

SPECIAL REPORT NO. 22

• *Timber Industry
Strategy*

MAY 1993

the Public Interest

VICTORIA

Auditor-General
of Victoria

SPECIAL REPORT No. 22

**TIMBER
INDUSTRY
STRATEGY**

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May 1993

The Honourable the Speaker
Legislative Assembly
Parliament House
Melbourne Vic. 3002

Sir

Under the provisions of section 48A of the *Audit Act* 1958, I transmit the Auditor-General's Special Report No. 22 on the Timber Industry Strategy.

Yours faithfully


C.A. BARAGWANATH
Auditor-General

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PART 1

Executive Summary

FOREWORD

1.1.1 Victoria has approximately 1.3 million hectares of native forest used for timber production, in addition to extensive areas of pine plantations. These resources supply a large proportion of Victoria's timber needs and provide significant State revenue in the form of timber royalties. The introduction of the Victorian Timber Industry Strategy, in 1986, set a new framework for the management of these timber resources and established new directions for the Victorian timber industry.

1.1.2 My Report is not aimed at questioning the merits of the objectives and targets established within this major government strategy but is aimed primarily at providing an assessment of the progress achieved, to date, in its implementation.

1.1.3 Recognition is given in this Report to achievements made in many areas of forestry operations. However, it also discloses issues which pose significant challenges for the Government, particularly in achieving its stated aim of a commercial approach to managing timber resources, and its target of balancing the economic and social needs of the community with the environmental values of native forests.

OVERALL CONCLUSION

1.2.1 The Timber Industry Strategy, adopted by the Government in 1986, set new directions for the Victorian timber industry and for the management of the extensive State-owned timber resources. While the Strategy has already required significant changes to the operations of the Department of Conservation and Natural Resources, it also formalised certain directions already in train at that time. In broad terms, the Strategy is based on the acceptance that timber production and utilisation is an integral part of the management of State forests. However, it recognises that native forests need to be managed in a manner which balances environmental values with the social and economic needs of the community.

1.2.2 In view of the long-term nature of forestry operations, the final outcome of a number of key Strategy initiatives will not be evident for many years. Consequently, an accurate assessment of the Strategy's overall effectiveness is difficult at this stage. In assessing its success to date, recognition should also be given to the difficult environment in which it has been implemented, including adverse economic conditions, numerous structural changes within the Department, problems associated with balancing competing views within the community and decreased funding for initiatives under the Strategy.

1.2.3 The audit review found that, **since 1986, the Department has made significant progress in setting in place structures aimed at achieving many of the key policy directions of the Strategy.** Initiatives have included:

- ▶ the establishment of long-term regional sustainable yields;
- ▶ the issue of long-term licences to timber processors;
- ▶ the introduction of multiple-use management and public participation into the planning process;
- ▶ a significant increase in softwood plantation establishment;
- ▶ development of a Code of Forest Practices for Timber Production;
- ▶ cessation of clearing in native forests for softwood (pine) plantation establishment; and
- ▶ improved training and worker safety within the industry.

1.2.4 It is disappointing, however, that **in several areas the progress made towards Strategy targets has been minimal. In particular, the rate of return from forest operations is still well below the target of 4 per cent, only limited progress has been made towards the completion of integrated forest management plans, and the anticipated expansion of private forestry and the reforestation of public land has not been achieved.**

Overall conclusion - continued

1.2.5 The current Government has indicated that many of the directions proposed in the Strategy will continue to be pursued. For this Government to build on the framework now in place for the management of timber resources and to reach its stated aims, particularly the adoption of a commercial approach to forestry operations, greater emphasis will need to be placed on:

- ▶ **achieving increased productivity** through identifying any potential for reducing production costs and improving silvicultural practices;
- ▶ **optimising the sale of all timber harvested**, including the current substantial surplus roundwood component;
- ▶ **strengthening the processes in place for grading and allocating the State's native hardwood timber** to ensure that the return from high quality timber is maximised and value adding is further encouraged;
- ▶ **undertaking increased financial analysis of alternatives available for the management of softwood plantations**;
- ▶ **evaluating the appropriateness of current price setting mechanisms**;
- ▶ **achieving a more co-ordinated approach between the conservation and timber production functions of the Department**; and
- ▶ **improving the marketing of the State's timber resources**.

1.2.6 An overall review of the key policy directions of the Strategy and progress made in their implementation has not been undertaken by the Department. As it is now over 6 years since the Strategy was adopted, audit considers that such a review is overdue.

SUMMARY OF MAJOR AUDIT FINDINGS

SOFTWOOD PLANTATION MANAGEMENT

Page 45

- ▶ The Department of Conservation and Natural Resources has increased the area of softwood plantations to 106 000 hectares, representing 88 per cent of its 1996 target. However, difficulties have been experienced in recent years in further expansion through land acquisition and sharefarming arrangements.

Paras 4.94 to 4.113

- ▶ The establishment of State-owned softwood plantations on cleared areas of native forest ceased in 1987. The Department acted promptly to achieve this change in direction advocated in the Strategy.

Paras 4.90 to 4.93

- ▶ The Department is faced with a number of significant problems in the management of softwood plantations including difficulties in meeting commitments to industry in some of the State's major softwood growing areas.

Paras 4.24 to 4.44

- ▶ To meet commitments in the short-term, the Department has chosen to harvest trees at less than its preferred harvesting age of 35 years and to defer procedures required to produce high quality sawlogs.

Paras 4.62 to 4.78

- ▶ Insufficient analysis has been conducted by the Department of the financial impact of various options available for the management of softwood plantations.

Paras 4.62 to 4.78

- ▶ Substantial volumes of roundwood resources from State-owned softwood plantations have remained unutilised for a number of years. Unless additional markets can be located for this resource, the surplus is projected by the Department to amount to at least 200 000 cubic metres a year for the next 40 years.

Paras 4.45 to 4.61

- ▶ The creation of the Victorian Plantations Corporation from 1 July 1993 should provide the impetus for a more commercial focus on the management of the State's softwood plantations.

Paras 4.15 to 4.18

NATIVE FOREST MANAGEMENT

Page 77

- ▶ The Department acted promptly in 1986 to establish regional sustainable yields for timber harvesting.

Paras 5.6 to 5.12

- ▶ While harvesting has been reduced in many areas of the State to the sustainable levels calculated by the Department, it is to be progressively reduced in several other major timber producing areas. This approach has been taken with the aim of minimising the detrimental impact on employment and timber-related industries, established within the areas, likely from a sudden reduction in harvesting.

Paras 5.13 to 5.14

- ▶ In order to improve the reliability of sustainable yield calculations, the Department needs to increase the extent of information maintained in relation to both timber and non-timber resources within the State's native forests.

Paras 5.15 to 5.27

- ▶ Commitments made to industry on the basis of 1986 sustainable yield calculations have placed certain limitations on the Department in the management of native forests.

Paras 5.28 to 5.29

- ▶ To 30 June 1992, a total of \$3.9 million had been allocated from Strategy funding towards the development of Forest Management Plans for 6 of the 15 Forest Management Areas of the State. The one Plan completed to date represents a comprehensive and high quality document which involved significant public participation in its preparation.

Paras 5.33 to 5.36

- ▶ Substantial delays and budget overruns have occurred in the development of most Forest Management Plans. The Department needs to accelerate the development process to ensure that all values associated with the State's native forests are recognised and managed appropriately in the harvesting process.

Paras 5.33 to 5.38

- ▶ Timber harvesting has been banned by the Department from areas defined as rainforest within the Government's rainforest policy document. However, issues surrounding the definition and protection of rainforests have been a source of ongoing conflict both within and outside the Department.

Paras 5.79 to 5.84

- ▶ Pre-logging surveys, necessary to identify areas such as flora and fauna habitat and areas of environmental or archaeological significance which should be excluded from harvesting, have not been introduced as a routine procedure for many areas of native forest.

Paras 5.60 to 5.61

- ▶ A Code of Forest Practices for Timber Production has been successfully implemented by the Department on public land. Although the Strategy proposed that the Code would also relate to private land from the 1986-87 logging season, some 5 years later, it is still not enforced in these areas.

Paras 5.66 to 5.70

NATIVE FOREST MANAGEMENT - *continued*

Page 77

- ▶ A mechanism has not yet been established to assess the Code's effectiveness in protecting forest values such as water catchment and flora and fauna habitat.
Paras 5.76 to 5.78
- ▶ Procedures have not been developed by the Department to prioritise the use of forests in areas where timber production and water catchment values compete.
Paras 5.85 to 5.92
- ▶ A comprehensive research project in the East Gippsland area was introduced with the aim of assessing the impact of integrated harvesting. The objectives and scope of the project need to be re-assessed by the Department following a Government decision, in October 1990, to introduce integrated harvesting in all areas of the State, without regard to the project's results.
Paras 5.98 to 5.104

VALUE ADDING

Page 107

- ▶ The Department has established a revised log grading and allocation system aimed at encouraging value adding within the Victorian hardwood timber industry.
Paras 6.10 to 6.16
- ▶ Departmental analysis suggests that there has been a trend towards increased value adding within the hardwood industry. The increase has resulted, to some extent, from market pressures on sawmillers including a decrease in the demand for green sawn timber.
Paras 6.49 to 6.51
- ▶ An overall increase in revenue expected to result from the implementation of revised grading and log allocation processes has not yet occurred, partly due to adverse economic conditions.
Paras 6.42 to 6.44
- ▶ Weaknesses in the log grading system have contributed to a significant annual loss of revenue as a result of the downgrading, by graders, of high quality logs.
Paras 6.17 to 6.44
- ▶ The downgrading of logs is not consistent with the value adding concept and may impact on the ability of the Department to maintain harvesting within regional sustainable yields.
Paras 6.45 to 6.48
- ▶ The procedures for measuring the extent of value adding within the industry and allocating high quality logs to the most appropriate processors need to be enhanced.
Paras 6.53 to 6.62

SUPPLY ARRANGEMENTS AND RESOURCE PRICING

Page 127

- ▶ The Department acted promptly to introduce licences which provided timber processors with long-term access to State-owned timber resources.

Paras 7.5 to 7.11

- ▶ While the issue of long-term licences was aimed at encouraging investment in the industry through the provision of resource security, it has limited the use of market mechanisms to determine the price of the resource. In addition, the recognition of historical entitlement to the resource has restricted new entrants to the industry.

Paras 7.52 to 7.54

- ▶ A licence fee is charged by the Department for access to timber resources. Evidence suggests that the fee charged by the Department does not adequately reflect the value to industry participants of long-term security of access to the State's timber resources.

Paras 7.13 to 7.15

- ▶ The supply of surplus quantities of timber through tender processes has improved the utilisation of forest resources and generated \$6.1 million in additional State revenue since 1989.

Paras 7.16 to 7.18

- ▶ The Department prepared supplementary financial statements for State softwood plantations and partial statements for native forests for the year ended 30 June 1991. Although a number of issues need to be resolved before a complete and accurate set of statements are available, the achievements to date are to be commended.

Paras 7.27 to 7.35

- ▶ The latest available financial statements, prepared for the year ended 30 June 1991, show that the return received by the Government from its forestry operations is far below the Strategy target of 4 per cent.

Paras 7.36 to 7.38

- ▶ In the case of hardwood operations, a loss of \$13.2 million was recorded for 1990-91. In the absence of more reliable data, the Department is unable to refute claims made by conservation groups that the industry is heavily subsidised by the Victorian public, nor counter-claims by the timber industry that the loss is due to inefficiencies and excessive costs within the Department.

Paras 7.36 to 7.43

- ▶ In setting royalty rates, the Department is faced with a number of objectives including, providing resource security to industry, maintaining stable regional employment, achieving a target rate of return and reflecting market rates. As a result of attempting to balance these competing and, at times, conflicting goals, the Department has not yet fully achieve any of the objectives set.

Paras 7.21 to 7.26

SUPPLY ARRANGEMENTS AND RESOURCE PRICING - *continued* Page 127

- ▶ For several years prior to June 1990, price increases for the State's timber resources were held below increases in timber prices charged by sawmillers due to the Government's decision to maintain increases in line with movements in the Consumer Price Index. In more recent times, increases have been limited by the recessionary climate.
Paras 7.49 to 7.51
- ▶ The Strategy confirmed the continuing application of the Royalty Equation System as the basis for timber pricing. Audit found that in some respects the equation, which emphasises price equalisation across the State, is in conflict with other objectives set within the Strategy.
Paras 7.44 to 7.46
- ▶ There is a need for the Government to clarify and prioritise its objectives in setting royalties.
Para. 7.4

REFORESTATION

Page 143

- ▶ As government-assisted reforestation programs outlined in the Strategy have not been supported by adequate resources, achievements against targets have, to date, been minimal.
Paras 8.7 to 8.16
- ▶ Since 1987, Strategy-related reforestation of Crown land has been achieved at an average of only 718 hectares a year compared with a Strategy target of 2 000 hectares a year. The current Government has recently reduced the annual reforestation target to 1 000 hectares.
Paras 8.13 to 8.16
- ▶ At least \$300 000 provided for reforestation has been redirected to other areas, reflecting a lower departmental priority for the program.
Para. 8.12
- ▶ Unless greater priority is given to funding reforestation programs, the pressure on native forests for timber production will continue and the expected future economic and environmental benefits will not be fully realised.
Paras 8.14 to 8.15
- ▶ A significant increase in agroforestry activity will be necessary if the current area of 600 hectares of land under agroforestry is to be increased to the 30 year target of 30 000 hectares set by the Government Joint Agroforestry Management Committee.
Paras 8.17 to 8.28

MARKETING AND INDUSTRY DEVELOPMENT

Page 153

- ▶ While the Timber Industry Council, established in 1987, was particularly active for a number of years, it has not met since March 1990. Consequently, there is now no body providing an apex of relevant organisations advising the Minister on matters relating to the Victorian forest products industries.

Paras 9.6 to 9.10

- ▶ The Department's role in relation to marketing and development, within the timber industry as a whole, requires clarification. Nevertheless, there is clearly scope for the Department to take a more active marketing role as a grower and seller of timber.

Paras 9.11 to 9.13

- ▶ In undertaking a more strategic marketing approach, the Department will need to expand its database of industry statistics.

Paras 9.14 to 9.16

- ▶ The expertise of senior staff of the Department needs to be further enhanced through an expansion of the skill base to include commerce and marketing.

Paras 9.17 to 9.19

- ▶ Since the introduction of the Strategy, the Department has instituted significant improvements in training and development programs relating to forest management. The most significant development relates to the introduction of forest operator licensing.

Paras 9.29 to 9.37

- ▶ The promotion by the Department of health and safety standards throughout the timber industry has contributed to a reduction in the number of work-related injuries since 1986.

Paras 9.38 to 9.42

- ▶ There is little evidence to suggest that strategies initiated in the East Gippsland Region will address the projected long-term decline in timber-related employment in the Region.

Paras 9.20 to 9.28

MANAGEMENT AND CO-ORDINATION

Page 167

- ▶ Since 1986, a total of \$95 million has been allocated to the implementation of Strategy initiatives. A regular review of the achievements of these initiatives against specific Strategy targets has not been undertaken by the Department.

Paras 10.5 to 10.19

- ▶ Victoria is one of only 3 States which has established an integrated conservation and land management agency. The benefits flowing from the integration in 1983 have not yet been fully realised.

Paras 10.12 to 10.14

- ▶ The lack of co-ordination in relation to certain aspects of the Department's conservation and timber production functions, together with a lack of continuity at senior management levels of the Department, have impeded the efficient implementation of the Strategy.

Para. 10.11

- ▶ The significant number of information systems established by the Department to assist in forest management need to be more effectively integrated and utilised for planning, reporting and decision-making purposes.

Paras 10.24 to 10.26

OVERALL RESPONSE BY SECRETARY TO THE DEPARTMENT

1.4.1 The Report acknowledges that the key policy directions in the Strategy have generally been implemented, but identifies a number of issues where further work is required. The Department is addressing, or recognises the need to address, a number of issues arising from the implementation of the Strategy, and accepts that the main findings of the audit team are fair and objective.

1.4.2 The Department's view is that it has effectively implemented the key initiatives of the Strategy, resulting in the most significant changes to management of Victoria's forests since the turn of the century. This achievement has involved the Department accepting the challenge of adopting more comprehensive approaches to forest management planning, research and new directions for industry than had been previously attempted in Australia. Further, these changes have been achieved in a period of increasingly adverse economic conditions, declining funding and frequent organisational change.

1.4.3 While it is pleasing to see audit acknowledge significant progress in a number of areas, additional areas where significant advances have occurred, but which have not been acknowledged, include:

- establishment of a comprehensive research program on management and environmental issues associated with native forests; and
- introduction of a program to increase community awareness of forestry issues.

1.4.4 Commercial accounts for forest operations were first produced by the Department for 1990-91. Although the return from plantation and native forest operations is less than 4 per cent on funds invested, the evidence for 1991-92 indicates the Department's financial performance is improving. The Government's action to establish the Victorian Plantations Corporation from 1 July 1993 will accelerate the trend toward improved commercial performance.

1.4.5 The Department had already recognised that some forest planning processes required examination, and a review was completed in August 1992. This review is now forming the basis for a new approach to forest planning and, although only one Forest Management Area Plan has been completed so far, rapid progress is now being made on the other plans under development. The Department expects to complete most Forest Management Plans by 1997.

1.4.6 Reforestation targets established in the Strategy have not been met as the necessary funds were not made available.

OVERALL RESPONSE BY SECRETARY TO THE DEPARTMENT - *continued*

1.4.7 Audit has also identified a number of areas where greater emphasis will be required in the future. The Department's view on each of these areas is:

- Continuing refinement of our commercial accounting processes will allow the Department to focus on those areas where the costs of production can be reduced. A major shift towards contracting of work and the introduction of financial reporting in the Department on an accrual basis will also assist in this regard;
- Our silvicultural research is strong and it will continue to identify opportunities for improved silvicultural practice leading to increased forest productivity;
- The Department is keen to optimise the sale of all timber harvested and will continue to work actively in this area;
- The implementation of the Strategy has facilitated substantial rationalisation in the hardwood sawmilling industry, and significant progress in increasing value added processing. Continuing change is essential if the industry is to meet future challenges and potential economic benefits are to be maximised;
- The Department has also recently taken steps to ensure that the grading of sawlogs from native forests is improved;
- Increased financial analysis of management alternatives in softwood plantations is supported, although this will be an issue for the proposed Victorian Plantations Corporation. However, it must be recognised that the desirability of establishing long-term supply agreements with industry will often require some trade-off in terms of achieving an optimum management regime from the point of view of wood production alone;
- The Department accepts that pricing arrangements need to be kept under review, and prices for forest products are adjusted annually unless otherwise specified in long-term agreements. The use of market mechanisms to determine prices is limited by the provision of resource security through long-term agreements and licences;
- Improved co-ordination of timber production and conservation functions is an objective which the Department supports. However, the Department believes the Report fails to acknowledge the considerable contribution the integrated Department has made towards establishing a sustainable industry based on the State's native forests; and
- The Department has made a considerable effort to market available resources from both softwood plantations and native forests. That effort has been adversely affected by the economic climate and the uncertainties created by the environmental debates of recent years. However, the Department acknowledges that it will need to place some additional emphasis on this area.

1.4.8 Significant change in the social and economic environment in Victoria has occurred since the Strategy was adopted in 1986. The Department supports the view that a review of key directions for the timber industry and forest management in Victoria would now be appropriate.

PART 2

Background

HISTORICAL PERSPECTIVE

2.1 Prior to European settlement, Victoria comprised predominantly forested land. The discovery of gold in 1850 saw widespread clearance of forests around mining settlements for buildings, fences, mining operations and firewood. Land Selection Acts passed by the colonies in the 1860s, which encouraged agriculture, also led to deforestation throughout many areas of Australia. In Victoria, clearance in the Strzelecki and Otway Ranges, primarily for dairying, was significant.

2.2 In 1907, the Victorian Parliament passed the first Forest Act which established the State Forests Department. Much of the Department's activity in the early years was directed towards repairing damage done to the forest resource through previous poor land management practices.

2.3 In addition to the impact of human settlement, bushfires have also caused severe damage to Victoria's forests and contributed to changes in native flora and fauna communities. In January 1939, the *Black Friday* bushfires destroyed approximately 1.3 million hectares of forested land throughout the Central Highlands.

2.4 Following these fires, a salvage operation harvested around 4.5 million cubic metres of timber from burnt areas to supply the demand for timber during and immediately after the Second World War when housing construction increased substantially. Many new sawmills were established to cope with the additional demand and new roads were constructed in order to access the forests of North-East and North-Central Gippsland. Native forests in East Gippsland became an additional source of timber during the 1960s and State-owned softwood (pine) plantations were significantly expanded during this period.

2.5 In 1983, the *Ash Wednesday* bushfires destroyed further areas of forest, including approximately 452 000 hectares of public land.



Early settlers farm.

2.6 An increasing interest in the conservation of forests and a commitment to reforestation programs developed in the community during the late 1960s and 1970s. Community attitudes have continued to change, both nationally and internationally, with increasing awareness of the environment and its importance in terms of social well-being and the welfare of future generations.

VICTORIA'S TIMBER RESOURCE

Native forests

2.7 Victoria consists of approximately 22.7 million hectares of land of which 9.1 million hectares are publicly owned. Native forests, which represent 52 per cent of public land, can be broadly categorised according to the following principal hardwood tree species.

2.8 *Ash-type forests* - exist in areas of high rainfall generally around the catchment areas of the State's major streams. They comprise alpine ash, mountain ash and shining gum and are considered to be Victoria's most valuable sources of native hardwood. These forests, which also possess significant scientific, recreation, water catchment and wildlife values, are generally of the same age following major bushfires or timber harvesting operations. Ash-type timbers are used for flooring, joinery, furniture, mouldings, veneer and paper.

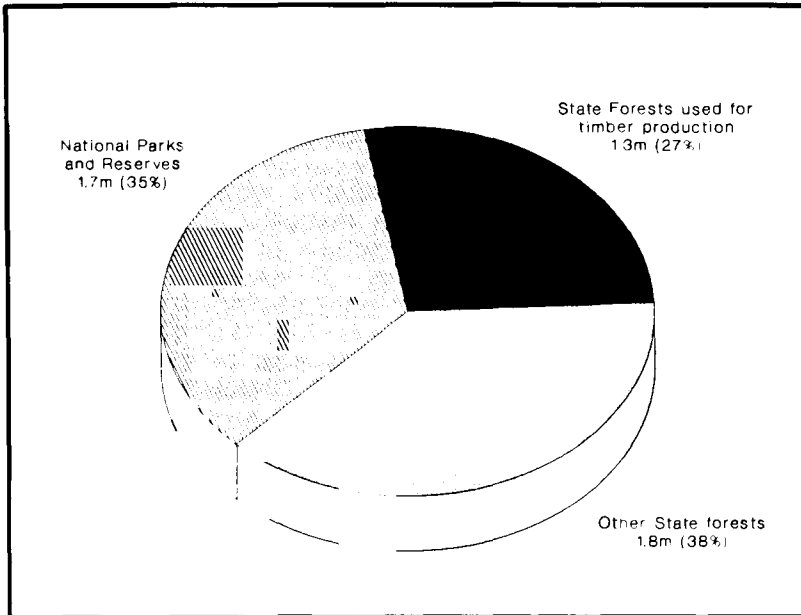
2.9 *Mixed species forests* - are found in foothill and coastal areas and make up a large proportion of the State's timber producing forests. The forests, comprising mixtures of different stringybarks, gums, peppermints and silvertop, provide habitat for many native animals. They also protect water catchments and provide a range of recreational opportunities. A large proportion of Victoria's sawlogs, poles, sleepers, fencing timber and firewood is supplied from mixed species forests.

2.10 *Red gum forests* - are generally found along flood plains of major river systems. These forests provide habitat for wildlife such as waterfowl and are important for scientific study and recreation. The timber is a deep red colour and is known for its strength and durability. These characteristics, together with its limited supply, make it a very valuable timber. Red gum is used for sawn timber, sleepers, posts and piles.

2.11 *Box-ironbark forests* - are usually located on poor soils of inland slopes and plains, areas not generally suitable for timber production. These forests are very important refuges for native wildlife existing in areas which have been largely cleared for agriculture. The timber from these forests is very strong and durable and was used extensively for fuel and mining operations during the late 1800s. It is now used primarily for heavy construction, fencing and firewood.

2.12 As illustrated in Chart 2A, 35 per cent of the State's native forest area is set aside as National Parks and Reserves. The remaining 65 per cent is classified as State Forest of which 1.3 million hectares is used for timber production. The balance is not generally harvested for various economic or environmental reasons.

CHART 2A
VICTORIAN NATIVE FORESTS
 (million hectares)



Plantations

2.13 In addition to native forests, plantation forestry also plays a major role in the supply of timber to the Australian market, particularly softwood plantations which have seen a rapid increase over the last 40 years. In 1991-92, publicly-owned softwood plantations covered approximately 109 000 hectares in Victoria. In addition, 108 000 hectares of softwood plantations were recorded in 1989 as privately-owned. The dominant species in these plantations is radiata pine.

2.14 In terms of hardwood plantations, approximately 8 900 hectares were recorded by the Department of Conservation and Natural Resources in 1989 as publicly-owned in addition to 6 900 hectares in private ownership.

WHY FORESTS ARE IMPORTANT

2.15 Forests have a range of uses and values, for example recreation, research, wood production, heritage and wilderness. Consequently, they mean different things to different people depending on personal values and perceptions.

2.16 Ecologically, forests represent complex and dynamic combinations of plants and animals which interact in a variety of ways. They have an important role to play in protecting water supply and air quality, in minimising soil erosion and salinity and providing habitat for native animals.

2.17 Economically, forests have provided resources for construction and fuel since early settlement and, more recently, wood fibre for the production of paper and paper products. In addition, there are a number of Victorian communities such as those located in the Orbost and Alexandra areas which are heavily dependent on the timber industry for their livelihood.

THE VICTORIAN TIMBER INDUSTRY

2.18 The Victorian timber industry, which includes industries involved in growing and maintaining the resource, logging, sawmilling, resawing and dressing and the manufacture of pulp, paper and paperboard, employs a significant number of people. Table 2B shows direct employment by timber industry groups in Victoria during the past decade.

TABLE 2B
TIMBER INDUSTRY EMPLOYMENT IN VICTORIA

<i>Industry group</i>	<i>(a) 1981</i>	<i>(a) 1986</i>	<i>(b) 1989</i>
Forestry, logging and sawmilling	4 528	3 177	2 257
Resawn and dressed timber	1 474	1 051	1 224
Veneers and manufactured boards	760	670	975
Pulp, paper and other paper products	8 030	5 824	3 031
Total	14 792	10 722	7 487

(a) Source: Australian Bureau of Statistics Census.

(b) Source: Australian Bureau of Statistics Labour Force Survey, 1991.

2.19 In addition, there is flow-on employment in other industries, such as the building and furniture industries, which utilise wood products.

2.20 The trend towards more capital-intensive processing, together with the impact of the recessionary climate in recent years, have contributed to the significant decline in employment in the timber industry.

2.21 The timber industry is diverse in nature and comprises firms of varying sizes and levels of capital investment. Forest products are traded internationally and, as such, the Victorian industry is exposed to competition from both interstate and overseas. In addition, timber competes with other non-timber substitutes such as steel, aluminium and concrete.

2.22 Over 60 per cent of the demand for sawn timber in Victoria is met by local production with only small quantities produced in the State exported interstate or overseas.

2.23 The Victorian Government is the major supplier of wood to the timber industry. In 1991-92, the Government sold approximately 1.6 million cubic metres (gross) of hardwood and 800 000 cubic metres (gross) of softwood.

THE TIMBER INDUSTRY STRATEGY IN CONTEXT

Development of the Strategy

2.24 In 1983, the Victorian Government announced a review of the timber industry which comprised an investigation of the range of products and values associated with forests, the challenges confronting the industry and options for its future direction. A Board of Inquiry, known as the Ferguson Inquiry, was established in 1984 and reported its findings to the Government in June 1985 following extensive consultation with conservation groups, industry, scientific bodies, government agencies and the public.

2.25 On the basis of the findings of this inquiry, the Government released the Timber Industry Strategy in 1986. Victoria was the first Australian State to prepare a strategy of this nature. Other States followed, with Western Australia releasing a timber strategy in 1987 followed by New South Wales in 1990 and Tasmania in 1991.

Key directions of the Strategy

2.26 The specific initiatives and actions outlined in the Victorian Strategy reflect the Government's desire to balance environmental values, the social and economic needs of the community and the capacity of forests to provide sustainable levels of all forest values, both timber and non-timber. The central aim of the Strategy is *"to make the best use of timber in a way which will strengthen the economic viability of the industry within an environmentally acceptable framework"*.

2.27 The Strategy sets 4 principles for forest management, namely, it must be:

- ▶ economically viable with respect to the provision of wood and other market goods;
- ▶ environmentally sensitive with respect to the provision of non-market goods and services;
- ▶ sustainable with respect to the interests of future generations; and
- ▶ assisted by public participation in the planning process.

2.28 The Strategy was established within the framework of the following broader government strategy statements:

- ▶ *The Economic Strategy* (1984 and 1987) which aimed at stimulating trade and trade-related activities in the State and improving the competitiveness of the State's trade-exposed sector.
- ▶ *The State Conservation Strategy* (1987) which grew out of the World and National Conservation Strategies. Its principal aim was to set a course for sustainable development in Victoria. A chapter in the Conservation Strategy dedicated to the protection of the State's forests lists 5 objectives directed to this end in that it aimed to:
 - ensure the use of forests is sustainable for the full range of products and benefits that forests provide;
 - protect the ecological condition of native forests;

- ensure that native forest management and timber harvesting operations are consistent with protection of the forest environment;
 - minimise the permanent removal of native forests and increase the current net area of public native forests; and
 - encourage reforestation, preferably with native species from the same location.
- ▶ *The Social Justice Strategy (1987)* which was concerned with the fair distribution and access to resources, opportunities for participation in the decision-making process and protection of human rights.

MANAGEMENT OF VICTORIA'S TIMBER RESOURCE

Department of Conservation and Natural Resources

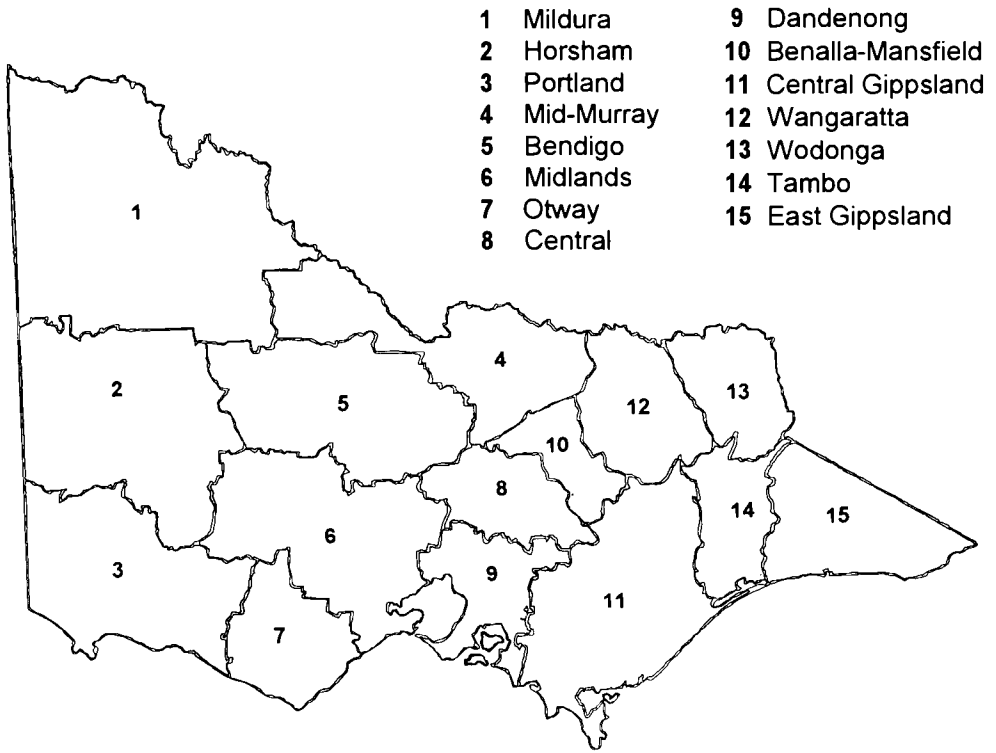
2.29 In accordance with the provisions of the *Forests Act 1958*, the Department of Conservation and Natural Resources is responsible for the control of Victoria's State Forests including the administration of all aspects of protection and management of the forests and harvesting of timber and other products from these areas. In line with these functions, the Department was assigned responsibility for the implementation of the State's Timber Industry Strategy.

