

**NORTH EAST VICTORIA**

**REGIONAL FOREST AGREEMENT**

**DIRECTIONS REPORT**

**April 1999**

**Prepared by officials to support the North East Regional Forest Agreement Process**

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

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## FOREWORD

This report has been prepared by the Commonwealth-Victorian joint Regional Forest Agreement Steering Committee to assist stakeholders and the broader community to have input to the development of a Regional Forest Agreement (RFA) for the North East region of Victoria. The role of the Steering Committee is to manage the development and completion of the RFAs in Victoria and to ensure that the processes associated with the development of RFAs are consistent with the Scoping Agreement signed in 1996.

The report builds upon information contained in the Comprehensive Regional Assessment (CRA) report released in August 1998, and the results of community consultation following the release of the CRA report.

It addresses:

- how the proposed comprehensive, adequate and representative (CAR) reserve system satisfies the national reserve criteria;
- industry opportunities and the implications of these opportunities;
- ecologically sustainable forests management which is integral to the development of the RFA; and
- the links between the RFA process and other statutory processes, particularly those related to environmental impact legislation, World Heritage, National Estate, endangered species protection and Native Title issues.

The Prime Minister and the Premier of Victoria will sign the RFA which will operate for 20 years. It will define the commitments made by both governments to forest conservation, forest use and development, and the development of those industries based on the resources of the region's forests. The RFA will be reviewed five yearly to evaluate the performance of the agreement against the identified commitments.

The release of this report marks the commencement of a six week public consultation period leading up to the completion of the RFA. To assist with this consultation, a series of public meetings will be held to discuss this report and any issues which need to be considered in completing the RFA.

Written submissions are invited and they may include:

- views on the approach which should be adopted within the RFA and any implications of that approach;
- any issues of substance that have not been considered; and
- other issues associated with the information presented.

Submissions will be taken into account in preparing the RFA and should be addressed to:

Commonwealth-Victoria RFA Steering Committee  
c/- Forests Taskforce  
Department of the Prime Minister and Cabinet  
3-5 National Circuit  
BARTON ACT 2600

**The closing date for submissions is 28 May 1999**

Mr Phillip Fitch, Commonwealth Project Manager phone 02 6271 5181, or Mr Andrew Maclean, Victoria Project Manager phone 03 96378407 are available to discuss any issue relating to this report or the RFA process in general.

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## EXECUTIVE SUMMARY

The report outlines the preferred directions for forest use and management in the North East region developed by the Commonwealth and Victorian Regional Forest Agreement Steering Committee. It provides a basis for public comment prior to the preparation of the North East Regional Forest Agreement (RFA).

The analysis and assessments completed for this Report indicate that the preferred position for the North East RFA has the capacity to provide long-term certainty for:

- sustainable levels of wood supply from public forests for industry growth and diversification in the region;
- protection of conservation and heritage values through a comprehensive, adequate and representative reserve system based on the nationally agreed reserve (JANIS 1997) criteria;
- access to forests for other uses including tourism, recreation, forest grazing, mineral exploration and mining; and
- ecologically sustainable forest management through accredited management systems and processes.

The preferred position proposed in the Report highlights the region's capacity to maintain the current timber supply commitments and identifies further opportunities for value-adding with associated employment and industry benefits. In addition, the Report identifies that there is scope to increase annual wood supply from the region, leading to positive impacts on industry investment and employment.

Results of economic assessments, based on investment strategies proposed by the industry through to 2006-07, combined with utilising potentially available additional resource, are projected to increase gross product value by up to 84 per cent to \$33.5 million and direct employment by 25 per cent to 192 people. The industry development opportunities may bring significant benefits to communities within the region.

The proposed reserve system satisfies the JANIS criteria as far as practicable on public land and if adopted will add approximately 174 000 hectares to the existing reserve system – an increase of 42 per cent. The Report proposes to include the upper Wongungarra catchment in the CAR reserve system, based on high biodiversity and old growth values and on new information indicating alternative mature ash resources being available to meet current supply commitments. Ninety five per cent of high quality wilderness is protected in the existing reserve system across eastern Victoria as a whole thereby satisfying the national reserve criteria for wilderness. In general, there is good agreement between the proposed CAR reserve system and many areas with National Estate values identified in the assessments.

Management strategies for threatened flora and fauna, including the Long-footed Potoroo, Spotted Tree Frog and large forest owls are incorporated into the preferred position and are detailed in the Proposed North East Forest Management Plan.

A statewide assessment of Ecologically Sustainable Forest Management systems and processes concluded that "Victoria has all the major elements in place for appropriate systems and processes for ecologically sustainable forest management...however, there is still considerable scope for further improvement...These are not major or exceptional requirements: they are the measures required for continuing improvement in management systems." The Statewide assessment of ESFM is applicable to the North East region.

The Steering Committee invites public comment on the preferred position. Closing date for submissions is 28 May 1999.



# 1. INTRODUCTION

## 1.1 BACKGROUND

This report outlines the Victorian RFA Steering Committee's preferred position with respect to the RFA for the North East. It has been prepared on the basis of the comprehensive regional assessment (CRA) report for the region and following consideration of issues raised by stakeholders in public meetings, individual and group briefings and in written comment.

The preferred position has been developed to address the three objectives of the RFA as follows:

- the development of a Comprehensive, Adequate and Representative (CAR) reserve system;
- ecologically sustainable forest management (ESFM) across the whole of the forest estate; and
- development of an efficient, internationally competitive timber industry and certainty for communities.

The Steering Committee believes that the proposals outlined in this report provide outcomes that together meet all of these objectives. The social and economic needs of communities have been addressed in the development of the proposals. Chapter 1 describes the RFA process and Chapter 2 describes links between the RFA and other key processes within the national and State spheres. Chapter 3 outlines the elements of the proposed CAR reserve system based on nationally agreed criteria. Chapter 4 examines opportunities for industry development in the region and Chapter 5 addresses the results of the statewide assessment of ESFM.

The proposed CAR reserve system, ESFM and industry development proposals combine to form the Steering Committee's preferred position. The Steering Committee invites public comment on the preferred position.

## 1.2 THE REGION

The boundaries of the North East RFA region include the Murray River to the east and north, and the Hume Freeway north of Seymour to the west, and generally the Great Dividing Range to the south.

The North East RFA Region covers approximately 2.3 million hectares. The following figures have been updated from the figures appearing in the North East CRA Report. Private land comprises some 1 064 000 hectares or 46 per cent of the region and is mostly cleared and used for a range of agricultural pursuits.

Public land comprises about 1 253 000 hectares or 54 per cent of the area and is covered mostly by native forest. The region is known for its mountain landscapes, diverse range of flora and fauna, timber resources, tourism and recreational opportunities and the high quality of water in its rivers and streams.

State forests occupies about 700 000 hectares or 56 per cent of the public land, and conservation reserves (including National Parks and Flora and Fauna Reserves) occupy 33 per cent of the public land, or about 417 000 hectares. The remaining public land in the North East includes other public land, plantations and water bodies.

### **1.3 THE RFA PROCESS**

#### **Background**

The National Forest Policy Statement (Commonwealth of Australia 1992) established the CRA process whereby the States can invite the Commonwealth to participate in undertaking all assessments necessary to meet Commonwealth and State obligations for forested areas of a region. These assessments will provide the basis for enabling the Commonwealth and the States to reach an RFA covering their obligations for forests in a region.

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. At the same time, the Prime Minister and Premier signed a Scoping Agreement setting out administrative and operational arrangements for undertaking CRAs and developing RFAs, as well as committing Governments to establishing processes and timetables for the completion of the RFA process.

#### **Victorian RFA Regions**

Victoria has a land area of 22.7 million hectares, of which some 40 per cent is publicly owned. Of the public land, 43 per cent (3.9 million hectares) is reserved for conservation purposes, including 2.6 million hectares of forests. A further 3.47 million hectares of public land is also forested, of which about 1.2 million hectares is available for timber harvesting.

Victoria has five RFA regions, namely East Gippsland, Central Highlands, Gippsland, North East, and West.

RFAs for the East Gippsland region and the Central Highlands region were signed by the Prime Minister and the Premier of Victoria on 3 February 1997 and 27 March 1998 respectively. The North East is the third region in Victoria for which an RFA will be completed.

#### **Stages in the RFA process**

The major stages in the RFA process as outlined below include the CRA, a Directions Report and the RFA.

#### ***Comprehensive Regional Assessment***

The National Forest Policy Statement establishes the CRAs as part of the process leading to the development of an RFA. The CRA is the information on which the RFA can be developed and agreed between the Victorian and Commonwealth Governments. It does not make judgements or interpretations which might pre-empt the development of the RFA.

The North East CRA report (VicRFASC 1998a) was published in August 1998. It brings together a wide range of studies conducted in recent years and is supported by a number of technical reports which provide detailed information. The technical reports are:

- Biodiversity Assessment (VicRFASC 1998b)
- Study of Old-growth Forest in Victoria's North East (NRE 1998a)
- National Estate Values in the North East of Victoria (VicRFASC 1999)
- Wilderness Assessment of the Eastern Victorian forests (VicRFASC 1996b)



- Victorian Statewide Assessment of Ecologically Sustainable Forest Management (VicRFASC 1997)
- Social Assessment (VicRFASC 1998c)
- Mineral Assessment (VicRFASC 1998d)

In addition to these technical reports, a compendium of Victorian forest research (VicRFASC 1998e) has been published.

The CRA report provides extensive information on the North East region and background information for developing approaches to reserves, industry and ESFM as described in this report. Copies of the CRA report are available at the, Benalla, Mansfield, Wodonga and Melbourne offices of the Victorian Department of Natural Resources and Environment (NRE). The CRA report and technical reports may be ordered by telephoning 03 9637 8080.

### ***RFA Directions Report***

The CRA report provides the base information for the integration phase of the RFA process. Information from the ecological, economic and social assessments and public consultation was used to identify and analyse issues which will be addressed in the RFA. A description of these issues and the results of the analysis is provided in this report. This Directions Report is released for a six week public comment period. This phase is an important component of the consultation process in developing an RFA for the North East and is a basis for further discussions with stakeholders.

### ***RFA Completion***

Following the six week public comment period on the Directions Report, the Commonwealth and State Governments will consider the comments made in submissions and other discussions with stakeholders and then negotiate the RFA. The RFA is scheduled for completion in mid-1999. The Forest Management Plan for the North East will be completed after the RFA.

For reference, the Central Highlands RFA (excluding attachments) is included in this report at [Appendix 1](#) to assist public comment on the development of the North East RFA. The North East RFA will follow a similar format to the Central Highlands RFA.

## **1.4 CONSULTATION PROCESSES**

Previous Victorian land use planning processes in the North East have provided extensive opportunities for community involvement in forest issues over the last twenty years (notably Land Conservation Council studies and forest management planning). The RFA process has built on this involvement through a wide range of consultation activities with the local community and other interest groups.

In August 1997, public meetings were held in Corryong, Myrtleford and Mansfield to explain the RFA process and discuss with stakeholders the ways in which they could be involved in the process.

The social assessment and national estate assessment provided further opportunities for involving the community, particularly through workshops at Benalla, Beechworth, Corryong, Mount Beauty, Myrtleford, Mansfield, Bright, Tallangatta and Wodonga and adjoining districts. In addition, other opportunities for community input included a telephone survey, questionnaires, interviews with key stakeholders at a State, regional and local level and through direct contact with the Victorian Forest Community Coordinator in Victoria.

Following the release of the CRA report, public meetings were held Corryong, Myrtleford and Mansfield and officials met with groups in Melbourne. At these meetings participants discussed the CRA reports and presented views on the issues that should be addressed in the development of the RFA. A second series of meetings in the same locations was conducted prior to the development of this report.

Further consultation will occur over the next six weeks prior to completing the RFA. A series of public meetings will be held in the region and will be advertised in the regional media. Mr Phillip Fitch (02 6271 5082) and Mr Andrew Maclean (03 96378407) may be contacted for further information on the North East RFA process.

## **1.5 ISSUES RAISED DURING CONSULTATION**

Issues raised in the meetings held prior to release of this report are summarised in [Appendix 2](#). A number of specific proposals raised by stakeholders have been addressed in the relevant chapters of this report. These issues can be broadly classified into those related to the CAR reserve system, ecologically sustainable forest management, certainty and development for forest industries, and other issues.

