

CHAPTER 1: INTRODUCTION

BACKGROUND

The East Gippsland region has been one of the key centres of the Australian forest management debate for the past thirty years. Eighty seven per cent of land in East Gippsland is publicly owned. The region exhibits extensive and unique forest resources in a nation and world where forest resources have become increasingly scarce. This relative scarcity has raised awareness of conservation values of the forest, prompting the wider community to contribute to the debate on the management of East Gippsland's public forests. How the forest resource is used for timber production impacts upon all other uses for which the forest has value.

There have been many inquiries into various aspects of the forests of East Gippsland during the last two decades. A heavy emphasis has been placed on scientific evidence and submissions from industry, conservation, community and other interest groups. The Australia wide Forest and Timber Inquiry in 1992 resulted in the National Forest Policy Statement which applies to all forest regions in Australia. The main outcome of the National Forest Policy Statement is the implementation of Regional Forest Agreements between the Commonwealth Government and the relevant State Governments on all aspects of each region's forest management. Within the main framework of ecologically sustainable forest management, efficiency in forest resource use is one of the main goals of the National Forest Policy Statement.

East Gippsland is the first region in Australia to have completed the Regional Forest Agreement process. The Comprehensive Regional Assessment carried out prior to the signing of the Regional Forest Agreement covered many aspects of the forests and people of East Gippsland. Economic theory was used to evaluate the costs and benefits of

particular projects, to describe the utilisation of timber products and to complete a socio-economic evaluation of policy for East Gippsland forests. Economic principles have been used in the past to comment on the efficiency of forestry practice but the outcomes have been to recommend wide sweeping changes to forest management without suggestion as to how these changes might be implemented. Consequently, many policy recommendations resulting from economic studies have been ignored or regarded as too difficult to implement.

AIM

To determine whether the native forest resources of the East Gippsland region are being used in a socially optimal manner for timber production.

RESEARCH APPROACH

To achieve this aim, the study is approached in three stages:

1. Description of how forests are currently managed and utilised for timber production in the East Gippsland region.
2. Explanation of the relevant economic theory which suggests socially optimal solutions to forest resource use problems.
3. Application of the optimal solutions to the particular case of East Gippsland, and suggestion of pragmatic policy options.

METHODOLOGY

A single case study of the East Gippsland region is the main research method used.

The case study approach was chosen because it gives more holistic approach to problem solving than would have been possible using other methods and given the research resources available. The case includes the historical, political and scientific context within

which the timber industry operates, giving a balanced approach both to the microeconomic analysis and the policy recommendation. In addition, there are currently comprehensive quantitative studies being carried out by the Australian Bureau of Agricultural and Research Economics (ABARE) using general equilibrium modelling and linear programming. The case study approach avoids duplication of this work.

The level of detail required to understand the complexity of forest resource use issues limited this study to one region of Australia. The East Gippsland region was chosen as the subject for the case because of its national political prominence and its representation of other native public forest areas in Australia. The selection of East Gippsland as the first region in Australia to undergo the Regional Forest Agreement process is evidence of its political significance. East Gippsland is representative of other regions because of the similarities to forests found in Tasmania and Western Australia's South-West, and because it carries a wide range of forest values.

The case study is augmented with the application of microeconomic theory to problems which are pertinent to East Gippsland. A simple simulation using forest inventory data is also included to give some support to the theoretical conclusions.

CONTENT SUMMARY

Chapter 2 describes the forest resource and gives historical context to forest management in East Gippsland. Industry and community profiles define the regional characteristics of East Gippsland. Chapter 3 specifically outlines the timber production process and the institutional setting within which East Gippsland industries operate. Economics as it applies specifically to forest management is the topic of Chapter 4 providing a microeconomic framework for making decisions about allocation of forest resources. Chapter 5 applies the theory from chapter 4 to the particular institutional arrangements found in East Gippsland. Preliminary recommendations are made about improving the efficiency of forest management operations. A simple simulation is carried out using forest inventory data collected for East Gippsland to support the theoretical conclusion. Chapter 6

applies the theory of joint production to the integrated harvesting process. The specific features of integrated harvesting and utilisation in East Gippsland are then analysed in Chapter 7, drawing on key aspects of joint production theory and industry operation as outlined in chapter 3. Chapter 8 reviews the impact of previous economic studies on public policy before making clear policy recommendations based on the analysis completed in this study. Guidelines for policy implementation are provided along with consideration of the possible impact of implementing such policies. Finally, Chapter 9 concludes by summarising the results, recognising the limitations of this study and suggesting areas for further research.

CHAPTER 2: THE FORESTS OF EAST GIPPSLAND

INTRODUCTION

The East Gippsland region is one of the remaining heavily forested areas in Australia and is the birthplace of the controversy over the export of hardwood woodchips. The region is isolated and sparsely populated but contributes significantly to Victoria's and Australia's timber supply. The forests of East Gippsland are also highly valued for recreation, conservation and their unique flora and fauna. This combined with the high proportion of public land ownership has cultivated the controversy over use of the East Gippsland native forests for commercial timber production. An understanding of the particular features of the East Gippsland region and its forests is crucial to the analysis which follows.

Chapter two will define the geographic and socio-economic features of East Gippsland and explain the background to the current state of the timber industry.

Geographic and land tenure details will be outlined along with some biological detail of forest types existing in the area. The history of the East Gippsland region gives important background to current use of the forests while the industries and community groups reinforce the significance of the debate over forest resource use.

THE REGION

Location

The East Gippsland region covers the eastern most tip of the State of Victoria in the south east of Australia. The region is located on the edge of the Great Dividing Range and consists of mountainous terrain which is mostly covered by Australian native forest. Map 1

gives the location of East Gippsland with respect to Australia and shows that much of the region is at least 400m above sea level with part exceeding 1000m.¹

East Gippsland is sparsely populated and linked by small towns which have limited infrastructure. The most heavily populated towns of East Gippsland are situated along the Princes Highway while the smaller towns exist in relatively isolated and undeveloped areas. Map 2 shows the East Gippsland Forest Management Area (FMA) and its relationship to the State of Victoria.² The main towns, roads and rivers are marked along with land tenure details and forest management zones.

Orbost is the main population centre of the East Gippsland FMA with a significant proportion of the 2515 population being supported by the timber industry. Other towns (and populations) include: Buchan (220), Nowa Nowa (203), Cann River (336), Mallacoota (961), Marlo (380), Lake Tyers (335).³

Land Use and Tenure

The definition to be used for the purpose of this study is that of the East Gippsland Forest Management Area (FMA) as defined in the Department of Natural Resources and Environment's East Gippsland Forest Management Plan. Map 2 indicates the boundaries of the East Gippsland FMA and the various land uses. The East Gippsland FMA is bounded by the Tambo FMA to the west and the Eden Native Forest Management Area in New South Wales to the north.

Eighty-seven per cent of the land in the East Gippsland FMA is publicly owned. Map 2 gives detail of land tenure, land use and forest management zones as follows:⁴

¹ Colin Green and Tony Milne (Eds) *The Australian Atlas Resource Units of Australia and The World* Rigby Philip, Melbourne 1979 p. 8

² Comprehensive Regional Assessment East Gippsland *Resource and Economics Report* Joint Commonwealth and Victorian Regional Forest Agreement (RFA) Steering Committee July 1996 Map 1 Land Tenure and State Forest Management Zones.

³ Australian Bureau of Statistics *Census Population by Urban Localities: Gippsland 30 June 1976 to 1991*. - 1991 figures

⁴ Department of Natural Resources and Environment *Forest Management Plan East Gippsland Forest Management Area* Conservation and Natural Resources December 1995.

Table 2.1 Area Statement of Land Categories within the East Gippsland Forest Management Area.

	Area (ha)	% of all land	% of public land	% of State forest
STATE FOREST				
Special Protection Zone	164 300	14	16	26
Special Management Zone	37 900	3	4	6
General Management Zone	434 500	36	41	68
Timber production	(332 600)	(28)	(32)	(52)
Other Uses	(101 900)	(8)	(9)	(16)
State forest sub-total	636 700	53	61	100
OTHER PUBLIC LAND				
Conservation Reserves	409 500	34	39	
Other public land	4 900	<1	<1	
Public land sub-total	1 051 100	87	100	
PRIVATE LAND	156 900	13		
Total for East Gippsland	1 208 000	100		

The State forest land use category provides for:

- water supply, catchment and stream protection;
- hardwood timber production;
- conservation of flora and fauna;
- recreation;
- forest produce other than timber; and
- mineral exploration and mining.⁵

⁵ A.J. Lau, P.D. Pearson, and R.J. McKimm, *Forecast of Sustainable Yield for Grade C and Better Sawlogs in the East Gippsland Forest Management Area*. Dept of Conservation and Environment Native Forest Management Branch April 1992 p. 2



Projection: Bonne
East from Greenwich

RURAL LAND USE	METROPOLITAN LAND USE	CBD LAND USE	POPULATION	HYPSOMETRIC TINTS (in metres)
Cattle	Central business district	Residential	Over 200	World maps Over 6000
Sheep	Mainly residential, commercial and retail	Retail and commercial	100-200	Regional maps Over 2000
Other livestock	Industrial	Industrial	50-100	1500-2000
Grains	Parkland	Warehousing and wholesale	25-50	1000-1500
Irrigated areas	Rural and open space	Offices	12-25	400-1000
Other commercial crops	Airport	Public and cultural	6-12	200-400
Subsistence crops	Special purpose	Parks, recreation and open space	1-6	0-200
Urban areas	Other	Service and transport	Under 1	Below sea level
Forests	City and town symbols	Special purpose		0-200
Non agricultural land	Over 100 000	Other		200-2000
Aboriginal reserves	50 000-100 000			2000-4000
	20 000-50 000			Below 4000
	10 000-20 000			
	5 000-10 000			
	1 000-5 000			
	Under 1 000			

The size of the city and town symbols may vary according to the scale of the maps.

For pages 94, 96 & 97 the sea depths differ slightly from this legend.

East Gippsland Comprehensive Regional Assessments LAND TENURE AND STATE FOREST MANAGEMENT ZONES

LEGEND



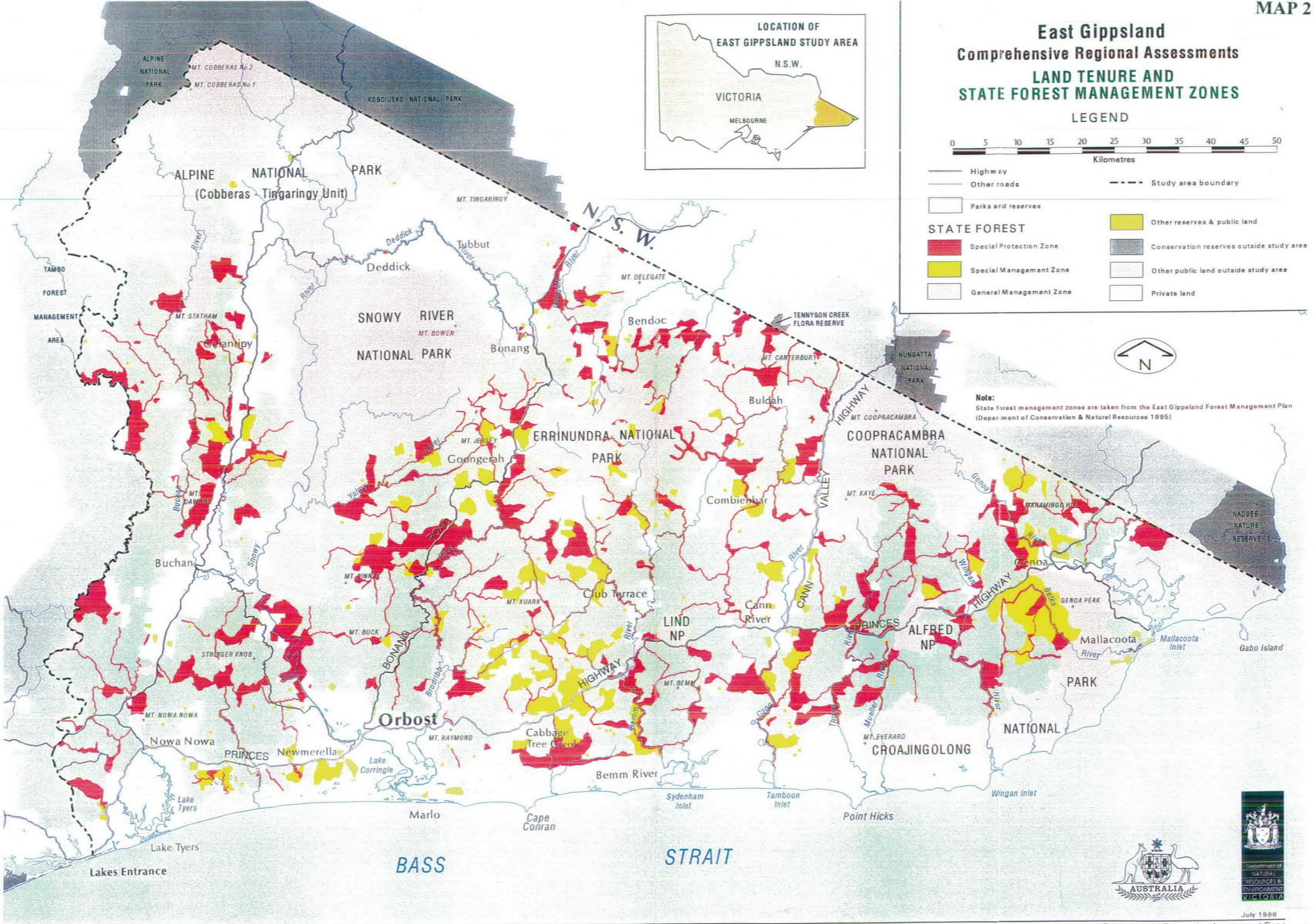
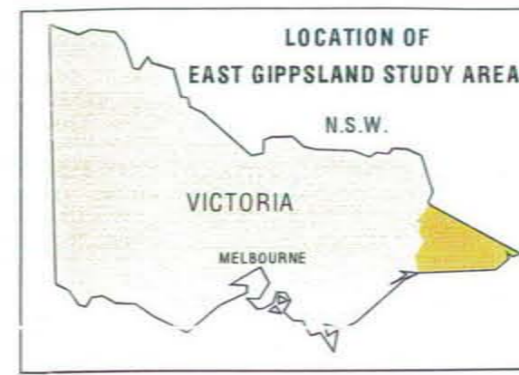
- Highway
- Other roads
- Study area boundary
- Parks and reserves
- Other reserves & public land
- Special Protection Zone
- Conservation reserves outside study area
- Special Management Zone
- Other public land outside study area
- General Management Zone
- Private land

STATE FOREST

- Special Protection Zone
- Special Management Zone
- General Management Zone



Note:
State forest management zones are taken from the East Gippsland Forest Management Plan (Department of Conservation & Natural Resources 1995)



Timber harvesting is excluded in the Special Protection Zone (SPZ) which is managed solely for conservation. It forms a network designed to link and complement conservation reserves. The Special Management Zone (SMZ) is managed to conserve specific features, while catering for timber production under certain conditions. The General Management Zone (GMZ) is managed for a range of uses, but timber production will have a high priority. Soil and water conservation, maintenance of native forest cover and wildfire suppression are of high priorities in all zones.⁶

National parks are crown land managed under the *National Parks Act 1975* and reserve areas of land having national significance.⁷ Management of East Gippsland's national parks has now been delegated to Parks Victoria, a newly established corporation owned by the State of Victoria. A news release dated December 1996 outlined the jurisdiction of Parks Victoria: "The new organisation will manage 33 National Parks, three Wilderness Parks, 34 State Parks, 85 Regional Parks, 3000 Crown Reserves, key heritage properties, sanctuaries, gardens and Port Phillip and Westernport Bays."⁸ National parks are available for public use which is mostly restricted to nature based recreation activities such as walking.