2.30 **Specific funding provided to the Department to implement the Strategy commenced in 1986-87 and to 30 June 1992 totalled approximately \$95 million.**

2.31 At the time of the audit review, the Department comprised 22 Head Office branches (employing approximately 1 200 staff) and 16 Regional Offices (employing approximately 3 200 staff). The number of staff directly related to the implementation of the Strategy could not be readily identified.

2.32 For the purposes of managing timber production and planning forest management activities, the Department has divided the State into 15 Forest Management Areas. Chart 2C shows the boundaries of these Areas.

**CHART 2C
FOREST MANAGEMENT AREAS**



2.33 In addition to royalties collected on the basis of the volume of wood supplied, the Department also collects an annual licence fee from sawmillers who are provided with access to the timber resource. **In 1991-92, receipts relating to timber royalties and licence fees totalled \$46 million.**

Land Conservation Council

2.34 Decisions concerning the use of public land for particular purposes are generally made by the Victorian Government on the basis of recommendations of the Land Conservation Council. In accordance with the *Land Conservation Act 1970*, the Council advises the Government on the use of Victoria's public land, the constitution and definition of water supply catchment areas, and land use policy in proclaimed catchments. The Council comprises an independent full-time Chairman and representatives from community and government bodies. The procedures of the Council provide an opportunity for the views of all interested parties to be expressed and evaluated before final decisions are made.

2.35 Since its inception, the Council has conducted investigations across all areas of Victoria. Recommendations arising from its investigations, including those for the establishment of National Parks and Reserves, have in most cases been adopted by the Government.

ROLE OF THE COMMONWEALTH GOVERNMENT IN FOREST MANAGEMENT

2.36 The Commonwealth Government has no express constitutional power relating to forest resources. **Its role in the area is generally restricted to co-ordinating a national approach to both environmental and industry development issues and promoting efficient and effective management of Australia's timber resources.**

2.37 However, several Commonwealth powers, such as those relating to external affairs, exports and foreign corporations in some areas impact on timber production. The Commonwealth Government also has certain specific legislative powers and obligations, including international obligations under the World Heritage Convention, which influence the State's management of forest resources.

Resource Assessment Commission

2.38 The Resource Assessment Commission is a Commonwealth body established to provide independent advice to the Commonwealth Government on complex resource-use issues referred to it by the Prime Minister. The Prime Minister's first reference to the Commission, in November 1989, was a request for an inquiry into, and evaluation of, options for the use of Australia's forest and timber resources.

2.39 The final report of the Commission, published in March 1992, comprehensively discussed a range of areas including the forest resource, ecologically sustainable development, conservation, the timber industry, timber products, plantations, national strategies, forest planning and administrative arrangements. The report contained a number of conclusions and recommendations based on investigations undertaken during the inquiry.

National Forest Policy Statement

2.40 In July 1992, Commonwealth, State and Territory officials released a draft National Forest Policy Statement. The Statement represented a joint response to the report of the Resource Assessment Commission and reports of 2 other Commonwealth initiated bodies, namely, the Ecologically Sustainable Development Working Group on Forest Use and the National Plantations Advisory Committee. The Policy is aimed at promoting greater integration of forest objectives at the strategic planning and operational management levels between governments and between the community and governments.

2.41 The final National Forest Policy Statement was signed by all participating Governments, with the exception of Tasmania, at the Council of Australian Governments meeting in December 1992. The Statement, which contains 10 broad national goals, recognises that many of the policy initiatives contained in the document have already been implemented, to varying degrees, by the States and Territories.

CONSTRAINTS AND COMPLEXITIES IN FOREST MANAGEMENT

2.42 There are a number of factors which have added to the complexity of forest management and the implementation of the Timber Industry Strategy.

Balancing economic and environmental values

2.43 The Resource Assessment Commission reported that *"the area of naturally occurring forest in Australia has decreased by up to 45 per cent since European settlement. Australia is estimated to have approximately 41 million hectares of forest remaining, covering about 5 per cent of the Continent"*.

2.44 Victoria now has approximately 5.4 million hectares of native forest, 4.8 million of which is on public land. The State Government has the responsibility of protecting and managing this asset on behalf of the community.

2.45 One of the most challenging tasks for any government in forest management is satisfying the needs of all users of the forest in a manner which balances economic, environmental and social values. While some forest values and uses have a commonality, others are mutually exclusive. Consequently, there are instances when part or all of one value will be sacrificed in order to protect another. This situation has inevitably resulted in conflict over the way forests are managed. Many disputes have been characterised by a polarisation of views regarding conservation and development issues with parties often unable to reach consensus through a process of negotiation and mediation.

Land use decisions

2.46 The *Australian Heritage Commission Act 1975* provides for the establishment of a Register of the National Estate to list places of national heritage. The Register is intended to identify significant components of Australia's natural and cultural environment, and draw attention to values such as wilderness and individual species of flora and fauna. Approximately 6 per cent of Victoria's land area in 94 forest places has been included on the Register. Most of these areas (around 84 per cent) are contained in the State's National Parks and Reserves.

2.47 The Act prohibits Commonwealth ministers, departments and authorities from taking actions which adversely affect places listed on the Register unless there is no prudent and feasible alternative. However, the listing on the Register does not directly restrict land use options for land owners and local or State Governments, or control public access to the place. A listing on the Register is not synonymous with the declaration of a conservation reserve, nor does it preclude logging in the area.

2.48 Conflict has arisen in Victoria where the listing of areas on the Register of the National Estate, but deemed by the State Government as available for timber production, has been seen by some members of the community as representing a land use decision which prohibits timber production.

2.49 National Estate areas in East Gippsland are clear examples where such conflicts have arisen. In February 1990, following major confrontations between the logging industry and conservationists over timber harvesting in National Estate forests, the Victorian and Commonwealth Governments reached an agreement which provided for increased protection of these areas. One of the key elements of the agreement was the provision of Commonwealth funding of \$10 million over 3 years to augment timber resource options in the East Gippsland Forest Management Area with a view to maximising prudent and feasible alternatives to logging in the listed areas. The agreement does not apply to any future National Estate listing scheduled for timber harvesting.

The economic climate

2.50 Subsequent to the adoption of the Strategy, the Australian economy moved into a recessionary period of high unemployment and reduced business confidence and industry investment. As a producer and seller of timber resources, the Department of Conservation and Natural Resources has been subject to these deteriorating economic conditions which have resulted in a major downturn in the building industry, significantly impacting on the demand for structural timber.

2.51 This economic climate, together with decreasing funding for Strategy initiatives, have created a difficult environment for the Department to implement the policy directions of the Strategy.

PART 3

Conduct of the Audit

AUDIT OBJECTIVES

3.1 The overall objectives of the audit were to evaluate the extent to which:

- ▶ key policy directions of the Strategy have been achieved by the Government;
- ▶ the Strategy has been implemented with due regard to economy and efficiency; and
- ▶ systems and procedures within the Department have provided an adequate accountability framework for implementation of the Strategy.

Key policy directions

3.2 The Minister's foreword to the 1986 Timber Industry Strategy listed the following 21 key policy directions which the Strategy aimed to achieve:

- ▶ commitment to a sawlog-driven industry;
- ▶ rejection of a pulpwood-only or pulpwood-driven industry;
- ▶ endorsement of an industry directed towards value adding forest management practices and value added products;
- ▶ reduction of harvesting to a level sustainable in perpetuity on the basis of regional sustainable yields;
- ▶ management of the forests to reflect multiple-use of the forest and all forest values;
- ▶ no rampant clearfelling and the introduction of trials for alternative harvesting methods in East Gippsland, Otways and central mountain areas;
- ▶ enactment of a Code of Forest Practices to apply on public and private land;
- ▶ creation of a Timber Industry Council with emphasis on value adding industry development;
- ▶ extensive action on hardwood reforestation;
- ▶ encouragement of private forestry, including a new sharefarming proposal;
- ▶ exclusion of rainforests from logging;
- ▶ public participation in the development of Forest Management Plans and the Code of Forest Practices;
- ▶ maximum use of sawmill residue;
- ▶ preparation of an Environmental Effects Statement prior to introduction of integrated harvesting and development of an Economic Impact Statement before any further woodchip export;
- ▶ supervision and control of the sale of residual roundwood with preference for local use;

- ▶ the cessation, by June 1987, of clearing of native forest for pine plantations;
- ▶ the inclusion in licence conditions of a requirement to comply with the Code of Forest Practices and Occupational Health and Safety provisions;
- ▶ establishment of an Employment Development Committee in East Gippsland to develop employment opportunities;
- ▶ establishment of a Tourism Strategy for East Gippsland;
- ▶ full coverage of timber production cost plus a 4 per cent return to the Government; and
- ▶ improved forestry training and education and a public education program on forests and their multiple values and uses.

3.3 The audit review focused on the implementation of these policy directions although, in doing so, it did not encompass an evaluation of the appropriateness of the objectives or targets set within the Strategy.

■ SCOPE OF THE AUDIT

3.4 The following broad areas of activity were included in the audit examination:

- ▶ Softwood forest management;
- ▶ Native forest management;
- ▶ Forest planning;
- ▶ Code of Forest Practices;
- ▶ Value adding logging and production;
- ▶ Licensing;
- ▶ Royalty equation system and commercial accounting;
- ▶ Reforestation;
- ▶ Marketing and industry development; and
- ▶ Administration and accountability.

3.5 The audit concentrated on the production and supply of hardwood and softwood sawlogs and residual wood. Other commercial uses of forests such as firewood, sleepers, eucalyptus oil, charcoal production and extractive industries were not reviewed during the audit. The funding, planning and construction of forest roads was also outside the scope of the audit.

3.6 The audit involved an examination of forest and plantation management systems and documentation together with discussions with relevant staff within various branches of the Department's Head Office. Due to the decentralised nature of the Department and the location of timber producing areas in the State, it was also necessary for audit representatives to undertake field trips to the following Regional Offices as part of the audit:

- ▶ Alexandra (Central Management Area);
- ▶ Colac (Otways Management Area);
- ▶ Orbost (East Gippsland Management Area);
- ▶ Wodonga (North-East Management Area); and
- ▶ Yarram (Central Gippsland Management Area).

3.7 In addition, audit questionnaires were issued to all Regional Offices requesting particular information in relation to the management of hardwood and softwood resources.

3.8 The audit team was provided with specialist advice by representatives from the School of Forestry, University of Melbourne and by Judy Clark Consultancy Services, a consultant in economics. Discussions were also held with representatives of industry and conservation groups.

3.9 As the Report substantially covers the implementation of the Strategy over the period 1986 to late 1992, any reference to the Government relates to the previous Government, unless otherwise stated.

PART 4

Softwood Plantation Management



OVERVIEW

4.1 In recognising the significant contribution softwood plantations will have in supplying Victoria's future timber resources, the Strategy has set a number of objectives for softwood plantation management including:

- ▶ optimising the financial return to the State;
- ▶ ensuring plantations are capable of sustaining supplies to competitive and integrated forest products industries;
- ▶ promoting the establishment of integrated timber-using industries requiring sustainable timber supplies; and
- ▶ encouraging the establishment of private softwood plantations for complementary timber production.

4.2 The Strategy also proposed a change in policy in that the past practice of clearing native forests for plantation establishment was to cease from 1986-87. **The Department is to be commended on taking appropriate measures to achieve this significant change in direction advocated in the Strategy.**

4.3 With the aim of providing a long-term sustainable supply of timber within the State, the Department has set a target of expanding the State-owned softwood plantation area to a total of 120 000 hectares by 1996. **While significant progress has been made towards achieving this target, the Department has experienced difficulty in recent times in obtaining and developing land for plantations through land purchase and sharefarming arrangements.**

4.4 Although the supply of softwood on a State-wide basis is projected to exceed current long-term commitments to industry, **an overcommitment of sawlogs is projected in some of the major softwood producing areas of the State.** As the costs and logistics of transfers between various areas generally renders transportation across the State an uneconomic option, **the Department has chosen to meet commitments in the short-term by harvesting some plantations at an earlier age and deferring thinning procedures necessary to promote the growth of high quality timber.**

4.5 For a number of years, substantial volumes of roundwood resources from the State's softwood plantations have remained **unutilised.** The Department projects that this situation will continue, at a level of over 200 000 cubic metres a year over the next 40 years, unless suitable markets can be located for the resource.

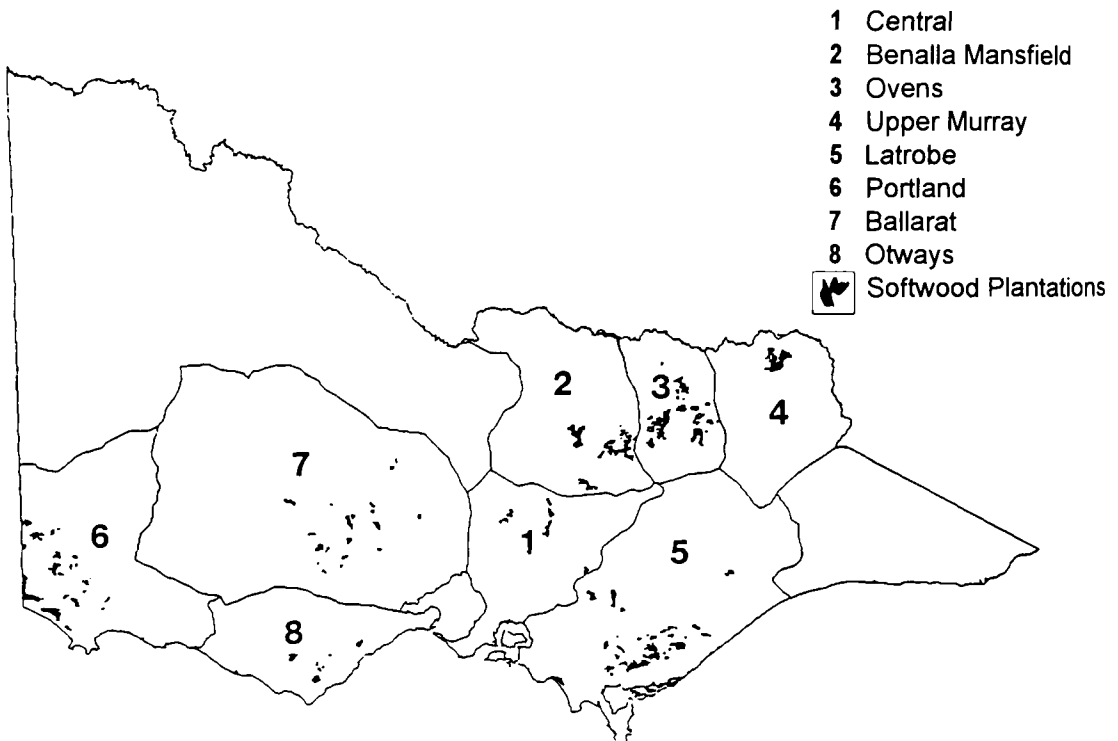
4.6 The current Government has announced that it proposes to continue plans for the corporatisation of the State's softwood plantations with the establishment of the Victorian Plantations Corporation by July 1993. For the Corporation to successfully achieve the commercial management of Victoria's plantations, greater emphasis will need to be placed on:

- ▶ assessing the financial implications of alternative silvicultural and plantation management options available to meet commitments; and
- ▶ ensuring the most effective utilisation of the total output of the plantations, including the significant volume of roundwood resources.

THE SOFTWOOD RESOURCE

4.7 Victorian softwood plantations occupy around 217 000 hectares representing 3 per cent of the total forest and woodland areas of the State. Victoria has the highest level of private plantation investment in Australia with almost 50 per cent privately-owned compared with the national average of 27 per cent. Of the remaining 109 000 hectares, in public ownership, around 106 000 hectares are managed by the Department. Details of the Department's 8 Softwood Management Areas are illustrated in Chart 4A.

**CHART 4A
SOFTWOOD MANAGEMENT AREAS**



4.8 A number of trials conducted in the State in the late 19th Century concluded that radiata pine had superior characteristics for softwood plantation activity. This conclusion, together with the results of subsequent studies, led to the adoption by the Department of radiata pine as the preferred species for plantation establishment.

4.9 Pine plantations were first established in Victoria in 1900, but until the early 1960s activity was relatively minor with an average of only 40 hectares planted annually. **In the 30 years since that time, an average of around 3 400 hectares per year have been planted.** As illustrated in Table 4B, 97 per cent of the current plantation area managed by the Department, comprises radiata pine species.

TABLE 4B
STATE-OWNED SOFTWOOD PLANTATIONS
(Hectares)

<i>Softwood Management Area</i>	<i>Radiata pine</i>	<i>Other conifers</i>	<i>Total</i>
Ballarat	13 400	100	13 500
Benalla - Mansfield	12 100	200	12 300
Central	4 500	400	4 900
Latrobe	19 900	100	20 000
Otways	3 600	700	4 300
Ovens	20 400	500	20 900
Portland	17 300	500	17 800
Upper Murray	12 200	200	12 400
Total	103 400	2 700	106 100

4.10 These plantations support a large proportion of the Victorian and Australian timber industries. In addition, they provide an important source of State revenue. Table 4C shows the volume of softwood sold, together with revenue generated from State-owned plantations, over the last 4 years.

TABLE 4C
SOFTWOOD SALES

<i>Year</i>	<i>Volume</i>	<i>Revenue</i>
	<i>(cubic metres)</i>	<i>(\$million)</i>
1988-89	857 000	18.9
1989-90	900 000	20.5
1990-91	795 000	19.3
1991-92	807 000	21.4

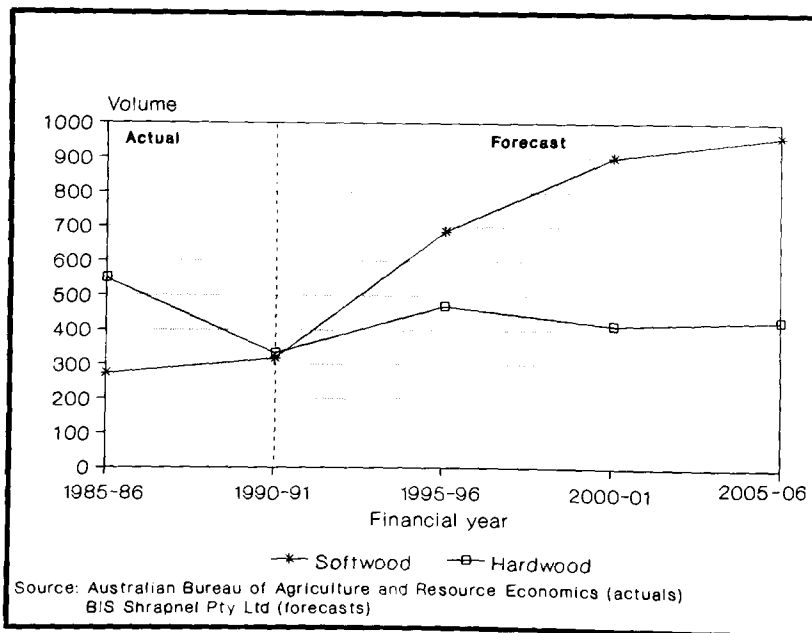
THE SOFTWOOD MARKET

4.11 The Victorian softwood industry is exposed to both national and international trade with State-owned plantations currently providing approximately 50 per cent of the softwood sawn timber used in Victoria, 40 per cent of plywood needs and 10 per cent of fine and special paper requirements. Although newsprint is not manufactured in Victoria, the State's softwood plantations supply raw material to a New South Wales producer. The quantity of material supplied is equivalent to around 30 per cent of Victorian newsprint consumption.

4.12 Throughout the 1980s, the softwood industry steadily increased its share of the sawn timber market with an average annual increase of 6.5 per cent. In 1991, the Department engaged a consultant to review the marketing prospects for sawn timber in Victoria. The major finding of this study was that **hardwood would increasingly be displaced by softwood and other substitute materials in the structural timber market for at least the next 15 years.**

4.13 The consultant predicted that by the year 2006, 69 per cent of sawn timber production in Victoria would comprise softwood timber. Chart 4D illustrates this prediction.

CHART 4D
VICTORIAN SAWN TIMBER PRODUCTION 1985-86 TO 2005-06
 ('000 cubic metres)



4.14 The major reasons for the projected increased production and usage of softwoods have been the comparative advantages of pine timber over hardwood such as a decreasing price relative to that of hardwood, and ease of usage. The increasing availability of softwood timber on the market, due to the expansion of plantations in the 1960s, and the decreased availability of hardwood from native forests as a result of the introduction of regional sustainable yields (refer to paragraph 5.13 of this Report), have also been contributing factors.

FUTURE DIRECTIONS

4.15 In order to enhance the value of the State's softwood plantations and place them on a firm business footing, in 1991 the Government outlined the corporatisation of softwood operations. The corporatisation process was to be aimed at streamlining management processes, maximising returns from log sales and ensuring the review and minimisation of costs.

4.16 The Department prepared a Business Plan, approved in principle by the Secretary of the Department in January 1992, which set financial targets to be achieved for softwood management and identified corporatisation as the end goal of organisational design. The Plan proposed that:

- ▶ the implementation be staged to enable effective consultation and negotiation to take place; and
- ▶ an independent softwood organisation, operating under an Interim Board within the Department, be established until corporatisation on 1 January 1994.

4.17 Since its election in October 1992, **the current Government has indicated that it intends pursuing the corporatisation process with the establishment of the Victorian Plantations Corporation** to undertake the management of State-owned plantations. Audit has been advised that the Corporation will be responsible for plantation management from 1 July 1993.

4.18 The following sections of this Report highlight a number of significant issues which will need to be addressed by the Corporation if it is to successfully achieve the commercial management of Victoria's softwood resource.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

A more commercial approach will be taken to the management of softwood plantations with the formation of the Victorian Plantations Corporation.

TIMBER COMMITMENTS

4.19 The Government has entered into 2 types of softwood supply arrangements with industry, namely:

- ▶ Agreements formalised either by a Memorandum of Understanding or an Act of Parliament; and
- ▶ Forest produce licences issued under the authority of the *Forests Act 1958* and the *Conservation Forests and Lands Act 1987*. The licences are issued with standard conditions specifying responsibilities and obligations of the Department and the licensee with most licences issued for 15 years but able to be renegotiated or renewed after 10 years.

4.20 In June 1992, the Government had 8 softwood legislated supply agreements, 18 licences and one Memorandum of Understanding. The advantages of these arrangements are that they provide security of raw material supply to industry and an assured market for government produce.

4.21 The principal aim of the Department in managing softwood plantations has been to produce an appropriate quality and quantity of sawlogs, on a sustainable level, to supply industries in accordance with these contractual arrangements. The Strategy states that in growing Victoria's wood resources priority is to be given to the production of sawlogs, with other products treated only as a by-product of this process. A significant by-product in the softwood operation is roundwood which can result from either:

- ▶ the removal of younger trees (thinning) at various stages of the growing process, with a view to increasing the growth rate of remaining trees; and
- ▶ sawlog residues from final harvesting.

4.22 This roundwood represents over 30 per cent of the total long-term yield of the State's softwood plantations.

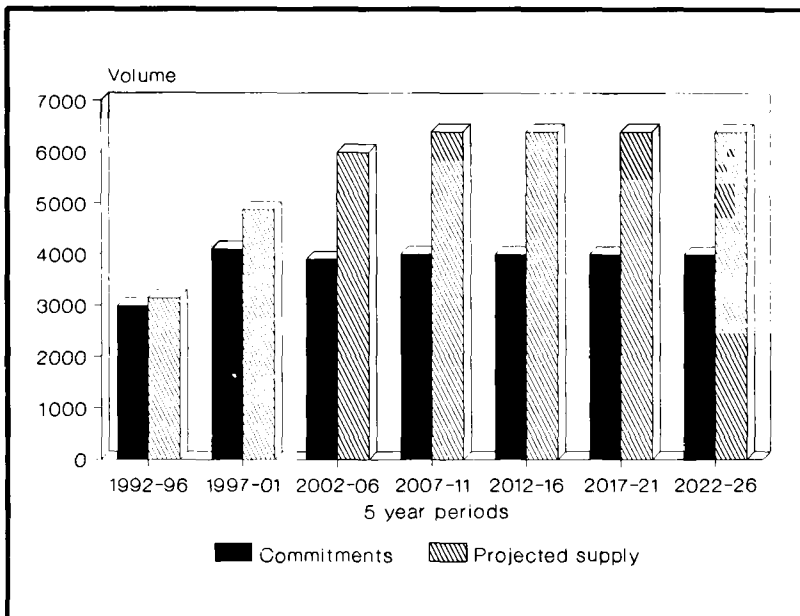
4.23 While the majority of supply agreements relate to the supply of sawlogs, a number of agreements for the supply of roundwood are also in place.

SUPPLY OF SAWLOGS

State-wide position

4.24 The Department has prepared softwood availability studies for each Softwood Management Area of the State which include details of the future wood supply projected to be available from the area. Chart 4E illustrates, **on a State-wide basis**, the relationship between the volume of sawlog currently committed to industry under contractual arrangements and the volume projected in these studies to be available over the next 35 years.

CHART 4E
STATE-WIDE PROJECTED SAWLOG POSITION
(’000 cubic metres)



4.25 As indicated in the Chart, almost all sawlogs projected to be available for the 5 years to 1996 are committed to industries. Beyond that time, it is predicted that there will be a supply available to meet industry expansion.

4.26 The State-wide position suggests that the Department is in a sound position to support an expanding softwood industry. However, from a management perspective, it is important that commitments to industries in individual areas of the State can be met from within those areas. In such a situation, management avoids any costs or inefficiencies involved in transporting timber for significant distances across the State.

4.27 An audit examination of the Department's projections in individual Softwood Management Areas indicated that **the Department has been, and will continue to be, faced with a variety of operating problems including difficulties in meeting sawlog commitments in major softwood production areas located in the north-east and south-west of the State.** In comparison, the departmental studies project an oversupply of sawlogs in other areas, particularly the Latrobe Softwood Management Area.

4.28 These problems have resulted, in part, from the absence until recently of adequate information systems to assist in forecasting future growth patterns, the difficulty in making future projections due to the long-term nature of forestry operations and past uneven planting levels. Consequently, actual outcomes have not been in line with supply levels assumed when long-term commitments were made to industry.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

This Report implies that the Department cannot meet existing sawlog supply commitments in some areas, and will be unable to market available supplies of sawlog in other areas. The Department does not agree with audit's conclusion, as it can meet all existing sawlog supply commitments. There are, however, issues relating to sawlog quality that are subject to on-going negotiations.

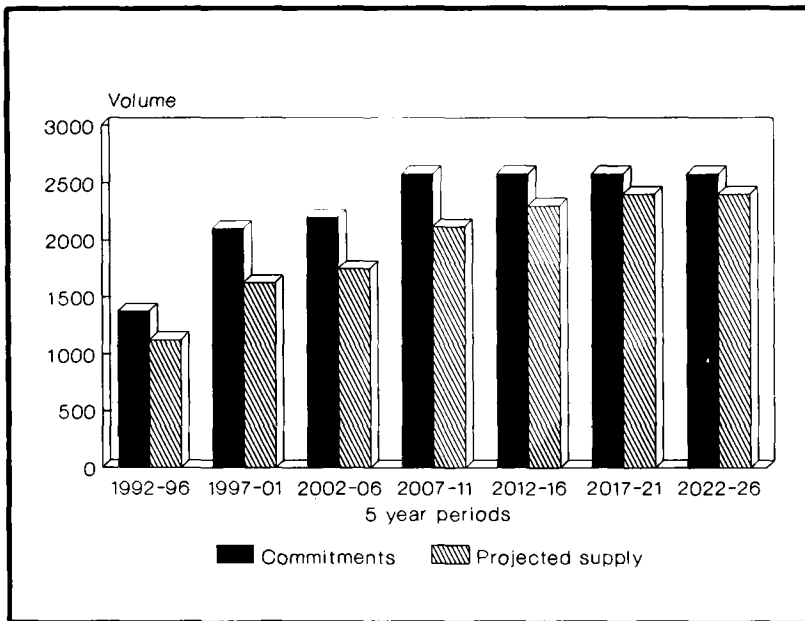
4.29 Issues relating to the particular supply difficulties faced in 3 of the major softwood producing areas of the State are set out in the following paragraphs.

North-east area

4.30 The north-east area of Victoria, which comprises the Ovens, Upper Murray, Benalla/Mansfield and Central Softwood Management Areas, accounts for approximately 51 000 hectares (48 per cent) of State-owned softwood plantations. Several major processing industries have been established in the area or on the New South Wales border to utilise this softwood resource including sawlog processing industries located in Myrtleford, Wodonga and Tumburumba and large-scale roundwood processing plants located in Albury, Myrtleford and Benalla. The area also contains a number of smaller wood processors.

4.31 As indicated in Chart 4F, the Department has predicted in availability studies that the commitments made to industry in the Ovens and Upper Murray Softwood Management Areas will exceed the resources projected to be available up to the year 2026. The projections made assume that the Department will continue to harvest plantations at an age of between 20 and 30 years, rather than its preferred harvesting age of 35 years, and to defer thinning procedures necessary to promote the growth of high quality timber. These practices have been adopted in an attempt to meet short-term commitments (refer to paragraph 4.95 of this Report).

CHART 4F
OVENS AND UPPER MURRAY PROJECTED SAWLOG POSITION
 ('000 cubic metres)



4.32 The availability studies project that the level of sawlog supply falling short of existing commitments in the 2 Softwood Management Areas up to 2026 will average 80 000 cubic metres a year.

4.33 Although the Department expects to absorb available sawlog resources from the neighbouring Central and Benalla/Mansfield Areas to help offset the imbalance, the contributions are likely to be minimal given the relatively young age and small area of plantation establishment in those areas.

4.34 The Department has recently advised audit that sufficient volume of timber can be produced in the north-east to meet all existing sawlog supply commitments. However, this will necessitate the production of lower quality (smaller dimensional) logs.

4.35 To ensure that the optimum financial return is received by the Government from softwood plantations in the north-east, both in the short and long-term, careful consideration will need to be given to analysing the implications of all available options. In undertaking such an analysis, the following factors should be considered:

- ▶ the impact of possible compensation payments to industry for loss of supply in the event that commitments are not met;
- ▶ the costs associated with transferring available supplies from other areas of the State;

- ▶ the impact of short-term practices on the ability of the Department to meet commitments in the long-term;
 - ▶ possible changes in future industry demand in relation to both quality and quantity of sawlogs; and
 - ▶ the potential to increase output through improved silvicultural practices.
- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department will be able to meet all existing sawlog supply commitments. When current sawlog supply agreements in North East Victoria were negotiated it was explicitly stated that supply after 1990 is based on clear fall at approximately age 30 until the year 2010.

