Department of Sustainability and Environment

Forest management plan

for **Gippsland**

Victoria
The Place To Be

Forest management plan

for Gippsland

Department of Sustainability and Environment
June 2004

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Foreword

The Gippsland Forest Management Plan area covers over 2.6 million hectares in mid Gippsland. The planning area extends from the coast to the Great Dividing Range and from the Timbarra and Murray Rivers in the east, to Aberfeldy, Moe and Inverloch in the west. The area is known for its diverse environment, ranging from alpine to coastal areas, landscapes and native forest industries including timber production, tourism and beekeeping. Public land comprises 1 452 800 ha, or 54% of the area, and is covered mostly by native forest. This Plan applies to State forest which covers approximately 802 600 ha, or around 30% of the planning area.

This Forest Management Plan provides for the balanced use and care of State forest, consistent with the Victorian Government's commitment to ecologically sustainable forest management and improved stewardship of public land. This Plan addresses one of Victoria's key challenges which is to enhance the sustainability of our environments, communities and industries.

The Plan aims to provide a framework for stewardship on public land where forest ecosystems are maintained or enhanced, water supplies and sensitive environmental and cultural values are protected, while timber production, recreation and other forest uses can continue to benefit Victorian communities. The Department of Sustainability and Environment (DSE) recognises that Indigenous communities, as the traditional custodians of the lands and waters, have a fundamental role in the management of Victoria's natural resources.

In developing this Plan, DSE adopted a process of integrated regional planning, drawing on a broad range of expertise and interest from within and outside the Department. Public participation has been an important part of this process. The Department established direct contact with a wide range of interested groups and individuals including a community-based Submissions Reference Group that assisted DSE in the review of the 33 submissions received on the Proposed Plan. The Department appreciates the dedication and efforts of the Submission Reference Group, those who provided submissions on the Proposed Plan, and the interest and contributions by other groups and individuals.

This Plan is consistent with the Gippsland Regional Forest Agreement and provides a comprehensive framework for the sustainable management of State forest within this area.

On the 8 January 2003 a series of lightning strikes started over 80 fires in eastern Victoria. These fires impacted on the communities and the public and private lands in North East Victoria, East Gippsland and Gippsland, including some areas covered by this Plan. A process for reviewing management strategies is provided in the Plan to enable DSE to adapt management practices and progressively refine the Plan in response to new information and changing community expectations.

The Department is committed to fostering a culture of openness, partnership and participation with communities to enhance the stewardship of the Gippsland forests.

Professor Lyndsay Neilson
Secretary
Department of Sustainability and Environment

Summary

Publicly owned forest in the Gippsland Plan area covers more than 1.4 million hectares, extending from the Great Dividing Range to the north, the Timbarra and Murray Rivers to the east, Bass Strait to the south, and Aberfeldy, Moe and Inverloch to the west. State forest comprises approximately 802 600 hectares of this land and has an important role in complementing the management of national parks and other reserves for conservation, recreation and the tourism industry. State forest also contributes to Victoria's annual sawlog harvest and encompasses catchments from which local communities draw clean water supplies.

The major challenges addressed in this Plan are to meet a number of conservation and resource use requirements, including the *Flora and Fauna Guarantee Act 1988*, the *Heritage Rivers Act 1992*, the *Catchment and Land Protection Act 1994*, the *National Forest Policy Statement* (NFPS) (Commonwealth of Australia 1992a), sawlog licence commitments to the timber industry and the sustainable yield requirements of Schedule 2 of the *Forests Act 1958*. The strategy used to address these challenges has three main elements.

Conservation guidelines specify minimum levels of planned protection to be provided for natural values in State forest, taking into account the extent of those values in national parks and conservation reserves. They provide a systematic basis for zoning decisions in State forest and therefore introduce stability into the process for balancing conservation with timber production goals.

Forest management zones set priorities and permitted uses in different parts of State forest. The Special Protection Zone (SPZ) will be managed for conservation, and timber harvesting will be excluded. The Special Management Zone (SMZ) will be managed for specific features while catering for timber production under certain conditions. The General Management Zone (GMZ) will cater for a range of sustainable uses with timber production a major use.

A process for reviewing management strategies and zones enables progressive refinement of the Plan in response to new information and developments in natural resource management.

This Plan provides a network of protected areas forming part of the National Forest Reserve System that complements the system of national parks and conservation reserves in Gippsland; a framework for sustainable use of the forest for timber production and other purposes; and a process for adapting to change in a systematic, and orderly manner. In doing so, this Plan will fulfil the major requirements of the *National Forest Policy Statement* and related forest policy initiatives.

Specific initiatives

Conservation of biodiversity

- In accordance with *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia* (JANIS 1997), minimum levels of protection have been adopted for each of the Ecological Vegetation Classes (EVCs) according to their rarity in the landscape. Where conservation reserves do not meet these targets, areas of State forest have been protected to make up the balance.
- The Plan addresses a series of processes that may threaten flora and fauna populations, and identifies measures to mitigate such threats.
- As far as practicable, all rare and endangered EVCs (38 EVCs) on public land, 60% of the remaining extent of vulnerable EVCs (5 EVCs), and 15% of pre-1750 extent of all other EVCs are protected.
- As far as practicable, all rare old-growth on public land is protected and where possible, sufficient State forest SPZ has been established to protect 60% of the area of common old-growth types.
- In establishing and protecting large areas of mature forest, provision is made for recruitment of old-growth forest so that its total area will increase in the long term.
- A strategy for conserving rare and threatened plant species is established.

- Conservation guidelines have been established for key threatened and sensitive fauna species in State forest. These include measures to protect the Spot-tailed Quoll, Smoky Mouse, Spotted Tree Frog and the Powerful, Sooty, Masked and Barking Owls in accordance with the management strategies for these species. Specific strategies are also established for a range of other forest fauna.
- A number of areas in the SMZ will be managed to retain high wildlife values while continuing to provide access to timber resources.

Forest production

- The area of forest suitable and available for sustainable sawlog production accounts for approximately 15.2% of public land in the planning area. The focus of hardwood production from Victoria's State forests is to supply a sawlog driven industry that produces value-added wood products within an ecologically sustainable forest management framework. Policies are in place to provide resource security and the development and growth of a sustainable timber industry.
- The Plan area covers the Tambo FMA, eastern part of the Central Gippsland FMA and 11 blocks of the Wodonga FMA. An interim forecast of D+ sawlog availability for the planning area was made in 2001. The legislated sustainable yield rate for these FMAs will be formally reviewed based on new resource information from the SFRI and modelling using the Integrated Forest Planning System.
- Harvesting and regeneration systems are the key to sustainable forestry. Clear felling and seed tree systems are the main harvesting and regeneration systems used within the forests of Gippsland.
- The forests of Gippsland will continue to supply a range of other timber products including firewood, posts and poles, and minor forest produce (e.g. seed).

Forest protection

- The forest management zones in this Plan have been reconciled as far as possible with zones for fuel-reduction burning in the Fire Protection Plans covering the FMAs.
- The Plan provides a framework for developing ecologically based fire regimes for the region.
- The Plan provides for the ongoing protection of water quality as well as regular consultation with water supply authorities.
- Thirteen areas in State forest were identified as Special Water Supply Catchment Areas under the *Catchment and Land Protection Act 1994* because of their significance as water supply catchments.
- Draft management plans for Heritage River Areas and Natural Catchments have been prepared in accordance with the *Heritage Rivers Act 1992* and recommendations of the Land Conservation Council (LCC). These areas have been included in the reserve system and will continue to be managed in accordance with the Heritage Rivers Act.
- Priorities are established for control of pest plants and animals in State forest to complement the efforts of private landowners and ensure an integrated approach across all public land.

Cultural heritage and landscape values

- A system for protecting landscape values from the visual impact of timber harvesting is established. It aims to minimise the impact on areas seen from the scenic-drive network and key lookout points.
- A process is established to protect places of Aboriginal heritage significance in State forest and to ensure regular consultation with Aboriginal communities and provide opportunities for increased participation of Aboriginal people in the management of State forest.
- Significant historic places are incorporated in the zoning system to ensure that they are protected and appropriately managed.

Tourism and recreation

- State forests of Gippsland are estimated to attract approximately 347 000 visitor days per year and support several licensed tour operators. The Plan establishes a process to maintain liaison with regional tourism organisations to assist coordination of DSE tourism services with those of other public land managers and the private sector.
- Special Protection Zones have been established around several major State forest recreation sites to maintain the recreational experience at those sites.
- The Plan identifies the diverse use of State forest for recreation and implements the planning, management and delivery of recreation programs through the establishment of Recreation Management Zones.
- The Plan encourages visitor compliance with voluntary codes relating to recreational activities including horse-riding, four wheel driving, mountain-bike riding, trail-bike riding, bushwalking and camping.

Other forest uses

- The Plan incorporates guidelines for management and planning of other State forest uses including mining, extractive industries, grazing, beekeeping and Defence Force training. The guidelines are intended to ensure appropriate usage of State forest whilst minimising any adverse impacts on other forest values, and in some instances to separate activities in time and space.
- The Plan establishes guidelines for the assessment of research projects and includes a list of research sites in State forest. State forest management actions considered incompatible with the objectives of approved research projects will be excluded for the duration of the project.

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Chapter 1 Background

1.1 Scope and aim

The Gippsland Forest Management Plan (Plan) area covers over 2.6 million hectares in mid Gippsland (see Map 1). The boundaries of the planning area include the Great Dividing Range to the north, Bass Strait to the south, the Timbarra River and Murray River to the east, and Aberfeldy, Moe and Inverloch to the west. This Plan includes the Tambo Forest Management Area (FMA), the eastern part of the Central Gippsland FMA and the southern section of the Wodonga FMA. Public land comprises 1 452 800 ha, or 54% of the area, and is covered mostly by native forest. This Plan applies to State forest which covers 30% (approximately 802 600 ha) of the planning area and 55% of public land. The *Gippsland Comprehensive Regional Assessment* report (VicRFASC 1999b) provides extensive background information.

> *The primary aim of forest management plans is to ensure that State forest is managed in an environmentally sensitive, sustainable and economically viable manner. Forest management plans also seek to ensure that planning is a continuing process, responsive to changing community expectations and expanding knowledge of the forest ecosystem.*

To achieve this key aim, the Plan establishes strategies for integrating the use of State forest for wood production and other purposes with the conservation of natural, aesthetic and cultural values across the whole planning area. The Plan is to apply for ten years unless a substantial change of circumstances (such as a major wildfire) warrants a review before then. Flexible management strategies however, will enable progressive refinement of the Plan in response to new information.

This Plan introduces several new approaches to forest management for Gippsland. Where existing practices are to continue, they have been subject to careful scrutiny to ensure they contribute to current forest policy goals.

Management vision for forests of Gippsland

The Department of Sustainability and Environment (DSE) aims to manage the forests of Gippsland for the benefit of all Victorians. The vision for sustainable management of the Gippsland forests has the following characteristics:

- management will aim to ensure that all indigenous flora and fauna species and vegetation communities will survive and flourish across their natural range;
- use of State forest resources will be in accordance with world-best practice. Standards will be maintained and improved by implementation and review of codes of practice, management guidelines, prescriptions, licensing and regulation of commercial activities on public land and by staff training;
- forest management will be sensitive to the cultural significance of the Gippsland forests to the community;
- use of State forest will contribute to the economic development and employment opportunities of the regional community;
- sustainable use of the forest for recreation and tourism will be encouraged and facilitated; and
- forest management will be flexible and responsive to new information. Where necessary, change will be introduced in a pro-active but orderly fashion in order to maintain confidence and stability of forest-based industries and the local economy.

1.2 Legislative and policy framework

When finalised, this Plan will be a working plan prepared and to be put into operation by the Secretary of the Department of Sustainability and Environment pursuant to section 22 of the *Forests Act 1958*.

This Plan forms a part of the Victorian ecologically sustainable forest management systems and processes (VicRFASC 1997). The Plan has been developed to conform with all Victorian land and natural resources legislation including the *Forests Act 1958*, *National Parks Act 1975*, *Land Act 1958*, *Reference Areas Act 1978*, *Heritage Rivers Act 1992*, *Flora and Fauna Guarantee Act 1988* and the *Catchment and Land Protection Act 1994*. Protection of species listed under the Commonwealth *Environment Protection and Biodiversity*

Conservation Act 1999 is also provided for in this Plan. The Plan has also been developed to conform with cultural heritage legislation such as the *Archaeological and Aboriginal Relics Preservation Act 1972* (Vic.), *Heritage Act 1992* (Vic.) and *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cwlth). The Plan fulfils a requirement of the *Code of Forest Practices for Timber Production* (the *Code*) (NRE 1996a). This Plan also conforms with the land use decisions made in accordance with the *Land Conservation Act 1970* (LCC 1975; LCC 1977; LCC 1979; LCC 1982a; LCC 1982b; LCC 1982c; LCC 1983a; LCC 1983b; LCC 1984; LCC 1988; LCC 1991a; LCC 1991b).

The Plan reflects the outcomes of the Gippsland Regional Forest Agreement (RFA) (Commonwealth of Australia and State of Victoria 2000).

The requirements of the *National Forest Policy Statement* (Commonwealth of Australia 1992a) to which Victoria is a signatory are also addressed in this Plan. The *National Strategy for Ecologically Sustainable Development* (Commonwealth of Australia 1992b) requirement for the ecologically sustainable management and use of forests is addressed through the *National Forest Policy Statement*. Other legislation, policies and plans of relevance are referred to as necessary throughout the Plan.

This Plan establishes broad strategies for forest management. In addition to establishing a system of Forest Management Zones for State forest that identifies priorities and permitted uses for different parts of the forest, a series of management guidelines and actions have been developed.

Management Guidelines give direction to forest managers to facilitate protection or careful management of specific values or uses.

Management Actions commit DSE to implementing a number of actions, which will further enhance the management of State forest.

More detailed prescriptions and planning processes at the local level are reflected in Regional Management Prescriptions and Wood Utilisation Plans (see Chapter 12 – *Plan implementation*). Appendix A is an extract from the *Code* and provides an outline of the relationship between the public land planning processes in the State and of the various levels of control of the environmental aspects of timber production.

1.3 Planning process

Work commenced on this Plan in 1998 concurrent with the Gippsland RFA process. The links between the planning processes for the management of State forest is shown in Appendix A.

A detailed review of current management issues was undertaken and information was gathered about the resources, uses and values of Gippsland. In addition, the *Gippsland Comprehensive Regional Assessment* (VicRFASC 1999b) prepared to support the Gippsland RFA, examined the natural, cultural, social, resource and economic values of the forests in Gippsland. The extensive biological, social and cultural data presented in the *Gippsland Comprehensive Regional Assessment* provide much of the background information upon which the management strategies in this Plan are based.

This Plan was developed in consultation with experts in disciplines such as forestry, botany, wildlife biology, catchment management, water resources, cultural heritage and recreation planning.

Public participation has been integral to the development of this Plan. Through public meetings and direct contact made with a wide range of interested groups and individuals, the Department has sought to ensure the Plan appropriately addresses the issues that have been raised.

The *Gippsland Regional Forest Agreement Consultation Paper* (VicRFASC 2000a) invited public comment on the draft comprehensive, adequate and representative (CAR) reserve system (including the State forest Special Protection Zone) and forest industry opportunities. An independent panel was formed to review submissions in response to the Consultation Paper, to conduct public hearings and report to the RFA Steering Committee. This Plan implements the zoning scheme established in the Gippsland RFA following extensive community consultation.

This Plan was released as a Proposed Plan for public comment in August 2001. Thirty-three submissions were received from individuals and organisations, the names of which are listed in Appendix Y. A community-based group was formed to assist in the review and consideration of these submissions during the finalisation of this Plan. This Submissions Reference Group comprised of ten community members representing a broad range of viewpoints on forest management (see Acknowledgments for a list of the group members). The Group reviewed all issues raised in submissions and provided advice to the Department on these issues to assist in the finalisation of this Plan.

Appendix B documents the meetings and workshops held in association with the development of this Plan and the RFA process.

Final Plan

The following is a summary of the main changes made to the Proposed Plan to finalise this Plan. The changes are primarily a result of public consultation and new information since the release of the Proposed Plan.

Zoning

The areas of the management zones have changed since the Proposed Plan. The principle reasons for the changes to the zoning are listed below.

- New records of flora and fauna have been zoned according to the conservation management strategies in the Plan. Some flora zones have been deleted because the species conservation status is no longer classed as threatened and in one case the zone had been incorrectly mapped. Due to the addition of SPZ for threatened species, areas have also been deleted from SPZ in accordance with the guidelines for amending the zoning scheme (see Chapter 12). Accordingly, the protection of conservation values and the availability of timber resources has been maintained.
- Corrections have been made to the zoning of the Bicentennial National Trail, Australian Alps Walking Track and incorrect mapping of freehold land and Other Public Land.
- The Brothers in the Benambra area has been zoned SMZ for its landscape values.
- New research sites are zoned as SMZ and research sites that are no longer required due to the completion of the research have been removed from the zoning scheme.
- The zoning scheme incorporates the recent additions to the Mitchell River National Park in accordance with the *National Parks Act 1975* and additions to State forest.

Fire management

- The Plan has been updated to refer to the alpine fires of 2003.

Biodiversity conservation

- The list of threatened flora in Appendix L has been updated to include new threatened species recorded in the planning area and recent changes to the conservation status of species.
- A conservation guideline for Barking Owl has been added due to the recent recording of this species in Gippsland State forests. The conservation status of Hooded Robin and Speckled Warbler has changed and therefore a management strategy for these species has been included in the Plan. The existing restriction on translocation of koala into South Gippsland is noted by a management strategy for this species. The conservation guidelines for several other species have also been updated consistent with the Action Statement.
- The section on management of processes affecting the structure and distribution of ecosystems has been updated with additional Potentially Threatening Processes listed under the *Flora and Fauna Guarantee Act 1998*. The section also notes that interim habitat tree prescriptions have been developed for State forest in Gippsland.

- The species and genetic diversity section has been amended to clarify the management of species occurring in the GMZ.

Timber production

- The timber production chapter has been updated with information from the *Our Forests, Our Future* policy statement (NRE 2002d) and Estimate of Sawlog Resources (NRE 2002a; NRE 2002b). Information from the forecast of sawlog availability identified through the Gippsland RFA has been replaced with the more recent estimates of economically accessible sawlog resource identified in the Estimates of Sawlog Resources.
- Amendments clarify that thinning and overwood treatment are the current silviculture techniques utilised in young regrowth forests.

Road management

- Section 5.4 (road and track management) has been updated with new research information.
- Several roads identified in the Proposed Plan for closure will remain open for public access. The 'restricted access only' track category has been deleted from the Plan as no tracks within this category occur in State forest in Gippsland.

Cultural heritage and landscape

- The Indigenous heritage values section refers to the *Indigenous Partnership Strategy* (NRE 2001c) and indicates that the Plan is consistent with the initiatives within that strategy.
- The Plan notes the *Code of Forest Practices for Timber Production* (NRE 1996a) sets out guidelines for the protection of landscape values within harvesting operations in State forests.

Tourism and recreation

- Information from the *Policy for Sustainable Recreation & Tourism on Victoria's Public Land* (NRE 2002e) has been included throughout the chapter. The Plan clarifies that management of recreation and tourism is within a framework of ecologically sustainable forest management.

1.4 Major themes considered during planning

An overview of the major themes addressed by this Plan and other matters raised by the community are set out below. Further detail is provided in the following chapters of this Plan.

Sawlog harvesting rates

The estimated rate at which sawlog harvesting can be maintained from each FMA in the State (the sustainable yield rate) is defined in Schedule 3 of the *Forests Act 1958*. In accordance with section 52D of the *Forests Act 1958*, sawlog sustainable yield rates are to be reviewed every five years (from 1991) to determine whether they are still appropriate. The first review for the Tambo, Central Gippsland and Wodonga FMAs occurred in 1996.

A forecast of D+ sawlog availability was made in 2001 (NRE 2002a; NRE 2002b) using the Integrated Forest Planning System (IFPS), resource data (including Statewide Forest Resource Inventory data where available), and the zoning scheme defined in the Proposed Plan. The sustainable yield for the Tambo, Wodonga and Central Gippsland FMAs will be formally reviewed.

Biodiversity conservation

This Plan adopts a multi-tiered approach to biodiversity conservation. It analyses the representation of EVCs in existing conservation reserves and, where necessary, provides protection for additional areas in State forest. It addresses a series of processes that threaten flora and fauna populations, and identifies measures to mitigate these threats. Further, this Plan establishes a framework of protection for rare and threatened species, which require specific management actions to ensure their continued survival in the forests of Gippsland.

Water quality and yield

Most areas of State forest in Gippsland lie within catchments that provide water to surrounding cities and towns or provide water for irrigation purposes. Maintaining the quality and yield of water supplied from these catchments is an important aim of this Plan. Information gathered during the preparation of this Plan indicates that the quality of surface water from State forest is suitable for domestic use and, at the catchment scale, current water yield appears to not be affected by forest management activities.

Recreation and tourism

Recreation is an important use of the Gippsland forests. This Plan establishes targets for the provision of recreation facilities and opportunities based on current and likely future demand. It also protects opportunities for recreation in the more remote forest areas. Planning for recreation in State forests is coordinated with the facilities and opportunities available in parks and reserves.

This Plan recognises the role of forest recreation in the regional tourism industry and establishes a framework for communication and coordination with tourist industry associations.

Management of historic and cultural sites

This Plan re-affirms DSE's commitment to protecting Aboriginal places of cultural and archaeological heritage in accordance with the Victorian *Archaeological and Aboriginal Relics Preservation Act 1972* and the Commonwealth's *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.

Subsequent to European settlement, the forests within Gippsland have been used for many purposes. The Plan establishes a framework for decisions about appropriate forms of protection for cultural and historic sites in accordance with the *Heritage Act 1995*.

Other forest uses

The Plan incorporates guidelines for management and planning of other State forest uses including beekeeping, grazing, mining, extractive industries and Defence Force training. The guidelines are intended to ensure appropriate usage of State forest whilst minimising any adverse impacts on other forest values.

1.5 Links with the Gippsland Regional Forest Agreement

In March 2000, the Prime Minister of Australia and the Premier of Victoria signed the Gippsland Regional Forest Agreement (RFA) (Commonwealth of Australia and State of Victoria 2000). The RFA established the framework for the future management of forests in Gippsland. Importantly, it satisfied the environmental protection and industry development requirements of both Governments, ensuring a durable basis for future planning and investment.

The RFA formally accredits the Gippsland Forest Management Plan as part of Victoria's Ecologically Sustainable Forest Management system. The RFA also makes reference to several other issues associated with this Plan. These are summarised below.

CAR reserve system

In Gippsland, the comprehensive, adequate and representative (CAR) reserve system on public land comprises areas established for conservation purposes (e.g. National and State Parks) and the State forest SPZ. The CAR reserve system amounts to over 780 000 ha or 54% of public land. In signing the RFA, the Commonwealth and Victorian Governments have agreed that the CAR reserve system satisfies the National Reserve Criteria (JANIS 1997).

Timber production

The Commonwealth and Victorian Governments acknowledge that the RFA is expected to provide 115 000 m^3 per annum of D+ sawlogs (net) from the Gippsland region (Tambo FMA, eleven blocks of the Wodonga FMA and the eastern part of the Central Gippsland FMA), but recognise that timber supply levels in Victoria are subject to change based on periodic review of sustainable yield and that sustainable yield estimates are based on the full extent of the FMAs.

The RFA also recognises that this expected available volume of D+ sawlogs includes forest stands which may be less desirable to harvest under existing market conditions, due to low yields, accessibility and product distribution. The available volume is dependent on the capacity of the timber industry to harvest these areas.

The RFA satisfies the requirements of three Commonwealth Acts:

- the *Australian Heritage Commission Act 1975*;
- the *Environment Protection (Impact of Proposals) Act 1974* (now *Environment Protection Biodiversity Conservation Act 1999*); and
- the *Endangered Species Protection Act 1992* (now *Environment Protection Biodiversity Conservation Act 1999*).

The export of hardwood woodchips or unprocessed wood sourced from Gippsland will not be subject to controls under the *Export Controls Act 1982* while the RFA is in place.

Integrated Forest Planning System

Victoria has developed a system of linked computer-based tools collectively called the Integrated Forest Planning System (IFPS). The IFPS provides a means of modelling the growth, development and harvesting of forest stands as well as a range of other forest values.

IFPS and resource information from the Statewide Forest Resource Inventory (SFRI) (see Chapter 4 – *Timber production*) will be used for the next review of the sustainable yield forecast for Forest Management Areas in Gippsland.

Management of cultural values

The RFA commits the Victorian and Commonwealth Governments to joint development of a package of measures that will be implemented by Victoria to ensure the appropriate management of cultural heritage values in Gippsland. These measures are: the preparation of Statewide guidelines for the management of cultural heritage values; the development of an Aboriginal heritage management system which aims to establish formal consultation mechanisms with Aboriginal communities; development of a sensitivity zoning model to highlight areas likely to contain Aboriginal heritage values and identify priority areas for future surveys; and, to facilitate cross-cultural awareness training for DSE staff.

National estate

The RFA recognises that many of the national estate values are well reserved in the CAR reserve system and that this Plan and other mechanisms provide for the conservation of many other national estate values in the region. All national estate values in Gippsland will be conserved through the application of the principles for managing national estate values as detailed in this Plan.

Management zone boundaries may require review in implementing this Plan. Best endeavours will be used by DSE to maintain the levels of protection of national estate values in a regional context, however, minor changes to the levels of protection of individual values may occur as a result of changes to the SPZ through time as new information becomes available.

Monitoring and reporting

The RFA commits the Victorian and Commonwealth Governments to joint development of an appropriate set of indicators to monitor and review the sustainability of forest management practices. The Governments have agreed that any indicators established will be consistent with the criteria established under the Montreal Process, and will take into account the framework of regional indicators developed by the Montreal Process Implementation Group. These processes further advance the monitoring and reporting commitments in this Plan.

Chapter 2 Forest management zones

2.1 Zoning scheme

Management of State forest is conducted consistent with ecologically sustainable forest management (ESFM) principles (VicRFASC 1997). A principal strategy to achieve the aims of this Plan was to divide State forest into three management zones (see Table 2.1 and Map 2).

- **Special Protection Zone** (SPZ) will be managed for conservation. It forms a network designed to complement conservation reserves (see section 2.2). Timber harvesting will be excluded.
- **Special Management Zone** (SMZ) will be managed to conserve specific features, while catering for sustainable timber production and other utilisation activities under certain conditions (see section 2.3).
- **General Management Zone** (GMZ) will be managed for a range of uses and values, with sustainable timber production a major use (see section 2.4).

Developing the zoning scheme

The zoning system consolidates and integrates information and management requirements from many sources. In developing the zoning system, one of DSE's aims was to establish a comprehensive, adequate and representative (CAR) forest reserve system in accordance with nationally-agreed criteria (JANIS 1997), while limiting resource withdrawals as far as possible in the region.

The zoning scheme was shaped by many of the management strategies in this Plan. The principle elements of the zoning system are summarised below.

Code of Forest Practices for Timber Production (the Code*)*

The *Code* (NRE 1996a) provides Statewide goals and guidelines that apply to timber harvesting, timber extraction roading, regeneration and reforestation in native forests in Victoria. The *Code* requires the exclusion of timber harvesting within a minimum 20 m buffer on permanent streams and from slopes generally greater than 30º. During the development of this Plan, these exclusion areas were modelled and implications were considered when developing the zoning scheme.

Heritage River Areas and Natural Catchment Areas

The *Heritage Rivers Act 1992* defines Heritage River Areas and Natural Catchment Areas. Where these areas occur in State forest, they have been shown as conservation reserves and will be managed in accordance with the Act.

Reference Areas

Reference Areas are defined in the *Reference Areas Act 1978*. Reference Areas located in State forest are identified as conservation reserves (see Appendix C).

Flora and Fauna Guarantee Act Action Statements

Action Statements specify the management requirements for species, communities or Potentially Threatening Processes which are listed in schedules of the *Flora and Fauna Guarantee Act 1988* (FFG Act). Action Statements are developed by multi-disciplinary teams, which consider both ecological and economic issues relevant to the statement. Several Action Statements are in preparation and have been considered in the development of the Plan. Some Action Statements establish management strategies that translate into forest zoning decisions. In these cases, the Plan is the primary instrument for implementing Action Statements in State forest.

Forest owl conservation

Forest owls breed and hunt over large areas of forest. Implementing management strategies developed for Sooty, Powerful and Masked Owls required establishment of extensive areas of State forest SPZ to complement adjacent habitat in State forest and in parks and reserves.

Other threatened flora and fauna
Management guidelines for a number of flora and fauna species considered threatened and which do not have Action Statements have been developed in consultation with experts and incorporated into the zoning scheme. SPZs and SMZs have been established for the conservation of many of these species where they are known to occur in State forest.

Ecological Vegetation Class protection
SPZs have been designed to contribute to conservation targets for Ecological Vegetation Classes (EVCs) in accordance with the national reserve criteria (JANIS 1997). As far as practicable, all areas of rare and endangered EVCs in State forest have been included in the SPZ. Sufficient State forest SPZ has been established to ensure, as far as practicable, at least 60% of the remaining extent of vulnerable EVCs and at least 15% of the pre-1750 extent of other EVCs are protected in the CAR reserve system (conservation reserves and State forest SPZ).

Old-growth protection
SPZs have been established to contribute to conservation targets for old-growth forest in accordance with the national reserve criteria (JANIS 1997). As far as practicable, all areas of rare or depleted (generally less than 10% of the extant distribution) old-growth in State forest have been included in SPZ. Where practicable, State forest SPZ has been established to ensure at least 60% of the area of common old-growth EVCs is protected in the CAR reserve system.

Sites of Significance
A number of Forest Blocks within Gippsland were subject to ecological surveys that proposed sites of biological significance (CFL 1984; CFL 1987a; CFL 1987b; CFL 1987c; CFL 1989a; CFL 1989b; DCE 1990a; DCE 1990b). The values of the Sites of Significance in State forest were considered in association with new information (such as flora, fauna, EVCs and old-growth forest) and the conservation guidelines for ecosystem diversity and threatened flora and fauna species. Many of the Sites of Significance are included in the SPZ and conservation reserves (see Appendix J).

Cultural heritage
Areas of significant cultural heritage value or considered to have high sensitivity to human disturbance have been included in the SPZ or SMZ.

Landscape
A number of areas considered to have high sensitivity to landscape disturbance have been included in either the SPZ or SMZ. These areas will be managed to minimise the medium to long term visual impact of management activities.

Recreation sites
SPZ and SMZ buffers have been established around several major State forest recreation sites to maintain the recreation experience at those sites.

Table 2.2 indicates the activities permitted in each zone. Soil and water conservation, maintenance of native forest cover and wildfire suppression are high priorities in all zones.

Table 2.1 Extent of forest management zones and other land categories in the Gippsland Forest Management Plan Area

	Area (ha)	Proportion of all land (%)	Proportion of public land (%)	Proportion of State forest (%)
STATE FOREST				
Special Protection Zone	248 526	9.3	17.1	31.0
Special Management Zone	10 471	0.4	0.7	1.3
General Management Zone				
Timber production[1]	219 910	8.2	15.1	27.4
Other uses[2]	212 209	7.9	14.6	26.4
Code exclusions[3]	111 456	4.2	7.7	13.9
State forest sub-total	**802 572**	**30.0**	**55.2**	**100.0**
OTHER PUBLIC LAND				
Conservation reserves[4]	535 250	20.0	36.8	
Other public land[5]	45 793	1.7	3.2	
Commonwealth land	851	<0.1	<0.1	
Water bodies	68 330	2.6	4.7	
Other public land sub-total	**650 224**	**24.3**	**44.8**	
Public land sub-total[6]	**1 452 796**	**54.3**	**100.0**	
PRIVATE LAND				
Private land sub-total[7]	**1 223 489**	**45.7**		
Total area for Gippsland	**2 676 285**	**100.0**		

Notes:
1 This is the estimated net productive area of forest, as defined by the Statewide Forest Resource Inventory (SFRI), available for sawlog production in the GMZ. This value does not take into account the range of operational and merchantable constraints identified in the Estimate of Sawlog Resources (see Chapter 4 – *Timber production*).
2 Areas considered unproductive for sawlog and suitable only for the production of firewood and other minor or non-timber produce are included in the 'Other uses' category.
3 Streamside buffers and steep slopes (greater than 30°) protected by *Code* prescriptions within the GMZ and SMZ are included in *Code* exclusions.
4 Although not subject to this Plan, these areas, which include parks, were taken into account in formulating management strategies for State forest.
5 Other public land includes the Mount Hotham Alpine Resort, land managed by water supply authorities, other parks and reserves and other parcels of public land that are not classified as either State forest or conservation reserve.
6 Excludes lands leased or licensed for plantation purposes.
7 Includes freehold land and lands leased or licensed for plantation purposes.

Combined with parks and other conservation reserves, the forest management zones provide an integrated conservation system and a framework for sustainable forest use. The inset in Map 2 illustrates elements of the zoning system in detail. Map 2 illustrates the zoning scheme across the Gippsland planning area, while Appendix D lists the attributes of each component of the SPZ and SMZ (each defined by a specific zone number and identified on Map 2).

2.2 Special Protection Zone (SPZ)

Most of this zone has been generated by applying the conservation guidelines and reserve design principles. Larger components of the zone are based on:

- representative examples of vegetation communities;
- representative examples of old-growth; and
- localities of key threatened and sensitive fauna.

These are linked to each other and to conservation reserves by other parts of the SPZ.

A number of smaller areas identified as sites of biological significance, recreation sites and some historic sites are also included in the SPZ. Some sites containing important features that require special management are small and are represented as point locations on Map 2.

Each component of this zone will be managed to minimise disturbances or processes that threaten their respective values, and timber harvesting will be excluded.

2.3 Special Management Zone (SMZ)

The areas included in this zone cover a range of natural or cultural values. The protection or enhancement of these values requires modification to timber harvesting or other land-use practices rather than their exclusion. The zone contributes substantially to the conservation of important species, particularly fauna.

The majority of the zone is derived from two strategies.

1. Landscapes with high visual sensitivity and high scenic quality are included in the SMZ, and guidelines for the conduct of timber harvesting operations are applied (in addition to those set down under the *Code*), as outlined in Chapter 8 – *Cultural heritage, native title and landscape*.
2. Spot-tailed Quoll habitat is included in the SMZ through the establishment of a SMZ buffer that surrounds a SPZ core for each confirmed record, as outlined in Chapter 3 – *Biodiversity conservation*. Timber harvesting in the SMZ will be planned in accordance with guidelines specified in a SMZ plan.

Management of the SMZ will be considered on a case-by-case basis within the constraints outlined in this Plan. Development of operational detail by way of SMZ Plans will be undertaken during implementation of this Plan.

Together with the GMZ, this zone forms part of the area that contributes to the sustainable yield of sawlogs. Timber and other forest produce may be harvested from this zone provided that modifications to normal management practices adequately address the protection of the identified values, or positively contribute to their conservation.

2.4 General Management Zone (GMZ)

Forest in this zone will be managed for a range of uses, such as the sustainable production of timber and other forest products, in accordance with ecologically sustainable forest management principles, the *Code* and more detailed local management prescriptions. Associated aims include protection of landscape, provision of recreation and educational opportunities, fire protection and conservation of natural values to complement adjacent zones. Together with the SMZ, this zone provides the net area available for timber production. The zone has three sub-zones; timber production, other uses and *Code* exclusions.

Timber production sub-zone

This sub-zone will be used to produce sawlogs on a sustainable basis in accordance with the *Code* and regional prescriptions. It corresponds to the net area of the GMZ that is both available and suitable for producing sawlogs after exclusions have been made for factors such as steep slopes and low productivity. It generally corresponds to sites where soil and rainfall conditions enable suitable tree species to grow to a merchantable height. Harvested areas will be regenerated with local species, and the regrowth across the sub-zone will produce a mosaic of native forest of different ages. The extent of the timber production sub-zone has been derived from Statewide Forest Resource Inventory (SFRI) forest mapping and is not shown on Map 2.

Other uses sub-zone

This GMZ sub-zone represents those areas generally not suitable for sawlog harvesting under current arrangements because of lower productivity. However, this sub-zone contributes substantially to the conservation of drier forest types and their associated fauna. Activities such as fuel-reduction burning, harvesting of other forest produce (such as firewood, poles and honey) and recreation are permitted. The extent of the other uses sub-zone has been derived from SFRI forest mapping and is not shown on Map 2.

Code exclusions sub-zone

This sub-zone identifies the areas within the GMZ (and SMZ) that are excluded from harvesting operations due to the requirements of the *Code*. It includes stream buffers and slopes generally greater than 30°. Much of this area will remain largely undisturbed and contributes to the conservation of a number of EVCs and related fauna. The areas shown on the inset on Map 2 represent a modelled prediction of the location of steep slopes and streamside buffers. The actual location of these buffers will be based on field inspections conducted during the development of timber harvesting coupe plans.

Table 2.2 Activities in forest management zones

Activity	Chapter	SPZ	SMZ	GMZ
Sawlog and residual log production	4	No	Cond.	Yes
Firewood, posts, poles	4	No[1]	Cond.	Yes
Regrowth thinning	4	No	Cond.	Yes
Fuel-reduction burning	6	Cond.	Cond.	Yes
Recreation	7	Cond.	Cond.	Yes
Apiculture	9	Cond.	Cond.	Yes
Seed collection	9	Cond.	Cond.	Yes
Stock grazing	9	Cond.	Cond.	Yes
Extractive activities	9	Cond.	Cond.	Yes
Mining activities	9	Yes	Yes	Yes
Road construction	10	Cond.	Cond.	Yes

Notes:
This table provides a guide to the issue of consent for various activities in State forest management zones. Further details are provided in relevant chapters.
1 DSE has phased out harvesting of firewood, posts and poles within the CAR reserve system in accordance with the Gippsland Regional Forest Agreement.
Key:
Yes Permitted under standard conditions.
Cond. Permitted with additional conditions specified in this Plan, or to the extent it does not conflict with the values identified for the respective areas.
No Not permitted.

Chapter 3 Biodiversity conservation

Biodiversity (or biological diversity) refers to the variety and variability among living organisms and the ecological processes upon which they depend. The *National Forest Policy Statement* (NFPS) (Commonwealth of Australia 1992a) and the *National Strategy for Ecologically Sustainable Development* (Commonwealth of Australia 1992b) refer to the importance of maintaining forest biodiversity. Victoria's *Flora and Fauna Guarantee Act 1988* (FFG Act) and the Biodiversity Strategy (NRE 1997f) further support processes that ensure all taxa of Victoria's flora and fauna can survive, flourish and retain their potential for evolutionary development in the wild.

Aim

To ensure all indigenous flora and fauna survive and flourish throughout the planning area.

Prior to European settlement, vegetation of the planning area comprised subalpine woodlands, heathlands and grasslands at higher altitudes, tall open forests in higher rainfall areas, open forests and woodlands on the drier hills, open grassy forest in valleys and grassy woodlands on the alluvial plains. The subalpine habitats and open forests remain largely intact, however the open grassy forests and grassy woodlands have been largely cleared or modified for agricultural and urban uses.

The strategies in this Plan apply only to State forest, however, they are framed in the context of all public land being part of a permanent estate that contributes significantly to biodiversity conservation. They are designed to complement the protection provided by the system of conservation reserves which total approximately 535 200 ha or 37% of public land. State forest occupies approximately 802 600 ha or approximately 55% of public land. The remaining public land includes water bodies, Commonwealth land and other public land such as alpine resorts (see Chapter 2 – *Forest management zones*).

The strategies in this Plan address biodiversity conservation through:

- protection of a significant proportion of all forest ecosystems in dedicated conservation reserves or the State forest Special Protection Zone (SPZ);
- specific conservation measures for the management of threatened and sensitive flora and fauna; and
- management of processes that may threaten biodiversity.

3.1 Ecosystem diversity

Classification of ecosystems

Ecological Vegetation Classes (EVCs) are appropriate units for assessing forest ecosystem diversity and conservation at the landscape scale, provided that the variability within widely distributed EVCs is also considered as a part of the assessment (VicRFASC 1999a). An EVC comprises one or more floristic communities with defined floristic, structural, biophysical (e.g. aspect, elevation, geology and soils, landform and rainfall) and ecological (e.g. lifeform) characteristics.

In Gippsland, 103 EVCs have been identified. Of these, 14 occur predominantly on private land and 89 occur predominantly on public land. The considerable variation within some EVCs is recognised and catered for by the strategies described below. EVCs occurring on public land in Gippsland are listed in Table 3.1 and described in the *Gippsland Comprehensive Regional Assessment Biodiversity Assessment* (VicRFASC 1999a). The representation of the EVCs in the reserve system and zoning scheme is discussed in sections 3.2 and 3.3 and listed in Appendix G.

Indicative maps of the extent of EVCs prior to 1750 on land that is now cleared have also been compiled (VicRFASC 1999b). These were prepared by extrapolating from EVC maps of existing vegetation with reference to land system information, and through field inspections of remnant vegetation.

Classification of old-growth

Old-growth forest is defined as:

> '...forest which contains significant amounts of its oldest growth stage in the upper stratum—usually senescing trees—and has been subjected to any disturbance, the effect of which is now negligible' (Woodgate *et al*. 1994).

Old-growth forest was identified using a model-based approach. The model was developed through an iterative process based on decisions that used information on forest growth stage (collected by aerial photograph interpretation with field checking), forest disturbance mapping (including historic and current records) and EVC mapping.

In Gippsland, 39 EVCs containing 209 000 ha of old-growth forest were identified on public land (VicRFASC 1999b). A further 118 805 ha of public land was identified as supporting 'negligibly disturbed forest' that has not yet reached its oldest growth stage, and another 152 885 ha as supporting forest significantly disturbed by natural means, that is regrowth forest originating from wildfire (NRE 2000b). A further 589 655 ha of public land was considered significantly disturbed by unnatural means and unable to qualify as old-growth forest until the effects of past disturbances diminish.

EVCs containing old-growth forest are listed in Table 3.2. The representation of old-growth forest in the reserve system and zoning scheme is discussed in sections 3.2 and 3.3 and listed in Appendix E.

3.2 National reserve criteria

The *National Forest Policy Statement* (Commonwealth of Australia 1992a) includes a requirement to establish a comprehensive, adequate and representative (CAR) reserve system as a prerequisite to the signing of a RFA. Accordingly, the Commonwealth and States jointly developed a set of national criteria (JANIS 1997) to guide the establishment of a CAR forest reserve system in each RFA region.

Summary of National Reserve Criteria

Biodiversity criteria

- As a general criterion, 15% 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 recognised as vulnerable, (e.g. approaching a reduction in areal extent of 70% within a bio-regional context and which remains subject to continuing threatening processes, or not depleted but subject to continuing and significant threatening processes which may reduce its extent), then at least 60% of their remaining extent should be reserved. These ecosystems include those where threatening processes have caused significant changes in species composition, loss or significant decline in species that play a major role within the ecosystem, or significant alteration to ecosystem processes.
- All remaining occurrences of rare and endangered forest ecosystems should be reserved or protected by other means as far as is practicable.
- Reserved areas should be replicated across the geographic range of the forest ecosystem to decrease the likelihood that chance events such as wildfire or disease will cause the forest ecosystem to decline.
- The reserve system should seek to maximise the area of high quality habitat for all known elements of biodiversity wherever practicable, but with particular reference to:
  - the special needs of rare, vulnerable or endangered species;
  - special groups of organisms, for example species with complex habitat requirements, or migratory or mobile species;

  - areas of high species diversity, natural refugia for flora and fauna, and centres of endemism; and
  - those species whose distributions and habitat requirements are not well correlated with any particular forest ecosystem.
- Reserves should be large enough to sustain the viability, quality and integrity of populations.
- To ensure representativeness, the reserve system should, as far as possible, sample the full range of biological variation within each forest ecosystem, by sampling the range of environmental variation typical of its geographic range and sampling its range of successional stages.
- In fragmented landscapes, remnants that contribute to sampling the full range of biodiversity are vital parts of a forest reserve system. The areas should be identified and protected as part of the development of integrated regional conservation strategies.

Old-growth forest criteria

- Where old-growth forest is rare or depleted (generally less than 10% of the extant distribution) within a forest ecosystem, all viable examples should be protected, wherever possible. For other forest ecosystems, 60% of the old-growth forest identified at the time of assessment would be protected, consistent with a flexible approach where appropriate.

The National Reserve Criteria also provide for flexibility in the application of numerical targets where there may be significant economic or social consequences associated with fully meeting targets.

Table 3.1 lists all EVCs occurring on public land and the National Reserve Criteria targets associated with each. Appendix G lists the representation of these EVCs in the CAR reserve system and State forest zones.

Table 3.1 National Reserve Criteria Targets for Ecological Vegetation Classes occurring on public land in Gippsland [1]

EVC No	Ecological Vegetation Class [2] **Rare and endangered** All remaining occurrences should be protected as far as is practicable
3	Damp Sands Herb-rich Woodland
5	Coastal Sand Heathland
7	Clay Heathland
9	Coastal Saltmarsh
10	Estuarine Wetland
11	Coastal Lagoon Wetland
12	Wet Swale Herbland
15	Limestone Box Forest
19	Riparian Shrubland
28	Rocky Outcrop Shrubland
31	Cool Temperate Rainforest
32	Warm Temperate Rainforest
34	Dry Rainforest
40	Montane Riparian Woodland
41	Montane Riparian Thicket
42	Sub-alpine Shrubland
44	Treeless Sub-alpine Mosaic
53	Swamp Scrub
55	Plains Grassy Woodland
56	Floodplain Riparian Woodland
61	Box Ironbark Forest
83	Swampy Riparian Woodland
107	Lake Bed Herbland
126	Swampy Riparian Complex
127	Valley Heathy Forest
132	Plains Grassland
133	Limestone Pomaderris Shrubland
135	Gallery Rainforest
136	Sedge Wetland
140	Mangrove Shrubland
141	Sandy Flood Scrub
143	Estuarine Wetland/Coastal Saltmarsh Mosaic
154	Bird Colony Shrubland
160	Coastal Dune Scrub
161	Coastal Headland Scrub
163	Coastal Tussock Grassland
175	Grassy Woodland
177	Valley Slopes Dry Forest
191	Riparian Scrub
192	Montane Rocky Shrubland
207	Montane Grassy Shrubland
210	Sub-alpine Wet Heathland
309	Calcareous Swale Grassland
310	Wet Rocky Outcrop Scrub
318	Montane Swamp
334	Billabong Wetland
681	Deep Freshwater Marsh
702	Montane Grassland
858	Calcarenite Dune Woodland
875	Blocked Coastal Stream Swamp
876	Spray-zone Coastal Shrubland
879	Coastal Dune Grassland

Table 3.1 Continued next page

Table 3.1 National Reserve Criteria Targets for Ecological Vegetation Classes occurring on public land in Gippsland [1] *continued*

EVC No	Ecological Vegetation Class **Vulnerable** 60% of remaining extent should be protected
2	Coast Banksia Woodland
18	Riparian Forest
45	Shrubby Foothill Forest
47	Valley Grassy Forest
151	Plains Grassy Forest

EVC No	Ecological Vegetation Class [2] **Other** 15% of the pre-1750 distribution should be protected
1	Coastal Dune Scrub Mosaic
6	Sand Heathland
8	Wet Heathland
16	Lowland Forest
20	Heathy Dry Forest
21	Shrubby Dry Forest
22	Grassy Dry Forest
23	Herb-rich Foothill Forest
27	Blackthorn Scrub
29	Damp Forest
30	Wet Forest
35	Tableland Damp Forest
36	Montane Dry Woodland
37	Montane Grassy Woodland
38	Montane Damp Forest
39	Montane Wet Forest
43	Sub-alpine Woodland
48	Heathy Woodland
72	Granitic Hills Woodland
73	Rocky Outcrop Shrubland/Herbland Mosaic
74	Wetland Formation
82	Riverine Escarpment Scrub
84	Riparian Forest/Swampy Riparian Woodland/ Riparian Shrubland/Riverine Escarpment Scrub
144	Coast Banksia Woodland/East Gippsland Coastal Warm Temperate Rainforest Mosaic
159	Clay Heathland/Wet Heathland/Riparian Scrub Mosaic
169	Dry Valley Forest
201	Shrubby Wet Forest
206	Sub-alpine Grassland
265	Valley Grassy Forest/Grassy Dry Forest Mosaic
307	Sand Heathland/Wet Heathland Mosaic
315	Shrubby Foothill Forest/Damp Forest Complex
316	Shrubby Damp Forest
317	Sub-alpine Wet Heathland/Sub-alpine Grassland Mosaic
319	Montane Herb-rich Woodland
320	Grassy Dry Forest/Heathy Dry Forest Complex
322	Dry Rainforest/Warm Temperate Rainforest/ Gallery Rainforest/Riparian Shrubland Mosaic
342	Rocky Outcrop Shrubland/Herbland Mosaic/ Shrubby Foothill Forest Complex
639	Swamp Scrub/Plains Grassy Forest Mosaic
695	Dry Valley Forest/Swamp Scrub/Warm Temperate Rainforest Mosaic
701	Swamp Scrub/Warm Temperate Rainforest/ Billabong Wetland Mosaic
703	Montane Grassy Woodland/Montane Grassland Mosaic
877	Lowland Herb-rich Forest
878	Damp Sands Herb-rich Woodland/Swamp Scrub Complex

Notes:
1 National Reserve Criteria relating to the status of each EVC are shown in Table 3.8 of Gippsland CRA Biodiversity Assessment Report (VicRFASC 1999a).
2 Rainforest is protected in accordance with the *Code of Forest Practices for Timber Production* (NRE 1996a). Heathland is managed in accordance with the *Code* and section 3.5.

Table 3.2 lists all old-growth EVCs occurring on public land and the National Reserve Criteria targets associated with each. Appendix E lists the representation of old-growth forest in the CAR reserve system and State forest zones.

Table 3.2 National Reserve Criteria Targets for old-growth occurring on public land in Gippsland

	Ecological Vegetation Class	Target
3.	Damp Sands Herb-rich Woodland	All viable
15.	Limestone Box Forest	All viable
16.	Lowland Forest	All viable
18.	Riparian Forest	All viable
20.	Heathy Dry Forest	60%
21.	Shrubby Dry Forest	60%
22.	Grassy Dry Forest	60%
23.	Herb-rich Foothill Forest	60%
27.	Blackthorn Scrub	60%
28.	Rocky Outcrop Shrubland	60%
29.	Damp Forest	60%
30.	Wet Forest	All viable
35.	Tableland Damp Forest	All viable
36.	Montane Dry Woodland	60%
37.	Montane Grassy Woodland	All viable
38.	Montane Damp Forest	All viable
39.	Montane Wet Forest	60%
40.	Montane Riparian Woodland	All viable
41.	Montane Riparian Thicket	60%
43.	Sub-alpine Woodland	60%
45.	Shrubby Foothill Forest	All viable
47.	Valley Grassy Forest	All viable
48.	Heathy Woodland	60%
72.	Granitic Hills Woodland	60%
73.	Rocky Outcrop Shrubland/Herbland Mosaic	All viable
82.	Riverine Escarpment Scrub	All viable
127.	Valley Heathy Forest	60%
151.	Plains Grassy Forest	All viable
169.	Dry Valley Forest	All viable
175.	Grassy Woodland	All viable
177.	Valley Slopes Dry Forest	60%
191.	Riparian Scrub	All viable
192.	Montane Rocky Shrubland	All viable
201.	Shrubby Wet Forest	60%
315.	Shrubby Foothill Forest/Damp Forest Complex	All viable
316.	Shrubby Damp Forest	60%
319.	Montane Herb-rich Woodland	All viable
320.	Grassy Dry Forest/Heathy Dry Forest Complex	All viable
877.	Lowland Herb-rich Forest	All viable

Notes:
All viable – All viable examples should be protected wherever possible.
60% – 60% of old-growth forest identified at the time of assessment should be protected, consistent with a flexible approach where appropriate (JANIS 1997).

3.3 Representative conservation strategy

The comprehensive, adequate and representative (CAR) reserve system comprises conservation reserves such as national parks, State parks, flora and fauna reserves and reference areas (see Appendix C), and the State forest Special Protection Zone (SPZ) identified in this Plan. The following management guidelines, used in the development of the CAR reserve system in Gippsland, aim to ensure that the combined system of dedicated conservation reserves and SPZ includes viable examples of all EVCs in the planning area. The CAR reserve system included in the Gippsland RFA accords with the national reserve criteria as far as practical on public land. Map 2 illustrates public land categories across Gippsland including the Forest Management Zones within State forest.

Conservation of species and communities across their natural range is fundamental to sound nature conservation. Protecting multiple populations across a species' range conserves local diversity and genetic variation, and guards against the risk of species extinction as a result of isolated populations being destroyed by natural disasters or human induced factors.

Ecosystem conservation has been considered at both a regional scale and within each Geographic Representation Unit (GRU). Wherever possible, viable samples of the ecosystems present are reserved within each GRU. The 21 GRUs are based on similar landform, geology, vegetation and climate. The GRUs are described in Appendix F and illustrated by Map 3.

Appendix G shows the area and proportion of each Ecological Vegetation Class (EVC) in conservation reserves and State forest zones across the planning area. Appendix H indicates the proportion of each EVC protected in conservation reserves and the SPZ across all GRUs.

In addition to the SPZ, the *Code* establishes goals and guidelines for the protection of environmental values (including heathlands, wetlands and riparian vegetation) in the GMZ that complement the strategies in this Plan. For example, the *Code* specifies roads should not be located in heaths and disturbance to riparian vegetation should be avoided. Other guidelines of the *Code* that address Potentially Threatening Processes are discussed in section 3.6.

The area of conservation reserves, together with the SPZ and areas excluded from timber harvesting by the *Code* total approximately 895 200 ha or 62% of public land within the planning area.

Conservation Guideline

Ecosystem diversity

The proportion of EVCs and old-growth forest included in protected areas (conservation reserves and State forest SPZ) is in accordance with the National Reserve Criteria (JANIS 1997). The targets for protection of EVCs and old-growth forest are shown in Table 3.1 and Table 3.2 respectively.

The selection of areas for inclusion in the SPZ is based on:

- analysis of ecosystem and old-growth forest representation in each Geographic Representation Unit;
- ensuring representation of known floristic and biophysical variation within EVCs and old-growth forest;
- maintaining representative and viable examples of ecosystems across their natural geographic range and successional stages;
- protection of mosaics of old-growth forest, negligibly disturbed forest and naturally disturbed forest to provide for recruitment of old-growth forest in the long term;
- selecting areas that support the requirements of other conservation strategies in this Plan (e.g. for threatened species);
- the creation of larger, consolidated areas in the SPZ defined by natural boundaries such as streams or ridgelines, or management boundaries such as roads;
- identifying areas that are not disturbed or fragmented (except where these are the only remaining examples of the community);
- identifying areas that help to establish an inter-linked protected area network across the planning area; and
- identifying areas that contain the biodiversity values to be protected and where possible avoids areas suitable for timber production, in particular when the biodiversity values can be protected in areas unsuitable for timber production.

3.4 Rainforest

Warm Temperate Rainforest, Cool Temperate Rainforest, Gallery Rainforest and Dry Rainforest EVCs occur in Gippsland.

Warm Temperate Rainforest is the most extensive rainforest EVC in Gippsland. It generally occurs in the east of the region, near the Mitchell River, Tambo River and Big Creek although stands are also found in the Strzelecki Ranges in south Gippsland. Cool Temperate Rainforest generally occurs on the Nunniong Plateau and Strzelecki Ranges, with isolated occurrences in the headwaters of Freestone and Mount Useful Creeks. Gallery Rainforest and Dry Rainforest do not occur in State forest and therefore are not discussed in this Plan.