The gross available area for harvesting is the area contained within the GMZ and SMZ, extending over 472 400 ha. The GMZ totals 434 500 ha and is divided into two subzones; the Timber Production subzone which has an estimated net productive area of 332 600 ha and the Other Uses subzone which comprises 101 900 ha and is unavailable or excluded from harvesting due to unsuitable slope or soils, or is unproductive forest (generally a mature height of less than 28 metres). Approximately 12 000 ha of the SMZ (which totals 37 900 ha) is estimated to be available for harvesting. Therefore, the net productive area available for timber harvesting is approximately 344 700 ha.⁹

⁶ Department of Conservation and Natural Resources *Proposed Forest Management Plan East Gippsland Forest Management Area* Conservation and Natural Resources February 1995 p. 5.

⁷ Resource Assessment Commission Forest and Timber Inquiry Final Report Volume 2B March 1992 p. V28

⁸ Office of the Minister for Conservation and Land Management (Victoria) *News Release - New Organisation to Manage Victoria's Parks* 12 December 1996

⁹ Comprehensive Regional Assessment East Gippsland op. cit. p. 7

The FMA is divided into 103 forest management blocks, each averaging about 10 000 ha in size. These are grouped into the four Forest Districts of the FMA - Nowa Nowa, Orbost, Cann River and Bendoc. Blocks are sub-divided into compartments with an area of some 300 to 700 hectares. Compartments are further divided into coupes, the smallest management unit, for the purpose of planning for timber harvesting. Coupes have a maximum area of 40 hectares, the boundaries of which are determined by natural features, for example ridges and drainage lines.¹⁰

FOREST HISTORY

East Gippsland's history from European Settlement does not differ widely from other parts of Australia where clearing of land, a gold rush and wildfires all took place. The first indication of European impact on the forests of East Gippsland was in 1838-1839¹¹ when country in the Buchan, Tubbut and Gelantipy areas was taken up by graziers moving south into Victoria from the Monaro tablelands of southern New South Wales.¹² The graziers were the main occupants of the FMA until gold was discovered in the early to mid 1850s which caused a minor gold rush and the development of a small gold mining community. The significance of gold rush the region was recorded by Wells: "The mining industry had expanded to such an extent that a mining registrar was appointed in 1867. The first forest industries became established at this time with pitsawing of timber to supply local mines and building requirements."¹³ The township of Orbost was proclaimed in 1890 by which time sawmills had been established to produce sawn timber.¹⁴

At the turn of the century, there was concern about the exploitation of forest resources and waste of what had been an abundant resource.¹⁵ In 1907 a Forest Act set up the Department of State Forests under a Minister of Forests. This was partly to control exploitation, partly

¹⁰ *ibid.* p. 8

¹¹ Denis O'Bryan, *Pioneering East Gippsland* Collingwood Victoria 1983 p. 8

¹² Department of Conservation and Natural Resources *Statement of Resources, Uses and Values East Gippsland Forest Management Area* Department of Conservation and Natural Resources January 1993 p. 5

¹³ John Wells, *Gippsland - People, A Place and Their Past* Landmark Press Drouin 1986 p. 114

¹⁴ Department of Conservation and Natural Resources *Statement of Resources, Uses and Values East Gippsland Forest Management Area* *op. cit.* p. 6

¹⁵ Wells, *op. cit.* p. 115

to collect royalties and (later) partly to provide employment for returned servicemen through afforestation programs.¹⁶ Public land was set aside and several national parks were declared by 1925. During the same period of time, the railway had been extended to Orbost, opening East Gippsland to the rest of Victoria for the production of railway sleepers and other sawn timber.¹⁷

The history of the East Gippsland region changed direction after the 1939 Black Friday bushfires.¹⁸ These fires destroyed thousands of hectares of forests throughout the rest of Victoria, leaving the East Gippsland forests relatively unscathed.¹⁹ The forests of East Gippsland were then called upon to meet the demands of the post war housing boom.²⁰ From this time until the early 1980s, the timber industry prospered and contributed significantly to Victoria's timber output and to East Gippsland's economic development.²¹ The end uses for timber during this period required logging for high quality sawlogs, the abundance of which has diminished over time. The relative scarcity of high sawlog productive forest has made forest management more and more difficult over time. In the late 1960s, the export of hardwood woodchips was seen as a way of accessing lower sawlog productive forest without wasting forest resources unsuitable for sawing.

Controversy over the use of public forests for woodchipping in Australia dates back to the early 1970s. Of particular relevance to East Gippsland was the establishment of an export woodchip mill at Eden in southern New South Wales by Harris-Daishowa (Australia) Pty Ltd in 1970.²² The very first shipment of woodchips from this mill to Japan caused considerable concern for the environmental consequences of woodchipping in local forests. This concern spread to other areas of Australia where fears grew that large areas of forests would be clearfelled for export woodchips.²³ In 1977, the *Woodchips and the Environment*

¹⁶ *ibid.*

¹⁷ Department of Conservation and Natural Resources *Statement of Resources, Uses and Values East Gippsland Forest Management Area* op. cit. p. 6

¹⁸ *ibid.*

¹⁹ Wells, op. cit. p. 116

²⁰ Department of Conservation and Natural Resources *Statement of Resources, Uses and Values East Gippsland Forest Management Area* op. cit. p. 7

²¹ O'Bryan, op. cit. p. 58

²² Senate Standing Committee on Science and the Environment *Woodchips and the Environment* Parliamentary Paper no 79/1977 Canberra 1977 p. 384

²³ *ibid.* p. 4

report from the Senate Standing Committee on Science and the Environment recommended, among other things, that there be no further issue of export woodchip licences to new projects until such time as the environmental problems outlined in the report were resolved. The committee also recommended that with the exception of woodchips sourced from sawmill waste, that there be no increase in the volume of export woodchips or renewal of existing licences until it could be shown that environmental protection and regeneration measures were planned.²⁴

In 1986 after an extensive review of the East Gippsland Area, Victoria's Land Conservation Council recommended to the Victorian Minister for Planning and Environment that several new reserves be set aside to incorporate the full range of forest values represented in East Gippsland.²⁵ At the same time, Victoria's Timber Industry Strategy was implemented, lowering timber harvest levels to a long term sustainable level and conducting a study into the environmental effects of integrated harvesting. In 1990, the Victorian Minister for Conservation and Environment announced that integrated harvesting would be allowed in all Victorian forests.²⁶ The operation of fully integrated harvesting in East Gippsland has to date been limited by the lack of markets for lower grade timber material (residual log). The total area to be harvested was the focus of public controversy in early 1990. A study into the feasibility of ceasing logging in National Estate Forests in East Gippsland resulted from an agreement between the Commonwealth and Victorian State Government in February 1990. The study entitled *East Gippsland Agreement Study: Analysis of Whether Feasible and Prudent Alternatives exist to the Logging of National Estate Forests in East Gippsland* found that: "Of the 14 possible sources of sawlog supply examined as alternatives to compensate for permanent exclusion of logging from National Estate areas, none are considered to be feasible and prudent."²⁷ Despite the agreement containing \$10 million for forest management and structural adjustment, logging went ahead in the National Estate Areas.

²⁴ *ibid.* p. 16

²⁵ Land Conservation Council *East Gippsland Area Review Final Recommendations* Land Conservation Council, Melbourne, December 1986 p. 7

²⁶ Department of Conservation and Natural Resources *Statement of Resources, Uses and Values East Gippsland Forest Management Area* *op. cit.* p. 143

²⁷ Department of Conservation and Environment *East Gippsland Agreement Study: Analysis of Whether Feasible and Prudent Alternatives exist to the Logging of National Estate Forests in East Gippsland* September 1990 p. 2.

Australia's commitment to international agreements on conservation and sustainable use of forests sparked the development of the National Forest Policy Statement (NFPS) in 1992. The Commonwealth Government initiated the NFPS and the Regional Forest Agreement process to which all State Governments will be signatories. A Regional Forest Agreement between the Commonwealth Government and the Victorian Government for the East Gippsland FMA was signed in February 1997. Details of this agreement are outlined in Chapter 3.

THE FORESTS

Classification

The forests of the FMA are dominated by four main vegetation communities: Wet Sclerophyll Forest, Damp Sclerophyll Forest, Dry Sclerophyll Forest and Coastal Sclerophyll Forest. Collectively, these account for over 90% of the State forest area.²⁸ The vegetation communities are used to describe ecological aspects of the forest.

A different classification system is used to describe the timber resource characteristics of the forest. Thirteen forest types are found with the FMA which are determined on the basis of predominant overstory species.²⁹ Of the thirteen forest types, the following are considered to be commercial and are harvested in the East Gippsland FMA: Alpine Ash, Mountain Ash and Shining Gum, Mountain mixed species, Foothill mixed species, Alpine Mixed Species and Coastal Mixed Species. These six forest types are broadly consistent with the four main vegetation communities listed above and therefore cover the majority of the FMA.³⁰ The main timber producing species in the East Gippsland FMA are eucalypts with the predominant overstory species defining the six forest types as follows³¹:

²⁸ *ibid.* p. 50

²⁹ *ibid.* p. 129

³⁰ *ibid.* p. 130

³¹ Department of Conservation and Natural Resources *Hardwood Timber Resources in the East Gippsland Forest Management Area - Areas and volumes report* Resource Assessment Report No. 93/01 June 1993. p.24

Forest Type	Predominant Overstory Species
Alpine Ash	Predominantly <i>Eucalyptus delegatensis</i>
Mountain Ash	Predominantly <i>E. regnans</i>
Shining Gum	Predominantly <i>E. nitens</i>
Mountain Mixed Species	Predominantly <i>E. fastigata</i> , <i>E. obliqua</i> (Messmate), <i>E. cypellocarpa</i> (Mountain Grey Gum), either in pure stands or in mixture. Many other species occur in this forest type including <i>E. viminalis</i> , <i>E. globulus</i> (Blue Gum) and <i>E. rubida</i> .
Foothill Mixed Species	Predominantly <i>E. obliqua</i> (Messmate), <i>E. cypellocarpa</i> (Mountain Grey Gum) and <i>E. viminalis</i> with some or all of <i>E. rubida</i> , <i>E. dives</i> , <i>E. seiberi</i> (Silvertop) and <i>E. radiata</i> .
Coastal Mixed Species	Predominantly <i>E. seiberi</i> (Silvertop) and <i>E. globoidea</i> (White Stringybark) in a mixture with other species.

Forests are also classified by age or maturity:

- Regrowth = 0-60 years of age
- Advanced Regrowth = 61-80 years of age
- Mature = greater than 80 years of age
- Overmature = greater than 80 years of age with evidence of senescing crowns.³²

The age classification system is crucial for planning the harvest of East Gippsland's forests. The nominal rotation age is 80 years for all forest types except Coastal and Alpine Mixed Species where it is 120 years. The minimum harvest age is 65 years for all forest types except Coastal and Alpine Mixed Species where it is 85 years.³³ These rotation lengths are selected by maximising the average growth rate of the forest to produce the highest annual volume of sawlog and are based on a nominal even aged forest.³⁴ The above age classifications would apply to forest types having an 80 year rotation.

³² Comprehensive Regional Assessment East Gippsland op. cit. p. 22

³³ Department of Natural Resources and Environment *Review of Sustainable Yield East Gippsland Forest Management Area* Forests Service Technical Report 96-2 November 1996 p. 29

³⁴ pers. comm. 11/11/96 Bruce Kilgour Department of Natural Resources and Environment.

The rotation/minimum harvest age restrictions mean that forests categorised in the regrowth and possibly advanced regrowth would not be available for harvesting in the current period.

Timber Resource Information

Many decisions which are made about forest management and timber production depend upon the reliability and accuracy of the timber resource information system. In particular, the calculation of sustainable levels of forest use and the consequent volumes which can be harvested each year are determined by the resource information provided.

Timber resource information for East Gippsland is collected and stored in the Hardwood Area Resource Information System (HARIS).³⁵ An appraisal of the method and information used to forecast sawlog growth and yield for East Gippsland was undertaken by Melbourne University in 1996. The appraisal found the overall approach to be conceptually sound but noted that “the source data in HARIS is derived from numerous assessments over the past 30 years, which have been modified and updated to meet current needs. As a result, the accuracy of this data cannot be statistically determined, and consequently, the confidence of the sustainable yield forecast for sawlogs in the East Gippsland Region cannot be determined.”³⁶

The Department of Natural Resources and Environment recognises four reliability levels for its assessment data³⁷:

1. Intensive assessment with detailed mapping and field inventory plots.
2. Reconnaissance with detailed mapping supported by field checking and few or no plots.
3. Reconnaissance with broad stand mapping and little or no inventory plots.
4. Desk study with estimates based on experience.