Portland area

4.36 The Portland Softwood Management Area is located within the *green triangle* region encompassing plantations in south-west Victoria and the south-east of South Australia. This Area covers approximately 17 800 hectares of state-owned plantations with major plantations at Rennick and Kentbruck.

4.37 Although the area is projected to meet sawlog commitments up to 1995, the Department predicts commitment levels will be in excess of available supply between 1996 and 2026, at a level of between 40 000 and 60 000 cubic metres a year. To meet commitments over this period, early clearfelling of unthinned stands will be necessary. The following factors have contributed to this position:

- ▶ Assumptions used by the Department as a base for calculating upper commitment levels from the mid-1980s did not reflect subsequent actual outcomes. Based on the availability estimates, the Department made 2 significant supply agreements in the late 1980s which are seen as a major reason for the sawlog shortfall;
- ▶ A further commitment was made to supply an average 170 000 cubic metres of sawlog a year to one licensee commencing in 1995-96 on the condition that a new sawmill is established by the licensee in south-west Victoria prior to that time;
- ▶ An additional allocation of sawlog was made for 125 000 cubic metres above calculated availability. Audit was advised that this agreement was made without reference to regional staff;
- ▶ An outbreak of the sirex wasp during the summers of 1987, 1988 and 1989 caused significant tree deaths. The total area affected was estimated at 1 100 hectares; and
- ▶ In October 1988, gale-force winds damaged a large area of plantations at Rennick (390 hectares) and Kentbruck (560 hectares).

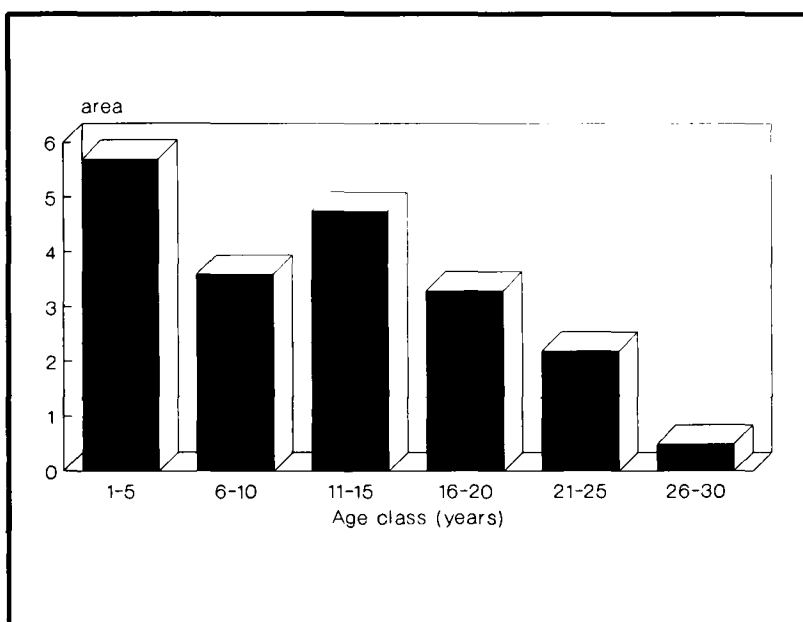
4.38 The Department has calculated that damage caused by the sirex wasp and wind since long-term availabilities were advertised for public tender in 1988 has resulted in a total loss of approximately 330 000 cubic metres of potential sawlog.

Latrobe area

4.39 The Latrobe Softwood Management Area, which includes the Yarram and Central Gippsland Regions, represents the second largest softwood plantation area in Victoria and comprises approximately 20 000 hectares of State-owned plantations. A major processing industry has developed in the area with a pulpmill and sawmill located in Maryvale and Morwell, respectively. Other smaller processing industries are also located in the area.

4.40 Chart 4G indicates that the majority of the Latrobe Forest Management Area comprises relatively young plantations.

CHART 4G
LATROBE AGE CLASS DISTRIBUTION
 ('000 hectares)



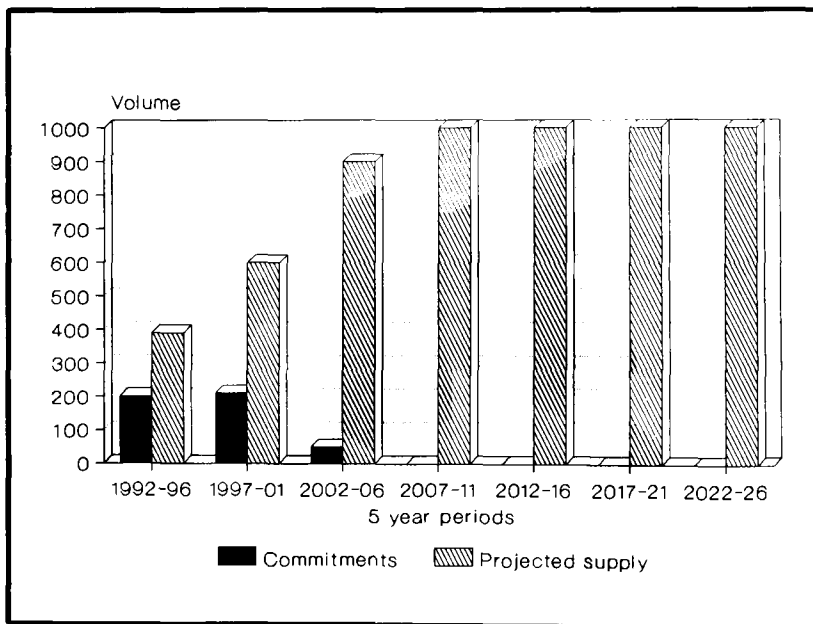
4.41 While approximately 70 per cent of the entire resource will not become available for harvesting for at least 10 years, a large supply of roundwood will be available as a result of thinning activities during that time.



Two year old plantations - Yarram area.

4.42 The Department has made significant commitments to industry in this area for the supply of roundwood. In order for the area to meet these commitments, significant volumes of sawlogs are expected to be produced. Chart 4H illustrates that the volume of sawlogs projected to be available in the area exceeds current commitments up to 2026.

CHART 4H
LATROBE PROJECTED SAWLOG POSITION
 ('000 cubic metres)



4.43 The management of plantations in the area is further complicated by the following:

- ▶ Export Incentive Plantations, comprising approximately 1 600 hectares, were planted under a joint agreement between 2 timber processors and the Department. The principle behind this agreement was that the timber produced from the first rotation (cycle from planting to harvesting) would be available to these companies in addition to their existing supply levels, and subsequent rotations would be used to meet the Department's normal supply commitments. As a result of the downturn in industry activity, the companies have not utilised the first rotation resources; and
- ▶ Because some plantations are in areas of high quality soil, the size of sawlogs produced is often too large to be effectively utilised by the major sawlog processor in the area. The problem relates particularly to the processor's inability to utilise logs with a large-end diameter greater than 55 centimetres. The Department has estimated that approximately 50 per cent of the logs produced from these high growth areas are over this dimension and therefore generally wasted. It also extends the area required to be felled to meet commitments.

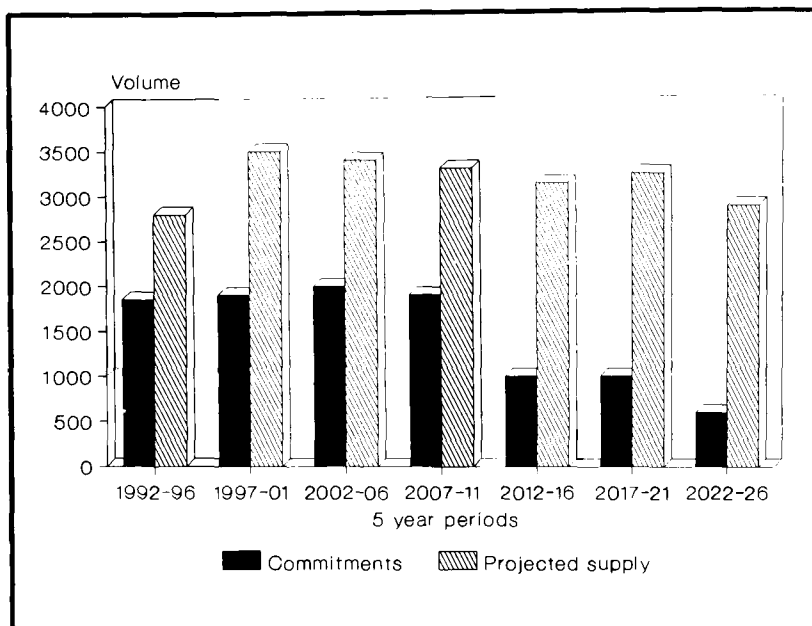
4.44 The Department will need to give close consideration to achieving the effective use of surplus sawlog supplies while at the same time continuing to meet roundwood commitments to industry in the area.

SUPPLY OF ROUNDWOOD

4.45 For a number of years, substantial volumes of surplus roundwood resources from the State's softwood plantations have remained unutilised. In most cases, the unused resource has remained in the plantation to rot or is burnt prior to the re-establishment of the plantation.

4.46 As indicated in Chart 41, the over-supply of roundwood is projected to continue over the next 35 years unless markets can be found by the Department for the surplus. On a State-wide basis, this surplus is predicted to range from approximately 200 000 cubic metres a year between 1992 and 1996 to approximately 500 000 cubic metres a year between 2022 and 2026.

CHART 4I
STATE-WIDE ROUNDWOOD POSITION
 ('000 cubic metres)



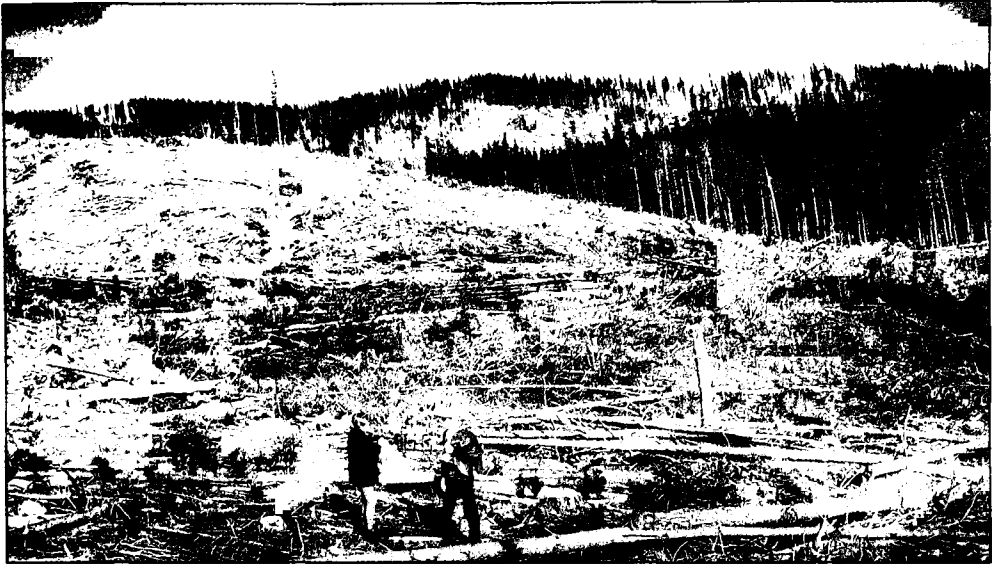
4.47 An examination of individual softwood management areas shows that the problem is particularly evident in the north-east and Portland areas of the State.

4.48 For example, a preliminary analysis conducted by the Department in May 1992 indicated that to achieve a sustainable volume and quality of sawlog for industry in the north-east area, between 250 000 to 300 000 cubic metres of roundwood a year above existing commitments would be produced for the next 15 years. The Department has estimated that at best between \$3 million and \$5 million a year could be returned over the next 5 years from the sale of this surplus resource, if suitable markets were located, and at worst the sale could be cost neutral.

4.49 The position in the north-east may be exacerbated by the following factors not taken into account by the Department in the analysis:

- ▶ An increasing volume of chipped residues will be available as sawmilling expands in the area; and
- ▶ The proposed establishment by one processor of a recycling plant in the area. This would significantly reduce that firm's intake of pulp and roundwood from the Department, currently amounting to 120 000 cubic metres a year.

4.50 A further problem that the Department is currently experiencing in the area is competition from other sources of softwood including State plantations near Tumut in New South Wales and private plantations in Victoria and New South Wales.



Residual roundwood - north-east area of Victoria.

4.51 It is recognised that the emphasis of the Strategy and departmental management of softwood plantations is on the production of sawlogs to meet commitments. **Nevertheless, it is surprising that only limited action has been taken to achieve the efficient management of roundwood resources which represent a significant output from softwood operations. The use of the resource, which is primarily suitable for the production of paper and panels, represents a potential source of State revenue.**

4.52 If the returns from softwood plantations are to be maximised, attention will need to be given to attracting further industry investment in suitable plant and equipment to process the roundwood and to identifying interstate or overseas markets for the surplus resource.

4.53 It was pleasing to find that the Department has recently commenced investigations to identify opportunities for the use of the projected surplus in the north-east area of the State. However, only limited consideration has been given to addressing the problem in other areas of the State.

Roundwood management options

4.54 The avenues under consideration by the Department in the north-east are detailed in the following paragraphs.

Location of additional domestic markets

4.55 The sale of roundwood in a domestic market is the preferred option of the Department as it is considered most likely to optimise returns and provide employment potential. In order for these benefits to be realised, **the level of existing processing needs to be greatly expanded or new processing facilities established.** Presently, it is unlikely that the necessary expansion program will be achieved through existing industry, hence new industries will need to be attracted.

4.56 Analysis conducted by the Department in June 1992 concluded that the quantity of excess roundwood would be able to support the following industries on a world-competitive basis:

- ▶ Panel product plants, including medium density fibre board or particle board plants. The Department has identified that the establishment of these plants would need to be based almost entirely on the export market as existing production in this area already meets domestic demand; and
- ▶ A semi-mechanical pulp and paper mill with a wood resource requirement of approximately 500 000 cubic metres a year.

4.57 A pulp and paper mill would require a substantial investment, estimated by the Department at approximately \$500 million, and would produce products such as newsprint for local sale and import replacement. Table 4J, prepared by the Department, compares the output capacity of a local world-scale mill with current imports of paper products.

TABLE 4J
IMPORT REPLACEMENT OPPORTUNITIES
IN THE AUSTRALIAN PAPER MARKET
(’000 tonnes)

<i>Paper type</i>	<i>Level of imports 1990-91</i>	<i>Capacity of mill (output production)</i>
Newsprint	295	220 to 250
Light-weight coated	140	150 to 200
Clay coated wood-free	120	200
Uncoated wood-free	70	220
Uncoated kraft (packaging)	80	200

4.58 As highlighted in the table, such a mill would have the capacity to replace imports of most paper types.

Potential utilisation of international markets

4.59 The sale of roundwood for export as unprocessed woodchips is not a preferred option of the Department given that the high costs of transporting the product to a port would result in minimal financial returns from the operation. However, it may **provide a possible interim solution during the process of developing a long-term strategy.**

Non-commercial thinning of young stands

4.60 In the absence of a small roundwood market in the north-east, the process of non-commercial thinning (i.e thinnings of plantations where no market is available for the resulting product) has been considered as an option for addressing current difficulties in the area. However, the Department has identified that thinning in these circumstances has a number of disadvantages including:

- ▶ poor financial outcome which would have an adverse short-term effect on the commercial viability of the plantation operations; and
- ▶ visible wastage of a State resource.

4.61 Despite these disadvantages, audit is of the view that consideration should be given to such a process where it makes a positive contribution to the achievement of the long-term goals of softwood forest management.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department has taken a number of actions to market roundwood although they are not recognised in the Report. Examples include:

- *Investigations as part of the State Economic Strategy on the possibility of establishing a TMP pulp mill at Portland;*
- *Issue of a new licence in 1986 which allowed a particle board plant to be established in Benalla; and*
- *In 1988 the Department called for expressions of interest in softwood sawlogs and roundwood resulting in the following long-term agreements being negotiated - Laminex Industries 1989, Victree Forests 1989, SEAS Sapfor 1993.*

Most recently the Department has entered into discussions with other growers in north-east Victoria and New South Wales to establish a joint marketing approach to residual roundwood available as a consequence of decisions by ANM not to proceed with a second paper machine at Albury, and to move to recycled fibre for part of their resource requirement.

SILVICULTURAL PRACTICES

Background

4.62 Silvicultural practices which include thinning, pruning, fertilising, and harvesting can have a significant effect on the yield and economic viability of softwood plantations. Sound silvicultural practices are aimed at promoting the growth of healthy, vigorous stands to maximise the yield and quality of the timber resource. The Strategy identifies the importance of evaluating the economic viability of undertaking these activities in that it states:

- ▶ silvicultural practices, to improve the quality of wood products, will only be applied where they can be justified in terms of potential markets and return on investment; and
- ▶ a fully integrated information system will be developed for evaluating management alternatives for softwood plantations which will take account of economic factors and growth characteristics under different silvicultural treatments.

Thinnings

4.63 Thinning operations play an important role in the production of a high quality and sustainable sawlog yield. As indicated in the Department's softwood availability studies, the objective of the Department is to undertake 3 thinnings before harvesting with the age and duration between thinnings dependent on the topographic and economic conditions of the particular softwood management area.

4.64 The first thinning is one of the most important management and silvicultural operations in a softwood rotation. The objective of this process is to remove the defective, malformed, moribund, sick and suppressed trees from the plantation to allow the remaining trees a healthier more vigorous growth pattern with the aim of producing stronger stands and hence higher quality sawlogs. The process largely defines the course and flexibility of subsequent operations and the log size assortments which can be produced. The age of stands requiring first thinning usually varies between 13 and 18 years. The second and third thinning phases emphasise spacing and tree form as important factors in selecting trees for removal and are normally performed between 20 and 30 years.

4.65 Where thinnings are not performed on schedule, the result is a reduction in the size and quality of the sawlogs produced.

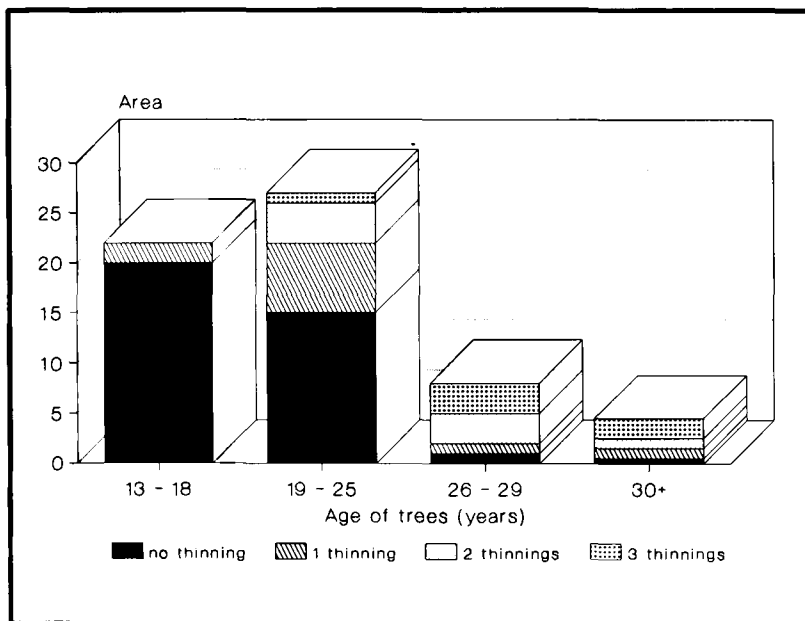
Past practices

4.66 The actual thinning strategy adopted by the Department in the past has been dependent on its obligations to industry and other plantation objectives such as structuring the age class distribution of plantations in a manner which provides an even woodflow. As a significant proportion of the State's plantations were established during the 1960s and 1970s, the Department is currently faced with the management of an uneven-age class distribution and consequently an uneven supply of mature trees.

4.67 An audit analysis of the thinnings history of softwood plantations was undertaken by examining the average stocking levels, i.e. the number of trees per hectare, for stands (uniform areas of a plantation) planted prior to 1982. The analysis was based on information supplied by the Department and relates to assumptions that can be made regarding past thinnings on the basis of stocking levels in particular areas.

4.68 Chart 4K, prepared on the basis of the results of the audit analysis, illustrates that much of the State's softwood plantations have not been thinned in accordance with the Department's preferred practice which approximates one thinning prior to 18 years of age, 2 thinnings prior to 25 years and 3 thinnings prior to 30 years.

CHART 4K
PLANTATION THINNING HISTORY MAY 1992
('000 hectares)



Note: Information on post-1982 planting is unavailable as stocking information is not compiled until a stand is 10 years old.

4.69 Detailed audit analysis of the thinnings history indicated that:

- ▶ up to 35 700 hectares (61 per cent) of plantations have high stocking levels indicating they have never been thinned; and
- ▶ for plantations over the age of 30, the stocking levels indicate that only 53 per cent have been subject to the preferred 3 thinnings .

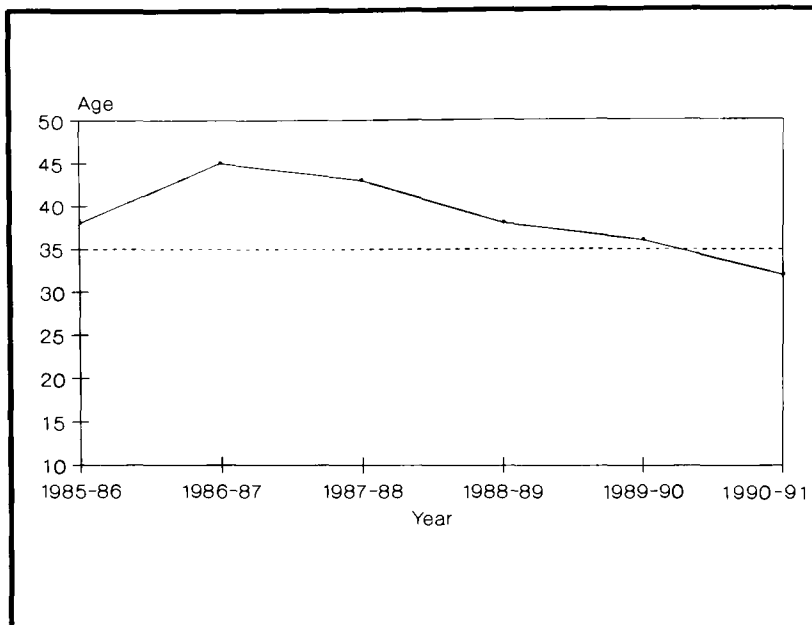
4.70 Audit was advised that the deferral of thinnings has occurred as a result of a lack of markets for the roundwood produced from thinnings in addition to the previously highlighted need to meet short-term sawlog supply commitments. Discussions with departmental representatives indicated that **the preferred thinning regime is viewed as a long-term target and that current silvicultural practices are directed at optimising financial returns while meeting commitments. Nevertheless, analysis was not available within the Department to support the financial basis of the chosen silvicultural practices.**

Harvesting age

4.71 The final operation within a silvicultural process is the harvesting of a mature plantation to supply the various sawmills and other processing plants. The age of harvesting also has a significant effect on the quality and size of the sawlog produced and the long-term sustainability of a plantation resource. **The Department's preferred harvesting age as defined in its availability studies is 35 years.** However, the actual age can vary slightly, depending on the topographic conditions applicable to each stand and the need to meet commitments in the short-term.

4.72 The average age at which plantations have been harvested since the adoption of the Strategy is illustrated in Chart 4L.

**CHART 4L
AVERAGE AGE OF HARVESTED STANDS**



4.73 As highlighted, a significant decrease in the harvesting age has occurred over the past 6 years with a 29 per cent State-wide reduction from 1986 to 1991. Details of the average harvesting age in each of the 8 Softwood Management Areas over the period is provided in Table 4M.

**TABLE 4M
AVERAGE AGE OF FINAL HARVESTING**

Management Area	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
Ballarat	32	55	44	56	46	46
Central	51	-	65	60	51	40
Latrobe	39	33	35	32	30	23
Otways	45	52	50	48	57	49
Ovens	33	51	39	41	31	30
Portland	37	39	35	27	37	26
Upper Murray	21	-	-	23	24	22

Note: In the Benalla/Mansfield Area, no harvesting occurred over the period.

4.74 Early harvesting has occurred in the areas with larger commitment levels such as Portland, Ovens, Upper Murray (sawlogs) and Latrobe (roundwood) where the level of resources reaching 35 years of age are insufficient to match commitments.

4.75 Although the rate of growth of pine stands is reduced after 25 years, high-quality volume is added up to the age of 35 years. The Department has identified that early harvesting of unthinned stands has the following impacts on the Department's operations:

- ▶ It will result in a progressive decline in volume and sawlog quality, accelerating over the next 5 years. As revenue from softwood timber sales is based on the size of logs supplied, a reduction in revenue may result;
- ▶ The recovery of sawlogs from unthinned stands results in a greater amount of waste material;
- ▶ The area required to produce the volume necessary to meet commitments will increase significantly. For example, the Department has identified that in the north-east of the State the volume of sawlogs produced on a per hectare basis will be significantly lower (200 cubic metres compared with greater than 300 cubic metres);
- ▶ The diameter range of harvested trees is generally significantly reduced. The Department has indicated that in the north-east area of the State, the industry expects that at least 50 per cent of the resources supplied will be in the range of 30 centimetres or greater diameter. Current supply levels in the area provide only 30 per cent within this range;
- ▶ By not allowing softwoods to grow for the preferred 35 years, the opportunity to produce veneer and other high quality larger logs, on a sustainable basis, will be forgone;



High quality logs.

- ▶ Many of the sites in the north-east used for early harvesting are steep and would normally be re-established by burning and hand planting. In addition to the high levels of retained slash (leaves and debris left after a harvesting operation) in these areas, some sites contain a considerable number of remaining stems which must be removed or burned for re-establishment. Hence, the Department has estimated that an increase of \$600-800 per hectare in re-establishment costs can be expected; and
- ▶ A shorter rotation limits flexibility in scheduling silvicultural and other operations.

4.76 On the other hand, an increase in the harvesting age can have a substantial impact on the long-term financial viability of a commercial plantation operation. Apart from the delay in collecting revenue, the additional costs would be associated with maintaining the plantation.

4.77 **To maximise returns to the State, it is therefore essential that the Department undertakes detailed financial analyses of the trade-off between the costs associated with producing high quality timber and the need to meet market demands including the requirements of timber producers under supply agreements.** The willingness of timber producers to pay the increased costs involved in producing large high quality timber also needs to be taken into account in the analyses.

4.78 Although the audit highlighted that the Department has chosen to meet commitments to industry by the earlier harvesting of timber in some areas, **limited financial analysis was available to substantiate the cost effectiveness of this practice.**

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Report fails to recognise the complexities of managing softwood plantations. The Department has deliberately chosen to meet its contractual obligations by using a variety of silvicultural regimes. The use of fixed 35 year silvicultural regimes would result in drastically reduced wood supplies to industry, and further decline in the economy and employment in rural Victoria.

FOREST INFORMATION SYSTEM

4.79 The Forest Resources Information and Yield Regulation (FRIYR) system, initiated in 1985, was developed under the Strategy as a means of enabling the Department to predict annual growth, wood yields, costs, and financial returns for specific silvicultural and management strategies. Since 1986-87, approximately \$1.6 million of Strategy funding has been allocated to the development of the system.

4.80 **The system is seen as a leader, both nationally and internationally, in maintaining an inventory of forest resources.** It has been recognised as such within the forest industry and has received awards from the Commonwealth Technology in Government Committee.

4.81 Audit found that the FRIYR system represents an excellent tool for assisting departmental management to make informed decisions on present and future directions for the State's softwood plantation program. **However, audit identified 2 key areas where the system's usefulness is not yet optimised.**

Availability studies

4.82 One of the most important facilities of the System is its ability to predict the sustainability of woodflow and the quality of the sawlog resulting from alternative silvicultural and management strategies. As indicated previously, the Department has developed a program of softwood availability studies covering all areas of the State's softwood resources using these facilities.

4.83 While recognising the Department's initiative in undertaking these studies, audit found that the following weaknesses need to be addressed before they can become a fully effective long-term planning tool for management purposes:

- ▶ the studies to date have not included data on the financial impact of the various options and the extent to which they will achieve the Strategy target of optimising the financial return to the State;
- ▶ the studies have not generally considered the marketing directions necessary to cater for the surplus resource identified; and
- ▶ the level of resources allocated to the task has been inadequate to enable the studies to be prepared in a timely manner.

Level of assessment

4.84 Calculation of the availability of softwood resources resulting from different silvicultural and harvesting practices requires updated, accurate growth and yield information within the FRIYR system.

4.85 In order to achieve the required quality of growth information, departmental officers regularly undertake a program of assessment through the use of sample plot measurements. The Department's guidelines indicate that:

- ▶ the initial assessment of young stands is to be undertaken at 10 years of age;
- ▶ a re-assessment is to be undertaken following first and subsequent thinnings; and
- ▶ further assessments are to be undertaken within 10 years of the previous assessment unless harvesting or thinning is planned within the following 2 years.

4.86 Audit found that the assessment program is generally running behind this schedule in most regions, and will be further complicated by the level of increasing activity required over the next 10 years as a result of expanded planting activities throughout the 1980s.

4.87 In addition, audit analysis of the current status of assessments revealed that 24 per cent, or 16 300 hectares, of pine plantations which qualify for assessment (i.e. pre-1981 plantings) have not had growth rates input and verified within the FRIYR system.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

Whenever the Department undertakes a review of softwood availability the first step is to update all resource information. Calculations of expected yields are therefore not compromised.

PLANTATION ESTABLISHMENT

4.88 The Department's target of expanding the plantation area from around 91 000 hectares in early 1985 to 120 000 hectares by 1996 is designed to provide long-term sustainable woodflows in each of the Softwood Management Areas to meet existing commitments and to enable expansion to support efficient world-scale industries.

4.89 Because of uncertainties created by the long-term nature of the industry, the Strategy advocates the concentration of future plantation development in areas identified as having an established, integrated forest products industry and growing conditions which minimise risk and maximise potential returns.

Plantations on cleared native forest areas

4.90 A major impediment to pine plantation establishment in the past has been community objections to clearing native State forest areas to provide the required land resource. Although the Department's past policy has involved establishing softwood plantations on native forest areas considered to be of low productivity and, in the main, unsuitable for hardwood sawlog production, environmentalists have argued that these areas should be retained as they provide suitable habitat for native plants and animals.

4.91 The Strategy advocated a change in policy direction. Clearance of native forest for plantations was to cease from 1986-87, with future plantations established primarily on cleared land purchased or leased by the Government.

4.92 As indicated in Table 4N, there has subsequently been a shift to plantation establishment on cleared shrubland and pasture land **with no clearing of native forest occurring after 1986-87.**

TABLE 4N
PLANTATION ESTABLISHMENT AT 30 JUNE 1992
(Hectares)

<i>Planting season</i>	<i>Previously native forest</i>	<i>Previously cleared land</i>	<i>Replanting of existing plantation areas</i>	<i>Total</i>
Pre-1960	2 400	-	400	2 800
1960-1970	23 300	-	1 000	24 300
1971-1980	35 600	1 300	4 400	41 300
1981-1985	8 700	3 400	4 300	16 400
1986-1992	(a) 2 000	11 700	6 000	19 700
Total	72 000	16 400	16 100	(b) 104 500

(a) Planting performed in this period was on land cleared prior to the adoption of the Strategy.

(b) Excludes 1 600 hectares of experimental plantings, research trials and regeneration.

4.93 The Department acted promptly to achieve this significant change in direction advocated in the Strategy.



Softwood plantation - north-east area of Victoria.