A working definition for field identification of rainforest in Gippsland is provided in Appendix I.

Strategy for the protection of rainforest

This Plan establishes a detailed rainforest protection strategy in accordance with the *Code of Forest Practices for Timber Production* (the *Code*). The *Code* requires that all rainforest and a surrounding buffer be excluded from timber harvesting. It also provides guidelines for rainforest protection, which include increased protection measures for significant stands of rainforest and a consideration of regional characteristics when developing protection strategies in Forest Management Plans.

This rainforest protection strategy is based on the protection of rainforest in conservation reserves and in State forest through Special Protection Zones, and *Code of Forest Practices for Timber Production* buffers, to exclude timber harvesting from the rainforest and surrounding buffer. The Special Protection Zone buffers range from 60 m to 100 m depending on the significance of stands. A number of significant stands receive sub-catchment protection. These buffers are considered to adequately protect rainforest stands from increased exposure to light, temperature and wind as a result of timber harvesting operations outside the buffer. It is also considered to provide adequate protection against physical disturbance from forest operations, which is relevant to minimising the spread of Myrtle Wilt. Prevention and minimising the spread of Myrtle Wilt is discussed in Chapter 6 – *Forest protection*.

DSE has identified all major patches of rainforest within Gippsland through a program of aerial photography and field reconnaissance. These patches were assessed using the following criteria: ecological integrity and viability, richness and diversity, rarity, representation of type, and scientific and education value. Some of these patches were considered to contain rainforest of regional, State or national significance. Sub-catchments that contain the regionally, State or nationally significant rainforest form a 'Site of Significance for Rainforest'.

There are 29 Sites of Significance for Rainforest on public land in Gippsland (Peel 1999) (see Appendix J). Eleven of these Sites of Significance for Rainforest are entirely within conservation reserves, comprising 2 sites of national significance, 4 sites of State significance and 5 sites of regional significance. Eight Sites of Significance for Rainforest cover both State forest and conservation reserves; these are a national site of significance, 2 sites of State significance, 2 sites of regional significance and a site of local significance. The 10 Sites of Significance for Rainforest that are entirely within State forest are 4 sites of regional significance and 6 sites of local significance. Other stands of rainforest are considered to be locally significant.

Within each Site of Significance for Rainforest considered as being of State or national importance in State forest 'priority areas' identify the most important areas for rainforest conservation. These 'priority areas' are ranked according to their relative importance based on:

- the size of individual rainforest stands or the highest concentration of stands within each Site of Significance for Rainforest;
- rainforest stands surrounded by relatively undisturbed forest or old-growth forest;
- stands with concentrations of rare or threatened flora;
- areas with identifiable management boundaries such as sub-catchment divides, roads or topographic features.

Protection of rainforest stands in priority areas in sites of national and State significance, and stands of regional and local significance are incorporated into the zoning scheme in line with the rainforest management guideline below. The rainforest management guideline and Appendix J provides further detail about the rainforest protection strategy in Gippsland. Appendix J lists the proportion of each priority area within each public land category for the Sites of Significance for Rainforest in Gippsland.

Conservation Guideline

Cool Temperate Rainforest and Warm Temperate Rainforest

The width of rainforest buffers varies according to the significance of the rainforest stand and the priority area. The following minimum buffers apply:

- Sub-catchments for those rainforest stands where the priority area is substantially undisturbed or the conservation requirements of other species or values are coincident with rainforest values;
- 100 m for priority 1 and 2 areas within sites of national significance;
- 60 m for priority 3 and 4 areas within sites of national significance and for priority 1 and 2 areas within sites of State significance;
- 40 m for priority 3 and 4 areas within sites of State significance and all sites of regional or local significance.

3.5 Heathland

The heathlands of Gippsland include a number of EVCs and mosaics. Heathland EVCs on public land in Gippsland include Wet Heathland, Clay Heathland, Sand Heathland, Coastal Sand Heathland, Clay Heathland/Wet Heathland/Riparian Scrub Mosaic and Sand Heathland/Wet Heathland Mosaic.

The conservation of heathlands and their attendant fauna require appropriate fire regimes. The development of ecologically based fire regimes is discussed in Chapter 6.

Heathlands are unlikely to be directly affected by timber harvesting, however, indirect effects associated with roading and hydrological disturbance may impact on heathlands. In order to maintain heathland drainage patterns, roads should not be located in or closely to heathlands in accordance with the *Code of Forest Practices for Timber Production*.

Conservation Guideline

Heathland

New roads should not be built across heathlands nor within 40 m of heathlands, unless there is no reasonable alternative. Roads should not be located closely parallel to heathlands in accordance with the *Code of Forest Practices for Timber Production*.

There should be no timber harvesting within approximately 40 m of the following heathland EVCs: Wet Heathland, Clay Heathland, and Clay Heathland/Wet Heathland/Riparian Scrub Mosaic.

3.6 Management of processes affecting the structure and distribution of ecosystems

Many processes operating in forests, both natural and human-induced may have the potential to adversely affect the distribution and structure of ecosystems. Several of these potentially threatening processes, relevant to forest management, are listed in Schedule 3 of the Flora and Fauna Guarantee Act.

Management of potentially threatening processes plays a key role in maintaining biodiversity by assisting protection of the integrity of ecosystems and reducing the direct threat to flora and fauna populations. This section addresses the main potentially threatening processes relevant to forest management in Gippsland.

Loss of hollow-bearing trees in Victorian native forests (listed under the FFG Act)

The loss of hollow-bearing trees in Victorian native forests is listed as a potentially threatening process under the *Flora and Fauna Guarantee Act 1988* (FFG Act), and an Action Statement is in preparation.

Although trees of all growth stages may be utilised by wildlife, live, hollow-bearing eucalypts are important as nesting and roosting sites for birds and arboreal mammals. Dead trees, whether standing (stags) or fallen, are also valuable habitat, providing hollows, denning sites, basking and foraging sites for a range of wildlife species.

Tree hollows tend to occur in mature, senescent and dead trees. For the majority of eucalypts in Gippsland, hollows suitable for nesting and roosting begin to form in trees over 100 years old. Some State forest areas of Gippsland have been utilised for timber harvesting for over 100 years and the remaining hollow-bearing trees are fewer than would be found in undisturbed forest. For this reason, the larger trees should generally be favoured for retention as habitat trees.

Timber harvesting and timber stand management operations, fire and road construction or maintenance can remove or damage trees with hollows, and leave insufficient younger trees to replace losses and ensure continuing supply. The establishment of conservation reserves and SPZ will allow extensive areas of regrowth forest to age sufficiently so that they approach the level of hollow abundance found in mature undisturbed forest.

The *Code of Forest Practices for Timber Production* (the *Code*) (NRE 1996a) specifies the need to retain habitat trees, with preference given to those located in situations most easily protected from damage during harvesting and subsequent management. In conjunction with the reserve system and SPZ, habitat tree retention in the GMZ provides for maintaining the distribution of hollow-tree dependent fauna in the forests. Habitat tree prescriptions are detailed within the *Gippsland Region Management Prescriptions for Timber Production and Other Forest Uses* (NRE 2002c).

A DSE multi-disciplinary working group has reviewed habitat retention within the General Management Zone (GMZ) of Victoria's State forests. The working group recommended objectives and principles for wildlife habitat retention at the landscape scale. It provided interim habitat tree prescriptions and established processes for the development of habitat retention prescriptions which take into account harvesting methods, the requirements of key sensitive species and the extent of harvesting within forest landscapes. These statewide habitat retention recommendations will guide the development of habitat tree prescriptions appropriate to the forests of Gippsland for the protection of hollow-bearing trees and other important habitat elements in areas used for timber production.

Actions

Develop and implement revised habitat retention prescriptions for State forest in Gippsland. The prescriptions should be consistent with the statewide habitat retention recommendations and will consider:

- *the density of trees or habitat patches that should be retained in the GMZ, with regard to the proportion of forest reserved within conservation reserves, SPZ and SMZ;*
- *the need for recruitment of habitat trees of varying age, species and form characteristics;*
- *the retention of dead standing trees;*
- *the location and distribution of habitat trees within logging areas;*
- *the requirements and sensitivity of wildlife populations to the loss of hollow bearing trees;*
- *understorey species protection; and*
- *the particular need to protect sufficient large hollow-bearing trees.*

Train supervising forest staff in the application of habitat retention prescriptions.

Monitor harvested areas to assess the implementation of prescriptions through the Code audit procedures.

Habitat fragmentation as a threatening process for fauna in Victoria (listed under the FFG Act)

Forests provide a range of habitat resources, particularly for arboreal fauna. Fragmentation of optimal habitats through clearing, burning and timber harvesting may contribute to a decline in certain sensitive forest species. Management of timber harvesting activities will ensure that mature forest existing in conservation reserves, SPZs and areas unavailable or unsuitable for harvesting are not isolated.

The development of the CAR reserve system (see section 3.3) took into account identifying areas to establish an inter-linked protected area network across the planning area. This includes existing conservation reserves, Heritage River areas, wildlife corridors, SPZ, existing links provided through *Code* exclusions from timber production and areas of forest that are not productive or suitable for timber harvesting. In addition, habitat retention prescriptions at the landscape scale, as previously discussed, will also contribute to maintenance of forest species and habitats.

Other potentially threatening processes

Other potentially threatening processes and management actions taken to address them are shown in Table 3.3. Processes listed under the FFG Act will also be subject to an Action Statement or management plan prepared under the Act.

Table 3.3 Management actions for other potentially threatening processes

Process	Management Action
Alteration to the natural temperature regimes of rivers and streams (FFG Act listed). Temperature affects the breeding success of a wide range of aquatic fauna.	Addressed by the *Code* requirement for the retention of a minimum 20 m buffer on all permanent streams. The shading this provides serves to minimise temperature variations that might otherwise result from additional exposure to the sun.
Alteration to the natural flow regimes of rivers and streams (FFG Act listed).	Addressed by the *Code* requirements.
Degradation of native riparian vegetation along Victorian rivers and streams (FFG Act listed).	Addressed by the *Code* requirements for the retention of a minimum 20 m buffer on all permanent streams and the *Code* roading requirements.
Increase in sediment input into Victorian rivers and streams due to human activities (FFG Act listed). Excessive sedimentation interferes with many aquatic ecosystem processes.	Measures aimed at minimising sediment input to rivers and streams are described in Chapter 5 – *Streams and catchments*.
Input of toxic substances into Victorian rivers and streams (FFG Act listed).	Addressed by the *Code* requirements for safe handling of fuel and lubricants which restricts the location and conduct of refuelling operations.
Prevention of passage of aquatic biota as a result of the presence of instream structures (FFG Act listed).	Addressed by the *Code* requirements for road construction.
Predation of native wildlife by the introduced red fox Vulpes vulpes (FFG Act listed) (CNR 1993b).	See Chapter 6 – *Forest protection*. Ensure biodiversity aims are considered in pest control programs.
Predation of native wildlife by the Cat Felis catus (FFG Act listed) (NRE 1997d).	See Chapter 6 – *Forest protection*. Ensure biodiversity aims are considered in pest control programs.
High frequency fire resulting in disruption of life cycle processes in plants and animals and loss of vegetation structure and composition (FFG Act listed).	See Chapter 6 – *Forest protection.*
Human activity which results in artificially elevated or epidemic levels of Myrtle Wilt within Nothofagus-*dominated Cool Temperate Rainforest* (FFG Act listed).	See Chapter 6 – *Forest protection*.
Spread of Pittosporum undulatum *in areas outside its natural range* (FFG Act listed).	See Chapter 6 – *Forest protection*.

Table 3.3 continued next page

Table 3.3 Management actions for other potentially threatening processes *continued*

Process	Management Action
The invasion of native vegetation by environmental weeds (FFG Act listed).	See Chapter 6 – *Forest protection.*
Use of Phytophthora-*infected gravel in construction of roads, bridges and reservoirs* (FFG Act listed).	See Chapter 6 – *Forest protection.*
The spread of Phytophthora cinnamomi *from infected sites into parks or reserves, including roadsides, under the control of a state or local government authority* (FFG Act listed).	See Chapter 6 – *Forest protection*.
High frequency fire resulting in disruption of life cycle processes in plants and animals and loss of vegetation structure and composition (FFG Act listed).	See Chapter 6 – *Forest protection*.
Soil erosion and vegetation damage and disturbance in the alpine regions of Victoria caused by cattle grazing (FFG Act listed).	See Chapter 9 – *Other forest uses*.
Threats to native flora and fauna arising from the use by the feral honeybee Apis mellifera *of nesting hollows and floral resources* (FFG Act listed).	See Chapter 9 – *Other forest uses.*

The structure and floristic composition of many vegetation communities is strongly influenced by local fire regimes. During the 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 may have increased as a result of fuel-reduction burning initiated to protect settlements and forest resources from wildfire. Ecological effects of fire and developing ecologically based fire regimes in the planning area is discussed in Chapter 6.

The regeneration of native resprouting understorey species such as tree-ferns is affected by mechanical disturbance associated with timber harvesting. The Department has trialed the use of 'understorey islands' in Wet Forest coupes in the Central Highlands to enhance the survival of the resprouting native species by retaining small areas of mechanically undisturbed understorey vegetation in coupes (see NRE 1998c). The success of these measures should be evaluated to determine the suitability of using 'understorey islands' in the Gippsland planning area. Depending on the results other mechanisms may need to be considered.

3.7 Species and genetic diversity

The long-term protection of flora and fauna populations is best achieved by protecting representative examples of all ecosystems, and by taking steps to minimise the impact of threatening processes. Section 3.3 outlines the strategy for protection of ecosystems in the CAR reserve system (conservation reserves and State forest SPZ). Whereas, section 3.6 outlines the management actions taken to address potentially threatening processes relevant to management of the forests of Gippsland (e.g. the development of prescriptions for habitat retention in GMZ, pest management and application of the *Code* in State forest). These approaches provide a base level of security for populations of most native flora and fauna.

Some species, however, occur in very low numbers, in isolated populations, or are sensitive to forest management practices. These 'featured species' require specific action aimed at ensuring the survival of populations and, therefore, the maintenance of biodiversity. Featured species include those:

- listed in Schedule 2 of the FFG Act or listed as a threatened species under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Some species (Giant Burrowing Frog for example) have Action Statements or National Recovery Plans prepared under these acts, to which the species conservation guidelines in this Plan are complementary;
- listed by DSE as Rare or Threatened Plants in Victoria (DSE 2003a; Flora Information System), as Threatened Vertebrate Fauna in Victoria (DSE 2003b) or as threatened invertebrate fauna (CNR 1995e);

- endemic, disjunct or at the edge of range in the planning area; or
- not listed in any of the above categories but which are sensitive to forest management activities and at risk of having their populations depleted and fragmented.

Genetic diversity refers to the variety of genetic material contained in all of the individual plants, animals and micro-organisms that inhabit our planet. Genetic diversity occurs within and between populations of organisms that comprise individual species as well as among species. Conservation of genetic diversity is best achieved through the maintenance of populations of all native flora and fauna across their natural range, and through the measures identified to avoid forest fragmentation. This may also reduce the risk of the species being destroyed by natural disasters or other factors. Populations of species that are rare, threatened, endemic, disjunct or at the edge of their range are likely to be genetically distinctive or unique and may also warrant special attention.

Featured flora conservation

Approximately 440 vascular plant species recorded on public and private land in Gippsland fall into one of the featured flora species categories. Over 180 of these are known to occur in State forest. Management of featured flora that occurs in State forest is based on an assessment of the threat status of the species in both the state and the region, and the presence of populations in conservation reserves. Featured flora species recorded in State forest in planning area have been reviewed and where necessary a management action consistent with the Conservation Guideline for Featured Flora is provided in Appendix L.

Additional species of rare and threatened flora may be identified in the planning area either as a consequence of further flora surveys, or reviews of the conservation status of species and subsequent listing under the FFG Act. Management of such species will be determined following consultation with botanists, but will follow the general approach outlined in the Conservation Guideline for Featured Flora.

Conservation Guideline

Featured flora

Include all known populations of species regarded as 'Endangered' at a Victorian or Australian level in the SPZ. The protection zone needs to be of sufficient size to include all of the local population, and should include a buffer large enough to protect the population from deleterious external impacts.

Include populations of Vulnerable, Rare, Poorly Known, Endemic, Disjunct, and Edge of Range species in the SPZ or SMZ after consideration of their regional status and level of representation in the existing conservation reserve system. An example of a species that may not warrant inclusion in the SPZ or SMZ would be one that is well represented in the formal reserve system or is rare at a State level, but locally abundant and tolerant of disturbance.

Populations identified for protection should, wherever practicable, be included in larger parts of the SPZ or SMZ, in combination with other values.

Action Statements for species listed under the *Flora and Fauna Guarantee Act 1988* will guide management of the species. If no Action Statement is available, species listed under the Act will be managed in accordance with their conservation status and this guideline.

Isolated populations of featured flora species should be placed in the SMZ (200 m radius) to highlight their presence and the need for site inspections and more detailed planning. Any disturbances (including logging coupes, road construction and fuel-reduction burning) proposed in close proximity or within these sites, will be planned in consultation with DSE biologists to ensure that the species is adequately protected.

Where an SPZ or SMZ has been established for featured flora conservation in areas licensed for grazing, licenses should be reviewed to determine potential impacts on the featured species. Grazing activities should be modified or excluded if necessary.

Action

Manage threatened forest flora in accordance with the Conservation Guideline for Featured Flora (above), relevant legislation and policies and Appendix L.

Featured fauna conservation

Conservation guidelines have been developed for threatened or sensitive species with major habitat requirements in State forest, and whose needs may not be fully met by other conservation strategies. Application of these guidelines has contributed to the network of protected habitat established for all forest fauna of Gippsland.

The purpose of the guidelines is to:

- provide planned protection for sensitive and threatened species in State forest to meet the requirements of the FFG Act and the precautionary principle outlined in the National Forest Policy Statement;
- take account of the contribution of national parks and other conservation reserves towards meeting these requirements; and
- initiate an orderly process for ongoing reconciliation of timber production with conservation of threatened species.

Species most vulnerable to forest management and utilisation activities are those that:

- forage over large areas of mature forest (e.g. forest owls, Spot-tailed Quoll);
- are at or near the top of the food chain (e.g. forest owls, Spot-tailed Quoll, diurnal forest raptors);
- require old forest or old forest elements such as large trees with hollows for nesting, roosting, foraging, perching or basking (e.g. forest owls, parrots and cockatoos, possums and gliders, many insectivorous bats);
- naturally occur at low densities (e.g. higher order predators such as the Spot-tailed Quoll);
- are colonial or social in population structure (e.g. several forest bats and some birds); and
- occur in small populations and have specialised habitat requirements that may be disrupted by disturbance (e.g. Spotted Tree Frog, New Holland Mouse).

The guidelines indicate either a minimum population level or review level for many of the species. The review level establishes a pre-determined number of protected records or habitat areas which, once reached, will trigger a review of the species' conservation requirements to ensure their relevance and effectiveness. The minimum population level establishes a target number of protected records or habitat areas around which key habitat is maintained to ensure the maintenance of populations of the species in the planning area.

In applying the guidelines, consideration will be given to the status of fauna records and the quality of habitat in the area. For example, a well-documented and substantial population of a threatened species warrants a higher priority for protection than an area of marginal habitat where the same species was incidentally recorded.

The conservation guidelines are to be in accordance with current FFG Act Action Statements. The conservation guidelines in this Plan meet the requirements of approved Action Statements. The comprehensive strategies in the guidelines may be further developed as more information becomes available. Preparation and implementation of FFG Act Action Statements may require refinement of some guidelines in accordance with the processes outlined in Chapter 12.

In addition to the following conservation guidelines, Appendix M provides management actions for a number of fauna species that do not warrant a conservation guideline but may have specific habitat requirements that should be protected where records exist.

Additional threatened fauna species may be identified in the planning area as a consequence of reviews of the conservation status of species and subsequent listing under the FFG Act. Processes for reviewing the management guidelines in this plan are outlined in Chapter 12.

Mammals

Spot-tailed Quoll *Dasyurus maculatus*

Victorian status: Endangered **FFG Act:** Listed **Action Statement:** Prepared **EPBC Act:** Vulnerable

The Spot-tailed Quoll is the largest carnivorous marsupial on the mainland. It is generally a solitary animal and is considered to be sparsely distributed in the forested areas of Victoria. The Spot-tailed Quoll inhabits a wide variety of vegetation types including rainforest, wet sclerophyll forest, dry sclerophyll forest and woodland. It is a high-order predator with a large home range. Dens are established in rocky outcrops and in hollow logs.

Most records from Gippsland are concentrated around the Gippsland lakes area and many are from before 1970. Since 1977, Quolls have been recorded from three widely separated sites in State forest — east of Mount Leinster, Won Wron State Forest, and from near Bulldog Road north of Bairnsdale.

The impact of forest management operations on Spot-tailed Quolls is poorly known. Fragmentation of habitat and reduction of suitable foraging habitat and den sites may be significant threats to the species. Competition from introduced predators, especially foxes, is probably significant. The species may be susceptible to pest control activities using 1080 (Sodium monofluoroacetate), but recent evidence suggests there is a negligible risk from baiting for foxes using Foxoff®, (Kortner and Gresser 2002).

This guideline adopts a precautionary approach, providing areas of undisturbed forest as foraging habitat until further knowledge of habitat requirements and threats in the region is gained. Fauna surveys that specifically target Spot-tailed Quolls will assist in identifying the habitat requirements and range of the species in the region. Priority for these surveys will be given to existing reserves and SPZ, where likely habitat may be found. This guideline is consistent with the revised Action Statement for this species (DSE 2003d).

Conservation Guideline

Spot-tailed Quoll

For each confirmed record establish a SPZ of approximately 500 ha including the detection site where appropriate. The SPZ should include areas of undisturbed mature forest, riparian areas and rocky outcrops where possible. In addition to the SPZ, a SMZ of approximately 1 000 ha contiguous to the SPZ will be established. The objectives of the SMZ will be to maintain habitat for both arboreal and non-arboreal Spot-tailed Quoll prey, while providing continuing opportunities for timber production.

Where harvesting is proposed within the SMZ, a SMZ plan must be prepared before operations commence. Harvesting within the SMZ may comprise single tree or group selection or small patch fellings over the entire area. Alternatively, carefully sited and scheduled seed tree or clearfall harvesting may be used, ensuring, in either case that important prey habitat components such as hollow-bearing trees are retained. Where clearfall or seed tree harvesting systems are proposed, harvesting operations may through time extend over the entire SMZ but must be scheduled to ensure at least 500 ha of suitable prey habitat is available at any point in time (in addition to the SPZ).

The adoption of harvesting strategies for SMZs should have regard to the assessed significance of the zone as Spot-tailed Quoll habitat, existing patterns of public land use and forest zoning, the silvicultural characteristics of forest types in the zone, the proportion of the zone which is unproductive for sawlog production and the timber resource values of the productive areas.

In accordance with the Action Statement establish a 200 m radius SPZ around latrine and den sites where they are not otherwise protected.

In order to minimise the risk of accidental poisoning, predator control programs using poisons such as 1080 will be conducted in accordance with the feral animal guidelines detailed in Chapter 6 – *Forest protection*.

Review this guideline when 10 zones have been established in State forest or when significant information has been obtained from further research.

Action

Support surveys for Spot-tailed Quoll, across all public land tenures, to assist in identifying the range of the species and its habitat requirements within Gippsland.

Smoky Mouse *Pseudomys fumeus*

Victorian status: Endangered **FFG Act:** Listed **Action Statement:** – **EPBC Act:** Endangered

The Smoky Mouse has a wide but disjunct distribution within Victoria, with records from the Grampians, Central Highlands, Barry Mountains, North East and coastal Gippsland. Within Gippsland, the Smoky Mouse is patchily distributed from Aberfeldy and along the Barry Mountains, and is also known from an isolated site at Mt. Cobberas. Several of the known Smoky Mouse sites are within the Alpine National Park and a few are from State forest. It appears that the distribution of the species has declined in the region. The majority of records from Gippsland are from the 1970s, although surveys undertaken in 1999 have located the Smoky Mouse from three sites near The Knobs and Toms Cap.

The Smoky Mouse is known to inhabit a variety of generally dry, often rocky forest types. The recent captures of the species in Gippsland were from low open mixed forest with sparse to dense heathy understorey on drier sites, and from montane open forest dominated by *Eucalyptus pauciflora* with a dense heathy understorey (Kambouris 1999). The Smoky Mouse feeds on underground fungi, various seeds, berries and insects, including Bogong Moths in rocky sub-alpine heaths during summer. Fire may play an important role in maintaining the structural diversity and floristic composition of ground and shrub vegetation suitable for this species. The most appropriate fire regime required to maintain suitable habitat, however, is not well understood, and habitat disturbance history within Gippsland does not indicate any clear preferences for post-fire successional stage. Threats to the Smoky Mouse are likely to include disturbances such as predation by foxes and cats, and fire and timber removal that result in changes to understorey floristics and structure.

Conservation Guideline

Smoky Mouse

For each confirmed record, establish a SMZ of approximately 100 ha incorporating the detection site wherever possible.

Timber harvesting and road construction may proceed following the preparation of a SMZ plan. This Plan should incorporate any relevant information collected from the recent study of the species conducted in the region.

The frequency of prescribed burning at known Smoky Mouse localities will be identified on a case-by-case basis in consultation with DSE biologists.

This strategy should be reviewed after the establishment of 10 SMZs or in light of further research regarding the conservation status of the species and its response to disturbance.

Eastern Bent-wing Bat *Miniopterus schreibersii oceanensis*

Victorian status: Vulnerable **FFG Act:** Listed **Action Statement:** In prep. **EPBC Act:** –

The Eastern Bent-wing Bat is a fast flying, highly mobile aerial insectivore. Caves and mine shafts are commonly used as roosting sites, along with stormwater tunnels, rock crevices and occasionally buildings. Roost sites are usually near well-timbered areas where bats forage above the canopy for insects. Females congregate in large breeding colonies to give birth in early November to late December. The known breeding site in Victoria is in East Gippsland where an estimated 60 000 individuals have been recorded in Nargun Cave.

In Gippsland, records of the Eastern Bent-wing Bat are widely scattered from a few localities. It has been recorded from Walhalla, near Bunyip, the Strzelecki Ranges, Glenmaggie, Deptford and the Haunted Stream. The population at Glenmaggie is regularly monitored and mine shafts targeted for closure under the Disused Mines Risk Mitigation Program are being investigated for bat presence. There are a few known roosting sites for the species within the Alpine National Park and seven known roosting sites in mines within State forest.

The precise home range requirements of the Eastern Bent-wing Bat are not known. As large distances have been recorded between maternity and roost sites, the potential home range size may be quite large. The species is particularly vulnerable to disturbances that rouse them during their winter torpor. Direct disturbance to the roost site, including recreational exploration of caves and mine shafts, could adversely affect on the populations survival. Intentional closure of mine shafts, even using standard 'bat gates', may hinder flight of this species and cause desertion of the roost. Feral cats and foxes may prey on the species as they fly in or out of mine entrances.

Conservation Guideline

Eastern Bent-wing Bat

Establish a SPZ buffer of 100 m around all breeding and roosting caves and mines and known over-wintering sites. Sites will not be publicised and visitors will generally be discouraged, except as part of planned interpretive activities.

Where mine safety requires the closure of mines, signage and fencing away from the mine entrance should be erected to exclude disturbance and protect roost and breeding sites. The fence should be designed so as not to cover the entrance to ensure flight movement of the species is not hindered.

Eastern Horseshoe Bat *Rhinolophus megaphyllus*

Victorian status: Vulnerable **FFG Act:** Listed **Action Statement:** – **EPBC Act:** –

The Eastern Horseshoe Bat is believed to travel only short distances (a few kilometres) within its range. It mainly forages for insects amongst low vegetation and appears to prefer forested areas close to roost sites. Roost sites have been detected within caves and mines. Three maternity sites, all in caves, have been located in Victoria near Nowa Nowa, Murrindal and on the Snowy River near Buchan. Another is suspected to occur in the adjacent North East region.

Within Gippsland, the Eastern Horseshoe Bat has been recorded from the Mount Alfred, Nicholson River, Dogtown and Deptford areas. Several roost sites are known of in State forest, including mines at Deptford, Yahoo Creek, Walhalla and Haunted Stream.

The Eastern Horseshoe Bat undergoes periods of torpor during winter and is vulnerable to disturbance during this time. Direct disturbance to the roost site, including recreational exploration of caves and mine shafts, could adversely affect the long-term survival of the local population. It is thought that re-working of mines, overgrown entrances and natural collapse of entrances may have contributed to the decline of these bats. Intentional closure of mine shafts using inappropriate gates may hinder flight of the Eastern Horseshoe Bat and cause desertion of the roost. Cats and foxes may prey on the species in caves or mines and capture them while they fly close to the ground.

Conservation Guideline

Eastern Horseshoe Bat

Establish a 100 m buffer of SPZ around all breeding and roosting caves and mines and known over-wintering sites. Sites will not be publicised and visitors will generally be discouraged, except as part of planned interpretive activities.

Where mine safety requires the closure of mines, specially designed 'bat gates' should be erected to exclude disturbance and protect roost and breeding sites. Bat gates should be monitored to ensure that flight movement of the species is not hindered.

Large-footed Myotis *Myotis macropus*

Victorian status: Near Threatened **FFG Act:** – **Action Statement:** – **EPBC Act:** –

The Large-footed Myotis (also known as the Southern Myotis) utilises a range of vegetation communities associated with water bodies (riparian forest, wetlands, slow-flowing lowland streams, estuaries), generally at an altitude of less than 300 m. It feeds on aquatic insects and small fish from the surface of water, and has been recorded roosting in caves, aqueduct tunnels and tree hollows.

Records of the Large-footed Myotis in Victoria are widely distributed, but the species typically occurs in low numbers. There are several records of the Large-footed Myotis from Gippsland, including a recent one from State forest beside the Freestone Creek, and roost sites are known on private land near Glenmaggie Weir. The species also occurs on Rotamah Island where bat trapping programs are carried out each year.

Permanent water bodies are important foraging substrates for the Large-footed Myotis. The removal of hollow-bearing trees is a potentially threatening process that may deplete numbers of available roost sites. Human disturbance of roosts and predation by feral cats are also potential threats to the species.

Conservation Guideline

Large-footed Myotis

Establish a 100 m buffer of SPZ around all known breeding and roosting caves, trees and mines and known over-wintering sites.

Sites will not be publicised and visitors will generally be discouraged, except as part of planned interpretive activities.

Review the above guideline after the location of 20 sites or when significant information has been obtained from further research.

Birds

Sooty Owl *Tyto tenebricosa*

Victorian status: Vulnerable **FFG Act:** Listed **Action Statement:** Prepared **EPBC Act:** –

The Sooty Owl is a large forest owl that exhibits a preference for closed forests and tall open forests. It is fiercely territorial and occupies a large home range. The species requires tree hollows for roosting and nesting sites and both terrestrial and arboreal mammals are major components of the diet. The general strategy for conservation of the Sooty Owl is to protect core habitat for a minimum of 169 pairs of Sooty Owls across public land in Gippsland by delineating Sooty Owl Management Areas (SOMAs). These SOMAs may overlap with management areas established for other species. Outside of SOMAs, habitat for foraging is provided in areas excluded from timber harvesting by steep areas, unmerchantable areas and areas protected for other management purposes.

Suitable habitat for Sooty Owls has been identified using a predictive habitat model. SOMAs are based on confirmed records (breeding sites, roosts and sightings) or areas of suitable habitat identified by the model in conservation reserves, State forest or other suitable public land areas. See Appendix N for a description of the modelling process. The target number is based on estimates of the viable population of Sooty Owls in Victoria and the proportion of Victorian Sooty Owl habitat in the planning area. An Action Statement has been prepared for the conservation of the Sooty Owl (Silveira *et al*. 2001).

Conservation Guideline

Sooty Owl

Establish and maintain 169 Sooty Owl Management Areas (SOMAs) across public land in Gippsland. SOMAs may be established in existing conservation reserves and areas of State forest SPZ, with preference given to the protection of suitable habitat within conservation reserves. SOMAs should be based on locating probable breeding areas based on the occurrence of owlets or roosting pairs of adults and on suitable habitat identified by habitat modelling. SOMAs may overlap with management areas established for other species.

SOMAs in State forest should protect 500 ha of suitable habitat in SPZ bounded by recognisable features, preferably natural, such as ridgelines or sub-catchments. SOMAs based on specific records (rather than habitat modelling) will be within a circle of 3.5 km radius of the record. The selection of suitable habitat should, where possible, comprise patches greater than 100 ha in area and contiguous with other forest. In establishing SOMAs, preference should be given to protecting the best quality habitat, subject to other forest management objectives.

The Action Statement requires that SOMAs are managed as SPZ where clear-fell or seed-tree systems are used, or be managed as SMZ where selective harvesting is used. Selective harvesting systems are not currently used in the planning area and therefore the SOMAs are managed as SPZ.

All confirmed nesting and roosting sites utilised recently and frequently (based on reliable observation or physical evidence such as pellets or wash) located outside of SOMAs will be protected by a 3 ha SPZ around the site and a 250–300 m radius (or equivalent linear area) SMZ buffers around identified localities, unless they are already protected.

Fuel-reduction burning will be avoided within 250 m of all known nest sites during the breeding season (May–November).

Powerful Owl *Ninox strenua*

Victorian status: Vulnerable **FFG Act:** Listed **Action Statement:** Prepared **EPBC Act:** –

The Powerful Owl is the largest owl found in Australia and is considered uncommon to rare throughout its range. It is classified as Vulnerable. In Victoria, it has been recorded in a wide range of forest types and from most of the State with the exception of the drier north-west and most of the riverine Red Gum forests (NRE 1998a). Powerful Owls occupy and defend large territories, resulting in a low population density. The Powerful Owl is nocturnal and preys mainly on arboreal or semi-arboreal marsupials. The species prefers older forests where large tree hollows provide nesting sites and arboreal prey. The reduction in forest cover in Victoria has led to loss of habitat and an overall reduction in owl numbers. Powerful Owls are vulnerable to disturbances that further reduce habitat such as land clearing and timber harvesting.

A Flora and Fauna Guarantee Action Statement has been prepared for the species (Webster *et al*. 1999). The general strategy for conservation of the Powerful Owl is similar to that of the Sooty Owl. It is designed to protect core habitat for a minimum of 115 pairs across public land in Gippsland by delineating Powerful Owl Management Areas (POMAs). These POMAs may overlap with management areas established for other

species. Outside of POMAs, habitat for foraging is provided in areas excluded from timber harvesting by steep areas, unmerchantable areas and areas protected for other management purposes.

Suitable habitat for Powerful Owls has been identified using a predictive habitat model. POMAs are based on confirmed records (breeding sites, roosts and sightings) or areas of suitable habitat identified by the model in conservation reserves, State forest or other suitable public land areas. See Appendix N for a description of the modelling process. The target number is based on estimates of the viable population of Powerful Owls in Victoria and the proportion of Victorian Powerful Owl habitat in the Gippsland planning area.

Conservation Guideline

Powerful Owl

Establish and maintain 115 Powerful Owl Management Areas (POMAs) across public land in Gippsland. POMAs may be established in existing conservation reserves and areas of State forest SPZ, with preference given to the protection of suitable habitat within conservation reserves. POMAs may overlap with management areas established for other species.

POMAs in State forest should protect a core area of suitable habitat of at least 500 ha within a circle of 3.5 km radius. The selection of suitable habitat should, where possible, comprise patches greater than 100 ha in area and contiguous with other forest.

In establishing POMAs in State forest, preference should be given to protecting the best quality habitat, subject to other forest management objectives. POMAs may be established in areas modelled as providing high quality habitat.

The Action Statement requires that POMAs are managed as SPZ where clear-fell or seed-tree systems are used, or be managed as SMZ where selective harvesting is used. Selective harvesting systems are not currently used in the planning area and therefore the POMAs are managed as SPZ.

Where new records are identified, new POMAs may be established to replace existing POMAs where they are considered to be of lesser priority, subject to other management objectives.

Unless otherwise protected, all confirmed nesting and roosting sites will be protected by a 3 ha SPZ around the site and a 250–300 m radius (or equivalent linear area) SMZ buffer around identified localities.

Fuel-reduction burning will be avoided within 250 m of all known nest sites during the breeding season (May–November).

Masked Owl *Tyto novaehollandiae novaehollandiae*

Victorian status: Endangered **FFG Act:** Listed **Action Statement:** Prepared **EPBC Act:** –

The Masked Owl is a large forest owl that requires tree hollows for nesting and roosting sites and hunts for prey amongst the forest canopy and on the ground. Due to its similar appearance and calls, it can sometimes be confused with Barn Owls and Sooty Owls. The Masked Owl has been recorded in the planning area on twenty recent occasions, including both public and private land (Atlas of Victorian Wildlife).

An Action Statement has been prepared for the conservation of this species (Schedvin *et al*. 2001). It is designed to protect suitable habitat for a target of 150 pairs of Masked Owls on public and private land across the range of the species in Victoria. Such protected areas are termed Masked Owl Management Areas (MOMAs) and may overlap with management areas established for other species. Outside of MOMAs, habitat for foraging is provided in areas excluded from timber harvesting by steep areas, unmerchantable areas and areas protected for other management purposes.

Conservation Guideline

Masked Owl

Masked Owl Management Areas (MOMAs) may be established in existing conservation reserves and areas of State forest, with preference given to the protection of suitable habitat within conservation reserves. Selection of MOMAs should be based on the strength of evidence for existence of a resident pair, and on the need for MOMAs to be distributed throughout the main range of the species. MOMAs may overlap with management areas established for other species.

MOMAs in State forest will protect a core area of at least 500 ha of suitable habitat as SPZ. For MOMAs based on specific records (rather than habitat modelling), the SPZ will fall within a 3.5 km radius of the confirmed record (e.g. nest or roost tree). The selection of suitable habitat should, where possible, comprise patches greater than 100 ha in area and contiguous with other forest.

In establishing MOMAs, preference should be given to protecting the best quality habitat, subject to other forest management objectives. MOMAs may be established near known records or in areas modelled as providing good quality habitat.

The Action Statement requires that MOMAs are managed as SPZ where clear-fell or seed-tree systems are used, or be managed as SMZ where selective harvesting is used. Selective harvesting systems are not currently used in the planning area and therefore the MOMAs are managed as SPZ.

All confirmed nesting and roosting sites utilised recently and frequently (based on reliable observation or physical evidence such as pellets or wash) located outside of MOMAs will be protected by a 3 ha SPZ around the site and a 250–300 m radius (or equivalent linear area) SMZ buffers around identified localities, unless they are already protected.

Avoid the development of intensive recreational facilities near known nesting and roosting trees, and discourage public access to breeding areas of Masked Owls.

Fuel-reduction burning will be avoided within 250 m of all known nest sites during the breeding season (May–November).

Barking Owl *Ninox connivens*

Victorian status: Endangered **FFG Act:** Listed **Action Statement:** Prepared **EPBC Act:** –

Within Victoria, Barking Owls occur in open woodlands and open forests, including Box-Ironbark and riparian River Red Gum habitats, as well as some foothill habitats on granitic slopes. Barking Owls predominantly occur in the 400–700 mm rainfall zone north of the Great Dividing Range. The species has been recorded more frequently in edge habitats such as the interface between woodlands and wooded farmland, than in forest interiors. The species requires tree hollows for nesting and roosting sites and hunts for prey in open habitat. There are only six records of Barking Owl in the planning area (Atlas of Victorian Wildlife).

An Action Statement has been prepared for the conservation of this species (Clemann and Loyn 2001). It is designed to protect suitable habitat for a target of 150 pairs of Barking Owls on public and private land across the range of the species in Victoria. Such protected areas are termed Barking Owl Management Areas (BOMAs) and may overlap with management areas established for other species.

Conservation Guideline

Barking Owl

Barking Owl Management Areas (BOMAs) may be established in existing conservation reserves and areas of State forest, with preference given to the protection of suitable habitat within conservation reserves. Priority should be given to protecting nest sites or probable breeding areas based on the occurrence of owlets or adult roosting pairs. Selection of BOMAs should be based both on the strength of evidence for existence of a resident pair, and on the need for BOMAs to be distributed throughout the main range of the species. BOMAs may overlap with management areas established for other species.

Within State forest, BOMAs should protect a core area of suitable habitat of 300–500 ha as SPZ. Where BOMAs are based on specific records (rather than habitat modelling) the SPZ will fall within a 3.5 km radius of the record.

All confirmed nesting and roosting sites utilised recently and frequently located outside of BOMAs will be protected by a 3 ha SPZ around the site and a 250–300 m radius (or equivalent linear area) SMZ buffers around identified localities, unless they are already protected.

Amphibians

Alpine Tree Frog *Litoria verreauxii alpina*

Victorian status: Critically Endangered **FFG Act:** Listed **Action Statement:** – **EPBC Act:** Vulnerable

The Alpine Tree Frog inhabits woodland, heath, grassland and herb fields at high montane, subalpine and alpine altitudes. Large breeding populations occur on plains or open valleys where there are stream side pools, fens and bogs. It also breeds around the margins of artificial lakes. The species is rarely seen during the non-breeding season although some individuals have been found under flat rocks in stream beds or in rocky areas near streams, amongst litter and under logs.

The Alpine Tree Frog was formerly distributed throughout the highlands of eastern Victoria, the ACT and southern NSW. Current distribution of the species is poorly known but it has declined in New South Wales and is now not found in the alpine zone (above 1 800 m) where it was previously known (Gillespie *et al*. 1995). Causes for the decline of species are not known. Most records of the species within Gippsland are from the north of the region from the 1970's and from surveys conducted in 2000, many from the Alpine National Park as well as from State forest.

While the environmental factors implicated in the decline of the species are not well understood, disturbances which impact on breeding sites and non-breeding habitat are likely to adversely affect populations.

Conservation Guideline

Alpine Tree Frog

Establish an SPZ of approximately 50 ha around confirmed frog sites, and review, and if necessary modify, grazing licences in the vicinity of confirmed records.

Review this guideline in light of results of further research into the distribution and habitat requirements of the species.

Spotted Tree Frog *Litoria spenceri*

Victorian status: Critically Endangered **FFG Act:** Listed **Action Statement:** Prepared **EPBC Act:** Endangered

The Spotted Tree Frog inhabits rocky, swift flowing upland streams in dissected mountainous country. It is generally found in areas of limited access and very little disturbance. Eggs are laid under boulders in the stream and adult frogs use streamside vegetation for shelter and basking. The use of adjoining forest in the non-breeding season is unknown.

The distribution of the species is likely to be fragmented and may have had a significant decline over the last 20 years. Extensive surveys in recent years have only located 14 extant populations, 12 from Victoria and two from Kosciuszko National Park in NSW. Records of the Spotted Tree Frog in Gippsland are mainly from the north along the Great Dividing Range, from the Murray River in the north-east, to around Woods Point in the west. Records from north-east of Woods Point are from State forest (from 1992) and the remainder are from national parks. Surveys targeting known and predicted populations of the Spotted Tree Frog in Gippsland were conducted as part of the Gippsland Region Comprehensive Regional Assessment.

The Spotted Tree Frog is thought to be threatened by predation of eggs and tadpoles by introduced trout (the species is unpalatable to native fish) and potential increases to stream sedimentation from roads and timber harvesting activities and disturbance to habitat by campers and anglers. Sediment deposition could affect breeding success by filling in the gaps between rocks and pebbles where eggs are laid. The major sources of stream sedimentation are likely to be roads and tracks (O'Shaughnessy and Associates 1997). Stream crossing points and roads built prior to introduction of the *Code* are of greatest concern. Fire and weed invasion that leads to loss and degradation of riparian habitat may also be threats to the species.

Management of the species in Gippsland is in line with the management actions outlined in the Action Statement (Gillespie *et al.* 2000). Table 3.4 lists the stream buffer widths recommended by O'Shaughnessy and Associates (1997) that have been incorporated in the Action Statement and are included in the conservation measures for this species.

Table 3.4 Minimum stream buffer widths for timber harvesting within 1 km of known Spotted Tree Frog locations

Stream class	Soils with high permeability[1] and low potential for overland flow Slope[2] 0–30°	Soils with low permeability[1] and high potential for overland flow Slope[2] 0–20°	Slope[2] 21–30°
Permanent streams	30m B	40m B	50m B
Temporary streams	20m B + 10m F	20m B + 20m F	30m B + 20m F
Drainage lines	10m F	10m F	15m F
Wetlands	30m B	40m B	50m B

Notes:

Minimum stream buffer and filter strip widths (metres) to be applied one kilometre upstream of Spotted Tree Frog locations. B = buffer strip. F = filter strip in which harvesting is permitted but without machine entry.

1 Soil permeability is based on the post harvest condition of the coupe (excluding landings and major snig tracks) for all but intense storm events.

2 Slope should be generally regarded as the average slope of coupe areas in the vicinity of the stream.

Conservation Guideline

Spotted Tree Frog

The emphasis of management will be to prevent disturbance of known sites, reduce any risks of increased stream siltation and improve control over recreation activities. Accordingly, the following special management arrangements will apply in catchments where the species has been recorded.

Until the species' critical habitat is known, a 300 m habitat protection zone on both sides of streams will be protected at confirmed frog sites and mapped habitat areas. The habitat protection zone will be included in the SPZ and timber harvesting, road construction and other potentially threatening activities will be excluded from the protection zone.

Continued next page

Conservation Guideline Spotted Tree Frog continued

In addition, a further 700 m either side of the SPZ, and for 1 km upstream or to the ridge top (if less than one km) along all streams that flow into the frog habitat, will be included in the SMZ where the following prescriptions will apply:

- stream buffers and filter strip widths should be in accordance with Table 3.4 for any timber harvesting;
- no stream crossings should be constructed;
- new roads (and the fill slope toe of any new road) in the management zone to be at least 50 m from any stream, unless site specific sediment management operations are put in place to prevent sediments entering perennial and ephemeral streams in the management zone; and
- recreational fishing and camping will be discouraged within the buffer zones to avoid disturbance of sites and habitat.

Areas within the catchment upstream of the SMZ (i.e. beyond 1 km), will have the following prescriptions:

- new roads (and the fill slope toe of any new road) to be at least 50 m from any stream, unless site specific sediment management operations are put in place to prevent sediments entering perennial and ephemeral streams in the management zone;
- the number of new roads or stream crossings should be minimised and constructed in accordance with the recommendations described in O'Shaughnessy and Associates (1997);
- all roads and tracks not required for management, harvesting or protection purposes will be progressively closed and rehabilitated (see Chapter 10 – *Forest roads*);
- all remaining existing roads and stream crossings to be assessed and be subject to upgrading or modification, where required according to O'Shaughnessy and Associates (1997); and
- timber harvesting, roading and fuel reduction burning will be scheduled so that the area disturbed at any one time is minimised.

Roads and stream crossings within the SPZ and SMZ constructed prior to the introduction of the *Code* should be reviewed. Road works that result in a net reduction of stream siltation or reduce the risk for siltation should be undertaken in consultation with DSE biologists.

A Strategic Roading Plan will be developed for all Spotted Tree Frog SMZ catchments in recognition that roads and tracks may be a primary source of stream sedimentation. These plans should be completed prior to listing harvesting operations in Wood Utilisation Plans.

Catchments in which mineral exploration and mining activities may affect Spotted Tree Frog habitat will have the following prescriptions to prevent habitat disturbance and changes in water quality (particularly sediment levels) and quantity in streams:

- strict enforcement of the ban on eductor dredging at all Spotted Tree Frog streams;
- prescriptions to protect Spotted Tree Frog habitat, as described above, should be included in licence conditions for exploration licences; and
- mining proposals should be rigorously assessed in all catchments where these activities may affect Spotted Tree Frog habitat; and suitable management prescriptions to prevent direct and indirect disturbances to frogs and their habitat should be developed in addition to those above.

Giant Burrowing Frog *Heleioporus australiacus*

Victorian status: Vulnerable **FFG Act:** Listed **Action Statement:** Prepared **EPBC Act:** Vulnerable

The Giant Burrowing Frog occurs in a variety of montane and lowland forests and woodlands, and associated riparian habitats. It is thought to be dependent on forest for feeding, sheltering and suitable breeding sites and has been recorded substantial distances from water. Eggs are laid in small water-filled burrows, or under thick vegetation in dams, ditches or slow-flowing streams. The species preys on a variety of arthropods, many of which occur in the litter layer of forests. Records of the Giant Burrowing Frog in Gippsland are disjunct, but are predominantly from the central part of the region from near Toongabbie in the west, to near Buchan in the east. Most records are from State forest.

The Giant Burrowing Frog is likely to be most threatened by processes that detrimentally affect breeding sites or the wider forest environment into which it disperses. Activities such as upstream extractive mining, road construction and disturbances to habitat by campers and anglers may result in changes to water flow, water quality or streamside vegetation. Potential increases to stream sedimentation could affect breeding success by filling in the gaps between rocks and pebbles where eggs are laid. Soil compaction by heavy machinery may reduce opportunities for burrowing, and fire that burns the litter layer may remove a potential food source for adult frogs. The species may also be threatened by predation on adults by cats and foxes, and predation on eggs and tadpoles by introduced trout.

The guideline follows the Action Statement for the species (Mazzer 1994), which includes restrictions on timber harvesting at all known Giant Burrowing Frog sites and strict controls on roading and fuel reduction burning in known habitat.

Conservation Guideline

Giant Burrowing Frog

At all sites where the Giant Burrowing Frog is recorded on first-order streams or at sites away from streams, approximately 50 ha (preferably a sub-catchment unit) will be included in SPZ. Sites on second- or higher-order streams will be included in a linear reserve (SPZ) extending 100 m from each bank for 1 km upstream and 1 km downstream from the detection site.

Construction of new roads within the SPZ will be avoided.

When 50 sites (in Victoria) have been located, or in light of further research on this species, this guideline may be reviewed.

Fish

Mountain Galaxias *Galaxias olidus* north eastern Victoria

Victorian status: Data Deficient **FFG Act:** – **Action Statement:** – **EPBC Act:** –

The Mountain Galaxias is a small, non-migratory fish that is usually found at moderate to high elevations (up to 1 800 m altitude) where it can tolerate near freezing water temperatures. It inhabits clear fast-flowing small streams with gravel, sand or boulder substrates, and depends on aquatic invertebrates as a main food source. Populations of Mountain Galaxias are concentrated at headwaters, where trout are often absent and there is abundant in-stream cover. Spawning generally occurs in freshwater during winter and spring, but may extend into summer and autumn in some alpine areas. Other details of the life cycle of the species are poorly known.

Although widespread, the distribution of Mountain Galaxias appears to be highly fragmented. The fragmentation of distribution has been attributed to the introduction of trout, which compete with adult Mountain Galaxias for habitat and food resources, and directly predate on juveniles of the species. Within Gippsland, the Mountain Galaxias has been recorded from several sites on both sides of the Great Dividing Range.

Threats to the species include removal of streamside vegetation which can reduce availability of their main food source. Increased stream sedimentation and turbidity as a result of soil disturbance in the catchment may also destroy suitable habitat and smother eggs deposited on the stream bed. Conservation measures in State forest focus on measures which minimise the risk of sedimentation that may arise from roads and forest operations to ensure no additional pressures are placed on already depleted populations.

Conservation Guideline

Mountain Galaxias

In addition to the permanent and temporary stream buffers applied under the *Code*, include a SMZ buffer 100 m either side of the stream for 1 km upstream and 1 km downstream of known Mountain Galaxias sites. The purpose of the SMZ is to highlight the presence of the species; harvesting operations may proceed within the SMZ with particular attention to the control of sedimentation risk.

Progressively close and rehabilitate all roads or tracks not required for forest management, harvesting or protection purposes in catchments containing Mountain Galaxias.

Where appropriate, seasonally close roads in catchments containing Mountain Galaxias.

Minimise stream crossings over permanent and temporary streams and drainage lines in catchments containing Mountain Galaxias.

3.8 Biodiversity monitoring

Monitoring is an integral component of DSE's Ecologically Sustainable Forest Management system. It provides information on the relative success of forest biodiversity management programs and provides a basis for review and improvement of these programs.

Indicators to monitor and review the sustainability of forest management practices are to be established in Victoria. The indicators will be consistent with the criteria established under the Montreal Process, and will take into account the framework of regional indicators developed by the Montreal Process Implementation Group.

DSE faces a number of challenges in the design and implementation of biodiversity monitoring programs. These include the need to adopt programs that are:

- related to forest management objectives;
- of known and appropriate statistical power for detecting changes in the condition of forest assets or relationships between planning goals and related outcomes;
- relevant to current management practices and strategies and are able to inform decisions about changes in approach;
- accepted by stakeholders; and
- cost-effective and practical to implement.

The currently favoured approach is to select species or processes that allow broader conclusions to be drawn about the condition of forests. The species vulnerability assessment for the Gippsland Comprehensive Regional Assessment identifies relevant species according to four criteria: rarity; population dynamics; spatial dynamics; and, life history parameters. Additionally, consideration needs to be given to habitat requirements at the population level, including the scale at which these operate. Potential candidates for monitoring include:

- large forest owls which range over large areas, are directly sensitive to changes in the structure of forests and which prey on species which may in turn be sensitive to changes in the condition of the forest;
- aquatic invertebrates and vertebrates which may provide an indication of trends in water quality and in turn, the health of aquatic ecosystems;

- arboreal mammals such as Greater Gliders or Yellow-bellied Gliders which are relatively easy to survey and may be sensitive to changes such as a declining abundance of hollow-bearing trees;
- diurnal birds that are dependent on a variety of habitat elements in the forest;
- nectarivorous birds that may be dependent on the flowering capacity of large old trees;
- a variety of plant species of different life histories;
- fire and timber harvesting history to ensure the extent and distribution of these processes are maintained within planned parameters;
- pest and weed populations which may impact on biodiversity assets.

This list needs to be refined and confirmed early in the implementation phase of this Plan in consultation with other land managers, scientists and stakeholders.

In addition to the general indicators of forest biodiversity, specific monitoring of populations of threatened species needs to be undertaken to ensure early detection of population trends.

The Victorian Biodiversity Strategy (NRE 1997f) establishes a requirement for monitoring on a bioregional scale. DSE has a number of Bioregional Networks, which have the task of reporting on the condition of biodiversity assets in each bioregion across all land tenures. Reporting on forest condition will be conducted in this framework.

Action

In conjunction with other public land managers and private forest owners, establish monitoring programs at a bioregional scale to determine the success of the biodiversity management strategies established in this Plan.

Chapter 4 Timber production

The native forest wood based industries are an important part of the Victorian and Gippsland economy. In 1997–98, the sawmilling and residual log processing industries using wood sourced from Gippsland accounted for over 680 direct jobs and the estimated gross value of production of the sawmilling industry in Gippsland was around $24.6 million (VicRFASC 1999b).

Forests in the Tambo FMA are predominantly high quality mature Alpine Ash (*Eucalyptus delegatensis*) and Mountain Mixed Species in the north, and mature Foothill Mixed Species and Coastal Mixed Species in the south. In the northern section of the Central Gippsland FMA in the planning area, the forests comprise Alpine Ash regrowth, primarily from the 1939 wildfire, and small areas of Mountain Ash (*E. regnans*) regrowth and high quality mixed species. Low quality mixed species timber stands are dispersed across the planning area.