A number of the issues raised are not directly related to the RFA process although they are important in a regional development context. A list of Commonwealth and Victorian government programs relevant to these issues is provided in [Appendix 3](#).

## **2. RELATIONSHIP OF THE REGIONAL FOREST AGREEMENT TO OTHER PROCESSES**

One of the objectives of the RFA process is to meet statutory and policy requirements through the development of a RFA. The satisfactory completion of these requirements should provide for greater certainty in government decision making on forests during the period during which the RFA is in place.

The RFA process takes into account Commonwealth statutes on environmental impact, world heritage, national estate and endangered species. The relevant Commonwealth Acts of Parliament are the:

- *Environment Protection (Impact of Proposals) Act 1974*
- *Australian Heritage Commission Act 1975*
- *Endangered Species Protection Act 1992*
- *World Heritage Properties Conservation Act 1983*

The RFA process is designed to satisfy the requirements of these Acts. Obligations under the *Environment Protection (Impact of Proposals) Act 1974* and the *Australian Heritage Commission Act 1975* require discrete assessment processes against defined criteria. These assessment processes are being conducted in parallel with the RFA process and will be based on the contents of this report and the previously published assessment reports.

The Commonwealth also has obligations under the *Native Title Act 1993* relating to the protection of native title rights and interests. The RFA is not intended to influence in any way native title claims that may arise. Where any government action to implement an RFA could affect native title, the action will be taken in accordance with the *Native Title Act 1993*.

Victorian statutory requirements have been satisfied by a number of Victorian legislative and administrative processes, including the proposed North East Forest Management Plan, and the application of various Codes of Practice and the *Land Conservation Act 1970*, the *Forests Act 1958* and the *Flora and Fauna Guarantee Act 1988*.

### **2.1 OBLIGATIONS UNDER ENVIRONMENT IMPACT ASSESSMENT LEGISLATION**

The objective of the *Environment Protection (Impact of Proposals) Act 1974* (EPIP Act) is to ensure, to the greatest extent that is practicable, that matters affecting the environment to a significant extent are fully examined and taken into account in arriving at Commonwealth Government decisions.

The Commonwealth Government's proposal to enter into a North East RFA with Victoria is subject to the EPIP Act so was referred to the Commonwealth Minister for the Environment and Heritage in accordance with the Act's administrative procedures. These procedures require the Minister to determine whether preparation and public review of either an environmental impact statement or a public environment report is required to satisfy the object of the Act. The Minister is required to provide this advice to the Prime Minister before he signs the North East RFA. The public consultation process for the North East RFA has been designed to be consistent with the requirements of the Act.

### **2.2 NATIONAL ESTATE OBLIGATIONS**

The Australian Heritage Commission's (AHC) responsibilities, as defined by the *Australian Heritage Commission Act 1975*, include:

- identifying places with national estate values and compiling an inventory of these places (the Register of the National Estate);
- promoting the conservation of national estate values and places; and
- providing advice to Commonwealth Ministers on the effect of proposed actions on the national estate.

The identification of national estate places in North East is described in the national estate report (VicRFASC 1998c). Interim and final listing will take place in accordance with commitments in the RFA.

National estate values in North East will be conserved through both having national estate places within the CAR reserve system and the incorporating in the RFA protection principles for national estate values in other forest areas.

The AHC will provide advice to the Commonwealth Government on the extent to which the RFA may have an effect on the National Estate prior to the Prime Minister signing the RFA. This advice will be regional in context, having regard to the levels of protection afforded to national estate values through a range of mechanisms.

### **2.3 OBLIGATIONS FOR ENDANGERED SPECIES PROTECTION**

The *Endangered Species Protection Act 1992* (ESP Act) defines Commonwealth responsibilities for the conservation of endangered and vulnerable species and endangered ecological communities, and for the amelioration of the processes that threaten them. The ESP Act requires that any effect on scheduled species and communities is taken into account in Commonwealth decisions, such as a decision to enter into a RFA. Forest species listed in the Act have been a high priority for assessment in the CRA.

Obligations under the legislation include:

- the identification of the occurrence of endangered and vulnerable species and communities and the assessment of their conservation status under present tenures and management practices;
- the preparation of recovery plans and threat abatement plans for identified endangered forest species and threatening processes;
- the development of appropriate prescriptions and other planning mechanisms;
- the identification and assessment of impacts of present and proposed resource uses; and
- the identification and assessment of impacts of key threatening processes with respect to present and proposed resource use.

Identification and assessment activities undertaken to fulfil these obligations are described in the biodiversity assessment report (VicRFASC 1998b).

Priorities for the preparation of recovery plans and action statements for endangered flora and fauna species will be included in the RFA.

### **2.4 WORLD HERITAGE ISSUES**

As a State Party to the World Heritage Convention the Commonwealth Government has a responsibility for the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural World Heritage situated on its territory.

As part of the development of the East Gippsland RFA, an independent panel of experts undertook a systematic assessment of themes of outstanding universal value that were relevant to Australia and then, of those, which might be best represented in Victoria. Two of the themes of outstanding universal value identified by the Panel are potentially relevant to the North East, namely:

- ‘Origin and development of biota and landforms as a result of Gondwana plate tectonics and more recent stability and long term isolation (sub-theme passive continental margins)’; and
- ‘Evolution of landforms, species and ecosystems under conditions of stress (sub-theme *Eucalyptus*-dominated vegetation)’.

The panel identified several sub-themes of outstanding universal value related to these themes: the sub-theme ‘parts of the Australian marginal swells associated with the Eastern Highlands’ and the sub-theme of ‘*Eucalyptus*-dominated vegetation’. This sub-theme was specifically identified as directly relevant to the eastern forest areas of Victoria, which include East Gippsland, the Central Highlands and the North East as well as other parts of Australia. The panel considered that places representing this theme would include a wide variety of *Eucalyptus* types from a variety of environments and that an excellent representative sample of these can be found in south-eastern Australia. The panel also stated that in the case of south-eastern Australia, any sample focussed on *Eucalyptus* is most likely to represent an outstanding example of the long-term processes of landform evolution associated with passive continental margins.

The panel also concluded that any such potential World Heritage nomination representing the sub-theme of *Eucalyptus*-dominated vegetation would comprise several large areas, most of which could be expected to already have protected area status.

The Central Highlands and East Gippsland RFA committed the two governments to actively investigate, and participate in, a World Heritage assessment of the Australia-wide Eucalypt theme, including any potential contribution from these regions. The Agreements also noted that in order to progress work towards an Australia-wide Eucalypt nomination the agreement of all relevant governments would be required.

Because the North East region may contribute to a potential World Heritage nomination based on the Australia-wide Eucalypt theme, it is envisaged that clauses similar to those in the Central Highlands RFA will be included in the North East RFA.

## 2.5 LAND USE PLANNING IN VICTORIA

The use of publicly owned land in Victoria has been determined by the government on the basis of recommendations from the Land Conservation Council (LCC). The LCC was an independent statutory body which was established in 1971 under the *Land Conservation Act 1970*. In July 1997, after 27 years of operation, it was replaced by the Environment Conservation Council (ECC).

The Land Conservation Act established a comprehensive and systematic public land use planning process. Between 1971 and 1997 the LCC conducted more than 30 major land use studies covering the whole State, with most of Victoria having been investigated a number of times. Each study took about 3 years to complete.

The LCC and its processes were based on three key principles: independence (from government and interest groups); expertise; and public consultation. All the Council members had technical expertise and brought to discussions the range of skills and

experience necessary to provide recommendations on the balanced use of public land in Victoria.

In making its recommendations on public land the LCC considered all uses of land and the range of views expressed. It also had regard to the social and economic implications of any recommendations it made. The LCC conducted several comprehensive reviews of public land use in the North East; the last review was completed in 1991.

Public consultation during the LCC review process was a legislative requirement and was crucial to successful land use planning outcomes. This has been a key factor in successive governments accepting the vast majority of LCC recommendations and in the general bipartisan support in the Parliament for legislation creating new national and other parks.

Based on advice from the LCC, the Victorian government determines those areas to be included in the conservation reserve system and those areas to be State forest. NRE then prepares Forest Management Plans for State forest taking into account management for conservation, timber and other uses of natural resources such as recreation and water supply.

Forest management planning in Victoria is based on 15 Forest Management Areas (FMAs) with a Forest Management Plan being prepared for each. These plans address the full range of forest values and apply for ten years but may be reviewed when required, such as in the event of a major fire. They aim to ensure the complementary management of State forest and the conservation reserve system and that State forests are used in an environmentally sensitive, sustainable and economically viable manner. Forest management planning is a continuing process and designed to be responsive to changing community expectations and expanding knowledge of the forest ecosystem.

Features of Victoria's forest planning are:

- public involvement and consultation in plan development and approval;
- the application of comprehensive data sets and information technology to assess planning options;
- a focus on integrating information from a range of scientific disciplines; and
- adaptable plans which accommodate new information, and circumstances, without losing their integrity or authority.

The planning process requires that a draft plan is available for a public consultation period of two months prior to plan completion. An advisory committee representing the range of community interests in the forests of each FMA is closely involved throughout the planning process.

The proposed North East Forest Management Plan is released for public comment concurrent with this Directions Report. The proposed Forest Management Plan meets the objectives of the Victorian forest planning processes and was developed in the context of meeting the national reserve criteria, with similar targets for protection of ecological vegetation classes (EVCs) and old growth. As such, the proposed Plan provides a substantial basis for undertaking analyses against the national reserve criteria. The final plan will be published after the North East RFA is completed and will reflect the outcomes of the RFA.

### **3. COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE RESERVE SYSTEM**

#### **3.1 THE NORTH EAST CONSERVATION RESERVE SYSTEM**

In 1970, the conservation reserve system in the North East region consisted of the original Mount Buffalo National Park covering 11 000 hectares.

In the mid-1970's, 1980's and the early 1990's the Victorian Land Conservation Council (LCC) reviewed land use in the North East. As a result of these major reviews which extended over several years and included extensive opportunities for public comment, substantial areas were added to the conservation reserve system. Between 1970 and 1995, the conservation reserve system in the North East was expanded significantly and now comprises 417 000 hectares or 33 per cent of all public land in the region. The most significant national, wilderness and State parks are Alpine, Mount Buffalo, Burrowa-Pine Mountain, Chiltern Box-Ironbark, Wabba and Mount Lawson. These parks are complemented by numerous flora and fauna reserves distributed across the region which provide protection for a variety of significant biodiversity values. A network of Reference Areas has also been established containing representative examples of the major land types occurring in the region. In making its recommendations, the LCC recognised other detailed planning processes, such as the Forest Management Planning process, which would address flora, fauna and other issues subsequent to the recommendations.

During 1995 the Commonwealth and Victorian governments undertook a process of identifying Interim (or Deferred) Forest Areas to provide interim protection for forests that may be required for a CAR reserve system while RFAs are being completed. The Interim Forest Agreement (IFA) between the Commonwealth and Victoria was signed in January 1996 formalising arrangements for the protection of those areas designated in the agreement.

#### **3.2 THE NATIONAL RESERVE CRITERIA**

The nationally agreed reserve criteria (JANIS 1997) guide the establishment of the Comprehensive Adequate and Representative (CAR) reserve system which is a central feature of the RFA process. The nationally agreed criteria cover biodiversity, old growth and wilderness and consider reserve design and the application of the criteria. These criteria are outlined in the relevant sections below, and further information on them is in [Appendix 4](#).

The national reserve criteria identify the following elements that comprise the CAR reserve system:

- dedicated reserves being reserves requiring a parliamentary decision to revoke their status. National Parks, State Parks and Flora and Fauna Reserves are examples of dedicated reserves;
- informal reserves – areas reserved under other secure tenure or management arrangements. Special Protection Zones (SPZ) which have been set aside for specific and identified conservation purposes in State forest in accordance with the Forest Management Plan are examples of informal reserves; and
- protection through prescription – for situations where protection of the conservation value within reserves is impracticable as a result of the nature of the value, for example protection by prescription afforded by the Code of Forest Practices for Timber Production.

The criteria also provide for the inclusion of private land in the CAR reserve system, with the agreement of landholders, where the criteria cannot be met from public land.

