

Overview of Assessments - East Gippsland

July 1996

Prepared by officials to support the East Gippsland Regional Forest Agreement Process

Published by the joint Commonwealth and Victorian Regional Forest Agreement (RFA) Steering Committee.

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ISBN No: 0 642 25462 1

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Introduction of Overview of Assessments

1. Introduction

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1. Introduction

For over two decades in Australia the competing demands of conservation and industry on our forests have been an area of debate and controversy. The National Forest Policy Statement (NFPS), agreed by the Commonwealth, State and Territory Governments, provides the framework for a long term solution to this issue.

The NFPS sets out the process for undertaking joint Commonwealth and State Comprehensive Regional Assessments (CRAs) of natural and cultural, and economic and social values of Australia's forests. These assessments will form the basis for the negotiation of Regional Forest Agreements (RFAs) between the Commonwealth government and the State governments. Regional Forest Agreements will encompass the establishment and management of a forest reserve system which is comprehensive, adequate and representative (CAR), the ecologically sustainable management of forest outside the reserve system and the development of an efficient, internationally competitive timber industry.

RFAs are agreements between the States/Territories and the Commonwealth and recognise the range of economic and environmental obligations both tiers of government have regarding the long term management and protection of forest values in specific regions. RFAs are intended to bring stability by providing a sustainable resource base for industry, while at the same time ensuring the protection of Australia's biodiversity, old growth and wilderness through a CAR reserve system and complementary off-reserve management.

The detailed information required to negotiate each RFA will be drawn together through a Comprehensive Regional Assessment (CRA) of the full range of forest values of a region. CRAs will be conducted on a regional basis, with the regions being agreed by the Commonwealth and each State respectively. East Gippsland is the first region within Australia to have a completed Comprehensive Regional Assessment. A representation of the steps in the RFA process is shown in Figure 1, and is described in more detail in the following sections.

1.1 The Comprehensive Regional Assessment reports

A series of CRA reports covering the East Gippsland RFA region has been published. These publications present the results of the individual assessments conducted as part of the CRA for East Gippsland. The CRA reports are intended to provide a synthesis of the relevant information upon which the development of different land allocation, forest management and industry and community development scenarios, or options, can be developed. It is emphasised that these reports have specifically attempted to avoid making judgements or interpretations of information that might pre-empt the development of options. Both governments are committed to the development of options in consultation with identified stakeholders and the wider community and this will be done over the next few months starting with the release of these reports. Further details of the next steps are provided later in this section.

This report provides an **overview** of the RFA process and a brief description of the East Gippsland region. It also contains an interim report on the review of forest planning and management systems which are relevant to **Ecologically Sustainable Forest Management (ESFM)** in Victoria (see Chapter 5) and, in particular, East Gippsland. The final ESFM report, which will be published shortly, has relevance to each of the other CRA reports, as the concept

of ESFM provides the overall framework for examining land use and management in the RFA process.

The **environment and heritage report** provides the results of the biodiversity assessments, including endangered species, as well as an overview of the old growth, wilderness, world heritage and national estate assessments. It should be noted that East Gippsland has, in recent years, been the subject of a number of detailed assessments for old growth, wilderness and National Estate. Reports on these assessments have previously been published or were substantially complete and are published as separate reports.

The **resource and economics report** provides the details of assessments of existing resources of the forest estate in East Gippsland. It also examines the range of existing forest uses, provides estimates of future potential resources and usage and develops the framework for economic evaluation of the scenarios/options to be developed as the next step in the RFA process.

In a similar way, the **social assessment report** profiles the social resources, structure and linkages in East Gippsland communities and presents the results of several case studies undertaken in the region. It provides the baseline information from which additional work can be done to provide an indication of the potential social effects of implementing different scenarios/options to be developed in the next step of the RFA process.

A summary of the assessments is provided in Chapter 6.

Each report includes a detailed review of data to be used in the East Gippsland RFA process, and identifies gaps in information and areas where further survey and research may be required. The information collected in these assessments will be used to finalise the Regional Forest Agreement for East Gippsland.

1.2 Options Development

The assessment reports are a precursor to the integration phase of the Regional Forest Agreement process. During the integration phase, the information from the assessments will be used to produce possible future forest use options. This analysis will include identification of areas proposed for commercial forest production, areas that comprise the forest reserve system and management prescriptions and guidelines for ecologically sustainable forest management. It will also include consideration of the community and industry needs to ensure that the effects of implementing different scenarios are an integral part of the options development process.

Opportunities for consultation with stakeholders will be provided prior to, and during the development of options. With this in mind, a series of workshops with stakeholders is to be held in East Gippsland and Melbourne over the next few months. The consultation process is designed to focus discussions and to avoid drawing too heavily on the limited resources of stakeholders. The first workshops will be held shortly after the release of these reports and are designed to familiarise stakeholders with all the information that will later be used to develop the RFA options. Stakeholders will be able to make their own assessment of the methods used and any underlying assumptions or decisions taken on the data. Any major deficiencies identified in the data or methods will be taken into account in the development of options and in finalising the Regional Forest Agreement.

A second series of workshops will then be arranged to focus on the development of forest use options. It is possible that further discussions with stakeholders will be required, in order to clarify issues arising from the initial options session. These will be arranged as necessary.

1.3 Draft RFA and Options Report

Following the options development phase a draft RFA report will be released for public comment. Submissions will be invited on the draft. This phase is an important component of the consultation process in developing an RFA for East Gippsland as it will provide details of the outcomes of the options development process. It will be available to the wider community, as well as those involved in the detail of options development. The report will also contribute to satisfying responsibilities under a number of Acts such as the *Australian Heritage Commission Act 1975*, *Endangered Species Protection Act 1992* and the *Environment Protection (Impact of Proposals) Act 1974*. This period will also allow further detailed discussion with stakeholders. Following this phase, the Commonwealth Government and State Government will negotiate the final Regional Forest Agreement. The final RFA is scheduled to be completed by the end of 1996.

Legislative and Policy Framework for the RFA Process

There is a range of legislative obligations and policies at the Commonwealth and State level that form the framework for the RFA process. As a negotiated process, and as provided for under the NFPS, RFAs are intended to recognise and meet the obligations and objectives of both governments.

2.1 National Reserve Criteria

Following signing of the NFPS, an intergovernmental Technical Working Group on Reserve Criteria was established in 1993 to draft the national criteria required by the NFPS, under the Joint Australian and New Zealand Environment and Conservation Council (ANZECC)/Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) NFPS Implementation Sub-committee (JANIS). The Technical Working Group comprised representatives from state forestry and conservation agencies and the CSIRO.

The Working Group's draft report, containing a set of proposed reserve criteria, was released for public comment in July 1995.

As part of the development of its position on the development of National Reserve Criteria the Commonwealth produced a discussion paper on reserve criteria in March 1995. After a public consultation period the Commonwealth published a position paper on reserve criteria in July 1995.

The criteria described in the Commonwealth position paper and those of the JANIS draft were used as a basis for continuing the development of National Criteria in late 1995 and 1996. This development has now reached an advanced stage and a draft reserve criteria paper has recently been completed by JANIS and is the subject of a further period of consultation between stakeholders, the Commonwealth and States and Territories, during July and August 1996.

The JANIS paper includes criteria for the protection of biodiversity, old growth and wilderness, as well as recognising the role of off-reserve management in meeting conservation objectives.

2.2 Commonwealth

The Commonwealth's principal involvement in forest issues derives from the Commonwealth's *Export Control Act 1982* which regulates the export of woodchips and unprocessed wood. In assessing applications for export licences under the *Export Control Act 1982*, the decision maker is required to ensure that a range of Commonwealth obligations are met. The major legislation is listed below.

- *Endangered Species Protection Act 1992* (ESP Act)
- *>World Heritage Properties Conservation Act, 1983*
- *Export Control Act 1982*
- *Australian Heritage Commission Act 1975*
- *Environment Protection (Impact of Proposals) Act 1974* (EPIP Act)

Further details on the scope and operation of the legislation in relation to the RFA process is provided in the separate assessment reports, and will be examined in the ESFM assessment report, due for release shortly.

2.3 Victoria

The NFPS recognises that State and Territory governments have constitutional responsibility for land use decisions and primary responsibility for forest management. To fulfill this

responsibility the States and Territories have enacted legislation that allocates forest land tenures and specifies the administrative framework and policies within which public and private forests are managed. The major Victorian legislative obligations that impact on forests are listed below. Further details on the scope and operation of the legislation in relation to the RFA process is provided in the separate assessment reports, and will be examined in the ESFM assessment report.

Victorian legislation of major significance to management of forests:

- *Forests Act, 1958*
- *Land Act, 1958*
- *Land Conservation Act, 1970*
- *Environment Protection Act, 1970*
- *Archaeological and Aboriginal Relics Preservation Act 1972*
- *National Parks Act, 1975*
- *Wildlife Act, 1975*
- *Environment Effects Act, 1978*
- *Crown Land (Reserves) Act, 1978*
- *Conservation, Forests and Lands Act, 1987*
- *Planning and Environment Act, 1987*
- *Flora and Fauna Guarantee Act, 1988*
- *Water Act, 1989*

2.4 Indigenous Issues

The RFA process addresses indigenous issues in three distinct ways: consultation on the outcomes and process in general; cultural heritage; and Native Title.

As with all communities and stakeholder groups with an interest in the East Gippsland RFA, Aboriginal communities in the region, and appropriate representative bodies, are already involved and will continue to be consulted throughout the RFA process. Places of cultural significance to indigenous people will be identified and consideration given to appropriate protection and management strategies.

The *Native Title Act 1993* (NTA) recognises and protects native title rights and interests. In recognition of this Act,:

- where any Government action to implement an RFA could affect native title, the action will be taken in accordance with the NTA; and
- an RFA is not intended to influence in any way native title claims that may arise.

2.5 Data Accreditation

An objective of Regional Forest Agreements is that, to the maximum extent possible, existing data sets and processes used in the assessments be accredited.

The framework for accrediting data sets and processes is set out in the Intergovernmental Agreement on the Environment (IGAE). Accreditation, as outlined in the IGAE, refers to the Commonwealth or a State endorsing a process use by the other jurisdiction(s) as having accommodated part or all of the interests of the accrediting government.

The data sets and processes considered in these assessments have been accredited for use in the East Gippsland RFA. Key data information is summarised in the various reports.

The RFA Process in Victoria

3.1 Background

During 1995, the Commonwealth and the States of Victoria, Tasmania, New South Wales and Western Australia undertook a process of identifying Interim (or Deferred) Forest Areas in order to provide interim protection for forests that may be required for a CAR reserve system while RFAs are being completed.