Establishment targets

4.94 A plantation establishment target of 125 000 hectares set in the Strategy, to be achieved by 1996, was subsequently reduced to a target of 120 000 hectares. This adjustment resulted from a 1989 recommendation of the State Plantations Impact Study Committee established in 1988 to review concerns expressed in rural communities regarding the plantation program outlined in the Strategy.

Improved productivity

4.95 The Committee's recommendation of revised establishment levels was primarily based on a reduction of the targets for the Ovens and Upper Murray Softwood Management Areas from 43 000 hectares to 38 000 hectares. As indicated previously, the supply of sawlog timber in these areas is projected to be significantly less than that required to meet existing commitments (refer to paragraph 4.31 of this Report). Nevertheless, the Department adopted the revised targets due to:

- ▶ Expectations of at least a 5 per cent productivity improvement through the use of routine silvicultural methods to control disease and pests in addition to more frequent and intensive use of fertilisers. Improvements in newly established plantations were also to be achieved through tree breeding, improved nursery practices and more intensive silviculture; and
- ▶ Potential for reallocation of uncommitted sawlogs from the Benalla/Mansfield Softwood Management Area to processors in the Ovens and Upper Murray Areas.

4.96 The Department has identified that the productivity improvements would require the following:

- ▶ an intensive program of forest fertilisation (3 times during a 35 year rotation period);
- ▶ an integrated control program for Softwood Management Areas affected by Pine Needle Blight (*Dothistroma*);
- ▶ development of a strategy for the control of the sirex wasp; and
- ▶ an ongoing community education program.

4.97 In total, annual funds of at least \$635 000 would be required to achieve the 5 per cent productivity improvement. Although the Department has adopted the reduced establishment targets on the basis of the productivity gains, audit found that **funds have not been allocated, to date, to enable the necessary programs to be fully implemented.**

Achievement of targets

4.98 The Strategy identifies that land for new plantations is to be acquired through land purchase, plantation sharefarming and lease agreements.

4.99 While 3 Softwood Management Areas have already achieved their required targets, substantial acquisitions are still necessary in some of the State's major softwood production areas. In order to achieve the targets, an additional 9 100 hectares is still to be acquired. Of this area, the Department plans to purchase 4 700 hectares and obtain 4 400 hectares through plantation sharefarming schemes. **Audit found that the Department is experiencing some difficulties in achieving the targets through these 2 means.**

Land purchase

4.100 As indicated in Table 40, the Department had purchased approximately 16 000 hectares of land for plantations at a cost of around \$21 million to 30 June 1992.

**TABLE 40
LAND PURCHASES TO 30 JUNE 1992**

<i>Softwood Management Area</i>	<i>Properties purchased</i>	<i>Gross area</i>	<i>Plantable area</i>	<i>Purchase price</i>
	<i>(number)</i>	<i>(Hectares)</i>		<i>(\$ '000)</i>
Ballarat (a)	-	-	-	-
Benalla/Mansfield	5	1 100	900	1 200
Central (a)	-	-	-	-
Latrobe	42	5 500	4 500	8 300
Otways (a)	1	1 000	800	1 200
Ovens + Upper Murray	12	4 000	2 200	3 500
Portland	9	4 200	3 400	6 700
Total	69	15 800	11 800	20 900

(a) Establishment targets have been achieved in these areas.

4.101 However, audit was advised that the task of purchasing land is becoming increasingly difficult for the following reasons:

- ▶ Land purchase activity has declined significantly in the past 18 months due to the uncertainties surrounding the direction to be taken in managing the State's softwood plantations and subsequent reduction in funding for land purchases;
- ▶ The Department has experienced widespread and intense community opposition, particularly in the north-east of the State, to the establishment of pine plantations on cleared agricultural land; and
- ▶ The amount of available land suitable for pine plantations is declining. Of the 15 800 hectares already purchased, only 75 per cent is considered suitable for planting. This problem will be exacerbated by Native Vegetation Retention Controls which limit softwood establishment on areas of vegetation considered indigenous or comprising mixed vegetation. Hence, the Government will be required to purchase higher quality land at an increased cost.

■ *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The prime reasons for the decline in land purchase by the Department were the decline of funding, significant opposition from rural communities in some areas and the anticipated formation of the Victorian Plantations Corporation.

Plantation sharefarming

4.102 To encourage the private sector in the establishment of softwood plantations, the Strategy proposed the introduction of a number of measures including the introduction of the plantation sharefarming scheme. The scheme provides landowners and the Government with the opportunity to grow timber commercially on farm land in partnership, with the landowner providing the land and the Department supplying the resources and expertise to establish, manage, harvest and market the timber.

4.103 The scheme was announced in 1987 and since its commencement, 20 agreements have been entered into covering 1 200 hectares. Total operating expenditure by the Department on the scheme to 30 June 1992 amounted to around \$730 000. The first rotation of plantations from existing agreements is expected to produce 749 000 cubic metres of merchantable pine.

4.104 However, the scheme has fallen well behind the planned targets. In particular:

- ▶ in the 5 years of the scheme's operation, only 50 per cent of the targeted area of 2 300 hectares has been established;
- ▶ while 370 hectares in the Benalla/Mansfield region had been targeted in 1991 and 1992 for plantation establishment, no planting has taken place; and
- ▶ as the scheme was suspended during consideration of alternative management arrangements for the State's softwood timber resources, only 60 hectares were established during 1992.

4.105 There are a number of specific factors which have contributed to the lack of achievement of the scheme targets. These factors, discussed in the following paragraphs, need to be addressed by the Department if the scheme is to contribute to meeting future supply commitments and encouraging private investment in wood resources.

Planning controls

4.106 Since its inception in 1987, **the plantation sharefarming scheme has been significantly impeded by continuing delays, of between 3 and 12 months, in obtaining the necessary local government approvals** and uncertainty caused by the opposition of local government authorities to private forestry. The Department advised audit that applicants had in some cases withdrawn from scheme negotiations due to the length of time taken to obtain planning approvals.

4.107 In addition, **there have been a large number of appeals by private foresters against decisions by local governments to refuse to grant a planning permit.** A review conducted by the Department on planning appeals between 1982 and 1990 highlighted that 31 appeals had been registered at the Administrative Appeals Tribunal relating to planting and harvesting of softwoods.

4.108 Following several years of unsuccessful attempts by the Government to encourage local authorities to review their planning schemes, in September 1991, the Department prepared an amendment aimed at introducing planning policy and planning controls related to timber production, to the State Section of all planning schemes throughout Victoria.

4.109 This amendment, which is yet to be finalised, would allow the establishment of plantations of up to 40 hectares, subject to a number of limitations, without the need for local government approval.

Community attitudes and education

4.110 The successful implementation of the plantation sharefarming scheme is largely dependent on the enthusiasm and co-operation of the community. However, **in the process of implementing the scheme, the Department has experienced substantial community opposition and tension in communities traditionally dependent on income derived from agricultural activity.**

Leasing options

4.111 The Department has negotiated a number of leases totalling approximately 2 000 hectares. These consist of areas leased from other public sector bodies such as the State Electricity Commission of Victoria and the Latrobe Region Water Authority.

4.112 While leasing is seen as an option for obtaining access to suitable land, it has the disadvantage of only applying to one rotation period of around 35 years. Therefore, at the time of harvesting, the lease needs to be renegotiated, if possible, or additional land acquired.

4.113 **However, as a result of the difficulties in purchasing suitable land, leasing of surplus land may become an increasingly important means of plantation establishment.**

Update of establishment targets

4.114 The Strategy identified that the targets initially set in 1985 as necessary to produce the required softwood woodflows were:

"... based on current management practices and wood supply commitments. In managing the State's plantation resources it is important that adjustments are made to individual projects as those factors and other variables (forecast demand, availability of wood from private plantation, economies of scale etc.) change over time".

4.115 However, since 1986-87, with the exception of the work performed in 1989 by the State Plantations Impact Study Committee (refer to paragraph 4.94 of this Report), **there has been limited review by the Department of the adequacy of plantation establishment targets.**

4.116 Audit is of the view that an ongoing mechanism to re-evaluate the targets is necessary, especially where changing economic conditions impact on the demand for resources. Regular reviews are also necessary to enable any changes in productivity, as a result of alterations in silvicultural practices or environmental factors, and difficulties in acquiring land to be evaluated and reflected in the targets.

PART 5

Native Forest Management

OVERVIEW

5.1 The introduction of the Timber Industry Strategy in 1986 required fundamental changes by the Department of Conservation and Natural Resources in the management of native forests. **The most significant changes relate to the progressive reduction of harvesting to a sustainable level, on a regional basis, and recognition of the non-timber values of forests within the planning and management process.**

5.2 A number of other actions aimed at protecting the environmental values of forests have been taken by the Department including the enactment of the *Flora and Fauna Guarantee Act 1988* and the development of the *Code of Forest Practices for Timber Production*.

5.3 To ensure that the full benefits of these initiatives are realised, several important aspects of forest management still need to be addressed by the Department. In particular, it needs to:

- ▶ give greater attention to surveying and recording non-timber values such as flora, fauna and sites of significance;
- ▶ intensify timber resource assessments to improve the reliability of data used as a basis for calculating sustainable yields;
- ▶ ensure the finalisation of Forest Management Plans for each area of the State;
- ▶ undertake regular assessments of the effectiveness of the Code of Forest Practices for Timber Production in protecting environmental values on public land and achieve the Code's implementation on private land;
- ▶ establish procedures to facilitate the timely incorporation of research findings into the Code of Forest Practices for Timber Production and Forest Management Plans;
- ▶ develop a mechanism to assess the comparative values of forest areas for water catchment and timber production; and
- ▶ resolve disagreement within the Department in relation to the definition of Victorian rainforests.

5.4 **Unless the above are addressed, the Strategy's objective of managing the State's native forests in a manner which ensures the long-term sustainability of all forest values, both environmental and economic, may not be fully realised.**

5.5 Performance against specific criteria set in the Strategy for the management of native forests is discussed in the following paragraphs.

FOREST MANAGEMENT BASED ON SUSTAINABLE YIELD

5.6 Sustainable timber production relates to harvesting timber at a rate which will enable the continuing supply of timber over time by balancing the rate of harvest with the rate of growth of the forest. The maintenance of an assured supply of timber is an important aspect of providing security to the timber industry with particular advantages likely where the rate of supply is maintained at a relatively even level. Nevertheless, management of native forests exclusively for commercial timber production is not compatible with the Strategy objective of achieving a balance between timber production and environmental protection.

5.7 The Strategy recognises that, in the past, overcutting occurred in some areas of the State's native forest, particularly in the period after the Second World War when the demand for construction material increased significantly. Under the timber harvesting practices often adopted during that period, all timber suitable for processing in a particular area was removed by a sawmiller who then relocated the activities to an area where further supplies of timber were available.

5.8 A key policy direction of the Strategy is the reduction of harvesting, on a regional basis, to a level which will sustain, in perpetuity, all forest values. Specifically, it proposes that:

- ▶ long-term sustainable yields will be implemented within 10 years for each of the State's 15 Forest Management Areas; and
- ▶ sustainable volumes of sawlogs, and requirements to cut within those volumes, are to be specified within legislation.

Sustainable yield calculations

5.9 The method specified in the Strategy for calculating sustainable yields in each Forest Management Area is summarised below:

- ▶ The land available for timber production was to be identified after excluding areas set aside for Parks and Reserves. In 1986, this total land area amounted to 3.1 million hectares.
- ▶ Of this land, the gross productive forest was to be defined on the basis of the height of mature trees. Forests of low inherent productivity, due to poor soil or unsuitable climate or topography, were to be excluded.
- ▶ The net productive area was to be calculated by excluding areas such as streamside reserves required to protect the quality of water in catchment areas, corridors aimed at preventing the isolation of wildlife populations and sites of environmental or archaeological significance.

5.10 Table 5A, prepared from information provided by the Department, details the area of State forest calculated in 1986 as available for harvesting in each Forest Management Area.

TABLE 5A
AREAS AVAILABLE FOR HARVESTING, 1986
 (hectares)

<i>Forest Management Area</i>	<i>Total area</i>	<i>Gross productive area</i>	<i>Net productive area</i>
Benalla/Mansfield	151 800	49 400	32 000
Bendigo	163 500	101 000	99 700
Central	211 200	151 500	118 400
Central Gippsland	541 400	270 500	179 500
Dandenong	55 700	50 900	40 600
East Gippsland	630 300	460 100	379 500
Horsham	84 200	31 100	19 600
Mid-Murray	52 100	45 000	41 100
Midlands	95 900	79 000	60 500
Mildura	13 100	13 100	2 800
Otway	92 000	79 600	65 400
Portland	109 300	41 700	38 200
Tambo	372 700	212 000	133 900
Wangaratta	224 200	38 500	20 000
Wodonga	331 000	73 500	57 200
Total	3 128 400	1 696 900	1 288 400

5.11 The actual volume of timber to be harvested from the net productive areas was to be calculated on the basis of the age and type of trees, the silvicultural system to be used, the expected growth rates for various species of trees, the age at which the forest is to be harvested and the expected output from the particular species of trees in the area.

5.12 Long-term sustainable yields were calculated on the above basis in 1986 and enacted through the *Forests (Timber Harvesting) Act 1990*. Long-term supply commitments were made to the industry on the basis of these yields.

Introduction of sustainable yields

5.13 The introduction of sustainable yields required an overall reduction in the volume of sawlogs harvested on a State-wide basis with significant reductions required in some areas. Harvesting is now at the sustainable levels determined by the Department for each Forest Management Area with the exception of the Benalla/Mansfield, East Gippsland, Wangaratta and Wodonga areas where harvesting is to be progressively phased down over a longer period. These areas supply approximately 44 per cent of the State's total timber production. The Department has taken this course of action to minimise the likely detrimental impact of a sudden reduction in harvesting on employment and timber industries established in the areas.

5.14 Considering the long-term nature of the Strategy proposals, the Department acted promptly to set in place procedures and processes designed to achieve the 10 year target of harvesting within sustainable yields. However, as the sustainable yields established in 1986, and the commitments subsequently made to industry, were based on data available within the Department at that time, they were subject to certain limitations. Specific details are provided in the following paragraphs.

Timber resource assessment

5.15 The calculation of sustainable yields is reliant on a comprehensive timber inventory detailing the species, age, volumes and condition of forest stands. Ongoing assessment and regular updating of this information is an important component of maintaining such an inventory as the volume and quantity of available timber varies over time as a result of:

- ▶ growth;
- ▶ harvesting and regeneration;
- ▶ damage through fire, insect attack and disease; and
- ▶ changes in land use classifications such as the declaration of National Parks and Reserves.

5.16 These factors make resource inventory systems both difficult and expensive to maintain. Measurement of timber volumes is also complicated by the difficulty of detecting internal wood defects from the external appearance of a tree. Eucalypt species, which predominate in Victoria's forests, are particularly difficult in this respect.

5.17 The Strategy recognised the need to increase the level of resource assessment in Victoria and enhance timber information systems. Between 1986-87 and 1991-92, Strategy funding of around \$2.5 million was directed specifically to the upgrade of the Department's native forest inventory system.

Method of assessment

5.18 The majority of information maintained within the inventory system is based on assessments undertaken by the Department using a range of techniques. The Department has developed the following standard methods of assessment:

- ▶ **Intensive inventory** - data is derived from detailed mapping and stratification, with measurement of a statistically valid sample of forest plots;
- ▶ **Reconnaissance inventory** - estimates are based on detailed stratification followed by limited inventory with few, if any, measurement of plots;
- ▶ **Reconnaissance** - estimates are based on broad mapping of the forest with limited ground checking and volume yields determined mainly from experience in similar forest types; and
- ▶ **Desk study** - estimates are based on local knowledge and broad-scale mapping of forest types.

5.19 The reliability of the information varies significantly depending on the inventory technique employed. While the *intensive inventory* method generally provides the most accurate estimate of timber volume, the Department has indicated that even these estimates are subject to sampling errors of between 15 and 20 per cent depending on the age, species, stocking levels and extent of defect in the timber.

5.20 In areas where less intensive assessment methods are used, the results are even less reliable. The volume and area available for timber production, for example, tends to be over-estimated where assessments depend only on aerial photo interpretation which cannot detect small areas that are too steep or too rocky for harvesting.

Extent of assessment

5.21 In 1989, the methodology and data used by the Department to calculate the sustainable yields for the East Gippsland Forest Management Area were independently reviewed by a Professor of Forestry at the University of Melbourne. Overall, **he concluded that the sustainable yield calculations were conservative.** His report also identified that a number of deficiencies in the Department's timber inventory data identified at the time the Strategy was developed were still present. In particular, he found that:

- ▶ The estimation of net areas available for timber production was largely based on untested allowances for unproductive areas and areas to be reserved for environmental reasons;
- ▶ Estimates of sawlog volumes were of widely differing reliability depending on the type of inventory used. Those subject to detailed inventory were considered reliable while those reliant on experience and judgement may have under-estimated the true volume;
- ▶ Although assessments can be updated by growth simulations between assessments, timely re-assessments are required to identify areas affected by factors such as bushfires, disease or revised environmental reservations. The review found that in some areas of the State, such updates had not been undertaken for over 20 years; and
- ▶ Estimates of growth rates for regrowth forest areas were assessed as conservative as they did not allow for increases possible through more intensive management and better protection measures against fire, insects and disease.

5.22 Although comprehensive current data on the method and timing of timber resource assessments in each Forest Management Area could not be provided by the Department during the audit process, summary information indicated that **in a large proportion of Areas, intensive inventory assessments have now been undertaken. However, the assessments in between 5 and 30 per cent of most Forest Management Areas continue to be based on less reliable methods** such as *reconnaissance* or *desk top* assessments.

5.23 The approach of the Department of assigning a higher priority to *intensive inventory* in high yielding timber areas is considered by audit to be a sound risk-based approach to utilising the limited resources available for undertaking timber assessments. Nevertheless, the limitations of assessments in other areas need to be addressed if a comprehensive, accurate knowledge of the State's timber resources is to be maintained as the basis of calculating sustainable yields and making future commitments to industry.

5.24 Where deficiencies in the inventory systems result in an under-estimation of available resources, **the Department will not be in a position to optimise the economic use of available resources. Conversely, in the event that the available timber resources are over-estimated, the Department could have difficulty in meeting supply commitments to the industry.**

Non-timber resource assessment

5.25 As previously highlighted, net timber production areas used as a basis for calculating sustainable yields were to exclude areas required to meet conservation prescriptions such as streamside reserves, wildlife corridors and sites of environmental, archaeological and Aboriginal significance.

5.26 The areas excluded from harvesting were based on knowledge maintained within the Department in 1986. As very few surveys of the environmental values within the forests had been undertaken at that time, such knowledge was limited.

5.27 Although the Department has initiated action to undertake environmental surveys in some areas since the introduction of the Strategy, audit found that the scope of such assessments has not been extensive. In addition, audit found that a comprehensive database of known rare or threatened species or sites of significance has not been developed by the Department. More specific issues in relation to the Department's knowledge of flora, fauna and sites of significance is included in later sections of this Report.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department is continually improving its databases related to both timber and non-timber forest resources. However, the level of information available is already extensive and allows for comprehensive planning of operations in native forests.

The Department will continue to place emphasis on forest inventory, and it intends carrying out a State-wide inventory over the next 4 years with the aim of improving sustainable yield estimates.

Long-term supply commitments

5.28 In view of the changing nature of native forests and the progressive increase in knowledge of forest areas, a certain degree of flexibility is needed in determining timber harvesting levels. **However, the commitments made to industry on the basis of 1986 calculations now place certain limitations on the Department in managing native forests.**

5.29 Under the terms of the commitments to industry, the Department is liable for compensation if the specified kind and quantity of timber is not made available (refer to paragraph 7.12 of this Report). Consequently, the Department is placed in a difficult position in cases where it identifies new environmental values within areas already committed to industry. For example, **in one Forest Management Area up to 33 per cent of the net productive area of State forest has been identified as having environmental values which were not accounted for when long-term licence commitments were made.** The Department has not yet assessed whether the identification of these values will necessitate an adjustment of sustainable yields in the area.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Forest Management Area referred to is undergoing a review of sustainable yield as part of the development of the Forest Management Plan.

FOREST PLANNING

5.30 Comprehensive planning of the State's native forests is necessary to ensure that the natural resources contained in those forests are utilised in a manner which prevents environmental degradation, ecological damage, and adverse social and economic impact. According to the Strategy, forest planning specifically aims to:

- ▶ integrate management planning in order to streamline procedures at departmental and regional levels;
- ▶ encourage public participation in several stages of planning; and
- ▶ integrate the social, economic and environmental values of native forests.

5.31 In order to achieve these aims, the Strategy advocates the preparation of 3 types of plans. **Forest Management Plans**, to be prepared for each Forest Management Area of the State for a 10 year period, are to prescribe the conditions under which timber could be harvested. **Wood Utilisation Plans** provide details of wood production and its allocation to licensees over a 3 year period and **Forest Coupe Plans** specify the operational requirements of each harvesting operations within parcels of land ranging from 20 to 40 hectares.

Forest Management Plans

5.32 While the Strategy does not specify a time frame for the preparation of Forest Management Plans, in 1987 the Department set an objective of progressively completing Plans for all 15 Forest Management Areas over a 10 year period. Since that time, the Department has established regional planning teams and Forest Management Area Plan Co-ordinating Committees. The Plans, which are prepared through a process of public participation, attempt to set a long-term direction for timber harvesting within a framework which gives balance to the social, economic and environmental issues relevant within the particular area.

Progress to date

5.33 To 30 June 1992, a total of around \$3.9 million had been expended from funding under the Strategy towards the development of Forest Management Plans. In addition, certain resources, not separately identifiable, were provided from the Department's annual funding.

5.34 As highlighted in Table 5B, only one Plan, for the Otways Forest Management Area, had been completed to 30 September 1992.

TABLE 5B
STATUS OF FOREST MANAGEMENT PLANS, AT 30 SEPTEMBER 1992

<i>Forest Management Area</i>	<i>Planned/actual date of commencement</i>	<i>Target completion date</i>	<i>Date of approval</i>
Benalla/Mansfield	-	-	-
Bendigo	-	-	-
Central	Aug. 1988	Mar. 1991	-
Central Gippsland	Jul. 1988	Jan. 1991	-
Dandenong	Jun. 1989	Jan. 1992	-
East Gippsland	Jan. 1989	Jun. 1991	-
Horsham	-	-	-
Mid-Murray	Jan. 1989	Jul. 1991	-
Midlands	Jan. 1993	Jun. 1995	-
Mildura	-	-	-
North East(a)	Jan. 1993	Jun. 1995	-
Otways	Jun. 1987	Dec. 1989	Aug. 1992
Portland	-	-	-
Tambo	Jan. 1993	Jun. 1995	-

(a) Plan relates to the Wodonga and Wangaratta Forest Management Areas.

5.35 Although each Plan was to be prepared within a period of 2½ years at a cost of around \$250 000, the Plans commenced to date have taken much longer than expected and, on average, have cost around \$650 000 each due to:

- ▶ an under-estimation of the resources required to gather data needed to aid in the planning process;
- ▶ the long and tedious process of verifying and recording resource data collected;
- ▶ a loss of continuity in the project's management, data compilation and knowledge base due to staff movements and turnover;

- ▶ absence of integration of departmental resources and planning processes; and
- ▶ ineffective monitoring and control of the project's progress by the Plan Co-ordinating Committees.

5.36 Audit was advised by the Department that 5 additional Plans are expected to be completed and approved by June 1993 and that the target of completing all Plans by 1997 is still considered achievable. A computerised information system and forest planning manual, developed as part of the planning undertaken to date, is expected to streamline the planning process.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department is the first natural resource management agency in Australia to undertake the development of such comprehensive Forest Management Plans, involving extensive public participation and the use of planning tools such as GIS and FORPLAN.

The development of additional Forest Management Plans is now proceeding satisfactorily and the Department expects to have most Forest Management Plans completed by 1997.

It is estimated that more than half of the expenditure on Forest Management Plans has been on collecting, verifying and digitising resource data. GIS is a relatively new tool and the Department has developed considerable expertise in its use. Strategy funds have had to be expended on gathering and digitising base layers of information such as LCC land use, streams, roads and forest/vegetation types.

There has been a tendency to go into detail unnecessary for a strategic plan. This will be rectified in future plans.

Impact of the absence of Plans

5.37 Audit found that **the one Plan approved to date represents a comprehensive and high quality document which involved significant public participation in its preparation. However, the absence of Plans in other Areas has had significant consequences in terms of the central task of the Strategy of achieving a balance between timber production, environmental and social issues within each Area.** In particular, short-term timber production plans, such as Wood Utilisation Plans and Forest Coupe Plans, have not been prepared within a framework of a long-term plan for the relevant Forest Management Area.

5.38 **In the above circumstances, the effects of harvesting operations may not be conducive to protecting all forest values or to optimising timber production.** For example, areas may be excluded from harvesting in an individual coupe to protect values such as wildlife habitat. However, the exclusion may not be justified where an assessment over the whole of a Forest Management Area indicates that the remaining habitat is adequate in size to support viable populations of the particular species. Similarly, requirements to disperse forest coupes over a forest area may appear, in the short-term, to be reducing environmental impact when in fact over a longer period they may prevent the recolonisation of certain species due to an accumulated loss of mature habitat.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The environmental data used to prepare Forest Management Plans is also used to prepare Wood Utilisation Plans. This ensures a balance between timber production and environmental protection is maintained even without Forest Management Plans.

Wood Utilisation Plans

5.39 Wood Utilisation Plans have been prepared by the Department for each Forest Management Area. The 3 year Plans identify the coupes from which the annual allocation may be taken and the recipients of wood allocations. Specifications of volume and grade of timber are detailed for the first year of the Plan together with indicative specifications for the following 2 years. The Plan is updated annually.

Cutting Areas Review Committee

5.40 In the absence of Forest Management Plans, the Department maintained planning procedures which were established in 1983 involving an independent assessment of short-term operational plans by the Cutting Areas Review Committee. The Committee, established in 1983, was considered necessary to prevent any forest planning and management decisions by the Department which could result in a repetition of the Errinundra Plateau conservation campaign. Timber harvesting was halted in that area following extensive public protests regarding the loss of old growth forest and rainforest. The area was eventually accepted for its conservation values and proclaimed a National Park in July 1988.

5.41 The Committee, which comprised representatives from the Conservation Council of Victoria, the Victorian Association of Forest Industries and experts from various areas of the Department, reported directly to the Minister. Any member of the Committee could object to the harvesting of a forest coupe included in Wood Utilisation Plans where it was considered the coupe included environmental values which required protection. Where unanimous agreement could not be reached by the Committee, Wood Utilisation Plans were returned to the relevant regional planners who endeavoured to locate an alternative coupe. Where an alternative coupe could not be identified, or the Committee could still not reach agreement, the Minister was required to make the final decision as to the exclusion or inclusion of forest coupes in the Plan.

5.42 Over the past 3 logging seasons, the Committee was unable to reach agreement on numerous coupes and in a number of cases the Minister was required to make a decision on proposed Plans. Audit found that **of 1 653 coupes planned since 1990-91, 531 were objected to by one or more members of the Committee. Around 70 per cent of these coupes were located in the Tambo and East Gippsland Forest Management Areas.**

5.43 The potential benefits which can flow from the completion of Forest Management Plans was highlighted when the Otways Forest Management Plan was complete. In that area, subsequent to the Plan's completion, the Committee was able to approve the region's Wood Utilisation Plan without the need for further detailed review, thus streamlining an inefficient and at times lengthy environmental review process.

5.44 The Department undertook a review of its forest planning process during 1992. The review made a number of major recommendations aimed at improving the efficiency of the process including the Committee's abolition. The Committee was disbanded in December 1992 and **the Department proposes to replace it with a regional review and approval process.**

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department completed a review of its forest planning processes in August 1992. Actions have been taken, and will continue to be taken, to improve the planning process.

The Department has recently modified the process used to develop Wood Utilisation Plans. This has ensured these plans take full account of conservation issues, that they are developed efficiently and produced on time, and that there is an opportunity for public consultation.

Forest Coupe Plans

5.45 A Forest Coupe Plan is prepared for an individual harvesting operation involving the felling of trees within a parcel of land ranging from 2 to 40 hectares. The Plan are derived from the Wood Utilisation Plan and details the specifications and conditions under which a harvest operation must be conducted including the location of the coupe, periods during which operations will occur, procedures to be adopted, areas excluded from harvesting and proposed regeneration procedures.

5.46 Departmental officers are responsible for entering the relevant details on each Plan and obtaining the signature of the harvesting contractor as acceptance of the terms and conditions. Regional Managers are responsible for signing a declaration that the coupe has been successfully regenerated after the harvesting process.

5.47 While the introduction of Forest Coupe Plans has provided the Department with a manual record of all forest operations conducted since 1987-88, audit found that **only fragmented computerised systems exist to assist in following the progress of a coupe from harvest to regeneration.** Consequently, with the vast number of Plans processed by the Department, senior management is not in a position to readily monitor the progress of harvesting operations on an area or State-wide basis and to ensure that all requirements have been met. Audit observed that of over 100 coupes harvested in one area between 1987 and 1991, none had been finalised by the Regional Manager's signature declaring that the area had been successfully regenerated.

5.48 The Department is currently working towards addressing these deficiencies through the development of a Coupe Management Information System aimed at tracking planning, approval and operational processes at local, regional and State levels.

ENVIRONMENTAL CARE

Introduction

5.49 The Strategy states that improved environmental management of forests will be demonstrated through:

- ▶ development and implementation of the Native Flora and Fauna Conservation Guarantee and a Code of Forest Practices;
- ▶ exclusion of specified uses from sites and areas of highest conservation significance;
- ▶ introduction of pre-logging surveys to identify significant flora and fauna habitats and their exclusion from harvesting; and
- ▶ adoption of a rainforest definition together with appropriate prescriptions to ban timber harvesting and other detrimental uses in these areas.

5.50 The Department was already in the process of implementing a number of the above initiatives when the Strategy was introduced in 1986.

Flora and Fauna Guarantee

5.51 The Department commenced development of the Flora and Fauna Guarantee in 1984 which resulted in the enactment of *The Flora and Fauna Guarantee Act 1988*. The key objective of the Act is to guarantee that all Victoria's native flora and fauna survive, flourish and retain their potential for evolutionary development in the wild.

5.52 The provisions of the Act, which apply to both public and private land, relate to all native flora and fauna. However, it provides a mechanism for certain listed species such as the Leadbeater's possum, at risk of extinction, to be given additional management attention. **The Act also recognises that damage to habitat is often a more serious threat to the survival of species than direct damage to plants and animals.** Consequently, the Act provides for habitat critical to the survival of flora or fauna to be protected.



Leadbeater's possum.
(Photo: courtesy of the Australian Conservation Foundation.)

5.53 The provisions of the Act impact on the operations of the Department in that wood production is cited by the Scientific Advisory Committee, established under the Act, as a potentially threatening process for more than 20 per cent of listed mammals and birds.

5.54 Forest habitat is altered in a number of ways by forestry practices including the disturbance of understorey species, changes to the structure of ecological communities and the introduction of foreign plants and animals. Silting of waterways, new vehicular access which allows recreational use, salination and loss of nutrients may also impact on the survival of forest species and communities through the disturbance of their natural habitat.

5.55 To assist in the implementation of the Guarantee, the Department appointed 34 additional staff.

Protected species and habitat

5.56 The Flora and Fauna Guarantee (Timber Harvesting) Order 1990 permits protected flora to be taken from native forests provided it is:

- ▶ not part of a listed category of species or a listed ecological community;
- ▶ not within the critical habitat for any flora or fauna; and
- ▶ taken in accordance with any relevant licence, lease or other authority and in compliance with the Code of Forest Practices, Timber Harvesting Regulations, Forest Coupe Plan or Forest Management Plan.