³⁵ Comprehensive Regional Assessment East Gippsland op. cit. p. 26

³⁶ *ibid.* p. 32

³⁷ *ibid.* Appendix A: p. 12

Only 21% of the gross available area is classed in reliability class 1, 19% in class 2, 36% in class 3, and 24% in class 4.³⁸

A low level of reliability of forest resource information limits the ability to accurately forecast timber growth and sustainable yield. In response to the Victorian Coalition's Forest Policy released before the 1992 State Election, the Department has initiated a Statewide Forest Resource Inventory (SFRI), designed to give high quality spatial and textural data in the order of +/- 15% for regional forecasts of timber yields. This will be linked with an Integrated Forest Planning System (IFPS) to replace the HARIS database and Sustainable Yield Spread Sheet (SYSS) modelling system.³⁹ Current estimates suggest that the SFRI program in East Gippsland may not be implemented until after the year 2000.⁴⁰

Composition

The composition and productivity estimates of areas available for timber harvesting depend upon the accuracy of forest resource information. However, accurate information takes time and is costly to collect. The information collected to date gives some indication of the composition of East Gippsland's forests at this point in time.

The gross productive area of forest suitable for timber production is the area of State forest remaining after forest of low inherent productivity on account of soil, topographic and climatic characteristics has been excluded. The net productive area is the forest available and suitable for timber harvesting after areas have been excluded as a result of management prescriptions adopted for the protection of specific forest resources and values. These prescriptions ensure that logging will be excluded from steep slopes, streamside reserves, rainforest buffers, wildlife corridors, and sites of floral, faunal, historical and archaeological significance.⁴¹

³⁸ *ibid.* Appendix A: p. 13

³⁹ *ibid.* p. 33

⁴⁰ *ibid.* Appendix A: p. 15

⁴¹ Lau, *op. cit.* p. 2

Table 2.2 shows the land (ha) composition of the net productive area of the East Gippsland FMA in terms of forest types and age classification:⁴²

Table 2.2 Net Productive Area (ha) of forest in East Gippsland by forest type and age classification

Age Classification	Alpine Ash	Mountain Ash and Shining Gum	Mountain Mixed Species	Foothill Mixed Species	Coastal and Alpine Mixed Species	Total	Percentage
Mature/Overmature	767	797	47338	101924	74722	225548	65.4
Advanced Regrowth	52	30	594	1210	0	1886	0.6
Regrowth	3768	1511	33069	45665	33249	117262	34
Total Area	4587	2338	81001	148799	107971	344696	100
Percentage	1.3	0.7	24	43	31	100	

Foothill Mixed Species forest type is the most extensive, comprising 43% of the net productive area in the region.⁴³ Coastal and Alpine Mixed Species make up another 31% while the Mountain Mixed Species, Mountain Ash and Shining Gum and Alpine Ash make up the remaining 26%. The other seven forest types make up less than one per cent or exist in areas outside the net productive area. The composition shown in Table 2.2 may reflect the overall occurrence of each forest type in the FMA but does not represent the area available for harvesting at this point in time. Taking into account the rotation ages for each forest type, only the Mature/Overmature category and possibly some of the Advanced Regrowth category will be available for harvest in over the next few decades. This limits the possible harvest area to 225548 ha which is 65% of the total net productive area, 35% of the State forest and 18% of the total land area in the East Gippsland FMA.

⁴² Department of Natural Resources and Environment *Review of Sustainable Yield East Gippsland Forest Management Area* op. cit. p. 15

⁴³ *ibid.* p. 15

Due to the small proportion of the advanced regrowth forest and its relatively young age, harvest of mature and overmature forest is likely to occur for approximately the next thirty years.⁴⁴ Such harvest patterns are likely to involve utilisation of old some growth forest that is not protected in the SPZ. The mature/overmature category does not necessarily match the definition of old growth forest used to describe ecological features because criteria used to describe timber values of a forest are different to those used to describe ecological features.

Productivity

The Alpine Ash, Mountain Ash and Shining Gum, and Mountain Mixed Species forest types occur in the high elevation and plateau areas in the north of the region. They generally have a mature stand height greater than 40 m and are the most productive forests in East Gippsland. Foothill Mixed Species and Coastal Mixed Species forest types occupy a broad east-west band through the foothills and coastal plains and are regarded as less productive than the higher elevation forest types.⁴⁵ A more specific measure of productivity is the average growth rates in terms of timber volume per year for each of the species.

⁴⁴ Department of Conservation and Natural Resources *Proposed Forest Management Plan East Gippsland Forest Management Area* op. cit. p. 37

⁴⁵ Comprehensive Regional Assessment East Gippsland op. cit. p. 22

Growth rates for mature and overmature forests are assumed to be zero. Growth rates for regrowth forests calculated over one rotation period are assumed by Department of Natural Resources and Environment to be⁴⁶:

Table 2.3: Growth rates assumed for East Gippsland

Forest Type	Growth Rate
Alpine Ash	2.75 m ³ /ha/year
Mountain Ash and Shining Gum	3.30 m ³ /ha/year
Mountain Mixed Species	2.40 m ³ /ha/year
Foothill Mixed Species	1.80 m ³ /ha/year
Alpine Mixed Species	0.60 m ³ /ha/year
Coastal Mixed Species	0.60 m ³ /ha/year
Thinned Foothill Mixed Species	2.18 m ³ /ha/year

Growth rates are expressed in cubic metres per ha per year of D grade or better sawlogs which gives the average growth in saw log volume of the stand of trees over the rotation period. This is known as mean annual increment (MAI).⁴⁷ The growth data is compiled from a number of sources including forest inventories undertaken in the FMA over the past 40 years and the extensive series of permanent growth plots measured at regular intervals.⁴⁸ The growth rates illustrate that the higher elevation forests yield more timber per hectare making it more attractive to log in these areas. The proportion of regrowth to the total of each species may give some indication of past logging practices and the current state of the resource:

⁴⁶ Department of Natural Resources and Environment *Review of Sustainable Yield East Gippsland Forest Management Area* op. cit. p. 10.

⁴⁷ Lau, op. cit. p. 3

⁴⁸ *ibid.*

Table 2.4 Regrowth forest as a proportion of total net productive area

Forest Type	Regrowth as a proportion of total net productive area
Alpine Ash	83.3%
Mountain Ash and Shining Gum	66%
Mountain Mixed Species	41.6%
Foothill Mixed Species	32%
Alpine and Coastal Mixed Species	31%

The proportions indicate that logging has taken place predominantly in the higher yielding forest types in the past. Some reduction in the volume of mature/overmature stock may have been as a result of fire but most has occurred due to a steady increase in harvesting since the late 1940s.⁴⁹ The total net productive area cannot be increased, leaving a large volume of lower yielding forest for future harvest until the high elevation regrowth matures. This has implications for the timber industry and the types of timber products which it will be able to produce in the short to medium term.

Silviculture

Silviculture is the treatment of forest stands to achieve identified management aims. Treatment can include harvesting, regeneration and tending operations such as thinning and fertilising. Combined, the treatments form a system that can manage the structure, composition and growth of a forest.⁵⁰ Silvicultural activity in the native forests of East Gippsland is limited to harvesting, regeneration and some thinning. This reflects the

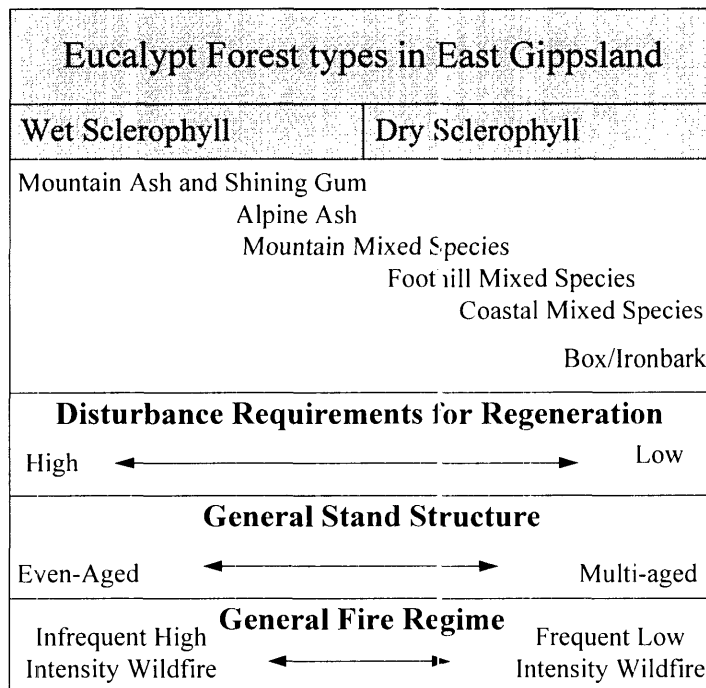
⁴⁹ *ibid.* p. 6

⁵⁰ Comprehensive Regional Assessment East Gippsland *op. cit.* p. 9

ability of the native Australian forest to efficiently self regenerate and a desire to maintain the natural range of species and genetic strains native to East Gippsland.

In general terms, growth of eucalypts is directly related to the availability of sunlight and nutrients. Eucalypts are generally intolerant of competition and will not successfully regenerate unless competition is reduced or eliminated. In nature the conditions necessary for regeneration are created by disturbance to the forest, which releases nutrients and allows sunlight to reach the forest floor. The following chart illustrates how the different forest types require different silvicultural treatment to reflect natural occurrence.⁵¹

Figure 2.1 Eucalypt Forest types in East Gippsland



From the above diagram, it can be seen that the higher elevation forest types (such as mountain ash and shining gum) require a silvicultural system which provides high disturbance, even-aged regeneration and high intensity fire. The lower elevation forests require opposite treatment. Despite this recognition, the uneven-aged stand regeneration

⁵¹ ibid. p. 12

methods have been largely unsuccessful in East Gippsland, causing the even-aged clearfelling and seedtree methods to be used for all forest types.

Clearfelling results in an even-aged forest and is used to regenerate approximately 20-30% of coupes logged in the region in any one year. The seed tree system results in an even-aged stand with scattered mature trees, and is the dominant silvicultural system employed in the region with approximately 70-80% of coupes being regenerated this way.⁵²

Stand management and improvement practises such as thinning and selective removal of mature and overmature trees are being carried out and closely monitored in some areas of the FMA.

FOREST INDUSTRIES

East Gippsland's economic development is still largely based around the timber industry. East Gippsland's timber industry supplies approximately 14% of Victoria's timber (hardwood and softwood).⁵³ East Gippsland's estimated annual sawn timber volume of 134 000 cubic metres accounts for approximately 10% of Australia's hardwood production.⁵⁴ The timber industry estimates that it generates \$55 million in revenue per annum in East Gippsland.⁵⁵ The sawmill survey completed for the Comprehensive Regional Assessment estimates that the sawmilling industry has receipts of \$52.5 million, costs of \$44.4 million and a resulting net value of production of \$8.1 million.⁵⁶ The harvesting and cartage industry has a turnover of about \$35 million.⁵⁷ Non-timber industries such as tourism are also beginning to play a significant economic role in the region with an estimated \$11 million generated from visits to Parks and Reserves in 1995/96.⁵⁸

⁵² *ibid.* p. 15

⁵³ *ibid.* p. 47

⁵⁴ Australian Bureau of Agricultural and Resource Economics *Commodity Statistics Bulletin* 1994 Table 126, p. 127

⁵⁵ Victorian Association of Forest Industries *The Challenge of East Gippsland* (public education pamphlet).

⁵⁶ Comprehensive Regional Assessment East Gippsland *op. cit.* p. 48

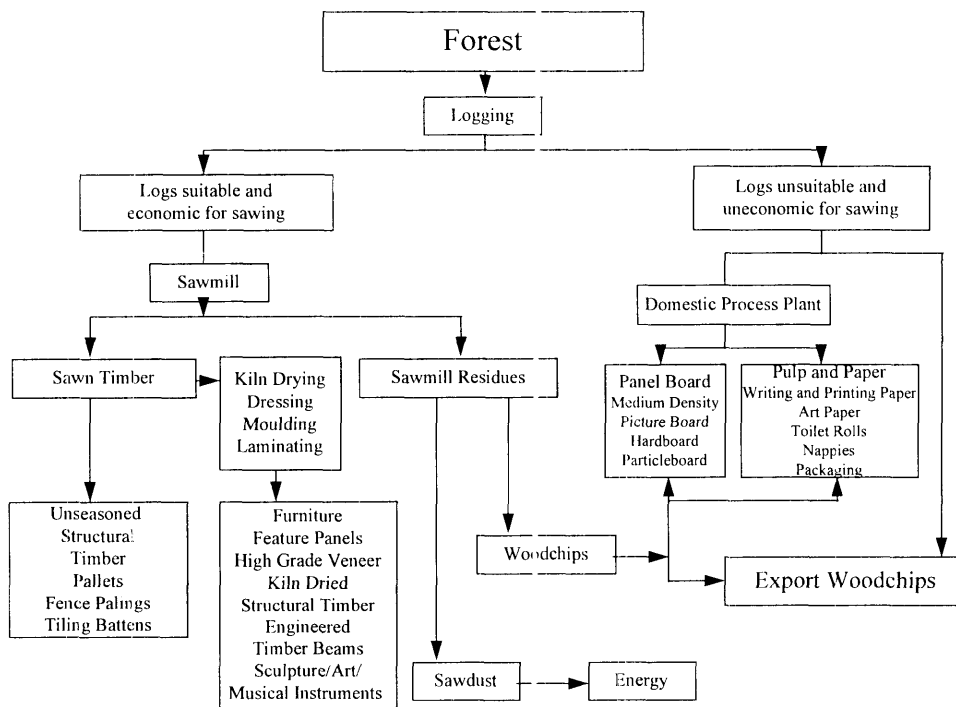
⁵⁷ pers. comm. Gary Featherston 17/12/96

⁵⁸ Comprehensive Regional Assessment East Gippsland *op. cit.* p. 92

Timber

The timber industry category covers many production activities which can be broken down into many stages of production. Figure 2.2 illustrates the possible flow of wood from the forest to its final uses.

Figure 2.2: Timber Industry Flows⁵⁹



It should be noted that no domestic processing plant for panel board or pulp and paper currently utilises wood from the East Gippsland FMA. In addition, the higher value added production of sawn timber such as kiln drying is only in the early stages of development in East Gippsland. Consequently, there are three main timber production activities which contribute to the economy of East Gippsland: log production, sawn timber production and woodchip production.

⁵⁹ *ibid.* p. 48

Log Production

The Department of Natural Resources and Environment (DNRE) in Victoria is responsible for growing and harvesting trees to produce various grades of logs which it sells to sawmillers and other producers for further processing.