### **3.3 THE PROPOSED CAR RESERVE SYSTEM**

The CRA report for the North East region identified the extent to which the existing reserve system meets the national reserve criteria.

The RFA process has proceeded in conjunction with comprehensive forest management planning for State forest areas in the North East. In addition to the 417 000 hectares of the North East included in the existing reserve system, the proposed additions shown in Map 1 would set aside further substantial areas of forest to protect the significant biodiversity values in the region. The proposed North East Forest Management Plan outlines the range of strategies needed to give effect to environmental outcomes envisaged in the RFA, to conserve endangered flora and fauna, ecological vegetation classes (EVCs) and old growth in the region. Based on the results of the CRA report, community input through three rounds of public meetings, written comments from stakeholders and the proposed Forest Management Plan, the Steering Committee has developed a preferred CAR reserve system as part of the North East RFA, shown on Map 1.

Adoption of the preferred position described in this report would add approximately 174 000 hectares to the existing reserve system, bringing the total area of the proposed CAR reserve system in the region to 591 000 hectares, an increase of some 42 per cent. The final tenure of these additional areas has not yet been determined. The Proposed North East Forest Management Plan identifies these additions as Special Protection Zone in State forest. A consideration in determining the final tenure of reserve additions will be the representation in dedicated reserves of particular EVCs, old growth types and other values addressed in the national reserve criteria. Decisions on tenure will be made during final negotiations on the RFA, following community comment on the proposal presented in this report.

The proposed CAR reserve system has been analysed against the reserve criteria and the results are discussed in detail below. The results show that the proposed reserve system derived from public land contains all of the conservation values and features required of a CAR reserve system, and the protection levels established by the proposal is in many cases significantly greater than the minimum specified by the JANIS criteria. A number of EVCs, however, do not exist on public land at levels that meet the reserve criteria. In many cases, considerably less than 15 per cent of the pre-1750 distribution remains, largely because these EVCs occurred on what is now cleared private land. As a result, these EVCs are classified as endangered, vulnerable or rare and are considered separately in the discussion that follows.

Based on the CRA assessments and subsequent analysis, the Steering Committee considers that the proposed CAR reserve system, together with the range of mechanisms aimed at protecting threatened species and communities satisfies the national reserve criteria with respect to the North East region.

Some areas where special management conditions apply in order to protect biodiversity and other values are shown on Map 1 as Special Management Zones. These are not part of the CAR reserve system, but provide additional off-reserve protection of biodiversity and cultural values.

The following sections provide a description of the key issues considered in developing the proposed CAR reserve system and a detailed analysis against the national reserve criteria.

#### **Criteria for Biodiversity**

The national reserve criteria for biodiversity are being addressed through consideration of the protection afforded to individual EVCs as well as individual species of plants and animals. Particular attention is given to endangered, vulnerable or rare species and EVCs.



### ***Representative Conservation of EVCs***

The national reserve criteria for biodiversity specify that as a general criterion, 15 per cent of the pre-1750 distribution of each forest ecosystem should be protected in the CAR reserve system with flexibility considerations applied according to regional circumstances, and recognising that as far as possible and practicable, the proportion of dedicated reserves should be maximised. Where forest ecosystems are endangered, vulnerable or rare the criteria require increased levels of protection, as discussed in further detail in the following section.

For the purposes of this assessment, EVCs are regarded as forest ecosystems. There are 58 EVCs identified in the North East, of which 46 are considered endangered, vulnerable or rare. For the 12 EVCs not falling into this category, Table 3.1 shows that the majority of the remaining occurrence of these EVCs is on public lands. For these EVCs, their representation in the proposed CAR reserve system meets or exceeds the criterion of 15 percent of their pre-1750 distribution. The proposed level of protection for Grassy Dry forest in the North East region is 14.7 per cent as shown in Table 3.1. This level of protection is regarded as satisfactory taking into account that this EVC was represented in the CAR reserve system to the level of 24 per cent of its pre-1750 extent in the adjacent Central Highlands RFA region.

### ***Representative Conservation of Endangered, Vulnerable and Rare Ecological Vegetation Classes***

The national reserve criteria require that all remaining occurrences of rare and endangered forest ecosystems should be reserved or protected by other means as far as is practicable. Vulnerable forest ecosystems should be reserved or protected to at least 60 per cent of their remaining extent.

Forty-six EVCs in the North East region have been identified as endangered, vulnerable or rare. As shown in Table 3.1, for many of these EVCs the majority or all of their occurrence is on private land. Consequently their representation in the proposed CAR reserve system on public land is limited.

A review of all endangered, vulnerable or rare EVCs in order to establish priorities for their protection is being undertaken. This review is considering the status and distribution of the EVCs in a regional and State context. It is intended that the prioritisation will be completed and incorporated in the RFA. Conservation of EVCs on private land can be encouraged through extension and support to landholders and through voluntary conservation covenants or agreements with landholders, as discussed later in this Chapter.

For those endangered, vulnerable or rare EVCs occurring predominantly on public land, the proposed CAR reserve system will provide levels of protection that satisfy the JANIS criteria. Heathy Dry Forest was assessed as vulnerable due to inappropriate fire regimes. The national reserve criteria indicate 60 per cent of its remaining extent should be reserved, however, further reservation of this extensive EVC beyond that which is proposed will not address the identified threatening process, as fire occurs across all public land tenures.

**Table 3.1 Representative conservation (percentage reservation status) of EVCs  
in the North East region based on pre-1750 vegetation mapping  
( SEE SEPARATE FILE)**

There are practical difficulties with including certain areas of this forest type in reserves due to its location adjacent to private property, wilderness areas or valuable timber resource stands where the capacity to conduct fuel reduction burning operations must be maintained. NRE will analyse the extent and frequency of fire in this EVC across all public land and wherever possible burning strategies that maintain or promote the ecological characteristics of the EVC will be developed and implemented through fire operations plans.

### ***Other Biodiversity Criteria***

The national reserve criteria also require consideration of reserve design, geographic representation, and protection of high quality habitat for all known elements of biodiversity (including threatened species). These have been addressed in part through the LCC reviews and developed further through the preferred position outlined in this report and the proposed Forest Management Plan. The criteria, which are listed in [Appendix 4](#), have all been taken into account in developing the proposed CAR reserve system described in this Section.

Representation of EVCs across the nineteen Geographic Representation Units (GRUs) within the North East has been addressed in the development of the proposed CAR reserve system. The GRUs are described and mapped in the North East CRA report. For those EVCs occurring predominantly on public land, the proposed reserve system improves upon their levels of geographical representation in the existing reserve system as shown in Table 12.5 of the CRA report and has been designed to provide protection in each GRU where they currently occur. The reserve criteria also recognise that the viability of the reserve system is linked to ecologically sustainable forest management outside reserves and reserve design should take this into account. The proposed CAR reserve system has been developed within this context.

Achieving adequate levels of reservation for EVCs, represented across the full geographic range of their natural occurrence in the region, is the primary means of maintaining high quality habitat for the full suite of species and current levels of genetic diversity. Additional mechanisms are also applied to protect species, through specific strategies and prescriptions which may include the identification of quality habitat (such as owl protection strategies).

Recovery Plans and/or Action Statements are examples of these additional mechanisms. Plans and statements are in place for a number of species and formed the basis for most of the explicit species management guidelines in the proposed Forest Management Plan and Park Management Plans. The Code of Forest Practices for Timber Production (NRE 1996) provides additional guidelines for protection of riparian areas and associated species. Guidelines and prescriptions from these documents will be implemented within the framework of the RFA. Priorities for preparation of Recovery Plans and Action Statements will be considered in finalising the RFA.

Following the flora and fauna assessments in the CRA report, the distribution of species within the proposed CAR reserve system was examined. This analysis used the priority species identified in the CRA report and built upon the information on the distribution, biological and life history characteristics of species, known threats and current management actions provided in that report. Valid analysis was only possible where there was a sufficiently high number of records for the relevant species.

The distribution of species records indicates that significant areas of high quality habitat for the fauna species are likely to occur in the proposed CAR reserve system and for flora species, most were reasonably well reserved, with a significant proportion of known populations of priority plant species occurring within the proposed reserve system. Fauna

species which are not well represented by known sites in the reserve system have been recorded largely on private land and there are 14 rare or threatened flora species in the North East region that occur only on private land. Mechanisms to protect significant conservation values on private land are discussed later in this report.

The flora assessment indicates that a high priority for management should be given to species which have a major part of their distribution within the region and are rated as Critically Endangered, Endangered or Vulnerable in the Region. Included in this category are *Acacia deanei* ssp. *deanei*, *Euphrasia collina* ssp. *muelleri*, *Euphrasia scabra*, *Hibbertia humifusa* ssp. *erigens*, *Thelypteris confluens*, *Eucalyptus cadens*, *Acacia dallachiana*, *Pomaderris subplicata*, *Carex cephalotes*, *Carex echinata*, *Colobanthus affinis*, *Craspedia alba*, *Euchiton nitidulus*, *Euphrasia crassiuscula* ssp. *eglandulosa* and *Poa hothamensis* var. *parviflora*. Some of these species are plants of grassland or heathland EVCs. For eight of these species at least 90 percent of the population is within the proposed CAR reserve system and for three species the majority of the occurrence is on private land. *Euphrasia collina* ssp. *muelleri* which is recorded only from State forest within the region is protected and an Action Statement is in preparation for this species. For the remaining two species their occurrence is primarily on Other Public Land and private land. Of the 8 species listed under the *Flora and Fauna Guarantee Act 1988* (FFG) or *Endangered Species Protection Act 1992*, FFG Action Statements exist for three of these species, with one in preparation.

Of the 44 priority fauna species in the North East listed under the *Flora and Fauna Guarantee Act 1988* or *Endangered Species Protection Act 1992*, the required Action Statements and/or Recovery Plans have been commenced or completed with the exception of nine species. A recovery plan is required for Spot-tailed Quoll. Flora and Fauna Guarantee Action Statements are required for Eastern Horseshoe-bat, Turquoise Parrot, Painted Honeyeater, Macquarie Perch and the four aquatic arthropods *Thaumatoperla alpina*, *Riekoperla intermedia*, *Riekoperla isosceles* and *Archeophylax canarus*. A further 21 species on the Threatened Fauna of Victoria list were considered in the fauna assessment. Of these, two (the Alpine Bog Skink and Barking Owl) have been recommended for listing under the Flora and Fauna Guarantee Act. A further four of these species (Broad-toothed Rat, Smoky Mouse, Large-footed Myotis and Grey Goshawk) are to be nominated for listing under the Flora and Fauna Guarantee Act in accordance with the Central Highlands RFA.

Protection of threatened species in the North East has been given considerable attention and a range of detailed strategies have been developed based on the best available scientific information. Special consideration has been given to the protection of adequate populations of large forest owls through habitat modeling. Using this tool, the reserve system has been designed to include habitat for 125 breeding pairs of the Powerful Owl and 100 breeding pairs of the Sooty Owl. Conservation strategies have been prepared for these and other species such as the Long-footed Potoroo and Spotted Tree Frog, as discussed below, protecting significant areas of suitable habitat across the region. Populations of significant flora have been included in the proposed CAR reserve system, or in SMZ after consideration of the level of representation in the reserve system, abundance and tolerance of disturbance. Details of these strategies are contained in the proposed North East Forest Management Plan (NRE 1999).

Inclusion of large areas of undisturbed forest, including significant stands of old growth, in the proposed CAR reserve system ensures important habitat for a range of hollow-dependent species, such as the Yellow-bellied Glider and Gang Gang Cockatoo.

Other values identified in the national reserve criteria such as centres of endemism, areas of species richness and refugia, have been identified through the national estate assessment.

Development of the proposed CAR reserve system has also taken these values into account and maximised their representation wherever possible.

### ***Long-footed Potoroo***

A significant population of the Long-footed Potoroo was discovered in the North East in 1995 after previously only being known from East Gippsland and south-eastern New South Wales. It inhabits wet to damp forests with a dense understorey vegetation, feeding largely on underground fungi. Much of the existing recovery strategy has been based on studies of the species in East Gippsland; a similar strategy and set of management guidelines are proposed to be adopted in the North East.