Timber harvested from Gippsland is utilised in several ways. These include:

- high grade sawlogs which are processed into kiln-dried and appearance grade products used by the furniture, cabinet-making and building industries;
- lower grade sawlogs which are chiefly sawn into material for house framing and other general construction purposes; and
- residual logs which are produced as a by-product of sawlog harvesting operations and include those low-quality logs suitable for conversion into woodchips for paper manufacturing or sawn products such as pallets and fence palings.

The *National Forest Policy Statement* (Commonwealth of Australia 1992a), to which both Commonwealth and Victorian governments are signatories, sets out a strategy for ecologically sustainable management of Australia's forests. The Statement acknowledges the contribution that forest-based industries make to the national economy and regional and local employment. The focus of hardwood production from Victoria's State forests is to supply a sawlog driven industry that produces value-added wood products within an ecologically sustainable forest management framework.

A key element of the Gippsland Regional Forest Agreement (Commonwealth of Australia and State of Victoria 2000) and this Plan is to provide resource security and development and growth of a sustainable timber industry, within an ecologically sustainable forest management framework.

The *Our Forests, Our Future* policy statement (NRE 2002d) reaffirms the commitment to sustainable management of Victorian forests to ensure the long term future of the forests and regional communities. It provides direction for a change in the management of Victoria's native forests and outlines processes to assist with the transition to the changes that have implications on Victoria's timber industry.

Aims

Provide a sustainable supply of hardwood sawlogs to the timber industry.

Meet sawlog and residual log licence and legislated commitments.

Maximise utilisation of sawlogs from timber harvesting operations while continuing to provide other timber products.

4.1 Hardwood timber supply

This section outlines sustainable timber supply, including timber resource information, the area available for sustainable timber production (the net available productive area) and the estimate of sustainable timber supply from that area. The silvicultural regimes applicable to the Gippsland forests are outlined in the subsequent sections.

Forest resource information – Statewide Forest Resource Inventory (SFRI)

The Statewide Forest Resource Inventory (SFRI) program is being developed by DSE to provide the first comprehensive, standardised statement of the State's native forest resources. The SFRI will be used for a range of applications, including strategic planning and forecasting sustainable yield.

Information generated from SFRI includes the mapping of the productive forest and estimates of standing volume, and forest growth and yield data. From SRFI data the area of productive forest (net productive area) is determined based on species, height and crown cover data. The inventory also includes biodiversity information, such as understorey species, tree hollow numbers, presence of weeds and timber on the ground.

Net available productive area

The net available productive area is the area available for sawlog production, once exclusions are made for the *Code of Forest Practices for Timber Production* (the *Code*) (NRE 1996a), Special Protection Zones (SPZ) and forest of low inherent productivity.

The net available productive area in Gippsland, upon implementation of this Plan, amounts to approximately 222 700 ha, or 15.3% of the extent of public land. It comprises the timber production sub-zone of the GMZ (General Management Zone) and approximately 2 848 ha of the SMZ (Special Management Zone). The extent to which the SMZ is available for harvesting depends on the application of the relevant guidelines. The Estimate of Sawlog Resources (NRE 2002a; NRE 2002b) identified that there are some areas of the net available productive area that would not be harvested due to a range of operational and merchantable constraints (see following section).

Optimisation of supply of forest products from the net available productive area is achieved by:

- adopting best-practice harvesting and regeneration systems;
- ensuring adequate regeneration of harvested areas;
- adopting silvicultural treatments (such as thinning) to enhance sawlog yield within economic and environmental constraints; and
- protecting forests from damage through factors such as wildfire, disease and insect attack.

Table 4.1 provides a timber resource area statement by forest management zone and forest type.

Management zone boundaries may require review during the implementation of this Plan. Chapter 12 (*Plan implementation*) outlines processes for review of the management zones and guidelines in this Plan.

Table 4.1 Timber Resource Area Statement

FMA	Product	Code (ha)	GMZ (ha)	SMZ (ha)[3]	SPZ (ha)	Total (ha)
Central Gippsland[1]	Alpine Ash	3 334	14 786	148	1 337	19 605
	Mountain Ash	1 266	2 540	20	451	4 277
	Mixed Species	23 721	69 610	1 340	35 853	130 524
	Sub Total	***28 321***	***86 936***	***1 508***	***37 641***	***154 406***
	Sub Total – Net Available Productive Area		**86 936**	**1 508**		**88 444**
Tambo[2]	Alpine Ash	2 961	26 909	139	2 962	32 971
	Mountain Ash	667	3 744	28	576	5 015
	Mixed Species	19 762	102 320	1 646	54 376	178 104
	Sub Total	***23 390***	***132 973***	***1 813***	***57 914***	***216 090***
	Sub Total – Net Available Productive Area		**132 973**	**1 340**		**134 313**
Total		***51 711***	***219 909***	***3 321***	***95 555***	***370 496***
Total	**Net Available Productive Area**		**219 909**	**2 848**		**222 757**

Notes:
1 These figures only include those areas of the Central Gippsland FMA that are within the Gippsland planning area (see Map 1).
2 These figures include both the Tambo FMA and the 11 Forest Management Blocks from Wodonga FMA which are within the Gippsland planning area (see Map 1).
3 This area statement takes into account that a part of the SMZ would be available for timber harvesting.
This area statement is based on the data used in the development of the Estimate of Sawlog Resources (NRE 2002a; NRE 2002b) and excludes the range of operational and merchantable constraints identified in the Estimate of Sawlog Resources.
This area does not include the 332 hectares of Historic Reserve that is available for timber production.

Sustainable sawlog supply

Sustainable yield is the forecast rate of harvesting that can be maintained for a given period without impairing the long-term productivity of the land, taking into account ecological integrity, the structure and condition of the forest and the diverse range of forest-based activities.

Under the *Forests Act 1958*, sustainable yields are to be reviewed:

- every five years;
- when significant change in the available sawlog resource occurs (e.g. due to wildfire); or
- at any time the Minister considers appropriate.

The sustainable yield of sawlogs from each of Victorias 15 FMAs is listed in Schedule 3 of the *Forests Act 1958*. The first review for the Tambo, Central Gippsland and Wodonga FMAs occurred in 1996.

A forecast of D+ sawlog availability was made during the RFA process using the Integrated Forest Planning System (IFPS), resource data (including draft SFRI data where available), and the zoning scheme defined in the RFA. The SFRI data available at the time comprised of an area statement for the planning area and an estimate of standing volume in the Tambo and Wodonga FMAs. Sawlog licence levels were reduced and adjustment to the sawlog availability specified in the Gippsland RFA was completed through the Victorian Forest Industry Structural Adjustment Program.

A further review of timber resource availability was undertaken in 2001 as part of a licence renewal project undertaken by the Department. This project was initiated to review sawlog licence levels and the process for licensing sawlogs from State forests, prior to the expiry of existing long-term licences.

The 2001 review took into account new SFRI data, harvesting records and modified yield curves and a range of operational and merchantable constraints that had not previously been assessed. The operational elements included further defined areas within the net available productive area that could not be harvested, such as steep slopes adjacent to *Code* exclusions and species that are not considered merchantable.

When taking into account the new resource information and these operational constraints, the estimated economically accessible sawlog resource for the Central Gippsland FMA (including the area of the FMA outside of the planning area) is approximately 90 000 m^3 nett/yr and 71 900 m^3 nett/yr for the Tambo FMA (including the 11 Forest Blocks of the Wodonga FMA) (NRE 2002a; NRE 2002b). These estimates may change based on new resource information, further discussions with industry about what resources can be accessed and processed economically, and to take into account impacts arising from the 2003 alpine fires. The Estimate of Sawlog Resources (NRE 2002a; NRE 2002b) provides more information on the process for determining timber resource availability in Gippsland.

The Estimate of Sawlog Resources has identified that current sawlog licence levels in the Central Gippsland FMA will need to be reduced and that the species mix in Tambo FMA will change. The *Our Forests, Our Future* policy statement provides a framework for the transition to the new estimates of sawlog supply in Gippsland. In consultation with the industry and affected communities, regionally appropriate transitions to the new resource estimates will be developed.

The timber resource availability in the planning area will be reviewed to take into account impacts arising from the 2003 alpine fires. The sustainable yield rates and sawlog licence levels will continue to be refined as new resource data becomes available.

Action

Formally review sustainable yield for the forests of Gippsland.

Residual logs

Wood made available to industry as residual logs come from forest within the net available productive area for sawlogs, and consists of trees (or parts of trees) which are either too small or too defective to meet sawlog specifications. Residual logs are derived from commercial thinning operations to enhance sawlog production or as a by-product of sawlog harvesting operations. Industry demand for this material varies with market conditions. In 2001–2002 approximately 193 700 m^3 gross of residual logs produced in the planning area was sold into residual log markets.

Residual logs may be sawn to produce timber products such as pallets and fence palings or they may be used in the production of woodchips and pulp, which is further processed into various types of paper. In the Central Gippsland FMA Paperlinx's Maryvale mill utilises residual logs to produce high quality printing and writing papers. Under the *Forests (Wood Pulp Agreement) Act 1996*, Australian Paper Pty Ltd (Paperlinx) has a legislated supply of residual logs from State forest, some of which is sourced from the planning area.

The existence of a strong market for residual logs is an important aid to silvicultural activities. It enables greater utilisation of all merchantable products, lowers costs of regeneration of stands and broadens the options for silvicultural treatment to improve and restore productivity of forests with low volumes of sawlogs.

Actions

Encourage the development of value-added markets for residual logs.

Supply residual logs from timber stands in which the removal of residual material will provide the maximum silvicultural benefits, subject to consideration of environmental, economic and market factors.

4.2 Harvesting and regeneration systems

Successful harvesting and regeneration systems are those that:

- ensure adequate regeneration with species or provenances native to the area, or general locality, with the objective of maintaining the local genetic pools and species mix;
- obtain good stocking and growth;
- maximise sawlog yield;
- minimise environmental impact on soil, landscape, flora, fauna and cultural values and water catchments;
- incorporate social and economic considerations; and
- protect regeneration from significant levels of damage from factors such as browsing and disease.

Seed tree and clear felling systems are the main harvesting and regeneration systems used within the planning area. For each harvesting operation, the type of system used is determined by the characteristics of the stand. Seed tree systems are generally used in mixed species stands, whereas clear felling systems are mainly used in even-aged Ash forests and in some high elevation mixed species forests in Gippsland where these systems aid regeneration. Current and potentially available silvicultural treatments are listed in Table 4.2.

Guidelines and prescriptions for the application of harvesting and regeneration systems in State forest are set out in the *Code of Forest Practices for Timber Production* (the *Code*), Regional Management Prescriptions (NRE 2002c) (see Chapter 12 – *Plan implementation*) and the *Utilisation procedures for all commercial harvesting in State forests in Victoria* (NRE 2001d). The *Code* provides Statewide goals and guidelines that apply to timber harvesting, timber extraction roading, regeneration and reforestation in native forests in Victoria.

Operational procedures and standards are also provided in the 'Native Forest Silviculture Guidelines' (CNR 1993a; CNR 1993c; CNR 1994a; CNR 1994b; CNR 1995c; NRE 1997a; NRE 1997e; NRE 1998b; NRE 2001b), the 'Eastern Research and Development Action Group (ERDAG) Operational Guidelines' (ERDAG 1997; ERDAG 1998a; ERDAG 1998b; ERDAG 2000a; ERDAG 2000b) and the 'Mountain Ash Research and Development Action Group (MARDAG) Operational Guidelines' (MARDAG 1992a; MARDAG 1992b; MARDAG 1992c; MARDAG 1992d; MARDAG 1993; MARDAG 1994; MARDAG 1995; MARDAG 1996; MARDAG n.d.-a; MARDAG n.d.-b).

Table 4.2 Current and potentially available silvicultural treatments for the State forests of Gippsland

Forest type	Silvicultural treatments currently used	Additional silvicultural treatments potentially available
Ash Species	Clear felling	Pre-commercial thinning
	Reforestation	Overwood removal
	Commercial thinning	Shelterwood[1]
		Seed tree
Mixed Species	Seed tree	
	Clear felling	Overwood removal
	Reforestation	Shelterwood[1]
	Commercial thinning	Group selection
	Pre-commercial thinning	Single tree selection

Note:
1 Availability is subject to continued research and development to address safety, costs and productivity.

The *Code* requires the regeneration of native forest coupes following timber harvesting. Regeneration success rates have been variable across the planning area in the period July 1993 to June 1997 (DSE 2003c). Factors which influence whether regeneration will establish successfully include: the distribution and amount of receptive seedbed across a coupe; the seed supply; and post germination conditions, such as rainfall, temperature, competition from other plant species and browsing.

A receptive seedbed can comprise either mechanically disturbed soil (such as that provided by harvesting equipment during logging) or an ash bed (produced by burning the heads of trees and waste wood remaining after harvesting). Re-treatment of inadequately stocked regeneration areas may involve mechanical disturbance of the soil surface (through ripping or root-raking) to create the required seed-bed.

Burning provides a good distribution of receptive seedbed across the coupe, which assists in germination of seed. It significantly reduces fire hazards, reduces the competition between eucalypt seedlings and other plants remaining in the coupe, and is an efficient means of providing a suitable seedbed. However, it may result in higher levels of nutrient loss from the site compared to mechanical disturbance and it may damage retained trees.

Mechanical disturbance is an effective means of providing a suitable seedbed, however, it can damage the understorey and may lead to poor regeneration of some species such as tree ferns. The use of understorey islands in harvesting Wet Forest coupes where mechanical disturbance is excluded may assist in improving the regeneration of these species (see NRE 1998c).

Seed of a suitable provenance for regeneration of harvested coupes may be applied by aerial or hand sowing, by planting seedlings, or from seed fall from trees retained on the coupe for the supply of seed. The method utilised varies according to the silvicultural system (NRE 2001b).

Application of seed tree, clear felling and thinning systems

Seed tree

This system involves the retention of about 5–9 well-spaced trees of good form per hectare, which carry adequate capsule crops for the supply of seed, together with trees retained for habitat purposes. A regeneration burn is generally used to prepare the seedbed and induce seed fall from the retained trees. Even-aged regeneration is achieved. This silvicultural system is used in years of good seed crops and where suitable seed trees are distributed throughout the coupe. It is most commonly applied in mixed species stands where this method achieves good regeneration results.

Clear felling

This system involves the removal of all trees within the coupe, except those retained for conservation purposes. Seedbeds are then prepared by either high intensity burns or mechanical disturbance. Regeneration is achieved by the application of seed of a suitable provenance by aerial or hand sowing, or more rarely by planting seedlings. Even-aged regeneration results from this silvicultural method. Clear felling is most commonly practised in Alpine Ash and Mountain Ash forests and may also be used in some even-aged mixed species forests. This system achieves good regeneration in these forest types which require reduced competition from other vegetation and access to light and water for successful seedling establishment.

Thinning, overwood removal and reforestation

Thinning of stands and overwood removal is discussed in section 4.3 (*Regrowth management*). Reforestation is discussed in section 4.4 (*Reforestation*).

Management Guideline

Choice and application of harvesting and regeneration systems

CHOICE

The system or combination of systems chosen for a particular coupe should take account of the characteristics of the forest stand and of other values in the area.

Seed tree systems should be considered where:

- the forest stand is generally mature and even-aged;
- the productivity of the forest has been substantially degraded from past selective harvesting, fire or disease as discussed in the following section on 'forest rehabilitation and low-volume forest management';
- trees carrying adequate seed in their crowns can be retained at the required spacing; and
- climatic conditions are harsh and seedfall distributed over a longer period of time may increase regeneration success compared to systems such as clear felling where there is one application of seed.

The clear felling system should be considered for stands that:

- are predominantly even-aged with little or no regrowth present;
- support relatively high standing volumes of sawlog; and
- can be regenerated using seed (or seedlings) obtained from the locality.

APPLICATION

The harvesting and regeneration system may need to be modified consistent with the *Code* and this Plan where other values such as landscape (see Chapter 8) must be maintained.

Regeneration operations, particularly seedbed preparation, should where appropriate take advantage of the peak in natural seed fall from retained trees.

The intensity of regeneration burns may need to be managed to contribute to the establishment of regeneration while minimising damage to retained trees.

Mechanical disturbance methods for seedbed preparation should be considered where regeneration burns are not proposed. Mechanical disturbance will be excluded from understorey islands, where these are required.

Regeneration monitoring should be conducted on all coupes where regeneration is an objective of the silvicultural system. Where monitoring indicates that regeneration is unsatisfactory, sites should be retreated to ensure adequate regeneration.

Actions

Apply appropriate harvesting and regeneration systems in accordance with:

- *the Code;*
- *the above Guideline for the Choice and Application of Harvesting and Regeneration Systems;*
- *Native Forest Silviculture Guidelines; and*
- *Eastern Research and Development Action Group (ERDAG) and Mountain Ash Research and Development Action Group (MARDAG) Operational Guidelines.*

Continue to review harvesting and regeneration systems and revise field practices based on research findings.

Implement re-treatment programs to reduce the area of understocked coupes.

Forest rehabilitation and low-volume forest management

Forest stands with low volumes of material suitable for sawlog production occur across Gippsland. Much of the mixed species forests on the lower foothills and coastal areas are within this category.

Low-volume forests are those that produce low volumes of sawlogs under natural conditions; that is, the forests inherently carry low sawlog volumes. Silvicultural treatment for timber production purposes is not undertaken in inherently low-volume forests as these sites do not have the capacity to produce sawlogs.

Forests with degraded timber values are those on sites with the potential to produce commercial volumes of timber, but which currently carry low volumes of sawlogs as a result of past practices or events such as selective harvesting or wildfire. Past selective harvesting has removed the better quality merchantable trees from these forests, particularly species producing durable timbers such as Forest Red Gum (*Eucalyptus tereticornis*), Red Ironbark (*E. tricarpa*), Yellow Box (*E. melliodora*) and Coast Grey Box (*E. bosistoana*).

Forest Red Gum, Yellow Box and Coast Grey Box are generally no longer harvested in the planning area. Selective harvesting of Red Ironbark is no longer permitted in the planning area, however, other silvicultural operations may continue. Silvicultural practices may be applied to promote the regeneration of Red Ironbark and other durable species.

Forests with degraded timber values have little capacity to produce commercial volumes of timber unless rehabilitation is undertaken. Silvicultural techniques can be used to improve and restore productivity to these areas.

Actions

Forest stands with degraded timber values should, where feasible, be restored to a productive state by appropriate silvicultural techniques.

Incorporate measures in the Gippsland Region Management Prescriptions for Timber Production and Other Forest Uses *which exclude harvesting of Forest Red Gum, Yellow Box and Coast Grey Box stands, except for when it is undertaken to facilitate propagation or regeneration of these species.*

Incorporate measures in the Gippsland Region Management Prescriptions for Timber Production and Other Forest Uses *to exclude selective harvesting of Red Ironbark in the planning area, and permit other silvicultural practices to promote regeneration of Red Ironbark.*

Salvage

Events such as wildfire, wind storm, disease or extensive insect attack may lead to substantial areas of forest consisting of dead or damaged trees. Where these areas occur within the GMZ and SMZ, salvage operations may be implemented to recover valuable timber resources. Generally, wildfire events in SPZ are unlikely to permanently destroy the values of the SPZ and salvage would not be proposed.

Timber salvage operations within areas affected by the 2003 alpine fires will be undertaken within the planning area during implementation of this Plan.

Management Guideline

Salvage harvesting and regeneration

Areas of forest within GMZ subject to extensive damage should be considered for salvage harvesting following the preparation of a salvage plan. The salvage plan must be prepared in accordance with the *Code* and Wood Utilisation Planning guidelines and address:

- flora, fauna, cultural and water quality and quantity values;
- access;
- priorities for harvesting the resource and the volume of timber expected to be recovered; and
- rehabilitation of the area following the salvage operation including regeneration.

Areas of SPZ and SMZ may be available for salvage harvesting where the:

- impact of the destructive event has led to the SPZ or SMZ to no longer contain the value(s) for which the zone was identified;
- the value(s) for which the area of SPZ or SMZ were identified may be better represented by reserving other areas of forest in SPZ or SMZ;
- the value(s) of the SPZ or SMZ are primarily cultural and historic, and salvage harvesting will not disturb the historic fabric of the site.

Where SPZ is proposed for salvage harvesting, proposed amendments to the zoning scheme should ensure that there is no net deterioration in the level of protection of values in the SPZ, nor any long-term reduction in timber production capacity. Replacement areas for SPZ should be identified prior to the salvage operation commencing.

Action

Prepare salvage harvesting and regeneration programs as needed in accordance with the Code*, Wood Utilisation Planning guidelines and the above guideline.*

4.3 Regrowth management

Thinning

In order to improve or maximise future sawlog production from young regrowth forests thinning operations are carried out in State forest. Thinning treatments involve the removal of trees that have less potential to produce sawlogs in order to concentrate the future growth of a stand onto the trees selected to be retained. Thinning treatments can be pre-commercial or commercial. In pre-commercial thinning (or spacing) no merchantable timber is produced, whereas in commercial thinning residual logs and small sawlogs are produced.

Thinning operations are designed to achieve stocking levels that improve the growth of the remaining trees to produce sawlog quality logs. Consequently, thinning is usually focused on regrowth stands that have the potential for high timber productivity. These operations aim to increase the proportion of high grade (currently A or B grade) sawlogs in the forest which can produce high value timber products.

Commercial thinning in Gippsland occurs in the mixed species forest regrowth in the Boola Boola State Forest, Alberton West State Forest and the Won Wron State Forest (VicRFASC 1999b). In addition, commercial thinning in Alpine Ash regrowth and pre-commercial thinning in mixed species regrowth is carried out in the Tambo FMA.

Management Guideline

Thinning

Commercial and pre-commercial thinning should be conducted in accordance with the Native Forest Silviculture Guidelines for thinning (CNR 1992; NRE 1997e).

Commercial thinning treatment should be directed to stands that meet the thinning criteria described in the Native Forest Silviculture Guidelines and maximise the growth of sawlogs (younger stands should be preferred over older stands, for instance).

Pre-commercial thinning should be targeted to stands in the medium to high productivity forest areas to maximise the future growth rates of sawlogs.

Regrowth thinning operations should be conducted in a manner that ensures damage to retained trees is kept within acceptable limits (NRE 1997e). Non eucalypt understorey species should be retained, where practicable, unless they contribute a high proportion of the stand stocking and are considered to have a significant competitive effect.

Regrowth thinning operations should be dispersed across the forest to reduce the concentration of areas with high fire hazard and to protect against the loss of thinned areas from a single wildfire.

Thinning areas are included in the Wood Utilisation Planning process.

Action

Identify areas suitable for thinning in moderate to high productivity sites, and encourage commercial thinning operations where suitable markets exist.

Overwood treatment

Suppression of regeneration and regrowth by trees remaining on a coupe after harvesting (overwood or non-merchantable trees) is well documented (Incoll 1979; Bassett 2000). The level of reduction in the sawlog productive capacity of a forest stand is related to the level of overwood within it. Operations involving the selective removal of mature trees from established stands of regrowth are aimed at releasing regrowth from competition. The operation does not remove trees required by prescription for habitat purposes.

The use of overwood treatment operations is limited in Gippsland. However, the expansion of residual log markets may enable greater utilisation of silvicultural treatments, such as overwood removal, to improve the productivity of regrowth stands.

Management Guideline

Overwood

Subject to favourable economic analysis, suppressive overwood, including seed trees, should be treated to reduce competition provided:

- it is not required for other management purposes (such as habitat trees);
- the amount of overwood is suppressing the regrowth stand beneath;
- the forest is capable of producing commercial quantities of sawlogs; and
- techniques recommended in *Treatment of Non-merchantable Trees* (NRE 1999b) are adopted.

Action

Conduct overwood treatment consistent with the guideline above.

4.4 Reforestation

Fire, insect attack, disease and poor regeneration in the past has resulted in some sites in Gippsland where eucalypt regeneration has not established.

Reforestation with eucalypt species would be required for these areas to be available for future timber production. The *Code* and Native Forest Silviculture Guidelines and MARDAG Operational Guidelines provide guidelines for reforestation of such areas. The Gippsland RFA notes the intention to wherever possible enhance Statewide silvicultural programs and reforestation works to improve the productive capacity of State forests.

Action

Implement a reforestation program across State forest in Gippsland where the site quality and conditions are suitable and funding permits.

4.5 Other timber products

The State forests of the planning area are close to large rural centres, numerous small towns and rural communities. This creates demand for a range of timber products other than sawlogs or residual logs, including firewood and farm timbers (post and poles).

Firewood

The extent of firewood collection from forests varies across Gippsland. Most firewood collection is for private use, although, commercial cutters collect firewood from logging residues following sawlog harvesting or during thinning operations, for example, in the Boola Boola State Forest. In 2001–2002, the volume of firewood sold from the planning area (to both commercial and non-commercial cutters) totalled around 10 000 m^3. Agencies (such as service stations and milkbars) in various towns throughout Gippsland are authorised to sell firewood permits (in 1 m^3 lots).

Under natural conditions in a forest, there is always a certain amount of woody debris on the ground (fallen trees and branch-wood) and a number of large dead standing trees that are components of faunal habitat. Removal of this material, through firewood harvesting, can reduce habitat values. Dispersed harvesting of naturally-fallen timber is unlikely to remove significant amounts of habitat. However, caution must be exercised in areas close to towns, where demand for firewood is high, because if other sources of wood (such as logging coupes) are not available, almost all naturally-fallen timber may be removed.

It is intended to encourage commercial harvesting of firewood in Gippsland. This approach will enable greater regulation and control over firewood activities, allow firewood to be incorporated into other timber production operations and provide firewood in quantities to meet the demands of local and more distant markets.

Consideration was given to the preference of domestic firewood cutters to obtain material close to towns, however, the zoning scheme includes SPZs within which there are a number of current firewood collection areas. Firewood collection will no longer be permitted in these SPZs. The Gippsland RFA required harvesting of firewood to be phased out of these areas by March 2003. The public have been made aware of these changed arrangements, particularly the State forests close to Yarram and Heyfield, and the identification of alternative areas. Firewood permits will also specify the locations where firewood may or may not be obtained.

A Firewood Action Plan for Victoria is currently being developed by DSE in accordance with the requirements of *A National Approach to Firewood Collection and Use in Australia* (ANZECC 2001). This national approach to firewood management aims to ensure that all firewood collection, including commercial cutting, is ecologically sustainable, and is not a major cause of loss and degradation of remnant woodland ecosystems, or the habitats of threatened species.

Management Guideline

Firewood activities

Harvesting of firewood should be targeted at those areas where it has the greatest potential to increase sawlog productivity or assist forest management activities.

Commercial firewood cutting will be managed in accordance with the *Code* and Wood Utilisation Planning guidelines.

Agencies permitted to sell firewood permits should be established in towns in close proximity to State forest.

Maps of current domestic firewood areas should be available at relevant DSE offices and agencies in Gippsland. The location of agencies should be advertised, periodically each year, in local newspapers.

Firewood permits should specify the location where collection may or may not occur.

Wherever possible, domestic firewood collection should be from areas where other harvesting activities have been undertaken. Harvesting of dead standing trees for firewood is not permitted.

Enforcement patrols should be undertaken, especially during peak collection times.

Actions

Provide firewood from timber harvesting or silvicultural operations within the GMZ and SMZ, where it is consistent with management aims.

Provide information to the public regarding the exclusion of firewood collection from the SPZs identified in this Plan.

Provide firewood permit holders with information of the specific areas where firewood collection may, or may not, occur.

Encourage commercial firewood harvesting operations.

Include areas designated for firewood harvesting in the Wood Utilisation Plan (WUP).

Posts and poles

Small quantities of posts and poles for fencing are produced from the forests of Gippsland. Production of posts and poles varies across the region depending on the availability of durable species. In some locations, Red Stringybark (*Eucalyptus macrorhyncha*), Yellow Stringybark (*E. muellerana*) and White Stringybark (*E. globoidea*) and other durable species from low foothill forests and woodlands are utilised from State forest and private land (VicRFASC 1999b).

The zoning scheme includes SPZs in areas utilised for post and pole production. The Gippsland RFA required harvesting of posts and poles to be phased out of these SPZs by March 2003. Post and pole production within the GMZ will be reviewed to ensure sustainability. This review will take into account silvicultural practices and areas available for harvesting of post and poles.

Actions

Review post and pole production in Gippsland by December 2005.

Integrate post and pole production with other forest operations where possible.

Include areas designated for post and pole harvesting on the WUP.

Minor forest produce

There is a small demand for minor forest products such as eucalypt seed, understorey species, cut flowers, foliage, wood-chop logs, stakes and specialty timbers.

Seed, in excess of DSE requirements for regeneration, may be sold under the *Forests Act 1958* to private collectors for commercial and non-commercial purposes. The *Flora and Fauna Guarantee Act 1988* provides for a permit system to control seed collection from protected species. Other minor forest produce is sold by licence.

Specialty timbers in small quantities occasionally become available during sawlog harvesting and road construction. Specialty timbers comprise:

- tree species with exceptional appearance such as Blackwood (*Acacia melanoxylon*) and Silver Wattle (*A. dealbata*);
- feature material such as burls, fiddle-back and birds-eye grain.

Harvesting of tree ferns may be authorised by DSE in areas of permanent vegetation clearance, site maintenance or other clearing activities. In State forest, authorised harvesting of tree ferns from new road alignments and road widening operations is required to be consistent with the *Code of Forest Practice for Timber Production*, regional prescriptions and the road alignment approved within the Forest Coupe Plan. Although support in principle is given to salvaging tree-ferns from logging coupes on public land, this activity is not permitted until the ecological sustainability and operational viability of this activity has been addressed (NRE 2001e).

Table 4.3 indicates the management of the collection of other forest products. The management of collection of these products must comply with the provisions of the *Flora and Fauna Guarantee Act 1988*.

Table 4.3 Conditions for the licensed collection of other forest products

Product	Management	
Cut flowers	Conditional	Not from rainforest or Victorian rare and threatened species.
Foliage	Conditional	Not from rainforest or Victorian rare and threatened species.
Grass trees	Conditional	From new road alignments and road widening operations.
Ground ferns	Conditional	From timber harvesting coupes, new road alignments and road widening operations.
Moss covered rocks or logs	Prohibited	
Sphagnum moss	Prohibited	
Tea tree stakes	Conditional	From timber harvesting coupes. Not from swamp or riparian areas.
Tree ferns (live)	Conditional	From new road alignments and road widening operations.

Actions

Consider DSE seed requirements prior to the issue of any seed collection licences.

Direct, as far as practicable, the collection of seed and other minor forest products to those areas affected by timber harvesting, silvicultural or road-construction operations. For other areas, activities should be conducted in a manner that is compatible with protection of natural values.

Continue to supply miscellaneous forest produce subject to Table 4.3 and the provisions of the Flora and Fauna Guarantee Act.

Sell by tender or by licence for small lots, those specialty timbers produced during normal management activities and not otherwise licensed.

Chapter 5 Streams and catchments

The planning area contains some of Victoria's most important inland fishery, tourism, recreational and consumer water resources, including the Gippsland Lakes and Lake Glenmaggie. Each of the major river systems flowing into the Gippsland Lakes (Latrobe, Avon, Mitchell, Nicholson and Tambo Rivers) are within the planning area. The Gippsland Lakes system has international importance as a wetland and is listed under the Ramsar Convention together with Corner Inlet, which is located in South Gippsland.

The Tambo, Mitchell, Thomson, Latrobe and South Gippsland river basins comprise the bulk of the planning area. The annual water usage within these 5 river basins is approximately 558 370 ML with 80% derived from surface water and 20% from groundwater resources. Water usage within these basins can be attributed to irrigation (67%), urban and industrial consumers (30%) and rural users (3%). A further 71 130 ML of groundwater is pumped for mine de-watering purposes (NLWRA 2001).

A part of the Upper Murray, Goulburn, Snowy and Bunyip River basins also covers the area (DWR 1989). Rainfall within the region varies from 600 mm on the coastal plains near Seaspray to between 900 mm and 1 500 mm on parts of the Strzelecki Ranges and Wilsons Promontory.

This Plan recognises the importance of protecting water quality and yield within State forest, and that water harvested from State forest is environmentally sustainable. Areas of ecological significance in or around aquatic environments will be managed for biological diversity and to maintain viable populations. Management actions for biodiversity are detailed in Chapter 3 – *Biodiversity conservation*.

Aims

Ensure that in State forest:

- *in-stream water quality meets State Environment Protection Policy standards for current and likely future urban and rural water supply uses;*
- *in-stream water quality is suitable for naturally-occurring populations of aquatic flora and fauna;*
- *long term water yield from catchments is maintained or enhanced;*
- *groundwater recharge areas are not adversely affected as a consequence of management activities; and*
- *natural values of streams are maintained.*

Policy and statutory framework

Water management and monitoring responsibilities are guided by a range of legislation, policies, codes of practice, and management plans and strategies. These include:

- *Water Act 1989* which provides mechanisms for the Statewide allocation of water resources and provides for the integrated and sustainable management of water resources across the State;
- State Environmental Protection Policy (SEPP) (Waters of Victoria) including the schedules specific to the surface waters in Gippsland (VicEPA 1998);
- *Catchment and Land Protection Act 1994* providing for integrated management and protection of catchments;
- *Heritage Rivers Act 1992* which identified rivers and catchments with significant nature conservation, recreation, scenic or cultural heritage values (see section 5.2); and
- The *Code of Forest Practices for Timber Production* (NRE 1996a) establishes goals, guidelines, and some minimum statewide prescriptions for environmental protection, include water yield, water quality and aquatic habitat protection (see section 5.1).

The *Catchment and Land Protection Act 1994* established nine Catchment Management Authorities (CMA) in Victoria. The East Gippsland and West Gippsland CMAs predominantly cover the planning area and are responsible for implementing regional catchment strategies (EGCALP 1997; WGCALP 1997) which identify the objectives and priorities for maintaining the quality of land and water resources. The Port Phillip Catchment and Land Protection Board and North East CMA cover small sections in the west and north of the region respectively. The actions and strategies within this Plan have been developed in accordance with those strategies. The regional catchment strategies are currently being reviewed by the CMAs. Implementation of this Plan (see Chapter 12) will need to ensure that it continues to be in accordance with the regional catchment strategies.

Areas within catchments warranting particular attention, such as areas required for water supply can be declared Special Areas under the Catchment and Land Protection Act. In Gippsland State forests, there are 13 Special Areas classified as Special Water Supply Catchments. The Special Water Supply Catchments and associated Special Area Plans are discussed in section 5.3.

The *Victorian Coastal Strategy* (Victorian Coastal Council 2002) and *Gippsland Lakes Coastal Action Plan* (Gippsland Coastal Board 1999) have been developed in accordance with the *Coastal Management Act 1995* to provide strategic planning and direction for the management of Victorian coastal areas. DSE in accordance with the Coastal Management Act is required to take all reasonable steps to give effect to the Victorian Coastal Strategy and Coastal Action Plans in regards to management of Crown land.

The Victorian River Health Strategy (VRHS) (NRE 2002g) provides a framework in which the Government in partnership with the community will make decisions on the management and restoration of Victoria's rivers. The objective for the VRHS is to achieve healthy rivers, streams and floodplains that meet the environmental, economic, recreational and cultural needs of current and future generations.

Other legislative and policy initiatives are outlined in more detail in the *Gippsland Comprehensive Regional Assessment* (VicRFASC 1999b).

Water reticulation and treatment management

The Gippsland and Southern Rural Water Authority (trading as Southern Rural Water) manage and control the diversion and use of water from rivers and groundwater aquifers for bulk supply to irrigators, regional water authorities, and the Latrobe Valley electricity generators.

Supply to non-metropolitan urban consumers is provided by Central and East Gippsland Regional Water Authorities (trading as Gippsland Water and East Gippsland Water respectively). The level of treatment for potable water within the planning area varies from minimal to advanced, depending on the nature of the catchment and the requirements of communities being supplied. Any significant reduction in water quality could add to the cost of water supply through necessitating the introduction of higher levels of treatment. Accordingly, maintaining water quality standards is a high priority for forest management.

Surface water and storages

A number of water storages are located within the planning area including Lake Glenmaggie, Lake Narracan (Yallourn Storage) and Hazelwood Pondage. Lake Glenmaggie is the main source of water for the Macalister Irrigation District (DWR 1989). It also supplies private hydro-electric stations with water for power generation (Southern Rural Water 1998).

Some towns within Gippsland draw water from Moondarra Reservoir, Thomson Dam and Blue Rock Lake, which are located outside the planning area. Water storages such as Lakes Eildon, Dartmouth and Hume receive water from catchments within the planning area.

Groundwater

Groundwater Management Areas (GMAs) have been established across Victoria to assist in the management of groundwater resources. GMAs have been identified for Lang Lang, Leongatha, Seacombe, Sale, Moe, Denison, Wa-De-Lock and Wy-Yung regions, parts of which occur in State forest (less than 36 000 ha). The GMAs are primarily recharged by rainfall.

When groundwater allocations to users exceed 70% of the Permissible Annual Volume for an area, the GMA may be declared a Groundwater Supply Protection Area (GSPA), requiring a legally enforceable Groundwater Management Plan to be developed. These Plans ensure that the groundwater resources are managed equitably, ensuring the long-term sustainability of the resource.

The Sale, Denison and Wy-Yung GMAs have been declared GSPAs. These areas are primarily beneath agricultural land and are generally unaffected by forest management activities.

Water quality and yield

Maintaining water quality and yield is important for environmental reasons as well as for domestic and industrial water supply. The relatively undisturbed stream environments in forests are important habitat for flora and fauna species and communities. Maintaining water quality is therefore an important factor in maintaining biodiversity.

The Gippsland lakes system has an extensive catchment area that covers a significant proportion of the planning area. DSE actively contributes to strategic planning of the Gippsland lakes (Gippsland Coastal Board 1999; Victorian Coastal Council 2002) and ensures that over the broader landscape water quality is maintained or improved in the forested catchments of State forest.

A review of water quality and aquatic ecosystems of the Gippsland Lakes (Harris *et al*. 1998) draws together a wide range of research conducted over many years. It found that over half the nutrient load to the lakes comes from the Latrobe, Macalister and Thomson Rivers. Major sources of nutrients stem from erosion and gullying associated with large rainfall events, particularly on cleared agricultural and urban land, and there is a good correlation between flows and loads of suspended solids and nutrients. Forested catchments afford significant protection from high rainfall events by buffering and dispersing flows into streams.

DSE in conjunction with Catchment Management Authorities have recently benchmarked the environmental condition and health of Victoria's major rivers and tributaries. The Index of Stream Condition benchmark at 1999 indicates that the condition of streams in the forested parts of the Tambo, Mitchell, Thomson, Latrobe and South Gippsland catchments in the planning area is good to excellent.

Catchment yield is an important consideration in water supply. An area of vigorously growing young forest will use more water than a mature forest of the same area. Hydrological research in the Central Highlands Ash forests indicates that large scale regeneration or reforestation activities following timber harvesting or wildfire can reduce long term water yields in Ash forests (Kuczera 1985). Water yield depressions can therefore occur in forested catchments where Ash eucalypt species predominate and a high proportion of regrowth forests exists. The change in water yield as mixed species forest matures is less well understood.

The following sections address the requirements of the *Code of Forest Practices for Timber Production*, management of water supply catchments, management of roads and tracks, and monitoring.

5.1 Code of forest practices requirements

The *Code* establishes goals, guidelines, and some minimum statewide prescriptions for environmental protection. Regional forest management prescriptions are developed based on the *Code* and standards may be enhanced where required by regional conditions. The continued application of the *Code* and regional prescriptions provides an appropriate level of water quality protection in the General Management Zone (GMZ).

The *Code* contains a number of measures aimed at protection of water yield, quality and aquatic habitat protection.

The measures aimed at protection of water quality and aquatic habitat protection in public native forests include:

- the retention of a buffer of riparian and other vegetation within at least 20 m of permanent streams (streamside reserve). This buffer is increased for soils with low permeability and high potential for overland flow to a 30 m buffer for slopes 0–20°, or a 40 m buffer for slopes 21–30°;
- the retention of at least 20 m of riparian and other vegetation from permanent springs, swampy ground, wetlands and bodies of standing water. This buffer is increased for soils with low permeability and high potential for overland flow to a 30 m buffer for slopes 0–20°, or a 40 m buffer for slopes 21–30°; and
- the retention of a filter strip at least 10 m wide on either side of temporary streams and drainage lines. This filter strip is increased to 15 m for soils with low permeability and high potential for overland flow and a slope of 21–30°.

Further, the *Code* requires timber harvesting and carting to be suspended during periods of wet weather, and the application of a general maximum slope limit of 30° for harvesting operations. Other *Code* requirements addressing road and track design and maintenance standards, and the siting and management of log landings and log dumps, assist in protecting water quality in forested catchments.

The *Code* requirements may be extended (in favour of increased protection for the environment) through forest management prescriptions or through the judgement of DSE Forest Officers while developing coupe plans. Forest management prescriptions have been developed for the planning area (NRE 2002c). These prescriptions and the different buffers based on stream characteristics have implications for field application. DSE's field guides (NRE 2000a) have been developed to assist in developing harvesting operation plans based on slope and soil characteristics.

The *Code* also provides for water yield from water supply catchments to be protected by appropriate rotation lengths and silvicultural techniques and, if appropriate, limitations on annual harvest areas.

In an investigation of the impact of timber harvesting on water quality and yield in the Otway Forest, (Sinclair Knight Merz 2000) reviewed the Best Management Practices (BMPs) designed to minimise the impacts on soils and water. They concluded that the suite of BMPs implemented in the Otways as measures under the *Code* are generally in line with equivalent soil/water BMPs elsewhere in Australian forests. The measures in the *Code* are also applied in Gippsland.

Action

Review and, if necessary, modify Gippsland Region Management Prescriptions for Timber Production and Other Forest Uses to ensure they conform with this plan.

5.2 Heritage Rivers and Natural Catchment Areas

The *Heritage Rivers Act 1992* provides for the protection of Heritage River Areas and Natural Catchment Areas which have significant nature conservation, recreation, scenic or cultural heritage attributes.

Heritage River Areas contain a number of outstanding scenic, recreation, cultural and nature conservation values. The Heritage River Areas in State forest in Gippsland protect parts of the Mitta Mitta River, Wonnangatta and Mitchell Rivers and the Thomson River.

Natural Catchment Areas are catchments which are considered to be in an essentially natural condition and should be managed to protect their condition. The Natural Catchment Areas in State forest in Gippsland are Stony Creek and Punchen Creek.

Draft management plans for Heritage River Areas and Natural Catchment Areas (NRE 1997b; NRE 1997c) have been prepared in accordance with the *Heritage Rivers Act 1992* and recommendations of the Land Conservation Council (LCC) (LCC 1991a).

Action

Include Heritage River Areas and Natural Catchment Areas in the reserve system and manage in accordance with the Heritage Rivers Act and approved management plans.

5.3 Water supply catchment areas

Thirteen areas in State forest in the planning area have been declared Special Water Supply Catchment Areas under the *Catchment and Land Protection Act 1994* (See Appendix O). In addition, part of the Thomson River catchment is within the planning area. The catchments differ in area, in the range of land uses, in soil and land-form characteristics and in the uses made of the water harvested from them.

Special Area Plans, as described in the Catchment and Land Protection Act, specify how particular land management issues in the Special Water Supply Area must be addressed. The Minister for Environment and DSE must have regard to Special Area Plans applying to land under their control.

Special Area Plans exist for four Special Water Supply Catchments Areas within State forest in the planning area. Table 5.1 provides a summary of the actions recommended in the Special Area Plans. Operations within these catchments shall be in accordance with the plans.

Additional management considerations are contained within the Gippsland Forest Management Prescriptions (NRE 2002c). For example, additional actions have been applied in the Glenmaggie and Lake Hume water supply catchments. These actions provide for harvesting and cartage suspension restrictions from 1 June to 31 October with a 40 m buffer on specified sections of the Macalister, Wellington, Barkley Rivers and Glenmaggie Creek. Harvesting and cartage suspension restrictions apply from 1 July to 30 September in the Lake Hume Special Water Supply Catchment.

The suspension periods listed in Table 5.1 may be varied by the Regional Forest Manager after consultation with the relevant responsible authorities. Standard suspension dates may be varied depending on weather conditions.

Table 5.1 Effect of Special Area Plans on State forest management

Catchment	Harvesting and cartage suspension restrictions	Summary of requirements affecting forest management
Lake Hume (Northern)	No	• In accordance with Plan No. S-1275B
Mirboo North	No	• Buffer of 100 m around the off-take weir • Buffer from the banks of streams, watercourses and spring areas specified on Plan No. S-101, and throughout the catchment, of between 20 m and 40 m
Nicholson River	No	• Slope restrictions greater than 30° • Buffer of 200 m around the Nicholson Reservoir and Water supply off-take on the Nicholson River as shown on Plan No. S-1411 • Buffer of 40 m around Nicholson and Barmouth Rivers as shown on Plan No. S-1411 • Buffer of 20 m from the banks of permanent streams and drainage lines as shown on Plan No. S-1411
Tyers River	1 June to 31 October (above 650 m)	• Harvesting restrictions on land above 1220 m • Buffer within 200 m of Moondarra Reservoir foreshore • Buffer of 40 m on Jacobs Creek up to the Walhalla Road • Buffer of 20 m from all other streams and drainage lines

Source *Catchment and Land Protection Act 1994*, (DWR 1989).

Catchment yield is an important consideration in water supply. If a significant proportion of a catchment (greater than 20% to 30%) is harvested over a relatively short period, detectable changes to the seasonal pattern of run-off may result (O'Shaughnessy and Jaysuriaya 1991). Based on preliminary analyses of harvesting in recent decades, it appears that the area of timber harvesting in domestic water supply catchments is at a level which is not likely to be causing adverse impacts on current water yields.

To ensure long term water yields from domestic water supply catchments are not adversely affected, timber harvesting in water supply catchments will continue to be managed in accordance with the *Code* to minimise any long term impact on current water yields.

If during implementation of this Plan the rate of harvesting needs to be limited to minimise impacts on water yield in water supply catchments, consideration will be given to the forest types and age classes present in the catchment, the degree of existing utilisation of water resources in the catchment and existing water yields (to be determined in consultation with the relevant water authority(s)). Consideration will also be given to the hydrological impacts of private land management in the catchment. The strategies will be refined, as more information becomes available from hydrological research, particularly in mixed species forests.

Actions

Ensure that the requirements of Special Area Plans are incorporated into Regional Management Prescriptions for Timber Production and Other Forest Uses, in addition to any soil and water management prescriptions required under the Code *or elsewhere in this Plan.*

Consult the relevant water supply authorities if coupes are proposed for scheduling in Special Water Supply Catchment Areas that are subject to a Special Area Plan.

Continue to schedule timber harvesting operations in State forest consistent with minimising impacts on water yield in domestic water supply catchments.

5.4 Road and track management

Runoff from earth or gravel-surfaced roads has been identified as the major potential source of sediment inflows into streams in forested areas. Croke (1999) in measuring the differences in runoff and sediment generation rates from forest roads, snig tracks and general harvesting areas, found that sediment and runoff generation rates from unsealed forests roads were several orders of magnitude higher than from the general harvesting areas. Furthermore, road useage is an important factor with sediment concentrations in road runoff being higher on well-used roads than abandoned roads. Roads used infrequently or abandoned have little available sediment and, in the absence of traffic, are minor sources of sediment (Croke 1999).

Best Management Practices (BMPs) play a significant role in the reduction of adverse effects in forested catchments. A number of measures can be taken to reduce the hazard of water quality degradation from roads. Some of the more important of these are:

- ensuring road design standards are appropriate for the nature of use of the road;
- ensuring appropriate siting of the road;
- use of appropriate construction practices;
- careful design and construction of stream crossings;
- regular drainage maintenance programs;
- rehabilitation of roads and tracks following fire management;
- minimising the length of the road network in the catchment; and
- seasonal or permanent closure of roads.

DSE has developed a stream crossing and road sedimentation survey process to provide information on the condition of roads and stream crossings, the cause of and remedy for any runoff problems, and extent to which they are contributing to stream sedimentation.

DSE endeavours to maintain high standards of road design, construction, management, and maintenance throughout State forest. Further information on road and track management is provided in Chapter 10 – *Forest roads*.

Actions

Progressively improve the design and drainage of the road network to minimise sediment run-off and meet appropriate road standards.

Apply seasonal and permanent road closures as detailed in Chapter 10 and Appendix X.

Ensure road maintenance staff and contractors are trained in and undertake road maintenance and construction techniques that minimise sedimentation run-off from the roading network.

Ensure compliance with the Code and Gippsland Region Management Prescriptions for Timber Production and Other Forest Uses*, in particular the specifications for the construction, drainage and maintenance of roads and tracks.*

5.5 Monitoring

Water quality monitoring in Gippsland ranges from long term fixed site monitoring to community based monitoring networks such as WaterWatch. The Victorian Water Quality Monitoring Network (VWQMN), managed by DSE, and the Environmental Protection Authority's (EPA) network of fixed sites represent long-term statewide environmental water quality monitoring programs of most relevance to this plan.

The Catchment and Land Protection Council *et al.* (1996) identified over 90 monitoring sites from a range of programs within the Tambo, Mitchell, Thomson, Latrobe and South Gippsland drainage basins, and a part of the Upper Murray drainage basin, which together comprise the bulk of the planning area. Catchment Management Authorities have recently adopted a statewide water quality monitoring program entitled the Index of Stream Condition (ISC). In 1999 the ISC benchmarked the environmental condition and health of Victoria's major rivers and tributaries. The ISC brings together information on the current river flow regime, water quality, condition of the channel and riparian zone and the invertebrate communities living in the stream.

New techniques have also been developed for water quality monitoring through AUSRIVAS (AUStralian RIVers Assessment Scheme). AUSRIVAS uses the presence or absence of stream aquatic macro-invertebrates to assess the impacts of off-stream management activities. Measures of the presence and diversity of macro-invertebrates can be used to provide a good measure of both the extent of the initial disturbance and any subsequent recovery. The AUSRIVAS process may be used to monitor the impact of management activities, including timber harvesting, against reference sites to detect change. Currently, there are approximately 43 reference sites established in the planning area. These will be used to set benchmark conditions against regional monitoring sites.

This information may be used either for short-term investigations of catchment condition or to assist in detecting any long-term trends that may result from catchment use. The data collected in water monitoring programs needs to be compared with agreed water quality objectives as set out in the *State Environment Protection Policy (Waters of Victoria)* (VicEPA 1998).

As part of the National Water Quality Management Strategy (NWQMS), guidelines have been developed for Fresh and Marine Waters which collate available scientific information to recommend water quality guidelines for aquatic ecosystems; drinking water; recreational water; industrial and agricultural water (ANZECC 1992). The Montreal Process (to which Australia is a signatory) has developed sustainability criteria and indicators for water quality and yield in forested areas. Water quality monitoring programs conducted in forested areas will need to address the reporting requirements for these criteria and indicators.

There are around 38 stream gauging stations in the planning area used by DSE for water resource assessment purposes and 24 stream gauging stations managed by water authorities. These may be suitable to examine any trends in water yields over time.

As well as monitoring the outcomes of the management of forested catchments, it is important to monitor compliance with the measures directed to maintaining catchment conditions established in this Plan. The system of audits that has been established to ensure compliance with the *Code* provides a framework for monitoring the implementation of the measures for maintaining stream and catchment values detailed in this Plan.

Actions

Establish liaison processes with organisations involved in monitoring water quality and yield to regularly obtain this data relevant to State forest management.

Develop and implement water quality monitoring programs which address:

- *State Environment Protection Policy standards;*
- *water quality in catchments used for domestic or industrial consumption; and*
- *the biological condition of streams;*

and which conform with:

- *Catchment Management Authority monitoring programs;*
- *forest monitoring programs developed under the Montreal Process; and*
- *NWQMS Guidelines for Monitoring Rivers and Streams.*

Where suitable data is available, conduct periodic (on a 5 to 10 year time frame) analyses of catchment flow and quality data to detect any trends which may result from the uses of State forest.

Target catchments which have special values (including Spotted Tree Frog catchments) for monitoring where a high level of intensive management activities, including timber harvesting and road-works are occurring.

Assess compliance with the catchment management measures established as part of this Plan while undertaking audits of compliance with the Code of Forest Practices for Timber Production.

6.1 Fire management

The combination of topography, vegetation and climate result in Victoria, along with other parts of south-eastern Australia, being one of the most severe fire prone areas on earth. The purpose of this section is to outline a strategic approach to the management of fire in State forests having regard to both fire protection and ecosystem management requirements.

Fire has played an important role in the evolution of the local biota. Many floral species and vegetation communities have adaptive traits enabling them to survive under particular fire regimes. For some communities, fire is essential for maintaining the vigour and diversity of the community. However, some species are not adapted to fire. The frequency, intensity, season and patchiness of fires will ultimately determine whether a species survives in an area. Thus fire can be a management tool, to be used to perpetuate natural systems where, for example, active suppression for the protection of life and property may have interrupted this system.

A number of important forest values can be adversely affected by fire. These include high quality timber stands, water quality and yield, cultural values (including landscape, Aboriginal places and post-contact historic sites) and fire sensitive threatened flora and fauna. The ecological effects of fire are discussed below.

Gippsland has a history of periodic large damaging wildfires. Major wildfires in the planning area include the 'Black Thursday' fires of 1851, the fires of 1875, 1898, 1900, 1908, 1926, the 1939 fires that burnt much of the Great Dividing Range of eastern Victoria, 1944, 1951–52, 1965, 1968, the Caledonia fire in January 1998, and the alpine fires which started from a series of lightning strikes on 8 January 2003. The Caledonia fire burnt over 34 000 ha including 8 500 ha of State forest. The alpine fires of 2003 (see Map 1) covered over one million hectares in Gippsland, East Gippsland and North East Victoria, including areas of State forest in the Gippsland planning area.

Excluding the alpine fires of 2003, the twenty year average (1980/81 to 1999/2000) for the total number of wildfires per annum on or near public land in the planning area is 68. Over 75% of these were between 0.1 to 5.0 ha in size. The average total area burnt per annum is 6 730 ha. This twenty year average is approximately one-tenth of the total number of wildfires on or near public land for the entire state. For the same period, over 40% of all fires were ignited by lightning strikes. The next most significant source of wildfire was deliberate lights (i.e. by humans) causing 19%, followed by burning off (non-DSE burns) 12%, campfires 6% and a range of other sources with each causing less than 5% (NRE 1999a).

Fire management on public land in Victoria is governed by the *Forests Act 1958*, *National Parks Act 1975* and the *Code of Practice for Fire Management on Public Land* (CNR 1995b) (the *Fire Code*). Fire protection strategies are detailed in the Gippsland Fire Protection Plan (NRE 1999a).

The Forests Act requires DSE to 'carry out proper and sufficient work for the prevention and suppression of fire in every State forest, National Park and all protected public land'. The *Fire Code* defines: 'principles, standards and guidelines that apply to fire management on all public land in Victoria to ensure that, in an effective, efficient and safe manner:

- human life, property and assets are protected, as far as is practicable, from the deleterious consequences of wildfire;
- environmental values including the vigour and diversity of the State's indigenous flora and fauna are protected, as far as is practicable, from the deleterious effects of wildfire and inappropriate fire regimes;
- water catchment, airshed and landscape values are conserved; and
- archaeological, historical and other cultural values are conserved.' (CNR 1995b)

Aims

Ensure that management strategies established in this Plan and the Regional Fire Protection Plan are complementary.

Ensure that fire protection strategies consider the requirement to provide protection of human life, property and assets, and consider ecological values (including the vigour and diversity of the indigenous flora and fauna).

Minimise adverse alteration of forest values arising from fire management activities.