Planning and silviculture is directly undertaken by DNRE employees while the actual harvesting and transport is contracted out to forest operators and carters. After harvesting, logs are graded in accordance with hardwood sawlog grading instructions and interpretation. The Hardwood Sawlog Grading Card defines sawlogs by grades (A to D) and allows for some variation between grades by relative changes between diameter, number of defective quarters and size of pipe defect. In many cases, defects occur inside the tree and cannot be determined until the tree is cut down. A sawlog is defined as any length of a log of merchantable species which:

- is at least 2.7 m in length
- has a small end diameter (measured under bark) of 25 cm or greater
- does not have sweep or crook which exceeds one-fifth of the diameter along a 2.4m straight edge
- is of grade D standard or better.⁶⁰

The four grades of sawlog have specific definitions but can best be explained in terms of production capabilities as listed in table 2.5. Residual log is defined as that which does not meet the requirements of a sawlog.

⁶⁰ Department of Natural Resources and Environment Review of Sustainable Yield East Gippsland Forest Management Area op. cit. Appendix 1 p. 29

Table 2.5 Log Grades⁶¹

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

The A, B, C, D and some residual log are sold to sawmills according to their value adding capacity. The remainder of the residual is currently sold to a woodchip mill or is disposed of when the forest is burnt for regeneration.

Bartlett and Lugg describe the production techniques used for harvesting in the East Gippsland FMA: “The main utilisation system employed is chainsaw felling with snigging of longwood, which has a number of features suiting its application to East Gippsland, including the flexibility to handle large sizes, modest capital investment and tolerance of wide range of terrain conditions. Specialised log-loading equipment is being used increasingly throughout the FMA, replacing the bulldozer, traditionally used for this task. No tree-felling or log-processing machinery is currently used in the FMA except in association with regrowth thinning trials.”⁶²

⁶¹ Victorian Auditor-General’s Office *Special Report No. 22 Timber Industry Strategy* Melbourne May 1993, p. 112

⁶² Department of Conservation and Natural Resources *Statement of Resources, Uses and Values East Gippsland Forest Management Area* op. cit. p. 140

It has been estimated that there are approximately 106 people directly employed as contract harvesters and log carters within the BMA, and a further 88 employed in the forest management and planning process.⁶³

Sawn Timber

There are currently twenty-one sawmills receiving sawlogs from State forest located within the East Gippsland region.⁶⁴ These sawmills employ approximately 360 people⁶⁵ and process 134 000m³ of sawn timber each year⁶⁶. “Approximately 95% of these employees are full-time workers. Sawmill employment varies from less than 5 employees per mill to greater than 30 employees per mill. Approximately 41% of saw mills employ between 15 and 24 people.”⁶⁷ Sawmills are geographically dispersed and vary markedly in capacity. Processing capacities range from less than 1000 cubic metres per year to greater than 30 000 cubic metres per year.⁶⁸

Approximately 79 per cent of sawn timber produced by fourteen sawmills surveyed in East Gippsland in 1994-95 was sold as unseasoned sawn timber (or green scantling), while palings and pallets accounted for approximately 10 per cent. Other dried structural grade sawn timber accounted for around 8 per cent of total sawn timber output.⁶⁹ The major markets for these products are in Melbourne, Sydney and Canberra. Other products sold included large beam construction timbers, sleepers, woodchips, firewood and landscape products.

The production processes and technology used for sawing have been shaped by the available timber resources. The abundance of mature and overmature stands of trees relative to regrowth forest means that sawmills have evolved to process old, dry logs of large diameter.

⁶³ Based on 1994-95 figures, Comprehensive Regional Assessment East Gippsland op. cit. p. 44

⁶⁴ *ibid.* p. 46

⁶⁵ *ibid.* p. 50

⁶⁶ Based on 1994-95 figures, *ibid.* p. 47

⁶⁷ Based on 1994-95 figures, *ibid.* p. 50

⁶⁸ Based on 1994-95 figures, *ibid.* p. 49

⁶⁹ Based on 1994-95 figures, *ibid.* p. 53

Woodchips

Some woodchips are produced at the sawmill as a result of the waste from sawn timber production. Residual log can also be collected by a woodchip company directly from the forest as part of an integrated harvesting operation or as a result of thinning operations.

There are two companies which receive residual logs or sawmill residues from the region to export to Japan for use in paper making.⁷⁰ Midway Wood Products produces and exports woodchips from Geelong, in Victoria, and Harris-Daishowa (Australia) operates out of Eden, in southern New South Wales. Harris-Daishowa (Australia) Pty Ltd is the most active in the East Gippsland region, collecting some 170 000 tonnes of woodchips produced from East Gippsland sawmills in 1995/96.⁷¹ The chip mill at Jews Head near Eden directly employs 76 people and it is estimated that an additional 300 people are employed in related activities such as logging, transport and resource management in NSW.⁷²

Although there is no direct employment from woodchip milling in East Gippsland, forest operators and sawmillers who provide the inputs to the chip mills are based in the region.

Tourism

Tourism activities are recognised as an important part of East Gippsland's regional economy. It is estimated that expenditure in East Gippsland Statistical Division in 1992-93 by Australian and international tourists was at least \$171 million. This figure is based on 2.2 million visitor nights in 1992-93 and an average expenditure by Australian tourists in Victoria of \$79 per day. It should be noted that the statistical division is quite a bit larger than the East Gippsland FMA taking in Bairnsdale, Lakes Entrance and other towns surrounding the Gippsland Lakes. In 1993-94 total direct employment in the tourism sector was estimated at 279 permanent full time jobs. At present there are 47 licensed

⁷⁰ Based on 1994-95 figures, *ibid.* p. 47

⁷¹ pers. comm. 12/11/96 Frank Whitelaw Harris-Daishowa (Australia) Pty Ltd Eden NSW.

⁷² Harris-Daishowa (Aust) Pty Ltd *Some Background Information about Harris-Daishowa (Aust) Pty Ltd*

commercial tour operators within the region. This figure includes commercial tour operators in both State forests and National parks.⁷³

Limited information is available for the specific region covered by the forest management area and which gives a more recent indication of tourism activity. In 1994/95 the total number of visitor days/nights to National Parks was estimated at 230,000 and 140,000 to State Forests within the East Gippsland Local Government Area which covers most of the East Gippsland FMA.⁷⁴

Other

Other markets for East Gippsland timber products include local markets for firewood, craftwood and furniture timber, and country Victoria for construction grade timbers.⁷⁵

Many other industries also use East Gippsland's forests for non-timber products and services. These include recreation, mineral exploration, other extractives (such as stone, rock, gravel, sand, clay and soil), grazing, apiculture and tree ferns.⁷⁶

THE PEOPLE

Although most people residing in the East Gippsland FMA are linked to the timber industry, there are others who choose to live in East Gippsland for the non-timber benefits of the forest. The different industry classifications give some indication as to the human face of the region. Perhaps more telling, are the community groups which have emerged over time.

Industry Classification

The number of people employed in each industry classification gives some idea of the community composition. The figures reflect the area covered by the Australian Bureau of

⁷³ Comprehensive Regional Assessment East Gippsland op. cit. p 92

⁷⁴ *ibid* p. 95.

⁷⁵ Based on 1994-95 figures, *ibid.* p. 55

⁷⁶ *ibid.* pp. 72-74

Statistics East Gippsland Statistical Division which is larger than the East Gippsland FMA. Consequently, the significance of forestry to the area covered by the East Gippsland FMA is likely to be greatly understated in these figures.

Total persons employed in the East Gippsland Statistical Division, 1995⁷⁷

<i>Industry</i>	<i>Employment (number of persons)</i>	<i>Percentage of total employment</i>
Agriculture, fishing and hunting	1143	6.00
Forestry and logging	318	1.67
Wood and paper products manufacturing	655	3.44
Mining	297	1.56
Other manufacturing	980	5.14
Electricity, gas and water supply	129	0.68
Construction	885	4.65
Wholesale and retail trade	4575	24.02
Transport, storage and communication	843	4.43
Financial and business services	1583	8.31
Government administration	819	4.30
Education, health and community services	4454	23.38
Cultural, recreational and accommodation	1717	9.01
Personal and other services	651	3.42
Total	19049	100.00

⁷⁷ *ibid.* p. 43

Community Groups

The East Gippsland community has a vested interest in the forest. Community groups have either the timber industry, conservation, recreation or economic development of the region as their focus.

The list of community stakeholders who were invited to the Orbost meeting for the East Gippsland Comprehensive Regional Assessment gives an indication of number and range of community groups operating in East Gippsland. The following list names the organisations but makes no attempt to group them according to their aims or importance.

Concerned Residents of East Gippsland
Friends of Errinundra National Park
Friends of Mallacoota
Orbost District Environment Group
Orbost Women's Awareness Group
Forest Protection Society - East Gippsland Branch
East Gippsland Timber Towns
Orbost Historical Society
Heritage Advisers Network
East Gippsland Shire
Orbost Chamber of Commerce
East Gippsland Regional Development Organisation
East Gippsland Victorian Farmers Federation
East Gippsland Catchment and Land Protection Board
East Gippsland River Management Board
Victorian Eastern Development Board
Orbost Water Board
Bairnsdale and District Field Naturalists Club
Orbost and District Tourist Association
Snowy River Tourist Association
Bairnsdale Aboriginal Corporation
Lake Tyers Aboriginal Trust

Moogji Aboriginal Council
Far East Gippsland Aboriginal Cooperative
East Gippsland CFMEU
East Gippsland Logging and Carters Association
Lower Bendoc Landcare Group
Jarrahmond Landcare Group
Cann Valley Landcare Group

As would be expected the Comprehensive Regional Assessment process produced a range of views on forest management and forest use. “Common to all stakeholders was the fundamental belief that they value the forests. At issue, is how best to value this resource for industry, recreation, environment and cultural heritage. A strong desire for a long term view and agreement has been expressed by all parties.”⁷⁸

CONCLUSION

East Gippsland has a history, forests, industries and people which make it a unique region of Australia. The past and present controversy over forest management in East Gippsland is indicative of its significance to the national forest resource. More specific details about the operation of the timber industry and the institutional setting within which it operates are necessary before an economic framework can be used to analyse the use of forest resources for timber production in East Gippsland.

⁷⁸ Comprehensive Regional Assessment East Gippsland, *Social Report*, Joint Commonwealth and Victorian Regional Forest Agreement (RFA) Steering Committee July 1996. p. 34

CHAPTER 3: TIMBER INDUSTRY OPERATION AND INSTITUTIONAL FRAMEWORK

INTRODUCTION

The forests of East Gippsland have been publicly owned and managed almost since European settlement. The behaviour of those people managing and using the forests is therefore determined as much by the institutional setting as by the market. The timber industry in East Gippsland is generally confined in its activities to what is allowed by State and Commonwealth Government legislation and policy. A detailed understanding of how the timber industry operates within the institutional framework is required before its impact on forest resource use can be analysed.

This chapter will outline the institutional framework within which the timber industry operates and describe how this influences the industry's use of forest resources in East Gippsland.

Recent national policies will be explained along with relevant Commonwealth and State Government legislation pertaining to timber industry operations. Strategic obligations as they apply to forest planning and forest resource allocation will then be examined. This will be followed by a detailed explanation of how each industry currently utilises the forest resource in East Gippsland. Finally, plans for future utilisation of the East Gippsland timber resource will be outlined.

REGIONAL FOREST AGREEMENTS

Background

Legislative power over forest management and land use resides with the State Governments of Australia.⁷⁹ The Commonwealth Government has very few legislative powers but does have national and international responsibilities for conservation and trade. The Regional Forest Agreement process draws together the responsibilities of all governments in one planning process.

In 1992, the Commonwealth Government initiated the National Forest Policy Statement which is “a joint response of the Commonwealth, State and Territory Governments to three major reports on forest issues - those of the Ecologically Sustainable Development Working Group on Forest Use, the National Plantations Advisory Committee, and the Resource Assessment Commission’s Forest and Timber Inquiry”.⁸⁰ The policy statement is based on eleven national goals to which all governments agree. According to the National Forest Policy Statement, “[t]hese goals should be pursued within a regionally based planning framework that integrates environmental and commercial objectives so that, as far as possible, provision is made for all forest values.”⁸¹ The national goals cover the areas of:

- conservation,
- wood production and industry development,
- integrated and coordinated decision making and management,
- private native forests, plantations,
- water supply and catchment,
- tourism and other economic and social opportunities,
- employment,
- workforce education and training,
- public awareness,

⁷⁹ Resource Assessment Commission *Forest and Timber Inquiry Final Report* Appendix V Volume 2B. p. V21

⁸⁰ Commonwealth of Australia, *National Forest Policy Statement A New Focus for Australia’s Forests* Canberra 1992. p. 1

⁸¹ Commonwealth of Australia op. cit. p. 5

- education and involvement,
- research and development, and
- international responsibilities.⁸²

The main framework for implementing the National Forest Policy is the signing of Regional Forest Agreements (RFAs) by all relevant governments to formalise forest management arrangements. RFAs will be valid for 20 years from the date of signing. Australia's 1995 report for the United Nations Commission on Sustainable Development stated that "[a]greements are to be based on joint comprehensive regional assessments of forest values (including assessments of environmental and heritage values), and economic and social assessments."⁸³ When comprehensive regional assessments are completed, national forest conservation reserves will be set aside with the remainder to be managed according to the RFAs.⁸⁴ The total area of conservation reserves in each region should meet the comprehensive, adequate and representative (CAR) criteria set down in the National Forest Policy Statement which broadly requires that at least 15% of the ecological distribution of each forest ecosystem, which existed prior to the year 1750, be protected.⁸⁵

East Gippsland Regional Forest Agreement

An interim measure known as the Deferred Forest Assessment process has been put in place to ensure that possible conservation reserves will not be logged whilst waiting for the RFAs to be completed. The Deferred Forest Assessment process was completed for Victoria in September 1995, resulting in two Deferred Forest Areas in East Gippsland. "Officials agreed that, in relation to East Gippsland, until an RFA is completed, Victoria would not log or carry out road construction in the Betka River catchment or the Ellery Creek catchment for the next 12 months."⁸⁶

⁸² *ibid.* p. 5-6

⁸³ Commonwealth of Australia, *Australia's 1995 Report for the United Nations Commission on Sustainable Development on the implementation of Agenda 21 1995* p. 21

⁸⁴ *National Forest Conservation Reserves Commonwealth Proposed Criteria* A Discussion Paper March 1995. p. 1

⁸⁵ Commonwealth and Victorian RFA Steering Committee *East Gippsland, Towards the Regional Forest Agreement* Canberra, 1996. p. 42.