Conservation of Long-footed Potoroo is addressed in the FFG Act Action Statement (CNR 1994) and the National Recovery Plan (in prep). The strategy is based on the interim protection of each confirmed Long-footed Potoroo population within a Special Management Area (SMAs) of 450-500 hectares of suitable habitat, until sufficient confirmed sites have been identified to place 17 500 hectares in SMAs.

Based on the well established population density for the species in East Gippsland, this should be sufficient habitat for about 1000 individuals, with about 25 individuals in each SMA. The current extent of suitable habitat in the proposed CAR reserve system is 5 925 hectares, consisting of 13 SMAs, 4 390 hectares of suitable habitat already within the reserve system and 1535 hectares proposed for addition. In addition, 3 530 hectares is included within Special Management Zones outside of the proposed CAR reserve system. These SMAs will be designed to include the best Long-footed Potoroo habitat in the area and boundaries will generally be based on topographic features. Each SMA will contain a Core Zone of 150 to 200 hectares. Once 17 500 hectares of SMAs is achieved, any additional sites will be assessed for habitat quality and integrity and adjustments made to SMA boundaries so that the largest populations receive the highest level of protection and smaller populations or those in highly disturbed areas are protected by Core Zones only. SMAs will be located throughout the potoroo's distribution. Timber harvesting and new roading will not be permitted in SMAs. Fuel reduction burning will be excluded unless burning is essential for protection of life and property.

The strategy will be reviewed in the year 2002 in light of the research of the species' response to habitat disturbance

### ***Spotted Tree Frog***

The region contains the majority of the known populations of the Spotted Tree Frog, a species which is classified as Endangered. Survey results suggest the species has declined over the last two decades. The species inhabits rocky, swiftly-flowing upland streams in dissected mountainous country and is known to be affected by disturbances that affect water quality and flow.

An Action Statement for the species is currently in preparation. The proposed reserve system and management strategy currently incorporates a 300 metre protection zone of off-stream habitat around known populations of the species and mapped habitat areas, with additional streamside buffers to minimise disturbances for at least 1 km upstream of the populations. No new roads or stream crossings in catchments containing the Spotted Tree Frog are to be constructed and existing roads or tracks not required for management, harvesting or protection purposes will be progressively closed and/or rehabilitated. Fuel reduction burning will also be restricted to protect in-stream and off-stream habitat.

### **Criteria for Old-growth Forest**

On public land a total area of old growth of some 261 000 hectares has been identified, distributed across 15 vegetation classes. Old growth represents approximately 21 per cent of all extant vegetation on public land in the region.

The national reserve criteria require that:

- where old-growth forest is rare or depleted (generally less than 10 per cent of the extant distribution) within a forest ecosystem, all viable examples should be protected, wherever possible. In practice, this would mean that most of the rare or depleted old-growth forest would be protected. Protection should be afforded through the range of mechanisms described in the national reserve criteria; and
- for other forest ecosystems, 60 per cent of the old-growth forest identified at the time of assessment would be protected.

Table 3.2 identifies the level of protection of the 15 EVCs in which old-growth forest has been identified.

The dispersed nature of the old growth forest of several EVCs in the Region (for example Shrubby Dry Forest) is such that it would be necessary to include a considerable area of non-old growth of already well-represented EVCs in order to achieve comparatively small gains in old growth forest protection. This could have resource availability implications. Reserving small isolates of old growth presents operational and management problems particularly in relation to the identification of old growth forest in the field and the delineation of identifiable boundaries.

The national reserve criteria provide for protection by prescription when certain values are dispersed in the landscape and it is not practicable to place reserve boundaries so as to capture them effectively or efficiently. Further protection is afforded to old growth forest values outside of the proposed CAR reserve system through areas identified by the Code of Forest Practices for Timber Production prescriptions for exclusion of timber harvesting from streamside buffers and slopes of 30 degrees or more.

As noted earlier, the national reserve criteria require that all reasonable effort should be made to provide for old-growth forest conservation in dedicated reserves on public land and this will be considered when finalising the tenure of the CAR reserve system.

### **Criteria for Wilderness**

The national reserve criteria require that ninety per cent, or more if practicable, of the area of high quality wilderness that meets minimum area requirements should be protected in reserves.

Wilderness in the North East was assessed in the wider assessment of wilderness for Eastern Victoria (VicRFASC 1996b). The assessment identified 18 areas of high wilderness quality of which 4 are within the North East region namely Wabba, Dartmouth, Yarrarabulla Creek and Razor/Viking. Ninety five per cent of the total area delineated in the assessment of Eastern Victorian forests as significant for high wilderness quality is protected in the existing reserve system, thereby satisfying the national reserve criteria.

### **Protection of the National Estate**

The development of the proposed CAR reserve system was informed by datasets that included all existing national estate places as well as much of the information derived from recently completed regional assessments of indicative national estate values in the North East. This information will be published in the National Estate Report and be available for public comment shortly.

In general, there is good agreement with many areas identified in the assessments and the placement of proposed reserve boundaries. An analysis of the actual percentage representation of the indicative National estate value layers within the proposed CAR reserve system will be provided in the National Estate Report.

### **Table 3.2: Representative Distribution of Old Growth (SEE SEPARATE FILE)**

### **Other CAR issues considered, including those raised during consultation**

An extensive program of public consultation has been undertaken as part of various Victorian land use planning processes in the North East. In addition, consultation associated with the RFA process has included three rounds of public meetings, distribution of reports and information kits, individual meetings with stakeholders, involvement of stakeholders in assessment workshops (such as National Estate and social assessments) and receipt of written comment.

A considerable range of views, at times in sharp contrast, has been expressed during these consultations and the Steering Committee has considered these in developing the preferred position for the proposed CAR reserve system described in this report. In line with the objective of the RFA, inputs have been considered in the context of the development of a comprehensive RFA package incorporating the proposed CAR reserve system, ESFM across the forest estate and industry and community development.

This section discusses other major issues examined in the developing the proposed CAR reserve system and raised during community consultations. Issues pertaining to the timber industry, forest management and other forest uses are discussed in Chapter 4.

Some stakeholders have noted that in previous RFAs, the reserve system provides more than the necessary levels of EVC protection specified in the *numerical* national reserve criteria and in the case of the North East region, suggest excising areas that may contribute to any similar perceived excess. While at first glance the numerical biodiversity criteria appear to have been exceeded, the requirement to meet other nationally agreed biodiversity criteria which deal, for example with the protection of high quality habitat for threatened species – as well as the need to meet old growth forest criteria - may necessitate inclusion of additional areas of forest over and above the numerical biodiversity targets. Each of these criteria is important to the overall framework of forest ecosystem protection.

Proposals have been put forward regarding the inclusion and exclusion of particular areas in the CAR reserve system. Some of the proposed additions relate to creation or expansion of links between existing reserves. Others have related to the setting aside of areas such as the upper Wongungarra catchment and Stanley Plateau. These issues have been considered in the development of the proposed CAR reserve system and incorporated where they also contribute to the increased protection of values consistent with the national reserve criteria and are practical when considering other forest management objectives.

The importance of the upper Wongungarra catchment for conservation and timber values has been emphasised by stakeholders throughout the RFA process. In a regional context, the conservation values contributing to the national reserve criteria targets are stands of old growth, high quality habitat for a number of flora and fauna species including the Spotted Tree Frog.

The upper Wongungarra catchment has also been identified as an important potential source of mature Alpine Ash sawlogs. This high-quality resource would be valuable for sawlog industries in the region which have established markets for appearance-grade kiln-dried boards. However, newly-available Statewide Forest Resource Industry data for the North East Region indicates that there are sufficient alternative areas of mature Alpine Ash available elsewhere in the North East Region to meet current supply commitments.

Following careful consideration of the relative biodiversity and timber resource values of the upper Wongungarra catchment, the Steering Committee proposes that the upper Wongungarra catchment above the confluence of Mount Selwyn Creek be included in the CAR reserve system (Refer Map 1). In combination with existing reserves in the North East

and the adjoining Gippsland Region, the Wongungarra upper catchment and the greater part of the headwaters of its tributaries is within the proposed CAR reserve system.

Proposals were put forward for a phase out of timber harvesting of native forests on the Stanley Plateau near Beechworth and that the plateau be preserved for nature conservation, tourism and recreation, and domestic firewood collection. The proposed CAR reserve system includes a substantial portion of the area of interest, whilst taking into account demand for domestic firewood collection and other forest uses within the area.

The frequency of fuel reduction burning was raised by sections of the community who believe that it has adversely altered the composition of the understorey in some EVCs in the Region.

The structure and floristic composition of many vegetation communities is strongly influenced by local fire regimes. During past 150 years, the timing, frequency and intensity of forest fires have altered. In some areas, frequency has been reduced as a consequence of active suppression of naturally occurring fires. In other areas, fire frequency has increased as a result of fuel-reduction burning initiated to protect settlements and forest values from wildfire.

A major continuing research program conducted by NRE in the Midlands FMA in the Wombat State forest (CNR 1992) addresses the impact of fuel-reduction burning on forest ecology. The results of this research will continue to provide a valuable basis for the development of fire management prescriptions that meet the requirements of both fire protection and ecosystem conservation. In addition, NRE in conjunction with Parks Victoria has established a Fire Ecology Working Group in order to promote the development of burning regimes taking into account ecological characteristics of plant and animal communities.

Grazing licences extend over approximately 15 percent of State forest in North East Victoria. Grazing is recognised as a threat to the integrity of a number of EVCs and 'Soil Erosion and Vegetation Damage and Disturbance in the Alpine Regions of Victoria Caused by Cattle Grazing' is listed as a threatening process under the FFG Act. EVCs affected by grazing are principally the grassy and forb-rich EVCs such as Grassy Woodland, Box-Ironbark Forest, Floodplain Riparian Woodland, Treeless Sub-alpine Complex, Plains Grassy Woodland, Herb-Rich Foothill Forest, Grassy Dry forest and Valley Grassy Forest.

In designing the proposed reserve system, preference was given, where feasible, to the selection of EVC representation in areas not subject to grazing, particularly where those EVCs contain palatable species in the understorey. In a number of cases, however, this was not practicable, particularly where some of the rarer EVCs afforded limited protection options. The Proposed North East Forest Management Plan outlines a strategy in which grazing of Special Protection Zones which are sensitive to grazing by domestic stock will be reviewed in consultation with licensees to develop appropriate arrangements for the protection of these values. Grazing will be excluded from particular Special Protection Zones where exclusion of grazing is essential for protection of the natural values.

Further details on the establishment and management of the CAR reserve system in State forest are provided in the proposed North East Forest Management Plan.

### **Private land**

The National Forest Policy Statement (NFPS) established that the CAR reserve system will in the first instance be selected from public land. The national reserve criteria (JANIS 1997) indicated that two key priorities for biodiversity protection in private native forests are to



ensure comprehensiveness so that replicated samples of all forest ecosystems are included in viable reserves across their geographic range and to meet the special needs for endangered, vulnerable or rare species or ecosystems on private land.

Within the North East, 45 endangered, vulnerable or rare EVCs occur partly or largely on private land. The national reserve criteria require that remaining occurrences of endangered and rare EVCs across all lands should be protected as far as is practical, and that conservation effort should be highly focused on the priority forest species and ecosystems. A review of these EVCs in a State and regional context has identified several EVC as being of high conservation priority in the North East.

The NFPS and the national reserve criteria recognise that there are a number of appropriate strategies to protect biodiversity on private land, including purchase of priority areas, the development of incentives and mechanisms to protect significant areas such as covenants on freehold land. All contributions of private land to the CAR reserve system will be voluntary.

Initiatives in Victoria to conserve plant and animal communities recognise that protecting biodiversity involves all land tenures. Governments are working cooperatively with land holders for the conservation of habitats on private land. The range of Victorian programs include statutory protection, binding agreements (such as covenants) and non-binding agreements. Statutory protection and binding agreements are appropriate mechanisms through which private land can contribute to the CAR reserve system.

Provisions of the *Flora and Fauna Guarantee Act 1988* and voluntary conservation covenants under the *Victorian Conservation Act 1972* are two of the main mechanisms. Native Vegetation Controls under the *Planning and Environment Act 1988* also provide for the protection of native vegetation. Land Management Cooperative Agreements under the *Conservation Forests and Lands Act 1987* and Wildlife Management Cooperative Areas under the *Wildlife Act 1975*, which can also be binding on landholders, are less common.