Achieve other land management objectives (e.g. weed management) by the planned use of fire where practicable.

Fire management planning

The *Fire Code* 'provides a framework for fire management procedures and practices on public land in Victoria'. It aims to promote the efficient, effective and integrated management of all fire and fire-related activities on public land, through the specification of procedures and practices for dealing with wildfire and prescribed fires.

Fire management planning must address the threat of wildfire, accommodate the use of planned fire, and provide for other land management objectives, consistent with environmental care principles. The various levels of control and planning for fire management on public land in Victoria are described in the *Fire Code* and shown in Appendix P.

A key element of Fire Protection Plans is a zoning system (referred to as Fuel Management Zones) for the use of planned fire. The system aims to help protect life, property and public assets, as well as to meet specific ecological requirements. The zones provide for a range of fuel management responses according to the level of protection required, the maximum overall fuel hazard recommended (as described by Wilson (1993) and McCarthy *et al*. (1998)), and the fire regime that is required to maintain biota and minimise fuel hazard levels.

The fuel management zones are described in the *Fire Code* (CNR 1995b) and are identified in the Gippsland Fire Protection Plan (NRE 1999a). The Fire Protection Plan applies for 10 years with provision for review. Details of the timing and location of fire protection works (e.g. fuel reduction burning) and services program are covered in a three-year Fire Operations Plan. These plans are prepared using a multi-disciplinary approach in DSE and with community consultation. The Fire Operations Plan is available for public inspection each year.

The five fuel management zones are as follows.

- ***Fuel Management Zone 1*** **Asset protection:** to provide the highest level of strategic protection to human life, property and highly valued public land assets and values. This zone will generally occupy only a small proportion of public land. The area of this zone in the planning area is approximately 60 000 ha (NRE 1999a).
- ***Fuel Management Zone 2*** **Strategic fuel-reduced corridors:** to provide strategic corridors of sufficient width and continuity to provide a substantial barrier to the spread of wildfire, to minimise the damage caused by wildfire and provide areas to assist in safe and efficient fire suppression. The area of this zone in the planning area is approximately 221 000 ha (NRE 1999a).
- ***Fuel Management Zone 3*** **Broad area fuel-reduced mosaic:** to provide an irregular mosaic of areas of fuel reduction which will complement works in Zones 1 and 2 in reducing severity of wildfire, and are consistent with broad-based ecological management objectives. The area of this zone in the planning area is approximately 476 000 ha (NRE 1999a).
- ***Fuel Management Zones 4*** **Specific flora and fauna management:** to provide for the use of planned fire for active management of specific flora and/or fauna, and vegetation communities which have critical fire regime requirements not adequately catered for by the broadly defined fuel and ecological management objectives. The area of this zone in the planning area is approximately 301 000 ha (NRE 1999a).

- ***Fuel Management Zone 5*** **Exclusion of prescribed burning:** to provide for the exclusion of planned fire for at least the period of the Fire Protection Plan of vegetation in which there would be high potential for economic, ecological or cultural loss if it was subjected to planned fire. These areas may be subject to special protection measures to reduce the probability of damage by wildfire. The area of this zone in the planning area is approximately 272 000 ha (NRE 1999a).

Interim Guidelines and Procedures for Ecological Burning on Public land in Victoria (Fire Ecology Working Group 1999) have been established to provide a consistent understanding and approach to planning and implementing ecological burning programs amongst Victoria's public land managers. The guidelines outline key information, standards and planning procedures required to carry out prescribed burns for ecological management and for the monitoring and reporting of outcomes.

Actions

Continue to carry out fire protection and management works in accordance with the Fire Protection Plan and Fire Operation Plans covering the Gippsland area.

Develop strategies for the use of prescribed fire that considers ecological requirements along with the requirement to provide protection of human life, property and assets.

Ecological effects of fire

Fire can have both advantageous and deleterious effects on various components of the Gippsland environment (i.e. flora, fauna, soil, atmosphere, water, etc.). The frequency, season, scale and intensity of a fire regime strongly influence the overall impact of fire on flora and fauna.

Fire frequency is considered to be the most important aspect of a fire regime. The fire frequency will determine the long-term structure and floristic composition of the vegetation, the re-population of faunal species, and the intensity of any future fire.

Seasonal differences influence the fuel and soil moisture regimes and the reproductive behaviour of the flora and fauna. For example breeding seasons may be affected. Autumn fires are generally of higher intensity than spring burns and the response of vegetation and associated fauna may differ depending on the heat and intensity of the burn (VicRFASC 1999a).

The intensity of a fire is the heat output per linear unit of fireline. The intensity of a fire may determine the degree to which the vegetation is altered initially. High intensities can initially damage all strata while low intensity fires may only damage the lower layers (VicRFASC 1999a). Low intensity fires generally leave more areas of un-burnt vegetation but high intensity fires can also be restricted or patchy in extent.

The immediate and short-term impacts of fire on fauna populations are related to mortality during the fire, loss of shelter and nesting habitat, increased predation and decreased prey availability. Longer-term effects involve changes to vegetation characteristics. Inappropriate burning regimes, such as too frequent or too infrequent burning, can alter vegetation floristics and structure, and may affect habitat suitability for some fauna.

There are numerous research projects conducted into the effects of fire on flora and fauna in Victoria. These include:

- A multi-disciplinary research program in the Wombat State Forest is in place to assess and describe the effects of repeated (rotational) spring and autumn fuel-reduction burning on flora, fauna and soils, the functional process of the dry sclerophyll forest system, and the short- and long-term stability of such ecosystems.
- Four projects to monitor the impact of the January 1998 Caledonia Fire were commenced in 1998. These projects include an assessment of vegetation condition, establishing a monitoring program for selected species and vegetation communities, identifying the impacts of the fire on fish and aquatic macro invertebrates, and effects/interaction of fire and grazing on alpine grasslands (Friend *et al*. 1999).

- Case studies have been carried out in mallee, heathland, dry sclerophyll and foothill forests to assist in the setting of guidelines for ecological burning (McCarthy 2000; Parks Victoria 2000; Tolhurst 2000).

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.

Chapter 3 – *Biodiversity conservation* and Appendix M provides management actions for fauna with specific habitat requirements that should be protected where records exist. Table 6.1 lists those actions relating to prescribed fire.

Table 6.1 Prescribed fire and fauna management

New Holland Mouse	Reliant on understorey elements that are potentially affected by the frequency and intensity of fire. Address fire management regimes through the processes established by the Fire Ecology Working Group.
Smoky Mouse	Reliant on understorey elements that are potentially affected by the frequency and intensity of fire. The frequency of prescribed burning at known Smoky Mouse localities will be identified on a case-by-case basis.
Spotted Tree Frog	Prescribed fire will be excluded from the habitat protection zone in the SPZ.
Grey-headed Flying-fox	Fuel reduction burning should be scheduled to minimise disturbance of active colonies.
Yellow-bellied Sheathtail-bat	
Square-tailed Kite	Fuel-reduction burning will be avoided within 500 m in line of sight of all known nest sites during the breeding season (July–February).
White-bellied Sea-eagle	Fuel-reduction burning will be avoided within 500 m in line of sight of all known nest sites during the breeding season (June–December).
Grey Goshawk	Fuel-reduction burning will be avoided within 250 m of all known nest sites during the breeding season (July–December).
Alpine Bog Skink	Review and, if necessary, modify fuel reduction burning regimes in the vicinity of confirmed records.
Alpine Water Skink	
Glossy Grass Skink	
Narracan Burrowing Crayfish	Prescription burning within crayfish habitat should be avoided during late spring and early summer. Gullies, seepage zones and floodplain regions should not be burnt during the driest time of the year. Soil moisture should be measured prior to prescription burns within crayfish habitat.
Sooty Owl	Fuel-reduction burning will be avoided within 250 m of all known nest sites during the breeding season (May–November).
Powerful Owl	Fuel-reduction burning will be avoided within 250 m of all known nest sites during the breeding season (May–November).
Masked Owl	Fuel-reduction burning will be avoided within 250 m of all known nest sites during the breeding season (May–November).

Actions

Incorporate fire ecology research into fire planning decisions in State forests, ensuring that both ecological and fire protection requirements are considered at a landscape scale.

Encourage research into the ecological effects of fire on the various components of the Gippsland environment.

Integrate ecologically based fire regimes in the implementation of the Fire Protection Plan.

Coordinate fire management planning with other forest managers, in particular, Parks Victoria to ensure effective integration of landscape scale issues.

Developing ecologically based fire regimes

The *Interim Guidelines and Procedures for Ecological Burning on Public land in Victoria* (Fire Ecology Working Group 1999) aim to provide a consistent approach to planning and implementing ecological burning programs on public land. The guidelines outline key principles, planning procedures and an interim process for identifying ecologically based fire regimes. Application of these processes to develop ecological fire regimes in Gippsland is discussed below.

Fire cycle

Ecologically based fire regimes can be developed from knowledge of the vital attributes of the flora and fauna species. Vital attributes are used to define the key response species for an EVC, which in turn provides a guide to upper and lower thresholds for tolerable fire frequencies for an area. Knowledge of the thresholds for tolerable fire frequencies enables a fire cycle to be defined from which an idealised model of the distribution of age classes within each EVC can be developed (Fire Ecology Working Group 1999).

The Vital Attributes method was initially proposed by Noble and Slayter (1980), and further developed by DSE's Fire Research Team (CNR 1996). The Vital Attributes method relies on identifying life history characteristics of all species in a specific community. It is these characteristics that are vital to the existence of individual species in vegetation replacement sequences. The life history characteristics are 'method of persistence' (i.e. how a plant regenerates after being burnt by fire), the 'conditions required for establishment' (i.e. whether regeneration is tolerant of competition), and the 'longevity' of each life stage of the species (i.e. time before extinction of species on-site).

Species within EVCs in the planning area were assessed for their vital attributes. From this list, Key Fire Response Species for each EVC were identified and used to determine the minimum and maximum fire interval, and the proposed fire cycle.

Key Fire Response Species are those species that are most likely to be affected by a change in fire regime, in particular by two or three fires in quick succession, and should therefore be monitored for regeneration success following the implementation of a selected fire regime. The fire cycle represents a time period approximately half the maximum tolerable fire interval and is the period over which an area equivalent to the total area of a community is burnt. The determination of a fire cycle is important as it 'allows some communities to remain unburnt for very long periods of time, while others may be burnt several times in the same period, but the community composition overall will be maintained and structural diversity will be maximised.' (Tolhurst 1999).

By using the Key Fire Response Species as indicators, and burning within the limits set by the fire cycle, the ecological integrity of each EVC should be maintained (Chatto and McCarthy 2000).

The interim fire cycle with suggested minimum and maximum fire interval for EVCs on public land in the planning area is listed in Appendix Q. These are based on limited field information, with some data being collected from outside the Gippsland planning area, and should be reviewed when further species fire response data is collected.

Fire response information can also inform the process of manipulating vegetation structure and floristics. This may be important to enhance or develop specific structural types or to favour (or reduce) particular species. Examples are active protection to enhance the development or extent of Warm Temperate Rainforest, or high frequency burning to enhance the development of grassy vegetation types.

Fire history analysis

Analysis of fire history data and EVCs is used to develop a known fire-age frequency distribution for each EVC on public land in the planning area. The fire history data needs to include both prescribed fire and wildfire records as they both contribute to the age class distribution.

An idealised model of the distribution of age classes within each EVC can be developed from the fire cycle. The idealised age frequency distribution that have been developed for the bioregions across the planning area

should be reviewed as new data becomes available (Fire Ecology Working Group 2002). There are numerous ways in which fire can be applied to the environment (i.e. season, frequency, scale or intensity), and this will impact on the age frequency distribution of each EVC.

Following comparison of the current age class structure with the recommended age class structure, areas will be identified that can be divided into logical burning units in order to implement appropriate fire regimes.

Implementation of ecologically based fire regimes

The management of fire should consider both ecological and protection objectives in order to optimise outcomes for asset protection and/or ecological management. The framework provided through the Fire Ecology Working Group (1999) will guide the progressive implementation of ecologically based fire regimes in the planning area.

Incorporating fuel reduction burning into an ecological burning framework may assist in reaching ecological burning objectives (Fire Ecology Working Group 1999). That is, prescribed fire may achieve both fire protection and fire management objectives. This Plan recognises that progressive implementation of ecological fire regimes will initially be based on making best use of fuel reduction burning to assist in meeting ecological objectives.

The fire age frequency distribution of each EVC should be regularly monitored taking into account both prescribed fire and wildfire history.

Actions

Continue to record both planned fire and wildfire in DSE's fire database.

Refine the interim fire regimes for each EVC, by collecting individual species fire response data as further botanical field work is undertaken in Gippsland.

Monitor the interim Key Fire Response Species in EVCs following the implementation of a selected fire regime.

Develop and implement a system for prioritising areas to burn to establish appropriate EVC age frequency distributions. This should include:

- *Identifying a preferred age frequency distribution for each EVC.*
- *Analysing fire history for EVCs so as to determine the post-fire age frequency distribution within each EVC.*
- *Using the interim fire cycle in Appendix Q to guide public land fire management requirements within bio-regions.*
- *Integrating the prioritised areas into the regional burning programs.*

Prescribed fire within Forest Management Zones

Where a Special Protection Zone (SPZ) is located in Fuel Management Zones 1 and 2, the values within the SPZ which may be affected by fuel reduction burning will be considered in the development of Fire Operations Plans. Wherever possible, fuel reduction burning programs that maintain SPZ values, but do not compromise the objectives of the fuel management zone, will be preferred.

The irregular mosaic of areas created by Fuel Management Zone 3 prescribed burning is unlikely to affect most SPZ values. However, where records of rare or threatened flora species (included in the SPZ or SMZ) occur within Zone 3, fuel reduction burning may be excluded from or modified in these locations.

Action

Develop prescriptions for the use of prescribed fire in SPZ that is within Fuel Management Zones 1 and 2, taking into account the objectives of the fire protection zone and the values of the SPZ.

6.2 Pest plants and animals and plant diseases

While best known for the losses they cause in agricultural land, pest plants and animals and diseases can also adversely affect economic and environmental values of public land. Pest plants bring about a reduction in the health and regenerative capacity of native plants, changes in vegetation composition and associated loss of habitat for native fauna. Pest animals disrupt natural ecosystems through competition for resources, by direct predation or by grazing of native plants. Grazing or burrowing by pest animals also disturbs vegetation and soil, allowing weeds to establish and contributing to erosion on susceptible sites.

The effectiveness of pest control programs on agricultural land can be reduced if the pest species are present on neighbouring public land. Likewise, forest and conservation reserve values can be compromised if adjacent freehold land contains infestations of pests that may spread onto public land. Because plant propagules and pest animals cross land management boundaries, effective pest control must be coordinated across both public and private land.

Aims

Protect the ecological, economic and cultural values of State forest from damage by pest plants and animals and diseases.

Prevent the introduction of new pest species into Gippsland, or their spread into sensitive areas.

Legislation that directs pest control in State forest is as follows:

- *Catchment and Land Protection Act 1994* provides for the classification of weeds and pest animals and for their eradication or control. It also establishes a system of community consultation through Catchment Management Authorities which prepare Regional Catchment Strategies;
- *Flora and Fauna Guarantee Act 1988* lists Potentially Threatening Processes. Several of these are relevant to pest control on State forest and are considered in the management of State forests.

The *National Forest Policy Statement* (Commonwealth of Australia 1992a) calls for forest management agencies to monitor and appropriately control the threat to publicly owned native forest ecosystems posed by feral animals, exotic plants, pests and diseases. Consistent with this, the C*ode of Forest Practices for Timber Production* (the *Code*) (NRE 1996a) requires that forests be 'protected from the introduction of and spread of pest plants and animals, including plant diseases and insect pests, and managed in a manner that limits the development of epidemics of endemic pests and pathogens'.

The National Weeds Strategy (Commonwealth of Australia 1997) provides an overall framework for weed control in Australia. It contains goals and objectives for the control of weeds across Australia and is concerned primarily with weeds of national importance. *The Victorian Pest Management – A Framework for Action* (NRE 2002f) provides an overarching policy and planning framework which gives direction for the management of existing and potential pests in Victoria. It also outlines specific species or issue based pest strategies developed according to the policy and planning framework.

The Good Neighbour Program allocates resources towards cooperative weed and pest animal control programs on the freehold/public land boundary. Under the program, DSE works with landholder groups and local government to identify pest control needs and to undertake coordinated work on both public and private land, bringing benefits to both landholders and the values of public land. The Good Neighbour Program currently provides most of the resources for pest plant and animal control in Gippsland. In addition, the Rabbit Buster program has also contributed resources to rabbit control in Gippsland. The program provides funds for rabbit control principally for private lands and the interface with public lands.

Planning and programming for pest plant and animal control

Effective pest plant and animal control requires well-planned and designed programs. The priorities for control of pest species in State forest should have regard for not only the management goals of State forest, but also the overall catchment priorities expressed in the Regional Catchment Strategies and associated Action Plans. Most of the planning area falls within the East Gippsland and West Gippsland Catchment Management Regions (CMRs). Small sections, in the west and north, are within the Port Phillip and North East CMRs respectively.

An essential initiative of this Plan is to introduce rolling three-year works planning for the control of pest species. The works plans will:

- ensure pest plant and animal control programs will be implemented within the framework established by this Plan;
- provide a vehicle for consultation with Catchment Management Authorities (CMAs) and community groups;
- ensure funding is allocated to areas of greatest need; and
- ensure any necessary follow-up works are identified in advance and included in annual programs.

DSE monitors pest infestations and control programs using the Integrated Pest Management System, a computerised database (Lane and Backholer 1990). This system supports:

- preparation of pest management plans;
- allocation of resources and the implementation of control programs; and
- monitoring the effectiveness of control programs.

Management Guideline

Pest plant and animal control programs

Priorities should be based on:

- current or potential impact on conservation, recreation and production values of State forest; and
- contribution to programs to reduce impacts on private land.

Programs should be conducted:

- with due regard to cost and efficiency;
- using methods which are defined in relevant DSE policies and guidelines;
- in consultation with relevant CMAs and Landcare groups; and
- with an evaluation program.

Preparation and implementation of programs for State forest in the Gippsland region should be based on the framework established by this Plan, CMA Regional Catchment Strategies and Action Plans and relevant legislation and policy. These programs should be prepared on a rolling three-year basis and include:

- maps showing the location of areas proposed for treatment;
- any cooperative management arrangements with adjoining land managers;
- the nature of infestations;
- the threat posed by infestations;
- control methods to be used;
- necessary follow-up works; and
- program evaluation.

Pest plants

Infestations of pest plants in State forest occur mainly along the boundaries with freehold land, beside roads and tracks, along watercourses, and on disturbed sites such as picnic areas, log landings and old mining areas. Although many forests of Gippsland have a long history of utilisation and disturbance, the interiors of forest areas, where disturbance has been relatively minor, are generally free of significant infestations. Although there is potential for progressive invasion from the margins of cleared freehold land, timber harvesting and other management activities also provide opportunities for pest plant species to establish if there is a source of propagules.

The introduction and spread of the propagules of pest plants through the forest is aided by:

- dumping of garden rubbish and soil;
- vehicles and machinery (in tyres, radiators or in adhering mud);
- movement of sand and soil;
- animals, including sheep, cattle and native animals (seeds dropped during feeding or in the coat or dung); and
- water movement in streams and channels.

A number of exotic plants have become naturalised and, in most cases, eradication is not feasible. Several species are capable of aggressive invasion of forest areas.

Pest plants may be declared 'noxious weeds' under the provisions of the *Catchment and Land Protection Act 1994*. The Act also provides for their categorisation as State Prohibited, Regionally Prohibited, Regionally Controlled or Restricted (see Table 6.2).

Table 6.2 Classification of weeds under the *Catchment and Land Protection Act 1994*

Category of weed	Definition
State Prohibited	a) it does not occur in Victoria; or b) it occurs in Victoria but it is reasonable to expect that it can be eradicated from the State.
Regionally Prohibited	a) it is not widely distributed throughout the region; and b) it is capable of spreading further in the region; and c) it is reasonable to expect that it can be eradicated from the region.
Regionally Controlled	a) it occurs in the region; and b) it is capable of spreading further in the region and should be stopped from doing so; and c) to prevent its spread, continuing control measures are required.
Restricted	a) it is a serious threat to primary production, Crown land, the environment or community health in another State or Territory; and b) it has the potential to spread into and within Victoria; and c) if sold or traded in Victoria there would be an unacceptable risk of it spreading within Victoria and to other States or Territories.

At present only one State Prohibited weed — Nodding Thistle (*Carduus nutans*) — has been recorded within the Gippsland State forests and is known to occur in the Bindi area.

African Lovegrass (*Eragrostis curvula*) and Gorse (*Ulex europaeus*), both Regionally Prohibited weeds in East and West Gippsland CMRs, have been recorded from the south of the Gippsland region but only Gorse has been found in State forest. Flax Leaved Broom (*Genista linifolia*), a Regionally Prohibited weed in East Gippsland CMR, and Great Mullein (*Verbascum thapsus*), a Regionally Prohibited weed in West Gippsland CMR, have both been recorded in Gippsland State forests.

Regionally Prohibited and Regionally Controlled weeds occurring in, or on the margins of, State forest are listed in Appendix R. The most common and widespread of these are Blackberry (*Rubus* spp.), Slender Thistle (*Carduus tenuiflorus/C. pycnocephalus*), Spear Thistle (*Cirsium vulgare*) and Tutsan (*Hypericum androsaemum*) in the South Gippsland area, and English Broom (*Cytisus scoparius*), Horehound (*Marrubium vulgare*) and St John's Wort (*Hypericum perforatum*) on drier sites in the north of the planning area.

Blackberry is widespread in Gippsland and often forms dense, thorny thickets along streams and roadsides in higher rainfall areas. This growth habit causes large areas of forest to be unsuitable as habitat for native wildlife, interferes with recreation activities and can provide harbour for pest animals. Blackberry control works will continue to feature in weed control programs across Gippsland. Most of the other species tend to be short-term colonisers in forested areas but can cause longer term problems in the more open woodland and grassy vegetation communities.

Some weeds that do not currently pose a problem in State forests in Gippsland have the potential to do so in the future. Serrated Tussock (*Nassella trichotoma*) and African Lovegrass are emerging weeds in the southern parts of the planning area and may have the potential to invade woodland and grassy Ecological Vegetation Classes (EVCs). Amsinkia (*Amsinkia* spp.) and Paterson's Curse (*Echium plantagineum*) have been recently introduced in the planning area in stock feed in areas of State forest licensed for grazing. When detected, new weed infestations will be integrated with pest plant control priorities to eradicate them where possible, or contain any further spread.

Some naturalised non-indigenous plants have not been declared under the *Catchment and Land Protection Act 1994*, but may still pose a threat to forest values. Often escaped pasture or garden species, these plants are not considered to be agricultural pests, but can adversely affect the survival or regeneration of native plant species and are referred to as 'environmental weeds'. The invasion of native vegetation by environmental weeds has been listed as a Potentially Threatening Process under the *Flora and Fauna Guarantee Act 1988*. Some of the more significant environmental weeds found in State forests of the planning area include Blue Periwinkle (*Vinca major*), Himalayan Honeysuckle (*Leycesteria formos*), Bridal Creeper (*Asparagus asparagoides*), English Ivy (*Hedera helix*) and Pampas Grass (*Cortaderia selloana*).

Sweet Pittosporum (*Pittosporum undulatum*), an indigenous species of the rainforests and wet forests of South and East Gippsland, is spreading beyond its natural range. It is considered a weed in some drier forests and woodlands in southern Victoria due to its adverse impact on their floristic and ecological integrity. The spread of *Pittosporum undulatum* in areas outside its natural range has been listed as a Potentially Threatening Process under the *Flora and Fauna Guarantee Act 1988*.

Spraying with herbicide, or cutting and poisoning are the main methods of pest plant control used in State forests, depending on the particular weed species and their location. In areas of State forest close to population centres, mechanical removal and spraying of weed infestations are also used as fire prevention measures. DSE is continuing to investigate improved methods of pest plant control including the use of biological control agents. Biological control programs for Paterson's Curse, Bridal Creeper, English Broom, Horehound and Ragwort (*Senecio jacobaea*) are currently underway in various parts of Gippsland.

Management Guideline

Control of pest plants

Allocation of resources for pest plant control should account for the potential for successful eradication and control while regarding the following priorities:

- State Prohibited weeds;
- Regionally Prohibited weeds;
- new weed infestations of any classification which can be feasibly eradicated;
- Regionally Controlled weeds where these have an environmental or economic impact on State forest values; and
- environmental weeds which have a significant effect on ecosystem diversity.

Continued next page

Allocation of resources to particular infestations should account for:

- their impact on State forest values;
- the conservation of rare or significant EVCs;
- the conservation of rare or endangered native flora and fauna species;
- neighbouring parks, reserves and reference areas; and
- their impact on nearby agricultural land (in keeping with the Good Neighbour Program).

The effectiveness of weed control programs should be monitored to:

- ascertain the rate of control or further spread;
- determine if follow-up work is required;
- determine the extent to which they meet the planned objectives; and
- determine if control practices require modification.

Actions

Prepare and implement three-year pest plant control programs for State forest in Gippsland based on the above Management Guideline for Pest Plant and Animal Control Programs, Management Guideline for Control of Pest Plants and with reference to relevant legislation and policies.

Maintain comprehensive records of the locations of pest plant infestations and control actions taken.

Implement hygiene practices for all plant and machinery working in areas known to have significant infestations of pest plants. Specifically:

- *subject DSE machinery to hygiene standards, detailed in works prescriptions;*
- *require that contract machinery conforms to machinery hygiene standards through the inclusion of appropriate clauses in contracts; and*
- *subject timber harvesting machinery to hygiene standards through regional timber-harvesting prescriptions and coupe plans.*

Seek opportunities to implement cooperative management programs with community groups involved in pest plant control activities.

Plant diseases

Depending on the type of pathogen and its interaction with climate, soil type, aspect, altitude and disturbance, plant diseases can seriously impact on forest ecosystems. Cinnamon Fungus (*Phytophthora cinnamomi*) occurs in State forests in the south of Gippsland. Myrtle Wilt is caused by a fungal pathogen (*Chalara australis*) that invades damaged Myrtle Beech (*Nothofagus cunninghamii*) trees causing die back and can result in the death of trees.

Cinnamon Fungus

Cinnamon Fungus, a water-borne organism living in the soil, has been listed as Potentially Threatening Processes under the *Flora and Fauna Guarantee Act 1988*. These listings are: Use of *Phytophthora*-infected gravel in construction of roads, bridges and reservoirs; and, The spread of *Phytophthora cinnamomi* from infected sites into parks or reserves, including roadsides, under the control of a state or local government authority.

Cinnamon Fungus attacks and destroys the roots of many native and introduced trees and shrubs, often leading to the death of plants. Once the disease is established in a susceptible community, there is no known means of eradication.

The disease is favoured by the following conditions:

- gravel or soils of low fertility containing little organic matter;
- soil temperatures of at least 10°C; and
- wet weather during spring, summer and autumn.

Cinnamon Fungus is primarily spread through the use of contaminated gravel in road construction and in run-off of drainage water from infected sites. Contaminated soil adhering to vehicles and machinery (particularly when used off-road) could introduce the disease into uninfected areas of forest.

A State Strategy for the management of *Phytophthora cinnamomi* is being developed in accordance with the national Threat Abatement Plan for dieback caused by the root-rot fungus *Phytophthora cinnamomi* (Environment Australia 2001). The guidelines for Cinnamon Fungus control (outlined below) will be reviewed following the development of the State Strategy.

Management Guideline

Cinnamon fungus control

Active measures should be implemented to minimise the risk of introduction or movement of plant diseases into uninfected areas.

Hygiene measures to contain and control the spread of Cinnamon Fungus include:

- washing machinery before moving into uninfected areas;
- restricting the movement of soil or gravel from infected sites to healthy vegetation;
- minimising the relocation or movement of infected gravel or soil during road and track construction or maintenance works, logging operations or wildfire suppression and pre-suppression works;
- restricting or controlling drainage water run-off from roads and tracks away from healthy vegetation;
- testing gravel from infected areas and using only uncontaminated gravel in uninfected areas; and
- cleaning and disinfecting vehicles, machinery, tools and equipment used in infected areas.

The effectiveness of hygiene practices should be monitored to:

- ascertain effectiveness of control measures or rate of further spread;
- determine what follow-up work is required; and
- determine if control practices require modifications.

This management guideline will be reviewed following the development of the State Strategy for the management of *Phytophthora cinnamomi*.

Myrtle Wilt

Myrtle Wilt is caused by the pathogenic hypomycete, *Chalara australis*. It has been recorded in the Gippsland planning area in the Strzelecki Ranges, however, it has not been recorded in State forest covered by this plan. It appears to be a natural phenomenon but is a major cause of death of Myrtle Beech in other areas. Following infection the trees become attractive to the pinhole borer *Platypus subgranosus*, the presence of which serves as a useful, early indicator of the disease (Kile 1987). Human activity which results in artificially elevated levels of Myrtle Wilt within *Nothofagus*-dominated Cool Temperate Rainforest has been listed as a Potentially Threatening Process under the *Flora and Fauna Guarantee Act 1988*.

Myrtle Wilt develops through root or stem wounds via air- or water-bone spores and through underground spread. The disease may also radically alter stand structure and in public access areas create trees that are hazardous for people and property. Further investigation should determine the occurrence and appropriate management for Gippsland stands of rainforest.

Actions

Implement the above Management Guideline for Cinnamon Fungus Control as the general basis for control of the spread of Cinnamon Fungus.

Maintain records of the locations of all Cinnamon Fungus infestations and other pathogens.

Investigate reports of Myrtle Wilt in State forest and, where necessary, develop management guidelines for the control of the spread of the fungus.

Insect pests

Insect pests usually affect forest ecosystems through defoliation and sometimes death of trees. Minor outbreaks have been recorded in the State forests of Gippsland. Phasmatids (*Didymuria* spp.) were recorded in the 1970s and 1980s but have not been observed since. Psyllid species and various lepidopteran (butterfly and moth) larvae that may cause defoliation and sometimes tree death occur in cycles and have been observed in the Heyfield and Dargo areas. A Psyllid Management Plan (CNR 1995d) has been developed. Christmas Beetle (*Anoplognathus* spp.) infestations occur cyclically at the forest/cleared land interface, particularly in Forest Red Gum communities on the plains.

Actions

Implement the Psyllid Management Plan where necessary.

Record and monitor outbreaks of insect pests. Where feasible control outbreaks that have significant economic and environmental impact.

Pest animals

Many species of pest animals have become established in Australia as a result of deliberate or accidental releases. The *Catchment and Land Protection Act 1994* classifies exotic animals (previously referred to under the Act as pest animals) as either Prohibited, Controlled, Regulated or Established depending on the threat that particular types of animals pose to primary production, Crown land, the environment or community health.

All of the exotic animals recorded within Gippsland are classified as Established which means that they are already established in the wild, pose a serious threat to primary production, Crown land, the environment or community health and should be eradicated or controlled.

Foxes, wild dogs and rabbits are common and widespread in Gippsland and are often most common at the interface between the forest and private land. Effective control of these pests requires cooperative programs with adjacent landholders. Other animals considered as pests, but which are localised or less common, include feral goats and pigs. Low numbers of feral pigs are known to occur in the Benambra region. Feral cats are also considered widespread, however, their abundance and impact on native fauna in Gippsland State forests is difficult to estimate. Predation of native wildlife by the introduced Red Fox and Cat have been listed as Potentially Threatening Processes under the *Flora and Fauna Guarantee Act 1988*.

Threats to native flora and fauna arising from the use by the feral honeybee *Apis mellifera* of nesting hollows and floral resources has been listed as a Potentially Threatening Process under the *Flora and Fauna Guarantee Act*.

Browsing by rabbits in conjunction with other browsing animals, such as wallabies, may damage regeneration following timber harvesting. Erecting fences and tree guards and the application of repellents may be effective means of limiting this type of damage.

Control of rabbits is generally concentrated around forest perimeters, mainly using 1080 (sodium monofluoroacetate) poison. Myxomatosis remains an effective control mechanism and has more recently been augmented by the introduction of the Rabbit Haemorrhagic Disease (RHD). The RHD, however, has had only limited effect in Gippsland. Experience in the release of other biological control agents shows that successful rabbit eradication in an area will require the traditional control measures (Myxomatosis, shooting, baiting, fumigation and ripping of burrows) to be used in concert with outbreaks of the RHD.

Wild dog control includes snaring and strategic 1080 use. 1080 is used in the forms of buried bait, such as Foxoff® for foxes and meat baits for wild dog control and poisoned carrots for rabbits. Close to built-up areas, Pindone® is often used in place of 1080 as it has no secondary poisoning effects. Additional research is now in progress that is intended to assist and improve predator control programs of the future. Wild dog control is primarily for the protection of livestock, while control of foxes and rabbits can provide significant environmental benefits particularly to endangered fauna and significant EVCs.

The protection of non-target species is an important component of any program for the control of pest animals. Where poisoning campaigns may affect non-target wildlife such as the endangered Spot-tailed Quoll, control programs are carried out in consultation with DSE wildlife biologists. The Spot-tailed Quoll, a native high order predator, may be susceptible to the use of 1080 meat baits in wild dog control programs, but is less susceptible to fox baiting programs using Foxoff® (refer to Chapter 3 – *Biodiversity conservation* for a more detailed description of this species). In order to minimise the chance of poisoning Spot-tailed Quolls, guidelines have been developed for predator control programs using 1080. These guidelines (outlined below) should be considered as interim measures until the Wild Dog Action Plan and Fox Action Plans are implemented under the *Victorian Pest Management – A Framework for Action* (NRE 2002f).

Management Guideline

Use of 1080 in State forest

In order to minimise the chance of poisoning Spot-tailed Quolls, predator control programs should adopt the following principles:

- bait stations or mounds should be constructed from sieved and smoothed earth. Bait stations constructed in this manner are easy to maintain and the even surface enables better identification of animal tracks;
- baits should be buried at a depth of 10 cm or greater. Spot-tailed Quolls do not forage fossorially and are unlikely to excavate baits at this depth;
- only one bait should be buried in each bait station at any one time;
- the distance between bait stations should be varied depending on terrain and pest species activity. A separation of one kilometre between baits in forested habitats has been shown to be optimal to limit the possibility of multiple bait take by a single animal; and
- in areas where threatened species that are susceptible to taking 1080 meat baits are known to be present, the use of free feeding for a period prior to burying poison baits should be considered. Free-feeding encourages the resident feral animals to visit the bait station and provides information about the numbers and kinds of animals visiting the bait station.

As many pest animals move between State forest, adjacent parks and private land, effective control involves cooperation between neighbouring land managers. Group pest control schemes result in better success and yield greater community and departmental benefits.

Management Guideline

Control of pest animals

Priority should be given to control of Prohibited, Controlled, Regulated or Established pest animals as required by the *Catchment and Land Protection Act 1994*, and to the management of threatening processes listed in Schedule 3 of the *Flora and Fauna Guarantee Act 1988*.

Direction of resources to particular pest species should account for the potential for successful eradication and control as well as for their impact on:

- State forest environmental or economic values;
- the conservation of rare or endangered native flora and fauna;
- nearby parks, reserves and reference areas; and
- neighbouring agricultural land.

Pest animals of particular importance for control in Gippsland include:

- rabbits, because of their impact primarily on agricultural pastures and flora species;
- foxes, because of their ecological impacts;
- wild dogs, because of the threat they pose to livestock;
- feral goats and pigs, because of their potential to cause serious damage to forest environments and their potential role as livestock disease vectors; and
- feral cats, because of their impact on native wildlife.

Pest control programs should be monitored to:

- ascertain effectiveness of control;
- determine if follow-up work is required;
- ascertain effects on non-target species; and
- determine if control practices require modification.

Actions

Prepare and implement three-year pest animal control programs for State forest based on the above Management Guidelines for Pest Plant and Animal Control Programs, Control of Pest Animals and for the use of 1080 in State forest, and relevant legislation and policies.

Maintain comprehensive records of the occurrences of pest animals and control methods taken.

Chapter 7 Tourism and recreation

The forest areas of Gippsland provide opportunities for a broad range of recreational experiences in expansive settings of natural bushland.

The Gippsland area is readily accessible by people living in Melbourne, the Mornington Peninsula and major towns in Gippsland, such as Bairnsdale, Moe, Morwell, Sale and Traralgon. While most recreational and tourism activity is focussed on the National Parks, other Parks, and coastal areas, a significant number of visitors use State forests for a broad range of recreational activities. A high proportion of visitors spend part of their time in the forests, enjoying their ruggedness and beauty, the views from ridges and peaks, and the opportunities for driving and walking.

The *Policy for Sustainable Recreation & Tourism on Victoria's Public Land* (NRE 2002e) provides strategic and co-ordinated direction for the management of recreation and tourism across public land within an ecologically sustainable management framework.

Aim

DSE aims to provide public land recreation and tourism opportunities that complement other natural attractions, are high quality, diverse in their nature and setting, satisfying and safe. They should also be environmentally sustainable, cost effective, make an economic contribution and offer equity of access.

7.1 Tourism

The strategic tourism framework for Victoria is established through Regional Tourism Development Strategies. The Gippsland planning area lies almost entirely within the *Phillip Island and Gippsland Discovery* product region and the *Lakes and Wilderness* product region. In the north a small part of the area overlaps into the *Legends Wine and High Country* product region. Gippsland is promoted with strong natural (Gippsland coast, lakes and wilderness), cultural (production of a wide range of good foods and wines) and historic (early settlement, mining) themes. These themes, with the exception of foods and wines, are inter-twined with the Parks and State forests of the region. Adventure activity pursuits, such as canoeing and horse-riding, as well as fishing, hunting and boating, are also strong in the region.

Gippsland includes some of the most significant and concentrated areas for outdoor activities in Victoria and much of it occurs on forested public land. Both State forests and the parks and reserves system are popular and complement each other as visitor destinations. The State forests of Gippsland are estimated to attract around 347 000 visitor days per year (Read Sturgess and Associates 1995). State forest may either be the primary attraction or supplement the tourist experience by providing natural surroundings as a setting for other activities. A number of visitors to major tourism centres, such as the Gippsland Lakes or South Gippsland, spend time driving into forest areas on extended drives or seek out interesting forest walks. The forest areas are a verdant backdrop to the valleys where most of the main roads are situated, inviting exploration. These areas are also used by licensed tour operators providing a broad mix of tours in forest areas which are generally well patronised, demonstrating that many people enjoy the forest as a setting for valued recreation experiences.

Lakes Entrance is the key tourism focus for the eastern part of Gippsland. This, together with the development of a visitor centre in the Colquhoun State Forest at the ForestTech site, provides a nucleus for forest-based tourism. The development of the Bairnsdale to Orbost Rail Trail provides further forest-based opportunities.

Aims

Provide nature-based tourism opportunities that are consistent with the other objectives of this plan and that are complementary to those provided by parks and reserves.

Participate in and integrate tourism planning and promotion with peak tourism bodies and local government.

DSE's Tourism Strategy

DSE's Tourism Strategy (NRE 1996b) recognises the complementary nature of State forest sites and services to those of National Parks and other reserves and, a lesser extent, the alpine resorts and private sector tourist attractions in towns and on freehold land. It recognises that many of the more popular attractions are found in forests managed by Parks Victoria, and that DSE has an existing and on-going role in providing for recreation pursuits that attract the majority of visitors to State forest. The strategy recognises the need for a range of sites and services within budgetary limitations and the need to manage environmental impacts of visitors at highuse sites.

DSE's contributions to tourism include:

- provision for a wide range of recreational activities, and provision of robust, appropriately-sited and well-maintained recreation facilities in State forest;
- development (in consultation with other land managers, user groups and tourism authorities) and maintenance of remote four wheel drive touring circuits, linked to key campsites and attractions;
- provision of appropriate infrastructure at key day-use and camping sites;
- maintenance of walks and picnic stops that service key tourist hubs;
- provision of information on forest activities, facilities, routes and destinations, both in printed form and on the World Wide Web;
- signage of forest roads, tracks and recreation sites;
- interpretation of natural and cultural features found on State forest;
- facilitation of the use of State forest for licensed tours; and
- management and conservation of natural and cultural features, including landscape, particularly along designated tourist routes.

DSE is keen to facilitate the ongoing development of nature-based tourism that is ecologically sustainable and yields appropriate economic and social benefits, provided activities are conducted in a manner that maintains other forest values. Currently a wide range of licensed tour operators run tours in State forest, providing opportunities for forest-based recreation including four wheel drive tours, horse-riding, rafting, canoeing and bushwalking. Such activities are regulated through DSE's Licensed Tours Permit System, which operates across all public land.

On-going and future commercial operations will be assessed on their merits, their compatibility with the maintenance of forest values, the directions set by recreation management zones, Regional Tourism Development Strategies and through the appropriate participation of stakeholders.

The *Gippsland Comprehensive Regional Assessment* (VicRFASC 1999b) provides more information about tourism and recreation pursuits in Gippsland.

A list of recreation and tourism-related works relating to State forest areas is in Appendix T.

Actions

Maintain and further develop liaison with regional tourism organisations to assist coordination of DSE tourism services with those of other land managers and the private sector.

Facilitate the development of nature-based tourism ventures while ensuring that operations maintain environmental and recreational values and minimise conflicts with other users.

Monitor, and report on, the level and nature of tourism in State forest.

7.2 Recreation Management Zones

A diverse range of user groups visit State forests to undertake a variety of different activities. The type of forest setting that visitors require to enjoy their activity also varies. The aim of DSE is to manage forest settings and the activities which occur within them to provide opportunities for visitors to enjoy a broad range of recreational experiences.

Different types of recreational activities require different settings and levels of facilities. DSE has broadly divided the State forests of Gippsland into four Recreation Management Zones (RMZs) (see Map 4). The zones (see Table 7.1) offer a range of settings which are managed to help ensure that a wide range of recreational activities and experiences can be catered for and the recreational needs of one group do not adversely affect the needs of others.

Developed sites (Zone 1) cater for high levels of visitor use and facilities that may include tracks, toilets, picnic tables, fireplaces and interpretive signs. At the other extreme are remote sites (Zone 4) where there is little visible management presence and few people, where there could be a bush camp site reached only on foot or by a challenging 4WD track. Table 7.3 indicates the types of facilities appropriate to the respective RMZs.

Table 7.1 Opportunities and experiences available in Recreation Management Zones

	Zone 1	Zone 2	Zone 3	Zone 4
Activities[1]	Picnicking, short walks, nature study and motorised sight seeing.	Motorised sight seeing, walking, horse-riding, camping, picnicking, nature study, mountain-bike riding, rogaining and orienteering, fishing, canoeing and rock climbing.	Walking, four-wheel-driving, nature study, trail-bike riding, mountain-bike riding, horse-riding, dispersed camping, hunting, fishing, canoeing, car rallies, fossicking and prospecting, rogaining and orienteering, and rock climbing.	Walking, dispersed camping, nature study, hunting, fishing, canoeing, four-wheel-driving, fossicking and prospecting, and trail-bike remote touring.
Settings	Management influence is obvious. Interaction between users is moderate to high.	Management influence is obvious, though largely in harmony with the environment. Interaction between users is often moderate to high.	Natural settings with some modifications present but not dominant. Virtually no facilities. Interaction between users is low to moderate.	Areas are essentially unmodified environments with little obvious management influence. Interaction between users is low to very low.
Experience	High probability of large numbers of users on-site and in nearby areas.	Moderate probability of encountering other users, but with a high degree of interaction with the natural environment.	High to moderate probability of experiencing isolation from the sights and sounds of humans. Areas offer some degree of challenge and self-reliance.	High probability of experiencing isolation from the sights and sounds of humans. Higher degree of challenge and self-reliance.

Note:
1 The list of activities for each zone is not exhaustive but is intended to indicate where activities are likely to be best catered for.

DSE will promote opportunities for those recreational activities that are best suited to each zone. For intensely used areas, such as the forests near Lakes Entrance and the Latrobe Valley urban areas, opportunities for picnics, scenic drives and short walks are appropriate. For the mountain forest areas beyond Heyfield, Erica or Dargo, four wheel driving, camping, bushwalking, fishing and hunting are more suited and minimal facilities are required.

7.3 Management of recreation activities and facilities

Recreation activities

A diverse range of forest environments extends from the Strzelecki Ranges and coastal plains of South Gippsland through the foothills north of the Princes Highway into the mountainous alpine area. These forests are easily accessed and provide a number of popular destinations for tourists and recreation groups. Many of the popular locations are within the National Parks and other reserves. DSE seeks to complement the recreation opportunities and facilities of the parks system by providing for a range of recreation activities in State forests. As a general strategy, DSE intends to focus resources for recreation facilities towards maintaining, rationalising and improving existing visitor facilities in preference to developing new facilities. This may lead to the provision of fewer sites, but of higher standards.

Visitors to State forest pursue a wide range of nature-based recreation activities. These include picnicking, pleasure driving, four wheel driving, trail bike riding, bush-walking, camping, nature study, mountain biking, orienteering and rogaining, fishing, hunting, horse-riding, white-water rafting and kayaking, canoeing, fossicking and prospecting. The forests also offer opportunities for historical and environmental education. Four wheel driving and deer hunting are popular recreational pursuits in the forest areas of Gippsland and are identified for special focus in this Plan.

Ensuring that recreation activities occur in an environmentally sustainable manner is a high priority for forest management. In doing so, DSE provides a valuable community service, contributes to regional tourism and helps to protect the forest from the impacts of visitor use.

In some places, forest areas experience a high level of use that is anticipated to increase in the future. Management is required to prevent over-use of popular routes or sites and to maintain a quality forest experience.

Recreation user groups can make a significant contribution to recreation management in State forest. Groups already assist with hut maintenance, rubbish collection and track maintenance. DSE is seeking to develop partnerships with community and user groups to encourage this type of participation.

Voluntary codes of practice have been developed by DSE and other land management and environmental agencies for a range of popular activities including horse-riding, four wheel drive touring, bush camping, trail-bike riding, mountain-bike riding and bushwalking. These Codes are designed to assist recreation users to experience the forest using minimal impact techniques. Some of these refer to laws relating to the activity; for example trail bike riding and four wheel driving is permitted only on roads open to the public. The Codes are available from DSE and Parks Victoria information centres and offices throughout the region.

Aim

Provide forest visitors with:

- *a diverse range of forest recreation settings;*
- *access and opportunity for all forest recreation activities that are consistent with the other objectives of this Plan;*
- *facilities at selected locations to enhance enjoyment of forest environments, and to provide a focus for forest recreation activities;*
- *information to assist understanding of forest recreation opportunities, the forest environment and management; and*
- *opportunities, activities and facilities that complement those provided by the parks and reserves system.*

Management Guideline

Recreation activities

Opportunities should be provided for appropriate recreation activities in State forest including activities that are excluded or restricted in Parks and reserves (e.g. hunting, dogs accompanying visitors and large-scale organised recreation events).

Planning, management and delivery of recreation programs should be guided by Recreation Management Zones and coordinated between State forests and Parks and reserves to ensure diverse forest recreation opportunities are maintained and to assist in separating conflicting uses.

Regular liaison with major community based recreation groups should be maintained and recreation activity codes of practice promoted via these groups.

Commercial recreation activities should be facilitated where the activity is consistent with other forest management objectives. Licensed tour permits should address the need to protect environmental values and to minimise the impact of large groups on other users.

DSE should work with organisers of commercial or large-scale events to ensure adequate measures are taken to protect environmental values, assisted by the use of a permit system.

Recreation activities which are incompatible with other State forest values or uses, or which are not forest-dependent, are to be discouraged through community education or, where necessary, regulations.

Four wheel driving

Four wheel driving is a common recreation activity in the Gippsland State forest areas. The road and track networks extending through the foothill forests north of the Princes Highway to the Alpine area are the most popular. The purpose for four wheel driving may be to enjoy touring and sightseeing, to reach campsites, to access areas from which to hunt deer or to fish in remote streams. Access to snow activities such as cross-country skiing or snow camping is also important.

Good opportunities for four wheel driving are generally found in RMZs 3 and 4, however, the road network as a whole is available for vehicle-based recreation.

During the preparation of this Plan, the permanent road network was reviewed in consultation with the Victorian Association of Four Wheel Drive Clubs, deer hunters and other forest users. Consequently, there will be some rationalisation of the road network and a number of tracks not required will be closed. Reasons for closure include: tracks that duplicate access, tracks requiring extensive maintenance to meet acceptable standards, temporary timber harvesting access tracks and tracks causing unacceptable environmental impacts. Refer to Chapter 10 – *Forest roads* for more information about the road network.

Four wheel drive visitors generally require minimal or no facilities and use existing small open areas for camping. Sites are monitored for maintenance of environmental and recreational values.

DSE in conjunction with the Victorian Association of Four Wheel Drive Clubs promotes the voluntary *4WD Touring Code* (CNR 1995a).

Actions

Maintain access to a network of four wheel drive routes within State forest and, where possible, maintain links with tracks in National Parks and other reserves.

Continue liaison with peak four wheel drive groups regarding four wheel drive issues.

Deer hunting

In Gippsland, deer hunting is a widespread recreational pursuit as two of Victoria's most commonly hunted deer species occur in the region.

Sambar deer occur across the Alpine region shared by Gippsland, Central Highlands and the North East. The largest Sambar deer populations occur near the Wonnangatta, Moroka and Macalister Rivers between Licola and Dargo. This area is the most popular for deer hunting, however, deer hunting is widespread throughout much of State forest generally from May to October. Hunting of Sambar deer in Gippsland using scent-trailing hounds is permitted in State forest north of the Princes Highway (except where restrictions apply). Hunting of Sambar deer by stalking is also permitted in State forest (except where restrictions apply) and at certain times in parts of the Alpine National Park, Avon Wilderness Park and Mitchell River National Park.

Hog deer occur only in coastal Gippsland and seldom on State forest.

Consultation with the Australian Deer Association (ADA) and local hunters during preparation of this Plan indicates that deer hunting is closely tied to use of four wheel drive access tracks and remote camping. Refer to Chapter 10 – *Forest roads* for actions which relate to road and track management.

Action

Maintain liaison with the Australian Deer Association on deer management issues.

Organised and competitive events

Examples of organised events include music and cultural festivals, potentially involving up to several hundred people. A smaller scale organised event may be, for example, a wedding in a forest setting. Organised events are conducted under a permit issued by DSE and subject to a series of conditions.

Competitive events include car rallies run by groups belonging to the Confederation of Australian Motor Sport (CAMS), motor cycle enduros, orienteering and rogaining championships, mountain bike races and horse endurance rides. The DSE policies '*Car rallies on public land*', '*Orienteering and rogaining events in State forest*', '*Guideline for horse activities in State forest*' and '*Music festivals on public land*' provide comprehensive detail of procedures relevant to organised and competitive events. Applications to hold other events are treated on an individual basis in accordance with relevant DSE policy guidelines.

Permit conditions for events include fire precautions, environmental care, parking and traffic routes, public liability insurance and indemnity to DSE, notification of other relevant authorities, gaining of other required permits, litter, toilet facilities and safety of the general public on forest roads during competitive events.

Management Guideline

Organised and competitive events

Organised and competitive events should be issued with a permit that authorises the proposed activity and provides conditions appropriate to the nature and scale of event. Conditions should include environmental, fire prevention, safety provisions and may also require payment of a security bond or event fee.

Existing policies for organised events and CAMS car rallies will guide the approval process.

Licensed tours

A number of organisations provide recreation services on a commercial basis, thus contributing to rural small business opportunities, employment and sustainable regional development initiatives. These tours often provide access to forest recreation activities which may be unavailable to tour participants using their own resources. Licensed tour operators are required to obtain a *Tour Operator Licence* (the Licensed Tour Permits system is applicable across all public land – including both Parks and State forests). This enables DSE to protect natural and cultural assets from impact and overuse, and regulate and monitor the use of public land for commercial

purposes, through appropriate conditions to ensure the activity is consistent with other forest management objectives.

Licensed tour activities and the number of operators licensed for each activity in Gippsland State forests is listed in Table 7.2.

Table 7.2 Licensed tour activities and operator numbers in Gippsland State forests

Licensed tour activity in State forests in Gippsland	No. of operators offering activity[1,2]
Four wheel drive tours	10
Bushwalking	6
Rafting, canoeing and kayaking	4
Natural history and nature observation	3
Trail bike tours	3
Fishing	3
Fossicking and prospecting	2
Other including coach tours, mountain bike tours, and ski touring	3
Rock climbing, abseiling and caving	2
Total of activities	**36**
Total number of operators	**18**

Notes:
1 Source: Parks Victoria (2003), unpublished data
2 Some operators hold a licence for more than one activity.

Management Guideline

Licensed tour activities

Licensed tour activities should be guided by the Recreation Management Zones, the above Management Guideline for Recreation Activities and relevant voluntary codes of practice (e.g. horse-riding).

Regular liaison with other land managers including Parks Victoria should be maintained to encourage development of consistent requirements relating to licensed tour activities on public land.

Effective liaison should be established with licensed tour operators to address potential conflicts between licensed tour operations and other forest uses.

Action

Establish effective liaison between licensed tour operators and forest management staff regarding licensed tour issues.

Recreation facilities

State forest recreation facilities are mostly located at sites of natural interest such as waterways and viewing spots. Coordination of the location and nature of State forest facilities with other recreation facility providers is an important part of State forest recreation management. Within State forest, DSE aims under this Plan to provide sufficient recreation facilities to meet current demand and likely growth in demand over the next 10 years, within an ecologically sustainable forest management framework.

DSE's challenge is to balance user demand for well-located and well-maintained sites with the provision of opportunities for visitors interested in a wide range of recreational pursuits, while achieving high standards of design and maintenance. There is a need to improve maintenance and promote key sites to visitors to the region, rather than construct additional sites.

The nature, location and quality of visitor facilities can influence the enjoyment of State forest recreational visitors. Overcrowded, dilapidated or poorly located sites can detract from a recreation experience, and are prone to vandalism.

DSE manages State forest to provide visitors with a broad range of opportunities for recreation experiences. At a number of sites, DSE will continue to provide and maintain traditional recreation facilities. In RMZs 1 and 2, the facilities will reflect a diversity of recreation activities and a high intensity of use. In RMZs 3 and 4, where facilities are provided, they will reflect the values of a remote recreation experience. At most sites in RMZs 3 and 4, visitors should be self-sufficient. Table 7.3 indicates the types of recreation facilities in each RMZ.

Recreation facilities in State forest serve a number of roles. They can add to visitor enjoyment through the provision of facilities such as fireplaces, toilets and picnic tables and by providing a focus for recreation activities such as a starting and finishing point for bushwalking. They also assist recreation management by confining activities such as camping to sites capable of supporting use, and by providing a focus for the distribution of visitor information.

The focus for State forest recreation planning in Gippsland is to provide a satisfying recreation experience to visitors and to provide a range of facilities at popular recreation sites which have vehicle access. New or replacement facilities installed in State forest should generally be designed to be physically accessible to the widest range of people possible. Where possible, consistent with the management objectives of the site, access for disabled people should be provided. A listing of existing recreation facilities and their management is found in Appendix S, while Appendix T identifies priority works relating to recreation and tourism activities in Gippsland.

Where scenic and educational Forest Drives are promoted they may incorporate:

- a description of State forest management strategies for biodiversity conservation, sustainable wood production and other management features;
- interpretation of scenic and historic features;
- explanation of current forest management activities such as timber harvesting, thinning and fuel reduction burning; and
- information on the location of existing recreation facilities and interpretive facilities.