5.57 Consequently, unless a species or ecological community is listed or is defined as critical habitat, it has no protection from timber harvesting under the Act. Given that the Department has made limited progress over the past 6 years in introducing Forest Management Plans and in undertaking environmental surveys which identify such species, current forestry practices may have unknown detrimental impact. For example, one could speculate that if a species, such as the yellow-bellied glider, is present in an area but has not been identified by the Department prior to harvesting, its survival may be threatened. Although the species is not immediately threatened with extinction, it is dependent on its habitat remaining undamaged if it is to survive.

Overlap of functions

5.58 The Department has a statutory obligation under the Act to develop and implement specific flora and fauna management plans. **These requirements, in some cases, result in an overlap with the Department's other planning processes.** For example, the loss of hollow-bearing trees, which provide suitable habitat for native animals, from Victorian native forests is listed as a potentially threatening process. Consequently, a plan is to be developed and implemented to manage the protection of such trees during the harvesting process. The Department also aims to address the protection of these trees within Forest Management Plans.

5.59 There is a need for the Department to initiate a formal liaison between the staff involved in the 2 planning processes to prevent any possible duplication of effort.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

Victoria's Flora and Fauna Guarantee, Code of Forest Practices, Forest Management Planning and Wood Utilisation Planning processes comprehensively address flora and fauna conservation requirements, and are consistent with recommendations from the Forest and Timber Inquiry conducted by the Resource Assessment Commission.

Forest planning processors require extensive liaison between staff within the Department and the mechanisms by which plans are approved ensures all appropriate input has occurred.

Pre-logging surveys

5.60 The Strategy proposes the introduction of pre-logging surveys prior to particular harvesting operations to identify significant flora and fauna habitat areas which should be excluded from harvesting. Over the last 2 years, additional funds have been provided through a Commonwealth program to enable pre-logging surveys to be undertaken in the East Gippsland Forest Management Area.

5.61 However, surveys have not been introduced as a routine procedure for all timber harvesting operations. In addition, audit found that:

- ▶ At a regional level, conservation specialists within the Department had not assisted in the preparation of Forest Coupe Plans through even rudimentary pre-logging surveys;
- ▶ The progress in surveying new blocks opened up for logging has been slow, covering approximately 3 forests blocks each year in only 2 Forest Management Areas; and
- ▶ **Surveys undertaken by the Department had not been targeted on the basis of risk.** For example, the Department has not undertaken assessments of the relative impact of timber harvesting on various conservation values through an evaluation of the most likely habitats to support rare or threatened species. As a result, current survey programs may not represent the most efficient use of the Department's limited resources and may not provide the most useful data for effective forest planning and management.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department has recently begun a review of survey programs with the intention of moving to regional-scale surveys. Following regional surveys, more detailed surveys will be targeted to specific areas with significant values.

Contrary to audit's view, the planning process provides for regional multi-disciplinary input on timber production and conservation issues at all levels of planning.

Sites of significance

5.62 The Strategy advocates the exclusion of timber harvesting from sites and areas of highest conservation significance. Specifically:

- ▶ sites of archaeological and historical significance and interest, such as Aboriginal scarred trees and relics of mining, logging or early settlement, are to be identified, maintained and protected by special prescriptions detailed in Forest Management Plans; and
- ▶ forest plans are to contain requirements for protecting significant vegetation communities and colonies of rare or endangered plants and animals.

5.63 Audit examination of the Otways Forest Management Plan indicated that it generally satisfies the Strategy's requirements of identifying and providing requirements to protect known sites of significance.

5.64 For the remaining Forest Management Areas which do not yet have an approved Plan, the Department is reliant on the processes involved in the development of annual operational plans for the identification and incorporation of sites of significance. However, audit found that:

- ▶ Some regions do not have adequate access to the sites of significance or survey data which is held in Head Office computer databases; and
- ▶ Specialists located centrally do not have formal lines of communication with forest planners in the regions. The absence of effective communication between regional planners and central experts has resulted in the omission of useful data in relation to sites of significance from the forest planning process.

5.65 In addition, audit found that a set of clear guidelines and a formal review process for determining sites of significance following pre-logging surveys has not been established by the Department. Internal documentation suggested that this situation has resulted in disagreements as to the weight that should be given to sites of significance when making planning decisions.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The management of sites for significant species and/or communities is reviewed during the development of Forest Management Plans. The process which is used to develop annual Wood Utilisation Plans ensures careful consideration of sites of conservation significance.

Code of Forest Practices

5.66 The *Code of Forest Practices for Timber Production* was developed in response to community concerns expressed at the 1985 Ferguson Inquiry. The development of the Code, undertaken between 1986 and 1988, involved comprehensive reviews of relevant scientific and technical information and field experience, community consultation, public submissions from numerous interest groups and a review by an independent panel.

5.67 The Code sets out principles and guidelines for timber production operations. The purpose of the Code is to ensure that the procedures followed during timber growing and harvesting operations are conducted in a manner compatible with the conservation of environmental values. The areas addressed within the Code include:

- ▶ establishing and tending timber stands;
- ▶ timber harvesting;
- ▶ roading for timber production; and
- ▶ the use of public forests for recreation, scientific study and education.

Enforcement of the Code on private land

5.68 A significant amount of work has been undertaken by the Department in developing and implementing the Code on public land. **Although the Strategy indicated that the Code would also relate to private land from the 1986-87 logging season, some 5 years later, enforcement of the Code is still limited to public land.**

5.69 In September 1991, the Department proposed an amendment to the State Section of all planning schemes in Victoria which would require any timber production on private land to comply with the Code. However, the amendment is yet to be made.

5.70 The non-applicability of the Code on private land may impact adversely on the protection of environmental values during such activities as establishing and maintaining plantations and timber extraction roads.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department's recommendations on application of the Code on private land are now with the Department of Planning and Development, which has responsibility for incorporating the Code into Planning Schemes.

Monitoring compliance on public land

5.71 The Timber Harvesting Regulations, 1989 require all persons operating in State forests for the purpose of harvesting timber for sale or for processing and sale, to hold a Forest Operator Licence. The Regulations also set out requirements for harvesting which, in essence, mirror the principles and guidelines set in the Code. Compliance with the Regulations is required as a condition of the Forest Operator Licence.

5.72 The Department is responsible for assessing forest operators adherence to the Regulations. Penalties can be imposed by the Department for breaches including the allocation of indicator points, licence suspension or cancellation.

5.73 An audit analysis of the level of supervision within various Regions of the Department highlighted significant variations in the proportion of time allocated to this area of activity. The allocation of time was not necessarily related to the size and nature of the Region or any identified problems in the application of the Code such as previously detected breaches.

5.74 In addition, audit was advised by the Department that a number of problems have been experienced in this area, namely:

- ▶ In small, local communities Forest Officers are hesitant to take on a policing role which might affect their relationship with Forest Operators within the local community; and
- ▶ While Forest Operators may work between 5.00 a.m. and 10.00 p.m., 6 days a week, departmental officers undertaking the monitoring role generally work between 7.45 a.m. and 5.45 p.m., 5 days a week. Consequently, it is difficult for the Department to identify individual operators responsible for breaches occurring after normal departmental working hours.

5.75 Given that the Department has limited resources available to undertake the many duties associated with forest operations, audit considers that greater emphasis should be placed on ensuring that resources are directed towards providing a deterrent against breaches and providing an adequate cover in areas of greatest risk.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

Ongoing monitoring of effectiveness of the Code has been occurring since 1989. A risk-based approach has been used for allocation of resources since that time. While operators may breach Code conditions outside of normal hours, the evidence of a breach is normally present long enough for the Department to take action.

Effectiveness of the Code

5.76 As the Code is an important instrument used to protect and preserve water catchments, flora, fauna and cultural sites of significance from the potentially detrimental effects of timber production operations, it is important that its effectiveness is continually monitored as part of field operations and research projects.

5.77 However, audit found that a mechanism has not yet been established by the Department for monitoring the impact of the Code's implementation on these assets. In particular, scientific studies of the effects of alternative silvicultural systems have not included specific evaluations of the impact of the Code. In addition, indicators, such as water quality parameters, have not been established within research programs to assist in the process of monitoring the Code's effectiveness. Such measures would provide useful information to assist in the process of regularly reviewing the Code and would enable changes to be made, where necessary, to take account of the most recent research findings and field experience.

5.78 Audit was advised that a review of the Code, planned for May 1992, was deferred for 12 months.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department intends to review the Code after it has been in operation on private land for 12 months. The review will incorporate all relevant scientific data.

Rainforest definition

5.79 The need for a definition of rainforests was recognised by the 1985 Ferguson Inquiry into the Timber Industry and as a result of its recommendations, the Minister for Conservation, Forests and Lands established the Rainforest Technical Committee. In February 1986, the Committee proposed a definition for rainforest in Victoria. The State Conservation Strategy refers to the protection of all areas of rainforest as defined by the Committee. A further rainforest definition was published by the Government, in July 1987, in a document entitled *Victoria's Rainforests. An Overview: a new era for Victoria's rainforests.*

5.80 The Department has banned timber harvesting in areas of mature rainforest, as defined in the Government's published policy, and has prescribed buffer zones within the Code of Forest Practices aimed at protecting rainforests from the effects of timber harvesting.

5.81 Audit was advised that from the viewpoint of rainforest experts in the Department, the published definition fails to take into account those areas of forest which are effectively regenerating as rainforest or areas which may eventually evolve into mature rainforest. These areas were recognised as rainforest in the original definition developed by the Rainforest Technical Committee. However, from a forestry viewpoint, the published definition is seen within the Department as a workable definition.

5.82 The definition of rainforest is currently a public issue within the scientific community, both nationally and internationally. **The issues surrounding the definition and protection of rainforests have also been an ongoing source of conflict within the Department and have complicated the planning processes in relation to certain areas of native forest.** Several working groups have been established within the Department during the past few years in an attempt to resolve the issue.

5.83 In August 1992, as an interim measure, the Department further increased buffer zones to protect rainforests and commenced research on the appropriate size of buffer widths in East Gippsland.

5.84 The Department needs to continue to work towards resolving the conflict surrounding the protection of Victorian rainforests with a view to removing any potential complications in the planning process.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

In August 1992, measures were introduced to resolve the issue of rainforest protection including research into appropriate buffer widths.

WATER CATCHMENT PROTECTION

5.85 The Strategy recognises the importance of water to the community from both an environmental and commercial aspect. To maintain and enhance the quality of water, it is important that stream systems are safeguarded. Forests play an important role in preventing streams, storages and estuaries from silting up as many of Victoria's native forests are situated within major catchments for water supply.

5.86 In recognition of this important aspect of forests, the Strategy states that:

- ▶ water production criteria are to be integrated into the planning process and emphasis is to be given to water production in catchments designated for water supply;
- ▶ priority is to be given to water production in catchments with limited stream flows which service regions with high current or potential water demand; and
- ▶ Forest Coupe Plans are to recognise land capability of individual catchments.

5.87 The State Conservation Strategy also states that the harvesting of timber will continue to be prohibited in those Melbourne water supply catchments which are unavailable for logging at present. **The Department has not deviated from this commitment.**

5.88 The Code of Forest Practices for Timber Production contains prescriptions for the protection of water quality and an endorsement of the Strategy's commitments with respect to the integration of water production criteria in the planning process. **The Otway Forest Management Plan recognises the 9 proclaimed water supply catchments within its boundaries and documents the water supply yields of each to be protected.** The yields are to be protected by scheduling the Department's harvesting and regeneration activities as required in the Plan. In the absence of Forest Management Plans in all other Forest Management Areas, the protection of water production has not yet been comprehensively addressed across the State.

5.89 However, the issue of wood versus water production has been of increasing importance to the Department in certain specific areas. For example, in 1985-86, a moratorium was placed on timber harvesting in the Apollo Bay water supply catchment following public concern of adverse impact on the quality of the water from catchments subject to logging. The catchment is to be rescheduled for harvesting in 1995 following the development of stricter management prescriptions by the Department.

5.90 In 1990, the Minister for Conservation and Environment, at the request of the Melbourne Water Corporation, initiated an evaluation of the economic values of wood and water in the Thomson catchment. The Thomson catchment falls within the Central Gippsland Forest Management Area and present policy is to harvest the entire Area on an 80 year rotation. The catchment supplies urban Melbourne with 20 per cent of its current water needs and the water supply yield of the catchment varies according to the rate of timber harvesting in the catchment.

5.91 The study found that **economic output in the catchment area would be increased by either ceasing to log in the catchment or by increasing the rotation length together with an increased use of thinning techniques.** It highlighted that the Department does not have agreed procedures in place to prioritise the values it should attach to wood production, water yield and wildlife conservation in order to make a sound decision on the matter. **The study also highlighted that the Department's forest planning processes had not fully considered the economic significance of the water supply yield from the catchment.**

5.92 Procedures need to be developed by the Department which enable economic values of wood and water to be prioritised where they are found to compete. Such procedures would provide forest planners with clearer direction when faced with various planning options.

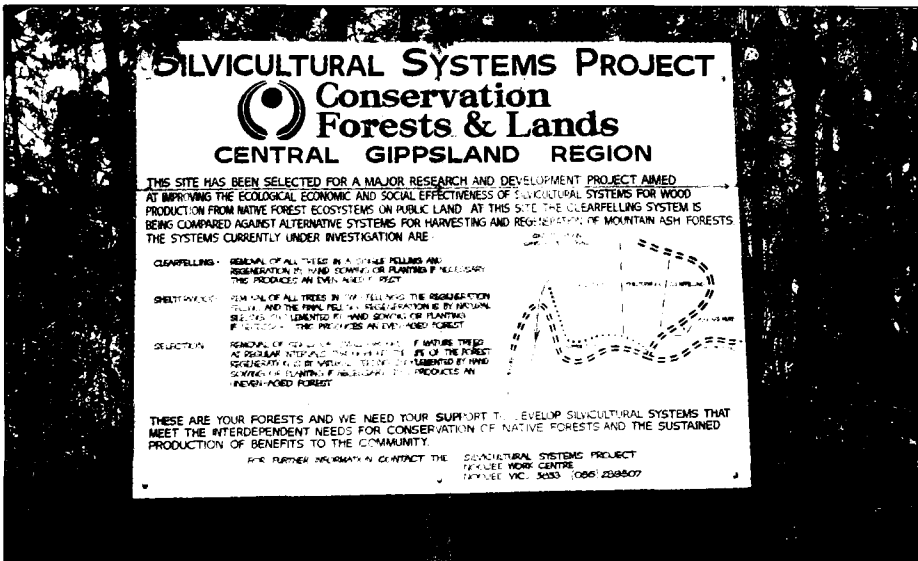
- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department is continuing to work with Melbourne Water on economic issues related to water and wood production from State Forests.

The outcomes will provide a basis for more comprehensive consideration of water values when Forest Management Plans are being prepared.

NATIVE FOREST RESEARCH

5.93 Prior to 1986, various departmental native forest research programs were in place. However, the Strategy indicates that such research is to be expanded and redirected. The major research studies implemented with Strategy funding comprise the Value Added and Silvicultural Systems Program. To June 1992, total funding for the Program amounted to \$12.4 million. Through a variety of funding arrangements, the Program has also involved resources of the University of Melbourne and the Commonwealth Scientific and Industrial Research Organisation.



Research Project in Central Gippsland.

5.94 Audit found that the Strategy-funded research has been closely aligned with the Department's service delivery needs with emphasis placed on its timber production obligations. However, research has also been increasingly focused on the Department's environmental responsibilities. The research commitments have provided the Department's biological scientists with the first opportunity to comprehensively study the long-term impact of timber harvesting in native forests.

5.95 While a detailed examination of the nature and management of the Department's research activities was not undertaken as part of the audit, the following specific research issues, which need to be considered by the Department, were highlighted.

Emerging research results

5.96 By necessity, forest research is long-term in nature. Consequently, the many gaps in knowledge in relation to the impact of timber harvesting on native forests may not be known for many years. Nevertheless, to ensure that any emerging knowledge of improved timber production and harvesting methods is progressively transferred to regional operations, the Department has held a number of field days, workshops and seminars to communicate knowledge to field officers.

5.97 Notwithstanding these mechanisms, it was evident during the audit that **a number of environmental research findings had not yet been formally incorporated into planning processes or the Code of Forest Practices**. For example, the Code provides for areas such as streamside reserves, buffer strips and corridors which are excluded from harvesting in order to protect water quality and wildlife. Some departmental research has indicated that current requirements included in the Code such as streamside reserves aimed at protecting water quality may not be adequate.

Integrated harvesting trial

5.98 Prior to the adoption of the Strategy, sawmillers were generally provided with access to a forest area to extract timber suitable to their requirements. Under this system, timber not considered suitable for sawing (residual wood) was usually left on the forest floor to be burnt. To optimise the use of timber within the forest, the Strategy advocated the introduction of integrated harvesting which involves the removal from a forest area of both sawlogs and residual wood in one operation (refer to paragraph 6.7 of this Report).

5.99 Integrated harvesting was to be tested on a trial basis to assess whether its potential advantages are achievable. This assessment was to be undertaken through the implementation of a trial in East Gippsland. The trial was to be conducted over 6 years with the annual sale of residual wood limited to 150 000 cubic metres. It was to test the social, economic and environmental impact of integrated harvesting under various alternative silvicultural systems. To June 1992, a total of \$3.4 million has been expended on the trial.

Allocation of residual wood

5.100 Expressions of interest were to be called from companies interested in buying residual wood harvested as part of the trial. **Preference and encouragement was to be given to tenders from local processors with the purpose of generating local long-term employment.** Although tenders were received from a number of small local processors, only one of the successful companies is situated in the local area. In the case of this processor, woodchips are transported to Eden for export to Japanese paper manufacturers. Consequently, the increase in local employment expected to result from the trial is unlikely to be achieved under the arrangements.

Size of the trial

5.101 The current market for residual wood is largely an international one with a Japanese paper manufacturer one of the major users of Australian hardwood chips. The demand for Australian residual hardwood in the form of woodchips has, in recent years, been significantly reduced due to competition from overseas hardwood plantations which are supplying the Japanese market with a lower priced product. This decrease in demand has affected the trial, resulting in a significant reduction in the volume of residual wood harvested and the area included in the trial. In total, only 78 500 cubic metres of residual wood had been removed from 726 hectares to January 1991, compared with the annual allocation of 150 000 cubic metres from a planned area of 1 500 hectares.

5.102 The reduction in the size of the trial may lower the validity of its results as a basis for assessing the impact of widespread integrated harvesting. In the event that there is a future increase in the demand for woodchips, the results of the 6 year trial may not be relevant to the environmental impact of larger operations.

Change in government policy

5.103 The Strategy stated that integrated harvesting would not be implemented outside the trial area until after the 6 year period of the trial. However, in October 1990, the Minister for Conservation and Environment publicly announced that the harvesting of residual wood was to be introduced throughout Victoria. In November of that year, the Department issued a prospectus calling for expressions of interest for the processing of residual wood. Over 1.1 million cubic metres a year were offered in 8 Forest Management Areas. Eight long-term licences and 4 short-term licences for a total of around 300 000 cubic metres were subsequently issued from July 1991.

5.104 The issue of the licences, which has resulted in the processing of residual wood outside the trial area, has effectively changed the focus of the trial. It has now become a study of the impact of integrated harvesting rather than, as originally intended, an assessment of whether the Government's social, economic and environmental objectives can be achieved under such a process, prior to the adoption of integrated harvesting in other areas of the State. Audit considers that **the Department needs to re-evaluate whether the continued funding of the trial in its present form is justified given the change in emphasis resulting from the decision to issue residual wood licences throughout the State.**

■ FIRE PROTECTION

Introduction

5.105 A number of issues relating to fire protection in native forests were previously reported in detail in the Auditor-General's *Special Report No. 16 - Fire Protection, April 1992*.

5.106 The Strategy indicates that while the incidence of wildfires poses a significant threat to life and property, it has also played a significant role in the development of Victoria's flora and fauna. Since European settlement, even with the allocation of large resources of manpower and equipment, it has not been possible to prevent or contain major wildfires such as those occurring in 1939 and 1983. Fuel reduction burning has been used by the Department, within strict controls, in an attempt to reduce the amounts of small flammable material within eucalypt forests in order to restrict the intensity and spread of fires to manageable levels.

5.107 In relation to fire protection and management, the Strategy provides that:

- ▶ Fire management plans are to be developed for all public land to protect human life and assets and significant plant and animal species;
- ▶ Licensees are to be required to assist in fire suppression as a condition of their licence;
- ▶ The planning and execution of prescribed burning is to give consideration to conserving plant and animal populations, soil and water catchment and landscape values; and
- ▶ Alternative methods of hazard and risk reduction are to be evaluated and compared with fuel reduction burning. The most appropriate method is to be used in each management area.

5.108 A condition requiring licensees to assist in fire suppression has subsequently been included in Forest Produce Licences.

Fire Management Plans

5.109 Since 1985, Fire Management Plans have been developed in 8 of the Department's 16 regions. The Plans developed to date include departmental policies on fuel reduction burning with respect to its effects on specific plant species, wildlife habitats, recreational facilities and areas used for commercial purposes.

Ecological effects of prescribed burning

5.110 While Strategy funding was not directed towards research into the ecological effects of fuel reduction burning, 2 Strategy initiatives include limited areas of study of the effects of regeneration burns on the flora and fauna of eucalypt forests.

5.111 However, a broader representation of research into the ecological effects of prescribed burning on other forest types in Victoria and comparisons of alternative methods of hazard and risk reduction would provide information to assist the Department in:

- ▶ planning prescribed burning operations in a manner which has the least impact on forest ecosystems or assessing and quantifying the effect on flora and fauna of current fuel reduction operations;
- ▶ comprehensively formulating detailed prescriptions regarding the frequency, intensity and timing of fuel reduction burns, to be provided in Forest Management Plans; and
- ▶ using fire as a tool for ecological management.

5.112 In respect to measuring the effectiveness of fuel reduction burning, the Department has initiated definitive priority burning zones with specific fuel quantity targets.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

Strategy funds were provided to assess fire hazards from thinning trials in East Gippsland.

The Department believes it has the knowledge and experience necessary to plan and undertake the prescribed burning required in Fire Protection Plans. The Department has a long history of research into the management and effects of prescribed burning, and that research is continuing.

DOMINANCE OF SAWLOG PRODUCTION

5.113 Timber harvested from native forests is suitable for use as sawlogs, firewood, poles and, in the case of residual wood, for the manufacture of paper or paper products. A key policy direction of the Strategy was a commitment to a sawlog-driven industry with all output from the forest, other than sawlogs, treated as by-products to the sawlog operation. The production of hardwood trees suitable for sawlogs takes a growing period of between 80 and 150 years.

5.114 Although a detailed definition and interpretation of the sawlog-driven concept has not been formally adopted by the Department, audit was informed that it has been interpreted, and implemented, by the Department as follows:

- ▶ long-term sustainable yields have been calculated on the basis of producing sawlogs;
- ▶ minimum rotations of at least 80 years have been used in the calculation of sustainable yields;

- ▶ land capable of producing pulpwood-only has been excluded from harvesting; and
- ▶ the Department has aimed at maximising the production of sawlogs from each tree through the log grading and allocation processes.

5.115 The Department has taken a long-term approach to the adoption of these principles in that some coupes in low volume forests have been scheduled for harvesting where they are considered by the Department to have the potential to yield a higher volume of sawlogs in the future. For example, by harvesting currently low sawlog yielding areas in the East Gippsland Forest Management Area, the Department aims to increase the annual long-term sustainable yield of the Area from 174 000 cubic metres to 500 000 cubic metres by the year 2062.

5.116 However, the extent to which the long-term output from the area will actually be used as sawlogs, rather than pulpwood, will be dependent on:

- ▶ The future demand for sawlog resources;
- ▶ The presence of industry groups with interests in export or local paper manufacturing. The Government commenced a major feasibility study in 1988 to look at the potential for a pulp and paper mill development in East Gippsland. Preliminary development proposals from 2 Melbourne-based paper manufacturers indicated that in excess of 1.1 million cubic metres of residual roundwood in the Central Gippsland, East Gippsland and Tambo areas would be required for such a project. Proposals to meet the expected shortfall were to be prepared by the companies. A decision relating to the establishment of the mill has not yet been made; and
- ▶ The impact of competition from private hardwood plantations and overseas hardwood pulping material. Large areas of eucalypt plantation, estimated at around 7 million hectares, have been established in Brazil, Portugal, Spain, South Africa, Argentina, South-east Asia and China. These plantations may result in the production of cheaper pulping resources of consistently high-quality compared with a more variable quality pulp obtained from most of the State's native forest resources. In addition, the plantations require less land and are generally faster growing.

5.117 In audit opinion, **there is a need for the Department to formalise its policy in relation to a sawlog-driven industry and to establish a long-term marketing plan for the end use of timber produced as a result of its current practices.**

CULL-FELLING PAYMENTS

5.118 Cull-felling is the removal of trees left by logging contractors which do not have any timber of sawlog quality and are not retained as habitat or seed trees by the Department. If the trees were left standing, their canopies would compete with regenerating seedlings by shading out sunlight and competing for moisture and nutrients in the soil. The trees are cleared in preparation for regeneration aimed at yielding a higher volume of sawlog in the future. Contractors have traditionally been paid for felling these trees.

5.119 Contractors are also paid by the Department for trees felled during harvesting that are found to contain no commercial sawlog timber. These payments represent another category of cull-felling payments.

5.120 The Strategy indicates that cull-felling payments, which amounted to more than \$400 000 in 1985-86, would not be necessary under the proposed integrated harvesting concept as all low quality logs were to be extracted from forests and sold for the best end use. However, due to the poor response by hardwood sawmilling companies to the Department's invitation to harvest lower graded logs (refer to paragraph 5.103 of this Report), cull-felling payments have continued.

5.121 Discussion with departmental officers indicated that cull-felling payments rise and fall according to economic conditions and that in recent times there has been a significant increase in payments. However, **information in relation to the actual level of payments could not be provided by the Department.**

5.122 Contractors are required to record the tree's location in a coupe together with its diameter at breast height on a claim presented to the Department for verification and payment. Audit was advised that in attempting to verify claims for payment, departmental Forest Officers have found that in some cases:

- ▶ they have been unable to locate where trees have been felled;
- ▶ they have observed what appeared to be a duplication of the number of trees recorded as felled; and
- ▶ payments had been made for the felling of large stag trees which do not compete with seedlings other than for the bole space they occupy (i.e. the area occupied by the tree at ground level) and which could otherwise have been left for hollow-dependent animals.



Cull-felled stag tree.

5.123 Despite these discrepancies, audit was advised that the claims of contractors are generally paid by the Department due to the difficulty associated with verifying the accuracy of the details provided by the contractors.

5.124 In audit opinion, **the cull-felling system is in need of review, particularly in light of the difficulties associated with the claim verification process.**

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

Cull-felling payments are made to logging contractors for those trees the Department requires felled that turn out to contain no merchantable volume. (Note: It is often difficult to determine if a standing tree contains merchantable volume.) The Report confuses cull-felling payments to logging contractors with silvicultural treatment to reduce suppression of regeneration.

PART 6

Value Adding

OVERVIEW

6.1 Since 1987, a number of changes have been made by the Department aimed at providing a suitable framework to encourage value adding within the Victorian hardwood timber industry. While **Departmental analysis suggests that there has been a trend towards increased value adding (further processing of timber into high quality, high value goods)**, the increase has to some extent resulted from market pressures on sawmillers, including a decrease in the demand for green sawn timber.

6.2 The increase in royalty revenue expected to result from the implementation of a revised log grading system has not yet occurred. This has been due, in part, to a decrease in the volume of timber sold as a result of the downturn in the economy and a reduction in log allocations in line with the establishment of sustainable yields. However, **audit concluded that the downgrading of logs has also contributed to the decrease in revenue.**

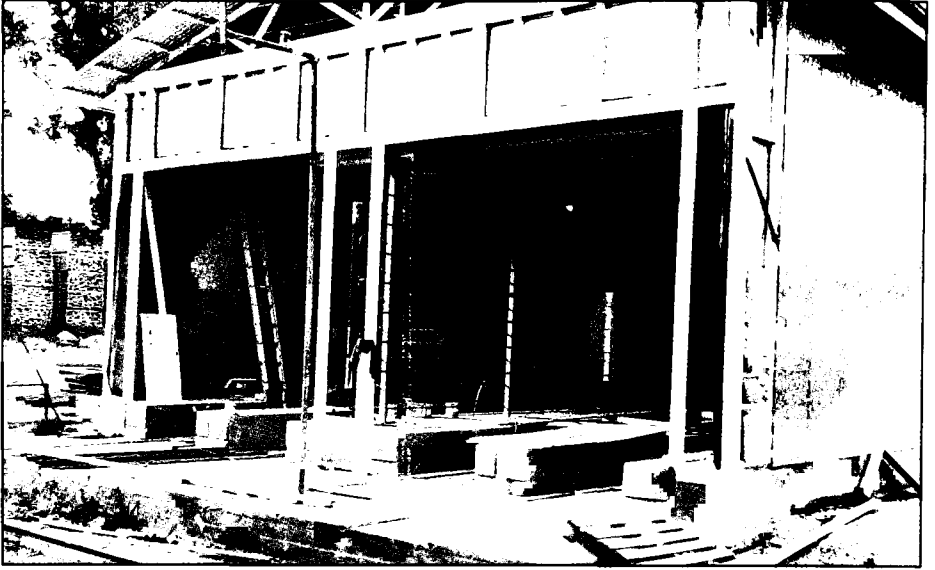
6.3 To further encourage the industry to maximise market opportunities for value adding, particular attention needs to be given to:

- ▶ strengthening the procedures for grading and allocating hardwood timber; and
- ▶ establishing more effective information systems for recording value adding within the industry.

INTRODUCTION

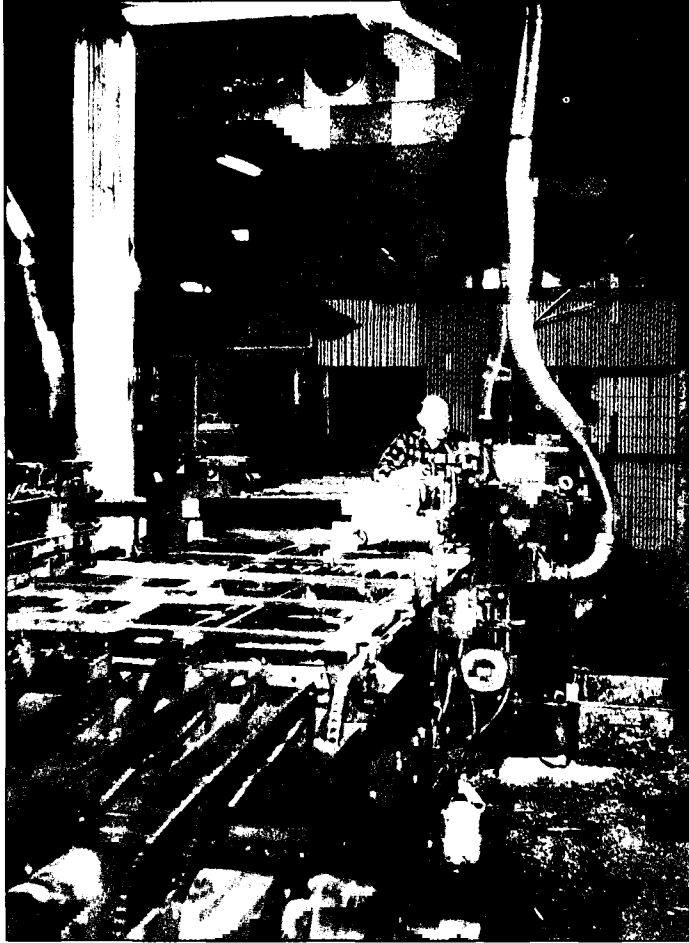
6.4 While a large amount of native hardwood in Victoria is sold as green sawn timber in a variety of sizes for the building and construction industries, in certain cases timber is further processed and dried for use as laminated beams, furniture and panelling. The further processing generally results in a considerable increase in the sale price of the product. For example, the sale price of unseasoned hardwood palings can be around \$250 per cubic metre compared with undressed seasoned timber which sells for over \$1 200 per cubic metre. Similarly, the further processing of woodchips into pulp or paper products can increase the value considerably. Information supplied by the Department indicates that in recent times the sale price for woodchips has been around \$80 per tonne compared with a price of \$800 for pulp and around \$1 200 for paper products.