The *Flora and Fauna Guarantee Act 1988* includes provisions for the protection of habitat that has been identified as being critical to the survival of any species. Other key features of the Act include listing threatened species, communities and threatened processes, preparing and implementing Action Statements which outline management programs for listed species, and establishing protected flora controls which aim to prevent threats on private land and critical habitats. The Act also provides for Interim Protection Orders to protect critical habitat.

Voluntary conservation covenants under the *Victorian Conservation Act 1972* are negotiated by the Trust for Nature (Victoria). Such covenants conserve areas of ecological significance and areas with cultural, historical, landscape or recreational values. The covenants are on the land title and are binding on all future owners. Donations are requested from landowners seeking covenants to assist in the costs of the covenants. The Trust regularly monitors observance of covenant conditions.

The Trust also purchases properties which are either managed by the Trust for conservation purposes, resold with a conservation covenant or transferred to the Crown. In the latter case, the Trust can specify how the land is to be managed. The Trust also acts as a broker to purchase conservation land on behalf of the State Government.

Conservation covenants in the North East region cover over 700 hectares and provide for the protection of additional areas of native vegetation on private land. Some of these covenants include endangered, vulnerable or rare EVCs, however the exact area has not been determined.

Opportunities for establishing a process to link the conservation of priority EVC in the North East with initiatives such as the Commonwealth Natural Heritage Trust and National Vegetation Inventory will be considered.

### **3.4 IMPLICATIONS OF THE PROPOSAL**

Completion of the RFA which establishes a CAR forest reserve system and the ecologically sustainable forest management of forests both on and off-reserve will provide the framework for the long-term conservation of North East forests.

Adoption of the proposed CAR reserve system would add approximately 174 000 hectares to the existing conservation reserve system. The tenure of these areas has not yet been determined. A consideration in determining the tenure of the reserve additions will be the representation in dedicated reserves of particular EVCs, the boundaries of each area in relation to existing reserves, and the range of uses considered appropriate in each area. The Steering Committee will consider comments on any implications related to tenure in developing the RFA. In general:

- timber harvesting would be precluded from any areas added to the CAR reserve system;
- access for mineral exploration, mining and extractives would be excluded from any areas added to the National and State Park system, consistent with provisions of the *Mineral Resources Development Act 1990* and *Extractive Industries Development Act 1996*; and
- the CAR reserve system may have some implications for the availability of forest areas currently used for firewood collection and other wood products, extractives (rock and gravel), apiculture and some recreational access.

Consistent with the national forest policy and national reserve criteria, economic and social factors have been considered in designing the proposed CAR reserve system. Establishing the proposed CAR reserve system will provide a world class reserve system, continue to provide for a range of uses in the forests of the North East and in combination with other elements of the RFA package will ensure a secure resource base for industry growth.

Consistent with the *Mineral Resources Development Act 1990*, new exploration licences and subsequent mining are not permitted in National Parks, Wilderness Parks, State parks and Reference Areas. Exploration and mining may be permitted in other parts of the CAR reserve system where the identified conservation values are not incompatible with exploration and mining. Mine sites will be rehabilitated to standards based on world best practice. The approval of the Minister for Conservation and Land Management is required before exploration or mining can be carried out on restricted Crown land. On unrestricted Crown Land the Minister for Conservation and Land Management's consent is not required; however the Minister must be consulted.

Given that current sawlog licence and pulpwood supply commitments can continue to be fully met from the region, there are unlikely to be any adverse social implications arising from the establishment of the proposed CAR reserve system. Notwithstanding this there may be some implications on individual enterprises. These will be clarified and considered prior to finalising the RFA. There may also be some implications for other land use activities should the land tenure change as a consequence of the RFA.

## 4. FOREST INDUSTRY OPPORTUNITIES

### 4.1 NATIVE WOOD BASED INDUSTRIES

In 1997-98, Australia had a \$690 million annual trade deficit in sawn wood and timber products (ABARE May 1999). Projections of global wood supply and demand over the next 20 years indicate significant changes in market conditions as availability of wood from traditional areas of supply decreases and demand increases with economic development. These two factors provide substantial investment opportunities for Australia's forest industries over the next three decades, particularly for high quality sawn timber products.

Through the consultative mechanisms provided by the RFA process, including the social assessment process, local communities and stakeholders identified issues which need to be addressed to promote the timber industry and regional development. Through a range of mechanisms including the RFA, the Commonwealth and Victorian governments are addressing key issues raised by stakeholders, including:

- resource certainty;
- product development and potential marketing opportunities; and
- public log pricing and allocation policies.

In light of the long term nature and capital intensity of most forestry investments, increased certainty of resource availability is necessary to promote a more efficient and internationally competitive forest based industry. In this respect, the North East RFA will be part of the framework that permits the forest industries to be internationally competitive and delivers desired environmental outcomes. This framework and its potential benefits are discussed below.

The Commonwealth and Victorian governments have also introduced initiatives addressing the issues of product and market development and pricing and allocation policies. While these initiatives are not directly related to the RFA, they are described below to provide the context for forest industry policy.

#### **Resource Certainty**

One of the objectives of RFAs is to provide greater certainty for forest based industries, including access to timber resources. Past land use planning decisions by the Victorian government, including decisions based on the recommendations of the former Land Conservation Council have influenced current resource availability in the region. Adopting the proposed CAR reserve system as outlined in Chapter 3 will also influence potential timber resource availability.

In conjunction with existing conservation reserves, the proposed additions to the CAR reserve system are designed to maintain species and genetic diversity through the protection of a proportion of all EVCs across all public land tenures. Specific conservation measures for known rare or threatened species such as Powerful Owl, Spotted Tree Frog and Long-footed Potoroo are also included.

Timber resource analyses have been undertaken by the NRE using the Integrated Forest Planning System (IFPS). These analyses utilise data from the Statewide Forest Resource Inventory (SFRI) and take into account the establishment of the proposed CAR reserve system. IFPS modelling results indicate that current harvest levels can be maintained while establishing a world class reserve system. Additional timber resources, predominantly from mixed species stands, may also be available above current harvest levels. The economic model FORUM has been used to forecast industry growth options based on both value adding

by industry and a notional increase in volume of 5 000 m<sup>3</sup> per year of ash and 10 000 m<sup>3</sup> year of mixed species.

Sustainable yield will be determined when a formal review is undertaken by NRE using fully spatially based modelling in the IFPS and incorporating SFRI data, the reserve system and other outcomes established in the North East RFA.

Certainty about resource availability is a major issue for the timber industry and enables investment decisions to be made with confidence. A statewide sawlog licensing system based on 15 year tradeable licences was introduced in 1987. Licences were introduced to guarantee long-term access to sawlog resources, promote investment and facilitate the transition to sustainable supply levels. A direct benefit of such a system has been the increased level of confidence within the Victorian sawmilling industry, which has seen a significant increase in the level of investment in value-adding operations, including in the North East region.

On completion of a North East RFA, the Commonwealth will remove export controls on unprocessed native hardwood sourced from the region. The lifting of these export controls together with the maintenance of long term licensing will increase certainty of access to hardwood resources and promote an investment climate conducive to the development of internationally competitive forest based industries. The present flexibility with respect to the trading of sawlog volumes between licensees also allows processors to respond to market conditions and maximise opportunities.

The issue of certainty of access to public hardwood resources is equally applicable to pulpwood (or residual log) processors.

### **Investment in the Timber Industry**

As with other sawmilling operations in the State, companies in the North East have made significant investments in upgrading mills over the past decade, resulting in increased output of higher value products. Value adding initiatives facilitated by long term licences have increased the production of kiln dried timber and the recovery of sawn timber from lower grade logs. The changes have required:

- substantial capital investment in value adding facilities;
- development of a larger and more skilled workforce;
- development of new markets in Victoria, interstate and overseas; and
- development of new products.

In 1995-96, there was an estimated capital investment of \$4.9 million in mills sourcing sawlogs from the North East region. This occurred at the 6 sawmills which are producing seasoned sawn timber.

### **Further development in value adding, marketing and product development**

The Victorian and Commonwealth governments are jointly committed to ensuring that hardwood resources sourced from the North East region are utilised to their maximum potential, recognising the economic and social benefits flowing from competitive value-added based industries.

An assessment of the potential growth of the forest industries drawing hardwood resources from the North East identified a number of potential investment and employment opportunities. Development opportunities for the hardwood sawmilling industry in the North East region will be determined in part by the level of sawlog availability. Specific development options that could be considered by the sawn timber industry sourcing hardwood sawlogs and residual logs from the North East include:

- increasing the proportion of sawn timber that is kiln dried. Most producers processing logs from the North East have the capacity to increase the proportion of their production that is kiln dried and re-processed;
- increased processing of residual logs through investment in plants specifically designed to process logs that are smaller and more defective than sawlogs;
- developing networks between timber processors to facilitate investment in the specialised equipment needed to produce highly processed wood products;
- strengthening links with the furniture industry; and
- continuing to identify and expand markets where the properties of the particular North East timbers (durability, appearance, strength and hardness) provide a competitive advantage.

As well as major capital investment in operations, industry is also establishing more effective marketing networks and opportunities for product development. There are significant opportunities for those companies which have been developing co-operative networks to target major national and export markets such as Japan.

One such initiative is the Australwood Export Network, which allows participating companies to trade individually, but also as a collective force. The network offers combined research, promotion, quality assurance and marketing activities. A major focus of the Australwood Export Network is the Japanese market, following an initial study jointly funded by industry and the Commonwealth AusIndustry Program. The Commonwealth assisted the industry in establishing the Network, and provided initial support for technology transfer in kiln drying hardwood sawmilling.

The work of the timber industry in developing new markets for value added products complements the Victorian Timber Promotion Council's development of a detailed quality assurance program for hardwood sawn timber to ensure consistency in supply of products targeted to customer requirements (DPIE Agribusiness Programs Annual Report 1993-94, 1994-95).

In order to promote further manufacturing opportunities, the Furniture Industry Association of Australia is developing a national export program and strategy for timber and furniture producers and exporters to promote Australian furnishings to the Japanese market. These timber promotion and quality assurance programs are funded by industry with Commonwealth assistance (DPIE Agribusiness Programs Annual Report 1995-96). In 1994 less than 5 per cent of Australian furniture was exported. This has increased by 10 per cent in the last two years, with Victorian manufacturers contributing significantly to this outcome (Cock 1997).

Opportunities for the Victorian sawmilling industry given the climate of certainty provided by an RFA have been reviewed by FORTECH (1999). Value adding in the sawmilling sector offers the greatest scope as market opportunities are available both domestically and internationally. The most promising product outlets are in flooring, external appearance products and furniture. The potential industry development opportunities in Victoria with a high priority for assistance, and their expected benefits, are listed in Table 4.1.

In addition to these opportunities in the sawmilling industry, appearance grade sliced veneer could be milled from the alpine ash forests in the North East. Veneer milling appears feasible only at those mills with large sawlog allocations. Based on past experience, mills would need to address a number of issues including scale of operations, choice of equipment, lack of experience in veneer production and inadequate marketing to ensure commercial success in the production of sliced veneer.

**Table 4.1: Potential Industry development opportunities in Victoria**

<b>Opportunity</b>	<b>Benefits</b>
Further development of natural feature grade products	Potential markets may be very large if industry builds on initial success and extend to a wider range of species.
Increased production of flooring	Potential markets may also be large particularly where advantages of strength and durability are linked with natural feature grades.
Increased drying of Ash species	Increased employment and income.
Increased drying of mixed species timbers, particularly in East Gippsland	Increased employment and income.
Re-manufacturing to produce appearance products	Import replacement and move to higher value end uses and higher utilisation of logs.
Preservative and other treatments	Import replacement and higher value end uses.
Hardwood furniture manufacturing	Significant export potential particularly for natural feature grade furniture timbers. Increase in skilled jobs.
Increased sawing of lower grade logs	Increased employment and income and greater utilisation of logs.
Mechanical harvesting	Lower delivered log costs, lower environmental impact.

Development opportunities for the hardwood sawmilling industry in the North East region will be determined in part by the level of sawlog availability. Decisions on industry expansion and investment will be made by private investors and companies in light of normal commercial considerations rather than being prescribed in the RFA.