⁸⁶ Commonwealth of Australia, *Draft Deferred Forest Areas Report for Victoria Commonwealth and Victorian officials' draft for public consultation* September 1995.

The Regional Forest Agreement process for the whole of Australia is planned to be completed by 1998. East Gippsland is the first region in Australia to complete the RFA process; the East Gippsland RFA was signed on February 3 1997.

Some sections of the East Gippsland Regional Forest Agreement have been selected to highlight points which are significant to this study (bold is author's emphasis):

“4. This Agreement takes effect upon signing by both parties (Commonwealth and State) and will **remain in force for twenty years**.

9. This Agreement and its provisions are not intended to give rise to legally enforceable rights or obligations between the parties. This Agreement **cannot impose** on either party or a third party any **obligation that is inconsistent with Australia's international obligations, or a law** of the Commonwealth or of Victoria.

13. The Commonwealth, in signing the Agreement, confirms that its obligations under the *Environment Protection (Impact of Proposals) Act 1974* have been met. The Commonwealth also confirms that, under administrative procedures of the Act, any activities covered by the Agreement, including the 5 yearly review and minor amendments to the Agreement, **will not trigger further environmental impact assessment**.

19. Parties note that current Commonwealth export licence arrangements provide that, **after 31 December 1999, exports of hardwood woodchips will only be permitted from areas covered by an RFA**.

20. The Commonwealth will, subject to the passage of amendments to the relevant regulations under the Export Controls Act 1982, ensure that **no controls under that Act will apply to the export of hardwood woodchips or unprocessed wood sourced from the East Gippsland region** while this Agreement is in place.

29. **Victoria will further develop the transparency and accountability of its forest management processes** through the implementation of an on-going quality assurance program. The program will be implemented, within three years, utilising expertise external to the forest agency in the Department of Natural Resources and Environment or its equivalent.

30. **Every five years, a review of the performance of the Agreement will be undertaken.** The purpose of the five yearly review is to provide an assessment of progress of the Agreement against the established milestones.....

33. The parties agree that ESFM (Ecologically Sustainable Forest Management) is an objective which requires a long term commitment to continuous improvement and that the key elements for achieving it are:

- the establishment of a CAR Reserve System;
- **the development of internationally competitive forest products industries;**
- and
- a fully integrated and strategic forest management system capable of responding to new information.

61. Parties recognise that under the **Competition Principles Agreement**, Governments aim to achieve more transparency and **greater efficiency in Government owned business enterprises.** The Commonwealth agrees that the day to day pricing and allocation arrangement for wood from public forests are matters for Victoria. **Victoria confirms its commitment to the pricing and allocation principles set out in the National Forest Policy Statement. Victoria confirms that legislation and policies relevant to the allocation and pricing of hardwood logs from State forests will be reviewed as part of the Competition Principles Agreement before the end of 1999.** Competitive neutrality principles will be taken into account in any changes following the review.”⁸⁷

⁸⁷ East Gippsland Regional Forest Agreement Between the Commonwealth and Victorian Governments. February 3, 1997.

Of major significance to forest managers and the timber industry is the lifting of export volume quotas from the East Gippsland Forest Management Area. This creates an opportunity to sell large volumes of residual log to export woodchip companies.

The Regional Forest Agreement also changed some of the land use zones from those contained in the Forest Management Plan (Chapter 2), to incorporate more land in the reserve system and to retire some previously reserved land to timber production. Tenure was changed for three State forest areas to become dedicated reserves: Ellery Creek became part of the Errinundra National Park, Martins Creek and Goolengook were both established as Flora and Fauna Reserves. This change adds approximately 2800 hectares of forest to dedicated reserves. There were also additions to Informal Reserves. The following table outlines the extent of the changes.⁸⁸

Table 3.1 Amendment to State Forest Management Zones as a result of the Regional Forest Agreement

Site Number	Current Zone	New Zone	Hectares	D+ Sawlog m ³	Residual Log m ³
1	SMZ	SPZ	1221	10077	79355
2	SMZ	SPZ	938	23712	40560
3	SMZ	SPZ	927	23940	40950
4	SMZ	SPZ	82	1216	2080
11	GMZ	SPZ	70	59	16454
12	GMZ	SPZ	95	1232	9954
15	GMZ	SPZ	467	4711	8833
16	GMZ	SPZ	336	2132	3449
24	GMZ	SPZ	558	1187	14207
29	GMZ	SPZ	176	1667	16431
31	GMZ	SPZ	86	1874	8682

⁸⁸ East Gippsland Regional Forest Agreement Between the Commonwealth and Victorian Governments. February 3, 1997, Attachment 1

33	GMZ	SPZ	532		
34	GMZ	SPZ	12	341	662
35	GMZ	SPZ	86	1381	6487
39	GMZ	SPZ	184	1677	9843
43	GMZ	SPZ	348	2505	11210
45	GMZ	SPZ	121	7541	9846
53	GMZ	SPZ	311		
56	GMZ	SPZ	204	1835	14902
59	GMZ	SPZ	74	2595	11753
62	GMZ	SPZ	221	3075	16113
64	GMZ	SPZ	124	7715	15415
67	GMZ	SPZ	151	4022	12670
69	GMZ	SPZ	117	6426	11934
71	GMZ	SPZ	254	10071	13009
72	GMZ	SPZ	145	4033	4717
73	GMZ	SPZ	242		
74	GMZ	SPZ	422	710	10865
88	GMZ	SPZ	120	308	4416
112	SMZ	SPZ	329	825	2075
125	GMZ	SPZ	48	6908	21880
129	GMZ	SPZ	378	21848	27008
143	GMZ	SPZ	450	1988	9015
157	SMZ	SPZ	116	2926	5005
158	SMZ	SPZ	49	2280	3900
170	GMZ	SPZ	538	11546	26847
180	GMZ	SMZ	626		
TOTAL ADDED TO RESERVES			11158	49339	111011
95	SPZ	SMZ	753	12520	38925
96	SPZ	GMZ	761	2739	5945
101	SPZ	SMZ	334	1696	4495

103	SPZ	GMZ	864	12596	38735
106	SPZ	SMZ	112	3758	7605
107	SPZ	SMZ	187	4246	20228
114	SPZ	SMZ	328	7080	4242
130	SPZ	GMZ	307	7475	11585
135	SPZ	GMZ	480	16782	26136
136	SPZ	GMZ	118	3390	9199
183	SPZ	GMZ	465	23812	43349
TOTAL			4709	96094	210444
RETURNED TO TIMBER PRODUCTION					
				Ha	
Change in SPZ			+5823		
Change in SMZ			-1240		
Change in GMZ			-4384		

COMMONWEALTH GOVERNMENT

Jurisdiction

The States of Australia have constitutional jurisdiction over land allocation and forest resource use. The Commonwealth Government's power is limited to areas of national significance such as national heritage, taxation and international trade. This colonial arrangement explains why the Commonwealth Government needs agreement from State Governments via the RFA process in order to pursue national goals.

There are three Commonwealth departments with significant direct responsibilities for forest matters: Department of the Environment, Sport and Territories; Department of Primary Industries and Energy; and Department of Prime Minister and Cabinet.⁸⁹ All three departments have been involved in implementing the Regional Forest Agreement process.

⁸⁹ Resource Assessment Commission, *op. cit.* p. V2

The Department of the Environment, Sport and Territories (DEST) administers environmental impact assessment procedures under the *Environment Protection (Impact of Proposals) Act 1974*. This act provides for environmental assessment of activities over which the Commonwealth Government must make a decision. Before engaging in an environmental impact assessment, the relevant Commonwealth Minister must decide whether the proposed action will have significant environmental impact. The four areas in which an environmental impact assessment is automatically required are: development requiring an export licence; development by a corporation in a State or Territory, where foreign investment is sought; development by a Commonwealth body, or using Commonwealth funds, or on Commonwealth property; and development that may impinge on commitments under international law.⁹⁰ Many forest product developments encompass one or more of these characteristics and are therefore required to meet the provisions of the Act.

The Regional Forest Agreement process is designed to ensure that the requirements of all State and Commonwealth legislation are met, including the EPIP Act. Section 13 of the East Gippsland Regional Forest Agreement specifically addresses the EPIP Act: “The Commonwealth, in signing the Agreement, confirms that its obligations under the Environment Protection (Impact of Proposals) Act 1974 have been met. The Commonwealth also confirms that, under the administrative procedures of the Act, any activities covered by the Agreement, including the 5 yearly review and minor amendments to the Agreement, will not trigger further environmental impact assessment.”⁹¹

The Agriculture and Forests Group in the Department of Primary Industries and Energy (DPIE) is responsible for the Commonwealth's policy and program interests in the agricultural, forestry, land and water industries. The Group is made up of the Crops, Livestock and Pastoral and Land Resources Divisions as well as the Australian Plague Locust Commission. The Land Resources Division “seeks to enhance the efficient,

⁹⁰ *ibid.* p. V6

⁹¹ East Gippsland Regional Forest Agreement Between the Commonwealth and Victorian Governments. February 3, 1997.

sustainable and equitable management of the nation's land, water and forest resources for the well being of all Australians.” This involves the Division encouraging improved inter-governmental and inter-agency co-ordination and community/government partnerships to provide sustainable natural resource management.⁹²

The Australian Bureau of Agricultural and Resource Economics (ABARE) also operates under the authority of the DPIE to carry out research in forestry and other relevant areas.

The Department of Prime Minister and Cabinet takes on special projects and were responsible for administering the Resource Assessment Commission Forest and Timber Inquiry of 1992. Amongst the wide range of other responsibilities, the Industries, Resources and Environment Division of this Department acts in the areas of: Ecologically Sustainable Development and Greenhouse policies; international environment issues, including UNCED biodiversity and climate change; World Heritage and conservation issues; Intergovernment Agreement on the Environment; forest conservation and development policy; and tropical timber policy.⁹³

Other relevant legislation includes:

- *Australian Heritage Commission Act 1975,*
- *World Heritage Properties Conservation Act 1983,*
- *Endangered Species Protection Act 1992,*
- *Export Control Act 1982.*⁹⁴

Woodchip Export Licences

Prior to signing the RFA for East Gippsland, the export woodchip industry was one of the only areas where the Commonwealth Government had some control over forest resource use. The East Gippsland FMA is the only region in Australia which is exempt from the export licence controls; the remainder of the regions in Australia are subject to the

⁹² Downloaded from Department of Primary Industries and Energy home page: <http://www.dpie.gov.au/> on 10/11/96

⁹³ Downloaded from Department of Prime Minister & Cabinet home page: <http://www.ogia.gov.au/pm&c.html> on 10/11/96

⁹⁴ Joint Commonwealth and Victorian Regional Forest Agreement (RFA) Steering Committee Comprehensive Regional Assessment East Gippsland Overview of Assessments July 1996, p. 6

following controls until regional forest agreements are signed. Annual export licences (3 year licences from the beginning of 1997⁹⁵) must be obtained from the Minister for Resources under the Export Control (Unprocessed Wood) Regulations of the *Export Control Act 1982*.⁹⁶ These licences are usually accompanied by long term approvals of 10-15 years which give some resource security to exporters but which must meet the criteria set down in the Commonwealth *Environmental Protection (Impact of Proposals) Act 1974*.

In the past, the Commonwealth Government has used its power over international trade policy to set a ceiling on the volume of woodchips to be exported from Australia. The export ceiling currently stands at 6.25 million tonnes as a result of a policy decision in July 1996 to allow an additional one million tonnes of sawmill residues and silvicultural thinnings to be added to the existing ceiling of 5.25 million tonnes.⁹⁷

⁹⁵ Joint Statement Minister for Primary Industries and Energy, John Anderson Minister for the Environment, Senator Robert Hill *Government Announces New Woodchip Export Regime* 11-July-96

⁹⁶ Mark Streeting, and David Imber, *The Pricing of Australian Woodchip Exports* Resource Assessment Commission Research Paper Number 4 Australian Government Publishing Service Canberra September 1991. p. 33.

⁹⁷ Joint Statement Minister for Primary Industries and Energy, John Anderson Minister for the Environment, Senator Robert Hill loc. cit.

The following licenses are currently issued for 1996 throughout Australia under the export ceiling arrangements.⁹⁸

Table 3.2 Hardwood Woodchip Export Licences - 1996

Company	Region	Subtotal (tonnes)	Total Volume
Boral Tasmania	Tasmania		940000
Gunns	Tasmania		200000
Harris-Daishowa	East Gippsland	265000	
	South NSW	530000	795000
Midway Wood Products	West Victoria	47500	
	Central Highlands	47500	
	North East Victoria	47500	
	Gippsland	47500	
	East Gippsland	100000	290000
North Forest Products	Tasmania		1688000
Sawmillers Exports	North NSW		288000
Southern Plantations Chip Co (Whittakers)	Western Australia		110000
Tasmanian Development Authority	Tasmania		190000
WA Chip and Pulp Co (Bunnings)	Western Australia		750000
TOTAL			5251000

The current Commonwealth Government is upholding its predecessors' promise that no export woodchips will be allowed from areas which are not covered by a Regional Forest agreement after the year 2000.⁹⁹ With the East Gippsland RFA having been signed, the

⁹⁸ Department of Primary Industries and Energy, 95/72B Media Release *Export Licences Seek to Encourage Value Adding*, Attachment B: Hardwood Woodchip Export Licence Volumes 1 December 1995.

⁹⁹ Department of Primary Industries and Energy, 95/72B Media Release *Export Licences Seek to Encourage Value Adding*, Attachment A Hardwood Woodchip Export Policy, 1 December 1995.

licensed allocation for East Gippsland listed in table 3.2 no longer applies leaving no restriction on the volume of woodchips exported from the region.

STATE GOVERNMENT - VICTORIA

Legislation

The forests of East Gippsland have been under State government control since 1907 when the Royal Commission on State Forests and Timber Reserves of 1900 lead to the formation of a Department of State Forests under the *Forests Act 1907*. The schedules associated within this Act set aside 10 blocks of forest across East Gippsland totalling 150 000ha.¹⁰⁰

Now, the State Government of Victoria controls 636 700 ha of forest land in the East Gippsland Forest Management Area with another 414 400 ha contained in National Parks and other types of public land.¹⁰¹ The *Forests Act 1958* gives control of all State forests to the relevant department (now Natural Resources and Environment), including administration of all aspects of the protection and management of state forest and the harvesting of timber products from these forests. The *Land Act 1958* governs the alienation and use of crown lands; that is, it issues leases and licences for uses other than the removal of timber from crown land. The Forests (Timber Harvesting) Act 1990 amended the Forests Act 1958 and the Land Act 1958 to incorporate provisions for government guarantee of long-term supply of hardwood logs to industry on a regional sustainable yield basis.¹⁰²

Land use decisions are made by the Victorian Government under the advice of the Land Conservation Council (LCC) which acts in accordance with the *Land Conservation Act 1970*.¹⁰³ As one of its three functions, it makes recommendations to the Minister for Planning and Environment with respect to the use of public land, in order to provide for the

¹⁰⁰ Department of Conservation and Natural Resources, *East Gippsland FMA - Statement of Resources, Uses and Values*, Melbourne, January 1993 p. 6.