6.5 However, processing of timber beyond the green sawn stage generally necessitates additional investment by the processor in capital equipment such as drying kilns, moulders or finger jointing machinery and requires increased management and marketing expertise. The extent to which further processing is economic, **or adds value**, is therefore dependent on the profitability of the process. The costs involved in processing the timber and market factors such as the demand for particular products, competition from domestic and overseas producers and substitute materials can have a significant impact on profitability.



Drying kiln under construction.

6.6 Prior to the adoption of the Timber Industry Strategy, sawmillers were generally provided with exclusive rights to a particular native forest area and were supplied with a mixture of timber species and log quality from that area. The Strategy indicates that this practice had resulted in the use of some high quality sawlogs for products of lesser value. In addition, low-quality timber not considered by sawmillers to be of a standard suitable for processing as sawlogs (residual wood) was often left as waste in the forest. Traditionally there has been little incentive for sawmillers to process hardwood beyond the green sawn stage as there has always been ready markets for this product.



Finger jointing machinery.

STRATEGY PROPOSALS

6.7 To facilitate and encourage the processing of hardwood to its full commercial potential, the Strategy proposes changes to the method of allocating and utilising material harvested from native forests. It proposes the allocation of higher grade sawlogs to sawmillers with the potential to process timber beyond the green sawn stage, selling lower grade material for processing as sawlogs, where possible, and taking residual wood from the forest and selling it for best end-use. This process of harvesting both sawlogs and residual wood in a single operation is referred to as integrated harvesting.

6.8 The Strategy proposes the following specific initiatives to facilitate the best use of timber within native forests and to evaluate the impact of the proposed change to integrated harvesting:

- ▶ allocation of sawlogs by quality and species to companies with the appropriate processing facilities;
- ▶ establishment of a government controlled mechanism for the sale of residual wood;
- ▶ introduction of a trial to assess the economic and environmental impact of integrated harvesting (refer to paragraph 5.99 of this Report); and
- ▶ establishment of a Value Added Processing Task Force to assist the timber industry to make the necessary adjustments in processing and marketing.

6.9 Royalty payments to the State were expected to increase as a result of these initiatives by maximising the volume of wood sold from each harvested area and optimising the yield of high quality logs.

LOG GRADING

6.10 Prior to 1987, a quota log system was used to supply timber to licensees. Quota logs were those assessed to be of acceptable quality for sawn timber. A full royalty was payable for these logs with an allowance deducted for certain defects in the log. Logs of poor quality, classified as non-quota logs, were usually left on the forest floor to be burnt. However, approximately 10 per cent of these logs were selected by licensees who had the option of purchasing them at around half the standard royalty.

6.11 In recognition of the need to identify high quality logs and to direct them to the appropriate processor, a revised log grading system was developed in 1987. The system, which was subject to a trial in the 1987-88 year and came into operation the following year, was primarily aimed at sorting logs into grades according to their dimension and the extent of defects such as rot, bumps and gum veins in the log. The grades of log established are detailed in Table 6A.

**TABLE 6A
LOG GRADES**

<i>Grade</i>	<i>Suitable application</i>
<i>A</i>	Quality suitable for veneer.
<i>B</i>	Meeting the minimum requirements for seasoned quality timber to be used for structural or appearance purposes.
<i>C</i>	Meeting the minimum requirements for scantling timber.
<i>D</i>	Meeting the minimum requirements for sawn timber.
<i>Residual</i>	Low quality timber - limited quantity suitable for processing as sawn timber with the remainder suitable for woodchips etc.

6.12 The classification of logs into 5 grades resulted in a greater differential in price than existed under the previous system. The average royalty paid for quota logs in 1987, prior to the introduction of the new system, was around \$20 per cubic metre. By comparison, Table 6B sets out the average royalty for each grade after the revised system was established.

**TABLE 6B
AVERAGE ROYALTY
RATES, 1988-89
(\$per cubic metre)**

<i>Grade</i>	<i>Royalty</i>
A	41
B	29
C	21
D	7

Implementation of the log grading system

6.13 Under the revised log grading system, contractors engaged by sawmillers are responsible for grading logs with departmental supervising officers providing a monitoring role. All logs are branded by the contractor with a grading hammer, issued by the Department, to identify the appropriate log grade and grader. A hammer, with the imprint of a crown, is used by departmental officers to override a contractor's assessment where unsatisfactory grading is identified or to indicate that the log grade has been verified.



Log grading hammer.

6.14 To facilitate and assist in the implementation of the log grading system, the Department has:

- ▶ established a system of accreditation for all graders;
- ▶ developed a log grading training program;
- ▶ prepared procedural documents to assist in the grading process;
- ▶ established procedures for the issue and control of grading hammers;
- ▶ established a penalty system to be applied State-wide aimed at achieving a consistent approach through penalising unsatisfactory grading; and
- ▶ developed an accounting system to record and invoice all sales of sawlogs according to grade.

6.15 The progressive implementation of these changes has been a major achievement under the Strategy.

6.16 Although the framework for grading logs according to quality is now in place, audit found that significant weaknesses exist within the system. While these weaknesses have been recognised by the Department for several years, strategies to strengthen the system are yet to be established. **Consequently, opportunities continue to exist for higher quality logs to be downgraded by contractors without detection by the Department.**

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The development and supply by industry of markets for value added products is contingent on the supply of logs of a consistent quality. Given the inherent variability of the forest resource, log grading is essential. The Department has undertaken a review of log grading and procedures to strengthen the control of log grading are being put in place.

Weaknesses in the log grading system

Contract arrangements

6.17 Under grading arrangements, contractors engaged and paid by sawmillers have been assigned responsibility to grade logs on behalf of the Department. In accordance with their accreditation status and the conditions governing the issue of hardwood grading hammers, graders have a duty to accurately grade logs and therefore maximise returns to the Government.

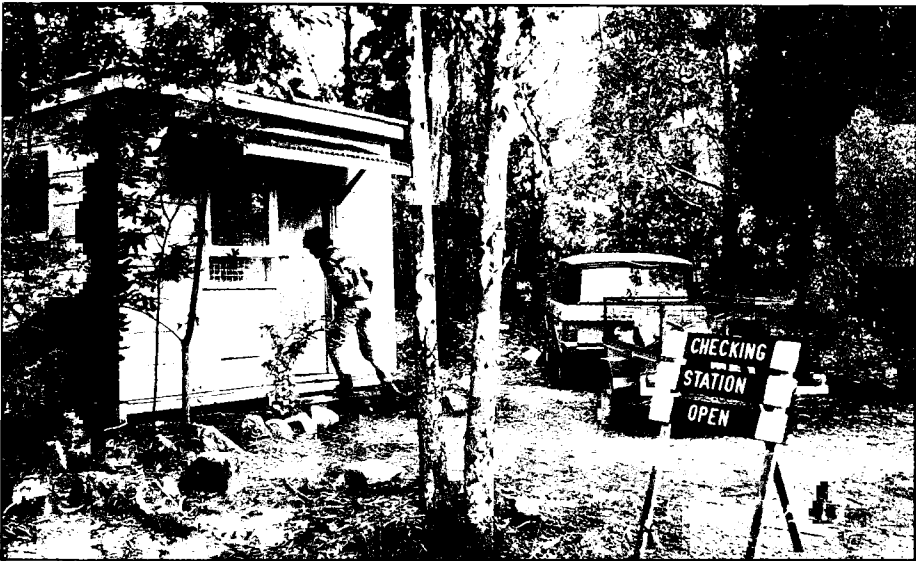
6.18 On the other hand, it is in the interest of their employer, the sawmiller, for logs to be graded as low as possible. Although log graders are generally paid for the total volume of logs harvested, irrespective of the grading, they are dependent on sawmillers for future employment. **This situation places contractors in a position where they may face a conflict of interest.**

Supervision and monitoring

6.19 As the responsibility for accurately grading logs is delegated by the Department to external contractors, it is essential that effective supervision and monitoring systems are in place.

6.20 A departmental meeting held in August 1990 to review the implementation of the log grading system concluded that departmental Forest Officers had not spent sufficient time in the forest encouraging graders to grade correctly and checking graded logs, due to time constraints and other priorities. It was recognised by the Department that further training of graders did not seem to be necessary as they were found to grade well when Forest Officers were present. However, **the Department considered that the grading performance declined as soon as the officers left.**

6.21 To address the weaknesses, an appropriate supervision and monitoring program was to be developed and applied in each Region. The supervision by departmental officers can either take the form of visiting the forest during harvesting operations, manning checking stations to inspect loaded trucks leaving the forest or visiting sawmills to inspect logs delivered to the mill.



Checking Station - East Gippsland.

6.22 Information included in responses from regions to an audit questionnaire indicated that significant variations exist in the type and level of supervision and monitoring in each Region. The amount of time devoted to such activity ranged from the equivalent of one person for less than 2 days a week to the equivalent of around 5 officers full-time. However, the allocation of time, in audit opinion, was not directly related to the volume of timber harvested in the region or to the quality of the timber in the particular Region.

6.23 In addition, audit found that:

- ▶ Although staff at different regional offices advised that between 10 and 70 per cent of all logs are checked, **no records were available to substantiate the extent of checking performed;**
- ▶ As indicated previously in this Report, while forest operators may work between 5 a.m. and 10.00 p.m., 6 days a week, departmental officers undertaking the monitoring function generally work between 7.45 a.m. and 5.45 p.m., 5 days a week. Consequently, **the Department is not in a position to adequately monitor the quality of grading at all times.** Audit was advised that in the case of the Orbost region, increased supervision outside normal office hours resulted in an improvement in the standard of grading;
- ▶ In most cases the extent and results of the log grading supervision function were not reported to, or monitored by, Regional Managers;
- ▶ **State-wide monitoring procedures were not in place** to regularly analyse and monitor trends in log grading;
- ▶ Where supervision consisted of examining loaded trucks passing through checking stations, **significant difficulties were experienced by departmental officers in adequately assessing the entire load.** For example, if downgraded logs were carried at the bottom or in the centre of the load, it is unlikely that they would be detected through this checking process; and
- ▶ There was no evidence that regular visits were made to sawmills to check the standard of log grading.

6.24 **Audit concluded that, overall, the level of supervision and monitoring undertaken by the Department was inadequate to provide a deterrent to downgrading by contractors or to identify the existence of any significant downgrading.**

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

New procedures involving detailed analysis and monitoring of log grading performance in each Region have been implemented.

Imposition of penalties

6.25 A hardwood grading penalty system was introduced by the Department in October 1989. The terms "*unsatisfactory grading*" and "*flagrant abuse*" are used in the penalty system to describe inadequate grading. Grading is considered unsatisfactory when more than 5 per cent of logs are misgraded and flagrant abuse refers to cases where the grader knowingly abuses the grading system.

6.26 Where unsatisfactory grading is identified, warning letters are sent to the grader. If unsatisfactory grading continues or if flagrant abuse is identified, a contractor may be suspended for 5 days or ultimately for 12 months.

6.27 Audit found a number of problems with the current application of the penalty system, namely:

- ▶ **A lenient approach to the imposition of penalties had been adopted.** For example, penalties generally consisted of a number of warning letters even in cases where continued unsatisfactory grading had been detected. Of a total of 89 penalties issued by the Department for cases of consistent unsatisfactory grading or flagrant abuse, suspensions (generally of 1 week) were applied in only 14 cases;
- ▶ The current penalty system penalises individual log graders. Consequently, **in circumstances where a grader is suspended, the logging operation can continue with no disadvantage to the sawmiller.** The Department has considered a proposal to issue penalties to the group of contractors rather than individuals. However, a decision has not yet been reached in this regard; and
- ▶ Audit has been advised that the imposition of penalties can place regional officers in a difficult position within their close-knit local communities. **As the suspension of a grader's licence may result in the loss of income to the grader, there is a reluctance by departmental regional officers to strictly impose the penalty system.**

6.28 Unless the penalty system is consistently and stringently applied, it will fail to provide an adequate deterrent to downgrading and achieve its aim of a consistent approach across the State.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department has recently completed an internal audit of log grading. Procedures to strengthen the control of log grading are being put in place.

Extent of downgrading

State-wide position

6.29 With the introduction of the revised log grading procedures, a computerised system was utilised to record all log sales according to timber species and log grade. The system provides a record, on a regional basis, of all sales for the past 4 years. A departmental review of sales recorded in the system for the 1989-90 year highlighted marked differences in the standard of grading across the State. While certain areas were assessed as achieving successful application of the grading system, in other areas the performance was considered unsatisfactory. **Overall, the standard of grading achieved across the State was assessed by the Department as poor.**

6.30 The major concern raised at the time related to the apparent incorrect classification in some regions of certain logs as D grade which actually met the specifications of C grade, or better, logs. A low proportion of timber classified as high grade logs (A and B) was also seen at that time as an indication that some licensees and graders did not accept the value adding potential of these logs.

6.31 A further audit examination of log sales data maintained by the Department for the past 4 years indicated that, **since the 1989-90 analysis, the proportion of timber graded as high quality has further declined.** Table 6C shows the overall trend for the State over the 4 year period.

**TABLE 6C
LOG GRADING
(Per cent)**

<i>Log grade</i>	<i>1988-89</i>	<i>1989-90</i>	<i>1990-91</i>	<i>1991-92</i>
A	1.08	0.64	0.22	0.24
B	14.85	15.91	12.32	10.86
C	53.64	54.66	57.83	59.17
D	30.43	28.79	29.63	29.73

6.32 It is recognised that the quality of timber in each area of the State will vary. However, audit concluded that, given the long-term nature of timber production, the marked decline in high quality timber could not be attributable entirely to a reduction in the quality of timber in the State's native forests in a period of only 3 years. In audit opinion, **the trend principally reflects a deterioration in the standard of log grading across the State.**

6.33 While audit analysis did not provide conclusive evidence of the total extent to which downgrading of logs is occurring, the trends highlighted in the following paragraphs strongly suggest that it is at a level which requires urgent attention by the Department.

Trends in individual regions

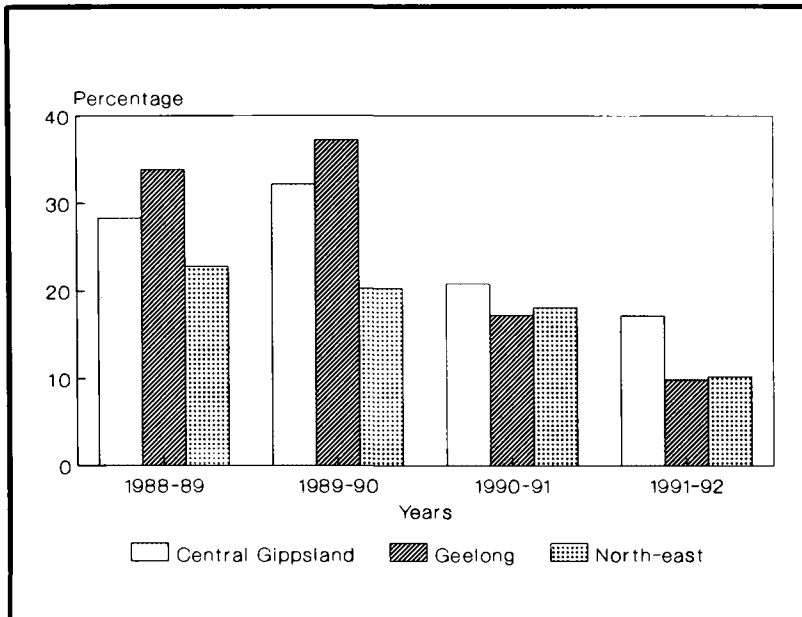
6.34 An analysis of trends in individual regions revealed that significant discrepancies continue to occur across the State. In particular, the proportion of logs classified as high quality is decreasing even in areas such as Central Gippsland which contains some of the State's best quality timber including re-growth alpine ash and mountain ash forests.

6.35 **In all regions, the proportion of A grade log sales recorded in 1991-92 was less than 0.5 per cent of the total volume of timber sold in the region. In some regions, namely Ballarat, Benalla, Dandenong, Portland and Yarram, no sales of A grade logs were recorded.**

6.36 As indicated in the Department's review of grading in the 1989-90 year, *"it is inconceivable that (regions recording less than one per cent of logs graded as A grade) correctly reflects the occurrence of logs meeting A grade specifications"*.

6.37 Chart 6D further illustrates the trend in the proportion of sales of high quality logs (A and B grade) recorded in a number of specific regions.

CHART 6D
A AND B GRADE LOGS SALES



6.38 In comparison with these trends, the proportion of high quality log sales in the Alexandra region remained at a level of around 30 per cent over the 4 years.

6.39 Conversely, audit found that **in these regions the proportion of C and D grade logs increased significantly over the 4 year period.**

6.40 The proportion of residual timber harvested across the State also increased in the past 4 years from around 2 per cent to over 16 per cent. However, the extent to which this increase represents downgrading of logs meeting D grade specifications is difficult to assess as additional licences for residual wood have been issued during the period. Nevertheless, **on the basis of trends in other categories, audit is of the view that some downgrading of D grade logs is also likely to be occurring.** As logging contractors are paid \$17 an hour to cut residual wood compared with \$14 an hour to cut D grade logs, an added financial incentive exists for contractors to assess D grade sawlogs as residual wood.

Impact of downgradings

6.41 As detailed in the following paragraphs, the downgrading of logs impact significantly on the successful achievement of major targets of the Strategy.

Loss of revenue

6.42 As the royalty paid by sawmillers increases for higher grades of sawlogs, any downgrading naturally results in a loss of revenue to the State. An audit analysis of revenue over the past 4 years highlighted a reduction in total State revenue from hardwood sales from \$21.1 million in 1988-89 to \$18.7 million in 1991-92. This reduction is explained to some extent by a significant reduction in the volume of hardwood sold during that period from 1.2 million cubic metres to less than one million cubic metres. **However, audit concluded that the lack of integrity within the grading system also contributed to the decline.**

6.43 A review of log grading undertaken by the Department for 1989-90 indicated that the results in the Geelong region reflected good grading performance. Although the region does not contain the State's highest quality timber, the percentage of B grade logs recorded was 36 per cent with the proportion of D grade logs at a level of only 15 per cent. In comparison, the proportion of D grade logs in the Colac region, an area of similar forests, was 48 per cent with only 6 per cent graded as A and B grade logs.

6.44 It was estimated by the Department at that time that if the standard of grading in the Geelong region had been achieved in other regions of the State, **significant additional revenue would have been received by the State in that year.** It was therefore surprising to find that **a detailed analysis of the impact of downgrading on State revenue since 1989-90 had not been undertaken by the Department.** In view of the further reduction in the proportion of high quality logs, due to poor grading, the significant annual loss of revenue identified by the Department in 1989-90 is likely to have increased and will continue to do so until adequately addressed by the Department.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department is obtaining additional revenue from the sale of lower-graded logs which were previously wasted. Royalty rates for A, B and C grade logs were initially set to achieve a revenue neutral outcome, rather than to achieve increased revenue.

Impact on sustainable yields

6.45 As indicated in Part 5 of this Report, sustainable yields for native hardwoods have been established by the Department for each Forest Management Area, and long-term licences have been issued to sawmillers on the basis of these yields. As part of licence conditions, the Department has a commitment to supply sawmillers specified quantities of various grades of hardwood generally specified as C grade and better, D grade, or residual wood.

6.46 Licence commitments have been made on the basis of departmental estimates that certain grades of timber will be harvested from particular areas. However, audit found that in many cases actual grades assigned to timber at the time of harvesting varied significantly from these estimates. The variations between commitments given by the Department for C grade and better logs and actual timber harvested in a number of regions in 1991-92 are detailed in Chart 6E.

TABLE 6E
PROPORTION OF 1991-92 GRADE C+ COMMITMENTS
COMPARED WITH OUTCOMES
(Per cent)

<i>Region</i>	<i>Commitments</i>	<i>Harvested</i>
Benalla	70	42
Central	88	82
East Gippsland	86	64
Otways	86	46
Tambo	83	72
North-east	95	67

6.47 This situation may have resulted from inaccurate estimates by the Department of the quality of timber in the regions or from downgrading of logs by contractors. If logs were graded as D grade which actually meet C grade specifications, **the Department would be in a position where it would be required to offer the surplus uncommitted D grade logs for sale by tender. If licensees took up their full allocation of C grade logs, additional areas would need to be harvested to meet the commitments, thus impacting on the ability of the Department to maintain harvesting within sustainable yields set for the area.**

Impact on value adding

6.48 Any downgrading of logs is contrary to the value adding concepts identified in the Strategy in that it does not result in the identification of higher quality logs and the allocation of these logs on the basis of the value adding capacity of sawmillers. In cases where a lower royalty is paid, even where the log meets the specifications of a higher grade, there may be an incentive for the sawmiller to use the log for low value products such as woodchips, particularly where cash flow problems are faced by the sawmiller. It may also result in some sawmillers obtaining an unfair advantage within competitive timber markets.

LOG ALLOCATION

6.49 In 1988, the Department introduced a method of analysing each sawmiller's capacity to process timber beyond the green sawn stage. The assessments have been used by the Department as the basis for determining future allocations of high quality logs to sawmillers.

6.50 The Department and the industry are of the view that **since the introduction of the allocation process, a significant increase in value adding has occurred in the hardwood timber industry.** A 1992 analysis was made by the Department of all D grade and better sawlog licensees in 7 of the 15 forest management areas. Of the 65 sawmillers analysed, 27 were found to have increased their value added processing capacity and are to receive higher allocations of the better quality sawlogs over the next 2 years. The Department attributes the increase in the number of sawmillers who are value added processing to the incentives built into the log allocation system and the guaranteed supply of timber created by the issue in 1987 of long-term licences.

6.51 The Victorian Association of Forest Industries also reported in May 1992 that there has been significant investment in value adding equipment. The Association cited the Victorian Government submission to the Resource Assessment Commission as indicating that the sawmilling sector had been investing an average of \$10 million a year in value adding equipment since 1987. **The Association recognises that the increase has occurred to some extent as a result of market pressures, including a downturn in the building industry and increased competition from softwoods in the house framing sector.** Such pressures have caused sawmillers to look to alternative markets for native hardwood timbers through further value added processing.

- **RESPONSE** provided by Acting Secretary, Department of Conservation and Natural Resources

There has been a significant and continuing trend towards increased value added processing by the hardwood sawmilling industry. The trend can be attributed to the Strategy providing for greater resource security and for re-allocation of higher quality logs, as well as changing market conditions.

The central thrust of the Strategy was to make the best use of timber in a way that will strengthen the economic viability of the industry within an environmentally-sensitive framework. To make the best use of the timber withdrawn from the forest, a number of complementary initiatives were implemented, including:

- *providing incentives for investment in the industry through provision of guaranteed access to resources by issuing 15 year licences;*
- *establishing licence conditions that provided for the re-allocation of higher-quality sawlogs based on value adding performance;*
- *introduction of a log grading system on a State-wide basis;*
- *evaluation of the value adding performance of sawlog licensees and the allocation of higher-grade logs to licensees with superior value added processing performance; and*
- *encouragement of greater processing of lower quality logs (D grade sawlogs and residual logs) which were previously classed as non-quota logs and left on the forest floor.*

Audit has not fully appreciated the interrelated nature of these initiatives and has tended to highlight deficiencies in isolation, rather than focusing on the broader outcome which has resulted in significant re-structuring of the industry and increased value adding.

While the move to value adding is also being driven by recent market changes, audit has under-estimated the role of the Strategy initiatives in achieving the significant shift to value added processing by the hardwood sawmilling industry.

6.52 An audit examination of the Department's systems and procedures for assessing value added performance and allocating logs highlighted a number of areas which need to be strengthened.

Assessment of value adding performance

6.53 A formula for calculating a value added statistic was developed by the Department in early 1988 in consultation with the Victorian Sawmillers Association. The statistic is aimed at measuring the capacity of each sawmiller to contribute to the value of the timber resource during the production process. To facilitate the calculation, the Department requires sawmillers to submit a biennial return detailing the volumes of each sawlog grade received from the Department and the quantities of various timber products produced. Information included on the return in relation to the investment by the sawmiller in value adding capital items is also taken into account in determining value adding potential.

6.54 Audit was advised that the actual allocation of logs to licensees is in many cases influenced by factors other than the results of the value added calculation. For example, the assessment is often made on the basis of a regional officer's knowledge of local operations and the extent of value adding by sawmillers in their area.

6.55 However, audit found that:

- ▶ there was insufficient documentation to substantiate the basis of the allocation of high quality logs to licensees;
- ▶ the overall extent of value adding within the Victorian hardwood industry was not regularly measured and monitored by the Department;
- ▶ numerous instances existed where discrepancies in value added statistic returns received by the Department had not been adequately investigated by departmental officers; and
- ▶ **physical verification of the output or capital investment details provided by sawmillers had not been undertaken by the Department.** Audit has been advised that although it was envisaged by the Department that visits would be made to mills to verify the accuracy of the returns, such checks have not been performed to date. Similarly, audit found that the Department has not required a certification of the returns by auditors of the licensee. Under the licence conditions such a certification may be requested by the Department.

6.56 Audit considers that unless the basis of the allocation of high quality logs is formally structured and carefully documented, potential exists for bias or subjectivity to influence the allocation process.

6.57 In addition, under present arrangements, if sawmillers have provided information which overstates the extent to which they are value adding, better quality logs may be mis-allocated while sawmillers providing accurate information may be disadvantaged in the allocation process.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department has recently commissioned some work on how value adding performance should be assessed.

Delays in value adding assessments

6.58 It was originally proposed by the Department that a performance assessment of value adding by sawmillers would be undertaken every 2 years. Although the first assessment was made in 1988, licence allocations resulting from this assessment did not become effective until July 1991. Similarly, the second assessment, made in 1991, was not effective until July 1992. The delay of over a year in the assessment affects the Department's ability to respond promptly to value adding initiatives taken by individual sawmillers and to provide the necessary encouragement through the allocation process.

Allocation of lower graded logs

6.59 The Strategy indicated that, where possible, residual wood was to be sold by tender for processing as sawlogs. The Department was to sell the remaining residual wood to best advantage. However, a change in policy direction resulted in the issue of long-term licences for residual wood in 1990 (refer to paragraph 5.103 of this Report).

6.60 The fate of the residual wood under these licence arrangements is left to the licensees who may, for cash flow reasons, immediately chip the entire material including logs suitable for use as sawlogs. If a sawmiller has not installed appropriate technology to enable sawn timber to be produced from these lower grade logs, there is a further incentive to chip the logs.



Woodchipper in the Otways area.

6.61 As the allocation system for value added processing has to date been limited to D grade logs or better, no incentive is currently provided through the allocation process to encourage investment by residual wood licensees in value adding equipment. Similarly, no State-wide monitoring of value adding in relation to lower graded logs is undertaken by the Department.

6.62 Under current arrangements, the Department is not in a position to ensure that the Strategy objective of making the best end use of lower grade hardwood logs is achieved.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The suggestion that lower royalties for higher-quality logs may provide an incentive to woodchip logs is speculation, and inconsistent with normal business practices of maximising revenue/profits irrespective of the price of inputs.

Residual log licence conditions require that logs are sawmill processed. The suggested situation of a licensee not being able to sawmill process, and therefore chip logs that should be processed to produce sawn timber will not arise.

The utilisation of residual logs is in itself value adding, since these logs were previously left to waste. It is recognised that, because of the generally low quality of residual logs, the range of sawn products that can be produced is limited.

Firms can be expected to maximise potential returns from individual logs by utilising all the sawn timber that can be economically recovered. Further action is not warranted.

Future impact of current allocation practices

6.63 The ratio of A, B, C and D grade logs cut from each Forest Management Area in previous years is used as the basis of determining future allocations. However, in some cases regional officers expressed concern to audit regarding the ability of the Department to maintain the supply of higher graded logs over time. This issue poses an impediment to value adding particularly in the East Gippsland Forest Management Area where C grade and better resources are limited and in steady decline due to the ageing of mature forests. Presently, for example, the Department has indicated that all B grade and better hardwood resources available in that area are committed to 2 licensees who have demonstrated their capacity to value add. Should other sawmillers in the area demonstrate an equal capacity to value add, the Department will not be in a position to provide them with high grade resources.

6.64 A detailed analysis of the current grading and allocation practice and the ability of the Department to meet future demands for various grades of hardwood in each Forest Management Area has not been undertaken. Unless such an analysis is performed, **sawmillers may be placed in a position where they have made substantial investment in value adding equipment but are unable to obtain the appropriate quantity and quality of the resource necessary to continue value added production.**

PART 7

Supply Arrangements and Resource Pricing

OVERVIEW

7.1 The Strategy outlined the important role timber pricing can play in achieving key policy objectives for the timber industry. It recognised that as the major supplier of wood resources within the State, the Government can influence the operations of individual timber processors and the structure of the industry as a whole.

7.2 Consequently, in determining the price for the State's timber resources, the Department is required to consider a number of objectives set within the Strategy. These include recovering timber production costs plus achieving a target return to the Government, protecting environmental values, reflecting market rates, promoting efficiency within the industry and maintaining stable regional employment. **Audit found that in attempting to balance these often competing goals, the Department has not fully achieved any of the pricing objectives set.** In particular:

- ▶ Results disclosed in the latest supplementary financial statements for forest operations prepared by the Department for the year ended 30 June 1991 indicate that **the return from forest operations is far below the Strategy target of 4 per cent;**
- ▶ In the case of hardwood operations, the Department reported a loss of \$13.2 million for 1990-91. However, due to limitations in its financial data, **the Department is unable to accurately assess the extent to which this loss represents a subsidy to industry, production inefficiencies or adverse market factors;**
- ▶ Under present pricing structures, **the average price per cubic metre paid by timber processors for hardwoods is significantly less than that paid for softwood.** This pricing structure has been adopted despite the fact that the State's hardwood resources are more expensive to produce and are environmentally more valuable;
- ▶ Elements of the current pricing system which emphasise cost-equalisation across all areas of the State may conflict with the Strategy objective of promoting the efficient use of resources by the industry; and
- ▶ **For approximately 5 years to 30 June 1991, price increases for the State's timber resources were held below increases in timber prices charged by sawmillers due to the Government's decision to maintain increases in line with movements in the Consumer Price Index.** In more recent times, price increases have been limited by the recessionary climate within the industry.

7.3 The Department acted promptly to introduce 15 year Forest Produce Licences from July 1987 with the aim of encouraging increased capital investment within the industry through the provision of resource security. Nevertheless, the issue of long-term licences has had the disadvantage of restricting new entrants to the industry and limiting the use of market mechanisms to determine the price of the resource.

7.4 The Department needs to clearly specify and rank in priority order the objectives associated with pricing timber in the State. In this regard, audit considers that a review of the fundamentals underlying the current price setting mechanism is required to ensure that it is conducive to achieving the Government's key objectives for the timber industry. Specific details of the issues which need to be addressed in such a review are set out in the following paragraphs.