An Interim Forest Agreement (IFA) between the Commonwealth and Victoria was signed in January 1996. This Agreement was negotiated on the basis of the Commonwealth Reserve Criteria position paper.

The Premier and Prime Minister also signed a Scoping Agreement in January 1996 setting out administrative and operational arrangements for undertaking CRAs and developing RFAs, as well as committing governments to establish processes and timetables for the completion of the RFA process.

The RFA process is managed by a joint Commonwealth-Victorian Steering Committee and Technical Committee. The membership of the Committees is listed in Appendix 1.

3.2 Victorian RFA Regions

Victoria has a land area of 22.7 million ha, of which approximately 40% is publicly owned. Of the public land, 42%, or 3.8 million ha is reserved for conservation purposes, including 2.5 million ha of forests. A further 3.5 million ha of public land is also forested, of which about 1.2 million ha, of, is available for timber harvesting.

In recognition of the differences in Victoria's forested estate and availability of data, Victoria has been divided into five RFA regions. The Regions are East Gippsland, Central Highlands, Gippsland, North East and West and are shown in Figure 2. East Gippsland, in particular, has been subject to a number of detailed assessments in recent years, as well as a major forest planning exercise through development of the East Gippsland Forest Management Plan (1995). As such, it was selected as the first Region in Victoria to undergo the RFA process.

3.3 Stages in the RFA Process

The major steps in the RFA process are listed below and depicted in Figure 1.

- negotiation of RFA scoping agreement;
- data audit and identification of gaps;
- agreement on assessment methods and projects to fill data gaps;
- assessments of values;
- development of options (based on environmental, heritage, social and economic values);
- evaluation of options and preparation of draft RFA;
- negotiation of draft RFA between the participating governments;
- final agreement;
- implementation; and
- periodic review of performance.

Publication of these reports completes the process up to and including the fourth step and, as described earlier, precedes the development of options.

East Gippsland Region

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4.1 Location

The East Gippsland RFA Region has the same boundaries as the East Gippsland Forest Management Area which comprises all land in the far eastern corner of Victoria, extending as far west as the Timbarra River and Lakes Entrance on the coast (see Figure 2). However, in some cases such as in parts of the social and economic reports, data collated on the basis of the East Gippsland Statistical Division has been used. The East Gippsland RFA Region lies approximately 300km east of Melbourne, and 200km south of Canberra, which is the closest major population centre.

4.2 Size and Tenure

The East Gippsland RFA Region covers 1.2 million hectares. The area is typified by a high level of relatively intact and diverse native vegetation ranging from subalpine to montane and coastal forests. East Gippsland's native forest forms a substantial and contiguous part of the forests of south-eastern Australia.

Public land comprises over 1.0 million ha, or 87%, of the area. The public land is covered mostly by native forest. This forest is renowned for its diversity of natural values and importance to the local and Victorian economies through the timber industry and tourism (East Gippsland Forest Management Plan (EGFMP), 1995).

State forest occupies approximately 637,000 ha, or 61% of the public land (NRE, 1996) and conservation reserves (National Parks and Flora and Fauna Reserves) occupy the remaining 39%, or approximately 409,500 ha.

4.3 Population

The East Gippsland RFA Region had a population of about 9,700 people in 1991 (ABS Census 1991). With a forecast annual population growth rate of around 1.4 percent, the population in 1996 would be expected to be above 10,000 people.

There are no major cities in the East Gippsland Region. Orbost is the largest township with a population of approximately 4,200 or around 43% of the east Gippsland population. There are numerous small towns in the region with populations ranging from 50 (Gelantipy, Norrinbee and Marlo) to around 1,000 people (Mallacoota).

More detailed demographic information is provided in the Social Assessment report.

4.4 History of the East Gippsland Region

Archeological sites suggest that aborigines have occupied East Gippsland for at least 18 000 years. These original inhabitants used regular burning to maintain the open woodland that they preferred, rather than dense forests. Fire was also used to bring out reptiles and small mammals, to aid digging for tubers or larvae, to maintain open pathways, to encourage 'green

pick' (as an attraction to kangaroos and other herbivores), and to encourage the regeneration of edible plant foods. The use of fire was probably the main effect that aboriginal people had on the East Gippsland area forest environment, mainly in the coastal and foothill forests. With the decline of the aboriginal people and the end of their burning activities changes to forest ecology would have resulted. The extent of these changes is not yet known.

The East Gippsland coast was the first part of the eastern Australian mainland sighted by Europeans. In 1770, Captain James Cook, first sighted and named Point Hicks. However there was little European activity within the area until 1838-9 when the country in the Buchan, Tubbut, and Gelantipy areas was taken up by graziers moving south into Victoria from the Monaro tablelands of southern NSW.

Indeed the history of East Gippsland is more closely related to the history of NSW than the rest of Victoria. In the 1840s there was further expansion of grazing in the Bendoc and Mallacoota areas, and the Newmerella and Orbost runs were officially occupied, although it is likely that there were Europeans there before this date. (O'Bryan 1982). This started an era of extensive forest grazing with graziers manipulating the land by regular patch burning to control the scrub and promote growth of grasses through to the 1930s.

In the 1850s gold was discovered in the Bendoc area, and by 1866-68, reef mines were operating on the upper Bendoc River.. The first forest industries became established at this time with the pit-sawing of timber to supply local mines and building activity. The closeness of the area to the NSW/Victoria border led to uncertainty in which state the area lay. To clarify this, the border was surveyed in the 1870s by two surveyors, Black and Allan. At this time wattle bark stripping for supply to the leather tanning industry was carried on with stripped bark boated downstream on the Snowy river to Marlo to be shipped out.

During the last years of the 19th century, Red Ironbark, Gippsland Grey Box, and Red Box were in demand for blocks, piles planks, beams and boat keels. Only the most accessible and best trees were harvested and a Royal Commission was held into State Forests and Timber Reserves in 1900. Its findings led to the formation of a State forest Department under the Forests Act 1907. This act set aside 10 blocks of forest across East Gippsland totalling 150 000 ha.

In 1912, the construction of the railway extension to Orbost (completed in 1916) which was supplied with sleepers and piles from the forest adjacent to the line, opened the way for the expansion of the timber industry. By 1920, 25% of Victoria's railway sleepers and 60% of hewn beams were produced in the forests east of Nowa Nowa. However, despite the dominating development ethic, Mallacoota, Wingan Inlet, Alfred, and Lind National Parks were declared between 1909 and 1926.

The 1930s depression, and the 1939 bushfires had a major effect on the East Gippsland forests. The railways department introduced its quota system for sleeper cutting which allowed cutters a quota of sleepers to provide a subsistence income. Red Ironbark realised twice the return of other species, and sleeper cutters combed wide areas of forest for it. There was little or no regeneration effort so that much of the coastal and foothill forest today is depleted of durable species and Silvertop and White Stringybark now dominate.

Also in the depression, unemployment relief was provided and workers were employed on 'silviculture improvement' - mainly ringbarking defective and unwanted trees in an attempt to improve the quality of the remaining stand. Many hundreds of hectares of coastal and foothill forests were treated in this way, although there is some doubt of the benefits. By 1938, it became difficult to maintain the supply of sleepers from the then acceptable species, (Red Ironbark, Gippsland Grey Box, Red Box, and Yellow Stringybark), so that Mahogany, White Stringybark and Messmate were added to the list.

The 1939 bushfires were a turning point in the region's forest history, although the area itself was little affected. An inquiry identified as the main cause graziers burning the forest, and the

government banned this practice. The scrub returned ending the era of intensive forest grazing. More significantly, after the 1939 fires the timber industry era commenced. After the salvage of the fire damaged forests of the Central Highlands, the East Gippsland forests were begun to be harvested to meet the demands of the housing boom. A massive roading program was initiated to provide access to timber stands, and in 1946, new and increased allocations of timber were made. The continuing sleeper demand still could not be met, and further species were added to the acceptable list. In the post war years, 500 to 600 the sleepers were cut each year. By 1950 several new sawmills had been established and were processing 75 000 m³ of sawlogs per year. During the 1970s and 1980s, production was further increased, and the area accounted for 25% of Victoria's sawn timber.

Since the initial reservation of 1907, more blocks were added to the forest estate, and the Forests Commission, Victoria was formed to control forestry operations on both reserved land and unoccupied crown land throughout Victoria. In the 1970s and 1980s the Land Conservation Council (LCC) conducted a number of public land use reviews which lead to the creation of new and enlarged National, State, and Regional Parks and other reserves and the identification of forests that would be available for timber production and other land uses.. The implementation of the Timber Industry Strategy in 1987, and Government acceptance of the LCC's land use recommendations, lowered harvesting levels to long term sustainable levels.

4.5 Land Classification

Conservation Reserves outside State Forest

East Gippsland has an extensive system of National parks and other conservation reserves which have been established to protect a range of significant natural and cultural values and to provide opportunities for recreation and tourism.

Information on the reserve system and the values it contains is provided in the Environment and Heritage Report.

State Forest Zoning System

Within State forest provision is made for: water supply, catchment, and stream protection; hardwood timber production; conservation of natural and cultural values; recreation and tourism; and other forest uses such as honey production, grazing and mineral exploration and mining. The East Gippsland Management Plan establishes a strategic landuse framework in State forest and is based on three 'management zones' which set priorities and specify permitted activities for different parts of the forest. The three management zones are described below.

- the Special Protection Zone (SPZ) - managed for conservation with no timber harvesting permitted. This zone is designed to supplement the protection of values in conservation reserves. The SPZ accounts for 164 300 hectares or 16% of the public land in the region.
- The Special Management Zones (SMZ) - managed to conserve specific features where timber harvesting is still permitted under certain conditions. The SMZ accounts for 37 900 hectares or 4% per cent of the public land in the region.
- The General Management Zones (GMZ) - managed for a number of uses where timber production is the main priority. The GMZ accounts for 434 500 hectares or 32 per cent of public land in the region.

Of the 637,000 ha of State forest the net available area for harvesting is 344,800 ha. The remainder is either unproductive forest or unavailable for harvesting due to steep slopes or other management reasons. Most timber harvesting will occur in the General Management Zone (GMZ) which has an estimated net productive area of 332,600.

Figure 3 illustrates the land status of public land in the region.

4.6 Management Arrangements

Land management arrangements, central to the achievement of Ecologically Sustainable Forest Management (ESFM), vary according to tenure and the objectives of management on each tenure. Legislation and policies define the management arrangements applicable to different lands at the broadest statutory and policy level. The implementation of these is then achieved through planning processes, management plans, codes of practice and environmental prescriptions that are applied at a strategic and operational level.