¹⁰¹ *ibid.* p. 3

¹⁰² Resource Assessment Commission, *op. cit.* p. V28

¹⁰³ Department of Conservation and Natural Resources *Proposed Forest Management Plan East Gippsland Forest Management Area*, Melbourne, February 1995 p. 1

balanced use of land in Victoria.¹⁰⁴ Forest management decisions having impact on public forested land must consider the LCC's recommendations to comply with this Act. The LCC has been quite influential in the past, conducting detailed research and recommending that conservation reserves be set aside from harvesting. A notable example was extensive additions to the Snowy River National Park and Coopracambra State Park and smaller additions to the Croajingolong National Park, Tingaringy National Park, and Lake Tyers State Park following the LCC's East Gippsland Area Review in 1986.¹⁰⁵

Other relevant Victorian legislation includes:

- *Environment Protection Act, 1970*
- *Archaeological and Aboriginal Relics Preservation Act 1972*
- *National Parks Act, 1975*
- *Wildlife Act, 1975*
- *Environmental Effects Act, 1978*
- *Crown Land (Reserves) Act, 1978*
- *Conservation, Forests and Lands Act 1987*
- *Flora and Fauna Guarantee Act, 1988*
- *Water Act, 1989*¹⁰⁶

Strategic Responsibilities

Apart from the legal responsibilities, the Department of Natural Resources and Environment (DNRE) has a strategic responsibility to make decisions which fall within the framework of the Victorian State Government's Conservation, Economic and Social Justice strategies.¹⁰⁷ This strategic requirement prompted the development of the Timber Industry Strategy which resulted from the Timber Industry Inquiry of 1985. The Timber Industry Strategy was implemented in August 1986 and still has the most significant

¹⁰⁴ Land Conservation Council *East Gippsland Area Review Final Recommendations*, Melbourne, December 1986, p. 1.

¹⁰⁵ *ibid.* p. 7

¹⁰⁶ Joint Commonwealth and Victorian Regional Forest Agreement (RFA) Steering Committee Comprehensive Regional Assessment East Gippsland Overview of Assessments July 1996, p. 6

¹⁰⁷ Resource Assessment Commission, *op. cit.* p. V32.

influence on resource use and timber utilisation decisions today. The strategy divided Victoria into fifteen Forest Management Areas (FMAs) and prescribed that each FMA prepare a Forest Management Plan which was to be valid for 10 years.¹⁰⁸ The East Gippsland FMA Forest Management Plan was completed in December 1995.

The Timber Industry Strategy outlines 21 key policy directions for the timber industry in an attempt to achieve a balance between timber production and environmental protection:

- “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;

¹⁰⁸ *ibid.* p. V33

- 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 development employment opportunities;
- establishment of a tourism strategy for East Gippsland
- full coverage of timber production cost plus a 4% return to the Government; and
- improved forestry training and education and a public education program on forests and their multiple values and uses.”¹⁰⁹

The Strategy is significant in the history of forest management and timber production in Victoria. A 1993 audit conducted by the Victorian Office of the Auditor-General found that the Department of Natural Resources and Environment had made significant progress in achieving key policy directions in the following areas:

- 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 native forests for softwood plantation establishment; and
- improved training and worker safety within the industry.

The audit also found areas which were severely lacking:

- the rate of return from forest operations was still below the target of 4 per cent;
- only limited progress had been made towards the completion of integrated forest management plans, and
- the anticipated expansion of private forestry and the reforestation of public had not been achieved.¹¹⁰

¹⁰⁹ Victoria, *Timber Industry Strategy - Government Statement* August 1986 p. ii

¹¹⁰ Victorian Auditor-General's Office *Special Report No. 22 Timber Industry Strategy* Auditor-General of Victoria, Melbourne 1993

Of particular relevance to East Gippsland was the implementation of sustainable yield and the code of forest practice. Those managing both public and private forests now work within the bounds of the Code of Forest Practices for Timber Production which exists in accordance with s.55 of the *Conservation, Forests and Lands Act 1987*. The Code ensures that timber growing and harvesting on public and private land is compatible with the conservation of forests.¹¹¹

FOREST RESOURCE PLANNING

Forest Management

The broad principles for forest management in Victoria are set down in the Timber Industry Strategy which states that forest management 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.¹¹²

The framework for meeting these requirements is the land zoning system explained in Chapter 2 and published in the Forest Management Plan for East Gippsland FMA. After taking National Parks and other official reserves into account, those areas such as water catchment and areas requiring protection of biodiversity, endangered species, and old growth forests are set aside in the Special Protection Zone. The remainder of the area is regarded as suitable for harvesting and is managed according to sustainable yield and adhering to the Code of Forest Practice. The Forest Management Plan should emphasise the importance of managing State forest on a multiple-use basis and provide extensive

¹¹¹ Resource Assessment Commission, op. cit. p. V33

¹¹² Ferguson, I.S. *Report of the Board of Inquiry into the Timber Industry in Victoria Volume One* June 1985 p. 121.

opportunities for public consultation and participation.¹¹³ It should be noted that the Regional Forest Agreement overrides the Forest Management Plan but in East Gippsland, the plans and prescriptions are expected only to differ on matters of conservation reserves due to the comprehensiveness of the Forest Management Plan.

The Regional Forest Agreement Process aims to implement a planning framework which takes account of the full range of forest values referred to as Ecologically Sustainable Forest Management (ESFM). The key elements of ESFM relate to the design of the forest conservation reserve system, and the management processes which apply to forests both inside and outside the reserve system.¹¹⁴ This approach is exactly the same as the current planning framework which sets aside conservation reserves in Special Protection Zones and manages the remainder according to sustainable yield. It should be pointed out that sustainable yield forest management refers to the sustainability of the timber resource and industry, not ecological sustainability. Hence, the use of sustainable yield as the management strategy in no way guarantees the ecological sustainability of the forest.

The Forest Management Plan's purpose is to establish strategies for integrating the use of State forest for wood production, and other purposes, with conservation of natural, aesthetic and cultural values across the whole FMA. The East Gippsland Forest Management Plan covers the areas of Biodiversity Conservation, Forest Production, Forest Protection, Recreation, Landscape and Cultural Heritage, and applies until the year 2005 unless a substantial change of circumstances warrants a review before then.¹¹⁵

The zoning system allocates land in the General Management Zone and some of the Special Management Zone for timber harvesting as the dominant use. Such specialised land allocation warrants an examination of the planning process for timber production.

¹¹³ Department of Conservation and Natural Resources, *East Gippsland FMA - Statement of Resources, Uses and Values* op. cit. p. x

¹¹⁴ Commonwealth and Victorian RFA Steering Committee *East Gippsland, Towards the Regional Forest Agreement* op. cit. p. 3.

¹¹⁵ Department of Conservation and Natural Resources *Proposed Forest Management Plan East Gippsland Forest Management Area*, op. cit. p. 1.

Figure 3.1 Planning Process for Timber Production¹¹⁶

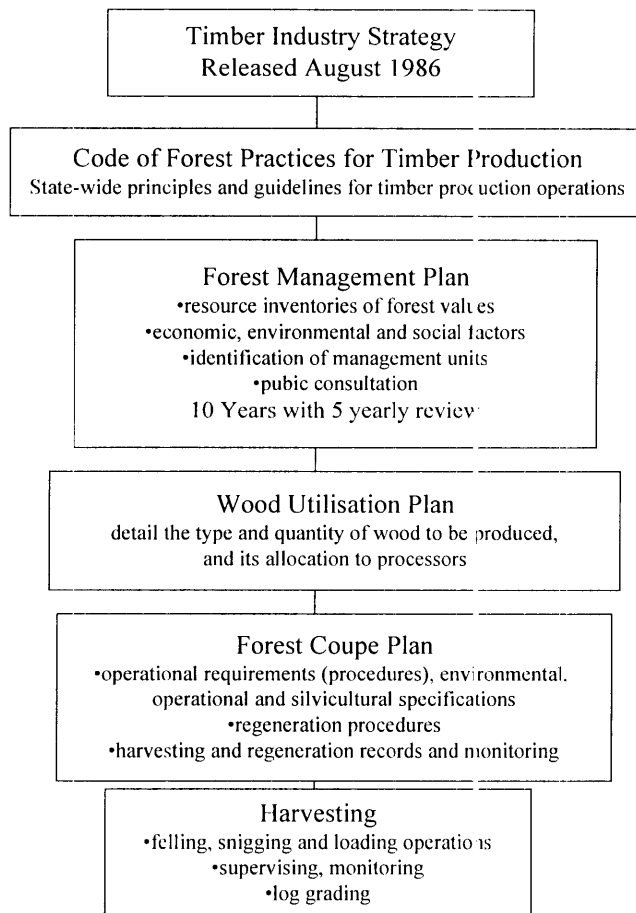


Figure 3.1 outlines the general environment in which planning takes place in Victoria, from the top strategic level of the Timber Industry Strategy through to harvest. The Timber Industry Strategy and Code of Forest Practice set out the strategic guidelines and logging prescriptions which apply to the whole state of Victoria. From the Forest Management Plan for the East Gippsland FMA, three year Wood Utilisation Plans (WUPs) are drawn up to provide a working plan for timber production and are reviewed before implementation to ensure that they reflect the full range of forest values. The WUP details the location of coupes and the type, quality and volume of timber to be produced in the coming year, but are indicative only for the following two years.¹¹⁷ From the WUP, each coupe scheduled for harvest has a Forest Coupe Plan which outlines specific details of the harvest

¹¹⁶ Department of Conservation and Environment, *Development of Forest Management Systems for the Value Adding Utilisation Trial, East Gippsland: 1990-1991 Pilot Trial*, Melbourne 1993, p. 10.

¹¹⁷ Department of Conservation and Natural Resources, *East Gippsland FMA - Statement of Resources, Uses and Values* op. cit. p. 139.

operations including many logging prescriptions to protect environmental values which meet the requirements of the Code of Forest Practice.

Before the WUP can be drawn up, planners need to know the total volume, type and quality of timber available. Planners also need to know the composition of the sawlog licence allocation so that it can be matched with the available resources in the WUP. Licences cannot be granted until the volume details are determined, and the volume cannot be determined until the sustainable yield for the region is calculated.

Sustainable Yield

The zoning system only determines the area which is available for harvest; sustainable yield determines the volume of sawlogs that is available from the forest in one year. The DNRE defines sustainable yield as follows: “Sustainable yield is the estimated annual rate of harvesting of hardwood sawlogs in any FMA that is capable of being produced without impairment of the long term productivity of the land, taking into account the structure and condition of the forest.”¹¹⁸

It should be noted that sustainability here refers to continued timber supply rather than maintenance of ecological aspects of the forest. The objectives of sustainable yield listed below indicate that it is more consistent with the traditional concept of sustained yield than with the broader concept of ecologically sustainable development.

The major objectives associated with the implementation of sustainable yield are to:

- provide a *non-declining* supply of grade D and better sawlogs;
- provide the *highest yield available* at any given point in time; and
- eventually reach the long term potential productivity of the forest which will result in a *balanced age class distribution* throughout the forest.¹¹⁹

The DNRE distinguishes between long term sustainable yield and short term sustainable yield. Short term ensures a non declining supply of timber; long term works on balancing

¹¹⁸ Department of Natural Resources and Environment *Review of Sustainable Sawlog Yield East Gippsland Forest Management Area* Forests Service Technical Reports 96-2 Victoria November 1996 p.13

¹¹⁹ *ibid.*

the age class. Both are important to the industry to ensure a constant, maximum supply of timber each year. “Long term sustainable yield (LTSY) is calculated by multiplying the net productive area of each forest type by the average annual growth during the planned rotation.”¹²⁰

$$P = \sum_{i=1}^n A_i \times I_i$$

where: A = net productive area of each forest type;

I = mean annual increment of each forest type;

n = total number of forest types

i = a particular forest type¹²¹

The calculation of LTSY is only the first step in the process of determining sustainable yield to be applied to current harvesting since it merely predicts the potential long term productivity of the forest in cubic metres. The second step is to consider the existing structure of the mature/overmature forest and to determine the level of harvest that can be sustained in the short term so as to provide a non-declining supply of grade D and better sawlogs.¹²² This step involves some estimation of the volume of cubic metre of D+ sawlogs per ha which the HARIS database calculates. As noted in Chapter 2, most of East Gippsland’s forest is represented by mature/overmature stands of trees because regrowth forests have not yet reached the nominal rotation age of 80 years (120 years for coastal mixed species). This means in the short to medium term, harvesting is mostly restricted to mature/overmature stands until the regrowth matures. If the balanced age class criteria was to be met immediately and the nominal cutting ages adhered to, no timber would be available for harvest from East Gippsland for approximately the next 30 years. Consequently, a third step is required in the process to meet the short term objective of non declining yield.

¹²⁰ Government of Victoria, *Timber Industry Strategy*, Melbourne, 1986, Appendix B Calculation of Sustainable Yield of Hardwood Sawlogs, p. 101.

¹²¹ Department of Natural Resources and Environment *Review of Sustainable Sawlog Yield East Gippsland Forest Management Area* loc. cit.

¹²² *ibid.* p.14.

The third step involves an iterative process where harvesting of the mature/overmature and regrowth forests is scheduled to fill in the gap until the minimum cutting age of regrowth is reached. Some of the regrowth may also need to be harvested at rates higher or lower than the nominal rotation age to achieve the balanced age class objective.¹²³ This scheduling is done manually using the Sustainable Yield Spreadsheet System (SYSS) and standing timber volumes from the HARIS database to ensure that there is an even, non-declining flow of wood.

Based on the above methodology, the following sustainable yield figures for D+ sawlogs were calculated by the Department of Natural Resources and Environment for three 15 year periods: 1987- 2001, 2002-2016 and 2017-2031.