Table 7.3 Provision of recreation facilities and services in recreation management zones

Type of recreation facility	Zone 1	Zone 2	Zone	Zone 4
Camping sites	✓	✓	✓	
Licensed tours	✓	✓	✓	✓
Walking tracks	✓	✓	✓	
Fire places	✓	✓	✓	
Forest drives	✓	✓		
Horse-riding facilities	✓*	✓	✓	
Information/Interpretation	✓	✓		
Picnic tables/Toilets	✓	✓		

Notes:
DSE will use this table to guide the standard and development of facilities in each zone. The actual type of facility provided in a particular site will vary according to the RMZ, the site's location and current and anticipated future usage.

* Appropriate in certain locations.

Management Guideline

Recreation facility management

Existing and proposed facilities should be consistent with the Recreational Management Zone (section 7.2 above) and DSE's capacity to maintain facilities to a high standard with minimal impact on environmental values.

New facilities should be planned, designed and developed to be safe, low impact, low maintenance and sensitive to the natural and cultural landscape. The impact of new facilities should be considered prior to their establishment. Facilities should be developed to blend into the natural forest surroundings and to enhance a high quality forest recreation experience.

Recreation sites should be regularly assessed to determine if replacement, repair or removal of damaged facilities is required, or unacceptable environmental impacts are occurring as a result of use or design of the site.

Forest drives should be regularly reviewed to ensure they remain enjoyable, relevant and up to date.

Actions

Manage State forest recreation activities in accordance with the above Management Guidelines for recreation activities and facility management.

Upgrade and maintain recreation facilities and network of walking tracks as outlined in Appendices T and U.

Where feasible, design and construct new or upgraded visitor facilities to provide access for disabled visitors consistent with the overall objectives of the site.

Monitor the use and condition of all sites as a basis for maintenance and upgrading programs.

Australian Alps Walking Track

The Australian Alps Walking Track (AAWT) extends from Walhalla to Canberra, covering approximately 650 km. In Gippsland, the AAWT is mainly within the Alpine National Park and State forest. The AAWT is managed by the local land management agency with coordination being provided by the Australian Alps Liaison Committee through strategy documents and a working group. The working group includes land managers and track user representatives. The management strategy for the AAWT was completed in 1997.

DSE recognises the significance of the AAWT, and will contribute to the maintenance of the track consistent with LCC recommendations (LCC 1983a) and the AAWT Management Strategy.

Management Guideline

Australian Alps Walking Track

Maintain a visual corridor generally of 50 m either side of the AAWT, free from harvesting and other activities, where practicable, in order to maintain the landscape quality of the AAWT.

Manage the track in accordance with the AAWT Management Strategy, which includes guidelines on signage and track marking, and the procedure for changing the agreed route.

Co-operate with Parks Victoria to maintain the AAWT at an appropriate standard, taking into account both its significance and level of use in sections where it does not follow a vehicle track.

Construct and maintain DSE roads that cross the AAWT in a manner that considers the needs of walkers using the track.

Consider the use of alternative extraction routes during harvesting operations to protect the AAWT where that section is a vehicular track managed by DSE.

7.4 Huts

There are 13 huts in State forest in Gippsland. This number excludes hut ruins or sites of former huts. The huts vary in age, style, construction and condition. Most were originally constructed by people involved in timber harvesting or grazing activities, although others had their origin in recreation, mining, or road maintenance. The huts are open to the public, but generally have low visitor levels (usually 4WD tourists or hunters). Map 4 shows the location of huts and Appendix U describes their management.

All huts on State forest are the property of the Crown (Victorian Government) regardless of who built them. It is intended that huts will be retained where they have heritage value or provide for emergency refuge.

Generally huts are available to the public on a 'first come, first served' basis for shelter or refuge only. The huts are not for accommodation purposes and, as such, visitors should be self-reliant. In some cases, a grazier (in accordance with the grazing licence) may have a prior right of use to a hut.

Two of the huts have regional or State heritage values and some have been vandalised. Maintenance required to keep the huts in good condition could be significant. Assistance from user groups will be required if some huts are to be retained.

Aims

Provide public access to all huts for refuge and shelter purposes. Ensure that the use of huts and their surrounds has minimal impact on the environment.

Preserve and protect historic huts.

Management Guideline

Management of huts

All huts on State forest should be managed to provide for public refuge and shelter, on a 'first come, first served' basis. Huts are not intended for or equipped to provide accommodation. Users will be encouraged to share huts.

Historic huts classified as being of high significance will be preserved. Huts should not be altered or removed until historic significance has been determined or they are considered by DSE to be unsafe.

Huts maintained by volunteers in agreement with DSE should have hut maintenance plans prepared prior to any work commencing. Plans will include as a minimum: the required standard of maintenance, any heritage values to be protected or maintained and safety considerations.

Where volunteer groups maintain huts on behalf of DSE, the agreement will not give a prior right of use to the hut but the contribution made by the volunteers will be acknowledged by providing appropriate information inside the hut.

Proposals for alterations or additions to any hut should be assessed in accordance with hut maintenance plans and be consistent with the purpose of huts, management objectives of the area, and historic, cultural and environmental values. Where exotic plants may be associated with an historic hut, any proposal for removal should consider their cultural significance.

Huts without significant historical or refuge values will be removed unless user groups or volunteers can justify the need for retention of huts and can contribute to their upkeep.

Construction of a new hut or a replacement hut may be permitted only in circumstances where a public need for refuge or shelter can be demonstrated. In general, huts constructed without DSE approval will be removed as soon as practicable.

Visitors to huts will be encouraged to take their rubbish home with them.

Actions

Manage huts in State forest in accordance with the above Guideline for the Management of Huts and as described in Appendix U.

Ensure all huts maintained in State forest are available for public refuge and shelter.

Monitor the condition of huts and their surrounds for environmental impacts and take appropriate remedial action.

Facilitate joint hut maintenance arrangements between DSE and volunteer groups according to agreed hut maintenance plans.

Remove illegal huts that have become hazardous.

Chapter 8 Cultural heritage, native title and landscape

The forests of Gippsland have a rich history. The earliest recorded evidence of human occupation in the region dates from 21 000 years ago, but it is likely that parts of Gippsland have been inhabited for at least 40 000 years.

The original inhabitants of Gippsland were the clans of the Gunai/Kurnai nation. The Gunai/Kurnai lived mainly around lakes, river systems, beaches and estuaries. In summer, journeys were made to the high country in search of the Bogong Moth. From the 1830s European settlers slowly penetrated the region and introduced new land-use regimes including grazing, timber harvesting, agriculture and mining. This history of human interaction with the land has resulted in a rich cultural heritage landscape. Places of traditional significance to Aboriginal people, and those valued for their historic or social values are an important part of Australia's cultural heritage.

Aims

Protect and maintain the cultural and historic values of State forest.

Encourage the sensitive use of selected sites and places for the education and enjoyment of the public.

8.1 Aboriginal heritage values

Within the forests of Gippsland there are areas of traditional, historical and contemporary significance to Aboriginal communities. Some of these areas may contain tangible evidence of past Aboriginal occupation, whilst others have important intangible values such as spiritual associations. The location of some of these values is recorded on the Aboriginal Affairs Victoria (AAV) Site Register. All Aboriginal sites and places, whether recorded or not, are protected under the Victorian *Archaeological and Aboriginal Relics Preservation Act 1972* and the Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (ATSIHP Act). A comprehensive survey of Aboriginal heritage values in State forest has not been undertaken and therefore it is anticipated that there are values that have not been recorded in the planning area.

Aboriginal heritage values are recognised for their cultural, scientific and educational importance. Aboriginal communities play a primary role in the management of their heritage and AAV is the State government agency responsible for administering the Aboriginal heritage legislation, providing advice to government, and supporting Aboriginal communities in cultural heritage management. Part IIA of the Commonwealth ATSIHP Act requires the protection of sites and places to be conducted in consultation with Aboriginal communities. Under the ATSIHP Act, six Aboriginal community organisations in the Gippsland region have specific powers relating to the disturbance of sites and places. These organisations are Moogji Aboriginal Council East Gippsland Incorporated, Lakes Entrance Aboriginal Corporation, Central Gippsland Aboriginal Health and Housing Co-operative Ltd, Gippsland and East Gippsland Aboriginal Co-operative Ltd, Wurundjeri Tribe Land Compensation and Cultural Heritage Council Incorporated, and West Gippsland Aboriginal Co-operative Ltd. In addition, the Gippsland, Kulin Nation and North East Regional Cultural Heritage Programs, which have been established to act as a community-based resource agency in cultural heritage, can provide advice and services relating to cultural heritage management. Native title claimants (see section 8.3) also have rights and interests in heritage matters.

The *Indigenous Partnership Strategy* (NRE 2001c) details the framework DSE has adopted to build effective relationships with Aboriginal communities and empower them to become actively involved in the management of natural resources. The Indigenous Partnership Strategy recognises that Victorian Indigenous communities, as the traditional custodians of the State's land and waters, have a fundamental role in the management of Victoria's natural resources.

The Indigenous Partnership Strategy contains initiatives relating to:

- implementing an Indigenous Cultural Awareness Program throughout DSE;
- developing community partnerships;
- promoting awareness and consideration of Aboriginal cultural heritage as an integral part of land and natural resource management, in partnership with Victorian Indigenous communities;
- capacity building within Victoria's Indigenous communities;
- creating employment opportunities for Indigenous people within DSE;
- Indigenous economic development;
- developing a communication strategy targeted at DSE staff; and
- development of Indigenous community profiles.

The Gippsland Regional Forest Agreement (Commonwealth of Australia and State of Victoria 2000) provides for the development of a package of measures to ensure the appropriate management of Aboriginal heritage including the maintenance of traditional historic uses and values. These measures are: the preparation of Statewide guidelines for the management of cultural heritage values; the development of an Aboriginal heritage management system which aims to establish formal consultation mechanisms with Aboriginal communities; development of a sensitivity zoning model to highlight areas likely to contain Aboriginal heritage values and identify priority areas for future surveys; and, to facilitate cross-cultural awareness training for DSE staff.

DSE is developing an Aboriginal heritage management system (AHMS) in consultation with AAV, Environment Australia and Aboriginal communities to implement these measures, to ensure that processes are in place for the ongoing identification, assessment and protection of Aboriginal heritage values in consultation with communities, and to increase Aboriginal participation in land and resource management. Hughes and Buckley (2000) developed a sensitivity zoning plan for the adjacent North East region to assist in the management of sensitive archaeological areas. A component of the AHMS is the development, in consultation with Aboriginal communities, of a sensitivity zoning model for the Gippsland region to assist in the management of Aboriginal heritage values and to establish priorities for field survey.

The measures identified in this Plan are consistent with the initiatives in the *Indigenous Partnership Strategy* and seek to address the broad range of Aboriginal community concerns about forest management activities in the Gippsland region.

Actions

Develop and implement the measures identified in the Gippsland Regional Forest Agreement to facilitate the appropriate management of Aboriginal heritage values.

Apply the Statewide cultural heritage guidelines in Gippsland once developed.

Maintain liaison with local Aboriginal communities and AAV to facilitate information-sharing and to provide opportunities for input into forest management decisions.

Determine management requirements for Aboriginal heritage values in consultation with Aboriginal communities.

Provide opportunities for increased participation of Aboriginal people in the management of State forest.

Incorporate measures to protect Aboriginal heritage values into the Gippsland Region Management Prescriptions for Timber Production and Other Forest Uses.

Improve cross-cultural awareness amongst DSE staff through training involving relevant Aboriginal communities.

8.2 Historic places

Over 160 historic places have been recorded in State forest in the Gippsland region (see Appendix V). These include mining sites, huts, sawmill and tramway sites, routes of human movement and settlement sites. Most of these places have already been recorded in the DSE Historic Places database, with additional information coming from DSE staff, and from the National Estate component of the Comprehensive Regional Assessment for Gippsland. Additional historic places may be discovered in the course of forest management activities or as the result of further research. These will be assessed and the significant sites will be protected.

Historic places in State forest are managed in accordance with principles of the Burra Charter of Australia ICOMOS (International Council on Monuments and Sites). Basic principles inherent in the Charter include: acknowledging the importance of a place itself; understanding its cultural significance; recognising that the fabric, setting and contents of the place are important; making decisions about the future of the place based on information methodically collected and analysed; and keeping accurate records about decisions and changes to places.

Historic places can offer rewarding cultural, educational, scientific or recreational experiences. In recognition of their special significance, a number of historic places are listed (or recommended for listing) on the Register of the National Estate and the Victorian Heritage Register.

An emphasis of cultural heritage management on public land is to protect significant places from human disturbance and inappropriate development, and to establish a process for their long-term conservation and management. Selected places or groupings of places, which provide an understanding of the history of the region, may be used in recreation and interpretation programs.

Management actions for each place are documented in Appendix V. For each place either a management action or a buffer has been specified. Buffered sites are either SPZ or SMZ, depending on the significance of the place and its susceptibility to disturbance. Where 'protect historic fabric' is specified as a management action, all artefacts should be left in situ and forest management activities should not disturb any historic feature.

Management Guideline

Historic places

Forest management activities should be planned so that they do not disturb significant historic places. Consultation with DSE's Historic Places Section should take place where proposed forest management activities may disturb historic places listed in Appendix V. Consultation with Heritage Victoria is to occur where proposed forest management activities may disturb sites on the Victorian Heritage Register.

Additional places discovered in the course of forest management activities or as the result of further research should be reported to DSE's Historic Places Section and, if appropriate, a buffer should be placed around the place.

Management plans for historic places, or groups of places, should be developed for the most significant or vulnerable places.

Historic places used for education or interpretation should be: accessible; close to current recreation facilities or a grouping of places illustrating a theme(s) of forest activity; and robust to disturbance so that their integrity is maintained. A regional interpretation strategy should be developed which recognises major forest themes, and the relationship between cultural heritage and the natural environment.

Actions

Manage places according to the Management Guideline for Historic Places and management actions in Appendix V.

Apply the Statewide cultural heritage guidelines in Gippsland once developed.

Incorporate measures to protect historic places into the Gippsland Region Management Prescriptions for Timber Production and Other Forest Uses.

Ensure that proposed activities do not adversely affect historic places (in line with the Guideline above) through annual forest management operational plans including the Wood Utilisation Plans and Fire Operations Plans.

8.3 Native title

The *Native Title Act 1993* (NTA) recognises and protects native title and regulates activities that may affect native title. Indigenous people can apply to have native title rights on Crown lands and waters in their traditional lands, recognised by Australian law by applying for a determination of native title with the Federal Court. The NTA enables native title holders to negotiate over matters which may affect their native title rights and interests before they formally receive recognition.

In Victoria, the Mirimbiak Nations Aboriginal Corporation currently coordinates native title claims, and acts for native title holders and claimants in relation to matters that may affect their rights and interests in land.

In 1997, the Gunai/Kurnai People (reference VG6007/98) and Taungurong (reference VG6021/98) claimed native title to areas in Gippsland. Some of the land covered by this Plan is subject to these applications.

All proposals (known as future acts under the NTA) on State forest must be assessed in light of the future act provisions of the NTA. This must occur, regardless of whether there is a native title claim lodged over the forest. This consideration may give rise to procedural rights, such as the right to comment on a proposal, to the relevant native title parties. The future act provisions only apply if native title has not been extinguished. Native title may have been extinguished by former freehold or leasehold land and public works. If there is no extinguishment and the proposal does not fit within the future act provisions of the NTA, the proposal will not be valid unless an Indigenous Land Use Agreement (ILUA) is entered into.

An ILUA gives the claimants a 'right to negotiate' over matters which may affect their rights without the prior requirement of formal recognition of native title.

This Plan is not an ILUA and is not intended to pre-empt the development of an ILUA. The Plan may, however, assist in future consultative processes with Aboriginal people and communities interested in the management of Gippsland forests.

Action

Ensure all future acts undertaken within State forests are done so in accordance with the provisions of the Native Title Act.

8.4 Landscape

The Gippsland region boasts great diversity in its landscapes. The region is characterised by steep mountains and deeply incised valleys in the north, bounded by foothills, with undulating plains and lake systems southward to the coastline. The Southern Gippsland Hills, with their distinctive rounded hilltops, lie geographically isolated within the lowlands of the region (Leonard and Hammond 1984). These natural environments contribute to the scenic quality and provide a contrast to the surrounding landscapes, which are generally dominated by agriculture.

The natural landscapes comprise part of Gippsland's attractiveness to tourists and contribute economic benefits to the region. As a manager of a large portion of the natural landscape, DSE endeavours to protect landscapes of high scenic quality and viewer interest.

Aims

Protect landscape values, especially in areas of high scenic and aesthetic quality and viewer interest.

Minimise the visual impact of forest management activities on the landscape.

Management actions can impact on the landscape viewed by visitors to an area, and what they see may strongly influence their perceptions of native forest management. If not managed properly, roading and timber harvesting can have a major impact on the forested landscape, particularly when viewed in the near and middle ground. Careful design of these activities can minimise impacts. The *Code of Forest Practices for Timber Production* sets out guidelines for the protection of landscape values within harvesting operations in State forests.

Landscape management on public land in Victoria is guided by the Visual Management System (VMS) (Williamson and Calder 1979). This system uses a combination of scenic quality, visitor sensitivity and distance classes to set visual quality objectives for an area. The VMS can be used for detailed landscape planning, or to develop broader landscape management strategies. In preparing this Plan, the VMS was used to help identify key areas of State forest where detailed planning is required to protect landscape values.

Management Guideline

Areas of high scenic quality

All areas considered to have high sensitivity and high scenic quality at a landscape level should be included as part of the Special Management Zone (SMZ).

In areas zoned as SMZ for high sensitivity and high scenic quality, timber harvesting coupes and new road alignments or easements should be planned and implemented in a manner that ensures the scenic value is maintained.

Landscape alterations in the middle ground may be evident in the short term, but become less apparent over time. Timber harvesting coupes, new roads and easements in these areas should be designed to minimise their visual impact.

The following strategies will help protect areas of high sensitivity and high scenic quality:

- selective harvesting around the edges of timber harvesting coupes;
- using silvicultural regimes such as overwood retention or selective harvesting;
- minimising the width of road alignment clearing;
- restricting the area of timber harvesting coupes which can be seen from popular travel routes or towns;
- curved boundaries of timber harvesting coupes; and
- ensuring the spatial and temporal distribution of timber harvesting coupes.

The actual strategies adopted should be specified in Coupe Plans prior to harvesting.

Landscapes with high scenic value have been identified from a variety of sources, including RFA workshops involving a cross-section of the public and DSE staff.

Some of the landscapes have also been nominated for the Register of the National Estate. However, assessment has not been completed for a number of these areas. There are no landscapes classified by the National Trust in the State forests of Gippsland.

Appendix W lists areas of high scenic quality and their management. These areas include vegetation adjacent to popular travel routes and areas seen from some roads, rivers, towns and lookouts. Timber harvesting will be permitted in these SMZ with special attention given to landscape values. Alterations to the foreground landscape of these areas should be temporary, subtle and not evident to the casual observer.

A number of places in Gippsland have been identified as having aesthetic value (VicRFASC 2000b). The aesthetic value was defined as 'the response derived from the experience of the environment or particular natural and cultural attributes within it'. Aesthetic value takes into account people's perception of form, scale, colour, texture and material, smell and sound. Appendix W also lists the sites identified in the Comprehensive Regional Assessment (VicRFASC 2000b) as containing aesthetic value and their management.

In addition, the Land Conservation Council (LCC) recommended areas of State forest to be protected for their natural features and scenic values (LCC 1983a; LCC 1983b; LCC 1991a; LCC 1994). These areas are included in Appendix W.

Action

Manage the high scenic quality landscapes seen from major tourist roads, towns and viewing points according to Appendix W and the Management Guideline for Areas of High Scenic Quality.

National Estate

A study conducted under the RFA process (National Estate Assessment) assessed national estate values in the Gippsland region and provides more detail on natural and cultural values of the region (VicRFASC 2000b).

Conservation measures have been developed for natural values identified by the National Estate Assessment as being sensitive to disturbance. Such measures are encompassed in strategies for biodiversity conservation (see Chapter 3 – *Biodiversity conservation*). Conservation of other natural and cultural values is achieved through forest management zoning, conservation and management guidelines and actions set out throughout this Plan.

The RFA recognises that many of the national estate values are well reserved in the CAR reserve system and that this plan and other mechanisms provide for the conservation of many other national estate values in the region. National estate values in Gippsland will be conserved through the application of the principles detailed in this Plan.

Management zone boundaries may require review in implementing this plan as outlined in Chapter 12. In accordance with the Gippsland RFA, best endeavours will be used by DSE to maintain the levels of protection of national estate values in a regional context, however, minor changes to the levels of protection of individual values may occur as a result of changes to the SPZ through time as new information becomes available.

Chapter 9 Other forest uses

There is a range of other uses of State forest in Gippsland. These include occupation and utility licences in State forest for public and private uses, mineral exploration, mining, extractive activities, grazing, beekeeping and Defence Force training. The Basslink electricity interconnector project occurs within the planning area.

9.1 Occupancies and utilities

Occupation and utility leases and licences in State forest may cover a variety of public and private uses. Occupation licences can include licences for campsites, rubbish depots and recreation sites. Utility licences may include water supply facilities, gas, oil and electricity supply lines, trigonometric stations, and towers for telecommunications and fire observation.

There are currently 31 licences and leases for occupations and utilities issued for areas of State forest within Gippsland. Most licences are issued on an annual basis and are for a specified use, while leases are generally held for an exclusive occupation, with rent paid annually. All occupation licences or leases are subject to conditions to ensure that the use is consistent to management practices appropriate to public land.

Aim

Manage the private and institutional occupation of State forest for uses that are dependent on access to State forest, conform to environmental guidelines, and provide a high level of public benefit.

Management Guideline

Occupancies and utilities

Private or institutional occupation of State forest should be restricted to uses that:

- do not substantially conflict with conservation, timber production or recreation objectives;
- cannot be located on freehold land;
- contribute to the beneficial management of State forest; and
- provide a public benefit that outweighs social or environmental costs.

Actions

Assess current licences and leases, and any new applications for further tenure, to determine if they meet the above Management Guidelines for Occupancies and Utilities.

Phase out occupancies and utilities that do not meet the above guidelines by the year 2010. Where occupied sites have been substantially modified by use, and where other State forest values will not be adversely affected, explore the option of excision and sale of the occupied land.

Liaise with facility managers to ensure a minimum width easement is maintained consistent with maintenance requirements, safe operation, protection of the installations and services and protection of environmental values.

9.2 Mineral exploration and mining

Since the 1850s exploration and mining in Gippsland has focused on gold, coal, oil and base metals. The planning area includes several of Victoria's most important mineral deposits, these include the State's largest base metal deposits at Wilga and Currawong (near Benambra) and brown coal in the Latrobe Valley (VicRFASC 1999b).

Exploration licences extend over large areas of State forest, however, only relatively small areas are subject to on-ground works. Exploration in the planning area mainly targets gold, with interest also in base metals. There are 14 mining licences covering State forest in the planning area. These licences cover the base metal deposits at Wilga and Currawong and a number of small gold-mining ventures primarily in the Tambo Forest Management Area. Brown coal deposits are of prime interest to the mining industry in the south of the region, where vast resources of brown coal are mined on freehold land, primarily as fuel for electricity generation.

Exploration may involve geological mapping, ground geophysical surveys, drilling, large-scale remote sensing techniques, the removal of rock samples for testing, or the removal of bulk samples for proving mineral content. These activities, subject to appropriate conditions generally have only a minor, temporary impact on forest values.

The area directly disturbed by mining depends largely on the type of operation. Surface alluvial operations may affect the entire area of a tenement, whereas an underground operation may only affect a small area of the tenement. Off-site impacts of mining potentially include sedimentation in streams, entry of materials into the water table and damage to forest roads by ore transport trucks. Such adverse impact can generally be minimised by careful management and enforcement of operating requirements.

Under the *Mineral Resources Development Act 1990*, access to State forest for exploration and mining requires a licence and approval of a Work Plan by Minerals and Petroleum Victoria (a division of Department of Primary Industries). Mining Work Plans include a rehabilitation plan, and are approved only after consultation with the relevant land management agency. Exploration Work Plans do not require a rehabilitation plan, but the exploration is subject to a set of conditions which includes rehabilitation measures. Local government planning schemes apply to mining activities except where an Environmental Effects Statement has been prepared and approved.

Aims

Provide for mining and exploration in State forest in accordance with the Mineral Resources Development Act.

Minimise the adverse impact of exploration or mining activities on State forest values.

Action

Seek to ensure that operational and rehabilitation requirements and approved work plans for all mining or exploration activities effectively protect forest values, including those identified in the Special Management and Special Protection Zones. As a minimum, these should address:

- *biodiversity conservation, including the requirement of the Order-in-Council issued under the Flora and Fauna Guarantee Act;*
- *protection of catchments and streams;*
- *impacts on forest recreation and tourism;*
- *impacts on sawlog resources;*
- *impacts on cultural and landscape values;*
- *pest plant and animal control; and*
- *management and maintenance of forest roads.*

9.3 Extractive materials

Extraction of rock, sand, gravel, clay and soils from State forest is regulated under the *Extractive Industries Development Act 1995* (EIDA) which is administered by Minerals and Petroleum Victoria. Under the EIDA, a Work Authority is required to access State forest for extractive operations. A work plan, that includes a rehabilitation plan, and the consent of the land owner are some of the requirements of the EIDA for the granting of a Work Authority. Some sites managed by DSE are exempt from the EIDA, due to their small size and depth.

There are eight extractive industry Work Authorities issued for operations within State forest in Gippsland. The most sought-after extractive materials are rock, gravel and sand. Cainozoic sand and gravel deposits throughout Gippsland contain large quantities of high-grade building and road making material, which is used by DSE, VicRoads and municipalities.

DSE currently manage numerous gravel pits in Gippsland, mainly for road construction, improvement and maintenance within State forests. Rehabilitation work is required at several redundant pits in Gippsland State forests.

Aim

Limit the use of State forest extractive material resources to:

- *the provision of material for forest management operations such as the construction and maintenance of forest roads;*
- *private or commercial operations where the resource cannot feasibly be obtained from freehold land; and*
- *sites that conform to the Extractive Industries Development Act.*

Management Guideline

Extractive activities

The opening of new DSE-managed pits, and consent for other extractive activities should take into account the:

- impact of proposals on State forest Special Protection Zones;
- availability of the resource on freehold land or other sites;
- environmental and other impacts of the proposal; and
- economic values.

No new extractive activity will be established within the Special Protection Zone, unless it will make a significant contribution to the regional economy and unless the values within the Zone can be maintained or be provided elsewhere.

Actions

Grant land owner consent for extractive activities in accordance with the Extractive Industries Development Act, above Management Guidelines for Extractive Activities and other relevant legislation and guidelines.

Seek to ensure that operational and rehabilitation requirements and approved work plans for all extractive activities effectively protect forest values. As a minimum, these work plans should address:

- *biodiversity conservation;*
- *protection of catchments and streams;*
- *impacts on forest recreation and tourism;*
- *impacts on sawlog resources;*
- *impacts on cultural and landscape values;*
- *pest plant and animal control; and*
- *management and maintenance of forest roads.*

Open new DSE-managed pits in accordance with the above Management Guidelines for Extractive Activities and relevant legislation and guidelines. Ensure work plans are prepared for all DSE managed pits.

Develop a Rehabilitation Strategy for DSE-managed pits (existing and redundant pits) on State forest by December 2005. The Strategy should include priorities for rehabilitation measures, taking into account the impact on soil, water, flora, fauna and timber values.

9.4 Grazing

Seasonal grazing of cattle and other livestock in the alpine area of Gippsland dates back to the 1800s. Today, access to grazing licence areas on State forest forms an integral part of livestock management for some graziers.

Grazing of State forest requires a licence, which is issued according to the relevant legislation such as the *Forests Act 1958* or the *Land Act 1958* depending on the land status. Conditions in all licences usually include restrictions on the number of stock, access dates and transfer of licences.

Numerous grazing licence types are issued for State forest eg. alpine grazing (above 1 220 m elevation) and seasonal bush grazing. These licences are generally issued for a twelve-month period.

Currently, there are 118 grazing licences on State forest in Gippsland, covering approximately 198 700 ha. Of these, 37 licences covering 108 100 ha are for grazing in alpine areas. Commonly there are few fences within State forest and so, licensees endeavour to control stock movement through the use of natural features such as barriers, water sources, salt licks and an end-of-season muster.

Grazing may compromise forest values through removal of vegetation cover and trampling, leading to loss or modification of habitat, soil compaction and erosion, the introduction and spread of exotic plants, and inhibiting regeneration (e.g. regeneration following timber harvest or wildfire events).

The *Flora and Fauna Guarantee Act 1988* identifies two major impacts of grazing as Potentially Threatening Processes. These processes are the degradation of native riparian vegetation along Victorian rivers and streams; and soil erosion and vegetation damage and disturbance in the alpine regions of Victoria caused by cattle grazing. Action statements are yet to be prepared for these processes.

Grazing is permitted where it does not significantly compromise forest values, other management purposes or other forest uses. Where grazing may adversely impact on forest values and other forest uses, licence conditions may restrict access temporarily or areas may be withdrawn from grazing activities. Grazing is not permitted in areas reserved under the *Reference Areas Act 1978* and associated buffers.

Grazing may also be excluded from SPZs for the protection of rare, endangered and vulnerable EVCs, old-growth forest and threatened species. Where amendments to currently licensed areas are required in order to protect environmental values, licensees will be consulted. Tables 9.1 and 9.2 provide direction for management of the rare, endangered and vulnerable EVCs in SPZ that are currently covered by a grazing licence, and threatened flora and fauna species that may be sensitive to disturbance from grazing.

Table 9.1 Management actions for protection of Ecological Vegetation Classes in SPZ

Value to be protected	Grazing Probability[1]	Management Action
Ecological Vegetation Class[2]		
Cool Temperate Rainforest	Low	Exclude grazing
Warm Temperate Rainforest	Low	
Sub-alpine Wet Heathland	High	Develop grazing strategies to minimise impacts. Regular monitoring
Riparian Forest	High	
Grassy Woodland	High	
Valley Grassy Forest	High	
Riparian Shrubland	Low	Regular monitoring to assess impacts
Rocky Outcrop Shrubland	Low	
Montane Riparian Woodland	Low	
Montane Riparian Thicket	Low	
Valley Heathy Forest	Low	
Valley Slopes Dry Forest	Low	
Montane Rocky Shrubland	Low	
Shrubby Foothill Forest	Low	

Notes:
1 Grazing probability is derived from assessing species comprising the EVC and determining the palatability of the EVC. A low grazing probability indicates that the EVC is unpalatable (provides little or no sustenance) and as such, domestic stock are likely to occupy the areas for short periods only. High probability indicates that the EVC is palatable to domestic stock.
2 Ecological Vegetation Classes included in this table are those classified as rare, endangered or vulnerable (see Chapter 3) and have greater than 10 ha covered by a grazing licence.

Table 9.2 Management actions for protection of threatened flora and fauna

Value to be protected	Management Action
Alpine Tree Frog	Review and, if necessary, modify grazing licences in the vicinity of confirmed records (see Appendix M).
Alpine Bog Skink	
Alpine Water Skink	
Flora species listed in Appendix L	Where an SPZ or SMZ has been established for flora conservation, review and, if necessary, modify grazing licences in the vicinity of confirmed records (see section 3.7 – Featured Flora Conservation Guideline).

Aims

Provide opportunities for grazing in currently licensed areas of State forest consistent with the Management Guideline for Grazing.

Ensure grazing licence conditions facilitate sound stock and land management practices.

Management Guideline

Grazing

Grazing will be permitted on State forest, where it does not compromise forest values or, other forest uses or other management requirements.

Grazing will not be permitted within 1 km of Reference Areas and 1 km of rainforest (see Appendix I for the definition of rainforest).

Grazing activities which may impact upon Reference Areas, forest regeneration areas or SPZs which are sensitive to grazing by domestic stock, will be reviewed in consultation with licensees to develop appropriate arrangements for the protection of forest values.

Licensees should be consulted when any changes to the licence or the licensees' use of the licensed area are under consideration.

Sites should be rehabilitated where necessary, where grazing has been discontinued.

Grazing of areas of State forest previously not licensed should only be considered following assessment of the potential impacts on environmental and natural values and an evaluation of economic benefits.

Actions

In consultation with licensees, review current licensed areas to assess the impact of grazing on water quality, soil stability, and flora and fauna values as the basis for any necessary improvements in stock management practices.

Establish and monitor grazing management standards in conjunction with licensees.

Assess applications to graze areas of State forest not previously licensed and consider access, natural permanent water supply, the potential impacts on water quality, soil stability, flora and fauna values.

Issue new grazing licences only where they do not compromise forest values and other forest uses.

Exclude grazing by domestic stock from Reference Areas (and associated buffers), rainforest (and associated buffers), areas of forest regeneration and where necessary SPZs specified in Table 9.1 where exclusion of grazing is essential for the protection of the forest values.

9.5 Beekeeping

The forests of Gippsland are an important resource for honey production, producing approximately 11% of Victoria's honey and related products (VicRFASC 1999b). In addition, apiculture contributes to the pollination of food and seed crops. High quality honey, beeswax and various other products are largely dependent on eucalypts, which form the major nectar resource for the European honeybees. Species utilised in Gippsland include Yellow Box (*E. melliodora*), Red Box *(E. polyanthemos*), Blue Box (*E. baueriana*), Red Ironbark (*E. tricarpa*), But-but (*E. bridgesiana*), Red Stringybark (*E. mackintii; E. macrorhyncha*), Alpine Ash (*E. delegatensis*), Snow Gum (*E. pauciflora*), Silvertop (*E. sieberi*), Manna Gum (*E. viminalis*), Long-leaf Box (*E. nortonii*) and Saw Tooth Banksia (*Banksia serrata*). The sporadic flowering seasons of these and other native flora result in the need for apiarists to access a wide range of areas to maintain honey production.

Licences for annual sites and short term permits (3 or 6 month) for temporary sites in State forests are issued under the *Forests Act 1958* or the *Land Act 1958*. Licences allow access to a site for locating hives and, usually, exclusive rights to forest nectar and pollen resources within a radius of 1.6 or 0.8 km. There are approximately 8 annual and 368 temporary licensed beekeeping sites on State forest in Gippsland (VicRFASC 1999b).

Some studies suggest that European bees may both adversely and positively affect native ecosystems, although the magnitude of such effects has not been evaluated (Paton 1996). Competition for resources such as nectar, pollen and tree hollows by honeybees may result in displacement of native fauna and a long-term decline in native pollinator populations. Potential effects on native flora species include hybridisation of plant species, inefficient pollination and the enhancement of seed production of a number of native plants whose native pollinators have declined substantially. Large bee populations may also interfere with recreational activities by creating a nuisance for picnickers and campers.

Not-withstanding these potential effects, beekeeping is consistent with the broad management objectives of State forest, if care is taken with the location and management of apiaries. There is no general requirement to exclude beekeeping from SPZ and all existing sites will continue to be available unless specific conflicts with other values become apparent. Applications for the establishment of new sites within SPZ will be considered where the protected values will not be compromised by the presence of large numbers of bees or associated apiary management activities. It would be inappropriate, for example, to permit new apiary sites to be cleared within areas protected for old-growth forest values, or for apiaries to be located in the vicinity of the breeding sites of a threatened species.

Some forest management activities may affect the conduct of beekeeping in State forest. Effects include canopy loss through timber harvesting operations and loss of bees from smoke and heat from fuel reduction burns. DSE endeavours to coordinate fuel reduction burning activities with use of forest areas by beekeepers to minimise conflict.

Care needs to be taken with the location and management of apiaries to ensure reliable access to nectar and pollen resources, while protecting other forest management objectives, uses and values. Apiaries are not permitted within areas reserved under the *Reference Areas Act 1978* and areas of rainforest and associated buffers (see *Management Guideline for Beekeeping*). Generally, licensing sites near recreation areas is avoided, particularly during periods of heavy public use.

An Apiary Management Plan for the combined Central Gippsland, Tambo and East Gippsland FMAs is being prepared by DSE in consultation with the apiary industry. The apiary management plan will identify forest areas suitable for apiculture, stratify bee sites according to importance for honey production, and address management of foothill forests across the Apiary Management Plan area.

Aim

Provide apiarists with opportunities for beekeeping in State forest while minimising any adverse impacts on other values.

Management Guideline

Beekeeping

Effective and regular liaison with beekeeping industry organisations should be maintained.

Apiary activities will continue to be permitted in State forest. Apiary activities are not permitted:

- within 2 km of Reference Areas (scheduled under the *Reference Areas Act 1978*);
- within 0.5 km of rainforest (see Appendix I for a definition of a rainforest);
- within 0.5 km of developed recreation sites;
- within specified Special Protection Zones unless beekeeping does not conflict with management aims (see text above); and
- within 1.6 km of an annual bee site or 0.8 km from an occupied temporary site, unless there are no management impediments, and the affected licensees consent.

Ensure all occupied sites in State forest are licensed under the *Land Act 1958* or the *Forests Act 1958*.

Temporary apiary permits shall be limited to pre-determined sites. All sites should be mapped and marked in the field as an aid for location and management.

New temporary sites may be established on demand subject to a site inspection that considers, at a minimum:

- the general suitability of the site and its proximity to other annually licensed and temporary sites;
- fire protection requirements;
- the standard of access to the site and the cost of maintaining access; and
- the need for a suitable cleared area for the location of hives.

Licensees should be consulted when timber harvesting, fuel-reduction burning or other forest management activities may affect their sites, or where sites should be moved.

Actions

Manage beekeeping in accordance with the above Management Guideline for Beekeeping.

Develop and implement an Apiary Management Plan covering the Central Gippsland, Tambo and East Gippsland FMAs.

9.6 Defence Force

At various times of the year Defence Forces use forests of Gippsland for training of Regular Force, Reserves and Cadet personnel. Areas of State forest around Licola, Dargo and Boola Boola State Forest and the 28 000 ha Mullungdung Training Area within the Mullungdung State Forest are utilised for Defence Force training. A variety of bushcraft, survival, navigational, logistical and tactical skills training is undertaken in these State forest areas. Training involves activities that may not be permitted in parks and conservation reserves.

Departmental policy *Defence Force training on public land* (NRE 2001a) provides detailed guidelines, procedures and legislative framework for the conduct of Defence Force training. It is permitted in State forest, provided:

- the types of activities, their timing and location is agreed between the Defence Forces and DSE;
- training is carried out under conditions specified by DSE to minimise any environmental effects;
- fire prevention requirements can be met;
- training is excluded from Reference Areas, areas of high recreation use and where necessary SMZ and SPZ for protection of the values of the zone.

Road damage is a potential consequence of Defence Force training, as large vehicles are often used in training, and some exercises involve extensive use of the forest road network. Approval of each exercise after consideration of its nature, and anticipated weather and road conditions is required. Particular roads are excluded from use by heavy vehicles during winter months as a condition of approval of exercises.

Aim

Provide for Defence Force training in State forest, while minimising any environmental effects and avoiding conflict with other forest users.

Management Guideline

Defence Force training

Defence Force training should be in accordance with the guidelines and procedures detailed in DSE policy (98-2-FS) *Defence Force training on public land*. The following guidelines complement the current policy.

Applications for Defence Force training should be assessed on an individual basis so that the particular requirements of each exercise can be considered and appropriate conditions applied.

Seasonal factors including winter road conditions and summer fire danger will be considered in the approval process.

Defence Force training should generally be scheduled to avoid periods of high visitor usage and will avoid the use of popular recreation facilities such as picnic and camp areas.

Sites used for vehicle recovery training may require highly visible temporary safety fencing between training exercises, for the protection of other forest users.

Movement of vehicles off formed roads and tracks is not permitted.

Campsites must be in accordance with Forestry Miscellaneous Regulations 16 and 17, and all rubbish removed at the completion of the exercise.

It is expected that the Defence Forces, in using State forest, will conform to similar environmental care requirements as those imposed upon the timber industry by the *Code of Forest Practices for Timber Production.*

DSE will, where possible, encourage and facilitate training exercises that provide lasting benefit to forest users (e.g. bridge construction).

Chapter 10 Forest roads

DSE is responsible for the network of roads in State forest in Gippsland. The origins of the network go back into the latter part of nineteenth century when miners searching for gold and graziers created tracks and bridle trails. With the development of the timber industry, the road network increased significantly. The density of forest roads has increased through the years, with the majority of logging roads and four wheel drive fire access tracks being constructed in the 1950s and 1960s.

This network is connected to those managed by Parks Victoria, Grand Ridge Plantations Pty Ltd (on land leased or licensed for plantation purposes), Alpine Resorts, municipalities and VicRoads. Table 10.1 details the responsibility of various bodies for road construction and maintenance.

Table 10.1 Responsibility for road construction and maintenance in Victoria

Authority	Responsibility
VicRoads	Proclaimed main roads and highways.
Local Government	Roads and legal easements providing access to private property.
DSE	Roads and tracks in State forest*.
Parks Victoria	Roads and tracks in parks and conservation reserves, and including park access roads in State forest.
Grand Ridge Plantations Pty Ltd	Roads and tracks in plantations on leased or licensed public plantation land.
Alpine Resorts	Roads and tracks in alpine resorts.
Commonwealth Government	Financial contribution to the maintenance of access to specific sites on public land occupied by Commonwealth installations.

Note:
* Temporary tracks for access to current logging areas are constructed by the timber industry.

Road standards vary across Gippsland. Generally, roads comprising the major access routes are relatively well maintained, whilst others may be in poorer condition. The majority of forest roads in Gippsland were built prior to the introduction of the *Code of Forest Practices for Timber Production* (the *Code*) (NRE 1996a). The *Code* specifies minimum standards of road design to minimise environmental impacts and ensure public safety.

This Plan reviews and develops strategies for the ongoing and efficient management of the road network to reduce maintenance costs and environmental impacts, while maintaining an adequate road network for all forest users.

Aims

Provide a road network suitable for forecast levels of forest utilisation, recreation and fire management.

Design, construct, upgrade and maintain forest roads in accordance with the Code to standards adequate for intended and identified uses, safety and minimal environmental impact.

10.1 Road classification

The existing road network managed by DSE in State forest in the planning area totals approximately 6 500 km, almost all of which is open to the public.

DSE categorises roads by function, or primary use and standard. Roads may have more than one function. The primary purpose of DSE roads in Gippsland is as shown in Table 10.2.

Table 10.2 Primary purpose of the current network of Gippsland State forest roads

Primary purpose	Proportion of total length (%)
Fire protection[1]	57
Hardwood production	30
Recreation	10
Conservation area access	1
Softwood production[2]	1
Private access[3]	1
Total	**100**

Source: DSE ROADS database.

Notes:

1 Includes tracks with a specific strategic fire protection purpose as well as other tracks that have no use other than improving the general level of access to State forest which may provide fire protection benefits.

2 Access through State forest to Grand Ridge Plantations Pty Ltd plantations.

3 DSE has no legal obligation to provide or maintain access to private property but in a number of cases, forest roads provide practical access to private property.

Roads and tracks in State forest are divided into five classes (5A primary road, 5B secondary road, 5C minor road, 5D access track/road and 5E rough tracks) based on the function of the road. In State forests in Gippsland, there are relatively few two-lane Class 5B roads and most roads are one lane roads (Class 5C or 5D) or tracks (Class 5E).

10.2 The permanent road network

Forest roads were primarily established for timber harvesting and fire management purposes. Timber extraction roads were constructed to a considerably higher standard than fire tracks, which were built for occasional summer use. Much of the network was built in the 1950s and 1960s, but maintenance and upgrading of road systems has varied according to availability of funding and continuing usefulness of roads.

Since 1989, the *Code* and forest management prescriptions have been introduced to ensure consistent environmental protection during road construction, improvement, maintenance and usage. While roads constructed for commercial forestry purposes are required to conform to the *Code*, the environmental standards within it have been adopted as the required standard for all new roads constructed by DSE. Some roads built before development of the *Code* do not meet current standards, but all new road construction is required to comply with the *Code*. Implementation of the *Code* has resulted in a progressive improvement in road construction and maintenance standards.

Across the planning area the emphasis of road management will be on the upgrading of the road network to improve trafficability and reduce off-site environmental impacts.

Road maintenance requirements

Roads and tracks forming the permanent road network require regular maintenance to ensure safety of use and minimise environmental impacts, particularly on water quality. Some roads require upgrading to meet current standards and others require seasonal closure or permanent closure and rehabilitation.

Native forest catchments generally give rise to high quality water. However, it has been recognised that deleterious effects on water quality and aquatic environments can occur due to inadequate road construction and maintenance practices. Failure to keep up with road and track maintenance increases the risk of water quality decline resulting from sediment-bearing runoff.

Regular road maintenance is also necessary to keep roads safe and trafficable for all road users. Higher road maintenance standards provide economic benefits through reducing haulage times for timber traffic and improving access to State forest for a wider range of tourist traffic.

10.3 Road management

The forest road network is used by a variety of users including the timber industry, licensed tour operators, 4WD tourers, DSE, deer hunters, prospectors and miners and numerous other users. Construction, maintenance and upgrading of roads used for timber extraction are funded through a roading charge paid by the timber industry.

DSE seeks to encourage the use of forest drives for pleasure driving, and to maintain four wheel driving opportunities while reducing potential environmental problems and maintenance costs.

There is some potential for involving volunteers, such as members of the Victorian Association of Four Wheel Drive Clubs (VAFWDC) and the Australian Deer Association (ADA) in an Adopt-a-Track program. Volunteers agree to clear and maintain drainage on nominated tracks. While this type of program can make a valuable contribution to road maintenance, it is limited to work that can be performed with hand tools, and is better suited to flat or gentle grades. Most roads require maintenance using mechanical plant, such as graders, dozers and excavators, especially those in steep and erodible country, for the network to remain in a reasonable condition.

Road construction, improvement and maintenance works in catchments inhabited by the Spotted Tree Frog require extra care, due to the frog's probable sensitivity to increased sediment levels in streams. A number of roads and tracks constructed prior to the introduction of the *Code* will need to be upgraded according to the guidelines described in *Water quality protection measures for the conservation of Spotted Tree Frog* (O'Shaughnessy and Associates 1997), provided the remedial action does not lead to a temporary increase in sediment levels.

Management Guideline

Roads and tracks

Roads should be designed, constructed and maintained to provide a road network consistent with the above aims.

New roads and major road upgrades should be designed to:

- conform with the *Code* and regional management prescriptions; and
- minimise environmental effects, the number of major stream crossings and encroachment on the Special Protection Zone (SPZ).

Roads constructed for a once-only use (e.g. a temporary logging road or fire suppression track) should be permanently closed and rehabilitated as soon as practicable after use.

Roads that were not designed or intended to support traffic during winter should be subjected to seasonal closures.

Roads should be maintained in a planned and costeffective manner.

Environmental impacts, recreational uses and the community benefit of roads and tracks should be considered when deciding between road maintenance or closure and rehabilitation.

Expenditure of roading funds for the extraction of timber should be planned in consultation with Timber Industry Roading Advisory Committees (TIRACs), whilst the expenditure of DSE funds earmarked for 4WD recreation tracks should be planned in consultation with the appropriate peak body of recreation users.

The condition of all roads and tracks should be periodically monitored.

Actions

Manage roads in accord with the above Management Guidelines for Roads and Tracks.

Progressively implement road drainage and stream-crossing improvement works in accordance with standards detailed in the Code.

Ensure roads in Spotted Tree Frog catchments receive a high priority in annual maintenance programs.

Establish and maintain a spatial database of the road network in State forest.

Incorporate into the Wood Utilisation Plan a three year road construction and major maintenance schedule.

Prepare annual construction and maintenance schedules for recreation and fire management roads.

Encourage involvement of interest groups in the Adopt-a-Track Program.

Shared responsibilities

Some roads in State forest may be important for access to parks and conservation reserves, softwood plantations, Commonwealth Government telecommunications facilities or provide alternative access for local residents. Conversely, some roads managed by other authorities may be important access routes to State forest for hardwood haulage, fire management or forest recreation use. Formal and informal arrangements for works to be undertaken by one agency and financial contributions to be made by another are in place. For example, Telstra contributes to the cost of maintenance of access roads to telecommunications installations, and VicRoads provides tourism funds to Shires to maintain park access roads, which may include State forest roads.

Action

Liaise with Shires, VicRoads, Parks Victoria, Grand Ridge Plantations Pty Ltd, Telstra, Alpine Resort Management Boards, and other agencies to establish appropriate cost sharing arrangements for shared roads.

10.4 Road closures

It is sometimes necessary to close forest roads or restrict their use. Such closures may be temporary, seasonal or permanent. Reasons for closure are discussed below and may include road or track deterioration, protection of water quality and safety of users.

DSE is responsible for closure of roads and tracks in State forest. Consultation with VAFWDC, ADA and PMAV (Prospectors and Miners Association of Victoria) representatives about the provision of an adequate road network formed an integral part in preparation of this Plan. The general public was also consulted regarding the road and track closures. Representatives of peak recreational user bodies, the timber industry and other interested parties will continue to be consulted regarding proposed road and track closures that may be identified during the implementation of this Plan.

Temporary road closure

Temporary road closures under the *Forests Act 1958* are generally implemented for short periods of time, primarily in the interests of public safety in emergency situations caused by hazards such as landslips, snow falls, road damage and fire suppression, or during forest management operations. The *Code* requires closure of roads when weather or road surface moisture conditions threaten water quality or the integrity and long-term serviceability of the road itself. The *Code* also requires suspension of timber transport in dry weather on roads where dry conditions may cause surface materials to break down and pose a threat to stream or wetland water quality in subsequent wet weather.

Road users should be informed of temporary closures, unless alternative routes are readily available and little inconvenience is anticipated.

Seasonal road closure

A number of roads and tracks in the planning area are currently closed during winter. Commonly this closure applies from around midJune to late-October. The seasonal closure may be extended if unsuitable weather conditions persist. Vehicles could significantly damage these tracks during wet weather, leading to erosion, consequent environmental damage and costly repairs. Roads may also be closed for the winter following road improvement works, to protect the surface from damage. Seasonal road closures, though primarily designed to protect roads, ensure the safety and convenience of the majority of drivers.

As seasonal road closures can inconvenience forest users, particularly those using vehicles for recreation, details of closures are made available from DSE and Parks Victoria offices, information centres, the internet and advertised in a range of local newspapers. The list of seasonally-closed roads (Appendix X) will be reviewedannually in accordance with the guidelines below.

Permanent road closures

During the planning process, a number of roads were identified as being no longer required. A program of road closure and rehabilitation is required to achieve the planned permanent (major) road network, and to ensure that closed roads do not contribute to environmental degradation.

Roads and tracks may be permanently closed for a variety of reasons, including:

- prohibitive cost of repair or maintenance of a road;
- protection of environmental values, particularly reducing the risk of stream sediment and turbidity;
- maintenance or enhancement of recreation opportunities;
- public safety;
- removal of duplicated access to an area;
- when a road is no longer required for the purpose for which it was constructed.

A road or track that has been closed to public vehicle access may be retained for use by management and emergency vehicles.

Appendix X lists roads and tracks in State forest that will be progressively closed and rehabilitated in the planning period.

Other roads and tracks, not currently listed, may later be identified as requiring closure and rehabilitation. Permanent road closure requires approval of the Governor-in-Council, following consultation with affected user groups.

Management Guideline

Road closure

TEMPORARY ROAD CLOSURES

Implement temporary road closures on those roads or sections of road:

- considered to be unsafe for vehicular use; or
- undergoing management activities that will affect public safety; or
- where continued use could result in damage to the road surface or lead to unacceptable levels of stream sedimentation.

Inform road users of temporary road closures, using appropriate means.

SEASONAL ROAD CLOSURES

Seasonal road closures should be implemented, where required, to:

- prevent vehicle traffic on roads and tracks which are unsafe during winter;
- limit damage to the road and track network;
- prevent an increase in stream sedimentation;
- protect the road and track surfaces during the winter following road and track construction and maintenance works; or
- where non-vehicle recreation such as cross-country skiing is being given preference.

Seasonal closures will be determined annually and publicised through DSE and Parks Victoria offices, information centres, the internet, selected regional newspapers and VAFWDC.

PERMANENT ROAD CLOSURES

For permanent closure, a road or section of road must be one or more of the following:

- unsafe and excessively difficult or expensive to make safe;
- eroding severely in places, causing stream siltation or turbidity;
- excessively expensive to maintain e.g. road surface softened by soaks and springs, or suffering bridge or stream crossing failure;
- able to enhance recreational opportunities by its closure (e.g. achieve vehicle-free cross country skiing, enhance remote or wilderness recreation opportunities);
- providing duplication of access; or
- no longer required for the purpose for which it was constructed.

Actions

Manage roads in accordance with the above management guidelines.

Close and rehabilitate roads causing high sedimentation to adjoining drainage lines.

Continue consultation with VAFWDC, timber industry and other appropriate road user bodies or interested parties concerning seasonal and permanent road and track closures.

Close roads, seasonally or permanently, as identified in Appendix X.

Erect signs and undertake appropriate publicity to inform the public about road and track closures.

Monitor effectiveness of closures and maintenance programs and take appropriate remedial action where necessary.

Periodically monitor closed roads and nearby streams for visible indicators of sediment reduction in streams. Undertake further remedial action if necessary.

Chapter 11 Research and education

11.1 Research

Through forest research programs conducted by the Department of Sustainability and Environment (DSE) and other organisations, an increased understanding of forest ecosystems, management activities and their interaction is achieved. Continued research activity is an important part of responsible forest management.

Many short- and long-term research projects are undertaken in Gippsland to examine the effects of management activities such as fuel-reduction burning, harvesting and regeneration. The duration of these projects can vary and depending on the nature of the research, sites may be used once or revisited periodically.

Aim

Improve knowledge about forest ecosystems and management activities and their interaction.

Long-term forest research projects in Gippsland include the measurement of Silvertop (*Eucalyptus sieberi*) thinning plots and mixed eucalypt species growth plots. Other trials evaluate various silvicultural treatments for establishing regeneration on *Phytophthora cinnamomi* dieback-affected sites in the Mullungdung State Forest.

There are three streamside sites in the region for Spotted Tree Frog (*Litoria spenceri*) research.

The Cooperative Research Centres (CRCs) bring together researchers from a variety of organisations including universities, CSIRO, private industry and public sector agencies in long-term collaborative research programs. Research carried out by the Cooperative Research Centre for Sustainable Production Forestry is providing a greater understanding of the genetic differences and similarity of eucalypt populations across different regions. In Gippsland, Shining Gum (*E. nitens*) in the Victorian Alps and Blue Gum (*E. globulus*) in south Gippsland are of particular interest. A trial conducted by DSE compares the growth and form of the Alpine Ash (*E. delegatensis*) provenance at Nunniong with other sites outside the planning area.

DSE or educational institutions, commonly universities, generally initiate State forest research. DSE facilitates organisations or individuals to undertake research on public land and in some cases may specify conditions. Students from such institutions as the University of Melbourne and LaTrobe University are currently undertaking research in Gippsland, in fields including faunal ecology and botany.

The long-term exclusive use of areas of State forest for research may conflict with some forest uses or activities. In some cases management activities, which are incompatible with the objectives of the research, may need to be excluded. Table 11.1 lists the locations of DSE research sites and growth plots. Consultation with the relevant research project managers is required prior to any activities occurring within research areas.

Management Guideline

Assessment of research project proposals

Where required, approval for applications to undertake research should consider the duration, type and method of the study including its impacts on forest values, and other DSE requirements or conditions.

Use of existing research sites and reference areas or education areas in preference to State forest should be encouraged, particularly if the nature of the intended research may require suspension of normal management activities.