RESOURCE SECURITY

7.5 During the late 1950s, the Victorian Government introduced legislation which provided for the supply of timber to several large corporations, predominantly producers of pulp and paper products. The corporations were given long-term security for the supply of large volumes of timber in line with the substantial capital investment associated with their operations. The Department currently supplies timber under 9 such legislated agreements (2 hardwood and 7 softwood) ranging in tenures from 20 to 50 years. The total volume supplied annually under the agreements amounts to 1.1 million cubic metres with royalty revenue received by the Government in 1991-92 totalling \$18.2 million.

7.6 However, prior to 1987 the remaining processors were generally granted annual allocations of wood subject to the renewal of their licence each year.

7.7 In its 1992 report, the Resource Assessment Commission defined the term resource security as "*guarantees of secure access to wood resources for fixed periods*". The concept of resource security has in the past been a source of tension between operators within the timber industry and conservation groups. The industry has seen the lack of guaranteed access to timber supplies as a disincentive to large, long-term capital investment in the industry. Conservationists, on the other hand, have argued that long-term supply commitments by governments will lead to more intensive logging in currently harvested areas and to a move by the industry into previously unharvested areas which may possess important environmental values.

7.8 In an attempt to increase security of supply and encourage further investment in the industry, the Government announced in the Strategy that:

- ▶ provisions of existing legislated agreements would continue;
- ▶ guaranteed long-term access to sawlog resources would be provided to other processors through 15 year licences; and
- ▶ sawlogs in excess of commitments would be available from time-to-time through public tender.

FOREST PRODUCE LICENCES

Licences issued

7.9 The Department commenced issuing long-term licences in July 1987. Licences were initially issued to sawmillers holding annual licences at that time with the timber volumes set within the licences generally based on the average amount of timber supplied to the licensee over the previous 5 years. Since July 1988, a further 32 long-term licences have been issued in response to expressions of interest.

7.10 As illustrated in Table 7A, a total of 191 long-term forest produce licences had been issued to April 1993 with a large proportion for a period of 15 years.

TABLE 7A
FOREST PRODUCE LICENCES ISSUED AT APRIL 1993

<i>Licence type</i>	<i>Period of licence</i>			<i>Total</i>
	<i>Up to 5 years</i>	<i>5 to 14 years</i>	<i>15 years</i>	
Hardwood -				
Sawlog and veneer	2	27	(a)107	136
Sleepers	6	9	5	20
Residual wood	2	7	9	18
Total hardwood	10	43	121	174
Softwood -				
Sawlog and veneer	-	1	11	12
Roundwood	3	2	-	5
Total softwood	3	3	11	17
Total licences	13	46	132	191

(a) Includes one 16 year licence.

7.11 The majority of timber resource commitments made through these licences relate to hardwood and softwood sawlogs and veneer timbers. Table 7B sets out the quantity of various timber resources allocated through licences for 1991-92.

TABLE 7B
TIMBER ALLOCATED THROUGH FOREST PRODUCE LICENCES,
1991-92

<i>Timber product</i>	<i>Measure</i>	<i>Volume</i>
Hardwood -		
Sawlog and veneer (Net)	cubic metres	960 700
Sawlog and veneer (Gross)	cubic metres	64 700
Sleepers (Gross)	sleepers	14 600
Residual wood (Gross)	cubic metres	69 000
Residual wood (Gross)	tonnes	151 000
Softwood -		
Sawlog and veneer (Net)	cubic metres	199 700
Roundwood (Net)	cubic metres	66 200

Note: Some licences specify allocations in gross measurements while others specify net measurements (after allowing for defects etc.)

7.12 Long-term licences are, in effect, legally binding contracts. Under the terms of the contracts, the Department is obligated to supply licensees with the specific quantities of timber, except where circumstances outside the control of the Department, such as wildfire or disease, prevent the supply. If a situation arose where the timber committed to a licensee could not be supplied, for example, where the Department deemed it necessary to reduce harvesting to maintain the long-term sustainable supply of timber in a region, the Government could be liable under licence conditions to pay the licensee some form of compensation. To date, the Department has avoided a situation where payment of compensation of this nature has been required.

Licence fees

7.13 Sawmillers are charged an annual licence fee for the right to access resources in State forests. Revenue from these fees amounts to approximately \$2 million each year. The licence fee charged by the Department is generally based on a fee of \$1.20 per cubic metre (indexed to changes in sawlog royalty rates) with the actual fee dependent on the duration of the licence. Audit was advised by the Department that the base fee of \$1.20, which was set in the Strategy, was arbitrarily determined.

7.14 As licences are transferable, they are at times traded between timber processors. Although the sale price is not generally disclosed publicly, **available information suggests that the market price is significantly higher than the licence fee charged by the Department.** For example, audit found that where open tenders have been called by the Department for access to parcels of wood over a particular time, some submissions have specified a price of over \$5 per cubic metre compared with the indexed fee at the time of \$1.25. In addition, the Australian Bureau of Agricultural and Resource Economics, in a report to the Resource Assessment Commission in October 1990, disclosed the results of a survey of Victorian hardwood sawmillers associated with licence transfers. The report indicated that the value of the licences traded was substantial.

7.15 The willingness of timber processors to pay these high prices indicates that the licence fees currently charged by the Department may not adequately reflect the value of long-term security of access to the State's timber resources.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The initial licence fees were set in the Strategy. The Department, through inviting expressions of interest, has sought to establish the market prices for long-term access to different forest products. This information will be used when negotiating renewal of existing licences.

TENDERS AND EXPRESSIONS OF INTEREST

7.16 Hardwood and softwood sawlogs available above long-term licence commitments were to be offered for tender. Licences for the purchase of specialty timbers were also to be offered where long-term supplies were available. Since the introduction of the Strategy, the Department has offered additional timber resources through both public tender and registration of expressions of interest.

7.17 This process has assisted in reducing the volume of timber left in forest coupes after harvesting and encouraged better utilisation of lower quality timber resources. It has also provided additional revenue to the State.

7.18 Audit was advised that prior to July 1989, there were less than 20 parcels of timber allocated through a tender process. **Between July 1989 and June 1992, however, there has been a total of 383 short-term licences issued by tender, returning \$6.1 million for timber supplied under the licence agreements.**

ROYALTY RATES

7.19 Timber royalties represent the price per cubic metre paid by sawmillers for actual resources extracted from public forests and plantations. **In 1991-92, receipts from timber royalties totalled \$43.8 million.**

7.20 In Victoria, royalties are determined through a formula referred to as the Royalty Equation System (RES). The RES was first developed during the late 1940s and early 1950s and the elements of the equation have remained relatively unchanged since that time. Separate equations are used by the Department to arrive at a price for hardwood and softwood sales.

Pricing objectives

7.21 The original objective of the RES was the promotion of equity between sawmillers in various locations across the State, thus encouraging the harvesting and supply of structural timber to the Melbourne market to meet the post-war demand for housing. Various components of the equation provide for different rates to be charged in different areas of the State to compensate processors for additional costs, such as roading and transportation, associated with operating in remote locations. A further allowance is also made in the East Gippsland Forest Management Area to compensate for reduced marketing opportunities in that area.

7.22 The introduction of the Strategy set a number of new goals and objectives for the timber industry within Victoria. In particular, the Strategy was aimed at:

- ▶ increasing opportunities for secure and stable employment and the provision of a safe working environment;
- ▶ increasing economic contributions to the State by the industry;
- ▶ operation of the industry within sound forest environment prescriptions; and
- ▶ maximising the efficient use of harvested wood for sawn timber and timber products.

7.23 The Strategy advocated that the RES system be retained as the method of pricing the State's timber resources. However, **the royalties to be charged for timber were to be set at a rate which achieved a return of 4 per cent on the State's investment in timber resources.** Royalties were also to reflect changes in production costs, as reflected in commercial accounting systems, and market prices for timber products.

7.24 Subsequent departmental reviews have referred to a number of other factors which should be considered in setting royalties, namely:

- ▶ equitable distribution of royalty revenue between all sawlog licensees;
- ▶ avoidance of subsidies to inefficient sawmilling operations;
- ▶ market factors such as demand for wood products and import competition (volume and price); and
- ▶ interstate royalty increases.

7.25 An analysis of the royalty setting arrangements currently utilised by the Department led audit to conclude that, **as a result of attempting to balance these many and, at times, competing or conflicting goals, the Department has not been in a position to fully achieve the major pricing objectives set.**

7.26 Achievement against a number of specific targets is discussed in the following paragraphs.

RETURN ON INVESTMENTS

Commercial accounting

7.27 The development and implementation of commercial accounting systems for both hardwood and softwood was one of the first projects established under the Strategy in 1986. Since that time, over \$1.5 million has been spent on the project including over \$1.1 million on the development and implementation of a computerised system for recording the sale of forest produce and almost \$400 000 on the development of financial statements for forestry operations.

7.28 In July 1992, the Department released supplementary financial statements for forest operations for the year ended 30 June 1991. The statements comprise a Revenue and Expense Statement and Balance Sheet for softwood plantations in addition to a Revenue and Expense Statement for native forests. At the time of the audit review, statements for the year ended 30 June 1992 had not been finalised by the Department.

7.29 There is currently no legislative requirement for the Department to prepare financial statements for State forestry operations and the statements have not yet been subject to audit by my Office.

7.30 While **the progress achieved by the Department in preparing commercial accounts is commended**, the following matters will also need to be addressed if the timber operations of the Department are to be reported on a fully commercial basis.

Community service obligations

7.31 In its report *Out on the Table: The Cost of Community Service Obligations, November 1991*, the former Economic and Budget Review Committee defined community service obligations of Victorian Government business enterprises as *"arising when the Parliament or the executive government expressly requires a government business enterprise to carry out an activity which it would not elect to provide on a commercial basis, or which would only be provided commercially at a higher price"*.

7.32 The Department's role in forest management involves not only the production of timber for sale but also the protection of forests from fire, preservation of water catchment areas and provision of visitor and tourist facilities. Consequently, in the preparation of commercial accounts, the Department has attempted to separate all revenue and expense items relating to commercial forestry operations from those associated with these other forest uses.

7.33 However, the Department has not yet established a policy for the categorisation and quantification of its community service obligations associated with forest management. Consequently, a degree of uncertainty surrounds the classification of certain costs excluded from the commercial accounts prepared by the Department. It could be argued, for example, that the cost of preserving water catchment areas should be included in the cost of providing water to the community and should therefore be included in commercial accounts for water production by the relevant State body. Similarly, the costs of protecting the environment during timber harvesting operations could be considered as a cost of extracting the timber and therefore included as a production cost of forest operations.

Accounting systems

7.34 Audit found that the information systems utilised by the Department to record forestry operations are currently inadequate to enable effective monitoring and reporting on a fully commercial basis. In particular:

- ▶ The value of all assets used in forestry operations cannot currently be identified as the Department has not established a complete and accurate asset register;
- ▶ Due to the difficulties associated with assigning a value to native State forests, a balance sheet has not been completed, as yet, for this area of forest operations. In addition, the processes used for valuing softwood plantations involves many estimates and assumptions;
- ▶ The current system of recording receipts from the sale of timber produce does not allow for the identification and monitoring of the cash flow and liquidity position relating to forestry operations; and
- ▶ The Department's current cash-based accounting systems and program budgeting structure is not conducive to the preparation of commercial accounts. Consequently, additional work is required to accurately allocate all relevant production costs to particular Forest Management Areas or regions.

Accounting expertise

7.35 Audit observed that only a limited number of staff within the Department possessed knowledge and expertise in accounting and in the commercial management of the State's forest operations. In audit opinion, the Department would benefit from a more broadly based mix of expertise in areas such as accounting, economics and commerce to complement the level of technical and specialist expertise already available within the Department.

Results of forestry operations

7.36 The supplementary financial statements prepared by the Department for 1990-91 disclosed a surplus of \$4 million on the State's softwood plantations and a deficit of \$13.2 million for native State forests. It should be noted that these results have been influenced, to some extent, by the economic recession which reduced the volume of timber sold in that year. Notwithstanding this factor, **the results indicate that a rate of return of only 0.9 per cent was achieved on the State's softwood plantations.**

7.37 As a Balance Sheet for native State forests is yet to be prepared, there is currently no basis on which to assess the rate of return in this area. **Nevertheless, the statements prepared to date indicate that the return from forest operations is still far from the Strategy target of 4 per cent.** In fact, the loss made on native forest operations would indicate that some degree of subsidy is currently provided to industry in this area.

7.38 Based on the 1990-91 results, audit observed that if the loss on the sale of hardwood was to be eliminated solely through an adjustment in royalties, a 55 per cent increase would have been required. An even greater increase would be required if the target return of 4 per cent was to be achieved. Similarly, softwood royalties would need to have increased by 73 per cent in order to generate the required target rate of return. As the industry is unlikely to absorb such increases in the current economic climate, other factors, such as reducing the costs of production and increasing sales through a more proactive marketing approach (refer to paragraph 9.12 of this Report), also need to be investigated by the Department.

- **RESPONSE** provided by Acting Secretary, Department of Conservation and Natural Resources

Commercial accounts for forest operations were first produced by the Department for 1990-91. The evidence from the preliminary accounts for 1991-92 indicates the Department's financial performance is improving. There is still considerable scope for more detailed analysis, including disaggregation of costs and returns associated with the provision of various forest products and services, before meaningful conclusions can be drawn on the return on funds invested.

The Department agrees that it needs to focus on the issues identified by audit including:

- *identifying the potential to reduce costs;*
- *achieving increased productivity;*
- *ensuring returns from the State's high-quality timber is maximised; and*
- *evaluating the appropriateness of current royalty rates.*

Through continuing to address these issues the Department's overall commercial performance will improve.

COSTS OF PRODUCTION

7.39 It is 6 years since the Strategy indicated that royalties were to be set at a rate which fully covers production costs, in addition to generating a return to the Government. Although it was anticipated that commercial accounting systems would be in place to enable the identification of production costs, **the previously highlighted limitations in the Department's accounting systems and financial statements have to date prevented an accurate analysis of costs or the identification of areas of potential inefficiency or subsidisation.**

7.40 Consequently, the Department is not in a position to refute claims which have been made by conservation groups that the industry is heavily subsidised by the Victorian public, nor counter-claims by the industry that the loss on timber harvesting operations results from inefficiencies and excessive costs within the Department.

7.41 While recognising the limitations of the statements prepared to date, audit observed a number of aspects in relation to production costs disclosed within the statements and within the Departmental systems which need to be carefully evaluated.

Comparative regional costs

7.42 As highlighted in Table 7C, the costs apportioned in 1990-91 to the management of native forest operations in some regions were relatively high compared with the small amount of harvesting activity reflected in the revenue generated, in the region. As a result, significant deficits were reported in these regions.

TABLE 7C
NATIVE FOREST FINANCIAL RESULTS, 1990-91
(\$'000)

<i>Region</i>	<i>Revenue</i>	<i>Expenditure</i>	<i>Deficit</i>
Bairnsdale	2 387	4 686	2 299
Bendigo	573	2 196	1 623
Central Gippsland	6 092	7 434	1 342
Colac	914	1 863	949
Orbost	6 165	9 904	3 739

7.43 The results indicate the need for a detailed analysis by the Department of the costs associated with each region. Such analysis should be aimed at identifying areas where operational costs can be reduced or where it would be more cost-effective to reduce or eliminate harvesting activities.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

Audit's recommendations appear to be based on the belief that royalty rates should be based on recovering costs of production. Without arguing the relative merits of this approach, the Department is required to act in accordance with the provisions of the Strategy which states that royalties should reflect a broader range of factors, including market prices, for timber products.

Cost equalisation

7.44 As the RES used by the Department aims to equalise costs for all sawmills in Victoria, different prices may be paid by timber processors in different regions for the same quantity, quality and species of timber. For example, audit analysis indicated that the average price per cubic metre paid for B grade logs in Bairnsdale during 1991-92 was \$33.51 compared with a price of \$27.24 in Orbost. This price differential reflects the equalisation factors built into the RES rather than the Strategy aim of reflecting the production costs of each region.

7.45 The use of the RES to determine royalties has been justified by the Department in terms of equity principles in that mills in the more isolated locations of the State are disadvantaged by their distance from the relevant market or by logging in harsher conditions. The RES has been aimed at promoting widespread, rather than concentrated, logging and consequently at supporting the Strategy goal of regional sustainable yield. By assisting mills in the outer areas of the State to continue in the industry, the Department also aims at maintaining stable employment in these regional areas.

7.46 However, the use of an equation which in effect provides a subsidy to some mills does not necessarily promote efficiency within the industry.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Royalty Equation System provides an objective basis for pricing sawlogs of varying quality at different locations in the State and is not aimed at cost equalisation. Tender prices indicate that these factors are important in determining the market price of logs. The recommendation infers that the present pricing system is inhibiting improving the efficiency of industry. No evidence is provided to support this view.

Differential between hardwood and softwood prices

7.47 The actual price paid by sawmillers for hardwood timber sawlogs is less than softwoods. Table 7D illustrates the price differential for the 1991-92 year.

TABLE 7D
SAWLOG ROYALTY RATES, 1991-92

<i>Type of timber</i>	<i>Average royalty rate</i>
Softwoods	\$37.57
Hardwoods	\$21.31

7.48 Given that the State's hardwood resources are environmentally more valuable and are more expensive to produce than softwoods, it is apparent that this current pricing differential does not reflect the relative production cost or value of each product. For example, an increased cost of capital is associated with the production of hardwoods which are harvested at an age of over 80 years compared with softwoods which are harvested at around 35 years of age. The longer growing period for hardwoods results in a delay in any returns to the Government.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

It is the effect of applying adjustments for log haulage, sawn haulage, divergence factors based on sawn product prices and recovery rates for various grades of sawlogs, that causes the "average" price of hardwood sawlogs to be less than the "average" price of softwood sawlogs.

INCREASES IN ROYALTY RATES

7.49 Since the introduction of the Strategy, there has been an inconsistent approach to the determination and timing of increases in royalty rates. Prior to 1990-91, royalty rates were tied to a basket of consumer goods and in line with a directive from the Premier, were not permitted to increase at a rate above the Consumer Price Index. **Such a directive meant that the Department could not capitalise on the buoyant years in the economy when timber prices charged by sawmillers rose at a rate greater than movements in the Consumer Price Index. Consequently, the real royalty rate fell over a period of approximately 5 years.**

7.50 In 1990-91, the Minister assumed responsibility for setting royalty rates and from July 1990, hardwood and softwood royalty rates increased by 8 per cent (with the exception of the rates in Portland which increased by 6.5 per cent in line with South Australia's increase).

7.51 Audit was advised by the Department that a number of further proposed royalty increases have been deferred or reduced since 1990-91 because the housing market, on which the hardwood and softwood sectors are dependent, has been in recession. Consequently, retail timber prices have fallen making it difficult for the Government to justify any royalty rate increases. The industry, as represented by the Victorian Association of Forest Industries, has been particularly vocal in opposing any royalty increases in recent years.

MARKET PRICING

7.52 One of the main principles of the Strategy has been *"to increase the efficiency of the timber industry by subjecting it to market forces as much as is possible without devitalising it"*.

7.53 Market price can be determined through the use of an auction or tender system. While other States, and indeed other countries, generally use a similar administrative formula to the RES as their means of setting timber prices, some States are endeavouring to make greater use of market prices in setting their royalty rates. For example, New South Wales is looking to sell up to 50 per cent of timber through tender with existing licensees having first option to purchase the timber and reserve prices used to assist in ensuring cost recovery.

7.54 Victoria is currently restricted in adopting a greater market approach by the issue of long-term licences which are not applicable interstate. **Consequently, timber resources cannot be allocated in the short-term at a market price, through a mechanism such as a tender process, because the majority of timber or logging areas are already committed to particular processors. The issue of licences on the basis of historical entitlement has also limited the entry of new participants to the industry.**

7.55 Nevertheless, the Department is endeavouring to place greater emphasis on market pricing. For example, the Department currently sells up to 30 per cent of surplus D grade hardwoods and 10 per cent of softwoods by tender. In addition, **it has assessed a number of market indicators when determining royalty increases.**

7.56 The Department also refers to the pricing policies of other States as a guide when assessing royalty adjustments. A departmental review of the royalty system in April 1991 indicated that it was difficult to undertake a simple comparison of royalty rates between States due to the variations in the quality of timber produced, State administrative mechanisms and policy objectives. It found, however, that Victoria's average royalty rates are generally lower than those in other States. In addition, **Victoria's royalty increases in recent years for hardwood timber have been below those of New South Wales and South Australia due to the policy of containing increases in line with movements in the Consumer Price Index and the subsequent difficulty in taking action to adjust royalties due to the recessed condition of the industry.**

7.57 In addition to the factors already considered by the Department in setting royalties rates, audit considers that greater attention could be paid to the following market factors:

- ▶ **the potential impact of overseas timber imports on the local market;** and
- ▶ **information on the value of forest produce licences freely traded on the open market** which would provide an indication of the implicit price for sawlogs of various grades.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The issue of long-term licences has not restricted new entrants to the industry as licences can be transferred with the consent of the Secretary to another party. There have been numerous transfers of long-term licences. The provision of guaranteed long-term access to resources limits the use of market mechanisms (e.g. tendering) to determine the price of resources, but provides offsetting benefits such as greater incentive for investment.

PART 8

Reforestation

OVERVIEW

8.1 Reforestation is defined in the Strategy as re-establishing a forest and managing it for purposes such as wood production, protection against soil erosion or control of rising water tables and salinity. The Strategy identifies reforestation as an effective method of increasing the State's timber resources and improving the economic and environmental productivity of agricultural and other degraded land.

8.2 Various government-funded programs, the establishment of private and public forestry plantations and the adoption of agroforestry practices (the integration of forestry and agriculture on the same land) are identified in the Strategy as the means for implementing reforestation with additional assistance sought from the Commonwealth Government to fund reforestation programs based on native tree species. Preference is to be given to reforestation programs in districts experiencing high levels of long-term unemployment.

8.3 **Audit found that, in comparison with reforestation targets set in the Strategy, achievements to date have been minimal.** For example, in comparison with a Strategy target of planting native species on cleared Crown land at a rate of 2 000 hectares a year, a total of only 3 600 hectares has been reforested over a 5 year period. In addition, limited progress has been made to date in increasing the level of agroforestry activity from 600 hectares to a 30 year target of 30 000 hectares.

8.4 **Unless greater priority is given to the programs, the pressure on native forests for wood production will continue and significant economic and environmental benefits expected to flow from reforestation will not be fully realised.**

8.5 Certain issues relating to private forestry are discussed in Part 4 of this Report. Other aspects of the achievements in relation to the reforestation program are set out in the following paragraphs.

REFORESTATION OF CROWN LAND

8.6 The Strategy identifies 24 000 hectares of potentially productive, unstocked and understocked Crown land in need of reforestation, primarily located in the Strzelecki Ranges, Central Highlands and Otway Ranges. The reforestation, implemented through the Strategy's Hardwood Reforestation Project, is committed to establishing 2 000 hectares of native forests annually on cleared land. The Project is expected to provide well-located, valuable timber resources and a greater diversity of local wildlife habitat. It is also expected to assist in relieving pressure to harvest timber from native forests. In 1988, the Government released a document entitled *Greenprint* which undertook to further increase the annual reforestation target to 4 000 hectares by 1992.

Level and timing of funding

8.7 Since 1986, total funds allocated to the Hardwood Reforestation Project have amounted to \$6.1 million, including funds allocated to the establishment of hardwood plantation trials. Ongoing annual departmental funding for reforestation works has continued to provide a further \$1.3 million to the targeted areas.

8.8 In addition, the State Government has been successful in obtaining Commonwealth Government assistance of around \$1.6 million for reforestation initiatives under the Strategy and funds have been received from a number of other sources for reforestation of Crown land not directly related to Strategy initiatives and objectives, namely:

- ▶ the East Gippsland Forests Agreement (EGFA) between the Commonwealth and Victorian Governments has provided funds for reforestation in the Bairnsdale and Orbost Regions; and
- ▶ the State Electricity Commission of Victoria (SECV) has provided specific funds for reforestation under the Greenhouse Effect Tree Planting Program which is aimed at reducing the impact of greenhouse gases in the Central Gippsland area.

8.9 A total of 3 212 hectares of land have been reforested with EGFA and SECV funds.

8.10 As indicated in Table 8A, between July 1986 and June 1992 a total of around \$11.3 million has been spent on the reforestation of Crown land in Victoria.

TABLE 8A
REFORESTATION EXPENDITURE, 1986-87 TO 1991-92
(\$'000)

<i>Funding source</i>	<i>Expenditure</i>
Strategy initiatives -	
Strategy	5 865
Ongoing annual funding	1 324
NAP (a)	1 585
	8 774
Other programs -	
SECV	263
EGFA	2 287
	2 550
Total	11 324

(a) National Afforestation Program provided through the Commonwealth Department of Primary Industry and Energy.

8.11 In most areas of the State, reforestation work, involving seed collection and site preparation, is more effective when carried out during the spring and summer seasons followed by planting during autumn and winter. If funds are provided at inappropriate times, the regions are restricted by seasonal conditions such as bad weather, non-availability of departmental and contract labour, and the potential risk of planting failures due to poor growth responses.

8.12 Audit found a difference of at least \$300 000 between funding allocated for the Strategy's reforestation initiatives over the past 5 years and the expenditure of \$5.9 million. According to the Department, the difference represents reforestation funds spent on other departmental activities because, in some cases, **the funds were provided at inappropriate times of the year. In addition, some regions had redirected Strategy reforestation funds to other areas.** As much of the funding associated with reforestation goes into capital expenditure rather than ongoing employment-generating operations, the Project was afforded a lower priority.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

Reduced funding required some funds originally allocated to reforestation to be re-directed to regeneration works. This reflects the Department's priority to ensure satisfactory regeneration of all harvested areas.

Achievement of targets

8.13 Table 8B shows that, since 1987-88, the annual rate of Strategy-related reforestation of Crown land has been significantly less than the Strategy target of 2 000 hectares with a gradual decline in recent years.

**TABLE 8B
CROWN LAND REFORESTED
(Hectares)**

Year	1987-88	1988-89	1989-90	1990-91	1991-92	Total
Area	574	1 053	950	535	477	3 589

8.14 At the current rate of progress, the reforestation of the 24 000 hectares of Crown land identified for reforestation will take a further 28 years to complete, compared with 10 years if the target level of activity set in the Strategy is achieved. Analysis of expenditure to date indicates that the average cost of Strategy-related reforestation is around \$2 400 per hectare. On the basis of this cost, the Department would require an annual allocation of \$4.8 million to achieve the Strategy reforestation target compared with the average allocation to date of \$1.5 million.

8.15 These factors suggest that, in the current budgetary climate, the 1988 revised reforestation target of 4 000 hectares is unachievable and that even the annual target of 2 000 hectares set in the Strategy is unrealistic.

8.16 Subsequent to the audit, in February 1993, the Minister for Natural Resources endorsed a departmental proposal to revise the annual reforestation target to 1 000 hectares.

- **RESPONSE** provided by Acting Secretary, Department of Conservation and Natural Resources

The funds necessary to achieve Strategy reforestation targets were not provided.

When work completed with East Gippsland Forest Agreement and other funds is included, the average area reforested in the period 1987-88 to 1991-92 increases from 718 hectares per year to 1 360 hectares per year.

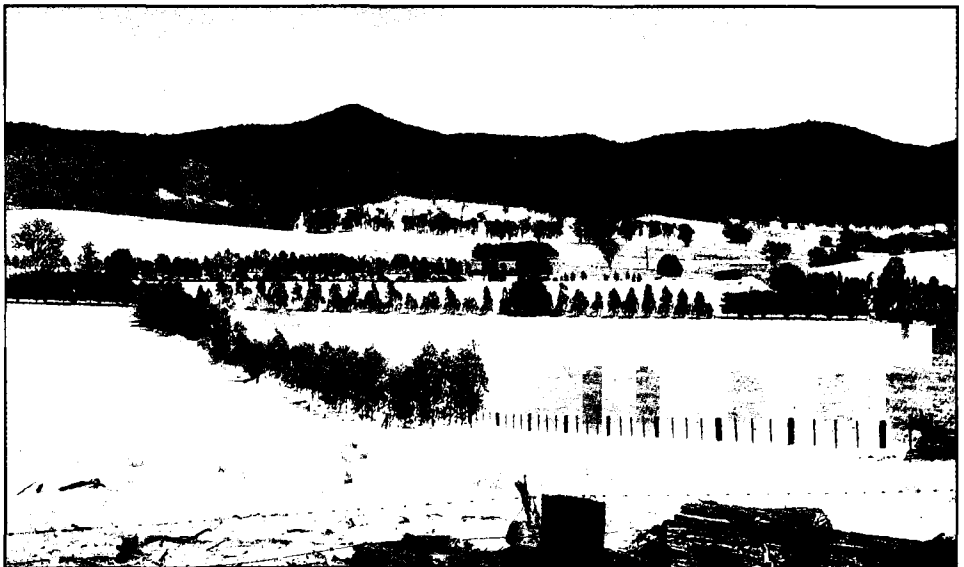
The Department is now looking to develop a sustainable reforestation program of approximately 1 000 hectares per year.

On-ground reforestation costs vary considerably depending on conditions and treatments applied. An average cost of on-ground works is approximately \$1 500 per hectare. The average figure quoted in the Report includes some research and nursery improvement costs.

AGROFORESTRY

8.17 The economic and environmental benefits of agroforestry include diversifying farm incomes, tackling salinity and other land degradation problems and expanding the State's timber supplies.

8.18 The responsibility for conducting research, promotion, and providing advice to farmers on agroforestry activities rests with both the Department of Agriculture and the Department of Conservation and Natural Resources. The co-ordination of activities between the 2 Departments is performed through a Joint Agroforestry Management Committee established in 1983.



Agroforestry in the Ovens Valley area.

8.19 The Strategy recognises that farmers had been reluctant to adopt agroforestry practices in the past due to uncertainties regarding profitability, perceived management problems and lack of objective information and appreciation of its diverse role and benefits. The Strategy proposes that the following actions be undertaken to further encourage agroforestry in the State:

- ▶ the 2 Departments continue to establish agroforestry research projects aimed at determining the costs and benefits of various agroforestry combinations;
- ▶ the Department of Conservation and Natural Resources establish commercial agroforestry operations on suitable Crown land;
- ▶ an information system be developed to provide farmers with relevant agroforestry details; and
- ▶ the Department of Conservation and Natural Resources provide increased technical advice and assistance to farmers interested in agroforestry schemes.

Five year plan for agroforestry in Victoria

8.20 Departmental figures on agroforestry activity in the State as at March 1991 are shown in Table 8C.

TABLE 8C
AGROFOREST AREA, MARCH 1991
(Hectares)

<i>Purpose</i>	<i>Softwood</i>	<i>Hardwood</i>	<i>Total</i>
Research	37	84	121
Demonstration	1	163	164
Production	86	197	283
Total	124	444	568

8.21 Policy direction and priorities for government research and extension programs for agroforestry activities for the 1991-1996 period have been established in a *Five year plan for agroforestry in Victoria* prepared by the Joint Agroforestry Management Committee in July 1991. The principal objective of the plan is to expand the use of agroforestry in Victoria from its 1991 level of approximately 600 hectares to around 30 000 hectares over a 30 year period, with most of the planting occurring within the first 10 years. The current plan indicates that in 1994-95, a review of the progress made towards the target is to be undertaken and a new plan developed for the following 5 years.