As described earlier, the following Interim Report on ESFM details the method of evaluation of existing management arrangements and processes in Victoria. The final report on the assessment will be produced shortly for use in the development of options and negotiation of the RFA.

Interim Report on the Assessment of ESFM for East Gippsland

5.1 Introduction

5.2 Conceptual Approach

5.3 Method Of Assessment

5.1 Introduction

The purpose of this chapter is to provide an interim report on the assessment of ecologically sustainable forest management being undertaken for East Gippsland. Full details of the assessment analysis and the supporting information on which the assessment is based will be published shortly in the full assessment report, prior to the development of options for a Regional Forest Agreement for East Gippsland.

While the concept of ecologically sustainable forest management is not new, the East Gippsland assessment is the first attempt to assess the concept in Australia. As a result, considerable time and effort has been required:

- to develop and refine appropriate criteria against which an assessment of ecologically sustainable forest management could be made;
- to determine what such an assessment involved; and
- to develop an assessment methodology and documentation and reporting formats.

The National Forest Policy Statement provides the operative rules for an assessment of ecologically sustainable forest management in that it states:

"The CommonwealthState regional agreement resulting from the (comprehensive regional) assessment will also cover guidelines for all aspects of ecologically sustainable management of the forests in question, taking into account the existing regulatory framework in the States and building on forest management strategies and practices. In this respect, the guidelines will cover, for example, management for sustainable yield, the application and reporting of codes of practice, and the protection of rare and endangered species and national estate values. They may also specify the levels and types of disturbance that are acceptable for a particular forest so as not to adversely affect national estate and other conservation values of that forest."

What is Ecologically Sustainable Forest Management?

Ecologically sustainable management is the foundation of current forest policy and underpins all the objectives articulated in the National Forest Policy Statement.

Ecologically sustainable forest management involves integrating commercial and noncommercial values of forests so that the welfare of society (both material and non-material) is improved, whilst ensuring that the values of forests, both as a resource for commercial use and for conservation, are not lost or degraded for current and future generations. Primary goals for ecologically sustainable forest management are:

- maintaining ecological processes within forests (the formation of soil, energy flows, and the carbon, nutrient and water cycles);
- maintaining the biological diversity of forests;
- optimising economic benefits within ecological constraints; and
- optimising the intangible benefits of forests and maintaining options for the future.

Ecologically sustainable forest management can be operationally defined as the management of forest on all land tenures to maintain the overall capacity of forests to provide goods, protect biodiversity, and protect the full suite of forest values at the regional level (see Table 1). It would be implemented through appropriate:

- planning processes
- management plans
- codes of practice and
- environmental prescriptions.

The National Forest Policy Statement (p12) proposes to give effect to ecologically sustainable forest management through:

1. integrated planning processes and management systems;
2. codes of practice and environmental prescriptions;
3. management plans incorporating sustainable yield harvesting practices; and
4. management of native forests outside the reserve system complementing the objectives of nature conservation reserve management.

5.2 Conceptual Approach

A general approach to the assessment of ecologically sustainable forest management was discussed by Commonwealth and State officials in a forum known as the Comprehensive Regional Assessments Implementation Forum in April 1996. At the Implementation Forum, Commonwealth and State officials jointly developed national criteria (Table 1) for the assessment of management systems relevant to ecologically sustainable forest management using as guides the National Forest Policy Statement, the Montreal Process, Forest Stewardship Council processes, the outcomes of the United Nations Conference on Environment and Development and the ISO 14000 Management System Series. A list of the management system elements to be considered in such an assessment was also developed and these were to be adapted to meet individual State circumstances. All CRA assessments would be brought together in an overall assessment of ecologically sustainable forest management before the signing of a regional forest agreement.

The management system was designed:

- to be compatible with the ISO 14000 Series;
- to provide a standard assessment framework which could be customised; and
- for possible use in certification and labelling purposes in the future thus providing marketing advantages to the wood and paper industry and the Australian economy.

Specific issues to be addressed in any ecologically sustainable forest management assessment include:

- management approaches, for example, to assist in the protection of endangered species and species sensitive to forest operations assessed as part of biodiversity projects; to minimise site impact;
- the range of uses and management intensities in timber production forests and reserves;
- the impacts and contribution of forest uses other than wood production (tourism, recreation and cultural activities; water production; grazing; mining; and beekeeping);
- tenure (private or public land) and land use purpose (conservation reserve or State forest);
- State legislative and management regimes, administrative structures and the availability of management resources; and
- regional ecosystem variation.

5.3 Method Of Assessment

The ESFM assessment is being undertaken in four steps.

Step 1 - Information Collection and Assessment

The first task in the assessment of ecologically sustainable forest management is the assessment of the basis and adequacy of currently used management systems. Commonwealth and the States agreed that:

1. Assessment of management systems would be undertaken bilaterally between the Commonwealth and each State.
2. State Expert Advisory Groups would be responsible for directing the collection of information, assessment of existing management systems against agreed criteria and producing an independent assessment report which will contribute to the overall assessment of ecologically sustainable forest management.
3. Joint Commonwealth-State Project Management Groups would provide secretariat support to the Expert Advisory Groups, including information collection and documentation.
4. Joint Commonwealth-State Regional Forest Agreement Steering Committees (joint Steering Committees) would oversee the ecologically sustainable forest management process (see Figure 4).

An Expert Advisory Group has been established by the joint Commonwealth-Victorian Steering Committee (refer Terms of Reference below.) Members of the Expert Advisory Group for East Gippsland are:

- Professor Ian Ferguson, Melbourne University and chair of Expert Advisory Group
- Dr John Raison, CSIRO Division of Forestry and Forest Products, ecologically sustainable forest management report coordinator
- Dr Bob McCormack, CSIRO Division of Forestry and Forest Products
- Dr Steven Cork, CSIRO Division of Wildlife and Ecology
- Mr David Holmes, formerly of the Department of Natural Resources and Environment
- Ms Jane Lennon, Heritage consultant.

The joint Commonwealth-Victorian Project Management Group, under the guidance of the Expert Advisory Group, is compiling an inventory and description of Commonwealth and Victorian forest management and planning systems applicable to the East Gippsland region under the following general headings

- Commitment and Policy Framework;
- Strategic Planning;
- Implementation;
- Measurement and Evaluation; and
- Review and Improvement.

Table 2 contains the proposed ESFM assessment framework for East Gippsland.

This inventory and description is being used by the Expert Advisory Group to undertake an assessment of the management system elements and processes relating to ecologically sustainable forest management using the agreed criteria and the framework described in Figure 5.

Step 2 - Towards a Regional Forest Agreement

Stakeholders and people interested in ecologically sustainable forest management will be able to comment on the assessment (step 1) and provide input to the development of Regional Forest Agreement options. The outcomes of the ecologically sustainable forest management assessment will need to be closely integrated with those of the other comprehensive regional assessments during the development of options.

Step 3 - Development of Options

An overall assessment of ecologically sustainable forest management needs to be made in relation to draft Regional Forest Agreement options after integrating all other comprehensive regional assessments and covering:

1. an assessment of the planning processes and management systems applying to forests across all land tenures;
2. an assessment of the protection afforded to conservation values by the comprehensive, representative and adequate reserve system; and
3. an assessment of off-reserve management and its complementarity with the comprehensive, representative and adequate reserve system; and
4. an assessment of development opportunities for industry and access to resources.

Following the integration process, the joint Steering Committee will agree provisions relating to ecologically sustainable forest management for incorporation in the Regional Forest Agreement options report. This could include:

- accreditation of State management and planning systems and practices;
- refinements to existing systems and/or practices where required;
- agreement to a cooperative work program to assess issues during the life of the Regional Forest Agreement;
- agreement on the development and application of criteria and indicators to monitor the effects of forest management and that could be used for Regional Forest Agreement reporting; and,
- identifying and developing a work program for filling agreed gaps in management systems.

The options report will be released for public comment.

Step 4 - Negotiation of a final Regional Forest Agreement

Following consideration of comments received on the options report and further discussions with stakeholders, the final Regional Forest Agreement will be negotiated by the Commonwealth and State Governments and will contain agreed ecologically sustainable forest management provisions.

Victorian Expert Advisory Group - Terms of Reference

1. The Expert Advisory Group will assist the joint Steering Committee to adapt the management system elements, sub-elements and the criteria in the national guidelines for the purpose of regional assessment (National Guidelines are at Attachment 1. Elements, sub-elements and criteria adapted for East Gippsland are at Attachment 2.) This should be done bearing in mind the national guidelines and the need to link the assessment outcomes to environmental management system structures such as the ISO14000. This in turn will facilitate the processes required to achieve international certification and labelling of Australian wood products in the future.

2. The Expert Advisory Group will assess whether or not the existing forest management and planning systems relating to ecologically sustainable forest management in Victoria and specifically in East Gippsland contain the necessary elements, whether these elements are soundly based, and whether or not they are adequately linked to administrative systems to ensure that stated policies and legislative requirements are implemented effectively.

3. The assessment should cover all forest tenures and all forest uses at the regional level for East Gippsland, noting the existence of different management objectives and systems for different tenures and uses.

4. With regard to reporting:

- The Expert Advisory Group will prepare an independent report for the

joint Steering Committee for comment.

- The report will be based on an assessment against management system elements, subelements and criteria within the guidelines for assessment agreed between the Commonwealth and the States.
- The report will review and document existing State and Commonwealth management arrangements and controls applicable to all forest tenures.
- The Expert Advisory Group will consult closely with State forest managers, other State/Commonwealth technical experts and the Project Management Group in undertaking their assessment.
- The assessment report should identify any gaps or deficiencies in forest management and planning systems and controls as applied in East Gippsland within the context of an environmental management system; identify gaps in knowledge; and identify priorities for further research and development in relation to the management planning system and controls, bearing in mind the resource implications.
- Following release of the report, the joint Steering Committee may seek additional advice from the Expert Advisory Group.