Table 3.3: Forecast of sustainable yield rate (D+ net sawlog volume) for the East Gippsland Forest Management Area. Annual volume expected to be harvested (m^3 /year).¹²⁴

Forest type	Period 1 1991 4 years	Period 2 1995 4 years	Period 3 1999 4 years	Period 4 2003 5 years	Period 5 2008 5 years	Period 6 2013 5 years	Period 7 2018 10 years	Period 8 2028 10 years
AA	6300	3000	3000	3000	3000	3000	6200	8000
MA&SG	13300	2700	2700	2700	2700	2700	2700	4000
MMS	96800	111600	111600	111600	111600	111600	88500	57700
FMS	115900	97400	97400	97400	97400	97400	115400	123400
C&AMS	44800	34900	34900	34900	34900	34900	35100	200
Thinned FMS							1700	56300
Total	277100	249600	249600	249600	249600	249600	249600	249600

¹²³ *ibid.*

¹²⁴ *ibid.* p. 17.

Forest type	Period 9 2038 10 years	Period 10 2048 10 years	Period 11 2058 10 years	Period 12 2068 10 years	Period 13 2078 10 years	Period 14 2088 10 years	Period 15 2098 10 years
AA	29700	10000	10000	10000	10000	10000	10000
MA&SG	16100	6500	6500	6500	6500	6500	6500
MMS	115400	170000	170000	194700	192800	137300	194400
FMS	84300	221600	221600	240000	240000	240000	240000
C&AMS	3800	47400	47400	64800	64800	64800	64800
Thinned FMS	300				1900	57400	300
Total Volume	249600	455500	455500	516000	516000	516000	516000

Forest type	Period 16 2108 10 years	Period 17 2118 10 years	Period 18 2128 10 years	Period 19 2138 10 years	Period 20 2148 10 years	Long Term Volume
AA	12600	12600	12600	12600	12600	12600
MA&SG	7200	7200	7200	7700	7600	7700
MMS	191400	191400	191400	197200	184900	194700
FMS	240000	240000	240000	240000	279100	259600
C&AMS	64800	64800	64800	64800	64800	64800
Thinned FMS						9900
Total Volume	516000	516000	516000	522300	549000	549300

Key to forest types:

- AA Alpine Ash
- MA&SG Mountain Ash and Shining Gum
- MMS Mountain Mixed Species
- FMS Foothill Mixed Species
- C&AMS Coastal and Alpine Mixed Species
- Thinned FMA Thinned Foothill Mixed Species

These volume estimates equate to harvested area estimates of 6700 hectares per year until 2017. In the period 2018 to 2047 the average rate will reduce to 2900 hectares per year as the more productive regrowth forest is harvested.¹²⁵ The lowering in total area and increase in volume reflects the maturing of regrowth forests which are faster growing and more productive than mature/overmature forest.

The *Forests (Timber Harvesting) Act 1990* will be amended to reflect the revised sustainable yield of 250000 m³/year of D+ net sawlogs which includes the current legislated yield of 174000 m³/year C+net.¹²⁶ The *Forests (Timber Harvesting) Act 1990* also specifies that for each 15 years the total hardwood supply level from a FMA must be within 2% of the sustainable yield rate for the FMA and provides for a review of the sustainable yield rates every five years.¹²⁷

Changes to Sustainable Yield

The Regional Forest Agreement for East Gippsland includes some additional areas which are able to be logged along with some newly protected areas. Four scenarios were proposed for the RFA in East Gippsland to meet the Comprehensive, Adequate and Representative (CAR) reserve national criteria. The East Gippsland FMA already caters well for this criteria, with designated reserves and special protection zones (SPZs) mostly meeting national criteria.

Scenario 1 comprises the existing dedicated reserve system and the SPZ established in the East Gippsland Forest Management Plan and the regional sustainable yield of 250 000 m³ of D+ sawlogs per year.¹²⁸ Scenario 2 includes other areas to protect all viable examples of those Ecological Vegetation Classes (EVCs) requiring maximum protection under the national reserve criteria. It also provides for some areas that are currently unavailable, or

¹²⁵ *ibid.* p. 23.

¹²⁶ Department of Conservation and Natural Resources *Proposed Forest Management Plan East Gippsland Forest Management Area*, *op. cit.* p. 37

¹²⁷ Department of Conservation and Natural Resources, *East Gippsland FMA - Statement of Resources, Uses and Values* *op. cit.* p. 127.

¹²⁸ Commonwealth and Victorian RFA Steering Committee *East Gippsland, Towards the Regional Forest Agreement* *op. cit.* p. 11.

have restricted access under the existing Forest Management Plan, to be made available for timber production as do scenarios 3 and 4.¹²⁹ Scenario 2 would result in a reduction in regional sustainable yield of D+ sawlogs of 800 m³ per annum. Scenario 3 builds on scenario 2 and includes additional areas of old-growth Damp Forest and old-growth Wet Forest outside the linear components of the SPZ. This would result in a reduction of sustainable yield of D+ sawlogs of 2000 m³ per annum.¹³⁰ Scenario 4 builds on scenario 2 and provides additional areas of old-growth Wet Forest and old-growth Damp Forest outside the linear components of the SPZ. It provides an alternative set of areas to achieve a similar outcome to scenario 3 with the same reduction in sustainable yield.¹³¹ The scenario chosen was predominantly scenario 2 but with some forest sites from the original plan substituted for those from scenarios 3 and 4. The resulting reduction in sustainable yield is approximately 1%.

These scenarios resulted from the Comprehensive Regional Assessment process and were part of the final public consultation to take place before the Regional Forest Agreement was signed. All stakeholders had significant opportunity for input into the RFA process via workshops, interviews, surveys through the Victorian Forest Community Coordinator.

FOREST UTILISATION

Current utilisation of East Gippsland's forests for timber production is determined both by the institutional setting and the markets for end use products. Utilisation begins with the integrated harvesting process.

Integrated Harvesting

Before 1986 and the Timber Industry Strategy, sawmillers were generally given access to an area of forest from which they would extract timber according to their production requirements. Under this system, timber not considered suitable for sawing (residual wood) was usually left on the forest floor. The Strategy introduced volume based access to

¹²⁹ *ibid.* p. 12.

¹³⁰ *ibid.* p. 13.

¹³¹ *ibid.* p. 14.

the forest and integrated harvesting which removes both sawlogs and residual wood in one operation.¹³²

The Timber Industry Strategy provided for a three year trial of the Value Adding Utilisation System (VAUS) from 1989 to 1991 in Central and East Gippsland allowing for the sale of up to 300 000 m³ /year of Residual Log, subject to the favourable assessment of an Environmental Effects Statement (EES).¹³³ An inquiry was held into the EES after it was published in 1988, resulting in an extension of the VAUS trial from three to six years and a limit on the annual amount of residual log to be harvested from the East Gippsland FMA to 150 000m³.¹³⁴

The objective of the VAUS Trial was to test the hypothesis that, for native forests in the East Gippsland FMA and for a range of silvicultural systems, a better balance between environmental and socio-economic concerns can be achieved when timber harvesting for sawlogs is integrated with residual log removal.¹³⁵ The Strategy stated that integrated harvesting would not be implemented outside the trial area until after the completion 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.¹³⁶

¹³² Victorian Auditor-General's Office, op. cit. p. 100.

¹³³ Department of Conservation and Natural Resources, *East Gippsland FMA - Statement of Resources, Uses and Values* op. cit. p. 142.

¹³⁴ *ibid.* p. 143.

¹³⁵ *ibid.*

¹³⁶ Victorian Auditor-General's Office op. cit. p. 101.

Figure 3.2 Value Adding Utilisation System¹³⁷

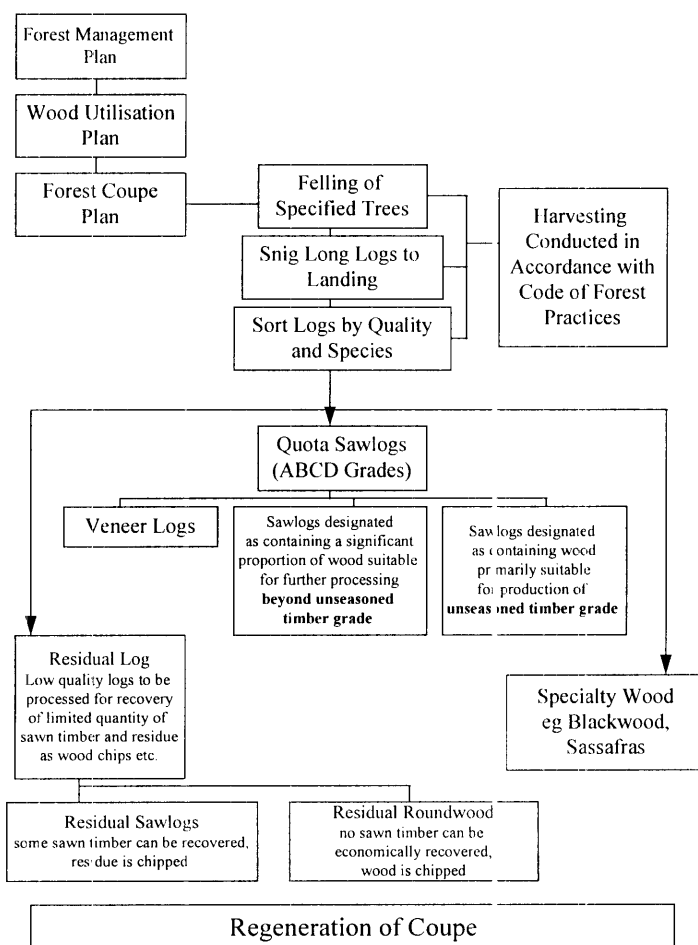


Figure 3.2 broadly outlines how the utilisation process extends from the forest planning stage. More detail about how each part of the process operates within the institutional setting is required.

Specific details of integrated harvesting in the East Gippsland FMA can be added to the above diagram at each of the planning and production steps:

¹³⁷ Department of Conservation and Environment, *Development of Forest Management Systems for the Value Adding Utilisation Trial, East Gippsland: 1990-1991 Pilot Trial*, op. cit. p. 7.

Forest Management Plan

- DNRE issues licences to sawmillers and other timber producers according to the sustainable yield volume of timber.

Wood Utilisation Plan and Forest Coupe Plan

- DNRE allocates logging coupes to licensees based on licence conditions regarding volume and quality and then chooses the harvest method which will give maximum silvicultural benefit. All details are included in the forest coupe plan.
- DNRE staff mark out the coupes and mark seed and habitat trees to be retained according to the silvicultural requirements for that forest type.

Harvesting

- The East Gippsland Logging Company was formed in 1995 to co-ordinate the integrated harvesting process so that the various grades of logs harvested can be best allocated to meet the licence commitments. Even though all licence holders have the opportunity to be members of the East Gippsland Logging Company, only three licensees currently hold shares. The East Gippsland Logging Company has an agreement with the Department of Natural Resources and Environment that it will co-ordinate all logging and is the sole point of contact with the Department.¹³⁸
- The East Gippsland Logging Company employs logging contractors to harvest the timber which meets the combined licence requirements.
- Logging contractors construct coupe access roads, fall all the trees in a coupe except seed and habitat trees and pull the logs to a landing at the harvest site.

Sorting

- Logs are sorted at the landing into specialty timber, sawlog grade or high defect residual log.
- Sawlogs are measured and graded by the contractors under the random supervision of Department of Natural Resources and Environment staff.
- Carters are contracted by the logging contractors to transport logs to licence holders according to the schedule prepared by the East Gippsland Logging Company. The

¹³⁸ pers. comm. John Swan East Gippsland Logging Company 19/11/96

carters do not know who they are delivering to until they leave the forest coupe and retrieve instructions left at an outward bound point by the East Gippsland Logging Company.¹³⁹

- Residual logs are loaded onto a truck and weighed before being delivered to the mill door. The tonnage weight of residual log is then converted to cubic metre measurement for the purposes of royalty and other payments. The standard conversion rate used by the Department is 0.87 cubic metres per tonne.¹⁴⁰
- The transport contractor has a docket book in which the grade, size and quantity of each load is recorded. The triplicate copies are distributed to the licensee, the Department, and the transport operator to allow payment of royalties and logging fees. Logging contractors are paid by the cubic metre by the East Gippsland Logging Company with one rate for sawlog quality and another for residual log. Cartage contractors are paid by the kilometre by the logging contractors. The East Gippsland Logging Company is a non profit organisation, taking a nominal fee from each cubic metre of timber handled by it to administer the scheduling.¹⁴¹
- Licensees pay royalties to DNRE and harvesting and transport costs to forest operators via the East Gippsland Logging Company.
- Further processing takes place.
- The coupe is prepared for regeneration by burning the forest floor and any waste material to create a receptive seed bed.

Problems exist with this system which are currently being addressed. “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. 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

¹³⁹ *ibid.*

¹⁴⁰ Department of Conservation and Environment, *Development of Forest Management Systems for the Value Adding Utilisation Trial, East Gippsland: 1990-1991 Pilot Trial*, op. cit. p. 54.

¹⁴¹ pers. comm. John Swan East Gippsland Logging Company 19/11/96

future employment. This situation places contractors in a position where they may face a conflict of interest.”¹⁴² Another problem is that the formation of the East Gippsland Logging Group has resulted in an uncompetitive arrangement which is socially unacceptable. A new tender process for all logging and carting in East Gippsland is currently being arranged.¹⁴³

Both the log downgrading and other problems associated with lack of competition may be solved if the Department employed the forest operators and charged the licensees production costs to reflect this. This method of operation is currently used in other forest management areas.¹⁴⁴

How well integrated harvesting operates also depends upon the ability to sell the grades of logs in the proportion that they are produced. DNRE policy covers this by stating: “Coupe harvesting generally will only be permitted to proceed where markets and intake capacity exists for all products of D grade or better. Selective harvesting is not permitted. Under no circumstances will harvesting for residual log only be permitted.”¹⁴⁵ Volumes of residual log which are not supplied under licence allocation are offered for sale by tender. If there is no market for residual log, the Department pays the forest operator to fell these trees (known as cull trees) and then burns them as part of the regeneration process. Forest operators are required to mark the stumps and insert proving cuts in cull trees. In addition to paying for the cull trees to be felled, the Department must check that the correct procedures have been followed and provide more fire supervision because the residual log on the forest floor burns for longer and increases the risk of wildfire.

The harvest operation requires roads to be constructed and maintained in addition to major roads which are funded by Commonwealth, State or local government. The Department of Natural Resources and Environment maintains minor roads which service timber production. The Department adds a charge per cubic metre to log royalties to recover all

¹⁴² Victorian Auditor-General’s Office op. cit. p. 114.