### **Pricing and allocation policies**

NRE has a major influence on the efficiency and competitiveness of downstream processing industries and private growers through the pricing and allocation of the logs it supplies. In recent years, NRE has responded to changing community expectations and policies towards the management of commercial aspects of public forests and is adopting more market oriented pricing methods. This includes greater flexibility in the sale of short term parcels of timber, and ongoing review of log royalties in light of market conditions. As noted in the Statewide ESFM report (VicRFASC 1997), the ongoing reform of NRE accounting systems to promote greater transparency between commercial and non-commercial forest production activities is acknowledged as a positive step towards increasing the efficiency of public wood supply activities.

A key feature of the existing log allocation system is the classification of logs into four sawlog grades or into residual logs, according to their quality. Residual logs are largely used as fibre input for the production of pulp and paper products. The log grading system is designed to encourage value adding and to maximise the economic and social benefits from the utilisation of the timber resource. For example, a proportion of better quality logs below D grade sawlog from the North East region are also converted into sawn timber products such as pallets and fencing material.

Further improvements in the grading of logs below D grade sawlog may facilitate additional value adding activities, such as composite products made from small dimension timbers.

As part of the Competition Principles Agreement, Victoria will review legislation and policies relevant to the allocation and pricing of hardwood logs from State forest before the end of 1999. Competitive neutrality principles will be taken into account in any changes following the review.

### Potential Forest Industry Opportunities

Timber industry development opportunities in the North East were examined as part of the economic assessment for the North East CRA. This section outlines the main findings of that assessment and modelling of industry opportunities, taking into account forest product markets and the availability and quality of hardwood resources.

#### Sawmilling

As discussed in the North East CRA report, sawmillers drawing hardwood resources from the region are intending to increase value adding within the industry over the next few years. In particular, sawmillers intend to increase the production of higher value products such as dried and appearance grade products (VicRFASC 1998a).

During the sawmill survey conducted by ABARE in 1997, sawmillers provided details of their proposed investment plans in terms of new milling equipment, total mill capacity and new timber drying facilities over the next ten years. Such investment plans will result not only in increased log intake capacity, but also an increase in both timber recovery rates and the proportion of timber processed beyond the green sawn timber stage. Responses from the sawmill survey showing the expected changes in the share of production from 1996-97 to 2006-07 are summarised in Table 4.2.

**Table 4.2: Current and anticipated sawn timber production in the North East region and major markets, 1996-97 and 2006-07<sup>a</sup>**

Product	% Share of production		Major markets in 1996-97 <sup>b</sup>
	1996-97	2006-07	
<b>Seasoned sawn timber</b>	<b>40.2</b>	<b>63.6</b>	
Appearance grade - select	12.4	14.3	Export, regional Victoria
Appearance grade – standard	6.5	13.8	Regional Victoria, New South Wales, Queensland
Dried structural grade	10.0	9.0	Regional Victoria, Melbourne
Further processed	11.3	26.5	Melbourne and export
<b>Unseasoned sawn timber</b>	<b>59.8</b>	<b>36.4</b>	
Scantling	47.0	28.2	Melbourne, New South Wales and Queensland
Palings and pallets	11.1	7.1	Melbourne, regional Victoria
Other sawn timber	1.7	1.1	Melbourne, regional Victoria
<b>Total</b>	<b>100</b>	<b>100</b>	

<sup>a</sup> Preliminary estimates for industry based on sawmill survey. These estimates exclude specialist recovery mills. <sup>b</sup> Markets recorded in order of importance.

Sawmillers utilising sawlogs from the North East anticipate that the proportion of output sold as seasoned timber will increase from 40 per cent in 1996-97 to around 65 per cent of total output by 2006-07 (mills that only process residual logs have been excluded from this

estimate). This should significantly increase the gross value of production associated with the timber industry in North East Victoria. In 1996-97 seasoned sawn timber accounted for 65 per cent of the gross value of sawn timber production.

In order to examine the impact of changes in sawn timber production, improvements in timber recovery rates and an expected small increase in log resources over the life of the RFA, industry development scenarios were examined through simulations using FORUM (Forest Resource Use Model). FORUM is a linear programming model that can be used to simulate the complex interactions between regional forest resources, wood based forest industries and final wood product markets. The model uses a spatial representation of the data and takes account of the distribution of available log resources, the location of sawmills and major markets. The model is described in Dann *et al* (1997) and has been used in RFA analyses to measure changes in the value of production of wood from the stump to the point of first sale of the timber or wood product.

Three scenarios have been analysed to examine the impact of increased value adding by sawmills as well as the impact of increased sawlog availability. The scenarios examined are:

1. annual sawlog intake maintained at 1996-97 harvest levels of 64 275 cubic metres, with sawmill technology maintained at 1996-97 levels over the RFA period (baseline scenario);
2. annual sawlog intake maintained at 1996-97 harvest levels, with sawmill technology and timber drying facilities (value adding) altered in line with sawmills' responses to the 1997 sawmill survey; and
3. annual sawlog intake at 1996-97 harvest levels increased by 5 000 cubic metres per year of Ash species and 10 000 cubic metres per year of mixed species, with the improved sawmill technologies and drying facilities in place.

The distribution of the ash and mixed species resource on a block basis was taken into account in developing the model. The model assumes that sawmills retain their species intake of either ash or mixed species. The model does not allow for changes in species intake. Mills which currently process both ash species and mixed species logs are assumed to do so under the scenario simulations.

Scenario 1 reflects the industry structure as at 1996-97. The value adding component of Scenarios 2 and 3 use the data supplied by the sawmills in 1997 sawmill survey on expected changes in operating costs, mill capacity, employment and the level of investment. These data are used to estimate changes in recovery rates, planned or expected changes to the timber product mix and changes to the level of timber production. The model assumes that investment in new mill capacity, changed technology and drying facilities occurs in the first year of the RFA period, whereas in fact, the investment may take place over a number of years.

Scenario 3 uses notional estimates of an increase in sawlog intake. The actual level of timber resource available will be determined when a formal review of the sustainable yield is undertaken by NRE.

The estimated output and employment of the sawmill industry for each scenario are set out in Table 4.3. Under the further processing scenario, the gross value of output and the level of employment increases significantly from current levels. This is due to the assumed increases in available log handling capacity, improvements in timber recovery rates, additional value adding and by FORUM allocating logs first to mills at which the net returns achieved from processing the logs are highest. These mills tend to produce higher proportions of further processed sawn timber and employ more labour per unit of output.



**Table 4.3 Industry development scenarios**

	<b>Units</b>	<b>Scenario 1 Industry structure for 1996-97<sup>a</sup> (baseline)</b>	<b>Scenario 2 Value adding</b>	<b>Scenario 3 Additional resources plus value adding</b>
<b>Mill production</b>				
Seasoned timber	'000 m <sup>3</sup> /yr	12.03	25.42	30.06
Green sawn timber	'000 m <sup>3</sup> /yr	17.51	6.75	6.75
Residues	'000 m <sup>3</sup> /yr	32.99	38.51	42.4
<b>Gross value of production<sup>b</sup></b>				
Seasoned timber	\$m/yr	11.87	25.55	30.40
Green sawn timber	\$m/yr	5.52	2.11	2.11
Residues	\$m/yr	0.79	0.90	0.99
<b>Total</b>	<b>\$m/yr</b>	<b>18.18</b>	<b>28.56</b>	<b>33.50</b>
<b>Employment<sup>c</sup></b>	<b>No. persons/ year</b>	<b>154</b>	<b>179</b>	<b>192</b>
<b>Net present value<sup>d</sup></b>	<b>\$m</b>	<b>73.9</b>	<b>168.2</b>	<b>194.5</b>

<sup>a</sup> Simulated rather than actual results for 1996-97 using the FORUM model. <sup>b</sup> In 1997-98 dollars. <sup>c</sup> Full time equivalent. <sup>d</sup> Net present value of land and tree resource rents in 1997-98 dollars measured using a discount rate of 7.5%. These figures may not be comparable to NPV figures calculated for other purposes. **na** not applicable.

If the sawmill industry undertakes the investment plans as indicated in 1997, a significant rise in the gross value of production and expansion of employment in the industry would be expected. Under Scenario 2, the gross value of production from timber production and residue sales would increase by 57 per cent to \$28.6 million, with employment rising by 16 per cent to 179. If additional volumes of sawlogs were available and the sawmill industry also undertook investment and value adding (Scenario 3), the gross value of production would increase by 84 per cent to \$33.5 million, with employment rising by 25 per cent to 192. It has been assumed that all of the additional logs would be used in the production of seasoned timber.

While the gross value of production and total level of employment increases under the value adding scenarios, it must be noted that in order to achieve the estimated levels of employment and gross value of output, a degree of structural adjustment within the North East sawn timber industry may be necessary. Any actual changes will be determined by individual enterprise decisions and other economic factors affecting individual mills over time. Industry may respond to changed circumstances in a number of ways. These changes could involve altered supply arrangements (for example existing green sawn timber mills supplying green material to a central located seasoned sawn timber processing plant), to rationalisation of mills to a smaller number of processors with higher throughputs.

Net present value is included in Table 4.3 as it is a measure of relative benefits gained from alternative courses of action. Net present value of production has been measured in terms of land and tree resource values (or rents). Land and tree resource values are calculated from the gross value of production minus all costs including handling and processing of the logs

and forest management. The net present value is the accumulated value of land and tree resource values used in wood production during the period 2000 to 2019, discounted to 1997-98 prices. These figures may not be comparable to NPV figures calculated for other purposes.

The difference in the net present value under different scenarios is a measure of the net return of alternative courses of action. For example, from Table 4.3 it can be deduced that the investment by sawmillers – as foreshadowed in the sawmill survey – results in a net return over the life of the RFA of around \$94 million. If additional log resources are available as under Scenario 3, the net return of utilising this additional resource accompanied by the extra investment by sawmillers is \$121 million over the life of the RFA.

In summary, an analysis of the development scenarios indicates that capital investment – such as that proposed by mill owners – generates the major potential gains in gross value of production and employment. Increases in timber resource availability also makes a contribution to higher gross value of production and employment.

In addition to the direct employment and value of production benefits from increased value adding in the sawntimber industry, there are likely to be further economic and social benefits arising from proposed industry changes. The flow-on effects to the state economy from increased value-adding in the sawntimber industry may be broadly estimated using appropriate input-output and employment multipliers. Drawing on available multipliers for the sawmilling industry in the Victorian economy, it is estimated that the total value of turnover generated from sawmill activities under Scenario 3 may contribute \$63 million to State output. This estimate is based on a state output multiplier of 1.87 for the sawmilling sector. Similarly, the employment generated from sawmill activities under Scenario 3 may contribute 442 jobs to the Victorian economy, based on a State employment multiplier of 2.3 for the sawmilling sector.

These industry development opportunities may bring significant benefits to communities within the region. There is potential for increased value-adding by hardwood mills located within the region, including those at Benalla, Mount Beauty, Whitfield, Corryong, Mansfield and Myrtleford, as well as two mills which access resource from the North East, but are located outside of the region at Seymour/Murrindindi.

It is suggested that value-adding within these particular towns would benefit the local communities, and would also have benefit to other communities in which employees from these mills access goods and services. For example, based on information collected as part of the RFA process which outlines expenditure patterns by the timber industry and its employees, value adding opportunities in Benalla-Mansfield would have benefit to Benalla, Mansfield, Jamieson and Whitfield, as well as Alexandra, Wangaratta and Seymour. Other townships which are likely to be positively affected by changes in the North East RFA area include, but not limited to, Wodonga, Albury, Beechworth, Bright, Myrtleford, Shepparton, Tawonga South, and Porepunkah. Other smaller townships within the regions may also experience some benefit. Many of the communities identified above have a relatively high economic and cultural dependence upon forest-related industries and as a result such opportunities are likely to significantly benefit these small rural communities.

### ***Pulpwood processing***

Development options for processing residual logs are currently limited. While the resource is relatively large, it is widely dispersed and it would therefore be difficult to develop competitive new industries manufacturing either panelboards or pulp and paper. In addition, the recently weak Asian economy has seen the depression of prices in panelboard markets and has made the development of any panel products venture unlikely at least until demand recovers in the Asian region. The residual log resource may contribute to the development of

new manufacturing industries if it is used in conjunction with resources from adjacent regions or supplemented from private hardwood resources.