TABLE 1: MANAGEMENT SYSTEM STRUCTURE AND CRITERIA FOR ASSESSMENT OF ESFM - EAST GIPPSLAND, VICTORIA

Criteria for assessment of management system elements and sub elements

ASSESSMENT CRITERIA	CRITERIA DESCRIPTION
System design to meet national principles of Ecologically Sustainable Forest Management	<p>The Planning and management of native forests should:</p> <ol style="list-style-type: none"> 1. Maintain the full suite of forest values for present and future generations. 2. Maintain and enhance long term multiple socio-economic benefits to meet needs of societies. 3. Protect and maintain biodiversity. 4. Maintain the productive capacity and sustainability of forests ecosystems. 5. Maintain forest ecosystem health and vitality. 6. Protect soil and water resources. 7. Maintain forest contribution to global carbon cycles. 8. Maintain natural and cultural heritage values. 9. Utilise the precautionary principle for prevention of environmental degradation.
	<p>Notes</p> <ol style="list-style-type: none"> 1. These principles should be interpreted and applied in the context of National Forest Policy Statement and other existing policy documents (See Attachment 2). 2. Definitions contained in the National Policy Statement apply to these principles. 3. Planning and management of plantations should be consistent with the Ministerial Council for Forest Fisheries and Aquaculture document: Forest Practices Related to Wood Production in Plantations: National Principles.
Public transparency	<p>These criteria need to be applied at the appropriate ecological scales.</p> <p>Scrutiny: Type and level of scrutiny - parliamentary, administrative.</p> <p>Consultation: Opportunity for public comment, individual</p>

	<p>stakeholder and group submissions, advisory group involvement in the process, information exchange, provision for feedback in consultation process.</p> <p>Access to information: Process for access to information.</p> <p>Public involvement: Opportunity for individual stakeholder or community groups to be involved in the decision-making process.</p> <p>Reporting: Mechanism for reporting of processes and outcomes for all system criteria.</p>
Monitoring	<p>Trend measurements: Process for assessment of change.</p> <p>Monitoring regimes: Process for regular monitoring of indicators.</p> <p>Standards: Process for designation of quantifiable measures against which the quality or performance of a characteristic or attribute is assessed.</p> <p>Performance targets: Process for designation of specified goals.</p> <p>Performance verification: Process for ensuring achievement of standards and targets</p>
Compliance	<p>Audit arrangements, penalties, incentives: Processes that ensure compliance with stated goals or objectives.</p>
Scientific and technical basis	<p>Mechanism for assessing adequacy of information (eg scientific/peer review); Process for incorporation of information into decision making process.</p>
Review	<p>Mechanism for review, feedback and continual improvement, internal/external, periodicity.</p>

Table 2: Proposed ESFM Assessment Framework for East Gippsland

1 COMMITMENT AND POLICY FRAMEWORK

Commonwealth Commitments to ESFM

Introduction	
International Treaties and Conventions	International Treaties and Conventions to which Australia is a signatory.
Legislation	Various Commonwealth Acts
Commonwealth policies	Various Commonwealth policies

Victorian Commitments to ESFM

Legislation	Various Victorian Acts, ie Flora and Fauna Guarantee
National policies	Various National Policies to which Victoria is a signatory
State policies	Various Victorian government policies
Corporate plans	DNRE and DP&E corporate plans

2 PLANNING

Framework

Introduction	Overview of various Victorian Acts and Codes for all land tenures
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Strategic land use plans

Public land use planning	Final LCC recommendations - East Gippsland
Local Government land use planning	

Strategic management plans

Forest management planning	East Gippsland Forest Management Plan
Yield regulation planning	Sustainable Yield Review
Flora and Fauna planning	Various Action Statements relevant to East Gippsland
Park management planning	Various East Gippsland Park Plans
Fire management planning	East Gippsland Fire Management Plan
Catchment planning	
Regional development and Industry planning	
Cultural and heritage planning	
Mineral Resources planning	

Operational planning framework

Regional prescriptions	East Gippsland Prescriptions
Code of Forest Practice for Timber Production, public land	Victorian Code - includes State forest and parks and reserves
Code of Fire Practices - public land	
Code of Forest Practice for Timber Production, private land	
Land clearing controls - private land	Victorian land clearance controls

Operational Planning Processes (assessments to be against all land tenures)

Coupe planning	Victorian coupe plans
Wood utilisation planning - public land	Victorian WUPs
Wood utilisation planning - private land	Victorian approvals process
Land clearance planning - private land	Victorian approvals process

Park management planning	East Gippsland fuel reduction burning plans
Fuel management planning	East Gippsland fuel reduction burning plans
Roading planning	WUPs, Coupe plans
Recreational planning	Applicable East Gippsland Service Agreements
Pest plant and animal control planning	Applicable East Gippsland Service Agreements
Other operational planning	Applicable East Gippsland Service Agreements

3 IMPLEMENTATION

Commonwealth Administrative Framework

Administrative System	Various relevant Commonwealth agency corporate plans
Intergovernmental Administrative Arrangements	

Victorian Administrative Framework

Public land administrative system	Overview of DNRE
Private land administrative system	Overview of DP&E

Linkages between Commonwealth and State Legislation

Linkages between Commonwealth and State Administrative Structures

Operational Control

Supervision systems	East Gippsland system
Operational records systems	East Gippsland system
Enforcement and penalty systems	Prosecution, FOLS penalties, audit process
Sales, licensing and accounting systems	LOGSALES, Standard log licence, Dept Accounts

Organisational support mechanisms

Commonwealth support mechanisms	
Accountability and responsibility	DNRE structure, duty statements, etc.
Resourcing	Corporate planning, Annual Service Agreements, etc
Education and Training systems	DNRE - FS Training strategy, FOLS training, etc
Communication and reporting systems	DNRE - FS Community awareness strategy, etc

Documentation systems	Various DNRE guidelines etc
Management accounts	DNRE's commercial forestry accounts

4 MEASUREMENT AND EVALUATION

ESFM Information

Environmental and resource inventory	Various databases including management impacts, SFRI
Environmental and resource analysis tools	Various data modelling and DNRE tools, ie GIS, IFPS

Monitoring and evaluation

Monitoring	Evaluation of environmental outcomes and effectiveness of performance, including of data collection and analysis eg sustainable yield of timber, Montreal indicators
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5 REVIEW AND IMPROVEMENT

Review of ESFM systems

Review systems	DNRE review requirements, ie Code, FM Plans, etc.
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Research and development

Research and development strategy plans	DNRE - Forests Service, CFTT R&D Strategy Plan
Research and development program	DNRE - Forests Service, R&D program 1996/7
Adaptive management - application of R&D to improve management systems	DNRE - Forests Service, R&D Action Groups

Summary of Assessments

6.1 Environment and Heritage Assessments

The Environment and Heritage report outlines the methods and findings of the environment and heritage assessments undertaken as part of the Regional Forest Agreement process for East Gippsland. The assessments cover biodiversity, endangered species, old growth, wilderness, national estate and world heritage.

National Forest Reserve Criteria

Proposed national reserve criteria for the establishment of a comprehensive, adequate and representative reserve system for forests in Australia have recently been completed by officials. The criteria relate explicitly to biodiversity, old growth and wilderness, and acknowledge the important role of forest management outside reserves in meeting conservation objectives. The report provides information for assessment of the current reserve system against the proposed national reserve criteria.

Biodiversity Assessment

The biodiversity assessment includes a flora and fauna data review and an assessment of species and forest ecosystems.

Flora and Fauna Data Review

A review of flora and fauna survey data has been undertaken to identify any major gaps. Additional data collection was not undertaken, given the extensive body of information already available for the region.

The level of flora survey in East Gippsland is high with more than 6 000 survey sites sampled since 1980. These sites have been sampled as part of a range of studies, including: region-wide studies; more than 30 pre-logging flora and fauna studies based on forest blocks; intensive sampling of experimental areas; and other studies based on targeted sampling of particular habitats, such as rainforests and heathlands.

The overall level of fauna survey data in East Gippsland is also high, although survey effort varies considerably between fauna groups. Generally, the region has relatively large areas of high survey intensity, but also some areas of low survey intensity, which tend to correspond with the existing conservation reserve system and areas of private land.

Species Assessment

The species assessment provides an analysis of information which can address the issue of the viability of maintaining populations of terrestrial and aquatic native species throughout their natural ranges. It enables an evaluation against the proposed national reserve criteria, and the determination of complementary off-reserve species and habitat management.

A list of terrestrial and aquatic forest flora and fauna species was compiled and assessed including National and State listed rare and threatened species occurring in East Gippsland.

The assessment involved collation of information on each of these species, including distribution, habitat and life history attributes; identification of factors affecting status (risk of extinction); identification of threatening process (disturbances); a description of current management actions; and identification of gaps in survey and research.

Forest Ecosystem Assessment

The forest ecosystem assessment provides an analysis of information which can address the issue of the protection of viable examples of forest ecosystems throughout their natural ranges. It enables an evaluation against the proposed national reserve criteria, and the determination of complementary off-reserve management.

The assessment involved mapping both the current and estimated pre-1750 distributions of forest ecosystems and assessing their current reservation status: identifying those which are endangered, vulnerable or rare, identifying refugia for flora and fauna, and describing disturbances and management actions relevant to their protection.

Ecological Vegetation Classes (EVCs) are the basic vegetation unit in this assessment. They are the units used for assessment, biodiversity planning and conservation management at the regional scale in Victoria. For the purposes of the RFA process EVCs are equivalent to forest ecosystems, as defined in the proposed national reserve criteria paper.

The methodology used to derive EVCs has been described and reviewed by an independent panel of experts. The panel concluded that EVCs provide an important Statewide level of vegetation mapping and that EVCs are an appropriate basis for assessing floristic biodiversity conservation, provided that the issue of variability across some of the larger EVCs is addressed. Issues raised by the panel have either been addressed in this assessment, or will be taken into account in the ongoing RFA process.

Within East Gippsland, four extensive ecological vegetation classes were considered by the panel to contain a significant amount of variability (Damp Forest, Wet Forest, Lowland Forest and Shrubby Dry Forest). Analyses were suggested to address this issue. The variability within EVCs has been recognised in the East Gippsland Forest Management Area Plan by the establishment of eleven geographic sub-units, with representation of EVCs being considered on the basis of these sub-units. This analysis has been updated in the assessment.

An assessment of the existing reserve system in East Gippsland has been undertaken to establish current reservation levels for each EVC as a proportion of its pre-1750 extent. An assessment has also been undertaken of the reservation levels of various growth stages within EVCs in East Gippsland.

In summary, more than 15% of the pre-1750 extent of all but one EVC (Limestone Grassy Woodland) is protected in the conservation reserve system. Each EVC is also represented in all the geographic sub-units in which they occur.

Old Growth Assessment

The old growth component of the East Gippsland regional assessment is based on the information compiled in *A study of old-growth forests of East Gippsland* by Woodgate *et al.* (1994). That study covers all the old growth assessment requirements under the RFA process.