¹⁴³ pers. comm. John Swan East Gippsland Logging Company 19/11/96

¹⁴⁴ pers. comm Gary Featherston Department of Natural Resources and Environment - Orbost 16/10/96

¹⁴⁵ Department of Conservation and Environment, *Development of Forest Management Systems for the Value Adding Utilisation Trial, East Gippsland: 1990-1991 Pilot Trial*, op. cit. p. 34.

roading costs so incurred. Establishing and maintaining coupe access roads in accordance with Departmental specifications and the Code is the forest operator's responsibility.¹⁴⁶

Residual Log

The amount of residual log which becomes available as a result of sawlog harvesting varies widely from coupe to coupe. The 1990-1991 Value Adding Utilisation System (VAUS) Pilot Trial can be used as an example: 26 coupes were studied with all but one containing Low Elevation Mixed Species (LEMS) type forest. The proportion of residual log harvested in these coupes ranged from 34% to 97% with a mean of 71.6% and a median of 75%.¹⁴⁷ These proportions are not necessarily representative of the whole forest management area because they are concentrated in LEMS forest which has higher residual log content than higher elevation species.

There is no sustainability criteria for residual log production. The volume and area harvested for residual log is limited by the zoning system and the regulation that residual log can only be extracted via an operation which is integrated with sawlog harvesting. The quantities of residual log produced now and in the future depend upon the types of forest harvested, the proportion of mature/overmature to regrowth existing and the condition of the forest.

Sawlog Production

Prior to implementation of the Timber Industry Strategy, sawmillers held annual licences which gave them access to an area of land from which to harvest. Most of these licences were converted to 15 year licences in 1988. At the time, the Timber Industry Strategy made the following announcement to implement the new sawlog licensing system in Victoria:

“To encourage investment and efficiency in the hardwood sawn timber industry: the Government will issue hardwood sawlog licences for 5 or 15 years subject to the payment of an annual licence fee. The Department of Conservation, Forests and Lands will undertake to supply the volume of timber specified by the licence, subject to the

¹⁴⁶ *ibid.* p. 35.

¹⁴⁷ *ibid.* p. 14.

availability of supply being unaffected by the loss through fire, disease or other causes beyond the Department's control. The licence fee will be for access to rights to use a public resource. The fee proposed is \$1 per cubic metre of the annual allocation for five year licences, to be indexed to changes in sawlog royalty rates. For 15 year licences the fee will be \$1.20 per cubic metre of annual allocation, also indexed to changes in sawlog royalty rates.”¹⁴⁸

The 15 year licences were allocated on the basis of sustainable yield and reduced the allocation from 345 000 m³ C+ pre TIS to 179 000 m³/yr C+ sawlogs.¹⁴⁹ This was later reduced to 174 000 m³/yr C+ sawlogs with the extension of National Parks in the FMA.

Licensees were given the following options to reduce their intake:

- phasing down to sustainable yield over the first (15 year) licence period without exceeding the total sustainable cut over the 15 year period;
- an immediate reduction to sustainable yield; and
- the ability to obtain remaining portions of pre-1988 licensed allocations that had not been cut.¹⁵⁰

Provision is made in licence agreements for licensees to negotiate their phase down and to overcut or undercut their annual allocation by up to 30% (between 70% and 130%) so they can respond to changes in demand. Overcuts and undercuts are averaged over the licence period and the total 15 year licence volume cannot be exceeded within the licence period. Additionally, the volume cut must not exceed 110% of annual allocation over any five year period.¹⁵¹

“Current licence commitments are a mixture of long-term (15 years) and short term (5 or 1 year) licences.”¹⁵² For the 1996/97 Harvesting Season, the following licence allocations and intended volumes apply¹⁵³:

¹⁴⁸ Victoria, *Timber Industry Strategy - Government Statement* op. cit. p. 75.

¹⁴⁹ Department of Conservation and Natural Resources, *East Gippsland FMA - Statement of Resources, Uses and Values* op. cit. p. 135.

¹⁵⁰ *ibid.*

¹⁵¹ *ibid.* p. 137.

¹⁵² *ibid.*

Table 3.4 East Gippsland FMA Licence Allocations and Intended Volumes for 1996/97.

Licence Type	Number of Licences	Product Type	Licence Allocation 96/97	Licensee's Intended Volume
15 year	18	D+ sawlog	196365 m ³ net	214214 m ³ net
15 year	3	D grade sawlog	77000 m ³ gross	95800 m ³ gross
15 year	2	E grade sawlog	30000 m ³ gross	27000 m ³ gross
15 year	1	Residual Log	3000 m ³ gross	990 m ³ gross
15 year	1	D+ sawlog gross	11110 m ³ gross	11110 m ³ gross
Thinnings	2	Residual Log	26000 m ³ gross	26000 m ³ gross
Residual Log	2	Residual Log	230000 m ³ gross	160000 m ³ gross
Specialty	1	D+ sawlog	150 m ³ net	150 m ³ net
Silver Wattle	1	D+ sawlog	200 m ³ gross	140 m ³ gross
Box/Ironbark	1	D+ sawlog	50 m ³ gross	50 m ³ gross

Some licences are issued in terms of net volume and some in gross volume. Gross volume includes the percentage of defect material in the log which is unsuitable for sawmilling.¹⁵⁴ Sustainable yield forecasts are calculated in net volume terms but only apply to D+ sawlogs.

The licensee's intended volume indicates how much timber is intended to be harvested according to market demand in that year. It may be over the licensed volume by up to 30% but then must be reduced in future years according to the licence agreement.

Royalties

Licensees pay royalties for the forest products they harvest. "The rate for long term-licence sawlogs is set under the Royalty Equation System. This aims to fix royalty rates so

¹⁵³ Department of Natural Resources and Environment *Wood Utilisation Plan for 1996/1997* Table 1. Intended Product Volumes by Licensee in the EGFMA for the 1996/97 Harvesting Season to meet Licence commitments.

¹⁵⁴ Joint Commonwealth and Victorian Regional Forest Agreement (RFA) Steering Committee *Comprehensive Regional Assessment East Gippsland Resource and Economics Report*, op. cit. p. 44.

that the sum of royalty and combined transport costs involved in placing a base grade of sawn timber on the market are the same for all sawmills with access to that market....Royalty rates for any new long-term licences are determined through expressions of interest. Royalty rates for short term licences of D and Residual Log grades are set by tender.”¹⁵⁵

The current royalty rates for East Gippsland FMA vary widely between product, size class and distance of the forest coupe from the point of royalty determination (PRD). Within the FMA, there is one PRD at Orbost and another at Cann River and the key market is assumed to be Melbourne. For example: an A grade Mountain Ash sawlog from a coupe 20 kms road distance from Orbost has a royalty of \$70.46 per cubic metre. The same log from a coupe 200kms road distance from Orbost has a royalty of \$49.76 per cubic metre. A C grade sawlog at 200km has a royalty of \$7.24. A roading charge of \$6.59 per cubic metre is levied on top of each one of these rates along with a Timber Promotion Council (TPC) charge of \$1.82 per cubic metre. The base rate for D grade is \$5.40 per cubic metre which for all species is significantly lower than C grade plus sawlogs.¹⁵⁶ Most of the residual log royalty rates are set by tender and can be lower or higher than this, depending on the demand for residual log. In the past, residual log royalties at the stump have varied from \$0.10 per m³ to \$15 per m³.¹⁵⁷

Woodchip Production

Eucalypt woodchips from native forests are currently used for paper production either locally or overseas. Chipping is an intermediate process which facilitates overseas or domestic transport to the paper processing plant. East Gippsland is very isolated making the transport of residual log (or chips) to domestic paper mills in Victoria or New South Wales inefficient. Several feasibility studies have been conducted on the possibility of a pulp mill being constructed in South Eastern Australia by Harris-Daishowa (Australia) and other industry bodies. An independent cost-benefit analysis was completed for the 1992

¹⁵⁵ Department of Conservation and Natural Resources, *East Gippsland FMA - Statement of Resources, Uses and Values* op. cit. p. 141.

¹⁵⁶ Department of Natural Resources and Environment, *Summary of Royalties for the Orbost District in the EGFMA for 1996/97*.

¹⁵⁷ pers. comm. Gary Featherston Department of Natural Resources and Environment Orbost 14-1-97

Resource Assessment Commission's Forest and Timber Inquiry on the feasibility of establishing a pulp mill in East Gippsland. The conclusion of the study was that "substantial change in the estimated costs or benefits of the project would be required to unequivocally support or reject the establishment of a pulp mill in East Gippsland on economic grounds."¹⁵⁸ Furthermore, the costs may have been understated as environmental costs were not taken into consideration. Consequently, the only current use for residual log from East Gippsland is chipping for export to Japan.

In the past, a firm wishing to export hardwood woodchips must meet the criteria set down by both the State and Commonwealth Governments. A licence must be obtained from the Victorian Government for access rights to extract the residual log and an export licence was required from the Commonwealth Government before the woodchips could leave Australia. If these two processes did not match, the firm might have had rights to extract the residual log but been unable to export the output, or could have had an export licence and been unable to access the residual log resource. The RFA removes the need for an export licence, meaning that a woodchip company need only win a State Government tender to extract residual log from the forests of East Gippsland.

Some residue is obtained from sawmills for chipping or is chipped at the sawmill and transported to Eden for export. This is encouraged in the export woodchip licence conditions and saves the woodchip firm obtaining a residual log licence from the Department of Natural Resources and Environment. However, large volumes of woodchips could only be processed from East Gippsland by harvesting residual log.

Harris-Daishowa (Australia) Pty Ltd (HDA) is based at Eden in NSW and currently has a three year licence to export 930 000 tonnes of woodchips per year. Most of this is obtained from forests more local to the chip mill, and there is currently no residual log directly purchased from the East Gippsland Forest Management Area. In 1996, approximately 170 000 tonnes of woodchips were purchased by the company from East Gippsland

¹⁵⁸ Mark Streeting, and Clive Hamilton, *An Economic Analysis of the Forests of South-Eastern Australia*. Research Paper Number 5 Resource Assessment Commission, December 1991 p. 128.

sawmills.¹⁵⁹ For 1996/97, HDA had State Government licences to harvest 30 000 m³ of residual log and 25000 m³ of thinnings from East Gippsland. The company had an export licence for 265 000 tonnes of woodchips and was therefore trying to negotiate State Government licences for a larger volume of residual log.¹⁶⁰ The signing of the RFA has facilitated this by freeing up the East Gippsland Resource. Tenders have been accepted from four companies for an annual total of 650000 m³ of residual log. The two Victorian woodchip companies (HDA and Midway) have each secured an undisclosed amount.

Export woodchip prices are negotiated by woodchip firms with Japanese buyers on a twice yearly basis. In practice, the largest Australian producer, APPM, negotiates an agreed price with its Japanese buyers which then becomes the benchmark for other Australian producers.¹⁶¹ The struck price must then be approved by the Minister for Resources which must occur before export licences are issued.¹⁶²

Domestic Processing

Export woodchips are just one possible use of the residual log which becomes available in the East Gippsland FMA each year. Woodchip production is regarded as low value added with the exported chips subjected to most processing into paper and paper products in Japan. For East Gippsland, most economic benefit occurs outside the region in the chip mills at Eden and Geelong. Currently, approximately 650 000m³ of residual logs become available in East Gippsland each year as a by-product of normal sawlog harvesting operations.¹⁶³ Prior to the RFA, only 10% of this was taken by long term (15 year) residual log licences.¹⁶⁴

Apart from woodchips, there are many products that can be derived from residual logs, including: composite wood panel products (such as medium density fibreboard, laminated veneer lumber and plywood); solid wood products (such as green framing and fencing

¹⁵⁹ pers. comm. 12/11/96 Frank Whitelaw Harris-Daishowa (Australia) Pty Ltd Eden NSW.

¹⁶⁰ Natural Resources and Environment *Wood Utilisation Plan for 1996/1997*, loc. cit.

¹⁶¹ Streeting and Imber op. cit. p. 35.

¹⁶² *ibid.* p. 34.

¹⁶³ Joint Commonwealth and Victorian Regional Forest Agreement (RFA) Steering Committee *Comprehensive Regional Assessment East Gippsland Resource and Economics Report*, op. cit. p. 36.

¹⁶⁴ *ibid.* p. 38.

timbers, laminated beams and small furniture grade products).¹⁶⁵ Development of processing facilities for these products in East Gippsland would be preferred to woodchip exports by the local community as they are higher value added using more labour, therefore returning more to the region's economy. There also appears to be stronger demand for wood panel products and less political controversy over their production than is the case for export woodchips. "Over the medium term, strong economic growth in South East Asian markets may provide export market opportunities for Australian producers of wood based panel products. These opportunities will be assisted by the forecast reduction in supply of tropical timbers to the Japanese and Korean markets, and potential substitution trends in structural end use markets between wood based panels and other building materials such as sawntimber."¹⁶⁶

The Department of Natural Resources and Environment called for expressions of interest for utilisation of the annual amount of residual log in 1996, resulting in the following proposal:

- "on-shore processing of approximately 400 000m³ per year to produce a reconstituted wood or wood-panel product after allowing five years to establish necessary processing facilities;
- sale of the remaining 250 000m³ of residual log for export woodchips."¹⁶⁷

The domestic processing plant will take five years to develop during which time the whole of the 650 000m³ of residual log from East Gippsland would be exported as woodchips. The Department of Natural Resources and Environment has recently signed heads of agreements with four companies who plan to utilise the excess residual log from East Gippsland.

¹⁶⁵ *ibid.* p. 64.

¹⁶⁶ *ibid.* p. 65.

¹⁶⁷ Commonwealth and Victorian RFA Steering Committee *East Gippsland, Towards the Regional Forest Agreement* *op. cit.* p. 18.

CONCLUSION

The timber industry as it operates in East Gippsland is complex and controversial. The industry as a whole is highly regulated, making it difficult to separate market based activities from government controlled activities. The recent policy directives and resulting Regional Forest Agreement is planned to provide resource security and account for all forest values via extensive public consultation. The forests of East Gippsland are publicly owned scarce resources which need to be allocated for the benefit of all. This fact alone suggests that the controversy will not end with the signing of a Regional Forest Agreement in East Gippsland. Issues of environmental valuation are difficult and evolving areas of economic thought, but issues of timber production and investment in forestry have been part of economic thought for centuries. The economic theory surrounding the traditionally scientific practice of forestry will be explored in the following chapters and then applied to the case of East Gippsland.