8.22 Table 8D sets out the level of activity identified in the plan as necessary to achieve the 30 year target.

TABLE 8D
AGROFORESTRY TARGET FOR THE YEAR 2020

Area	<i>Agricultural land</i>	<i>Percentage of farm under agroforestry</i>	<i>Target area of agroforestry</i>
	('000 hectares)	(per cent)	('000 hectares)
Mallee	2 400	0.1	2.4
South West	1 600	0.4	6.4
Irrigation Areas	700	0.6	4.2
Central West	1 200	0.3	3.6
Central South	1 000	0.3	3.0
North East	1 500	0.4	6.0
Gippsland	2 000	0.4	8.0
Total	10 400	0.32	33.6

8.23 In addition to the environmental advantages of planting trees, the plan identified that by the year 2020 when trees reach maturity, substantial benefits, estimated at around \$35 million a year in the form of increased agricultural productivity and increased wood production, would result from the program.

Resourcing of agroforestry program

8.24 Strategy funding allocated to agroforestry between 1986-87 and 1990-91 totalled \$549 000. However, funding was not provided for the program in 1991-92 as the Department directed that agroforestry and private forestry services were to be provided on a commercial consultancy basis only.

8.25 While the Department of Agriculture has allocated 3 full-time officers to the development and promotion of agroforestry, the Department of Conservation and Natural Resources has only one officer with part-time agroforestry responsibilities. **Audit concluded that, unless the current funding and staffing allocations are increased, the target expansion of agroforestry and its expected economic and environmental benefits are unlikely to be achieved.**

Community education and demonstration

8.26 One of the methods used by the Department to promote public interest and understanding of agroforestry has been the establishment of agroforestry research and demonstration sites. To date, 285 hectares have been established for this purpose.

8.27 In addition, an Agroforestry Extension Sub-Committee was formed in 1988 comprising members from the 2 Departments, various industry and environmental groups, the International Tree Crops Institute and the University of Melbourne. This Sub-Committee reports to the Joint Agroforestry Management Committee. Since its inception, the Sub-Committee has produced high quality information for use by agroforesters and other interested parties.

8.28 The continuation of an effective community education program will be necessary to achieve the level of agroforestry establishment required to meet the 30 year targets set.

OTHER REFORESTATION OR REVEGETATION PROGRAMS

8.29 A number of additional reforestation or revegetation programs have been introduced by the Government since the development of the Strategy, including:

- ▶ The Tree Victoria Program which is a major program aimed at planting 100 million trees by the year 2010. The Program provides assistance to community groups and local councils involved in revegetation. Audit was advised that in 1991-92 the Department planted around 1.2 million trees through this Program which focuses on the establishment of trees for land protection and habitat purposes. However, the Program does not encompass the establishment of commercial plantations or commercial forest management; and
- ▶ The Trees for Profit Program was launched in July 1992 to encourage the establishment of timber plantations on private land for commercial wood production. The Program, a joint State Government/private sector initiative, is aimed at encouraging joint ventures in hardwood plantations between farmers, investors and timber processors by providing long-term economic returns for farmers and landholders. At the same time, it will play a role in the restoration of salt-affected land. It is intended that the Government will establish 80 hectares of pilot plantations of native hardwoods in both irrigation and dryland areas for demonstration and research purposes.

8.30 Audit found that the various programs aimed at reforestation and revegetation are managed within a number of different areas of the Department. **A more co-ordinated approach to this aspect of the Department's responsibilities would enable a more focused approach to meeting key reforestation targets.**

PART 9

Marketing and Industry Development

OVERVIEW

9.1 The Strategy indicates that competitive pressures on the Victorian timber industry from both interstate and overseas is likely to increase and that strategic issues must be addressed to ensure that the State's competitive strengths are maximised. The Strategy envisages an increasing role for market and product development, restructuring of the industry to achieve economies of scale, increased investment in training and new technology and an acceleration of research and development to achieve greater efficiencies in the industry.

9.2 In addition to promoting industry confidence by guaranteeing timber processors long-term access to State-owned resources, the Strategy is specifically aimed at:

- ▶ providing opportunities for secure and stable employment in a safe working environment;
- ▶ assisting industry to be increasingly competitive in markets for wood and wood products;
- ▶ encouraging the efficient operation of the forest industries and the efficient use of the resource;
- ▶ ensuring that suitable systems of education, skills development and technology transfer are available to meet the needs of the industry; and
- ▶ assisting workers dependent on the industry when their current employment is affected by changes in timber supply and in technology.

9.3 Since the adoption of the Strategy, **the Department has instigated significant improvements in training and education programs relating to forest management.** The enhanced training mechanisms, together with a commitment to improving occupational health and safety within the industry, has been reflected in the significant decrease since 1986 in workcare claims reported to the former Occupational Health and Safety Authority.

9.4 The role of the Department in relation to marketing and product development within the industry as a whole needs clarification. However, **there is clearly a role for the Department in taking a more strategic approach to establishing and promoting markets for the raw timber produced from State-owned forests and plantations.** To effectively undertake this role and to analyse the impact of various government strategies on the industry, the Department needs to develop a more comprehensive database of industry statistics and trends and expand its skill base to include staff with a background in marketing or related disciplines.

NATURE OF THE INDUSTRY

9.5 The timber industry in Victoria is diverse in size and nature and comprises businesses which grow the wood through to those manufacturing and processing the resource into a range of products including building materials, furniture and paper products. The industry comprises the following 4 main processing sectors:

- ▶ *Sawmilling* - The hardwood sawmilling sector has historically been located close to a scattered resource. It operates through mills which are generally small in size and exhibit a relatively low ratio of capital investment to labour. The softwood sawmilling sector, on the other hand, has developed in relatively more recent times and as such comprises a small number of large-scale, highly capitalised and integrated plants;
- ▶ *Veneers and manufactured boards* - There are 2 manufacturers of plywood in Victoria primarily using softwood timber. A number of sawmills have commenced production of veneer, used as facing on particle board or medium density fibre board, as a subsidiary to their general sawmilling operations. Particle board plants located in Bacchus Marsh, Ballarat, Benalla and Portland use roundwood or sawmill residue;
- ▶ *Pulp and paper* - The pulp and paper industry is vertically integrated in that most companies are involved in timber growing, harvesting and manufacturing operations. Victoria has 3 companies manufacturing wood pulp from State forests; and
- ▶ *Woodchips* - Woodchips are derived from native forests and hardwood and softwood plantations. They are produced from thinnings or as a joint product during the harvesting of sawlogs and residual wood. Woodchips are also produced as a residue from sawmilling operations. The Commonwealth Government issues licences for the export of woodchips from Australia. The Resource Assessment Commission reported in 1992 that: "*Woodchipping brings significant economic benefits to Australia. Each year approximately 5 million tonnes of woodchips are exported, with a value of about \$400 million*". Hardwood woodchips from East Gippsland are exported from Eden in New South Wales while those from the central, northern and western areas of the State are exported from Geelong. Softwood woodchips are exported from Portland. Japan has traditionally been the major buyer of Australian woodchips, however, increasing international competition has seen the Japanese demand for Australian woodchips decline in recent times.

THE TIMBER INDUSTRY COUNCIL

9.6 One of the key policy directions contained in the Strategy was the creation of a Timber Industry Council to assist and encourage the timber industry to continue to play a major role in the economic development of the State. The Council, which comprised representatives from various industry, union, education, research and government bodies, was established in March 1987 to provide advice to the Minister on matters relating to the Victorian forest products industries.

9.7 An audit review of the work undertaken by the Council indicated that it was extremely active between 1987 and 1989. Numerous reports and research studies were prepared by elements of the Council on a range of forest product-related issues.

9.8 During the working life of the Council, the Department was responsible to 3 different ministers. As a ministerial advisory body, the Council was dependent on input from these ministers for it to provide a productive and effective role. However, discussions within the Department led audit to conclude that towards the end of its operation, the Council lacked a sense of purpose as a result of limited ministerial involvement in its work and uncertainty created by departmental restructuring.

9.9 Although the Council has not been formally dissolved, audit observed that it has not met for 3 years. However, a review of the last minutes of the Council, dated March 1990, indicated that work was still in progress at that time in a number of areas.

9.10 As the Council is no longer an active body, there is now an absence of a key ministerial advisory body envisaged in the Strategy as representing the views and expectations of community, government and industry groups on forestry and forest industry issues.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

Although the Timber Industry Council is no longer operative, mechanisms do exist which ensure the Minister receives advice from external interest groups in relation to forestry issues. These include regular ministerial meetings with conservation and industry groups.

ROLE OF THE DEPARTMENT WITHIN THE TIMBER INDUSTRY

Marketing of timber products

9.11 Discussions with departmental officers indicated that, historically, the Department has not taken a strong, proactive marketing role and until more recent times, there has not been any real emphasis on commercial management of forest resources. As a result, **the role of the Department within the timber industry as a grower and seller of wood has, in audit opinion, been understated.**

9.12 To strengthen the role of the Department in establishing and promoting markets for the raw timber produced from State-owned forests and plantations, there are a number of areas where audit considers that a more strategic approach could be taken, namely, the Department needs to give consideration to:

- ▶ Investigate export market opportunities for hardwood and softwood timber products;
- ▶ Identify potential markets for the uncommitted softwood roundwood resources (refer to paragraphs 4.45 to 4.61 of this Report);
- ▶ Place greater emphasis on developing markets for Victoria's speciality timbers, e.g. blackwood, southern mahogany, silver wattle, yellow stringybark. Audit understands the Department is investigating the possibilities for segregating some species for allocation to particular licensees;
- ▶ Investigate the promotion and marketing of natural features of hardwood timbers. The nature of these timbers is such that quality and lack of uniformity has been seen as a problem for manufacturers concerned with product appearance. The Department needs to investigate promoting what are currently considered flaws or defects of native hardwoods as a natural characteristic of the product not unlike the acceptance of scars in leather;
- ▶ Increase the area of State hardwood plantations and assess their future role within the State's timber industry; and
- ▶ Place greater focus on the competitive strengths and weaknesses of the raw timber product in terms of its attractiveness to buyers (domestic and overseas) in preference to other imported timber and non-timber products.

9.13 There is also a need for the broader role of the Department, with respect to marketing and industry development, to be more clearly defined. In clarifying the role, the Department needs to determine the extent to which it should:

- ▶ be involved only in the promotion of its own raw material or of the products of the timber industry as a whole;
- ▶ take an active role in promoting and assisting specific sectors of the industry; and
- ▶ take a role in product development, research into new processing techniques, product promotion and the investigation of export market opportunities.

Industry analysis

9.14 The Strategy stated that a balance between market intervention and market forces needs to be achieved by the Government. It recognised that regulation and control are necessary where market forces would not lead to the Government's social or environmental goals.

9.15 Assessment of the nature and effectiveness of government regulation and control in influencing the market in a particular direction is therefore an important component of the Department's role. Such assessment is dependent upon information on:

- ▶ the structure and conditions of the market;
- ▶ historical market trends and forecasts;
- ▶ the extent and nature of competition in the market;
- ▶ the price elasticity of the product; and
- ▶ the relationship with other markets.

9.16 Audit found, however, that the collection and recording of statistical information within the Department was inadequate to enable an overall analysis of trends within the industry to be undertaken or to ascertain the impact of government policies and strategies on the industry.

Marketing expertise

9.17 The functions of the Forests Branch of the Department include the identification and development of markets for the range of wood products available from State forests.

9.18 Audit investigations revealed that the qualifications and experience of staff in the Branch is predominantly in the area of forestry. Audit was advised that the Branch has never employed officers with market research or promotional expertise.

9.19 For the Department to effectively undertake its role in marketing its timber products and analysing the impact of various government strategies on the industry, the skill base of the Department needs to be further expanded to include staff with a background in commerce or marketing.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department agrees that it needs to place some additional emphasis on marketing forest produce.

STRATEGIES FOR THE EAST GIPPSLAND REGION

9.20 The Strategy referred to an anticipated long-term decline of some significance in the number of jobs available in the timber industry in East Gippsland due to a range of factors, namely:

- ▶ the limited amount of mature forests available for harvesting resulting from increased areas of National Park;
- ▶ the lack of availability of regrowth forest for between 25 and 50 years;
- ▶ technological change in the industry leading to a lower number of employees required;
- ▶ competition from pine and steel in traditional hardwood timber markets;
- ▶ a lack of marketing expertise in the hardwood timber area; and
- ▶ the implementation of sustainable yield resulting in a reduction in the volume available for harvesting.

9.21 The Strategy recommended that the area should be treated as a special case in that the East Gippsland Regional Employment and Economic Development Committee was to be set up to assist in identifying and developing new employment opportunities in the area including the further processing of timber and tourism. The development of a specific tourism strategy for East Gippsland was also a key policy direction of the Strategy.

9.22 The Committee, established in 1987, comprised 13 community representatives selected by the Government from a list of nominations received from industries, interest groups and community organisations within the region.

9.23 The principal responsibilities of the Committee were:

- ▶ development of a regional employment and economic strategy; and
- ▶ provision of advice to the Economics Committee of Cabinet on the implementation of a Strategy to create further jobs.

9.24 The Government provided \$180 000 to fund the Committee's work for an 18 month period. The Committee was dissolved in June 1988, when it presented its Regional Economic Development Strategy Plan to the Minister. The Plan recommended that:

- ▶ value adding to forest products be maximised;
- ▶ approvals for suitable mining projects be expedited;
- ▶ the Very Fast Train Project be facilitated; and
- ▶ approvals for tourism and commercial development be expedited.

9.25 The Minister subsequently released the Government's response to the recommendations of the Committee. The Victorian Eastern Development Association, appointed at a regional level as the principal facilitator of the Strategy Plan, was responsible for promoting economic development and investment in East Gippsland and in providing advisory and referral services to business in the area.

9.26 Tourism strategies were prepared for the Far East Gippsland Region (1988) and the Gippsland Hinterland Region (1989). The strategies are comprehensive documents containing details of the regions demographic and geographic characteristics, tourism strengths, market assessment, tourism infrastructure, development plans and implementation process.

9.27 Audit was advised that **comprehensive evaluations of the effectiveness or achievements of both the Economic Development Plan and the tourism strategies are yet to be undertaken.**

9.28 However, discussions with departmental officers in the Orbost region indicated that there had not been a significant change as a result of the Economic Development Plan and that many of the problems facing the area identified in the Timber Industry Strategy continue to exist.

TIMBER INDUSTRY TRAINING

9.29 The Strategy recognises that successful implementation of the Government's objectives will require higher levels of skills in field operations, industry and business. Forestry, wood procurement and processing are identified as requiring particular attention. The Strategy also heralds an increase in community expectations of forest managers and the degree of expertise required in dealing with modern forest management issues such as multiple use management and environmental care of forests. As such, an upgrade in training and education became equally important for both government employed forest officers and forest workers in private industry.

Strategy-related training for industry personnel

9.30 In May 1989, the Code of Forest Practices for Timber Production came into effect followed by the development of Timber Harvesting Regulations in September of that year. The Regulations require each person involved in commercial harvesting in Victorian State forests to be licensed. The Department acted to introduce Forest Operator Licences to commence from September 1989. To obtain a licence, forest operators are required to:

- ▶ show proof of accreditation as a qualified forest worker (e.g. chainsaw operator, faller, machine operator, truck driver);
- ▶ attend an environmental training session at the Department, followed by an assessment to confirm the operator's understanding of the environmental care principles; and
- ▶ pay a licence fee.



Log handling excavator - Alexandra.

9.31 Since September 1989, over 3 200 Forest Operator Licences have been issued by the Department. In addition, a number of departmental committees worked extensively liaising with the industry training body during 1989 to promote consistency in training and forms of accreditation across the State.

9.32 **The Department is to be commended on the introduction of Forest Operator Licensing in Victoria** which has served to promote the importance of appropriate vocational training, educate forest workers in their environmental care responsibilities and increase awareness of occupational health and safety issues in the forest.

Training for departmental officers

9.33 With the introduction of the Code of Forest Practices for Timber Production and the Timber Harvesting Regulations, the Department introduced a number of workshops and training sessions for departmental staff. The training included occupational health and safety requirements, environmental care principles and the use of the Forest Operator Licensing system.

9.34 Visits were also made by departmental officers to regions to review the application of the Code and the Timber Harvesting Regulations in the field and provide on-the-job advice and training for officers directly involved with forest operations.

9.35 During 1989, significant concern from within the Department was expressed regarding the level of expertise available among forest officers resulting from the absence of appropriate training and a high staff turnover. As a result, the Director-General, at the time, authorised a complete review of training needs.

9.36 The departmental review team examined the operation and structure of the Associate Diploma of Applied Science in Resource Management which is the main accredited training program for departmental technical staff. The course was found to be inefficient and cumbersome and recommendations were proposed to replace the existing course with a new course structure which would promote multi-skilling in accordance with the Government's Structural Efficiency Principles and with the aim of assisting the further integration of the Department.

9.37 The Department has taken significant action to revise the Associate Diploma course and implement a Professional Development Planning process aimed at identifying staff training and development requirements. However, the following deficiencies were identified in relation to the training and development of departmental field officers:

- ▶ The effectiveness of the initiatives aimed at addressing the problems identified in 1989 had not been assessed. This would seem particularly important in the light of more recent staff losses through the Government's 1992 Enhanced Resignation Package;
- ▶ A monitoring committee to oversee the curriculum and course content of the Associate Diploma and other professional development activities for forest officers had not been established;
- ▶ The effectiveness of training courses had not been evaluated; and
- ▶ The Professional Development Planning process had not been given a high priority in some regions and as such had at times been deferred.

OCCUPATIONAL HEALTH AND SAFETY

9.38 The logging and sawmilling sectors of the timber industry have long been considered high risk areas for work-related injuries and deaths. This is reflected in the relatively high WorkCover levy rate of 7 per cent in the logging and sawmilling industries as compared with the average 3 per cent across other industries in Victoria. Between September 1985 and June 1992, **compensation payments to sawmill workers and forest operators amounted to \$11.7 million and \$6.8 million, respectively.**

9.39 The Strategy states that there is a need for improved attitudes in the industry towards health and safety conditions in the workplace. The occupational health and safety of workers in forestry and associated forest products industries were identified as a priority.

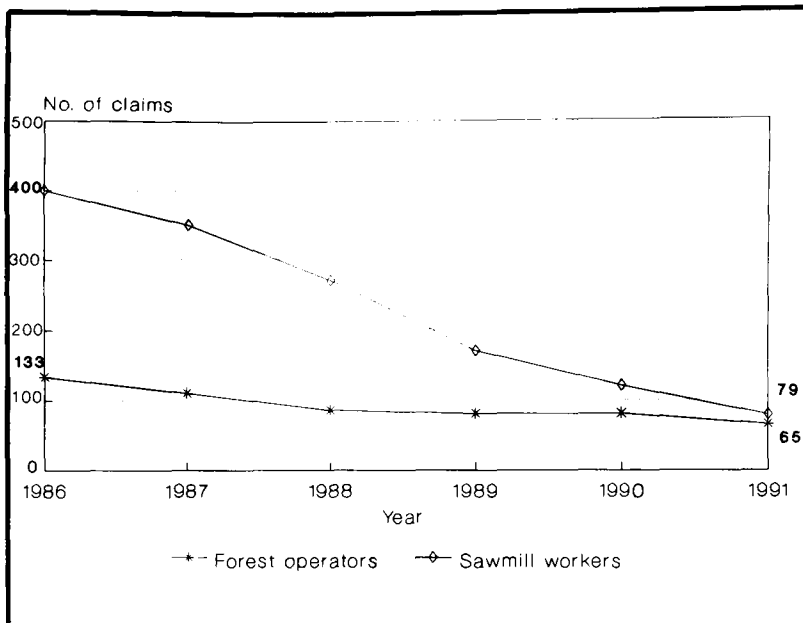
9.40 The Department has demonstrated its commitment to improving safety in the industry through:

- ▶ the inclusion of a guideline in the Code of Forest Practices for Timber Production stating that "*timber harvesting operations must be conducted with relevant occupational health and safety standards*";
- ▶ training departmental officers in the responsibilities of the Department under the *Occupational Health and Safety Act 1985* and the application of the former Department of Labour's 1990 Code of Practice for Safety in Forest Operations;
- ▶ issuing licences to forest operators only after proof of competency for the work being undertaken;
- ▶ including occupational health and safety-related requirements as a condition of the forest produce licence;
- ▶ bringing any unsafe practices observed in the field to the attention of licensed forest operators;
- ▶ actively encouraging the Victorian Forest Industries Training Board to develop an occupational health and safety course for forest operators; and
- ▶ including an additional condition in the Forest Operators Licence from September 1992 for the completion of an occupational health and safety course.

9.41 From 1 July 1993, every person operating one of the nominated forest harvesting machines in areas of State Forest will be legally required to hold a Certificate of Competency with an appropriate endorsement for each machine operated. As such, forest machine operators will be required to attain formal accreditation before this date.

9.42 The actions taken by the Department and the former Department of Labour have improved occupational health and safety in the timber industry. This improvement is reflected in Table 9A which has been prepared on the basis of statistics provided by the former Occupational Health and Safety Authority, and shows the marked fall in WorkCover claims in the period 1986 to 1991 (claims by sawmill workers declined from 400 to 79 claims and by forest operators from 133 to 65 claims).

**TABLE 9A
WORKCOVER CLAIMS**



PART 10

Management and Co-ordination

OVERVIEW

10.1 Since the introduction of the Strategy in 1986, a total of **\$95 million has been allocated to the Department to implement specific Strategy programs**. However, audit found that a comprehensive evaluation of the outcomes of these programs, compared with specific targets set in the Strategy, has not yet been undertaken by the Department.

10.2 The absence of regular evaluation of achievements, together with a lack of continuity at senior levels of the Department, have in audit opinion impeded the efficient and effective implementation of the Strategy.

10.3 To improve the overall management and administration of the Government's policy in relation to the management of timber resources, there is a need for:

- ▶ **greater emphasis to be placed on regular measurement and monitoring of achievements against specific objectives and targets;**
- ▶ **improved integration of specialist staff and functions within the Department;** and
- ▶ **greater integration of the significant number of information systems** established by the Department and more effective utilisation of the systems for planning, reporting and decision-making purposes.

FUNDING ARRANGEMENTS

10.4 Responsibility for the implementation of the Strategy did not create a new field of work for the Department but rather determined the manner and direction its work should take within existing programs. One of the major programs of the Department relates to Land Resource Management which involves all work conducted on Victorian land - public and private. The implementation of the Strategy has been an important aspect of this program. Because the Strategy detailed new initiatives for planning and managing the State's forests and plantations, special funding was provided to the Department to implement these initiatives.

10.5 Table 10A, details the specific Strategy projects established by the Department, together with **total funds allocated** between 1986-87 and 1991-92.

TABLE 10A
TIMBER INDUSTRY STRATEGY PROJECTS
(\$'000)

<i>Project name</i>	<i>Total funding, 1986-87 to 1991-92</i>
Plantation Establishment and Maintenance	18 999
Evaluation of Clearfelling Practices	9 652
Land Purchase for Plantation Establishment	7 529
Hardwood Extraction Roding	6 676
Hardwood Reforestation	6 137
Development of Code of Forest Practices	5 780
Softwood Extraction Roding	4 464
Implementation of Long-Term Sustainable Yield	4 316
Value Adding Utilisation System	4 181
Resource Assessment	4 162
Forest Management Area Plans	3 896
Plantation Sharefarming	2 819
Upgrading Hardwood Supervision in Field	1 858
VicFlora Strategy Development and Implementation	1 564
General Implementation	1 480
Timber Industry Training	1 474
Development and Implementation of Commercial Accounting	1 414
Supply of Additional Softwood Logs to Industry	1 212
Seed Collection	978
Community Awareness Programs	975
Softwood Later Age Fertilisation	940
Review of Royalty Equation System	928
Improved Utilisation Research	924
Establishment of Timber Industry Council	642
Plantation Impact Study	635
Agroforestry	549
Biological Assessment and Planning	463
Evaluation of Industry Proposals	311
Farm Forestry	150
Advisory Committees	90
Development of Log Licence Conditions	75
Total Strategy funding	95 273

10.6 As time has passed, the Strategy has become an integral part of ongoing forest management by the Department and as such is increasingly supported through the Department's annual base funding allocations.

STRUCTURE AND CORPORATE FOCUS

Administrative arrangements and organisational structure

10.7 In 1983, the Department of Crown Lands and Survey, Forests Commission and certain functions of the former Ministry of Conservation were amalgamated. Since that time, changes in administrative arrangements have included the following:

- ▶ in 1985, the Division of Survey and Mapping and functions related to commercial fisheries were transferred to other areas of the public sector;
- ▶ in 1990, the Department of Conservation and Environment was created through an amalgamation with the Department of Water Resources and most of the Heritage and Environment Divisions of the Ministry of Planning and Environment;
- ▶ in 1991, the Land Conservation Council and Environment Protection Authority were incorporated within the Department;
- ▶ in early 1992, the water resources functions were transferred back to a separate Department of Water Resources; and
- ▶ in October 1992, with the change of government, the Department of Conservation and Natural Resources was created with responsibilities for conservation, natural resources, water and alpine resorts.

10.8 In addition to these changes, since 1986 the Minister responsible for the Department has changed on 5 occasions and the Department has been headed by 4 Directors-General.

10.9 During 1990, the Department commenced a process of organisational restructure which is yet to be finalised. The restructuring process has resulted in a large number of acting positions at senior management levels of the Department and a changing organisational structure. Retirements and acceptance by departmental officers of resignation packages have resulted in the loss of a number of experienced staff. A number of matters relating to the management of this restructure were raised in the Auditor-General's *Report on Ministerial Portfolios, May 1992*.

10.10 The first departmental Corporate Plan covering the 1990-1993 planning period was developed by the Department in 1990. However, as a result of the various changes within the Department, the Plan quickly became obsolete and has been under review since early 1992.

10.11 The absence of a Corporate Plan, together with the numerous changes which have occurred within the Department in recent years, have impeded the efficient and effective implementation of the Strategy. In particular, this situation has contributed to:

- ▶ poor communication of corporate priorities to departmental staff;
- ▶ lack of a clear structure in terms of goals, performance measurement and accountability;
- ▶ inadequate emphasis on outcomes and effectiveness;
- ▶ poor integration and co-ordination of various specialist functions within the Department; and
- ▶ insufficient interpretation and definition by senior management of certain aspects of the Strategy, contributing to inconsistencies and disagreement between units.

Integration of functions within the Department

10.12 The purpose of amalgamating a number of agencies in 1983 was to create an integrated land management agency which would develop multi-skilled teams and produce a more balanced approach to public land use management and decision-making.

10.13 The Resource Assessment Commission reported in March 1992 that such an integrated conservation and land management agency is better able to adapt to continuing changes in community values and technology.

10.14 While integration of the various functions of the Department has occurred to some extent at a regional level, **audit observation and discussion with personnel, both within and external to the Department, indicated that the Department is still far from functioning as a fully integrated organisation.** Substantial scope exists for a more co-operative and co-ordinated approach to forest management between some Head Office branches.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department believes that, because of its integrated nature, it has been able to ensure very comprehensive consideration of all issues related to timber harvesting from the State's forests, and in turn has allowed the major changes established by the Strategy to be implemented effectively.

MONITORING AND REPORTING

10.15 In 1986, when Strategy projects were first established, individual project managers were identified in the Department to progressively monitor expenditure and assess performance against Strategy targets. However, audit observed that, since that time, departmental reporting processes have not provided an adequate accountability framework to assist senior management in effectively undertaking this important monitoring role.

10.16 For example, expenditure on each Strategy project is not available within the Department's current accounting systems. This factor, together with the difficulty in separating Strategy-related activities from the ongoing forest activities of the Department, has prevented the quantification and reporting of total Strategy expenditure or expenditure on individual projects.

10.17 The final chapter of the Strategy details the impact and trends expected to result from the implementation of the initiatives and actions proposed. In audit opinion, these anticipated outcomes provide the Department with a suitable framework against which performance should have been regularly measured and monitored. However, **audit found that in the 6 years since the Strategy's adoption, the Department has not undertaken a comprehensive review of achievements or progress towards these expected outcomes or against specific Strategy targets.**

10.18 The performance evaluation procedures of the Department have, to date, been limited to:

- ▶ Statements, prepared annually by regional offices which contain targets to be achieved by the region during the following year. Audit found that the statements varied in quality and usefulness. In addition, an evaluation of achievements against the targets was not generally undertaken;
- ▶ A system initiated by the Department in October 1987 whereby each region or head office branch submitted monthly reports detailing any significant achievements, for inclusion in a departmental publication. However, the system was finally discontinued in early 1989; and
- ▶ The Report of Operations in the Department's Annual Reports which include details of the major initiatives, activities and outcomes for the year. A review of recent Annual Reports indicated that statements with respect to the progress of some Strategy initiatives such as research and value adding were included.

10.19 In the absence of a comprehensive measurement of achievements in forest management areas, **senior management is not in a position to ensure any necessary changes are made in systems and procedures to achieve effective program delivery, to provide accountability to Parliament, or to enable suitable input to future government policy development.**

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

Once elements of the Strategy were introduced they became a part of the Department's overall forestry programs. Regular monitoring of progress and expenditure was incorporated into the normal review process for these programs.

Strategy committees

10.20 A range of management committees and working groups was created by the Department to oversee the implementation of particular aspects of the Strategy. One such committee, the Timber Industry Strategy Co-ordinating Committee:

- ▶ provided the opportunity for regional input to departmental policy and decision-making with a view to ensuring its relevance and assessing its impact in the regions;
- ▶ assisted in ensuring that the Strategy projects had a practical orientation;
- ▶ developed training programs and technical guidelines; and
- ▶ facilitated communication throughout the Department and provided a constructive forum for identifying and discussing problems and developing action plans for their resolution.

10.21 Audit found that numerous changes occurred in the Committee's membership from the latter part of 1989, meetings and advice to senior management became less frequent, and eventually Committee activity ceased. At the Committee's last meeting in April 1991, it was agreed that its future would be further discussed. However, the Committee has not met since that time.

10.22 While the Committee provided a useful role in the early years of the Strategy's implementation, audit found that its important ongoing monitoring function had not been fulfilled. The Committee was abandoned despite the continuing need to regularly monitor the effectiveness of the Strategy and to communicate Strategy policy throughout the organisation.

10.23 A March 1990 list of consultative mechanisms established to implement the Strategy detailed a number of other committees and working groups. A review of the operation of these bodies indicated that while many continue to meet on an ongoing basis, others have not met for some time or meet on an ad hoc basis. **A review of the committees and working groups needs to be undertaken to assess their continuing relevance to the current forestry activities** of the Department and to provide them with updated directions and focus, where appropriate.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

A Forest Sub-Program Strategy and Policy Advisory Group has been established in the Department. This Group will provide any ongoing co-ordination of Strategy initiatives which is required.

INFORMATION SYSTEMS

10.24 The Department has established a large variety of databases and information systems to assist in the forest management function. However, a number of matters need to be addressed by the Department to ensure that the utilisation and usefulness of these systems is optimised, namely:

- ▶ the systems have been developed independently and as such are not fully integrated;
- ▶ in some cases, the facilities are not fully utilised for planning and decision-making purposes;
- ▶ information technology is not widely accessed by regional staff and many regions continue to develop and maintain manual files for storage of information;
- ▶ there has been a limited amount of training provided to staff in the use of the systems, particularly at regional offices; and
- ▶ limited specialist assistance has been available to regional staff from head office specialist computer personnel.

10.25 In February 1992, the Department established a working group to review the linkages between existing resource information systems and planning tools and to make recommendations for the development of an advanced system for native forest management. The working group designed a framework for the continued development of integrated forest resource information systems within the Department.

10.26 It is pleasing that the Department envisages the advanced system will enable rationalisation and integration of existing systems and assist in improving the efficiency and effectiveness of forest management in the State.

- *RESPONSE provided by Acting Secretary, Department of Conservation and Natural Resources*

The Department has recently taken steps to ensure its forest resource and management systems are properly integrated and provide an improved basis for forest management.