The definition of old growth forest used by Woodgate *et al.* (1994) is consistent with the national and NFPS definitions.

The scientific validity of one of the operational requirements of the Woodgate *et al.* old growth forest definition was referred to a Joint Scientific Advisory Group (JSAG) by Victoria and the Commonwealth. The JSAG recommended adoption of the 10% regrowth crown cover rule used by Woodgate *et al.* (1994).

An assessment of the existing reserve system in East Gippsland has been undertaken to determine current reservation levels of old growth forest for each EVC. In addition an analysis has been undertaken to determine whether old growth in each EVC is represented in the reserve system across its geographic range. This was achieved by sub-dividing the region into eleven geographic units.

In relation to the representation of old growth across the region, examples of all old growth occurrences in each of the eleven geographic units in the region are represented in the current reserve system.

The analysis shows that, for most EVCs in the region, 60% or greater is protected in the conservation reserve system. However, the level of old growth protection in some EVCs will need to be considered as part of the development of RFA options.

Wilderness

The assessment uses the methodology developed by the Australian Heritage Commission (AHC) through the National Wilderness Inventory (NWI). The assessment of wilderness has been undertaken in the wider regional context of the forests of eastern Victoria, given their broad similarity. Areas of high wilderness quality were identified and delineated and an assessment has been undertaken to establish current reservation levels of wilderness.

The assessment of the eastern Victorian forests identified 18 areas that meet the wilderness threshold requirements, nine of which are within the East Gippsland Region.

In the eastern Victorian forests region 95% of the total area delineated as significant for high wilderness quality is within the existing reserve system. The proposed national reserve criteria specify that 90%, or more if practicable, of the area of high quality wilderness that meet the minimum area requirements should be protected in reserves.

National Estate

The objectives of the National Estate assessment were to identify those areas in East Gippsland which merit listing in the Register of the National Estate, and to assess the representation of national estate values in the current reserve system, as well as the protection afforded by other mechanisms.

An overview of the broad National Estate themes, their sensitivity to disturbance, and the extent to which a particular value occurs within the conservation reserve system has been assessed. The detailed assessment included a wide range of values addressing aspects of both the natural and cultural heritage of the forests of the region. A full list of values identified is provided in the separate CRA report, *The National Estate Values in East Gippsland, Victoria, 1996*. See Section 6.4.

World Heritage

In accordance with the Commonwealth's obligations under the World Heritage Convention, there is a requirement to identify and assess World Heritage values. To meet this obligation, a methodology for assessment of World Heritage values in forested areas of Australia has been developed between the Commonwealth and the States.

In accordance with this methodology, a panel of experts was convened to identify themes and sub-themes of outstanding universal value relevant to Australia and to determine which of these themes and sub-themes are relevant to Victoria. The panel subsequently met and developed a list of places in Victoria warranting further investigation as part of the CRA, to determine whether they best express the identified themes.

One of the themes identified focussed on *Eucalyptus* evolution and diversity which would include a wide variety of *Eucalyptus* types from a variety of environments. An excellent representative sample of these can be found in South East Australia, centred on East Gippsland, encompassing a range of habitats from the sea to the alpine herbland, and then to the inland plains.

This sample would not be found in a single, contiguous area but would be comprised of several large areas, most of which could be expected to already have protected area status.

The Victorian RFA Steering Committee is now developing the details of how assessment work relating to the places identified by the expert panel is to be progressed.

It should be emphasised that none of the places identified so far fulfil the definition of 'identified property' in the *World Heritage Properties Conservation Act 1983*. The Attorney's General's Department advised the Commonwealth's World Heritage Unit of this in correspondence of 7 June 1996. The Department outlined that "the mere application of any or all stages of the methodology to a place will not make that place 'identified property' for the purposes of the *World Heritage Properties Conservation Act 1983*. The Act will not be capable of applying to a place solely by reason of the application of the above steps of the methodology."

It is also important to note that places identified might not in themselves have World Heritage values. Only places that meet the requirements of all of the steps of the methodology, including the final step involving a formal assessment against the criteria and operational guidelines, are likely to have World Heritage value. Such places are then likely to be the 'best of the best' of their type in the world.

6.2 Social Assessment

The East Gippsland social assessment report presents a descriptive 'snapshot' of the communities which may be affected by the planning and policy decisions to be made during the Regional Forest Agreement process.

The report provides a socio-demographic profile of the RFA area, an analysis of current community infrastructure and an outline of community attitudes and perceptions with regard to the use of forest resources.

The methodology employed in the social assessment in East Gippsland is based on social assessment theory and involved detailed scoping and profiling phases. A multi-method approach to data collection was adopted using survey, interview, participation observation and workshop techniques. Methodological and data triangulation was employed to strengthen the study design. Public involvement is an integral part of any social assessment process and thus the community was actively involved in the process of data collection.

A review of current studies in the East Gippsland area reveal that there have been a number of decisions which have significantly affected the communities in the region. Studies by the Land Conservation Council (LCC) in 1985 and the East Gippsland Shire in 1988 have provided opportunities for community comment. In 1995, communities were asked to participate in the development of the East Gippsland Forest Management Plan. These processes provide a detailed history of the region, considers issues relating to cultural values, forest protection, biodiversity and conservation and outline plans for the sustainable management of East Gippsland forests. They also emphasise the importance of developing recreation and tourism within the region. Communities have also been involved in a project undertaken by the Australian Heritage Commission in identifying national estate values. Despite these projects, little social assessment work has been conducted within the region to date.

Through the Forest Community Coordinator in Victoria, a range of stakeholders at a state, regional and local level have been involved in the social assessment process. Groups involved in forest activities such as logging, transport, apiary, seed collecting, tourism and other forest uses were surveyed. In addition, a random telephone survey was undertaken of the East Gippsland area to ensure that a wider community view was obtained.

Furthermore, a representative sample of case study communities was selected. These communities differed in terms of the diversity of the local economy, some communities such as

Orbost and Cann River were seen as more dependent upon forest industries while others, such as Mallacoota, had a more diverse economic base. The case study areas selected represent the social and economic diversity of the East Gippsland region. Community workshops were conducted in each of these case study areas and representatives from a range of community sectors and local organisations were invited to attend.

The East Gippsland area, and more specifically the RFA region is characterised by relatively low population density. In the area of study, the population has risen steadily over the past ten years and a 1.4% growth rate is predicted by 2011. The qualitative data from community workshops strongly suggests that a large number of families with adolescent children are leaving the area to pursue a quality of education not available within rural centres. It is also evident that across all study areas there is a high proportion of families with no children, residing in townships and surrounding districts, as well as a high proportion of the population in later age categories. This finding is supported by the large proportion of retirees sampled in the random survey, especially in areas such as Mallacoota.

Within all case study areas the average household income is relatively low and people are largely vocationally qualified. The majority of individuals are employed as managers and administrators or labourers. In relation to employment, agriculture and forestry are the predominant industries compared to the rest of Victoria.

Within the region, themes of self-reliance and commitment are common. Individuals identify strongly with their communities and have a clear vision for their future. Employment for the youth of the community was perceived as a major priority. The increasing decline of young people in the area due to a lack of employment opportunities is resulting in an aging population in many townships. Furthermore, the restructuring and regionalisation of community infrastructure is also a major concern due to the limited services that currently exist in rural areas.

However, despite these problems, the rural environment is seen to afford a quality of life which is unattainable in urban areas. Residents valued the safety of rural areas, the friendliness of the people and the beauty of the surrounding environment. Social cohesion within the communities was also very high. Communities were investing time and energy in exploring new economic development options, such as the development of an industrial park in the region, tourist attractions such as festivals and events and the possibility of value-added wood products. Within the area there is a clear vision for the development of tourism and related industries. A majority of respondents felt that forests should be reserved but not labelled as National Parks, thus allowing greater access for recreational use. Furthermore, it was outlined that there was a place within the region for both timber and tourist industries.

The results of the assessment suggest that the timber industry is very important to the economy of the area. Community respondents outlined that both tourism and forestry would be the main industries in the area in the next 20 years, and that a more diverse industry base was required for the region. Those communities which have greater dependence on the timber industry, such as Orbost and Cann River, were inclined to suggest that forestry was more important than those communities which are less dependent, such as Mallacoota.

When asked to indicate what would be the perceived effect on the community of a decrease in the activity of the forest industry it was apparent that the majority of people sampled believed such a decrease would affect the community as a whole, that is, there would be an increase in unemployment, economic loss, decline in population and social instability. A smaller percentage of people believed environmental benefit would be a consequence.

Five distinct belief systems were seen to exist within the community. Of these systems two were significantly different. These included a factor relating to the protection of flora and fauna and a factor relating to social issues. These factors differ across location. For example, people living in areas which are less dependent upon the timber industry were more concerned about

the environment, while those living people in the areas that are more dependent on timber emphasised the social and economic consequences to their communities.

Of the tourist operators sampled there was also a recognition that communities were suffering from changes in forestry. While tourist operators used national parks, predominantly, for their activities, some state forest areas were also utilised. The main concern of this particular group was the visual impact of logging and it was suggested that tourist operators should be more involved in the development of forest management plans in the area.

A common theme across surveys of economic activities in the forest was the need to utilise the resource currently left on the forest floor. Overall, contractors, apiarists, firewood, seed collectors and other forest users believed that a properly managed resource, with the least possible impact on the environment, was necessary for future generations.

The experiences of an individual or a community shapes the way that events are perceived. In this way, what is important to a member of a community, or the community as a whole, may not be important to someone outside that community. In summary therefore, it is important to acknowledge and consider the values, social dynamics and beliefs of those immediately affected by events in order to minimise social disruption and to maximise the positive community potential within the outcome of the RFA for East Gippsland. It is evident from the social assessment in East Gippsland that the community wishes to have a voice in determining how future forest resources are used and managed.

This process has given communities and other stakeholders within the area a chance to present their views and opinions in an open and neutral forum. These views must be seriously considered if an optimal solution to the RFA is to be achieved.

6.3 Resource and Economic Assessments

The Resource and Economics report provides the details of the resource and economic components of the Comprehensive Regional Assessment (CRA) for East Gippsland. It details assessments of existing resources of the forest estate in East Gippsland, examines forest management and the range of existing forest uses, provides estimates of future resources and potential usage and develops a framework for the economic valuation of the options to be developed in the next step of the Regional Forest Agreement (RFA) process.

The report, together with the other regional assessment reports, provides a basis for the development of options for resource use and development in East Gippsland. Six broad resource and usage categories are considered:

- native forests - production of sawlogs and residual logs
- plantations - native and exotic species
- other forest produce
- recreation and tourism
- water
- mineral resources.