If sawmillers undertake the investment options as they indicated in 1997 then increasing quantities of residual logs may be used for the production of sawn timber.

### **Facilitating investment and best use of timber resources**

As well as increasing investment certainty, governments are also committed to facilitating the best-use of timber resources and to ameliorating any negative economic and social impacts of land-use proposals. The requirements to achieve these objectives will vary from region to region, depending on the level of opportunities or impacts.

The Forest Industry Structural Adjustment Package (FISAP) was developed during the negotiation of Deferred (or Interim) Forest Agreements which provided interim protection for areas which may be needed to form a CAR reserve system within a region. As such, it was initially designed to assist workers and businesses in the native forest industry which are directly affected by the outcomes of the Interim Forest Agreements (IFAs) and/or RFAs. The program is designed to ameliorate any immediate adjustment impacts on workers and businesses in the native forest industry, and has been broadened to facilitate investment in the production of value added wood products through restructuring assistance.

As part of the Central Highlands RFA negotiations the Commonwealth and Victorian governments agreed that the FISAP program would contribute \$27.6 million, of which \$18.8 million would be directly available for industry development and restructuring. A joint Commonwealth and Victoria Memorandum of Understanding (MOU) establishes the respective roles and responsibilities of the two governments in funding and administering the program.

### **Other timber industry issues considered, including those raised during consultation**

The timber industry in the North East has developed around access to high quality stands of Alpine Ash and mixed species logs occurring in relatively small patches which are widely dispersed across the region and interspersed by areas of low productivity or unproductive forest. The industry exhibits a strong preference for Alpine Ash resources and certain other non-ash species, including messmate. Utilisation of lower productivity mixed species stands has been limited and there is minor utilisation of residual logs as pulpwood.

Processing centres have been located to take advantage of access to nearby timber resources, minimising haulage distances. Past investments in plant and equipment have been made to take advantage of high quality, large dimension, mature ash and mixed species logs. Markets have been developed for high quality sawn products obtained from these logs. Industry advice is that current capacity to process smaller dimension, regrowth logs is limited and that markets are not well-developed for sawn products obtained from logs exhibiting greater levels of internal defect (such as gum veins or stain). Further, a range of technical issues need to be overcome to successfully kiln-dry younger, regrowth ash logs for the markets that have been established.

Nevertheless, the industry generally recognises the need to make a transition to smaller diameter logs obtained from regrowth forests (mostly 1926 or 1939 fire regrowth) and is anticipating future investments to ensure processing plants are capable of handling this type of material. The key issue raised by the timber industry in this regard is the timing of this change and the need to extend access to mature ash and high quality mixed species resources for as long as possible.

Implementation of the CAR reserve system may have implications for the timber industry at both the industry and individual enterprise level. At the industry level, comprehensive, region-wide analyses based on Statewide Forest Resource Inventory data indicates that current industry supply commitments can continue to be met following establishment of the CAR reserve system and there may be some capacity for increased supply, particularly in mixed species logs. Completion of the RFA will improve the security of these supplies, providing a basis for greater certainty in investment decisions, benefiting the entire industry.

Although the CAR reserve system has been designed to maintain access to high quality timber stands as far as possible, there has been some changes in availability, principally to address protection of old-growth and threatened species. Individual enterprises, which have established patterns of use based on access to particular components of the overall sawlog resource, may need to make adjustments to allow a more rapid transition to alternative resources than previously planned. NRE will continue to work with potentially affected enterprises to identify feasible alternative resources prior to finalisation of the RFA.

## **4.2 OTHER INDUSTRY ISSUES**

### **Tourism and recreation**

The North East forests contribute significantly to the region's attractiveness as a tourism and recreation destination, providing a wide range of tourism and recreational opportunities. The natural attractions and the range of activities available in the region are a major tourism and recreation asset and provide one of the identified strengths with respect to future tourism development potential. The North East received approximately 1.5 million visitors in 1995 most of whom were from within the State. Driving to sightsee is the most popular activity and on a Statewide basis, only visit numbers to the Grampians is higher in terms of useage or bushwalking than the North East. Attractions on public land include:

- national parks and forests providing a wide range of tourism and recreation opportunities;
- the Murray River, Lakes Hume and Dartmouth and other rivers and streams which are popular for fishing, rafting and camping;
- opportunities for deer hunting in Victoria's mountain region; and
- the snowfields at Mt Buller, Mt Hotham, Falls Creek and Mt Stirling.

The social assessment process and other information provided by stakeholders identified a range of community and stakeholder issues related to development opportunities for tourism in the region including:

- further tourism development focussing on the key features of the area;
- maintenance of environmental and aesthetic values; and
- compatible development of the tourism and timber industries.

The RFA is intended to provide certainty about the future use of forests in the region for the next twenty years and will provide the context for future planning of tourism and recreation opportunities in the North East.

The Victorian Regional Travel and Tourism Survey (Tourism Victoria 1996) found that the North East received approximately 1.5 million visitors in 1995 with 1.3 million day trippers spending a total of \$48 million.

As outlined in the CRA report, in 1994-95 there were an estimated 362 500 visitors to State forests and 595 300 visitors to National Parks in the North East generating a total net economic value for tourism and recreation of between \$2.1 million and \$6.5 million in State forests in the North East region, and \$10.7 million from parks. Using a 1995 study which suggests that a range of between \$20 and \$50 per visitor day can be used as a guide to

calculate the stimulus to the regional economy of tourism and recreation in State forests, it is estimated that State forests contribute between \$7.2 million and \$18.1 million per year to the regional economy in the North East. Using an estimate of \$131 per visitor day as a guide to calculate the stimulus of tourism and recreation to the regional economy derived from the 1994 Grampians study, parks in the North East could generate up to \$78 million, though caution is required in these figures as they are extrapolations from other studies. Based on these aggregated figures, tourism and recreation based on public land in the North East is estimated to contribute between \$85.2 million and \$96.1 million per year to the regional economy making tourism and recreation important parts of the economic values derived from North East forests.

Alpine resorts provide a further significant input into Victoria's economy creating more than 5 700 full time equivalent jobs in 1991. The estimated winter gross expenditure by visitors to these resorts is \$230 million, and an additional \$39 million from summer visitors (ARC 1998). These figures represent the economic significance of all alpine resorts however, in 1991, resorts in the North East accounted for 73 per cent of all alpine visitors.

In the North East region, recreational deer hunting is an important contributor to the economy as sambar deer, one of Victoria's most commonly-hunted deer species, occur in the region. Sambar deer occur across the alpine region shared by the North East, Central Highlands and Gippsland. The largest sambar deer populations in the North East occur in the west of the region, near the Buckland and Buffalo Rivers. Although hunting takes place across the entire alpine area, where permitted, these river valleys are the most popular areas for deer hunting in the region. Forests near the Jamieson, Howqua and Goulburn Rivers and Lake Dartmouth are also popular for hunting trips. Hunting of sambar deer is permitted in parts of the Alpine National Park and in State forest (except where restrictions apply).

It is estimated that 10 000 deer hunters, or 57 per cent of all licenced hunters, reside in Victoria (ADA 1998) with the majority hunting sambar deer. In 1989, expenditure by Victorian hunters on equipment totaled \$33 million in Victoria. During the same period, these hunters spent approximately \$6.5 million, or an average of \$494 per hunter, on trips for hunting sambar deer (ADA 1998).

Tourism is one of Australia's fastest growing industries. The growth in visits to Victorian State forests has been estimated to remain at least in the order of 3 to 5 per cent per annum until the end of the decade. Applying these growth rates to the 1995 visitation levels in the North East, between 420 000 and 462 000 visits are expected in the region's State forests by 2000. Visits to National Parks in Victoria averaged around 5 per cent per annum in the 8 years to 1996-97 and this growth is expected to continue. Using current visit levels, over one million visit days are expected in parks in the North East by 2000.

### **Outdoor Education**

In addition to tourism and recreation activities, outdoor education is also an important and established forest based industry in the North East. Outdoor education activities include bush walking, rafting, rock climbing, horse riding, abseiling, mountain bike riding, skiing, wildlife observation, historic site interpretation and camping.

### **Plantations**

Plantations in the North East contribute significantly to overall wood supply, particularly as an additional source of pulpwood and small diameter sawlogs for industry. They can also contribute to regional economic development and provide substantial environmental and agricultural productivity benefits to landholders and the broader community if established on cleared land.

Stakeholders, interest groups and local communities have identified commercial farm forestry and plantation development as an important issue. The current plantation estate in the North East, the potential for its expansion and the policies, programs and initiatives to encourage its expansion are described in the North East CRA report (VicRFASC 1998a).

The RFA cannot be prescriptive about private plantation development and investment. Actual investment in plantation establishment and development is a commercial decision for companies and individuals that requires more detailed resource and economic assessment at the plantation unit level.

Both Governments however have developed a range of policies and programs to encourage and facilitate plantation development on cleared land. In total, at least \$10 million of Commonwealth and State funding has been allocated over a 4 year period from 1996 to support extension, demonstration, education, planning and coordination and practical research and development activities aimed at enhancing the uptake of private forestry in Victoria.

In addition, Commonwealth and Victorian legislation pertaining to plantation development has been reviewed. Victorian forestry rights now provide for agreements between landowners and tree growers that give legal title for trees separate from the land and forestry plantations can be established in some areas without requiring a planning permit. Export controls have been removed from timber sourced from Victorian plantations, and an export licence is no longer required for such material.

### **Mining and quarrying**

The North East region of Victoria has 25 active or intermittently active construction material quarries supplying a range of industrial, construction and agricultural uses. In 1994-95 at least \$20.5 million of construction material was extracted. The largest feldspar mine in Victoria was commissioned in 1997 and is in operation near Beechworth. The North East region has about 43 historical gold and tin fields which continue to be explored. Current gold mining operations are restricted to several small producers but gold resources have been identified at a number of prospects in the region. As discussed in the North East Victoria CRA report, expenditure on mining and exploration was \$17.5 million in 1996-97.

The mineral assessment in the North East identified potential for 14 types of mineral deposits and 4 types of industrial mineral and construction materials deposits including:

- high potential for slate-belt gold for most of the region with smaller tracts of high potential for volcanic associated base metal and gold deposits; and
- moderate to high potential for disseminated gold, epithermal gold, porphyry copper-gold and nickel-copper deposits.

The geological complexity and diversity of host rocks and structures for potential mineral resources and improving technology make North East Victoria a possible candidate for future discoveries of the above-mentioned types of mineral deposits.

The principal issue for mineral exploration and mining is long-term access to land because of the long-term continual nature of exploration activities. This occurs because of the development of new exploration techniques and changes to the economic viability of exploration and development of particular minerals.

In making decisions on the tenure of the CAR Reserve system, consideration will be given to the impact on land access for exploration and mining activities. Mineral exploration and mining will be permitted in certain parts of the reserve system but only where the identified conservation values are not incompatible with exploration and mining. Consistent with the

Central Highlands RFA, mineral exploration and mining in the reserve system will be subject to the normal Victorian legislative controls. Mine rehabilitation will also be subject to Victorian legislation and will aim to achieve world best practice.

Another important issue is the need for management and environmental impact assessment regimes that allow mineral exploration and mining industries to remain internationally competitive while at the same time delivering desired environmental outcomes. State government requirements for taking this into account are outlined in Chapter 10 of the North East Victoria CRA (VicRFASC 1998a).

## 5. ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT

Ecologically Sustainable Forest Management (ESFM) is a key principle of current forest policy and underpins the objectives articulated in the National Forest Policy Statement. ESFM can be defined operationally 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.

As outlined in the ESFM assessment in the North East CRA report (Chapter 17 and Appendix 4), a Statewide assessment of ESFM (VicRFASC 1997) has been undertaken and is applicable to the North East region. The Statewide assessment report was independently reviewed by Professor Ian Ferguson, the Chair of the East Gippsland ESFM Expert Advisory Group (VicRFASC 1996a). Given that it was an independent peer review, the views contained in the appraisal are not necessarily those of the joint Commonwealth/ Victorian RFA Steering Committee or of the Commonwealth or Victorian Governments.