Exclusive use of an area of State forest may be permitted depending upon:

- the public benefit of the study;
- other uses or requirements for the proposed study area; and
- duration of the study.

Table 11.1 Research sites in Gippsland

Research Project	Number of sites	Management Zone	Future Management
Spotted Tree Frog monitoring transect (Black, Goulburn and Snake Rivers)	3	SPZ	Manage in accordance with Spotted Tree Frog Action Statement and Conservation Guidelines.
Gippsland Mixed Species Growth Study (Engineers Road, Barmouth Spur Track, Clarks Track, Angora Range Road), estab. 1998	12	SMZ	Permitted activities should be limited to those that are compatible with the experiment objectives.
Boola Silvertop thinning trials, estab. 1968	6	SMZ	Permitted activities should be limited to those that are compatible with the experiment objectives.
FSC (Forest Science Centre) Tree Improvement Research. Mullungdung *Phytophthora cinnamomi* (various eucalypts) Progeny Trial EUC475, estab. 1978	1	SMZ	Permitted activities should be limited to those that are compatible with experiment objectives.
FSC Forest Pathology Research. Regrowth of *Phytophthora cinnamomi* dieback (Harraps Hwy), estab. 1977. Planting on dieback affected sites (Old Rosedale Road), estab. 1973	3	SMZ	Permitted activities should be limited to those that are compatible with experiment objectives.
E. delegatensis provenance trial (Bentley's Plain Road) estab. 1979	1	SMZ	Permitted activities should be limited to those that are compatible with experiment objectives.

Actions

Permit research projects in accordance with the guidelines above.

Maintain a register of research sites in State forest.

Exclude management actions that are incompatible with the objectives for approved research projects, until such time as the areas are no longer required.

Encourage research projects that may increase knowledge about forests or assist forest management.

11.2 Education and interpretation

Students from secondary schools and tertiary institutions frequently visit State forests in Gippsland as part of teaching programs in earth sciences or environmental studies. DSE facilitates access to the forest for educational use, as well as providing educational information in the form of DSE guest speakers, printed resources and web site information for use by students and others. DSE also runs a forest education program at Toolangi for primary, secondary and tertiary students, which includes an outreach program for primary schools in Gippsland.

East Gippsland Institute of T.A.F.E., through its ForesTech campus near Lakes Entrance, runs courses in natural resource management and timber industry accreditation for chainsaw and harvesting machine use. DSE provides ForesTech with access to timber harvesting coupes for training purposes. These activities are carried out in accordance with the *Code* and local sawmills use the timber.

The Land Conservation Council identified a number of areas of public land in Gippsland as Education Areas, which are designated for education purposes. In Gippsland, these areas include Melwood and Seaton Education Areas, which provide an appropriate focus for forest use for educational purposes.

A good community understanding of the role of State forests and of forest management will aid the implementation of forest management programs. Providing access and resources for school and community groups is a useful basis for improved understanding.

Aim

Improve community understanding and awareness of the role of State forests and of forest management.

Actions

Continue to make DSE staff available as guest speakers for schools and community groups.

Continue to develop information and educational resource material relating to State forest for a variety of educational users (primary to tertiary level).

Chapter 12 Plan implementation

Responsibility for implementation of this Plan rests with the Secretary of the Department of Sustainability and Environment (DSE). Executive authority for State forest management is delegated to the Executive Director, Parks and Forests. Accordingly, the Executive Director, Parks and Forests in conjunction with the Regional Services Division is responsible for plan implementation.

12.1 Plans and prescriptions

Detailed prescriptions or plans associated with the implementation of this Plan are established at a regional or Forest Management Area level and include Wood Utilisation Plans, Forest Management Prescriptions and Special Management Zone Plans.

Wood Utilisation Planning

While the zoning scheme establishes the area of State forest available for timber harvesting, the volume of forest products to be supplied is specified in sawlog licences which are issued based on sustainable yield forecasts. Sawlog licence conditions require DSE to provide licensees with Wood Utilisation Plans (WUPs) by 31 March each year. WUPs specify the individual areas (coupes) of State forest that are approved for harvesting to meet licence commitments. They are supplied to sawlog licensees who organise the harvesting and transport of logs. Harvesting is supervised by DSE and must be conducted by licensed operators in accordance with the *Code*.

The current WUP process involves individual consideration of each proposed logging coupe to ensure compliance with policy commitments to conserve forest values (flora, fauna, landscape, cultural heritage, soil and recreation opportunities). The information used to check individual coupes has been incorporated into the management strategies and zoning scheme in this Plan. The Plan and zoning scheme will streamline preparation of WUPs. New information will be considered with a view to the possible amendment of the zoning scheme or management strategies rather than considering coupes in isolation.

Management Prescriptions

Regional Management Prescriptions incorporate the planning and management requirements from the *Code*, Forest Management Plans, Regional Forest Agreements and relevant guidelines and prescriptions. The Gippsland Region Management Prescriptions for Timber Production and Other Forest Uses (NRE 2002c) is applied in the planning, management, implementation and monitoring of State forest-based activities in the Gippsland region. These prescriptions will need to be reviewed following the completion of this Plan.

Special Management Zone Plan

Management of the Special Management Zone (SMZ) is considered on a case-by-case basis within the constraints outlined in this Plan. As discussed in Chapter 2, operations such as timber harvesting in a SMZ may require the development of a SMZ Plan.

Actions

Continue to prepare the rolling three-year WUPs in accordance with DSE guidelines and consistent with the content of this Plan and licence requirements.

Develop and maintain forest management prescriptions that provide detailed information relevant to implementation of this Plan.

Develop Special Management Zone plans and associated prescriptions where required.

12.2 Reviewing the plan

The management of Victoria's State forests is based on the best available information and an innovative and progressive approach to natural resource management. This Plan provides for refinement of management guidelines, prescriptions and the zoning scheme in response to new information or changes in government policy, community expectations, technology and timber market conditions. A key feature of this Plan is the use of management guidelines for natural and cultural values, and the translation of these into the Special Protection Zone and Special Management Zone. Inherent in the process is the provision to improve management guidelines and the zoning scheme in response to new information. Refinements will be made in an objective, systematic manner to avoid disruption to the forward planning and conduct of timber harvesting operations. A multi-disciplinary approach is essential to this process.

Where a change to zoning is warranted, any significant proposed change will be made available for public viewing and comment. Following consideration of comments received and relevant specialist advice, approval will be sought from the Secretary of DSE or his/her nominee for adoption of the revised zone. Approvals for changes of minor nature and operational procedures for amending the zoning scheme will be detailed in the Regional Management Prescriptions for Timber Production and Other Forest Uses.

The Forest Management Plan will apply for a period of ten years following its final approval or until circumstances warrant a major review.

Management Guideline

Reviewing Management Guidelines, Management Prescriptions and the Zoning Scheme

Management guidelines and prescriptions may be reviewed under the following circumstances:

- when new information on the impact of forest management or utilisation activities on biological or cultural values becomes available;
- if the status of a threatened species changes;
- if new species are identified that are considered to be threatened;
- when monitoring of the practical implementation of the Plan indicates that improvements can be made;
- as required by new legislation, policies or action statements.

Management zone boundaries may require review if:

- changes to management strategies for certain species or values mean that the zoning system is more or less than adequate for those values;
- field inspections or better mapping indicate that minor amendments are required to create practical management boundaries or to more accurately define the location of a particular species or value. At the scale of mapping used in this plan, the boundaries of some values cannot be accurately defined;
- the reserve does not contain the values for which it was identified – amendments may be required to ensure that conservation targets are met;
- new records are listed for species whose conservation targets have not been met;
- new records of some species warrant changes to reserves to include areas of good-quality habitat in exchange for areas of poorer-quality habitat;
- existing boundaries are found to place unreasonable restrictions on the practical access to areas for timber production or for infrastructure development (easements etc).

Continued next page

Management Guideline Reviewing Management Guidelines, Management Prescriptions and the Zoning Scheme continued

Proposed changes to the zoning scheme will be assessed according to whether they:

- ensure the CAR Reserve System continues to comply with the JANIS Reserve Criteria;
- adequately conserve the CAR values identified in the Comprehensive Regional Assessment data sets;
- ensure there is no net deterioration in the level of protection of identified CAR Values[1] in the SPZ;
- will maintain the protection of national estate values at the agreed regional scale, noting that as a result of any change to the CAR Reserve System in State forest, some minor changes to individual values may occur;
- consider the maintenance of National Estate protection;
- conserve the values highlighted in the zoning scheme register of this Plan (see Appendix D);
- maintain a well-distributed, inter-connected network of protected areas;
- at least maintain the timber production capacity of State forest in terms of volume, species and quality;
- minimise practical problems for timber harvesting or access in the General Management Zone;
- make the best use of areas that are unavailable for timber harvesting due to other considerations such as slope, access and site quality;
- avoid conflict with strategic burning zones.

Note:

1 CAR values means the conservation values as described by the JANIS Reserve Criteria embodied in the CAR Reserve System.

Actions

Consider new information and, if necessary, make recommendations on possible refinements or amendments to management strategies or the zoning scheme in accordance with the above guideline (Guideline for Reviewing Management Guidelines, Management Prescriptions and the Zoning Scheme).

Consult with stakeholders and invite comment where significant changes are proposed to management strategies or zones.

Maintain a register of zoning scheme amendments showing the area and purpose of all changes.

Maintain the currency of the map of State forest zones.

12.3 Monitoring

Integral to sustainable forest management is the development of criteria and indicators against which the effects of forest management and utilisation activities can be determined. In response to this need identified in the *National Forest Policy Statement* a working party was established. Their task was to develop a set of national baseline standards against which the criteria for forest management and utilisation activities can be assessed. The working group found that such standards should be progressively developed and incorporated into codes of practice for forest operations (JANIS 1997).

DSE has a number of processes established to monitor forest management and utilisation activities.

- Regular audits of timber harvesting operations in State forest are undertaken to provide information on implementation of the *Code*.
- Water quality in State forest streams is regularly monitored through the Victorian Water Quality network. These data can be used to detect trends in water quality and yield in forest catchments.
- Forest areas subject to timber harvesting and other management operations are recorded each year, and timber volume and area harvested are compared to licence commitments and conditions.

- The Statewide Forest Resource Inventory (SFRI) project is establishing a consistent description for forests throughout the State and will provide a baseline for future monitoring of changes in the condition of the forests.
- Forest sawlog growth and standing sawlog and residual volume are monitored through measurement of the Permanent and Continuous Forest Inventory plots.
- The Integrated Pest Management System provides a means to record pest infestations and to report on the effectiveness of control programs.
- The Wildlife Atlas and Flora Information System provides a means of collecting and reporting on flora and fauna data collected by a wide variety of sources.
- Victoria's Biodiversity Strategy (NRE 1997f) establishes a requirement to maintain ecological processes and biodiversity and undertake monitoring activities.

Australia is a signatory to the Montreal Process and has therefore agreed to develop a set of regional indicators, consistent with criteria established under the Montreal Process for assessing sustainability of forest management.

Geographic Information Systems assist in data recording and storage, and enable analysis of data sets to examine the effects of proposed forest operations on forest management zones and to determine the area subject to harvesting.

Actions

Continue existing monitoring activities including the collection of data on areas and volumes of timber harvested.

Develop and progressively monitor appropriate indicators for forest biodiversity, water quality and other environmental values in accordance with the Montreal Process.

12.4 Reporting

Implementation of this Plan is a vital step in ensuring sustainable forest management in Gippsland. Accordingly, it is important to regularly review and report on its implementation. Reviews will provide the basis for systematically adapting the Plan to changing information and circumstances and thus, ensuring it remains relevant.

Action

Upon adoption of the Forest Management Plan, the Regional Forest Manager will be responsible for preparation of an annual report. This report may include:

- *implementation of biodiversity management guidelines, new records of threatened species, and any observed responses to management initiatives;*
- *key timber production data such as area and volume harvested by product type, areas thinned or subject to other stand improvement operations critical to the maintenance of sustainable yield, and the outcomes of regeneration and stocking surveys;*
- *water quality and yield prescriptions;*
- *implementation of pest plant and animal control guidelines;*
- *recreation and tourism initiatives;*
- *major road maintenance or construction works;*
- *compliance with the Code;*
- *significant research outcomes;*
- *progress on implementation of the Actions and commitments in this Plan; and*
- *recommendations for amendments to this Plan where required.*

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Mr Chris Barry	catchment management
Mr Ron Camier	tourism, recreation and roads
Ms Caroline Copley	Gippsland Regional Forest Reference Group
Mr John Gunson	conservation
Mr Mick Harding	Indigenous heritage
Mr Vince Hurley/Kevin Piercy	timber industry
Ms Rhonda Micah	timber communities
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Ms Karen Stoll	local government

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Glossary

The following glossary has been prepared to assist in the reading of this Plan

Biodiversity – encompasses the diversity of indigenous species and communities occurring in a given region; includes *genetic* (genes/genotypes within each species) diversity, *species* (variety of living species) diversity and *ecosystem* (different types of communities formed by living organisms and the relations between them) diversity.

Buffer (strip) – a protective margin of vegetation abutting a stream, spring, wetland, body of standing water, swampy ground or an area of rainforest, which protects it from potentially detrimental disturbances in the surrounding forest. Buffer width is defined as the horizontal distance from which various operations are excluded.

Burning unit – minimum area for prescribed burning or wildfire control if existing roads, tracks, gullies, ridges, etc. are used as fire control lines.

Clear-fell – a method of harvesting a coupe whereby all merchantable trees, apart from those to be retained for wildlife habitat, are removed.

Code of Forest Practices for Timber Production – a set of principles and, in some cases, minimum standards for the conduct of timber harvesting and associated works in forests in Victoria.

Competition – (in the context of forest growth) the relative growth of trees (stem and canopy) as a consequence of limited availability of water, nutrient and light availability due to other neighbouring vegetation.

Continuous forest inventory (CFI) plots – plots established throughout the forest on which tree growth information is calculated. The plots are measured periodically (every five or ten years, for example), and growth on the plot can be determined from the difference between measurements.

Coupe – an area of forest of variable size, shape and orientation from which logs for sawmilling or other processing are harvested.

Developed recreation site – an area with developed recreation facilities (including toilets and tables) designed for a high level of visitor use.

Disturbance – any range of factors affecting the condition of natural areas. Disturbance may be natural or human-induced. Natural disturbance includes wildfires and rainstorms and is part of natural ecological processes. Human-induced or 'unnatural' disturbance includes timber harvesting, agricultural clearing, mining and grazing. The factors that are important when considering disturbance are the origin, duration, intensity of the disturbance and its impact on the environment.

Diversity – a measure of the physical or biological complexity of a system. It refers to a range of features from artefacts to species present.

Ecological Vegetation Classes (EVC) – the components of a vegetation classification system. They are groupings of vegetation communities based on floristic, structural and ecological features.

Ecosystem – a functional system which includes the organisms of a natural community together with their environment.

Environmental weed – a naturalised non-indigenous plant species outside the agricultural or garden context which adversely affects the survival or regeneration of indigenous species in natural or partly natural vegetation communities.

Erosion hazard, of the soil – the likelihood of erosion occurring because of the interrelationship of soil erodibility, rainfall erosivity, slope and soil disturbance.

Even-aged stand – a forest stand where all or most of the trees are of the same age, that is, they have regenerated from the same event (e.g. Ash Wednesday fires or a clear felling harvesting operation).

Fabric – the physical material of a place. For example, the fabric of cultural places might be an artefact scatter or hut.

Fauna – a general term for animals (including birds, reptiles, marsupials and fish).

Filter strip – a narrow strip of ground retained either side of a drainage line or temporary stream. In the strip trees may be felled subject to certain conditions and machinery entry is only permitted in certain circumstances.

Fire control line – a natural or constructed barrier, or treated fire edge, used in fire suppression and prescribed burning to limit the spread of fire.

Fire cycle – the period of time, approximately half the maximum tolerable fire interval and is the period of time over which an area equivalent to the total area of a community will be burnt, it is not the period of time each segment of the community will be burnt.

Fire management – all activities associated with the management of fire-prone land, including the use of fire and exclusion of fire, to meet land management goals and objectives.

Fire prevention – all activities concerned with minimising the incidence of wildfire, particularly those of human origin.

Fire protection – all activities designed to protect an area (including human life, property, assets and values) from damage by wildfire.

Fire protection plan – a plan prepared by DSE for the purpose of planning proper and sufficient works for the prevention, preparedness, suppression and recovery of wildfire on public land. The plan is strategic in its approach, addressing fire protection at a regional (geographic) level.

Fire regime – the frequency, intensity, season and scale of fire in a given area over a period of time.

Fire suppression – the activities connected with restricting the spread of wildfire following its detection and making it safe.

Flora – a general term for plants of a particular area or time.

Flora reserves – areas set aside because of their special floristic conservation significance.

Forest coupe plan – a plan that must be prepared for each harvesting operation in public native forest and will contain a map identifying the area and a schedule incorporating the specifications and conditions under which the operation is to be administered and controlled.

Forest Management Areas – the basic units for forest planning and management in Victoria. Currently Victoria is divided into fifteen Forest Management Areas as defined in the *Forests Act 1958*.

Forest Management Plan (Plan) – a plan developed to address the full range of values and uses in State forest by Forest Management Area.

Forest management zone – an area of similar physical capability or forest value to which a particular DSE strategy and specific prescriptions may apply. There are three zones: the Special Protection Zone (SPZ), Special Management Zone (SMZ) and the General Management Zone (GMZ).

Forest type – a classification of forests according to their life form, height of the tallest stratum and the projected foliage cover of the tallest stratum.

Fuel hazard – a fuel complex defined by volume, type, condition, arrangement and location that determines both the ease of ignition and of fire suppression difficulty.

Fuel reduction burning – the planned use of fire to reduce fuel levels in a specified area.

General Management Zone (GMZ) – delineates the area to be managed for the broad range of forest values available in the area. The GMZ is divided into two sub-zones: 'Timber Production' where timber harvesting under standard conditions is one of the main uses and 'Other Uses' where the forest is unsuitable for sawlog production but where other activities are permitted.

Geographic Representation Units (GRU) – subdivisions created to help analyse the distribution of the reservation system across the region and the degree to which values are represented in that reserve system.

Geographic Information System (GIS) – a system which holds spatially referenced data which can be classified, overlaid, analysed and presented in map, tabular or graphic form.

Gross area – the area of a particular forest type which is capable of producing merchantable timber.

Group selection system – harvesting of small groups of trees so that new trees can replace them in the small to medium gaps created.

Growth stages – the different forms exhibited by trees at various stages in their development e.g. regeneration, regrowth, pole, mature and senescent.

Guidelines – are the directing principles adopted to establish decisions (zoning, actions or prescriptions) for the protection and management of forest values. They are not necessarily mandatory, rather they are to be interpreted and applied based on the information available and in context of the protection and management of other values in the forest.

Habitat tree – a tree that has been identified as providing important habitat for wildlife and which is given additional protection during forest operations.

Heritage – all those things we have inherited from previous generations and which we value. It includes such things as places, things and folklore.

Land system – a complex mapping unit that contains a pattern of land components each of which has little variation in climate, lithology, landform, soil and indigenous vegetation. The land system is regarded as a unit of management for broad scale land use.

Land use – the primary level of public land classification in Victoria. It is determined by government through the Victorian Environmental Assessment Council process establishing National parks, State forest and other categories.

Landing – a place where trees and parts of trees are snigged for sorting, processing and loaded for transport from the forest. Conversion sites at which small amounts of produce are processed and which do not involve earthworks or clearing are not regarded as landings.

Landscape management zone – a composite landscape unit based upon distinct combinations of specific scenic quality classes, public sensitivity levels and seen area disturbance zones.

Landscape sensitivity – areas identified as having a high scenic quality and visual sensitivity. They are usually areas that are readily visible from high-usage recreation facilities or routes such as look-outs, campsites, walking tracks, or tourist roads and towns.

Mature – forest stands and/or individual trees where the tree crowns are well foliated and rounded. The height and crown development of the trees has effectively ceased (compared with regrowth) but decline of the crown (loss of limbs, development of epicormic growth) has not yet significantly begun (as in the senescent or over mature growth stage).

Merchantable – used to describe trees suitable for processing into forest produce and for which a market exists.

Montane – the biogeographic zone in mountain regions located below the tree line with relatively moist, cool temperatures and dominated by evergreen trees.

Multiple use forests – forests managed for a combination of values and uses so that a wide range of community expectations are met (e.g. biodiversity conservation, timber and water production and recreation).

National Estate – those places, being components of the natural or cultural environment of Australia that have aesthetic, historic, scientific or social significance or other special value for future generations as well as the present community.

National park – land described as a national park on Schedule Two of the *National Parks Act 1975*. These are generally extensive areas of land of nationwide significance because of their outstanding natural features and diverse land types.

Net available productive area – the area of forest both suitable and available for sawlog production, once exclusions are made for the *Code of Forest Practices for Timber Production*, SPZ, and land of low inherent productivity, is defined as the net available productive area.

Old-growth forest – forest which contains significant amounts of its oldest growth stage in the upper stratum – usually senescent trees – and has been subjected to any disturbance, the effect of which is now negligible.

Overwood – trees left after harvesting that compete with regeneration for light, water and nutrient.

Overmature – a growth stage of a forest stand or individual tree that is characterised by declining crown leaf area and irregular crown shape due to the loss of branches and epicormic growth (synonymous with senescent).

Permanent road – a road permanently required for the continuing management of the forest.

Planned fire – See *Prescribed burning*.

Prescribed burning – the controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity and rate of spread required to attain planned resource management objectives.

Prescription – the standards specified according to the principles of the *Code of Forest Practices for Timber Production* and the guidelines of the Forest Management Plan which prescribe acceptable practices.

Protection burning – as for *Fuel Reduction Burning*.

Public land – unalienated land of the Crown managed and controlled by the Minister for Environment and the Minister for Victorian Communities, or the Secretary of Sustainability and Environment, whether or not occupied under a licence or other right (but not including land occupied under a lease, or land vested or leased by the Grand Ridge Plantations Pty Ltd, Victorian Plantations Corporation or its successor in law).

Pulpwood – see *Residual log*.

Recreation Opportunity Spectrum – the range of opportunities for a person to participate in specific recreational activities in specific settings in order to realise predictable recreational experiences.

Reforestation – the re-establishment of a stand of trees by planting or sowing with species native to the locality on previously cleared or poorly forested land.

Regeneration (noun) – the young regrowth of forest plants following disturbance of the forest such as timber harvesting or fire.

Regeneration (verb) – the renewal of forest by natural or artificial means.

Regrowth – **(a)** forest stands regenerated either naturally or by seeding following death or removal of the forest overstorey. **(b)** a growth stage of a forest stand or individual tree in which the crowns have a narrow conical form and where trees are actively growing.

Rehabilitation – restoration and revegetation of a site of disturbance usually associated with fire damage, forest road-works, landings and mining.

Remote and natural area – an area described as a remote and natural area on Schedule Six of the *National Parks Act 1975* or recommended by the Land Conservation Council in its special Wilderness Investigation as an area with remote and natural attributes.

Residual log (including Pulpwood) – produced as a by-product of sawlog harvesting operations, including those low-quality logs suitable for conversion into sawn products or pulpwood. Pulpwood logs (those logs which cannot be economically converted into sawn products) are supplied for conversion into hardboard or paper products.

Retained trees – trees retained on a coupe during a harvesting to serve as seed trees or wildlife habitat trees, or selected to grow on after thinning.

Richness – a measure of the abundance of individual elements within a particular place. For instance, the species richness of an ecological vegetation class (EVC) is the number of species which typically occur within that EVC.

Riparian – of, or located on, the banks of rivers.

Riparian vegetation – vegetation that requires free or unbound water, or conditions that are noticeably moist along the margins of streams, drainage lines and lakes.

Rotation – planned number of years between the regeneration of a forest stand and the final harvesting for forest produce. Actual rotations will vary to suit local conditions.

Sawlog – any length of a log of merchantable species which is at least 2.7 m in length, has a small-end diameter of 25 cm or greater, does not have a sweep or crook which exceeds 1/5 diameter from a 2.4 m straight edge and is of grade D or better.

Sclerophyll – of trees, hard-leaved (e.g. members of the genera *Eucalyptus* and *Acacia*).

Seed trees – trees retained on harvested coupes to provide seed for natural regeneration of that coupe.

Seed tree system – harvesting and regeneration system used for particular forest types. All merchantable trees are harvested apart from those specifically retained for regenerating the coupe by natural or artificial seedfall and for habitat purposes.

Selection systems – trees are harvested either singly or in groups at relatively short intervals indefinitely. Used to harvest and regenerate particular forest types. By this means regeneration is established continually and an uneven-aged stand is maintained.

Senescent – a growth stage of a forest stand or individual tree that is characterised by declining crown leaf area and irregular crown shape due to the loss of branches and epicormic growth. This term is interchangeable with 'overmature'.

Shelterwood system – used for harvesting and regenerating particular forest types that may not be suited to a clearfell regime. It consists of the removal of a proportion of mature trees to allow establishment of essentially even-aged regeneration under sheltered conditions, followed by later felling of the remainder of the mature (seed) trees.

Silviculture – the theory and practice of managing forest establishment, composition and growth, to achieve specified objectives.

Single tree selection system – used for harvesting of single trees so that new trees can replace them in the small gaps created.

Site preparation – preparation of the ground to provide conditions suitable for regeneration from seed or by planting seedlings.

Snigging – the towing or winching of a log from the stump to the landing site.

Snig-track – track along which a log is snigged.

Special Management Zone – delineates an area to be managed to maintain specified values, such as flora and fauna habitat or catchment values, while catering for timber production under certain conditions.

Special Protection Zone – delineates an area to be managed for the conservation of natural or cultural values and where timber harvesting will be excluded.

Stand – a group of trees in a forest that can be distinguished from other groups on the basis of age, species composition, condition etc.

Stand condition – the health, age and size class distribution and stocking of a forest stand.

State forest – as defined in section 3 of the *Forests Act 1958*.

State park – land described as a State park on Schedule Two B of the *National Parks Act 1975*. These are generally tracts of land containing or more land types complementing those found in national parks to provide a system representing the major land types of the State.

Stocking – density of any given forest stand, usually expressed in terms of the number of trees per hectare.

Streamside reserve – a strip of vegetation retained along a stream and extending out at least 20 m (measured horizontally) from the bank. The actual width of the streamside will be determined by the width of the saturated stream flat, the nature of the forest operation to be undertaken in the adjacent forest the ground slope.

Succession – the progressive change of species composition within a stand over time. If left undisturbed this succession will continue to a climax where the species composition will remain largely unchanged.

Sustainable Yield – rate of harvest that can be maintained for a given period which is linked to the capacity of the forest to produce that product.

Temporary road – a road constructed specifically for use during forest operations and closed at their completion. Generally a short length of road leading from a permanent road.

Threatened (fauna) – a collective term used to denote taxa that are Extinct, Critically Endangered, Endangered, Vulnerable, Near Threatened, Data Deficient, or Conservation Dependent.

Thinning – the removal of trees in a forest stand for a given silvicultural objective.

Timber harvesting – includes tree felling, snigging, and the marking, sorting, loading and carting of forest produce within a forest.

Timber production – growing and harvesting of timber from native forests.

Understorey Island – area designated within a coupe where tree removal is permitted but machine entry is restricted to allow recovery of flora species dependent on re-sprouting following disturbance.

Uneven aged stand – forest stand which contains a continuum of age classes resulting from more or less continuous regeneration within the stand over a number of years.

Unplanned fire – see *wildfire*.

Unstocked sites – sites previously well forested with timber producing eucalypt species which have been disturbed by natural or artificial agencies and, as a result, the eucalypts have been replaced with non-eucalypt tree and/or scrub species of little or no value for timber production.

Value adding – the further processing of commodities into higher quality, high value goods.

Vegetation type – an aggregate of plant species, such as an Ecological Vegetation Class or Broad Vegetation Class, recognised by DSE, which consistently occur together in the landscape and provide a convenient descriptive unit, and is recognisable in the field.

Vigour, of trees – the health and vitality of growth of trees.

Water basin – an ecological unit, defined by the physical boundaries of the watershed, it provides a natural division for assessing the environmental impact of human activities.

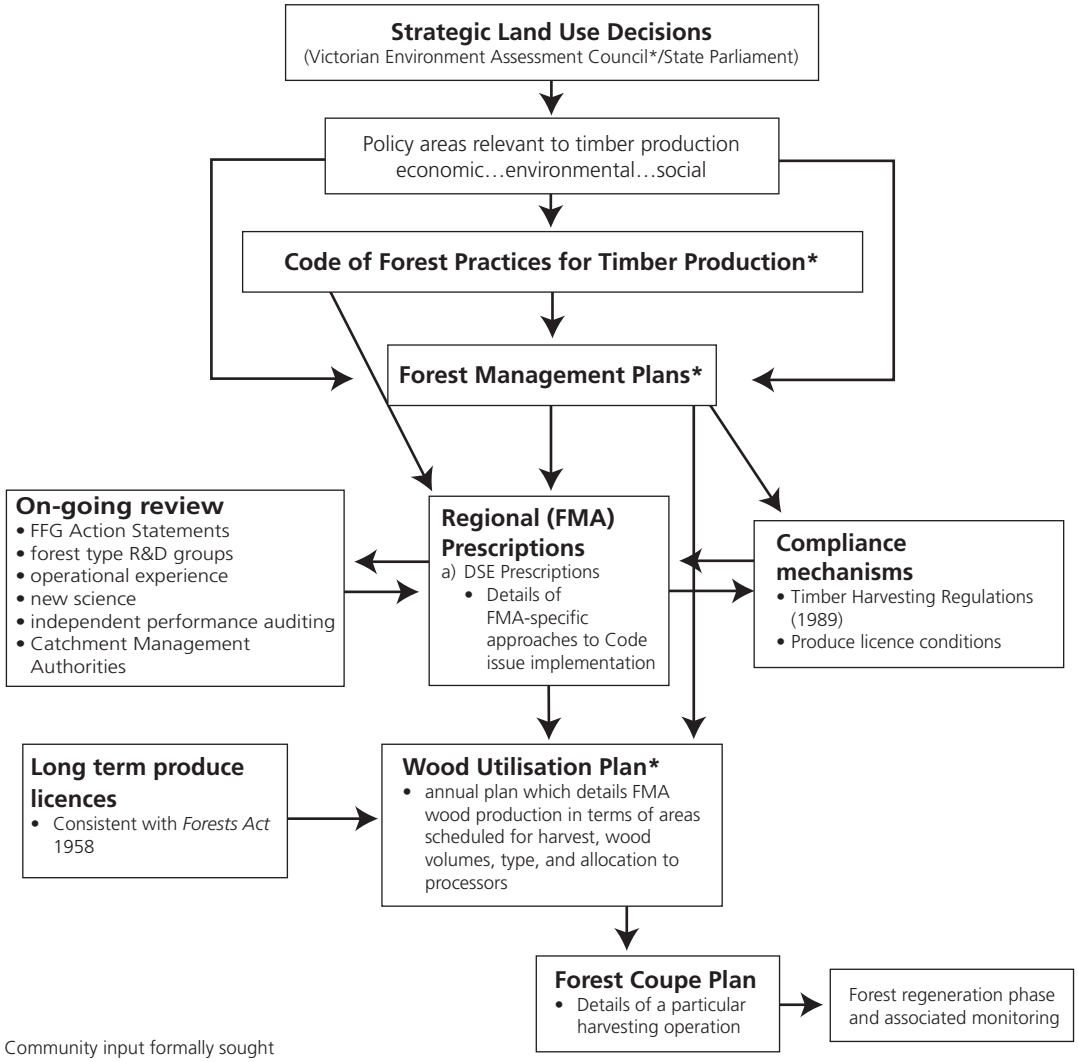
Wilderness area – land described as a wilderness park on Schedule Two A of the *National Parks Act 1975* or land within a national park described as a wilderness zone on Schedule Five of the *National Parks Act 1975*. These areas are generally tracts of land remote at their core from access and settlement, substantially unmodified by modern technological society or capable of being restored to that state and of sufficient size to make practical the long term protection of their natural systems.

Wildfire – fire which in not intentionally lit as part of the management program, in grass, scrub or forest.

Wood Utilisation Plan – details the area to be harvested and the type of wood to be produced from an FMA in any one year and provisionally for the succeeding two years; together with the allocation of timber to licensees.

Appendix A

Planning and control of the environmental aspects of timber production operations on public land in Victoria



* Community input formally sought

Appendix B

A record of meetings and workshops held in association with the Gippsland Forest Management Plan and RFA

Date	Meeting Type	Location	Group Met	Purpose
18/05/98	Public meeting	Yarram	Community	Introduction to RFA process
19/05/98	Public meeting	Heyfield	Community	Introduction to RFA process
20/05/98	Public meeting	Omeo	Community	Introduction to RFA process
21/05/98	Public meeting	Bairnsdale	Community	Introduction to RFA process
11/06/98	National Estate Workshop	Churchill	Community	Identify areas of possible cultural heritage value
12/06/98	National Estate Workshop	Heyfield	Cross section of community	Identify areas of possible cultural heritage value
13/06/98	National Estate Workshop	Sale	Cross section of community	Identify areas of possible cultural heritage value
14/06/98	National Estate Workshop	Dargo	Cross section of community	Identify areas of possible cultural heritage value
15/06/98	National Estate Workshop	Bruthen	Cross section of community	Identify areas of possible cultural heritage value
16/06/98	National Estate Workshop	Omeo	Cross section of community	Identify areas of possible cultural heritage value
17/06/98	National Estate Workshop	Foster	Cross section of community	Identify areas of possible cultural heritage value
21/09/98	Social Assessment Workshop	Yarram	Cross section of community	Social assessment case study
22/09/98	Social Assessment Workshop	Heyfield	Cross section of community	Social assessment case study
23/09/98	Social Assessment Workshop	Dargo	Cross section of community	Social assessment case study
29/09/98	Social Assessment Workshop	Swifts Creek	Cross section of community	Social assessment case study
30/09/98	Social Assessment Workshop	Bairnsdale	Cross section of community	Social assessment case study
01/10/98	Social Assessment Workshop	Sale	Cross section of community	Social assessment case study
11/98 12/98	Aboriginal communities	Orbost, Lake Tyers, Morwell, Sale and Bairnsdale	Aboriginal communities organisations	Introduction to RFA process and national estate assessment
05/99	Workshop		Cultural heritage officers	Introduction to RFA process and national estate assessment
	Meeting		Lakes and Wilderness Tourism	Recreation and tourism chapter
1998	Meeting	Melbourne	Tambo Environment Awareness Group	Discussion of a range of issues including wood utilisation planning and management and forest regeneration
1998	Meeting	Traralgon	Timber Towns and municipalities	Introduction to RFA process

Continued next page

A record of meetings and workshops held in association with the Gippsland Forest Management Plan and RFA continued

Date	Meeting Type	Location	Group Met	Purpose
19/05/98	Meeting	South Gippsland	Susan Davies and local communities	Introduction to RFA process
22/4/99	Meeting		Gippsland Country Tourism	Recreation and tourism chapter
23/4/99	Meeting		Phillip Island and Promontory Coast Tourism	Recreation and tourism chapter
20/5/99	Meeting	Bairnsdale	Gippsland Apiarists Association	Discussion of apiculture in the Gippsland region for inclusion in Gippsland CRA
13/7/99	Meeting	Bairnsdale?	Bairnsdale Fly Fishing Club	Recreation and tourism chapter
8/99	Meeting		Central Gippsland Forest Management Area Timber Industry Liaison Committee	Discussion of forest management planning process.
2/9/99	Meeting	Bairnsdale	Tambo Forest Management Area Timber Industry Liaison Committee	Discussion of forest management planning process
6/9/99	Meeting		Latrobe Valley Fly Fishing Club	Recreation and tourism chapter
5/10/99	Meeting	Traralgon	West Gippsland Catchment Management Authority	Pest plant and animal management
11/10/99	Public meeting	Bairnsdale	Tambo Environment Action Group, Friends of the Earth, Gippsland Apiarists Association, Cleanwater Coalition, Construction, Forestry Mining and Energy Union	Discussion of the RFA and forest management planning processes
13/10/99	Meeting	Traralgon	Central Gippsland Forest Management Area Timber Industry Liaison Committee	Discussion of the RFA and forest management planning processes
13/10/99	Meeting		Victorian Association of Four Wheel Drive Clubs	Management of roads and tracks
8/11/99	Meeting	Leongatha	South Gippsland Shire	CRA release
8/11/99	Meeting	Yarram	Julie Constable, Kim Devenish	CRA release
8/11/99	Public meeting	Yarram	Community	CRA release
9/11/99	Public meeting	Omeo	Community	CRA release
10/11/99	Public meeting	Bairnsdale	Community	CRA release
11/11/99	Public meeting	Heyfield	Community	CRA release

Continued next page

A record of meetings and workshops held in association with the Gippsland Forest Management Plan and RFA continued

Date	Meeting Type	Location	Group Met	Purpose
10/11/99	Meeting	Bairnsdale	Tambo Timber Industry Liaison Committee	CRA release
9/11/99	Meeting	Bairnsdale	East Gippsland Shire	CRA release
10/11/99	Meeting	Bairnsdale	Tambo Environment Awareness Group	CRA release
10/11/99	Meeting	Bairnsdale	Gippsland Apiarists Association	CRA release
11/11/99	Meeting	Bairnsdale	East Gippsland CMA	CRA release
11/11/99	Meeting	Heyfield	The 'A' Team	CRA release
11/11/99	Meeting	Heyfield	Central Gippsland Timber Industry Liaison Committee	CRA release
12/11/99	Meeting	Traralgon	West Gippsland CMA	CRA release
29/11/99	Meeting	Traralgon	Gippsland Apiarists Association	Apiary Management Plan
9/12/99	Meeting		Australian Deer Association (Gippsland Branch), Wonthaggi and District Deer Hunters	Road and track management
30/12/99	Meeting		Australian Deer Association (Gippsland Branch), Wonthaggi and District Deer Hunters, deer hunters, South Gippsland 4WD Club	Road and track management
11/01/00	Meeting		Prospectors and Miners Association of Vic Inc	Road and track management
17/01/00	Meeting	Melbourne	Construction, Forestry, Mining, Energy Union	RFA Consultation Paper
17/01/00	Meeting	Melbourne	Victorian Association of Forest Industries, Timber Communities Australia, Timber Towns	RFA Consultation Paper
25/01/00	Meeting	Bairnsdale	Gippsland Apiarists Association	RFA Consultation Paper
25/01/00	Meeting	Bairnsdale	Timber industry	RFA Consultation Paper
03/02/00	Meeting	Melbourne	RFA State Stakeholder Group	RFA Consultation Paper
03/02/00	Meeting	Melbourne	Municipal Association Victoria	RFA Consultation Paper
07/02/00	Public Forum	Traralgon	NRE public forum	Forest management
08/02/00	Public Forum	Traralgon	NRE public forum	Forest management
14/02/00	Meeting	Sale	Wellington Shire	RFA Consultation Paper

Continued next page

A record of meetings and workshops held in association with the Gippsland Forest Management Plan and RFA continued

Date	Meeting Type	Location	Group Met	Purpose
28/02/00	RFA Independent Panel Hearing	Bairnsdale	Community	RFA Independent Panel Public Hearing
29/02/00	RFA Independent Panel Hearing	Traralgon	Community	RFA Independent Panel Public Hearing
01/03/00	RFA Independent Panel Hearing	Traralgon	Community	RFA Independent Panel Public Hearing
02/03/00	RFA Independent Panel Hearing	Yarram	Community	RFA Independent Panel Public Hearing
03/03/00	RFA Independent Panel Hearing	Melbourne	Community	RFA Independent Panel Public Hearing
15/02/01	Meeting	Sale	Gippsland aboriginal communities	Cultural heritage management
22/03/01	Meeting	Traralgon	Australian Deer Association	Road and track management
21/08/01	Meeting	Melbourne	Denise Allen	Release of the Proposed Plan
22/08/01	Meeting	Melbourne	Susan Davies	Release of the Proposed Plan
23/08/01	Meeting	Melbourne	Keith Hamilton	Release of the Proposed Plan
23/08/01	Meeting	Melbourne	Craig Ingram	Release of the Proposed Plan
23/08/01	Meeting	Melbourne	Ian Maxfield	Release of the Proposed Plan
30/08/01	Meeting	Melbourne	Victorian Association of Forest Industries, Timber Communities Australia	Release of the Proposed Plan
6/09/01	Meeting	Bairnsdale	Tambo Timber Industry Consultative Committee	Release of the Proposed Plan
11/09/01	Meeting	Bairnsdale	East Gippsland	Release of the Proposed Plan
13/09/01	Meeting	Melbourne	Victorian National Parks Association, Environment Victoria, Australian Conservation Foundation	Release of the Proposed Plan
14/09/01	Meeting	Traralgon	Wellington Shire	Release of the Proposed Plan
14/09/01	Meeting	Traralgon	Central Gippsland Syndicate	Release of the Proposed Plan
17/09/01	Meeting	Traralgon	West Gippsland CMA	Release of the Proposed Plan
17/09/01	Public meeting	Yarram	Community	Release of the Proposed Plan
18/09/01	Meeting	Bairnsdale	East Gippsland Shire	Release of the Proposed Plan
18/09/01	Meeting	Bairnsdale	Gippsland Apiarists Association	Release of the Proposed Plan
18/09/01	Public meeting	Omeo	Community	Release of the Proposed Plan
19/09/01	Meeting	Orbost	East Gippsland Regional Forest Reference Group	Release of the Proposed Plan
19/09/01	Public meeting	Bairnsdale	Community	Release of the Proposed Plan
20/09/01	Meeting	Bairnsdale	Gippsland Coastal Board, Executive	Release of the Proposed Plan

Continued next page

A record of meetings and workshops held in association with the Gippsland Forest Management Plan and RFA continued

Date	Meeting Type	Location	Group Met	Purpose
20/09/01	Public meeting	Heyfield	Community	Release of the Proposed Plan
3/10/01	Meeting	Traralgon	Latrobe Valley Four Wheel Drive Club	Release of the Proposed Plan
9/10/01	Meeting	Sale	Wellington Shire Council	Release of the Proposed Plan
10/10/01	Meeting	Melbourne	Victorian Association of Four Wheel Drive Clubs	Release of the Proposed Plan
30/10/01	Meeting	Lakes Entrance	ForesTech – East Gippsland Institute of TAFE	Release of the Proposed Plan
5/11/01	Meeting	Warragul	Warragul Education Centre	Release of the Proposed Plan
5/11/01	Meeting	Melbourne	Swinburne TAFE	Release of the Proposed Plan
8/11/01	Meeting	Melbourne	Victorian Association of Four Wheel Drive Clubs	Road and track management
9/11/01	Meeting	Bairnsdale	Parks Victoria	Release of the Proposed Plan
9/11/01	Meeting	Bairnsdale	Gippsland Coastal Board	Release of the Proposed Plan
27/03/02	Meeting	Traralgon	Submissions Reference Group	Review of the submissions
23/04/02	Meeting	Traralgon	Submissions Reference Group	Review of the submissions
24/05/02	Meeting	Traralgon	Submissions Reference Group	Review of the submissions
11/10/02	Meeting	Melbourne	Victorian Association of Four Wheel Drive Clubs	Road and track management
22/10/02	Meeting	Melbourne	VicWalk	Road and track management

Appendix C

Public land categories that contribute to the CAR Reserve System

Land Category
National Parks[1]
Alpine National Park
Wilsons Promontory National Park
Mitchell River National Park
The Lakes National Park
Tarra-Bulga National Park
Morwell National Park
State Parks[1]
Holey Plains State Park
Mount Worth State Park
Regional Parks
Colquhoun Regional Park
Glenmaggie Regional Park
Mirboo North Regional Park
Tyers Park
Wilderness Parks
Avon Wilderness Park
Coastal Parks
Venus Bay-Waratah Bay Coastal Park
Shallow Inlet Coastal Park
Corner Inlet Coastal Park
Nooramunga Coastal Park
Gippsland Lakes Coastal Park
Reference Areas
Mullungdung Reference Area
Stringybark Creek Reference Area
Thirteen Mile Spur Reference Area
Twenty Acre Creek Reference Area
Eaglehawk Creek Reference Area
Spring Creek Reference Area
Tambo River Reference Area
Natural Features and Scenic Reserves
Livingstone Creek Natural Features and Scenic Reserve
Macalister Gorge Natural Features Reserve
Mount Gibbo Natural Features and Scenic Reserve
Avon-Mount Hedrick Natural Features Reserve
Macfarlane Lookout Natural Features and Scenic Reserve
Bentley Plain Natural Features and Scenic Reserve
Nunniong Plain Natural Features and Scenic Reserve
Education Areas
Jeerlang North Education Area
Melwood Education Area
Seaton Education Area
Victorian Heritage River Areas
Wonnangatta Heritage River
Mitchell Heritage River
Mitta Mitta Heritage River
Thomson Heritage River
Streamside Reserves
George Creek Streamside Reserve
Natural Catchment Areas
Punchen Creek Natural Catchment Area
Stony Creek Natural Catchment Area

Land Category
Flora Reserves
Kings Flat Flora Reserve
Bald Hills Flora Reserve
Gunyah Flora Reserve
Won Wron Flora Reserve
Rifle Range Flora Reserve
Woodside East Flora Reserve
Heyfield Flora Reserve
Glenmaggie Flora Reserve
Bengworden South Flora Reserve
Fairy Dell Flora Reserve
Flora and Fauna Reserves
Mullungdung Flora and Fauna Reserve
Stradbroke Flora and Fauna Reserve
Moormurng Flora and Fauna Reserve
Saplings Morass Flora and Fauna Reserve
The Billabong Flora and Fauna Reserve
Traralgon South Flora and Fauna Reserve
Wildlife Reserves
Bald Hills Creek Wildlife Reserve
Lake Dennison Wildlife Reserve
Sea Islands Wildlife Reserve
Nature Conservation Reserves
Mount Elizabeth Nature Conservation Reserve
Lake Coleman Nature Conservation Reserve
Glenmaggie Nature Conservation Reserve
Dowds Morass Nature Conservation Reserve
Mount Moornapa Nature Conservation Reserve
Clydebank Morass Nature Conservation Reserve
Lake Kakydran Nature Conservation Reserve
Lake Melanydra Nature Conservation Reserve
Marble Gully-Mount Tambo Nature Conservation Reserve
Red Morass Nature Conservation Reserve
Historic Areas
Walhalla Historic Area
Cassilis Historic Area
Scenic Reserves
Mount Skene Scenic Reserve
Agnes Falls Scenic Reserve
Mount Useful Scenic Reserve
Ben Cruachan Scenic Reserve
Turtons Creek Scenic Reserve
Bushland Reserves
Darriman Bushland Reserve
Willung South Bushland Reserve
Freestone Creek Bushland Reserve
3 unnamed Bushland Reserves
Game Reserves
Jack Smith Lake State Game Reserve
New Heart Game Reserve
Lakes Reserves
Gippsland Lakes Reserve

Notes:

1 National Parks and State Parks may also contain Reference Areas, Remote and Natural Areas, Wilderness Zones, Heritage River Areas and Natural Catchment Areas, which are not specified in this table.

Appendix D

Zoning Scheme Register

This zoning scheme register lists the most significant values, which form the basis of the Special Protection Zone (SPZ) and the Special Management Zone (SMZ) and should be used in conjunction with Map 2. Regional offices can be contacted for more detailed maps and information.

EXPLANATORY NOTES:

Zone Number

The zone number corresponds to the forest management district that it is within. Zones within the Noojee forest management district commence at 100, the Erica district at 200, Yarram district at 300, Heyfield district at 400, Swifts Creek district at 600 and 1 000, and Bairnsdale district at 800.

Area

The areas shown for each zone have been rounded to the nearest hectare. Areas less than 10 ha in size are not shown on the maps due to scale, however these have been marked with an asterisk (*) in the zoning scheme register. Zones with a total area greater than 10 ha that are not shown are the map, due to the individual polygons of the zone being less than 10 ha, have also been marked with an asterisk (*) in the zoning scheme register.

Ecological Vegetation Class (EVC)

Only those EVCs that are within SPZ to improve their representation in the CAR reserve system based on the national reserve criteria (JANIS 1997) have been included in the zoning scheme register. The EVC values have also been listed for those areas that have been designated SPZ for other purposes (e.g. flora sites).

Old-growth values

Old-growth forest that is within SPZ to improve their representation in the CAR reserve system based on the national reserve criteria (JANIS 1997) has been included in the zoning scheme register. The old-growth forest values have also been listed for those areas that have been designated SPZ for other purposes (e.g. flora sites).

Fauna

Threatened fauna species have been included in the zoning scheme register based on the management guidelines or prescriptions. The requirements of the management guidelines or prescriptions are often met by a number of adjoining zones.

Rare and threatened plants (VROT Flora)

Rare and threatened plant species that have been zoned SPZ or SMZ are listed in the zoning scheme register under their scientific names where known occurrences of these species are in the SMZ and SPZ.

Wildlife corridor

These are listed when present in the SPZ.

Sites of Significance

A number of forest blocks were subject to ecological survey reports. Many of the sites of significance identified in the block reports have been included in the SPZ.

Rainforest Sites of Significance
The zoning scheme register lists Rainforest Sites of Significance in SPZ.

Landscape values
A number of areas considered to have high scenic quality and high sensitivity to landscape disturbance have been included in the SMZ. Natural feature zones have been included in the SPZ.

Historic sites
Areas of significant cultural heritage value that have been zoned SPZ or SMZ are included in the zoning scheme register. Historic sites with the management prescription to protect historic fabric have not been included.

Recreation sites
SPZ and SMZ buffers have been established around several major recreation sites to maintain the recreation experience of the site.

Research sites
These zones have been established at research sites in Gippsland.

Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
Central Gippsland FMA			
Noojee District			
100	SPZ	46	EVC protection (Wet Forest), Powerful Owl, VROT Flora (*Adiantum diaphanum*)
Erica District			
200	SPZ	13	VROT Flora (*Eucalyptus kybeanensis*)
201	SMZ	11	VROT Flora (*Acacia howittii*)
202	SPZ	4 970	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest), Old-growth values (Riparian Forest, Heathy Dry Forest, Damp Forest, Shrubby Foothill Forest), Sooty Owl, VROT Flora (*Grevillea miqueliana* ssp. *miqueliana*), Historic Site (Boiler & Steam Engine, Coulston & Rawson Mine, Day Dream Mine, Locks Mining Area, Lord Roberts Mine, O'Tooles Flat (Farmhouse), Store Point Township Site, Watson Reward Mine, Donnellys Creek Alluvial Workings), Recreation Site (Jorgensen's Flat, Locks, Merringtons, The Junction, O'Tooles 1&2)
203	SPZ	277	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest, Shrubby Wet Forest), Old-growth values (Damp Forest, Wet Forest, Shrubby Wet Forest)
204	SPZ	279	EVC protection (Riparian Forest, Damp Forest, Shrubby Foothill Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Shrubby Damp Forest), Sooty Owl, Historic Site (Dawes Hotel Site)
205	SPZ	245	EVC protection (Riparian Forest, Damp Forest, Shrubby Foothill Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Shrubby Dry Forest, Damp Forest, Shrubby Foothill Forest, Shrubby Foothill Forest/Damp Forest Complex, Shrubby Damp Forest)
206	SPZ	46	EVC protection (Lowland Forest, Damp Forest, Shrubby Foothill Forest, Dry Valley Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Damp Forest), Landscape values (Thomson River)
207	SPZ	5 844	EVC protection (Lowland Forest, Riparian Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Clay Heathland/Wet Heathland/Riparian Scrub Mosaic, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Lowland Forest, Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Riverine Escarpment Scrub, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Foothill Forest/Damp Forest Complex), Powerful Owl, Sooty Owl, VROT Flora (*Gahnia microstachya*), Landscape values (Thomson River), Historic Site (Marble Quarry), Recreation Site (Bruntons Bridge)
208	SPZ	79	EVC protection (Riparian Scrub), Old-growth values (Riparian Scrub)
209	SPZ	336	EVC protection (Lowland Forest, Damp Forest, Shrubby Foothill Forest), Old-growth values (Damp Forest, Shrubby Foothill Forest), Landscape values (Thomson River)
210	SPZ	1 390	EVC protection (Lowland Forest, Riparian Forest, Damp Forest, Shrubby Foothill Forest), Old-growth values (Lowland Forest, Grassy Dry Forest, Damp Forest, Shrubby Foothill Forest), Powerful Owl, Sooty Owl
211	SPZ	653	EVC protection (Lowland Forest, Riparian Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Lowland Forest, Riparian Forest, Damp Forest, Wet Forest)
*212	SMZ	3	Research Site (Boola Silvertop Thinning Trial)
213	SMZ	54	Landscape values (Boola Road)
*214	SPZ	1	Historic Site (Lady Vera Battery)
*215	SPZ	7	EVC protection (Wet Forest, Shrubby Foothill Forest), Historic Site (Edwards Hill Township Site, Edwards Mine, Harp of Erin Mine)
217	SPZ	13	EVC protection (Wet Forest, Shrubby Foothill Forest), Historic Site (Morning Star Mine & Waterwheel, Incline Tramway)
*218	SPZ	6	EVC protection (Wet Forest), Historic Site (Tullamore Township Site), Recreation Site (Morning Star Water Wheel Walking Track)
*219	SPZ	2	EVC protection (Damp Forest), Historic Site (White Star No.1 Mine Site, White Star No.2 Mine Site)
*220	SPZ	3	EVC protection (Damp Forest), Recreation Site (Hanging Rock Walking Track)
*221	SPZ	3	EVC protection (Damp Forest), Historic Site (Lily Creek Battery & Mine Site)
*222	SMZ	<1	Historic Site (Mountain Maid Battery)
*223	SPZ	12	Landscape values (Australian Alps Walking Track), Recreation Site (Australian Alps Walking Track)
*225	SMZ	1	Historic Site (Maidentown Township Site)
*226	SPZ	2	Old-growth values (Shrubby Dry Forest), Eastern Bent-wing Bat

Continued next page

Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
*227	SMZ	<1	Historic Site (Eldorado No. 1 Mine)
*228	SMZ	<1	Historic Site (Eldorado No. 2 Mine)
*229	SMZ	<1	Historic Site (Battery Site – Cast Iron Point Area)
*230	SPZ	<1	Historic Site (Crinoline Battery)
*231	SMZ	<1	Historic Site (Gippsland Consols Machinery Site)
*232	SMZ	<1	Historic Site (Gippsland Consols Mine)
233	SPZ	9	VROT Flora (*Eucalyptus ignorabilis* s.s.), EVC protection (Damp Forest, Shrubby Foothill Forest)
234	SPZ	13	VROT Flora (*Eucalyptus pauciflora* ssp. *acerina*), EVC protection (Damp Forest)
235	SMZ	12	VROT Flora (*Australopyrum velutinum*)
236	SPZ	13	VROT Flora (*Euchiton umbricola*), EVC protection (Damp Forest)
237	SPZ	13	VROT Flora (*Ranunculus collinus*), EVC protection (Damp Forest)
238	SPZ	13	VROT Flora (*Grevillea* sp. aff. *monslacana*)
*239	SMZ	4	VROT Flora (*Pterostylis grandiflora*)
*240	SMZ	4	VROT Flora (*Pterostylis grandiflora*)
*242	SMZ	<1	Historic Site (Bismark Mine and Machinery Site)
*243	SMZ	<1	Historic Site (T. Evans Grave Site)
Yarram District			
300	SPZ	248	EVC protection (Lowland Forest, Damp Forest, Swampy Riparian Complex), Powerful Owl, Landscape values (Strzelecki Hwy)
301	SPZ	266	EVC protection (Wet Forest)
302	SPZ	1 414	EVC protection (Swamp Scrub), VROT Flora (*Acacia howittii*, *Juncus revolutus*, *Triglochin minutissimum*, *Xerochrysum palustre*)
303	SMZ	431	Landscape values (South Gippsland Hwy)
304	SPZ	573	EVC protection (Lowland Forest, Damp Forest), Powerful Owl
305	SPZ	316	EVC protection (Lowland Forest, Swamp Scrub, Plains Grassy Forest)
306	SPZ	355	EVC protection (Swamp Scrub, Plains Grassy Forest), Old-growth values (Plains Grassy Forest), VROT Flora (*Eucalyptus strzeleckii*), Historic Site (Goodwood Timber & Tramway Co.)
307	SPZ	5 678	EVC protection (Lowland Forest, Damp Forest, Warm Temperate Rainforest, Swamp Scrub, Sedge Wetland, Plains Grassy Forest, Riparian Scrub), Old-growth values (Lowland Forest, Plains Grassy Forest, Riparian Scrub), Spot-tailed Quoll, Powerful Owl, VROT Flora (*Thelymitra circumsepta*), Landscape values (Hyland Hwy), Historic Site (Jamieson & Thompson Sawmill), Recreation Site (White Woman's Waterhole, White Woman's Waterhole Walking Track)
308	SPZ	124	EVC protection (Lowland Forest)
309	SPZ	55	EVC protection (Lowland Forest)
310	SPZ	5 986	EVC protection (Clay Heathland, Lowland Forest, Damp Forest, Swamp Scrub, Plains Grassy Forest, Riparian Scrub), Old-growth values (Lowland Forest, Damp Forest, Plains Grassy Forest, Riparian Scrub), Barking Owl, Powerful Owl, VROT Flora (*Petalochilus alatus*, *Petalochilus aurantiacus*, *Pterostylis chlorogramma*, *Pterostylis grandiflora*, *Thelymitra matthewsii*), Landscape values (South Gippsland Hwy), Historic Site (Goodwood Timber & Tramway Co.), Research Site (Phytophthora dieback regeneration - Southern Site, Planting on Phytophthora dieback affected sites)
311	SPZ	871	EVC protection (Damp Forest, Plains Grassy Forest), Powerful Owl, Landscape values (South Gippsland Hwy)
312	SPZ	498	EVC protection (Lowland Forest, Swamp Scrub), Powerful Owl
313	SPZ	410	EVC protection (Lowland Forest, Damp Forest), Old-growth values (Lowland Forest)
314	SMZ	72	Research Site (Phytophthora dieback regeneration – Northern Site)
315	SMZ	39	Research Site (Phytophthora dieback regeneration – Southern Site)
316	SPZ	4 007	EVC protection (Clay Heathland, Lowland Forest, Swamp Scrub, Sedge Wetland, Plains Grassy Forest, Riparian Scrub), Old-growth values (Lowland Forest, Riparian Scrub), Powerful Owl, VROT Flora (*Eucalyptus* aff. *willisii*, *Pterostylis chlorogramma*), Landscape values (South Gippsland Hwy), Historic Site (Froud's Sawmill)
317	SPZ	52	EVC protection (Clay Heathland)
*318	SPZ	10	EVC protection (Swamp Scrub), Landscape values (South Gippsland Hwy)
*319	SPZ	21	EVC protection (Warm Temperate Rainforest), Landscape values (South Gippsland Hwy)
*320	SPZ	10	EVC protection (Riparian Scrub)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
321	SPZ	10	EVC protection (Damp Sands Herb-rich Woodland)
*322	SPZ	8	EVC protection (Riparian Scrub), Old-growth values (Riparian Scrub)
*323	SPZ	4	EVC protection (Plains Grassy Forest), Landscape values (Hyland Hwy), Recreation Site (The Gums)
*324	SPZ	1	EVC protection (Plains Grassy Forest), Old-growth values (Plains Grassy Forest)
*325	SPZ	51	EVC protection (Riparian Scrub), Old-growth values (Riparian Scrub)
*326	SPZ	10	EVC protection (Swamp Scrub)
*327	SPZ	18	EVC protection (Swamp Scrub)
*328	SPZ	11	EVC protection (Clay Heathland, Swamp Scrub)
*329	SPZ	27	EVC protection (Swamp Scrub), Research Site (Phytophthora dieback regeneration – Northern Site)
*330	SPZ	8	EVC protection (Sedge Wetland)
*331	SPZ	3	EVC protection (Swampy Riparian Complex)
*332	SPZ	8	EVC protection (Riparian Scrub)
*333	SPZ	12	EVC protection (Swamp Scrub)
*334	SPZ	2	EVC protection (Plains Grassy Forest), Old-growth values (Plains Grassy Forest), Historic Site (Goodwood Timber & Tramway Co.)
*335	SMZ	7	Landscape values (Strzelecki Hwy)
336	SMZ	13	VROT Flora (*Acacia howittii*)
*337	SMZ	4	Landscape values (Hyland Hwy)
*338	SMZ	2	Research Site (Mullungdung Progeny Trials)
*339	SMZ	10	VROT Flora (*Pseudanthus ovalifolius*, *Thelymitra matthewsii*)
*340	SMZ	2	VROT Flora (*Pterostylis chlorogramma*)
341	SMZ	13	VROT Flora (*Pterostylis fischii*)
*342	SMZ	7	VROT Flora (*Leionema bilobum* ssp. 3)
343	SMZ	13	VROT Flora (*Entolasia stricta*)
*344	SMZ	5	Barking Owl, VROT Flora (*Pterostylis grandiflora*)
*345	SMZ	<1	Landscape values (South Gippsland Hwy)
Heyfield District			
400	SPZ	13	EVC protection (Damp Forest), VROT Flora (*Euchiton umbricola*)
401	SPZ	450	EVC protection (Damp Forest, Wet Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Wet Forest, Montane Dry Woodland, Montane Damp Forest), Powerful Owl
402	SPZ	545	EVC protection (Damp Forest, Wet Forest, Montane Rocky Shrubland), Old-growth values (Shrubby Dry Forest, Damp Forest, Wet Forest, Montane Dry Woodland, Rocky Outcrop Shrubland/Herbland Mosaic), Sooty Owl
403	SPZ	47	EVC protection (Montane Rocky Shrubland), Old-growth values (Montane Rocky Shrubland)
404	SPZ	1 617	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest, Shrubby Wet Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Wet Forest, Montane Dry Woodland, Montane Damp Forest, Shrubby Foothill Forest), Landscape values (Barkly River)
405	SPZ	75	EVC protection (Damp Forest, Wet Forest), Old-growth values (Damp Forest, Wet Forest, Montane Dry Woodland)
406	SPZ	590	EVC protection (Damp Forest, Wet Forest, Shrubby Wet Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Wet Forest, Shrubby Wet Forest), Powerful Owl, Landscape values (Barkly River)
407	SPZ	226	EVC protection (Riparian Forest, Damp Forest, Dry Valley Forest), Old-growth values (Riparian Forest, Shrubby Dry Forest, Grassy Dry Forest, Dry Valley Forest), VROT Flora (*Asplenium trichomanes*), Landscape values (Mt Skene Creek), Recreation Site (Bicentennial National Trail)
408	SPZ	692	EVC protection (Riparian Forest, Riparian Shrubland, Damp Forest, Valley Heathy Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Rocky Outcrop Shrubland/Herbland Mosaic, Valley Heathy Forest), VROT Flora (*Ranunculus collinus*), Recreation Site (Bicentennial National Trail)
409	SPZ	2 513	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest, Grassy Woodland), Old-growth values (Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Montane Dry Woodland, Shrubby Foothill Forest, Dry Valley Forest), VROT Flora (*Pseudanthus divaricatissimus*, *Pterostylis cucullata*), Landscape values (Barkly River), Recreation Site (Barkly Bridge)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
410	SPZ	16	Historic Site (Chairman's Stand), Recreation Site (Connors Plain)
411	SPZ	159	EVC protection (Wet Forest, Tableland Damp Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Montane Dry Woodland), Spotted Tree Frog, VROT Flora (*Trochocarpa clarkei*), Landscape values (Australian Alps Walking Track), Historic Site (Camp Site - Black Track), Recreation Site (Australian Alps Walking Track)
412	SPZ	465	EVC protection (Damp Forest, Wet Forest, Shrubby Wet Forest), Spotted Tree Frog, Recreation Site (Bicentennial National Trail)
413	SMZ	343	Spotted Tree Frog
414	SPZ	2 498	EVC protection (Riparian Forest, Damp Forest, Wet Forest), Old-growth values (Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Wet Forest, Montane Dry Woodland, Montane Damp Forest), Spotted Tree Frog, Sooty Owl, Landscape values (Australian Alps Walking Track), Recreation Site (Australian Alps Walking Track)
415	SMZ	176	Spotted Tree Frog
416	SPZ	285	EVC protection (Damp Forest, Wet Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Wet Forest), Spotted Tree Frog
417	SMZ	315	Spotted Tree Frog
418	SMZ	253	Landscape values (Heyfield-Licola Road)
419	SPZ	7 793	EVC protection (Lowland Forest, Riparian Shrubland, Damp Forest, Wet Forest, Cool Temperate Rainforest, Tableland Damp Forest, Shrubby Foothill Forest, Dry Valley Forest, Shrubby Wet Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest, Shrubby Wet Forest, Shrubby Foothill Forest/Damp Forest Complex, Shrubby Damp Forest), Sooty Owl, Rainforest Site of Significance, Landscape values (Heyfield-Licola Road), Historic Site (The Germans - Donnelly's Creek)
*420	SPZ	28	EVC protection (Wet Forest, Cool Temperate Rainforest), Old-growth values (Wet Forest), Rainforest Site of Significance
421	SPZ	156	EVC protection (Damp Forest, Wet Forest, Cool Temperate Rainforest, Shrubby Foothill Forest), Old-growth values (Damp Forest, Wet Forest), Rainforest Site of Significance
422	SMZ	10	VROT Flora (*Pterostylis grandiflora*)
423	SPZ	13	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest), Old-growth values (Damp Forest), VROT Flora (*Eucalyptus kybeanensis*)
424	SPZ	16	EVC protection (Lowland Forest), VROT Flora (*Gahnia microstachya*, *Grevillea chrysophaea*, *Olearia adenophora*)
425	SPZ	13	VROT Flora (*Olearia adenophora*)
426	SMZ	17	Landscape values (Heyfield-Licola Road)
427	SPZ	673	EVC protection (Riparian Shrubland, Dry Valley Forest, Valley Slopes Dry Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Damp Forest), VROT Flora (*Grevillea chrysophaea*), Landscape values (Heyfield-Licola Road)
428	SPZ	279	EVC protection (Riparian Shrubland, Dry Valley Forest, Grassy Woodland, Valley Slopes Dry Forest), Old-growth values (Shrubby Dry Forest, Grassy Woodland, Valley Slopes Dry Forest), VROT Flora (*Goodenia macmillanii*), Landscape values (Heyfield-Licola Road), Recreation Site (Cheynes Bridge)
429	SPZ	244	EVC protection (Damp Forest, Shrubby Foothill Forest), Old-growth Forest (Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Shrubby Foothill Forest), Powerful Owl, Landscape values (Heyfield-Licola Road)
430	SPZ	240	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Shrubby Dry Forest, Damp Forest, Shrubby Damp Forest), Sooty Owl
431	SPZ	1 764	EVC protection (Damp Forest, Shrubby Foothill Forest, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Riverine Escarpment Scrub, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Foothill Forest/Damp Forest Complex, Shrubby Damp Forest)
432	SPZ	618	EVC protection (Lowland Forest, Damp Forest, Valley Grassy Forest, Dry Valley Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Shrubby Dry Forest, Shrubby Damp Forest), Powerful Owl, Landscape values (Heyfield-Licola Road)
433	SMZ	2 883	Landscape values (Heyfield-Licola Road)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
434	SPZ	345	EVC protection (Lowland Forest, Riparian Forest, Riparian Shrubland, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Riparian Forest, Rocky Outcrop Shrubland/Herbland Mosaic, Riverine Escarpment Scrub, Dry Valley Forest, Valley Slopes Dry Forest), Landscape values (Glenmaggie Creek)
435	SPZ	89	EVC protection (Valley Slopes Dry Forest), Old-growth values (Valley Slopes Dry Forest)
436	SMZ	7	VROT Flora (*Platysace ericoides*)
437	SPZ	15	EVC protection (Valley Slopes Dry Forest), Old-growth values (Valley Slopes Dry Forest)
438	SPZ	537	EVC protection (Lowland Forest, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Shrubby Dry Forest, Riverine Escarpment Scrub, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Foothill Forest/Damp Forest Complex), Sooty Owl, Landscape values (Thomson River)
439	SPZ	50	EVC protection (Lowland Forest, Damp Forest), Powerful Owl
440	SPZ	13	EVC protection (Lowland Forest), VROT Flora (*Grevillea chrysophaea*)
441	SPZ	569	EVC protection (Lowland Forest, Dry Valley Forest, Lowland Herb-rich Forest), VROT Flora (*Grevillea chrysophaea*, *Platysace ericoides*)
442	SPZ	533	EVC protection (Damp Forest, Dry Valley Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Dry Valley Forest, Shrubby Damp Forest), Powerful Owl
443	SPZ	561	EVC protection (Damp Forest), Old-growth values (Shrubby Dry Forest, Damp Forest, Shrubby Damp Forest), Sooty Owl
444	SPZ	12	EVC protection (Riparian Forest), VROT Flora (*Gahnia microstachya*, *Grevillea chrysophaea*, *Platysace ericoides*)
445	SPZ	52	EVC protection (Valley Slopes Dry Forest)
446	SPZ	2 797	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Tableland Damp Forest, Shrubby Foothill Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Montane Dry Woodland, Shrubby Damp Forest), Sooty Owl
447	SPZ	13	VROT Flora (*Gynatrix macrophylla*)
448	SPZ	40	EVC protection (Montane Rocky Shrubland)
449	SPZ	25	VROT Flora (*Pultenaea tenella*)
450	SPZ	467	Sooty Owl, Alpine Tree Frog
451	SPZ	25	VROT Flora (*Ranunculus eichlerianus*, *Trochocarpa clarkei*)
452	SPZ	13	VROT Flora (*Euchiton umbricola*, *Grevillea miqueliana*)
453	SPZ	50	Alpine Tree Frog
454	SPZ	254	Sooty Owl, Historic Site (Surveyors Creek Camp)
455	SPZ	53	Alpine Tree Frog
456	SPZ	306	EVC protection (Montane Riparian Thicket, Montane Rocky Shrubland), Old-growth values (Montane Dry Woodland, Montane Damp Forest, Montane Riparian Thicket), Alpine Tree Frog, Powerful Owl, VROT Flora (*Trochocarpa clarkei*)
457	SPZ	16	EVC protection (Montane Rocky Shrubland), VROT Flora (*Acacia alpina*)
458	SPZ	25	VROT Flora (*Aciphylla glacialis*, *Grevillea miqueliana*)
459	SPZ	115	Alpine Tree Frog, VROT Flora (*Diuris lanceolata* s.l., *Ranunculus eichlerianus*), Landscape values (Dargo High Plains Road)
460	SMZ	530	VROT Flora (*Eucalyptus perriniana*, *Solanum linearifolium*), Landscape values (Dargo High Plains Road), Historic Site (Grave of the Unknown Woman), Recreation Site (12 Mile Creek)
461	SPZ	47	Old-growth values (Montane Dry Woodland, Montane Damp Forest), Alpine Tree Frog
462	SPZ	1 154	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket, Shrubby Wet Forest), Old-growth values (Montane Dry Woodland, Montane Grassy Woodland, Montane Damp Forest, Montane Riparian Thicket), Alpine Tree Frog, Landscape values (Dargo High Plains Road), Recreation Site (Gows Hotel)
463	SPZ	496	Old-growth values (Shrubby Dry Forest, Montane Dry Woodland, Montane Damp Forest), Alpine Tree Frog, Powerful Owl, Sooty Owl, Historic Site (White Timber Township Site)
465	SPZ	433	EVC protection (Lowland Forest, Damp Forest, Shrubby Foothill Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Montane Dry Woodland, Montane Damp Forest, Shrubby Foothill Forest)
466	SPZ	21	EVC protection (Montane Rocky Shrubland), Old-growth values (Montane Rocky Shrubland)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
467	SPZ	4 171	EVC protection (Riparian Forest, Riparian Shrubland, Damp Forest, Wet Forest, Shrubby Foothill Forest, Valley Grassy Forest, Valley Slopes Dry Forest, Shrubby Wet Forest), Old-growth values (Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Montane Dry Woodland, Montane Damp Forest, Shrubby Foothill Forest, Valley Grassy Forest, Valley Slopes Dry Forest, Shrubby Damp Forest), Wildlife corridor, Landscape values (Dargo River), Historic Site (Harrison's Cut Diversion Sluice), Recreation Site (Bicentennial National Trail, Harrison's Cut)
468	SPZ	2 628	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Valley Grassy Forest, Dry Valley Forest, Grassy Woodland, Valley Slopes Dry Forest), Old-growth values (Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Riverine Escarpment Scrub, Shrubby Damp Forest), VROT Flora (*Cyphanthera anthocercidea*), Wildlife corridor, Landscape values (Dargo River), Recreation Site (Bicentennial National Trail, Black Flat, Collins Flat, Italian Flat, Jimmy Inversons, Ollies Jumpup)
469	SPZ	454	EVC protection (Riparian Forest), Old-growth values (Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest), Landscape values (30 Mile Creek)
470	SPZ	83	EVC protection (Tableland Damp Forest), Alpine Tree Frog, Landscape values (Dargo High Plains Road), Recreation Site (Kinleys Yards), Historic Site (Freda Treasure Reserve)
471	SPZ	20	EVC protection (Wet Forest), Old-growth values (Montane Damp Forest), Landscape values (Dargo High Plains Road), Historic Site (Freda Treasure Reserve)
472	SPZ	72	EVC protection (Rocky Outcrop Shrubland)
473	SPZ	15	EVC protection (Grassy Woodland)
474	SPZ	33	EVC protection (Grassy Woodland)
475	SPZ	208	EVC protection (Valley Grassy Forest, Grassy Woodland), Old-growth values (Grassy Woodland), VROT Flora (*Clematis microphylla* var. *leptophylla*, *Desmodium varians*)
476	SPZ	217	EVC protection (Valley Grassy Forest), Recreation Site (Black Snake)
477	SPZ	1 159	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest, Valley Grassy Forest), Old-growth values (Shrubby Dry Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Rocky Outcrop Shrubland/Herbland Mosaic), Sooty Owl
478	SPZ	12	Old-growth values (Grassy Dry Forest), VROT Flora (*Gynatrix macrophylla*)
479	SPZ	131	EVC protection (Dry Valley Forest, Grassy Woodland), Old-growth values (Shrubby Dry Forest, Grassy Dry Forest, Dry Valley Forest), Sooty Owl, Recreation Site (Gibraltar)
480	SPZ	863	EVC protection (Lowland Forest, Riparian Forest, Damp Forest, Wet Forest, Swampy Riparian Woodland, Riparian Forest/Swampy Riparian Woodland/Riparian Shrubland/Riverine Escarpment Scrub, Valley Heathy Forest, Dry Valley Forest, Valley Slopes Dry Forest, Lowland Herb-rich Forest), Old-growth values (Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Valley Heathy Forest, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Damp Forest), Powerful Owl, Landscape values (Dargo High Plains Road, Cobbannah Creek)
481	SPZ	979	EVC protection (Wet Forest, Grassy Woodland), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Wet Forest, Riverine Escarpment Scrub, Shrubby Damp Forest), Recreation Site (Lennies Cutting)
482	SPZ	247	EVC protection (Damp Forest, Dry Valley Forest, Grassy Woodland, Valley Slopes Dry Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Dry Valley Forest, Shrubby Damp Forest), Landscape values (Dargo River)
483	SMZ	7	VROT Flora (*Beyeria viscosa*)
484	SPZ	16	EVC protection (Riparian Shrubland, Valley Slopes Dry Forest), Old-growth values (Valley Slopes Dry Forest)
485	SPZ	51	Alpine Tree Frog
486	SPZ	13	VROT Flora (*Trochocarpa clarkei*)
487	SPZ	18	EVC protection (Montane Riparian Thicket)
488	SPZ	111	EVC protection (Montane Grassy Woodland, Montane Riparian Woodland), Landscape values (Moroka River)
489	SPZ	13	EVC protection (Montane Grassy Woodland), VROT Flora (*Ranunculus collinus*)
490	SPZ	231	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket), Old-growth values (Montane Grassy Woodland, Montane Riparian Thicket), VROT Flora (*Hibbertia pedunculata*)
491	SPZ	127	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
492	SPZ	16	EVC protection (Montane Riparian Woodland)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
493	SPZ	2 479	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Tableland Damp Forest, Shrubby Foothill Forest, Shrubby Wet Forest), Old-growth values (Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Wet Forest, Tableland Damp Forest, Montane Damp Forest, Shrubby Foothill Forest, Shrubby Wet Forest, Shrubby Damp Forest), Powerful Owl
494	SPZ	1 413	EVC protection (Damp Forest, Wet Forest, Cool Temperate Rainforest, Tableland Damp Forest, Shrubby Foothill Forest), Old-growth values (Shrubby Dry Forest, Damp Forest, Wet Forest, Tableland Damp Forest, Montane Damp Forest, Shrubby Foothill Forest, Shrubby Damp Forest), Sooty Owl
495	SPZ	329	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Dry Valley Forest), Old-growth values (Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Wet Forest, Dry Valley Forest, Shrubby Damp Forest), Landscape values (Freestone Creek), Recreation Site (Lees Creek Walking Track)
496	SPZ	8 042	EVC protection (Lowland Forest, Riparian Forest, Riparian Shrubland, Damp Forest, Wet Forest, Warm Temperate Rainforest, Dry Valley Forest, Lowland Herb-rich Forest), Old-growth values (Lowland Forest, Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Dry Valley Forest, Shrubby Damp Forest), Powerful Owl, Sooty Owl, VROT Flora (*Beyeria viscosa*, *Boronia galbraithiae*, *Gahnia microstachya*, *Hybanthus monopetalus*, *Pultenaea foliolosa*, *Aristida calycina* var. *calycina*), Landscape values (Freestone and Sportsman Creeks, Cobbannah Creek), Recreation Site (Lees Creek Walking Track, Lee Creek)
497	SPZ	52	EVC protection (Damp Forest), Giant Burrowing Frog
498	SPZ	29	EVC protection (Grassy Woodland)
499	SMZ	97	Landscape values (Dargo High Plains Road)
500	SPZ	5 188	EVC protection (Lowland Forest, Riparian Shrubland, Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest, Lowland Herb-rich Forest), Old-growth values (Lowland Forest, Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Wet Forest, Riverine Escarpment Scrub, Dry Valley Forest, Shrubby Damp Forest, Lowland Herb-rich Forest), Large-footed Myotis, Powerful Owl, Sooty Owl, Masked Owl, VROT Flora (*Pomaderris pilifera*, *Senna aciphylla*), Landscape values (Freestone and Sportsman Creeks), Recreation Site (Lees Creek Walking Track, Winke Creek)
501	SPZ	539	EVC protection (Riparian Forest, Damp Forest), Old-growth values (Shrubby Dry Forest, Damp Forest, Shrubby Damp Forest), Powerful Owl
*502	SPZ	13	EVC protection (Warm Temperate Rainforest)
504	SMZ	4	VROT Flora (*Gahnia microstachya*)
*505	SMZ	6	VROT Flora (*Gahnia microstachya*)
506	SPZ	320	EVC protection (Riparian Forest, Damp Forest, Dry Valley Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Riparian Forest, Shrubby Dry Forest, Rocky Outcrop Shrubland/Herbland Mosaic, Riverine Escarpment Scrub), Landscape values (Valencia Creek)
507	SMZ	12	VROT Flora (*Gahnia microstachya*)
508	SPZ	11 561	EVC protection (Lowland Forest, Riparian Forest, Riparian Shrubland, Damp Forest, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Foothill Forest/Damp Forest Complex), Old-growth values (Lowland Forest, Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Rocky Outcrop Shrubland/Herbland Mosaic, Riverine Escarpment Scrub, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Foothill Forest/Damp Forest Complex, Shrubby Damp Forest), Powerful Owl, Sooty Owl, Masked Owl, VROT Flora (*Gahnia microstachya*, *Pomaderris ligustrina* ssp. *ligustrina*, *Prostanthera decussata*, *Senecio diaschides*), Landscape values (Valencia Creek, Ben Cruachan Creek, Avon River), Recreation Site (Paddy Lee Crossing)
509	SPZ	69	EVC protection (Lowland Forest, Dry Valley Forest, Lowland Herb-rich Forest), Powerful Owl, VROT Flora (*Ozothamnus argophyllus*)
510	SMZ	11	VROT Flora (*Ozothamnus argophyllus*)
511	SPZ	98	EVC protection values (Lowland Forest, Riparian Forest, Riparian Shrubland, Dry Valley Forest, Lowland Herb-rich Forest), Masked Owl, Landscape values (Valencia Creek), Recreation Site (Valencia Creek)
512	SPZ	201	EVC protection (Lowland Forest, Riparian Forest, Riparian Shrubland, Dry Valley Forest, Lowland Herb-rich Forest), Old-growth values (Shrubby Dry Forest, Riverine Escarpment Scrub, Lowland Herb-rich Forest), VROT Flora (*Gynatrix macrophylla*), Landscape values (Freestone Creek, Blue Pool), Recreation Site (Blue Pool, Froam Camp Site, McKinnon's Point, Lees Creek Walking Track)
513	SPZ	65	EVC protection (Lowland Forest, Riparian Shrubland, Lowland Herb-rich Forest), Old-growth values (Shrubby Dry Forest), VROT Flora (*Pomaderris aurea*, *Zieria smithii*)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
514	SPZ	120	EVC protection (Plains Grassy Woodland), VROT Flora (*Diuris lanceolata* s.l., *Elymus multiflorus*, *Desmodium varians*), Landscape values (Briagolong Forest Red Gum Reserve)
515	SPZ	599	EVC protection (Lowland Forest, Lowland Herb-rich Forest), Old-growth values (Lowland Forest), Powerful Owl
516	SPZ	976	EVC protection (Lowland Forest, Plains Grassy Forest, Lowland Herb-rich Forest)
517	SPZ	755	EVC protection (Lowland Forest, Riparian Forest, Damp Forest, Warm Temperate Rainforest, Dry Valley Forest, Lowland Herb-rich Forest), Old-growth values (Lowland Forest, Shrubby Dry Forest, Damp Forest, Dry Valley Forest, Shrubby Damp Forest), Powerful Owl, VROT Flora (*Leionema lamprophyllum* ssp. *lamprophyllum*, *Pseudanthus divaricatissimus*)
518	SPZ	13	EVC protection (Lowland Forest), VROT Flora (*Pseudanthus divaricatissimus*)
519	SMZ	11	VROT Flora (*Zieria smithii*)
520	SMZ	13	VROT Flora (*Pterostylis grandiflora*)
*521	SPZ	2	EVC protection (Riparian Scrub)
*522	SPZ	1	EVC protection (Riparian Shrubland)
*523	SPZ	1	EVC protection (Riparian Shrubland)
*524	SPZ	8	EVC protection (Riparian Shrubland)
*525	SPZ	9	EVC protection (Warm Temperate Rainforest)
*526	SPZ	2	EVC protection (Warm Temperate Rainforest)
*527	SPZ	6	EVC protection (Warm Temperate Rainforest)
528	SPZ	37	EVC protection (Riparian Forest, Damp Forest, Swampy Riparian Woodland), Old-growth values (Shrubby Dry Forest, Grassy Dry Forest), Recreation Site (Lees Creek Walking Track)
*530	SPZ	5	EVC protection (Grassy Woodland)
531	SPZ	11	EVC protection (Valley Slopes Dry Forest)
*532	SPZ	3	EVC protection (Damp Forest), Old-growth values (Damp Forest), Historic Site (Black Snake Battery & Cyanide Works)
*533	SPZ	1	Recreation Site (Two Mile Creek)
534	SPZ	40	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest), Old-growth values (Shrubby Foothill Forest), Recreation Site (Bicentennial National Trail), Historic Site (Freda Treasure Reserve)
*535	SPZ	4	Landscape value (Dargo River)
*536	SPZ	9	EVC protection (Montane Rocky Shrubland), Recreation Site (Noon Road)
*538	SPZ	7	EVC protection (Montane Riparian Thicket)
*539	SPZ	1	Recreation Site (25 Mile Creek)
*540	SPZ	1	Recreation Site (30 Mile Creek)
*541	SPZ	9	EVC protection (Montane Grassy Woodland), VROT Flora (*Ranunculus eichlerianus*)
*542	SPZ	4	EVC protection (Montane Rocky Shrubland)
*543	SPZ	4	EVC protection (Montane Rocky Shrubland), Recreation Site (Tablelands)
*544	SPZ	1	Recreation Site (Moroka Gorge Lookout)
*545	SPZ	10	EVC protection (Grassy Woodland)
*546	SPZ	9	EVC protection (Grassy Woodland), Old-growth values (Grassy Woodland)
*547	SPZ	5	EVC protection (Montane Riparian Woodland)
*548	SPZ	2	EVC protection (Montane Riparian Woodland, Sub-alpine Wet Heathland)
*549	SPZ	3	EVC protection (Sub-alpine Wet Heathland)
*550	SPZ	1	Recreation Site (Bennison Lookout)
*551	SPZ	1	Recreation Site (Moroka Gorge Lookout)
552	SPZ	51	EVC protection (Damp Forest, Wet Forest, Shrubby Wet Forest), Old-growth values (Damp Forest, Wet Forest, Montane Dry Woodland), Landscape values (Australian Alps Walking Track), Recreation Site (Australian Alps Walking Track)
*553	SPZ	1	Recreation Site (East Barkly)
*554	SPZ	6	VROT Flora (*Grevillea miqueliana*)
*555	SPZ	6	EVC protection (Riparian Forest), Recreation Site (Bicentennial National Trail)
556	SPZ	71	EVC protection (Damp Forest, Shrubby Foothill Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Shrubby Foothill Forest), VROT Flora (*Asplenium trichomanes*), Recreation Site (Bicentennial National Trail)
557	SPZ	65	EVC protection (Damp Forest), Recreation Site (Bicentennial National Trail)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
*558	SPZ	2	EVC protection (Montane Riparian Thicket)
*559	SPZ	5	EVC protection (Wet Forest, Cool Temperate Rainforest), Rainforest Site of Significance
*560	SPZ	7	EVC protection (Damp Forest, Shrubby Foothill Forest), Powerful Owl
*561	SPZ	24	EVC protection (Valley Slopes Dry Forest), Old-growth values (Valley Slopes Dry Forest)
562	SMZ	214	Smoky Mouse
*563	SMZ	1	VROT Flora (*Asplenium trichomanes*)
*564	SPZ	<1	Landscape values (Australian Alps Walking Track), Recreation Site (Australian Alps Walking Track)
*566	SPZ	1	Recreation Site (Rumpffs Flat)
*567	SPZ	14	EVC protection (Valley Slopes Dry Forest), Old-growth values (Valley Slopes Dry Forest)
*568	SPZ	2	EVC protection (Grassy Woodland)
*569	SPZ	4	EVC protection (Rocky Outcrop Shrubland), Old-growth values (Rocky Outcrop Shrubland)
*570	SPZ	1	EVC protection (Floodplain Riparian Woodland)
*571	SPZ	2	EVC protection (Grassy Woodland)
*572	SPZ	2	EVC protection (Floodplain Riparian Woodland)
573	SPZ	185	EVC protection (Riparian Forest, Valley Grassy Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest), Landscape values (Wongungarra River), Recreation Site (Bald Top)
*574	SPZ	2	EVC protection (Montane Riparian Woodland, Sub-alpine Wet Heathland)
575	SMZ	18	VROT Flora (*Pomaderris pilifera*, *Senna aciphylla*)
576	SMZ	11	VROT Flora (*Leptorhynchos* sp. 1)
577	SMZ	4	VROT Flora (*Rhytidosporum inconspicuum*)
*578	SPZ	1	Powerful Owl
*579	SPZ	17	EVC protection (Valley Heathy Forest), Old-growth values (Valley Heathy Forest), Landscape values (Dargo High Plains Road)
580	SMZ	11	VROT Flora (*Baeckea latifolia*)
581	SPZ	29	EVC protection (Valley Slopes Dry Forest), Old-growth values (Valley Slopes Dry Forest)
*582	SMZ	3	VROT Flora (*Hibbertia pedunculata*)
*583	SMZ	3	VROT Flora (*Gahnia microstachya*)
*584	SMZ	10	VROT Flora (*Pultenaea foliolosa*)
585	SMZ	117	Landscape values (Dargo High Plains Road)
586	SPZ	13	VROT Flora (*Bossiaea bracteosa*), Old-growth values (Montane Dry Woodland)
587	SMZ	8	VROT Flora (*Pomaderris phylicifolia* var. *ericoides*)
588	SMZ	11	VROT Flora (*Pomaderris helianthemfolia*, *Pomaderris pilifera*, *Senna aciphylla*)
589	SMZ	11	VROT Flora (*Pomaderris ligustrina* ssp. *ligustrina*, *Pomaderris pilifera*)
590	SMZ	9	VROT Flora (*Pomaderris helianthemfolia*, *Pomaderris pilifera*)
591	SMZ	12	VROT Flora (*Euphrasia crassiuscula*)
592	SPZ	12	VROT Flora (*Wahlenbergia densifolia*)
593	SMZ	13	VROT Flora (*Ozothamnus stirlingii*)
594	SMZ	25	VROT Flora (*Poa hothamensis* var. *parviflora*, *Olearia speciosa*)
*595	SPZ	<1	Recreation Site (Pretty Boy Hill)
*596	SMZ	<1	Historic Site (Freestone Creek Battery)
*597	SMZ	<1	Historic Site (Red Rose Battery)
Wodonga FMA			
Swifts Creek District			
600	SPZ	393	Old-growth values (Montane Damp Forest, Montane Herb-rich Woodland), VROT Flora (*Koeleria cristata*)
601	SPZ	283	EVC protection (Rocky Outcrop Shrubland, Montane Riparian Woodland, Montane Riparian Thicket), Old-growth values (Heathy Dry Forest, Rocky Outcrop Shrubland, Montane Dry Woodland, Montane Damp Forest), Site of Significance (Pheasant Creek & Upper Buenba), Landscape values (Buenba Flat, Australian Alps Walking Track), Recreation Site (Australian Alps Walking Track)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
602	SPZ	2 301	EVC protection (Montane Riparian Woodland), Old-growth values (Heathy Dry Forest, Montane Dry Woodland, Montane Damp Forest, Montane Riparian Woodland, Montane Herb-rich Woodland), VROT Flora (*Carex chlorantha*, *Galium curvihirtum*, *Grevillea brevifolia* ssp. *brevifolia*, *Tasmannia xerophila* ssp. *robusta*, *Pterostylis oreophila*), Site of Significance (Pheasant Creek & Upper Buenba), Landscape values (Buenba Flat)
603	SPZ	10	Site of Significance (Pheasant Creek & Upper Buenba)
604	SPZ	604	EVC protection (Damp Forest), Old-growth values (Heathy Dry Forest)
605	SPZ	18	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
606	SPZ	18	EVC protection (Montane Riparian Woodland)
607	SPZ	16	EVC protection (Montane Riparian Thicket)
608	SPZ	44	EVC protection (Sub-alpine Shrubland), Old-growth values (Montane Dry Woodland), Site of Significance (Beloka and Gibbo River), Landscape values (Australian Alps Walking Track), Recreation Site (Australian Alps Walking Track)
609	SPZ	1 402	EVC protection (Montane Riparian Woodland, Montane Riparian Thicket), Old-growth values (Heathy Dry Forest, Montane Dry Woodland, Montane Damp Forest, Montane Riparian Thicket), Powerful Owl, Sooty Owl, VROT Flora (*Australopyrum velutinum*, *Austrofestuca eriopoda*, *Corunastylis arrecta*, *Prasophyllum montanum*), Site of Significance (Beloka and Gibbo River)
610	SPZ	13	VROT Flora (*Discaria pubescens*)
611	SPZ	2 043	EVC protection (Rocky Outcrop Shrubland, Damp Forest, Montane Grassy Woodland, Montane Riparian Woodland), Old-growth values (Damp Forest), Landscape values (The Brothers)
612	SMZ	1 027	Spot-tailed Quoll, VROT Flora (*Taraxacum aristum*), Landscape values (Pendergast Lookout)
613	SPZ	1 640	EVC protection (Montane Riparian Woodland, Montane Riparian Thicket), Old-growth values (Heathy Dry Forest, Montane Dry Woodland, Montane Damp Forest, Montane Riparian Thicket, Rocky Outcrop Shrubland/Herbland Mosaic, Montane Herb-rich Woodland), Spot-tailed Quoll, Site of Significance (Leinster), Landscape values (Pendergast Lookout)
614	SPZ	33	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
615	SPZ	27	EVC protection (Montane Riparian Thicket)
616	SPZ	69	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
617	SPZ	49	EVC protection (Montane Grassy Woodland), Landscape values (Australian Alps Walking Track), Recreation Site (Australian Alps Walking Track)
618	SPZ	10	EVC protection (Montane Riparian Thicket)
619	SPZ	28	EVC protection (Sub-alpine Wet Heathland)
620	SPZ	821	EVC protection (Montane Riparian Thicket, Sub-alpine Wet Heathland), Old-growth values (Heathy Dry Forest, Montane Dry Woodland, Montane Damp Forest, Montane Riparian Thicket, Montane Herb-rich Woodland), Powerful Owl, VROT Flora (*Thelymitra X chasmogama*), Landscape values (Dead Horse Creek)
622	SPZ	39	EVC protection (Montane Riparian Thicket)
623	SPZ	44	EVC protection (Montane Riparian Thicket, Sub-alpine Wet Heathland), VROT Flora (*Leptorhynchos elongatus*)
624	SPZ	240	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket), Old-growth values (Montane Grassy Woodland), VROT Flora (*Gingidia harveyana*)
625	SMZ	12	VROT Flora (*Polygala japonica*)
626	SPZ	3 758	EVC protection (Rocky Outcrop Shrubland, Montane Grassy Woodland, Montane Riparian Woodland), Old-growth values (Rocky Outcrop Shrubland, Montane Dry Woodland, Montane Grassy Woodland, Montane Damp Forest, Montane Riparian Woodland, Montane Herb-rich Woodland), Masked Owl, VROT Flora (*Leucopogon attenuatus*, *Polygala japonica*, *Pomaderris phylicifolia*)
627	SPZ	234	EVC protection (Montane Grassy Woodland), Old-growth values (Montane Grassy Woodland, Montane Damp Forest, Montane Herb-rich Woodland)
628	SMZ	12	VROT Flora (*Lotus australis*)
1000	SMZ	13	VROT Flora (*Euphrasia caudata*)
1001	SMZ	9	VROT Flora (*Euphrasia caudata*)
1002	SMZ	10	VROT Flora (*Tasmannia xerophila* ssp. *robusta*)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
1003	SMZ	26	VROT Flora (*Tasmannia xerophila* ssp. *robusta*, *Grevillea brevifolia* ssp. *breviofolia*, *Galium curvihirtum*)
*1004	SMZ	8	VROT Flora (*Euphrasia caudata*)
*1005	SMZ	<1	VROT Flora (*Koeleria cristata*)
1006	SMZ	657	Landscape values (The Brothers)
Tambo FMA			
Swifts Creek District			
629	SPZ	732	EVC protection (Rocky Outcrop Shrubland, Wet Forest, Montane Riparian Woodland), Old-growth values (Heathy Dry Forest, Rocky Outcrop Shrubland, Wet Forest, Montane Dry Woodland, Montane Damp Forest, Montane Riparian Woodland, Montane Herb-rich Woodland), VROT Flora (*Euphrasia collina* ssp. *muelleri*, *Koeleria cristata*, *Scleranthus fasciculatus*), Landscape values (Tambo River North Branch)
*630	SMZ	7	VROT Flora (*Scleranthus fasciculatus*)
631	SPZ	13	VROT Flora (*Austrofestuca eriopoda*)
632	SPZ	27	EVC protection (Montane Riparian Thicket)
633	SPZ	15	EVC protection (Montane Riparian Thicket), VROT Flora (*Pterostylis oreophila*, *Scleranthus fasciculatus*)
634	SMZ	11	VROT Flora (*Polygala japonica*)
635	SMZ	9	VROT Flora (*Koeleria cristata*)
636	SPZ	26	VROT Flora (*Diuris lanceolata* s.l.)
637	SPZ	13	VROT Flora (*Ranunculus collinus*)
638	SPZ	18	EVC protection (Montane Riparian Thicket)
639	SPZ	218	Old-growth values (Shrubby Dry Forest, Montane Dry Woodland, Montane Herb-rich Woodland), Landscape values (Tambo River South Branch), Recreation Site (Bicentennial National Trail)
640	SPZ	260	EVC protection (Wet Forest), Old-growth values (Heathy Dry Forest, Wet Forest), VROT Flora (*Wahlenbergia densifolia*), Landscape values (Tambo River South Branch), Recreation Site (Bicentennial National Trail)
641	SPZ	104	EVC protection (Wet Forest, Montane Riparian Thicket), Old-growth values (Heathy Dry Forest, Wet Forest, Montane Herb-rich Woodland), Landscape values (Tambo River South Branch)
642	SPZ	544	EVC protection (Montane Riparian Woodland, Montane Riparian Thicket, Sub-alpine Wet Heathland), Masked Owl, VROT Flora (*Aciphylla simplicifolia*, *Acrotriche leucocarpa*, *Pterostylis oreophila*, *Pultenaea fasciculata*, *Ranunculus collinus*), Landscape values (Tambo River South Branch)
643	SPZ	13	VROT Flora (*Acrotriche leucocarpa*)
644	SPZ	84	EVC protection (Wet Forest, Montane Riparian Thicket), VROT Flora (*Almaleea capitata*, *Acacia lucasii*, *Aciphylla simplicifolia*, *Brachyscome radicans*, *Pultenaea tenella*, *Ranunculus collinus*)
*645	SMZ	3	VROT Flora (*Pterostylis oreophila*, *Scleranthus fasciculatus*)
*646	SPZ	17	EVC protection (Montane Riparian Thicket)
647	SPZ	36	EVC protection (Tableland Damp Forest), Old-growth values (Tableland Damp Forest)
648	SPZ	129	EVC protection (Wet Forest, Tableland Damp Forest), Old-growth values (Wet Forest, Tableland Damp Forest, Montane Dry Woodland)
649	SPZ	64	EVC protection (Wet Forest, Tableland Damp Forest), Old-growth values (Wet Forest, Tableland Damp Forest)
650	SPZ	13	VROT Flora (*Aciphylla simplicifolia*, *Coprosma nivalis*, *Pultenaea tenella*)
651	SPZ	25	VROT Flora (*Pultenaea tenella*, *Ranunculus collinus*)
652	SPZ	32	Site of Significance (Nunniong North)
653	SPZ	13	VROT Flora (*Pterostylis oreophila*)
654	SPZ	13	VROT Flora (*Aciphylla simplicifolia*, *Ranunculus collinus*)
655	SPZ	13	VROT Flora (*Aciphylla simplicifolia*, *Acrotriche leucocarpa*, *Pultenaea fasciculata*, *Ranunculus collinus*)
657	SPZ	652	EVC protection (Wet Forest, Tableland Damp Forest, Dry Valley Forest), Old-growth values (Heathy Dry Forest), Powerful Owl, Site of Significance (Nunniong North)
658	SPZ	13	VROT Flora (*Pomaderris aurea*)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
659	SPZ	13	Old-growth values (Heathy Dry Forest), VROT Flora (*Senna aciphylla*, *Pomaderris oraria*, *Vittadinia tenuissima*, *Arthropodium* sp.1 (robust glaucous), *Pomaderris oraria* ssp. *calcicola*, *Clematis microphylla* var. *leptophylla*)
660	SPZ	61	EVC protection (Limestone Pomaderris Shrubland, Grassy Woodland), VROT Flora (*Vittadinia tenuissima*)
661	SPZ	2 154	EVC protection (Rocky Outcrop Shrubland, Montane Grassy Woodland, Montane Riparian Woodland, Montane Grassy Woodland/Montane Grassland Mosaic), Old-growth values (Heathy Dry Forest, Rocky Outcrop Shrubland, Montane Dry Woodland, Montane Grassy Woodland, Montane Riparian Woodland, Montane Herb-rich Woodland)
*662	SPZ	15	Old-growth values (Heathy Dry Forest), VROT Flora (*Pultenaea setulosa*)
663	SPZ	1 439	Old-growth values (Heathy Dry Forest, Montane Dry Woodland, Montane Damp Forest, Montane Herb-rich Woodland), Powerful Owl, Recreation Site (Bicentennial National Trail)
664	SPZ	65	Old-growth values (Heathy Dry Forest, Montane Dry Woodland, Montane Herb-rich Woodland), Site of Significance (Splitters Range)
665	SMZ	8	VROT Flora (*Koeleria cristata*)
666	SMZ	7	VROT Flora (*Australopyrum velutinum*)
667	SPZ	55	Old-growth values (Heathy Dry Forest, Montane Herb-rich Woodland), Powerful Owl, VROT Flora (*Australopyrum velutinum*, *Koeleria cristata*), Recreation Site (Bicentennial National Trail)
668	SMZ	11	VROT Flora (*Australopyrum velutinum*)
669	SPZ	2 168	EVC protection (Riparian Shrubland, Damp Forest, Wet Forest, Cool Temperate Rainforest, Warm Temperate Rainforest, Dry Rainforest, Dry Valley Forest, Grassy Woodland), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Montane Dry Woodland, Montane Damp Forest, Dry Valley Forest, Montane Herb-rich Woodland), Sooty Owl, VROT Flora (*Pterostylis oreophila*), Wildlife corridor, Recreation Site (Bicentennial National Trail)
670	SPZ	262	EVC protection (Valley Grassy Forest), Old-growth values (Shrubby Dry Forest, Grassy Dry Forest), Powerful Owl, Masked Owl
671	SPZ	8 168	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Cool Temperate Rainforest, Dry Rainforest, Tableland Damp Forest, Shrubby Foothill Forest, Valley Grassy Forest, Dry Valley Forest, Grassy Woodland), Old-growth values (Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Montane Damp Forest, Shrubby Foothill Forest, Dry Valley Forest, Grassy Woodland, Shrubby Damp Forest), Powerful Owl, Sooty Owl, Masked Owl, VROT Flora (*Irenepharsus magicus*), Landscape values (Bindi Lookout)
672	SPZ	177	Powerful Owl, VROT Flora (*Utricularia monanthos*)
673	SPZ	3 871	EVC protection (Damp Forest, Wet Forest, Cool Temperate Rainforest, Dry Rainforest, Tableland Damp Forest, Shrubby Foothill Forest, Dry Valley Forest), Old-growth values (Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Tableland Damp Forest, Montane Dry Woodland, Montane Damp Forest, Shrubby Foothill Forest, Dry Valley Forest), Powerful Owl, Sooty Owl, VROT Flora (*Hibbertia hermanniifolia*), Site of Significance (Scorpion)
*674	SPZ	13	EVC protection (Tableland Damp Forest), Powerful Owl
676	SPZ	13	Historic Site (Washington Winch), Recreation Site (Washington Winch)
677	SPZ	29	Old-growth values (Montane Dry Woodland, Montane Damp Forest), Landscape values (Nunniong Forest Drive)
678	SPZ	156	EVC protection (Tableland Damp Forest), Powerful Owl, VROT Flora (*Aciphylla simplicifolia*, *Euphrasia scabra*, *Pultenaea tenella*, *Ranunculus collinus*, *Scleranthus singuliflorus*, *Utricularia monanthos*)
679	SPZ	244	EVC protection (Damp Forest, Shrubby Foothill Forest), Old-growth values (Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Shrubby Foothill Forest, Shrubby Damp Forest)
680	SPZ	13	EVC protection (Shrubby Foothill Forest), VROT Flora (*Pomaderris aurea*)
*681	SPZ	13	Mountain Galaxias, VROT Flora (*Pterostylis aestiva*)
682	SPZ	17	Mountain Galaxias, VROT Flora (*Corysanthes hispida*, *Pterostylis aestiva*)
683	SMZ	32	Mountain Galaxias, VROT Flora (*Pterostylis aestiva*)
684	SPZ	544	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest, Valley Grassy Forest, Grassy Woodland), Old-growth values (Shrubby Dry Forest, Damp Forest, Wet Forest, Shrubby Damp Forest), Powerful Owl