Information for the report was drawn from a number of sources including existing published and unpublished sources. All data is referenced and metadata information is provided.

Native Forest Management

East Gippsland native forests are managed by the Department of Natural Resources and Environment for a range of uses including conservation of biodiversity, catchment protection, recreation and tourism, and production of wood and wood-based products.

Native forest management in Victoria is guided by a legislative, policy and planning framework for wood and non-wood values. The *East Gippsland Forest Management Area Plan* (DCNR 1995), provides further detail on land use within State Forests.

The policy of NRE regarding timber production is that forest management is directed towards the production of sawlogs. Sawlog production is sustainably managed to produce around 250 000 m³ (D+) per year. This will increase through time as more productive regrowth forests mature.

Residual logs are those which are of insufficient size or quality for sawlogs, but which can be used for pulpwood, firewood and craftwoods. Residual logs represent a commercial opportunity that is currently underutilised. NRE has estimated that around 650 000 m³ of residual logs become available as a result of sawlog production every year in the East Gippsland Forest Management Area with an additional 150 000 m³ from the adjacent Tambo Forest Management Area. NRE has recently sought expressions of interest for the utilisation of this wood.

Silviculture

The silvicultural practices used in East Gippsland are designed to optimise sawlog production. Seed tree silviculture offers an economic technique for achieving sufficient disturbance to allow regeneration and optimal growth. Clearfelling is used in some forest types where natural seed supply is insufficient or unreliable for adequate regeneration. Selection methods are not usually practiced in conventional logging as they provide insufficient disturbance for adequate and consistent regeneration and growth.

Thinning, another silvicultural technique for optimising sawlog production, is also practiced in East Gippsland.

Sustainable Yield for Sawlogs

The report examines sustainable yield forecasts for sawlog production in East Gippsland. An independent appraisal of the methodology used by NRE to forecast sawlog yield in East Gippsland was undertaken by the University of Melbourne. The details of the appraisal are discussed in the report and the appraisal included, in full, as an Appendix.

The forecast of sustainable yield in East Gippsland is contingent upon:

- resource volume estimates for standing timber volume, including the method for collecting, storing and handling resource data;
- growth models used to forecast future product yield by forest type; and
- forecasting method, including the strategy formulation and technology for handling data

The method for forecasting the sustainable yield for East Gippsland was found to be conceptually sound. Limitations were identified in relation to the supporting resource data. The growth rates have been found to be conservative. A number of improvements to the methodology were suggested. NRE has indicated that several of these will be addressed through the implementation of the Statewide Forest Resource Inventory (SFRI) and Integrated Forest Planning System (IFPS).

The appraisal also emphasised the need for sensitivity analysis as a standard procedure for assessing the consequences of potential error in data or methodology. Sensitivity analysis was conducted by NRE for a number of variables, including one scenario for determining the effect of an extreme positive variation in the estimation of standing timber volumes on the sustainable yield. Based on this scenario, the failure to identify such an error would be an additional 1.3% variation to the sustainable yield rate in 2001.

The forecasting methodology used in East Gippsland, and therefore the forecast, is considered adequate as the basis for developing options in the next step in the RFA process.

Value and significance of the timber based industries

In order to assess the economic circumstances underlying the competitiveness and value of the hardwood sawmilling industry an economic survey of sawmills operating in the East Gippsland Region was conducted. This information was used in conjunction with other market based information to estimate the net economic value of the East Gippsland hardwood sawmilling industry.

The timber industry plays an important role in the regional economy accounting for approximately 27 per cent of manufacturing turnover within the East Gippsland statistical division. In 1995, 19 049 people were employed in the East Gippsland statistical division. Direct employment associated with the timber industry within the East Gippsland region is estimated at 555 people.

In 1994-95, there were twenty-three hardwood sawmills receiving logs from State forests located within East Gippsland. Twenty-two of these mills were operating within the region. Presently, there are 21 hardwood sawmills receiving logs from State forests located within the East Gippsland region, reflecting recent changes in mill processing activities compared to 1994-95. There are also two woodchip companies which receive sawmill residues from the East Gippsland region. These are located in Geelong and Eden.

Total hardwood sawntimber production from sawmills dependent on the East Gippsland resource in 1994-95 is estimated at around 134 000 cubic metres, approximately 14 per cent of total Victorian sawntimber production (including both softwood and hardwood sawntimber).

The total net value of production for 1994-95 for the hardwood sawmilling industry in East Gippsland is estimated at \$8.1 million. The total value of turnover (or gross receipts) for the industry is estimated at around \$52.5 million in 1994-95. Information collected on the average net returns to the industry in 1994-95 was also used, in conjunction with future anticipated log allocations, to provide a broad estimate of the likely magnitude of the total net returns to the industry in 1995-96 and 1996-97. Assuming real constant costs and prices over these two years, and future anticipated log allocations, the total net economic value of sawmilling production is estimated at \$10.7 million in 1995-96 and \$11.6 million in 1996-97.

Total capital invested by mills within the East Gippsland FMA is estimated at approximately \$49.8 million. This figure includes all plant, machinery and structures in East Gippsland mills and was estimated as the replacement value of existing capital stock in 1994-95.

Market Outlook for Sawntimber

Because Australian trade in most forest products (such as sawntimber) is small in comparison with world trade, domestic prices for forest products are largely determined by the landed or import parity price of imports. The forecast supply reductions in global hardwood timbers, together with projected increases in world population growth and economic activity, are expected to result in rising real prices of logs and solid wood products over the medium term.

The Australian market for sawn timber continues to be influenced by depressed conditions in the new residential construction sector. Total sawntimber consumption is expected to fall by 13% in 1995-96 before recovering moderately by an average 1% per year from 1997-98 onwards.

Strong competition from softwood sawn timber is expected in the house framing market and other structural end use markets in line with future projected increases in softwood sawntimber production. However, the impact of substitution away from hardwoods to lower cost softwoods in housing construction has been offset, in part, by hardwood sawmillers

diversifying into kiln-dried timber for furniture, flooring, mouldings and other value-added markets.

Possible wood based industry development opportunities

A number of wood based industry development opportunities have been proposed for the region. These industry development opportunities may be summarised into two broad categories: opportunities for further value adding of hardwood sawlogs; and, opportunities for the increased utilisation of residual logs.

With respect to opportunities for further value adding of hardwood sawlogs, the ability of the hardwood sawmilling industry to maintain profitability and compete against domestic softwood and other imported timbers will depend on the underlying cost competitiveness of the industry, as well as the development of new market opportunities.

While the proportion of kiln-dried and dressed sawntimber to total production is still presently moderate, up to \$5.4 million has recently been invested by sawmillers in kiln-drying or sawing facilities designed to increase the proportion of dried and dressed sawntimber over time.

With respect to the increased utilisation of residual logs from East Gippsland, the Department of Natural Resources and Environment has recently called for expressions of interest in the processing of 800 000 cubic metres (m³) annually of residual logs available from East Gippsland (650 000 m³) and Tambo Forest Management Areas (150 000 m³).

The residual log volume of 800 000 m³ per year is of sufficient size to support a range of internationally competitive wood processing activities. With current technology, these logs can be processed into a variety of products, including medium density fibreboard, laminated veneer lumber, plywood, veneer, or other smallwood products (e.g. furniture components). There is an emphasis on the development of domestic processing in relation to this resource.

Other forest products

A review of existing resource and market information was also used to present an economic profile of other direct or potential uses of State forests including apiculture, grazing, non-mineral extractives, recreation, tourism, mining and water production. Cost, price and trade data were obtained either directly from industry, or from published information sources such as the Australian Bureau of Statistics. A range of economic indicators were collated, including estimates of employment, production volumes and gross value.

The State forests of East Gippsland provide for a range of uses. In addition to the production of sawlogs and residual logs. These include, bee-keeping, stock grazing, recreation, tourism, and water production for domestic and agricultural use. Production of minor products in the region is generally low in terms of value. Total royalties received by DNRE from the sale of minor forest products was \$44 956 in 1994-95.

Bee-keeping and grazing in State forests

Apiculture (or bee-keeping) is practiced widely in East Gippsland State forests by a number of commercial and semi-commercial beekeepers. In 1992-93, there were 4 permanent bee farms covering an area of 2 454 hectares, and 144 temporary licence holders operating within State forests in the East Gippsland region. However, only 143 bee-keeping sites were operating in 1994-95. In 1993-94, the honey produced from the East Gippsland region had an estimated market value of \$172 700.

Grazing licences occupy a total area of 85 000 hectares, or over 90 per cent of the total area held under occupation licences in State forest within East Gippsland. Access to grazing activities in the State forests of East Gippsland is controlled through the issue of grazing licenses and Crown leases.

Recreation and tourism based activities

East Gippsland forests are used as a resource for both recreation and tourism. In 1993-94 total direct employment in the tourism sector was estimated at 279 permanent full-time jobs. East Gippsland forests attract a significant number of visitors as they offer a range of recreational opportunities based on the natural values of the region.

It is estimated that in 1995/96, approximately 600 000 visitor days were made to East Gippsland Parks, representing a total value of approximately \$11 million.

It is also estimated that State forests in the region received 140 000 visitor days per year which equated to a total net value of between \$0.8 and 2.5 million per annum.

Catchment and Water Values

A supply of water in sufficient quantity and appropriate quality is essential for maintaining natural environments, and for agricultural, recreational, industrial and domestic consumers. For these reasons, water is a very important resource that can be harvested from forests. Streams and catchments in the East Gippsland region include some of the most pristine in Victoria.

The relationship of water, catchments, forests and forest use is complex, and based on many variables including climate and geology, lithology and vegetation. Human impacts can have adverse effects on water values. Water quality and quantity are important forest management issues, and a number of management techniques are used to maintain water values, as detailed in the code of forest practices and regional prescriptions for timber harvesting.

In East Gippsland, areas of the Betka and Rocky River catchments subject to harvesting are included in the Special Management Zone, with several specific management constraints designed to offer additional protection to catchment values.

Plantations

Land availability and suitability in East Gippsland limits the potential development opportunities for plantations. Current Victorian Government policy prohibits the clearing of native forest on public land for the establishment of plantations. Private land can be cleared for conversion to plantations subject to native vegetation retention controls to protect flora and fauna, and local government planning requirements.

Consequently, plantation development opportunities are available only on public lands that do not presently contain forest, and some areas of private land. Private land represents 156 900 ha (13%) of the land area of East Gippsland.