The Statewide ESFM report contained an overall appraisal by Professor Ferguson. That appraisal concluded that: 'Victoria has all of the major elements in place for appropriate systems and processes for ecologically sustainable forest management. Having said that, however, there is still considerable scope for further improvement... These are not major or exceptional requirements: they are the measures required for continuing improvement in management systems.' Professor Ferguson also pointed out that progress on the implementation of improvements to the environmental management system will depend on several factors, not the least of which is the resources available for the task.

The Commonwealth and Victoria have considered the ESFM assessment and the comments made by the Expert Advisory Group and Professor Ferguson. The response of the Commonwealth and Victoria to the ESFM assessment was reported in the North East CRA report. Some of the improvements suggested by the Expert Group have already been addressed through commitments made in the East Gippsland RFA and Central Highlands RFA, while others are not considered sufficiently significant to justify an adjustment to the systems and processes already in place.

The key elements for ESFM relate to the establishment of the CAR reserve system as discussed in Chapter 3, the development of internationally competitive forest products industries as discussed in Chapter 4, and the forest management processes which apply to forests both inside and outside the reserve system. Forest management systems and processes in Victoria are discussed in Chapters 3 and 17 of the CRA report and are listed in Table 5.1. The system includes the forest management plan and the process for its review, the *Flora and Fauna Guarantee Act* 1988, the process for forecasting sawlog sustainable yield, and the systems and processes established by the Code of Forest Practices for Timber Production and the Code of Practice for Fire Management on Public Land (CNR 1995).

In the North East region, the Statewide Forest Resource Inventory has recently been completed and its data outputs have been used in the development of the Forest Management Plan and this report, as discussed in Chapter 4.

The Commonwealth and Victorian Governments have implemented a number of strategies and programs aimed at pest plant and animal control that involve government at all levels, industry, landholders, land managers, and community groups. Major Commonwealth initiatives for the control of pests are implemented through the National Heritage Trust, including the National Weed Strategy and the National Feral Animal Control Strategy. The



Victorian Weeds Strategy (NRE 1998b) builds on the National Weeds Strategy and also takes account of recommendations in the Victorian parliamentary inquiry 'Report on Weeds in Victoria' (ENRC 1998). The Victorian strategy sets out a range of actions that will establish a cost-effective long-term approach to weed management in Victoria.

A number of State-funded programs including the 'Weed Initiative', and the 'Good Neighbour' and 'Rabbit Busters' programs are run in conjunction with the National Heritage Trust. These projects, on public and private land, reflect priorities established in Regional Catchment Strategies. This year (1998/99), approximately \$98 000 has been funded from the Good Neighbour program targeting pest species such as blackberry on public land in the North East region and \$215 000 on rabbit control programs on public land. Of this, approximately \$192 000 of the Good Neighbour Program and \$69 000 of rabbit control program is in State forests. In addition, approximately \$72 000 has been allocated for a wild dog control program on public and private land and approximately \$25 000 on weed mapping on public and private land in the North East region.

A range of commitments to ESFM have been made in previous RFAs, some of which are outlined below.

#### **The CAR Reserve System**

- Managing the dedicated reserves within the CAR reserve system in accordance with relevant government approved LCC recommendations.

#### **Monitoring, reporting and consultative mechanisms**

- Completing and publishing management plans for National and State Parks.
- Completing and publishing regional prescriptions for timber production.
- Publishing of future reports of audits of compliance with the Code of Forest Practices for Timber Production.
- Implementing a continuing quality assurance program.

#### **Forest inventory and sustainable yield**

- Implementing the Integrated Forest Planning System and Statewide Forest Resource Inventory for the review of sustainable yield.

#### **Sustainability indicators**

- Establishing an appropriate set of sustainability indicators to monitor forest changes. Indicators established will be consistent with the Montreal Process Criteria (as amended from time to time).

#### **Private land**

- Encouraging private forest owners to ensure that their management operations are consistent with the Code of Forest Practices for Timber Production, and to have in place adequate mechanisms to protect nature conservation and catchment values.
- Identifying the EVCs which are priorities for the CAR reserve system. These EVCs could be managed to protect values or contribute to the CAR reserve system through a range of mechanisms with the consent of the land owner. These mechanisms are discussed in Chapter 3 of this report.

#### **Management of cultural values**

- Development of Statewide guidelines for the management of cultural heritage values in forests, parks and reserves.

**Conservation strategies for priority flora and fauna species and vegetation communities**

- Priorities for management of vegetation communities and endangered species. These included priorities for listing threatened species, vegetation communities or threatening processes, and the preparation of action statements or recovery plans.
- Developing pest plant and pest animal control programs in accordance with the forest management plan.

**Research**

- The RFA outlines the current Statewide research priorities.

**Table 5.1: Forest Management Systems and Processes in Victoria**

<p><b>1. LEGISLATION AND POLICIES</b>  International Treaties, Conventions and Initiatives  Commonwealth Government Legislation  National Policies  State Legislation  State Policies</p> <p><b>2. PLANNING</b>  <i>Strategic Planning</i>  Regional Forest Agreements  Land Use Planning - Public land  <i>Forest management planning - public land</i>  Forest Management Plans (State forest)  Victorian Code of Forest Practices  Regional prescriptions  Sustainable Yield  Wood Utilisation plans  Forest coupe plans  Log grading  <i>Park planning</i>  Park Plans  <i>Private land</i>  Land Use Plans  Education and cooperative programs  Native Vegetation Retention Controls  Code of Forest Practices for Private Land  Waters of Victoria State Environment Protection Policy  Flora and Fauna Guarantee  Plantation Management  Private forestry strategy  <i>Fire management planning</i>  Code of Practice for Fire Management  Regional Fire Protection Plans  <i>Flora and Fauna planning</i>  Flora and Fauna Guarantee  Recovery Plans</p>	<p><b>2. PLANNING (continued)</b>  <i>Cultural values</i>  Aboriginal places  Historic places  <i>Exploration and Mining</i>  Environmental Effects Statements  Planning Permits  Work Plans  Environmental Review Committees  <i>Other Plans</i></p> <p><b>3. IMPLEMENTATION</b>  <i>Accountabilities and Responsibilities</i>  <i>Resourcing of Implementation Programs</i>  <i>Operational Controls over implementation programs</i>  Control of timber harvesting in State forests  Control of fire management operations  Control of other activities in State forest  Control of operations in National Parks  Control of other operations on public land  Control of activities on private land  <i>Documentation and Records Keeping</i>  <i>Communication and Education</i>  <i>Knowledge, skills and training</i></p> <p><b>4. INFORMATION MONITORING AND EVALUATION</b>  <i>Forest information</i>  <i>Monitoring implementation of plans and programs</i>  <i>Monitoring and evaluating condition of the forest environment</i>  <i>Auditing of compliance with regulations and controls</i>  <i>Corrective action</i></p> <p><b>5. REVIEW AND IMPROVEMENT</b>  Review of the Environmental Management System  Research and Development</p>
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## REFERENCES

- ABARE (1999), *Australian Forest Products*, September Quarter 1998, Canberra.
- ADA (1998), *Recreational Deer Hunting in Victoria*. Australian Deer Association Inc., Lakes Entrance.
- ARC (1998), *Regulatory Impact Statement - Alpine Resorts (Management) Regulations*. Alpine Resorts Commission / Department of Natural Resources and Environment, Victoria.
- CNR (1992), *Ecological Impacts of Fuel Reduction Burning in Dry Sclerophyll Forest: First Progress Report*. Research Report, No. 349. Forest Research Section. Department of Conservation and Natural Resources, Melbourne.
- CNR (1994), *Long-footed Potoroo (Potorous longipes)*. Action Statement, No. 58. Flora and Fauna Unit, Department of Conservation and Natural Resources, Melbourne.
- CNR (1995), *Code of Practice for Fire Management on Public Land*. Department of Conservation and Natural Resources, Victoria.
- Cock, G.F. (1997), Opportunities in the furnishing industry. In proceedings of Gippsland Timber - 21st Century: sustaining a high value timber industry into the 21st Century. 22-23 May 1997. Gippsland Development Ltd.
- Commonwealth of Australia (1992), *National Forests Policy Statement: A New Focus for Australia's Forests*. Advance Press, Perth.
- Dann, T., Gooday, P., Gilmour, C., Hansard, A., Hogan, L., Kiln, N., Lawson, K., Neck, M., Thorpe, S. and Tran, Q.T. (1997), *Economic Implications of Forest resource Use Options in Tasmania*, ABARE Report, Canberra.
- Dann, T., Gooday, P., Hansard, A., Hogan, L., Neck, M. and Thorpe, S. (in press), *Economic Implications of Forest Resource Use Options in Tasmania*, ABARE Research Report, Canberra.
- DPIE (1996), *AusIndustry-Agribusines Program, Annual Report 1995-96*, Commonwealth Department of Primary Industries and Energy Canberra, (and previous issues).
- ENRC (1998), *Report on Weeds in Victoria*. Environment and Natural Resources Committee. Parliament of Victoria, Government Printer.
- FORTECH (1999), *Victorian Native Forest hardwood Industry Strategic Options for Growth*, A report prepared for the Victorian Forest industry Structural Adjustment Program (Vic FISAP).
- Hansard, A., Dann, T., Stephens, M. and Clark, J. (1996), An economic model for comprehensive regional forest assessments: a case study – some issues and considerations, ABARE conference paper 96.13, presented at the 40th Annual Conference of the Australian Agricultural and Resource Economics Society, Melbourne, 13–15 February.
- JANIS (1997), *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*. Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee, Canberra.
- Network for Excellence in the Hardwood Timber Industry (1996), *Interim Business Plan 1996-98, East Gippsland*, January 1996.

NRE (1996), *Code of Forest Practices for Timber Production (Rev. No. 2)*, Department of Natural Resources and Environment, Victoria.

NRE (1998a), *Study of Old-growth Forest in Victoria's North East*. Forest Service Technical reports 98-1, Department of Natural Resources and Environment, Victoria.

NRE (1998b), *Victorian Weed Strategy: Draft for consultation*. Department of Natural Resources and Environment, Victoria.

NRE (1999), *Proposed Forest Management Plan for the North East*, Department of Natural Resources and Environment, East Melbourne.

Read, Sturgess and Associates (1995), *Recreational Use of Victoria's State forest*. Unpublished report for the Department of Conservation and Natural Resources, Victoria.

Tourism Victoria (1996), *Victorian Regional Travel and Tourism Survey 1995*, Main Overnight Report, Tourism Victoria, June 1996.

VicRFASC (1996a), *Comprehensive Regional Assessment East Gippsland: Independent Advisory Group Report on Ecologically Sustainable Forest Management, Systems and Processes*. Commonwealth and Victorian Regional Forest Agreement Steering Committee, Canberra.

VicRFASC (1996b), *Comprehensive Regional Assessment: Wilderness Assessment of the Eastern Victorian Forests*. Commonwealth and Victorian Regional Forest Agreement Steering Committee, Canberra.

VicRFASC (1997), *Comprehensive Regional Assessment: Victorian Statewide Assessment of Ecologically Sustainable Forest Management*. Commonwealth and Victorian Regional Forest Agreement Steering Committee.

VicRFASC (1998a), *North East Victoria Comprehensive Regional Assessment*. Commonwealth and Victorian Regional Forest Agreement Steering Committee.

VicRFASC (1998b), *North East Comprehensive Regional Assessment: Biodiversity Assessment*. Commonwealth and Victorian Regional Forest Agreement Steering Committee.

VicRFASC (1998c), *North East Victoria Comprehensive Regional Assessment: Social Assessment*. Commonwealth and Victorian Regional Forest Agreement Steering Committee.

VicRFASC (1998d), *North East Victoria Comprehensive Regional Assessment: Mineral Assessment*. Commonwealth and Victorian Regional Forest Agreement Steering Committee.

VicRFASC (1998e), *Compendium of Forest Research in Victoria: Published, unpublished and research in progress*. Compiled and edited by Simon Murphy, Caroline Polak Scowcroft and Robyn Coy. Bureau of Resource Sciences, Canberra.

VicRFASC (1999), *North East Comprehensive Regional Assessment: National Estate Values in the North East of Victoria*. Commonwealth and Victorian Regional Forest Agreement Steering Committee.

Victoria Government (1986), *Victoria Timber Industry Strategy*, Government Printer Melbourne.