Most potential for plantation development or expansion lies to the west of the East Gippsland Region, in Central Gippsland, or to the north-east on the Monaro Tablelands of New South Wales.

Minerals

An assessment of known mineral resources and potential (undiscovered) mineral resources is provided in the report.

The rock types, the age and geological structures in East Gippsland are similar to those which host major mineral deposits in other parts of Victoria and elsewhere.

East Gippsland is underexplored in terms of exploration expenditure at \$736 per km² as compared with Victoria as a whole at \$1298 per km². There are currently 21 active exploration

licences in the region and the minerals being explored include gold, copper, diamonds, iron ore and zinc. In 1994/95 exploration expenditure in East Gippsland totalled \$904 818. Exploration expenditure from 1970 to the present is \$8.9 million and the minimum expenditure requirement on existing Exploration Licences for 1996-7 is a further \$1.3 million.

The Victorian Government has conducted airborne magnetic and radiometric surveys and geological mapping to encourage exploration in East Gippsland at a cost of \$2 million over the last 3 years.

There are about 200 mineral occurrences, deposits and old mines in East Gippsland. Known resources of high grade limestone in the Buchan area are large, with lesser quantities of dolomite.

Estimated gold production since 1851 to the present is estimated by the Victorian Geological Survey (VGS) at about of 3 000 kg which, at today's prices equates to about \$US40M. Current major mining activity is confined to the extraction of high grade limestone and construction materials.

The potential for occurrence of mineral deposits in the area has been assessed using the scientific approach developed by the United States Geological Survey. This approach identifies geological units (tracts) which could contain particular styles of mineralisation. It ranks the potential for occurrence of specific types of mineralisation in specific geological units as high, moderate, low or unknown, based on the professional judgements of the geoscientists involved. To reflect the differing amounts of information available, the mineral potential has also been categorised according to levels of certainty.

It is not possible to have a 'final' assessment of potential mineral resources at any given time. The mineral resource potential of areas needs to be monitored and reassessed periodically to take account of new data, advances in geological understanding, in mineral exploration and mining technologies, changes in mineral markets and other factors. Continued access to land for regulated exploration, which is a transient process rather than a long-term land use, is an important issue for the minerals industry and for future mineral development.

The qualitative desk-top assessment, based on a wide range of geoscientific data and information, has identified considerable potential for a number of significant types of gold, base metal and other mineral deposits within East Gippsland. These occur in defined tracts throughout the region and are described and mapped in detail in the report.

The relative economic significance of the tracts for different types of mineral deposits would be dictated by the perceptions (of mining companies) of prospectivity, future market conditions, land access and other factors.

6.4 National Estate Assessment

The Register of the National Estate is a national register of places in Australia with cultural or natural significance to the community as defined in the *Australian Heritage Commission Act 1975*. The role of the Australian Heritage Commission (AHC) is to identify the National Estate and (under section 30 of that Act) to advise the Commonwealth Government about its conservation.

The Victorian Department of Natural Resources and Environment (NRE) is responsible for the ecologically sustainable management of most of the public land in Victoria and its associated resources and values.

The Commonwealth, State and Territory governments have agreed on a national approach to the sustainable management and use of Australia's forests, the National Forest Policy Statement (NFPS). One of the aims of the NFPS is to establish a Comprehensive, Adequate and

Representative (CAR) forest reserve system. To achieve this it is essential to assess the conservation values of forests, including areas of National Estate significance.

Since the commencement of this study, there have been many developments in forest policy. During 1995, the Commonwealth and Victorian Governments jointly undertook a Deferred Forest Assessment (DFA) which resulted in the signature of an Interim Forests Agreement (IFA). The aim of the IFA is to ensure that options for the development of a CAR reserve system are not foreclosed while a Comprehensive Regional Assessment (CRA) is being undertaken. The CRA will provide the basis for an East Gippsland Regional Forest Agreement (RFA) between the two Governments. Both Governments are committed to ensuring that the RFA for East Gippsland is negotiated before the end of 1996. A more detailed understanding of the current policy framework behind this report, as well as the ongoing joint Government approach to forests assessments and agreements, is provided in the *Background Paper - Regional Forest Agreement, East Gippsland Victoria* (1996).

How the study was carried out

The study involved a broad range of technical expertise, as well as public input, and covered both natural and cultural values. Key sources of information were the NRE flora, fauna and historic databases, the Register of the National Estate, *A Study of the Old-Growth Forests of East Gippsland*, (Woodgate et al 1994), ecological survey reports, NRE's pre-logging surveys and previous studies by experts, including the Land Conservation Council reports. A large amount of new data on cultural heritage was also collected. Assessment was based on the national estate criteria as specified in the *Australian Heritage Commission Act 1975*.

The joint assessment process consisted of:

- data compilation from a range of existing sources and survey work undertaken within the study;
- identification and assessment of national estate values; and
- analysis of current levels of protection.

Community involvement was a key component of the study. Community heritage workshops were held to draw on the knowledge of local people about heritage places in the region. The workshops involved local organisations, land managers, local business and tourist operators, industry and conservation groups. Many places not on existing databases, or known to experts, were identified and documented as a result of this work. The active participation of local Aboriginal communities was an essential part of the identification and assessment of Aboriginal places.

The assessment of Aboriginal values could not be completed within the time-frames of this study, given the AHC's commitment to having local Aboriginal communities actively involved in the assessment of Aboriginal places. Work with the Aboriginal people of East Gippsland is continuing and results will be incorporated into the study outcomes.

Results

National estate places identified

The study identified many areas of national estate significance on public land within East Gippsland, as well as specific places with national estate significance. These ranged from a World War Two intelligence-gathering complex, to historic mining sites, natural landscapes and places valued by the community for long-standing recreational use, or as a symbol of local identity.

Better definition of national estate values

For the first time, a comprehensive understanding of the region's disturbance history, based on a range of land use studies, was developed. This drew on the extensive datasets on NRE's computer systems.

As expected, additional research led to the better definition of a number of heritage values, such as:

- endemism;
- refugia for flora and fauna;
- old-growth forests;
- successional processes;
- flora and fauna richness; and
- social, or community-based, heritage values.

Private property

While conserving national estate values on public land is the focus of the study, some values do not stop where the private property begins. Geological and geomorphological values, cultural and wetland values are well established and readily mapped, and these have been identified throughout the study area, including private property. The quality of data about other values on private land is variable, and further identification of values on private property would require additional work.

Major outcomes

The study has resulted in the following outcomes:

- identification of the National Estate, based on the assessment of both natural and cultural heritage values in an integrated way across the region;
- better definition of heritage values and analysis of the overall protection of the national estate in the region;
- an improved basis for integrated management of the full range of heritage values on public land within the study area;
- the results will be used by the AHC as the basis for listings on the Register of the National Estate; and
- a basis on which to incorporate national estate values into the RFA process.

Appendix 1: Regional Forest Agreement Committees

Steering Committee Members

Victoria

Richard Rawson (co-chair), Department of Natural Resources and Environment
Janice Stanford, Department of Premier and Cabinet
Ian Miles, Department of Natural Resources and Environment

Commonwealth

Anthea Tinney, (co chair) Department of the Prime Minister and Cabinet
Anne-Marie Delahunt, Department of the Environment, Sport and Territories
Tom Aldred, Department of Primary Industries and Energy
Peter Channells, Department of the Prime Minister and Cabinet
John Hicks (DEST) and Mike Lee (DPI&E) were former members of the Steering Committee.

Technical Committee Members

Victoria

Ian Miles (co-chair), Dept of Natural Resources and Environment
Phil Roberts, NRE, Minerals
Daniel Catrice, NRE, Historic Places
Brian Thompson, NRE, Forest Planning
Bruce Kilgour, NRE, Forest Information
Doug Hooley, NRE, National Parks
Adrian Moorrees, NRE, Flora and Fauna
Malcolm Macfarlane, NRE, Flora and Fauna
David Tainsh, NRE, Gippsland Region
David Clarke, Department of Aboriginal Affairs Victoria

Commonwealth

Peter Channells, Department of Prime Minister and Cabinet (co-chair)
Pam Robinson, DPIE, Social Assessment Unit
Tom Aldred, DPIE Forest assessment Branch
Terence Uren, DEST, Australian Heritage Commission (AHC)
Keith Lamb, DPIE, Bureau of Resource Sciences
Michael Stephens, DPIE, Australian Bureau of Agriculture and Economics
Tracy Pateman, DEST, Forests Branch
Brendan Edgar, DEST, Australian Nature Conservation Agency
Ian Lambert, DPIE, Bureau of Resource Sciences
Maria Cofinas, DEST, Environmental Resources Information Network
Wendy Proctor (DEST) and Chris Ashe (NRE) were former members of the Technical Committee.

Tables and Figures

Table 1: Management System Structure and Criteria for Assessment of ESFM

Table 2: Proposed ESFM assessment Framework

Figure 1: The RFA Development Process

Figure 2: Map of Victorian CRA Regions

Figure 3: Public Land in the East Gippsland Forest Management Area

Figure 4: ESFM Management Arrangement

Figure 5: Presentation Framework for ESFM Assessment

Figure 1: The RFA Development Process

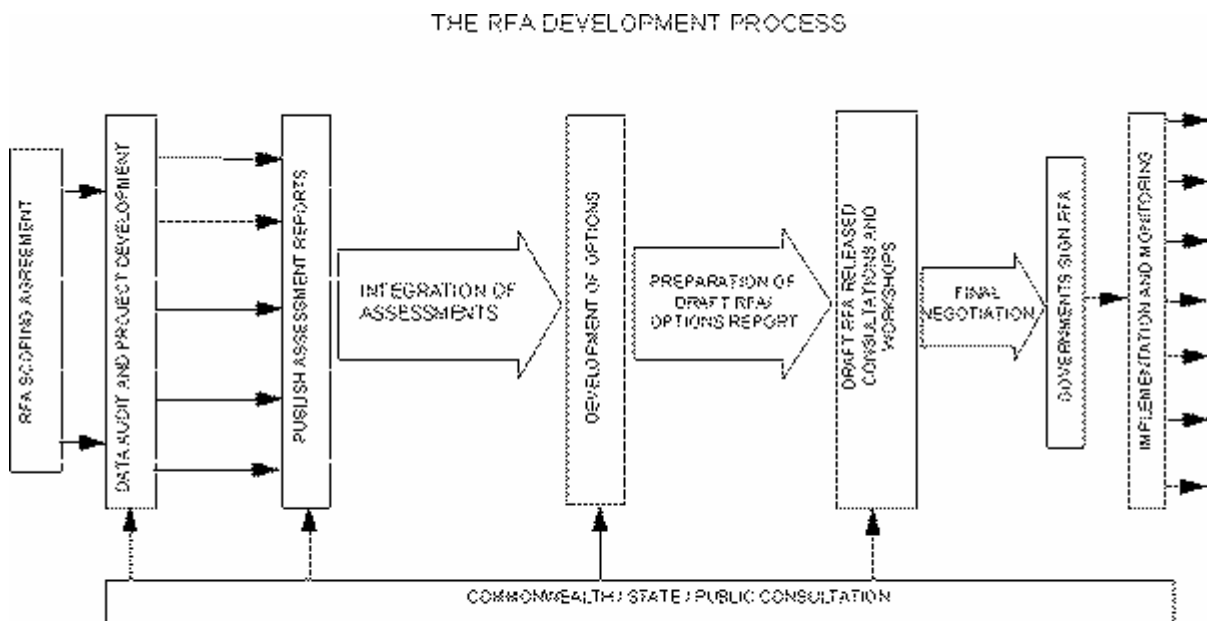


Figure 1 - Indicative Steps of the RFA Process

Figure 2: Map of Victorian CRA Regions

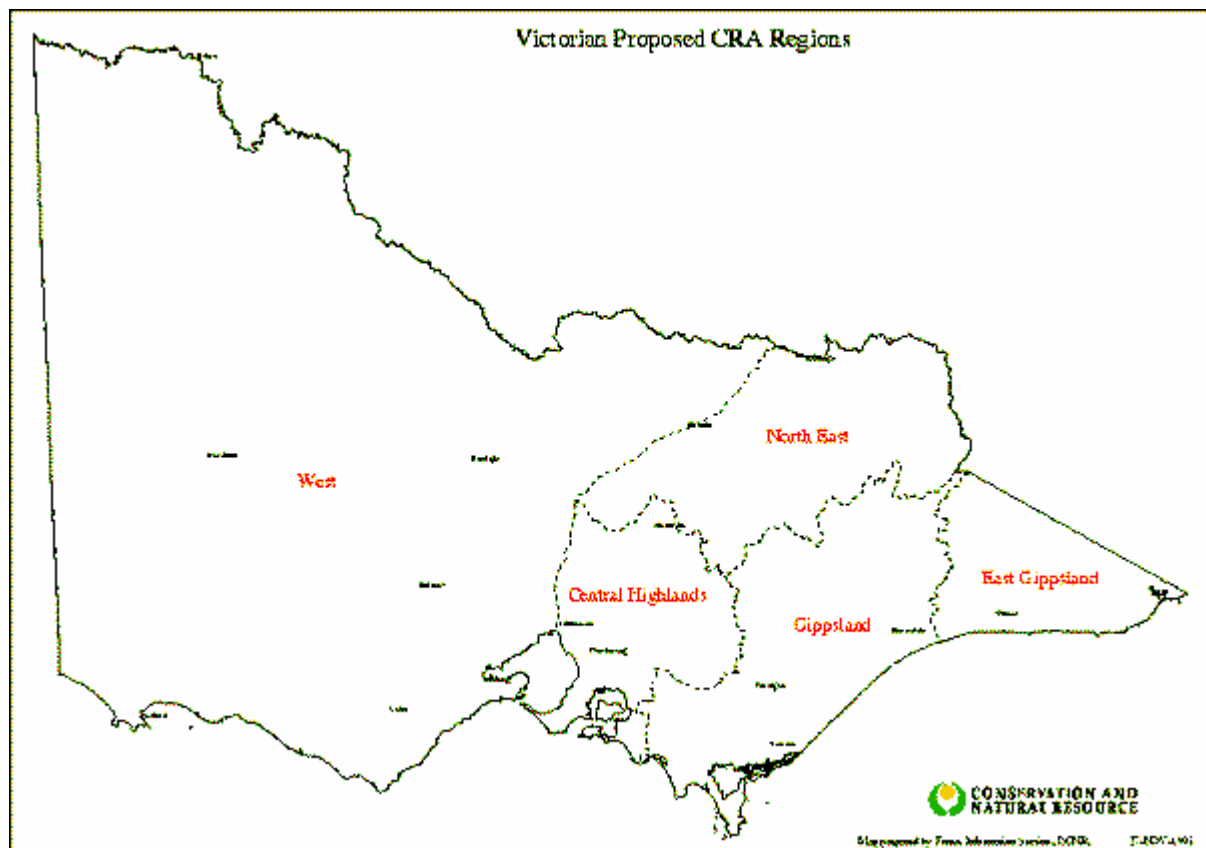


Figure 3: Public Land in the East Gippsland Forest Management Area

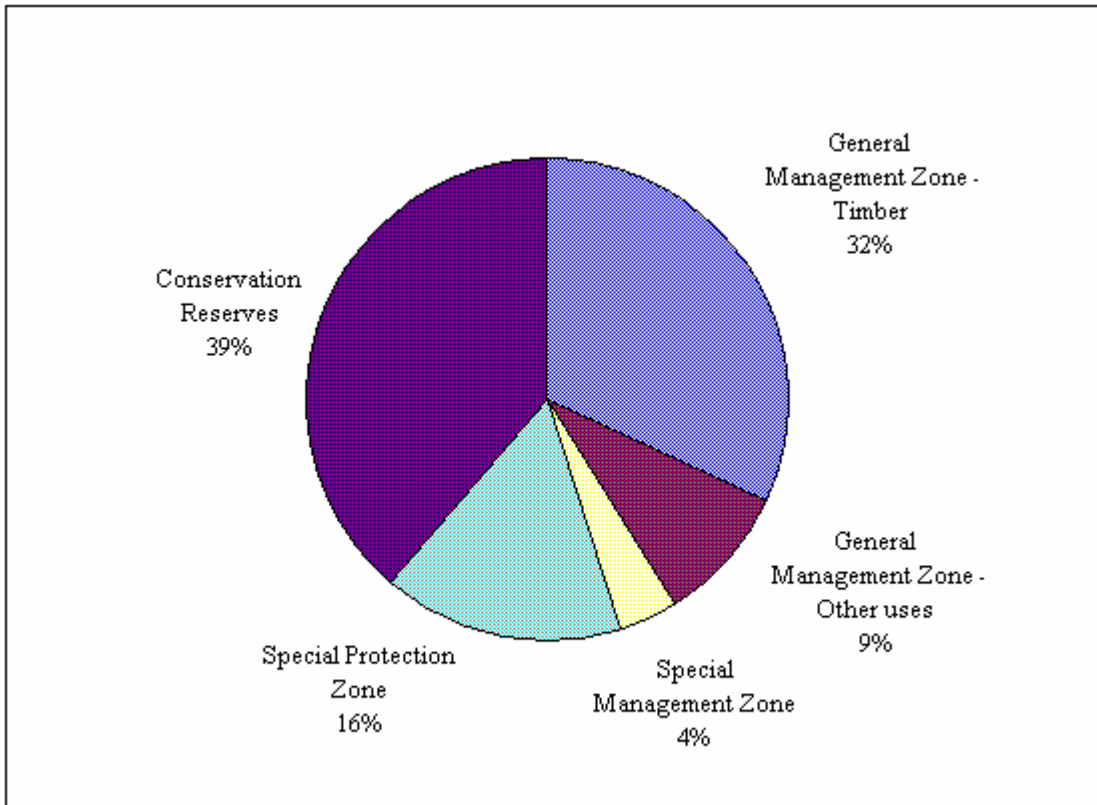


Figure 3. Public land in the East Gippsland Forest Management Area (NRE, 1996)

Figure 4: ESFM Management Arrangement

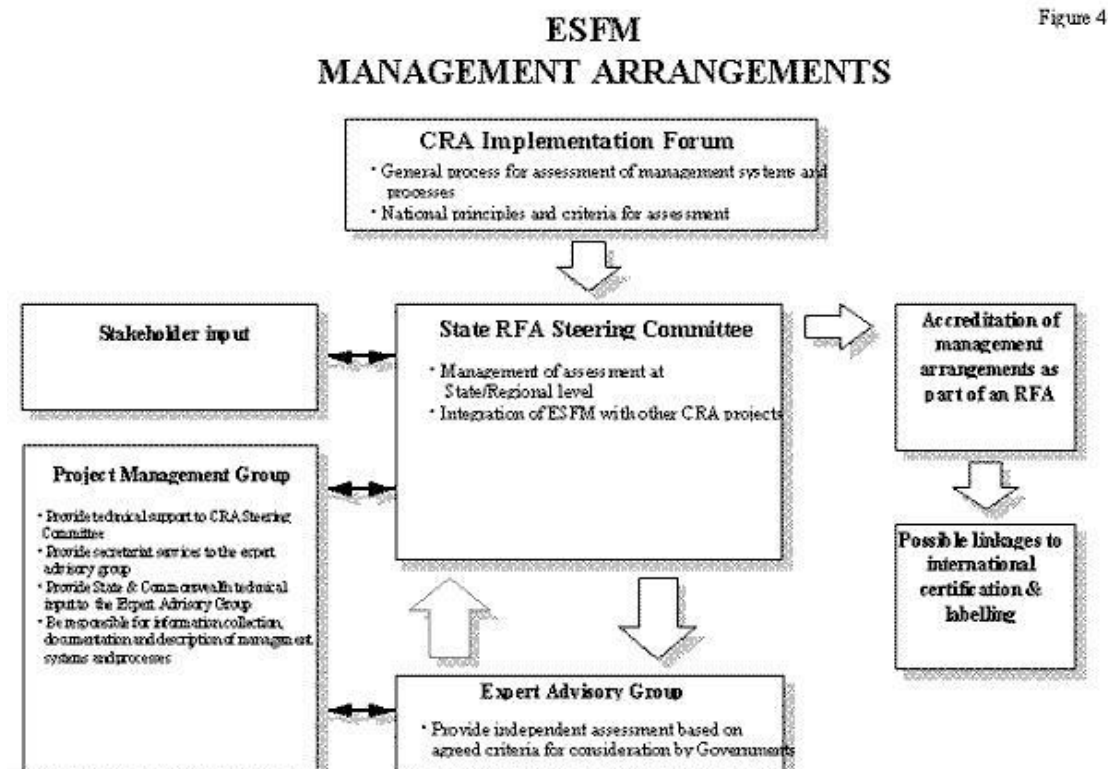


Figure 5: Presentation Framework for ESFM Assessment

PRESENTATION FRAMEWORK FOR ESFM ASSESSMENT

Figure 5