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
685	SPZ	14	EVC protection (Cool Temperate Rainforest, Tableland Damp Forest), VROT Flora (*Pomaderris aurea*)
686	SPZ	16	EVC protection (Cool Temperate Rainforest), VROT Flora (*Hibbertia diffusa*)
687	SPZ	14 565	EVC protection (Limestone Box Forest, Riparian Forest, Rocky Outcrop Shrubland, Damp Forest, Wet Forest, Warm Temperate Rainforest, Shrubby Foothill Forest, Valley Heathy Forest, Dry Valley Forest, Grassy Woodland, Valley Slopes Dry Forest, Lowland Herb-rich Forest), Old-growth values (Riparian Forest, Shrubby Dry Forest, Grassy Dry Forest, Blackthorn Scrub, Damp Forest, Wet Forest, Shrubby Foothill Forest, Valley Heathy Forest, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Damp Forest, Lowland Herb-rich Forest), Powerful Owl, Sooty Owl, Giant Burrowing Frog, VROT Flora (*Beyeria lasiocarpa*, *Gahnia microstachya*, *Galium curvihirtum*, *Hibbertia hermanniifolia*, *Pomaderris eriocephala*, *Senna aciphylla*), Site of Significance (Lower Wilkinson and Fainting Range, Scorpion), Landscape values (Timbarra River, Wilkinson Creek), Recreation Site (Timbarra River)
688	SPZ	6 350	EVC protection (Riparian Forest, Riparian Shrubland, Damp Forest, Wet Forest, Tableland Damp Forest, Shrubby Foothill Forest, Valley Grassy Forest, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Wet Forest, Lowland Herb-rich Forest), Old-growth values (Shrubby Dry Forest, Grassy Dry Forest, Blackthorn Scrub, Damp Forest, Wet Forest, Tableland Damp Forest, Shrubby Foothill Forest, Riverine Escarpment Scrub, Valley Slopes Dry Forest, Shrubby Damp Forest, Lowland Herb-rich Forest), Powerful Owl, Sooty Owl, Eastern Horseshoe Bat, Eastern Bent-wing Bat, VROT Flora (*Beyeria lasiocarpa*, *Beyeria viscosa*), Wildlife corridor, Site of Significance (Fainting Range), Landscape values (Elphick Lookout, Haunted Stream, Great Alpine Road)
689	SMZ	535	Landscape values (Great Alpine Road)
690	SPZ	594	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest), Old-growth values (Heathy Dry Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Shrubby Damp Forest), Sooty Owl
691	SPZ	1 331	EVC protection (Valley Grassy Forest, Dry Valley Forest, Grassy Woodland), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Valley Grassy Forest, Dry Valley Forest, Grassy Woodland), Landscape values (Great Alpine Road)
692	SPZ	12	EVC protection (Grassy Woodland)
693	SPZ	204	EVC protection (Valley Grassy Forest, Dry Valley Forest, Grassy Woodland)
694	SPZ	20	EVC protection (Grassy Woodland)
695	SPZ	504	EVC protection (Damp Forest, Wet Forest), Old-growth values (Heathy Dry Forest, Damp Forest, Wet Forest, Montane Dry Woodland), Powerful Owl
696	SPZ	343	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Grassy Woodland), Old-growth values (Riparian Forest, Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Shrubby Damp Forest)
697	SPZ	1 658	EVC protection (Damp Forest, Wet Forest, Tableland Damp Forest, Montane Riparian Thicket, Dry Valley Forest), Old-growth values (Shrubby Dry Forest, Damp Forest, Wet Forest, Tableland Damp Forest, Montane Dry Woodland, Montane Damp Forest), VROT Flora (*Eucalyptus neglecta*), Historic Site (Jirnkee Water Race)
698	SPZ	358	EVC protection (Damp Forest, Wet Forest, Cool Temperate Rainforest, Montane Riparian Thicket, Shrubby Foothill Forest), Old-growth values (Shrubby Dry Forest, Damp Forest, Wet Forest, Montane Dry Woodland, Montane Damp Forest, Montane Riparian Thicket), Historic Site (White Bridge Sawmill)
699	SPZ	14	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
700	SPZ	778	EVC protection (Damp Forest, Wet Forest, Tableland Damp Forest, Montane Riparian Thicket, Shrubby Foothill Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Damp Forest, Wet Forest, Tableland Damp Forest, Montane Dry Woodland, Montane Damp Forest, Montane Riparian Thicket, Shrubby Foothill Forest, Rocky Outcrop Shrubland/Herbland Mosaic, Shrubby Damp Forest), Landscape values (Wentworth River)
701	SPZ	116	EVC protection (Riparian Forest, Damp Forest), Landscape values (Wentworth River)
702	SPZ	874	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest), Old-growth values (Riparian Forest, Shrubby Dry Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Shrubby Damp Forest), Landscape values (Wentworth River)
703	SMZ	13	VROT Flora (*Pterostylis fischii*)
704	SPZ	426	EVC protection (Montane Grassy Woodland, Sub-alpine Wet Heathland), Powerful Owl, Landscape values (Spring Creek)
705	SPZ	198	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket, Sub-alpine Wet Heathland), Old-growth values (Montane Dry Woodland, Montane Damp Forest)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
706	SPZ	1 196	EVC protection (Montane Grassy Woodland, Montane Riparian Woodland), Old-growth values (Montane Dry Woodland, Montane Grassy Woodland, Montane Damp Forest), Masked Owl, VROT Flora (*Diuris lanceolata* s.l.), Landscape values (Great Alpine Road)
707	SMZ	21	Landscape values (Great Alpine Road)
708	SPZ	657	EVC protection (Montane Grassy Woodland), Powerful Owl
709	SPZ	12	Old-growth values (Heathy Dry Forest), Historic Site (Gambetta Reef Battery Site)
710	SPZ	1 008	EVC protection (Montane Grassy Woodland, Sub-alpine Wet Heathland), Powerful Owl, VROT Flora (*Eucalyptus neglecta*), Landscape values (Spring Creek)
711	SPZ	25	EVC protection (Sub-alpine Wet Heathland)
713	SPZ	28	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
714	SPZ	11	EVC protection (Montane Grassy Woodland), VROT Flora (*Eucalyptus neglecta*)
715	SPZ	580	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket, Sub-alpine Wet Heathland), Old-growth values (Montane Grassy Woodland, Montane Riparian Thicket), VROT Flora (*Discaria nitida*), Landscape values (Victoria River)
716	SPZ	11	EVC protection (Montane Riparian Thicket, Sub-alpine Wet Heathland)
717	SMZ	107	Landscape values (Great Alpine Road)
718	SPZ	67	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket), Landscape values (Great Alpine Road)
719	SPZ	95	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket), Old-growth values (Montane Dry Woodland, Montane Grassy Woodland, Montane Riparian Thicket)
720	SPZ	24	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
721	SPZ	212	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket), Old-growth values (Montane Dry Woodland), Alpine Tree Frog
722	SPZ	5 362	EVC protection (Riparian Forest, Montane Grassy Woodland, Montane Riparian Woodland, Grassy Woodland, Montane Grassy Shrubland, Sub-alpine Wet Heathland), Old-growth values (Riparian Forest, Heathy Dry Forest, Montane Dry Woodland, Montane Grassy Woodland, Montane Damp Forest, Montane Herb-rich Woodland), Powerful Owl, VROT Flora (*Discaria pubescens*, *Grevillea willisii*, *Leptorhynchos elongatus*, *Lotus australis*)
723	SMZ	13	VROT Flora (*Leucopogon attenuatus*)
724	SPZ	28	EVC protection (Montane Riparian Thicket)
725	SPZ	42	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
726	SPZ	38	EVC protection (Montane Grassy Woodland), Old-growth values (Heathy Dry Forest, Montane Damp Forest), Landscape values (Australian Alps Walking Track), Recreation Site (Australian Alps Walking Track)
*727	SPZ	7	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
728	SPZ	12	EVC protection (Montane Riparian Thicket)
*729	SPZ	13	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
*730	SPZ	7	EVC protection (Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket)
*731	SPZ	33	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket, Sub-alpine Wet Heathland)
732	SPZ	10	VROT Flora (*Bossiaea bracteosa*)
733	SPZ	73	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket, Sub-alpine Wet Heathland)
*734	SPZ	55	EVC protection (Montane Riparian Thicket, Sub-alpine Wet Heathland)
735	SPZ	213	Old-growth values (Heathy Dry Forest, Montane Dry Woodland, Montane Damp Forest), Recreation Site (Bicentennial National Trail)
*736	SPZ	139	EVC protection (Montane Riparian Thicket, Sub-alpine Wet Heathland), Old-growth values (Montane Dry Woodland, Montane Riparian Thicket), Historic Site (Hallett's Sawmill), Recreation Site (Dog's Grave)
*737	SPZ	9	Old-growth values (Montane Dry Woodland), VROT Flora (*Eucalyptus neglecta*)
*738	SPZ	32	EVC protection (Riparian Forest, Valley Slopes Dry Forest)
*739	SPZ	9	EVC protection (Montane Riparian Woodland)
*740	SPZ	2	EVC protection (Montane Riparian Woodland)
*741	SPZ	4	EVC protection (Montane Riparian Woodland)
*742	SPZ	4	EVC protection (Grassy Woodland)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
*743	SPZ	3	EVC protection (Damp Forest, Wet Forest), Old-growth values (Wet Forest), Historic Site (Tierneys Creek Battery & Mine Site)
*744	SPZ	3	EVC protection (Dry Rainforest)
*745	SPZ	6	EVC protection (Warm Temperate Rainforest)
*746	SPZ	2	EVC protection (Valley Heathy Forest)
*747	SMZ	10	VROT Flora (*Beyeria lasiocarpa*)
*748	SPZ	2	EVC protection (Warm Temperate Rainforest)
*749	SPZ	1	EVC protection (Dry Valley Forest)
750	SPZ	63	EVC protection (Cool Temperate Rainforest)
*752	SPZ	7	EVC protection (Tableland Damp Forest), VROT Flora (*Euphrasia scabra*)
*753	SMZ	1	Research Site (Alpine Ash Provenance Trial – Bentley's Plain Road)
*754	SPZ	2	EVC protection (Cool Temperate Rainforest)
*755	SPZ	1	EVC protection (Sub-alpine Wet Heathland)
*756	SPZ	1	EVC protection (Sub-alpine Wet Heathland)
*757	SPZ	7	EVC protection (Montane Riparian Thicket)
*758	SPZ	4	EVC protection (Sub-alpine Wet Heathland)
*759	SPZ	4	EVC protection (Grassy Woodland)
*760	SPZ	3	EVC protection (Grassy Woodland)
761	SPZ	19	EVC protection (Warm Temperate Rainforest)
*762	SPZ	13	Old-growth values (Heathy Dry Forest), Powerful Owl, VROT Flora (*Koeleria cristata*)
*763	SMZ	12	VROT Flora (*Australopyrum velutinum*, *Koeleria cristata*)
*765	SPZ	1	EVC protection (Rocky Outcrop Shrubland)
*766	SPZ	11	EVC protection (Grassy Woodland)
*767	SPZ	9	VROT Flora (*Discaria pubescens*)
*768	SPZ	16	EVC protection (Montane Riparian Thicket)
*769	SPZ	19	EVC protection (Montane Riparian Woodland, Montane Riparian Thicket)
*770	SPZ	3	Historic Site (New Chum Battery)
771	SPZ	13	VROT Flora (*Leptorhynchos elongatus*)
*772	SPZ	1	EVC protection (Montane Riparian Woodland)
*773	SPZ	27	EVC protection (Montane Riparian Thicket, Sub-alpine Wet Heathland)
*774	SPZ	11	EVC protection (Montane Riparian Thicket)
*775	SPZ	8	EVC protection (Rocky Outcrop Shrubland, Montane Riparian Woodland), Spot-tailed Quoll
*776	SPZ	8	EVC protection (Rocky Outcrop Shrubland)
*777	SPZ	14	EVC protection (Montane Grassy Woodland, Montane Riparian Woodland)
*778	SPZ	<1	EVC protection (Grassy Woodland)
*779	SPZ	9	EVC protection (Grassy Woodland)
*780	SPZ	22	EVC protection (Montane Riparian Thicket)
*781	SPZ	3	EVC protection (Sub-alpine Shrubland)
*782	SPZ	20	EVC protection (Montane Riparian Woodland)
*783	SMZ	8	VROT Flora (*Australopyrum velutinum*)
*784	SPZ	8	EVC protection (Montane Riparian Thicket)
*785	SPZ	1	EVC protection (Sub-alpine Wet Heathland)
*786	SPZ	7	EVC protection (Montane Riparian Thicket)
*787	SMZ	3	Historic Site (Jirnkee Water Race)
*788	SMZ	6	VROT Flora (*Gingidia harveyana*)
*789	SMZ	8	VROT Flora (*Leucopogon attenuatus*)
*791	SMZ	5	VROT Flora (*Hibbertia diffusa*)
792	SMZ	11	VROT Flora (*Persoonia subvelutina*)
793	SMZ	13	VROT Flora (*Brachyscome radicans*)
794	SPZ	12	VROT Flora (*Hibbertia hermanniifolia*), EVC protection (Damp Forest), Old-growth values (Heathy Dry Forest)
795	SPZ	13	VROT Flora (*Pomaderris betulina* ssp. *betulina*), Old-growth values (Heathy Dry Forest)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
796	SMZ	38	VROT Flora (*Brachyscome radicans*, *Utricularia monanthos*, *Pultenaea fasciculata*)
*797	SMZ	3	VROT Flora (*Vittadinia tenuissima*)
798	SPZ	13	VROT Flora (*Prasophyllum niphopedium*)
*799	SMZ	2	VROT Flora (*Galium curvihirtum*)
1007	SPZ	68	Alpine Tree Frog
1008	SPZ	48	EVC protection (Montane Grassy Woodland, Montane Riparian Thicket), Old-growth values (Montane Riparian Thicket), Alpine Tree Frog
*1009	SPZ	<1	Historic Site (Dog's Grave)
Bairnsdale District			
800	SPZ	3 613	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Blackthorn Scrub, Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest, Shrubby Damp Forest), Sooty Owl, Landscape values (Wentworth River)
801	SPZ	323	EVC protection (Riparian Forest, Valley Grassy Forest, Dry Valley Forest), Old-growth values (Riparian Forest, Shrubby Dry Forest, Dry Valley Forest), Landscape values (Wentworth River), Recreation Site (Jones Hut)
802	SPZ	2 020	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest, Valley Grassy Forest, Dry Valley Forest), Old-growth values (Shrubby Dry Forest, Dry Valley Forest), Landscape values (Wentworth River), Historic Site (Jenkins Township Site)
803	SPZ	1 695	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest), Old-growth values (Shrubby Dry Forest, Blackthorn Scrub, Damp Forest, Wet Forest, Dry Valley Forest, Shrubby Damp Forest), Powerful Owl, VROT Flora (*Cyphanthera anthocercidea*), Recreation Site (Bicentennial National Trail)
804	SPZ	7 841	EVC protection (Limestone Box Forest, Riparian Forest, Riparian Shrubland, Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest, Valley Slopes Dry Forest), Old-growth values (Riparian Forest, Shrubby Dry Forest, Grassy Dry Forest, Blackthorn Scrub, Damp Forest, Shrubby Foothill Forest, Riverine Escarpment Scrub, Dry Valley Forest, Valley Slopes Dry Forest, Shrubby Damp Forest), Powerful Owl, Sooty Owl, VROT Flora (*Acacia howittii*), Landscape values (Wentworth River), Recreation Site (Wallers Hut)
805	SPZ	144	EVC protection (Riparian Forest, Damp Forest, Dry Valley Forest), Old-growth values (Riparian Forest, Shrubby Dry Forest, Grassy Dry Forest), Landscape values (Wentworth River)
806	SPZ	1 201	EVC protection (Rocky Outcrop Shrubland, Damp Forest, Wet Forest, Tableland Damp Forest, Montane Riparian Thicket, Shrubby Foothill Forest), Old-growth values (Shrubby Dry Forest, Rocky Outcrop Shrubland, Damp Forest, Montane Dry Woodland, Montane Damp Forest, Montane Riparian Thicket, Rocky Outcrop Shrubland/Herbland Mosaic), VROT Flora (*Eucalyptus neglecta*), Historic Site (McDonalds Hut)
807	SMZ	13	VROT Flora (*Prostanthera walteri*)
808	SPZ	51	EVC protection (Tableland Damp Forest, Montane Riparian Thicket), VROT Flora (*Prostanthera walteri*)
809	SPZ	50	EVC protection (Wet Forest, Tableland Damp Forest, Montane Riparian Thicket), VROT Flora (*Prostanthera walteri*)
810	SPZ	222	EVC protection (Damp Forest, Wet Forest, Tableland Damp Forest, Montane Riparian Thicket), Old-growth values (Damp Forest, Wet Forest), VROT Flora (*Hibbertia hermanniifolia*), Historic Site (Mt Baldhead Trig Station)
811	SPZ	13	EVC protection (Shrubby Foothill Forest), VROT Flora (*Grevillea miqueliana*)
812	SPZ	88	EVC protection (Lowland Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest), Old-growth values (Lowland Forest, Shrubby Dry Forest, Damp Forest, Wet Forest)
813	SPZ	2 911	EVC protection (Riparian Forest, Riparian Shrubland, Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest, Lowland Herb-rich Forest), Old-growth values (Shrubby Dry Forest, Grassy Dry Forest, Blackthorn Scrub, Damp Forest, Wet Forest, Shrubby Foothill Forest, Riverine Escarpment Scrub, Dry Valley Forest, Shrubby Damp Forest), Sooty Owl, Eastern Horseshoe Bat, Eastern Bent-wing Bat, VROT Flora (*Beyeria lasiocarpa*, *Beyeria viscosa*), Landscape values (Haunted Stream), Historic Site (Cherry's Battery, Commotion Battery Site, Dogtown, Hans Battery & Mine Site, Haunted Stream Battery Site, Stirling), Recreation Site (Dogtown, Stirling)
814	SMZ	11	VROT Flora (*Tetratheca subaphylla*)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
815	SPZ	6 568	EVC protection (Lowland Forest, Riparian Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Dry Valley Forest), Old-growth values (Lowland Forest, Riparian Forest, Shrubby Dry Forest, Damp Forest, Wet Forest, Shrubby Foothill Forest, Riverine Escarpment Scrub, Dry Valley Forest, Shrubby Damp Forest), Sooty Owl, Giant Burrowing Frog, Eastern Horseshoe Bat, VROT Flora (*Hybanthus monopetalus*), Landscape values (Nicholson River, Nicholson Track), Recreation Site (Marthavale Hut)
816	SPZ	430	EVC protection (Riparian Forest, Damp Forest, Warm Temperate Rainforest, Dry Valley Forest), Old-growth values (Shrubby Dry Forest)
817	SPZ	616	EVC protection (Damp Forest, Wet Forest, Warm Temperate Rainforest, Shrubby Foothill Forest), Old-growth values (Shrubby Dry Forest, Damp Forest, Shrubby Damp Forest), Sooty Owl
818	SPZ	624	EVC protection (Lowland Forest, Riparian Forest, Damp Forest, Dry Valley Forest), Old-growth values (Lowland Forest, Shrubby Dry Forest, Blackthorn Scrub, Dry Valley Forest, Shrubby Damp Forest), Giant Burrowing Frog, Powerful Owl
819	SPZ	30	EVC protection (Lowland Forest, Riparian Forest), Old-growth values (Riparian Forest, Shrubby Dry Forest), Powerful Owl
820	SPZ	32	EVC protection (Riparian Shrubland)
821	SPZ	316	EVC protection (Lowland Forest, Lowland Herb-rich Forest), Powerful Owl
822	SPZ	70	EVC protection (Lowland Forest, Lowland Herb-rich Forest), Giant Burrowing Frog
823	SPZ	291	EVC protection (Lowland Forest, Dry Valley Forest, Lowland Herb-rich Forest), Powerful Owl, Sooty Owl
824	SPZ	682	EVC protection (Lowland Forest, Warm Temperate Rainforest, Dry Valley Forest, Lowland Herb-rich Forest), Powerful Owl, Eastern Horseshoe Bat, Rainforest Site of Significance
825	SPZ	505	EVC protection (Damp Forest, Dry Valley Forest), Old-growth values (Shrubby Dry Forest, Dry Valley Forest), Sooty Owl, Masked Owl
826	SPZ	25	EVC protection (Dry Valley Forest)
827	SPZ	1 408	EVC protection (Lowland Forest, Damp Forest, Warm Temperate Rainforest, Dry Valley Forest, Lowland Herb-rich Forest), Old-growth values (Shrubby Dry Forest), Powerful Owl, Sooty Owl, Historic Site (Beehive Mine & Boiler)
828	SMZ	454	Spot-tailed Quoll
829	SPZ	2 851	EVC protection (Clay Heathland, Lowland Forest, Damp Forest, Warm Temperate Rainforest, Shrubby Foothill Forest, Dry Valley Forest, Lowland Herb-rich Forest), Old-growth values (Shrubby Dry Forest, Damp Forest, Shrubby Damp Forest), Sooty Owl, Spot-tailed Quoll, VROT Flora (*Beyeria viscosa*)
830	SMZ	30	Spot-tailed Quoll
831	SPZ	624	EVC protection (Lowland Forest, Riparian Forest, Damp Forest, Dry Valley Forest), Old-growth values (Shrubby Dry Forest, Shrubby Damp Forest), Sooty Owl, VROT Flora (*Pomaderris discolor*), Landscape values (Nicholson River, Nicholson Track)
832	SPZ	584	EVC protection (Lowland Forest, Damp Forest, Dry Valley Forest), Powerful Owl, Sooty Owl, Eastern Horseshoe Bat, Eastern Bent-wing Bat, VROT Flora (*Hibbertia pedunculata*), Landscape values (Nicholson River, Nicholson Track, Deptford Road), Historic Site (Deptford Proprietary Mine, Deptford Township, Mine (Deptford Road))
833	SPZ	43	EVC protection (Damp Forest, Dry Valley Forest)
834	SPZ	71	EVC protection (Lowland Forest, Riparian Forest, Damp Forest)
835	SPZ	370	EVC protection (Lowland Forest, Riparian Forest, Warm Temperate Rainforest, Dry Valley Forest), Old-growth values (Shrubby Dry Forest, Blackthorn Scrub), Powerful Owl, Eastern Bent-wing Bat, VROT Flora (*Hibbertia pedunculata*), Landscape values (Nicholson River, Nicholson Track, Deptford Road), Historic Site (Houghton's Flat Diversion Tunnel), Recreation Site (Deptford)
836	SPZ	2 851	EVC protection (Lowland Forest, Riparian Forest, Damp Forest, Dry Valley Forest, Lowland Herb-rich Forest), Powerful Owl, Sooty Owl, Landscape values (Nicholson River, Deptford Road)
837	SMZ	55	Landscape values (Deptford Road)
838	SPZ	553	EVC protection (Lowland Forest, Riparian Forest, Warm Temperate Rainforest, Dry Valley Forest), Old-growth values (Lowland Forest, Shrubby Dry Forest), Powerful Owl, VROT Flora (*Pterostylis grandiflora*), Landscape values (Nicholson River)
839	SPZ	528	EVC protection (Lowland Forest, Dry Valley Forest, Lowland Herb-rich Forest), Powerful Owl, Sooty Owl, Landscape values (Fairy Dell Forest Drive)
840	SMZ	49	Landscape values (Fairy Dell Forest Drive)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
841	SPZ	1 565	EVC protection (Lowland Forest, Damp Forest, Wet Forest, Warm Temperate Rainforest, Dry Valley Forest, Lowland Herb-rich Forest), Old-growth values (Shrubby Dry Forest, Shrubby Damp Forest), Giant Burrowing Frog, Powerful Owl, Sooty Owl, Masked Owl, VROT Flora (*Pomaderris betulina* ssp. *betulina*), Rainforest Site of Significance, Landscape values (Fairy Dell Forest Drive)
842	SPZ	175	EVC protection (Limestone Box Forest, Lowland Forest, Swamp Scrub), Landscape values (Mississippi Creek), Historic Site (Mississippi Creek Quarry & Tramline)
843	SPZ	112	EVC protection (Lowland Forest), Old-growth values (Lowland Forest)
844	SPZ	193	EVC protection (Lowland Forest, Dry Valley Forest, Lowland Herb-rich Forest), Landscape values (Mississippi Creek), Historic Site (Bairnsdale-Orbost Railway). This zone is a Rail Trail.
*845	SMZ	13	VROT Flora (*Entolasia stricta*, *Billardiera scandens* var. *brachyantha*)
846	SMZ	19	VROT Flora (*Leucopogon juniperinus*)
847	SPZ	13	EVC protection (Lowland Forest), VROT Flora (*Pomaderris aurea*), Landscape values (Bruthen-Buchan Road)
*848	SMZ	41	Landscape values (Bruthen-Buchan Road)
849	SPZ	4 590	EVC protection (Lowland Forest, Warm Temperate Rainforest, Dry Valley Forest, Riparian Scrub, Dry Rainforest/Warm Temperate Rainforest/Gallery Rainforest/Riparian Shrubland Mosaic, Lowland Herb-rich Forest), Old-growth (Lowland Forest, Riparian Scrub, Shrubby Damp Forest, Lowland Herb-rich Forest), Giant Burrowing Frog, Powerful Owl, Sooty Owl, Masked Owl, VROT Flora (*Dendrobium striolatum*, *Grevillea celata*, *Leucopogon juniperinus*, *Pterostylis uliginosa*), Landscape values (Tambo River, Bruthen-Buchan Road)
850	SPZ	60	EVC protection (Lowland Forest, Dry Valley Forest), Wildlife corridor, Landscape values (Tambo River)
851	SPZ	3 375	EVC (Limestone Box Forest, Lowland Forest, Riparian Shrubland, Damp Forest, Warm Temperate Rainforest, Dry Valley Forest, Dry Rainforest/Warm Temperate Rainforest/Gallery Rainforest/Riparian Shrubland Mosaic, Lowland Herb-rich Forest), Old-growth (Lowland Forest, Shrubby Dry Forest, Blackthorn Scrub, Damp Forest, Riverine Escarpment Scrub, Dry Valley Forest, Shrubby Damp Forest), Powerful Owl, VROT Flora (*Acacia dawsonii*, *Adriana tomentosa* var. *tomentosa*, *Beyeria lasiocarpa*, *Beyeria viscosa*, *Brachyscome petrophila*, *Leucopogon juniperinus*, *Pomaderris eriocephala*, *Pomaderris subcapitata*, *Senna aciphylla*), Wildlife corridor, Landscape values (Tambo River, Great Alpine Road)
852	SMZ	70	VROT Flora (*Beyeria lasiocarpa*), Landscape values (Great Alpine Road)
853	SPZ	585	EVC protection (Lowland Forest, Damp Forest, Warm Temperate Rainforest, Dry Valley Forest, Lowland Herb-rich Forest), Powerful Owl
854	SPZ	3 323	EVC protection (Lowland Forest, Riparian Shrubland, Damp Forest, Wet Forest, Warm Temperate Rainforest, Shrubby Foothill Forest, Swampy Riparian Woodland, Dry Valley Forest, Valley Slopes Dry Forest, Lowland Herb-rich Forest), Old-growth values (Shrubby Dry Forest, Blackthorn Scrub, Damp Forest, Riverine Escarpment Scrub, Dry Valley Forest, Shrubby Damp Forest, Lowland Herb-rich Forest), Powerful Owl, VROT Flora (*Leucopogon juniperinus*, *Pomaderris aurea*, *Pomaderris eriocephala*, *Clematis microphylla* var. *leptophylla*), Wildlife corridor, Site of Significance (Fainting Range), Landscape values (Tambo River, Great Alpine Road), Historic Site (Gippsland Timber Co. Mill), Recreation Site (Barksheds)
855	SPZ	62	EVC protection (Grassy Woodland)
856	SPZ	551	EVC protection (Riparian Forest, Damp Forest, Wet Forest, Warm Temperate Rainforest), Old-growth values (Shrubby Dry Forest, Blackthorn Scrub, Damp Forest, Wet Forest, Shrubby Damp Forest), Sooty Owl
857	SPZ	21	EVC protection (Warm Temperate Rainforest)
858	SPZ	12	EVC protection (Warm Temperate Rainforest)
859	SPZ	16	EVC protection (Warm Temperate Rainforest)
860	SPZ	29	EVC protection (Warm Temperate Rainforest)
861	SPZ	21	EVC protection (Warm Temperate Rainforest)
863	SPZ	997	EVC protection (Limestone Box Forest, Riparian Shrubland, Damp Forest, Wet Forest, Warm Temperate Rainforest, Shrubby Foothill Forest, Dry Valley Forest), Old-growth values (Limestone Box Forest, Heathy Dry Forest, Shrubby Dry Forest, Blackthorn Scrub, Damp Forest, Shrubby Foothill Forest, Riverine Escarpment Scrub, Shrubby Damp Forest), VROT Flora (*Acacia dawsonii*, *Pomaderris subcapitata*), Wildlife corridor, Landscape values (Tambo River, Great Alpine Road)
864	SPZ	13	VROT Flora (*Pomaderris aurea*)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
865	SMZ	656	Landscape values (Great Alpine Road), VROT Flora (*Leucopogon juniperinus*, *Pomaderris aurea*, *Galium curvihirtum*)
866	SPZ	157	EVC protection (Wet Forest), Old-growth values (Shrubby Dry Forest, Blackthorn Scrub, Riverine Escarpment Scrub, Shrubby Damp Forest), VROT Flora (*Beyeria viscosa*), Site of Significance (Fainting Range)
867	SMZ	9	VROT Flora (*Beyeria lasiocarpa*)
868	SPZ	43	EVC protection (Valley Grassy Forest, Grassy Woodland, Lowland Herb-rich Forest), Old-growth values (Grassy Dry Forest, Valley Grassy Forest, Lowland Herb-rich Forest), VROT Flora (*Beyeria viscosa*)
869	SMZ	69	VROT Flora (*Beyeria lasiocarpa*, *Beyeria viscosa*, *Gahnia microstachya*)
870	SPZ	92	EVC protection (Damp Forest, Wet Forest, Shrubby Foothill Forest), Old-growth values (Shrubby Dry Forest, Wet Forest, Shrubby Foothill Forest, Shrubby Damp Forest), VROT Flora (*Gahnia microstachya*), Site of Significance (Fainting Range)
871	SPZ	12	EVC protection (Lowland Forest, Damp Forest, Shrubby Foothill Forest), VROT Flora (*Acrotriche leucocarpa*), Site of Significance (Fainting Range)
872	SMZ	7	VROT Flora (*Beyeria lasiocarpa*)
873	SPZ	2 939	EVC protection (Damp Forest, Warm Temperate Rainforest, Shrubby Foothill Forest, Valley Grassy Forest, Dry Valley Forest, Lowland Herb-rich Forest), Old-growth values (Heathy Dry Forest, Shrubby Dry Forest, Grassy Dry Forest, Blackthorn Scrub, Damp Forest, Shrubby Foothill Forest, Valley Grassy Forest, Dry Valley Forest, Shrubby Damp Forest, Lowland Herb-rich Forest), Powerful Owl, Sooty Owl, Masked Owl, VROT Flora (*Beyeria lasiocarpa*, *Gahnia microstachya*, *Galium curvihirtum*, *Grevillea brevifolia* ssp. *polychroma*, *Hibbertia hermanniifolia*, *Leucopogon attenuatus*, *Aristida calycina* var. *calycina*), Site of Significance (Fainting Range), Wildlife corridor
874	SPZ	43	EVC protection (Damp Forest, Shrubby Foothill Forest), VROT Flora (*Acrotriche leucocarpa*), Site of Significance (Fainting Range)
875	SMZ	12	VROT Flora (*Sorghum leiocladum*)
876	SPZ	675	EVC protection (Lowland Forest, Damp Forest, Wet Forest, Warm Temperate Rainforest, Shrubby Foothill Forest), Sooty Owl
*877	SPZ	10	EVC protection (Damp Forest), Old-growth protection (Damp Forest), Recreation Site (Bicentennial National Trail)
*878	SPZ	3	EVC protection (Cool Temperate Rainforest)
*879	SPZ	6	EVC protection (Montane Riparian Thicket)
*880	SPZ	1	Old-growth values (Shrubby Dry Forest), Recreation Site (Dawson City)
*881	SPZ	1	EVC protection (Wet Forest), Recreation Site (Turntable Camp)
*882	SPZ	7	EVC protection (Damp Forest, Wet Forest), Old-growth values (Damp Forest), Historic Site (Peter Ah Sen's Sawmill)
883	SPZ	140	EVC protection (Damp Forest, Wet Forest, Warm Temperate Rainforest, Shrubby Foothill Forest), Eastern Horseshoe Bat, VROT Flora (*Muehlenbeckia rhyticarya*)
*884	SPZ	6	EVC protection (Damp Forest, Dry Valley Forest), Eastern Horseshoe Bat
*885	SPZ	28	EVC protection (Warm Temperate Rainforest)
*886	SPZ	18	EVC protection (Warm Temperate Rainforest)
887	SPZ	28	EVC protection (Clay Heathland, Warm Temperate Rainforest), Spot-tailed Quoll
*888	SPZ	3	EVC protection (Warm Temperate Rainforest)
*889	SPZ	3	EVC protection (Dry Valley Forest), Eastern Horseshoe Bat, Eastern Bent-wing Bat, Landscape values (Deptford Road)
890	SPZ	12	EVC protection (Valley Slopes Dry Forest, Lowland Herb-rich Forest), Old-growth values (Valley Slopes Dry forest), Wildlife corridor, Site of Significance (Fainting Range), Landscape values (Great Alpine Road)
*891	SPZ	1	EVC protection (Dry Rainforest)
*892	SPZ	3	EVC protection (Warm Temperate Rainforest)
*893	SPZ	3	EVC protection (Shrubby Foothill Forest), Site of Significance (Fainting Range)
*894	SPZ	5	EVC protection (Wet Forest, Shrubby Foothill Forest), Sooty Owl
*895	SPZ	2	EVC protection (Warm Temperate Rainforest)
*896	SPZ	2	EVC protection (Rocky Outcrop Shrubland)
897	SPZ	646	EVC protection (Lowland Forest, Dry Valley Forest, Lowland Herb-rich Forest)
*898	SPZ	17	EVC protection (Warm Temperate Rainforest)

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Zoning Scheme Register continued

Zone no.	Zone	Area (ha)	Attributes
*899	SPZ	1	EVC protection (Warm Temperate Rainforest)
*900	SPZ	2	EVC protection (Warm Temperate Rainforest)
*901	SPZ	2	EVC protection (Warm Temperate Rainforest)
*902	SPZ	1	EVC protection (Lowland Forest), Recreation Site (Mount Taylor)
*903	SPZ	6	EVC protection (Warm Temperate Rainforest)
*904	SPZ	4	EVC protection (Warm Temperate Rainforest)
*905	SPZ	7	EVC protection (Lowland Forest), VROT Flora (*Grevillea celata*)
*906	SPZ	6	EVC protection (Lowland Forest), Historic Site (Little Mississippi Tramway)
*907	SPZ	2	EVC protection (Warm Temperate Rainforest)
*908	SMZ	34	VROT Flora (*Cypanthera anthocercidea*, *Pomaderris phylicifolia* ssp. *ericoides*, *Prostanthera walteri*)
*909	SMZ	16	Historic Site (Dahlsens Mill & Tramway)
*910	SPZ	21	EVC protection (Lowland Forest), VROT Flora (*Dipodium variegatum*)
*911	SMZ	<1	Historic Site (Marthavale Mill Site)
*912	SMZ	1	Research Site (Mixed Species Growth Study-Barmouth Spur Track)
*913	SMZ	1	Research Site (Mixed Species Growth Study-Engineers Road)
914	SMZ	89	Landscape values (Nicholson Track)
*915	SMZ	4	VROT Flora (*Hibbertia pedunculata*)
916	SMZ	58	Landscape values (Great Alpine Road)
*917	SMZ	1	VROT Flora (*Leucopogon attenuatus*, *Aristida calycina* var. *calycina*)
*918	SMZ	5	VROT Flora (*Beyeria lasiocarpa*, *Gahnia microstachya*)
*919	SMZ	9	VROT Flora (*Prostanthera walteri*)
*921	SMZ	7	Landscape values (Fairy Dell Forest Drive)
*922	SMZ	8	VROT Flora (*Pterostylis grandiflora*)
*923	SMZ	7	VROT Flora (*Leucopogon juniperinus*)
*924	SMZ	<1	Historic Site (Black Cat Battery)
*925	SMZ	<1	Historic Site (Yahoo Creek Battery)
*926	SPZ	<1	Historic Site (Tubal Cain Mine & Battery)
*927	SMZ	1	Research Site (Mixed Species Growth Study – Angora Range Road)
*928	SMZ	1	Research Site (Mixed Species Growth Study – Clarks Track)
929	SMZ	35	VROT Flora (*Galium curvihirtum*, *Grevillea brevifolia* ssp. *polychroma*)
930	SMZ	17	VROT Flora (*Beyeria lasiocarpa*, *Pomaderris eriocephala*)
931	SMZ	8	VROT Flora (*Cypanthera anthocercidea*)
932	SMZ	10	VROT Flora (*Pomaderris subcapitata*)
933	SPZ	13	VROT Flora (*Pomaderris betulina* ssp. *betulina*), EVC protection (Damp Forest)
934	SMZ	9	VROT Flora (*Beyeria viscosa*)
935	SMZ	11	VROT Flora (*Eragrostis trachycarpa*)
936	SMZ	19	VROT Flora (*Acacia dawsonii*, *Leucopogon juniperinus*)
*937	SPZ	6	Landscape values (Mitchell River)
938	SMZ	10	VROT Flora (*Pomaderris eriocephala*)
939	SMZ	11	VROT Flora (*Leucopogon juniperinus*)
*940	SMZ	1	VROT Flora (*Utricularia monanthos*)
*941	SPZ	1	EVC protection (Valley Slopes Dry Forest)
*942	SMZ	<1	Historic Site (Mountaineer Mine Site)
*943	SPZ	2	EVC protection (Warm Temperate Rainforest)
*944	SPZ	<1	Recreation Site (Seldom Seen Hut)
945	SPZ	10	VROT Flora (*Discaria nitida*), EVC protection (Montane Grassy Woodland)
946	SMZ	20	VROT Flora (*Carex iynx*)
*947	SMZ	<1	Landscape values (Stutterin' Fred's Lookout)
*948	SMZ	7	VROT Flora (*Pomaderris eriocephala*)
*949	SMZ	<1	VROT Flora (*Pomaderris eriocephala*)
*950	SPZ	7	VROT Flora (*Leptorhynchos elongatus*), EVC protection (Montane Grassy Woodland)
*951	SMZ	7	VROT Flora (*Pultenaea capitellata*)
*952	SMZ	4	VROT Flora (*Leucopogon juniperinus*)

Appendix E

Distribution of old-growth forest in Conservation Reserves and Forest Management Zones

Ecological Vegetation Class			CAR reserve system			SMZ		GMZ		Code	
						(ha)	(%)	(ha)	(%)	(ha)	(%)
		Area of Old Growth (ha)	Conservation reserves (ha)	State forest SPZ (ha)	Total (%)						
3	Damp Sands Herb-rich Woodland	16	9	1	63.9						
15	Limestone Box Forest	43	30	8	87.7						
16	Lowland Forest	2 397	1 411	533	81.1	4	0.2	355	14.8	45	1.9
18	Riparian Forest	261	132	70	77.2			28	10.9	31	11.8
20	Heathy Dry Forest	20 094	8 515	4 538	65.0	164	0.8	5 138	25.6	1 642	8.2
21	Shrubby Dry Forest	73 933	28 583	17 683	62.6	484	0.7	19 924	26.9	7 146	9.7
22	Grassy Dry Forest	10 115	4 066	2 639	66.3	250	2.5	1 944	19.2	1 118	11.0
23	Herb-rich Foothill Forest	12 353	8 316	1 382	78.5	37	0.3	1 360	11.0	1 230	10.0
27	Blackthorn Scrub	2 737	740	1 642	87.0	3	0.1	282	10.3	68	2.5
28	Rocky Outcrop Shrubland	838	276	561	100.0						
29	Damp Forest	15 030	3 146	4 976	54.0	45	0.3	4 492	29.9	2 300	15.3
30	Wet Forest	4 697	1 491	1 155	56.3	3	0.1	1 421	30.2	624	13.3
35	Tableland Damp Forest	1 020	129	328	44.8	6	0.5	471	46.2	86	8.5
36	Montane Dry Woodland	16 564	9 388	1 949	68.4	189	1.1	3 912	23.6	1 085	6.5
37	Montane Grassy Woodland	2 689	448	1 819	84.3	6	0.2	240	8.9	25	0.9
38	Montane Damp Forest	7 000	3 738	692	63.3	19	0.3	1 861	26.6	681	9.7
39	Montane Wet Forest	2 116	1 282	137	67.1			447	21.1	248	11.7
40	Montane Riparian Woodland	29	22	7	100.0						
41	Montane Riparian Thicket	336	50	275	97.0						
43	Sub-alpine Woodland	6 509	5 316	104	83.3	11	0.2	612	9.4	39	0.6
45	Shrubby Foothill Forest	2 774	523	768	46.5	28	1.0	1 222	44.1	220	7.9
47	Valley Grassy Forest	57	44	11	96.1			1	1.9	1	1.6
48	Heathy Woodland	8 226	5 296	2 412	93.7	7	0.1	362	4.4	12	0.1
72	Granitic Hills Woodland	1 203	1 203		100.0						
73	Rocky Outcrop Shrubland/ Herbland Mosaic	554	456	24	86.7	1	0.1	27	4.9	46	8.3
82	Riverine Escarpment Scrub	266	80	118	74.2	3	1.2	40	15.2	25	9.3
127	Valley Heathy Forest	510		510	100.0						
151	Plains Grassy Forest	1 618	307	767	66.4			516	31.9	28	1.7
169	Dry Valley Forest	746	154	274	57.2	1	0.2	203	27.2	115	15.4
175	Grassy Woodland	243	160	83	99.7						
177	Valley Slopes Dry Forest	816	300	515	99.9						
191	Riparian Scrub	195	95	98	98.8						
192	Montane Rocky Shrubland	172	166	5	100.0						
201	Shrubby Wet Forest	248	3	150	61.5			78	31.5	17	6.8
315	Shrubby Foothill Forest/ Damp Forest Complex	204	31	84	56.1			55	27.1	34	16.7
316	Shrubby Damp Forest	9 211	2 124	3 575	61.9	84	0.9	2 223	24.1	1 183	12.8
319	Montane Herb-rich Woodland	1 984	1 079	265	67.7	9	0.5	322	16.2	310	15.6
320	Grassy Dry Forest/Heathy Dry Forest Complex	27	27		100.0						
877	Lowland Herb-rich Forest	431	74	265	78.7	4	0.9	68	15.8	15	3.4
	Total	**208 262**	**89 209**	**50 424**		**1 357**		**47 606**		**18 371**	

Note:
The figures shown in this table are based on modelled information mapped at a scale of 1:100 000 derived during the pre-1750 analysis of vegetation types in the Gippsland region, and are therefore only approximate. Only those EVCs that contain old-growth are shown in the table. SPZ - Special Protection Zone, SMZ - Special Management Zone, GMZ - General Management Zone. Code refers to areas protected under the *Code of Forest Practices for Timber Production* prescriptions for exclusion of timber harvesting from streamside buffers and slopes of 30 degrees or more. The 'other public land' and 'other parks and reserves' categories are not shown in this table.

Appendix F

Description of Geographic Representation Units

Geographic Representation Unit (GRU)	Description
Aberfeldy Foothills	Steeply dissected ranges of Palaeozoic sedimentary and metamorphic rocks in the rain shadow of the Baw Baw massif. Rainfall moderate. Forest types are predominantly Shrubby Dry Forest, Damp Forest, Lowland Forest, with a significant proportion of the Box Ironbark Forest in this region. Rare EVCs occurring here include Cool Temperate Rainforest and Riparian Shrubland.
Avon Foothills	Dissected foothills of Ordovician sandstones. Rainfall moderate. Shrubby Dry Forest and Shrubby Damp Forest are predominant in this unit along with Montane Dry Woodland, Plains Grassy Woodland and Lowland Herb-rich Forest. Rare EVCs include Plains Grassland, Valley Heathy Forest, Montane Rocky Shrubland and Cool Temperate Rainforest.
Bunyip Foothills	Rolling hills and small ranges in moderate to high rainfall zones south of the Great Dividing Range (only a small portion occurs in this region). A large portion of this unit is classified as Swampy Riparian Complex, with Damp Forest and Lowland Forest as significant forest types.
Cobungra Mountains	Palaeozoic granitic mountain ranges of the Great Divide, including the southern slopes of Mount Hotham. Rainfall moderate to high, supporting Montane Grassy Woodland and Montane Dry Woodland, as well as Heathy Dry Forest and Herb-rich Foothill Forest, with 99% of the rare EVC Lake Bed Herbland.
Dargo Mountains	Foothills and dissected ranges of Ordovician sandstones and older Volcanics around Dargo. Rainfall moderate. The dominant forest types are Shrubby Dry Forest, Montane Dry Woodland and Herb-rich Foothill Forest.
Fish Creek Coastal	Gently undulating erosional and depositional plains of Cainozoic marine sedimentary and continental deposits. Rainfall moderate. Lowland Forest, Wet Forest and Shrubby Foothill Forest are the main forest types, along with nearly 20% of the rare EVC Coastal Tussock Grassland.
Haunted Mountains	Dissected foothills and ranges of Ordovician sediments and metamorphics. Rainfall low to moderate, supporting Shrubby Damp Forest, Montane Dry Woodlands and Shrubby Damp Forest. Rare EVCs include Cool Temperate Rainforest and Dry Rainforest.
King Coastal Plains	Flat Quaternary Alluvial Plain below 100 m. Includes Lakes Victoria and King. Rainfall low, forest types include Plains Grassy Woodland, Plains Grassy Forest and Lowland Forest. This unit also supports significant rare EVC populations of Limestone Pomaderris Shrubland, Gallery Rainforest and Deep Freshwater Marsh.
Latrobe Foothills	Foothill country of varied geology (sediments, outwash, alluviums and basalts) south of the Great Divide on the margins of the Latrobe Valley. Moderate to high rainfall. Predominant forest types include Lowland Forest, Damp Forest and Shrubby Foothill Forest.
Latrobe Valley	Broad erosional and alluvial plains, in part overlying extensive Tertiary brown coal deposits. Rainfall moderate, supporting rare EVC populations of Plains Grassland and Deep Freshwater Marsh. Forest types include Lowland Forest, Plains Grassy Woodland, Floodplain Riparian Woodland and Plains Grassy Forest.
Macalister Mountains	Alpine to montane uplands of Palaeozoic sediments and older volcanics. Rainfall moderate to high, supporting forest types such as Shrubby Dry Forest, Herb-rich Foothill Forest, Montane Damp Forest and Montane Dry Woodland. Rare EVCs include Cool Temperate Rainforest, Sub-alpine Shrubland, Treeless Sub-alpine Mosaic, Valley Heathy Forest and Montane Rocky Shrubland.
Matlock Mountains	Steeply dissected ranges south of the Great Dividing Range, consisting of Devonian and Silurian sediments in low to moderate rainfall areas. Forest types include Shrubby Dry Forest, Herb-rich Foothill Forest, Montane Damp Forest and Montane Dry Woodland.
Mullungdung Coastal	Relatively flat coastal plain underlain by marine Tertiary rocks. Coastline is characterised by Quaternary depositional features and includes the islands east of Corner Inlet. Rainfall low to moderate. This unit supports the only occurrences of the EVCs Coastal Dune Scrub and Coastal Dune Grassland in this FMA. Other rare EVCs include Coastal Tussock Grassland, Clay Heathland and Plains Grassland. Predominant forest types include Lowland Forest, Damp Sands Herb-rich Woodland, Heathy Woodland and Plains Grassy Forest.

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Description of Geographic Representation Units continued

Geographic Representation Unit (GRU)	Description
Nunniong Mountains	Montane ranges above 400 m of predominantly Ordovician sediments and metamorphics. Rainfall moderate, supporting rare EVCs such as Cool Temperate Rainforest and Dry Rainforest, as well as Valley Heathy Forest and Limestone Pomaderris Shrubland. Dominant forest types include Shrubby Dry Forest, Damp Forest, Grassy Woodland, Grassy Dry Forest, Heathy Dry Forest, Herb-rich Foothill Forest and Montane Dry Woodland.
Strzelecki Foothills	Ranges of mainly Mesozoic sandstones with widespread older volcanic basalts. Rainfall high to very high. Forest types include Lowland Forest, Damp Forest, Wet Forest and Shrubby Foothill Forest.
Taylor Foothills	Steeply dissected foothills of Ordovician sandstone north of Bairnsdale. Rainfall low to moderate, supporting rare EVCs such as Clay Heathland, Dry Rainforest, Gallery Rainforest and Deep Freshwater Marsh. Dominant forest types include Lowland Forest, Shrubby Dry Forest, Plains Grassy Forest, Shrubby Damp Forest and Lowland Herb-rich Forest.
Upper Murray Mountains	Alpine to montane ranges of varied geology (Palaeozoic sediments, metamorphics and volcanics) comprising the headwaters of the Murray River. Rainfall moderate to high. Rare EVCs include Sub-alpine Shrubland, Lake Bed Herbland, Valley Heathy Forest and Montane Rocky Shrubland. Heathy Dry Forest, Montane Dry Woodland, Montane Damp Forest and Montane Herb-rich Woodland are the predominant forest types in this unit.
Wellington Coastal Plains	Broad alluvial plains at the western edge of the Gippsland Lakes. Includes Lake Wellington and Quaternary depositional barrier features around Loch Sport. Rainfall low, supporting forest types such as Plains Grassy Woodland. Rare EVCs include Dry Rainforest, Plains Grassland and Deep Freshwater Marsh.
Wellington Mountains	High alpine plains of Mesozoic and Palaeozoic sediments. Rainfall moderate to high. Dominant forest types include Shrubby Dry Forest, Herb-rich Foothill Forest, Montane Dry Woodland, Montane Damp Forest and Sub-alpine Woodland. Rare EVCs include Sub-alpine Shrubland, Treeless Sub-alpine Mosaic and Montane Rocky Shrubland.
West Gippsland Foothills	Rolling foothills (predominantly cleared) at the western edge of the Strzelecki Ranges, formed of Mesozoic sandstones and mudstones. Rainfall moderate, supporting forest types such as Lowland Forest, Damp forest, Wet Forest and Shrubby Foothill Forest.
Wilsons Promontory	Granitic massif linked to the mainland by a narrow neck of dunes. Peaks rise to 750 m. Rainfall moderate. This unit supports the only occurrences of several rare EVCs including Coastal Lagoon Wetland, Wet Swale Herbland, Bird Colony Shrubland, Calcareous Swale Grassland, Wet Rocky Outcrop Scrub, Calcarenite Dune Woodland, Blocked Coastal Stream Swamp and Sprayzone Coastal Shrubland. Dominant forest types include Granitic Hills Woodland, Heathy Woodland, Shrubby Foothill Forest, Damp Forest, Wet Forest and Lowland Forest.

Source: (VicRFASC 1999a)

Note:
Rainfall is classified as low (<700 mm), moderate (700–1000 mm), high (1000–1200 mm) or very high (>1200 mm).

Appendix G

Representative Conservation of Ecological Vegetation Classes

Ecological Vegetation Class		Total Area		CAR reserve system				SMZ	GMZ	Code
	Status	Pre 1750 (ha)	Current (ha)	Conservation Reserve (ha)	SPZ (ha)	Total Pre-1750 (%)	Total Current (%)	(ha)	(ha)	(ha)
1 Coastal Dune Scrub Mosaic		11,200	8,925	6,640		59				
2 Coast Banksia Woodland	V	3,475	1,382	802			58			
3 Damp Sands Herb-rich Woodland	E, V	40,883	14,306	7,877	7		55			
5 Coastal Sand Heathland	R, V	23	23	17			73			
6 Sand Heathland		8,289	7,402	6,795		82				
7 Clay Heathland	R	683	685	319	287		88	0		
8 Wet Heathland		14,390	7,408	6,428	201	46		0	88	0
9 Coastal Saltmarsh	E, R, V	7,710	7,059	4,391			62			
10 Estuarine Wetland	E, V	8,377	12,266	6,641			54			
11 Coastal Lagoon Wetland	R	59	59	59			100			
12 Wet Swale Herbland	R	171	193	193			100			
15 Limestone Box Forest	R, V	1,430	746	190	140		44			
16 Lowland Forest		258,999	116,680	17,277	22,290	15		572	32,270	1,825
18 Riparian Forest	V	9,687	9,013	3,660	2,564		69	13	791	1,000
19 Riparian Shrubland	R	4,375	1,660	424	342		46			0
20 Heathy Dry Forest		88,161	85,017	41,457	12,333	61		571	18,813	6,126
21 Shrubby Dry Forest		272,744	263,826	70,500	58,384	47		3,245	95,257	24,131
22 Grassy Dry Forest		39,824	33,368	8,796	7,381	41		358	5,821	2,287
23 Herb-rich Foothill Forest		130,909	116,606	57,523	13,849	55		972	20,530	14,424
27 Blackthorn Scrub		7,429	7,378	1,480	3,909	73		40	1,401	414
28 Rocky Outcrop Shrubland	R	1,816	1,807	659	1,093		97		0	
29 Damp Forest		183,397	106,062	13,751	23,474	20		464	40,354	16,265
30 Wet Forest		111,093	68,453	8,683	4,467	12		84	12,985	4,704
31 Cool Temperate Rainforest	E, R, V	2,207	893	338	178		58			
32 Warm Temperate Rainforest	E, R, V	6,078	2,513	1,330	949		91			
34 Dry Rainforest	E, R, V	31	13	3	7		75			
35 Tableland Damp Forest		11,034	11,031	1,408	1,259	24		58	7,428	863
36 Montane Dry Woodland		139,459	131,619	59,276	9,278	49		954	49,801	6,350
37 Montane Grassy Woodland		58,302	29,952	3,030	8,725	20		451	8,718	655
38 Montane Damp Forest		105,672	104,135	42,306	5,618	45		517	45,240	8,765
39 Montane Wet Forest		11,694	11,613	4,448	682	44		3	4,860	1,562
40 Montane Riparian Woodland	E	7,476	2,759	1,004	503		55		0	0
41 Montane Riparian Thicket	R	2,631	2,654	406	2,175		97		1	0
42 Sub-alpine Shrubland	E, R	111	111	107	4		100			

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Representative Conservation of Ecological Vegetation Classes continued

Ecological Vegetation Class		Total Area		CAR reserve system				SMZ	GMZ	Code
	Status	Pre 1750 (ha)	Current (ha)	Conservation Reserve (ha)	SPZ (ha)	Total Pre-1750 (%)	Total Current (%)	(ha)	(ha)	(ha)
43 Sub-alpine Woodland		38,468	38,388	27,943	946	75		93	8,052	371
44 Treeless Sub-alpine Mosaic	E, R, V	167	167	167			100			
45 Shrubby Foothill Forest	V	133,917	36,887	7,235	8,590		43	89	15,642	2,492
47 Valley Grassy Forest	V	11,697	3,118	705	386		35	8	63	41
48 Heathy Woodland		44,049	34,506	16,907	4,428	48		10	2,984	122
53 Swamp Scrub	E	82,570	4,180	1,677	630		55			
55 Plains Grassy Woodland	E, R, V	134,044	3,112	807	109		29		0	
56 Floodplain Riparian Woodland	E, R, V	17,817	1,080	5	3		1			0
61 Box Ironbark Forest	R, V	7,503	2,497	1,445			58			
72 Granitic Hills Woodland		3,979	3,979	3,977		100				
73 Rocky Outcrop Shrubland / Herbland Mosaic		9,383	9,394	6,895	410	78		37	455	1,440
74 Wetland Formation		580	1,871	954	105	182			3	14
82 Riverine Escarpment Scrub		9,231	8,637	3,235	2,946	67		198	1,013	820
83 Swampy Riparian Woodland	E, R, V	15,630	97	42	23		67	0		
84 Riparian Forest/Swampy Riparian Woodland /Riparian Shrubland / Riverine Escarpment Scrub		105	7		2	2				
107 Lake Bed Herbland	E, R, V	605	712	712			100			
126 Swampy Riparian Complex	E, R, V	8,549	667	2	5		1			
127 Valley Heathy Forest	R, V	1,242	1,130		1,062		94	0	0	
132 Plains Grassland	E, R, V	37,284	291	287			99			
133 Limestone Pomaderris Shrubland	E, R, V	174	74	43	13		76			
135 Gallery Rainforest	E, R, V	269	46	12			25			
136 Sedge Wetland	E, R, V	2,215	965	392	32		44			
140 Mangrove Shrubland	E, V	2,933	3,074	2,510			82			
141 Sandy Flood Scrub	R, V	2,456	394	100			25			
143 Estuarine Wetland/ Coastal Saltmarsh Mosaic	R, V		642	112			17			
144 Coast Banksia Woodland /East Gippsland Coastal Warm Temperate Rainforest Mosaic		13	13	13		94				
151 Plains Grassy Forest	V	88,017	19,781	1,637	7,932		48	46	5,109	143
154 Bird Colony Shrubland	R	50	50	50			100			
159 Clay Heathland/Wet Heathland/ Riparian Scrub Mosaic		55	42		37	68				
160 Coastal Dune Scrub	R	31	31	31			100			
161 Coastal Headland Scrub	E, R, V	1,110	949	744			78			

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Representative Conservation of Ecological Vegetation Classes continued

Ecological Vegetation Class		Status	Total Area		CAR reserve system				SMZ	GMZ	Code
			Pre 1750 (ha)	Current (ha)	Conservation Reserve (ha)	SPZ (ha)	Total Pre-1750 (%)	Total Current (%)	(ha)	(ha)	(ha)
163	Coastal Tussock Grassland	R	1,348	1,231	949			77			
169	Dry Valley Forest		24,999	18,851	2,600	5,542	33		125	5,192	2,374
175	Grassy Woodland	E, V	48,592	13,981	5,701	1,387		51		0	4
177	Valley Slopes Dry Forest	R	1,996	1,840	603	976		86		0	0
191	Riparian Scrub	R, V	13,549	3,903	2,507	541		78			
192	Montane Rocky Shrubland	R	3,259	3,259	2,998	155		97		96	10
201	Shrubby Wet Forest		2,250	2,250	20	392	18		3	1,534	200
206	Sub-alpine Grassland		15,827	15,386	13,974	133	89		37	614	76
207	Montane Grassy Shrubland	R, V	88	29		1		2			
210	Sub-alpine Wet Heathland	R, V	2,106	1,224	467	669		93		39	18
265	Valley Grassy Forest/ Grassy Dry Forest Mosaic		7	2			0			2	
307	Sand Heathland/Wet Heathland Mosaic		3,440	3,719	3,710		108				
309	Calcareous Swale Grassland	R	552	305	305			100			
310	Wet Rocky Outcrop Scrub	R	521	521	521			100			
315	Shrubby Foothill Forest /Damp Forest Complex		7,995	7,707	299	1,446	22		293	3,821	1,576
316	Shrubby Damp Forest		68,783	68,161	11,206	20,227	46		547	26,045	9,004
317	Sub-alpine Wet Heathland / Sub-alpine Grassland Mosaic		3,654	3,413	1,370	74	39		20	1,466	145
318	Montane Swamp	E, R, V	702	219	19			9			
319	Montane Herb-rich Woodland		24,766	22,421	8,471	4,184	51		162	6,118	1,591
320	Grassy Dry Forest/ Heathy Dry Forest Complex		529	503	503		95				
322	Dry Rainforest/Warm Temperate Rainforest /Gallery Rainforest/ Riparian Shrubland Mosaic		185	198	2	4	3				0
334	Billabong Wetland	E, R, V	851	12		0		1			
342	Rocky Outcrop Shrubland/ Herbland Mosaic/Shrubby Foothill Forest Complex		3	3		1	31				
639	Swamp Scrub/Plains Grassy Forest Mosaic		4,280	164			0		149		3
681	Deep Freshwater Marsh	E, V	8,173	3,982	1,200			30			
695	Dry Valley Forest/Swamp Scrub / Warm Temperate Rainforest Mosaic		4,938	18	5		0				
701	Swamp Scrub/Warm Temperate Rainforest /Billabong Wetland Mosaic		1,814	4	2		0				

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Representative Conservation of Ecological Vegetation Classes continued

Ecological Vegetation Class			Total Area		CAR reserve system				SMZ	GMZ	Code
		Status	Pre 1750 (ha)	Current (ha)	Conservation Reserve (ha)	SPZ (ha)	Total Pre-1750 (%)	Total Current (%)	(ha)	(ha)	(ha)
702	Montane Grassland	E, R, V	2,013	69	20			29			
703	Montane Grassy Woodland / Montane Grassland Mosaic		1,867	71	2	2	0				
858	Calcarenite Dune Woodland	R	3,568	3,831	3,829			100			
875	Blocked Coastal Stream Swamp	R	29	32	32			100			
876	Spray-zone Coastal Shrubland	R	47	47	47			100			
877	Lowland Herb-rich Forest		36,051	20,444	1,552	4,106	16		190	5,720	1,212
878	Damp Sands Herb-rich Woodland / Swamp Scrub Complex		5,103	157	149		3				
879	Coastal Dune Grassland	E, R, V	34	34	34		98				

Note:

The figures shown in this table are based on modelled information mapped at a scale of 1:100 000 derived during the pre-1750 analysis of vegetation types in the Gippsland region, and are therefore only approximate.

Status, in accordance with the national reserve criteria (JANIS 1997), E – Endangered, R – Rare, V – Vulnerable.

Total Area comprises the area of each EVC across all land tenures, including public and private land.

Conservation reserves and State forest land categories only are shown in this table. The 'other public land' and 'other parks and reserves' categories are not shown in this table. SPZ – Special Protection Zone, SMZ – Special Management Zone, GMZ - General Management Zone. Code refers to areas protected under the *Code of Forest Practices for Timber Production* prescriptions for exclusion of timber harvesting from streamside buffers and slopes of 30 degrees or more.

Appendix H

Representative Conservation of Ecological Vegetation Classes in Geographic Representation Units

	Ecological Vegetation Class	Aberfeldy Foothills		Avon Foothills		Bunyip Foothills		Cobungra Mountains		Dargo Mountains		Fish Creek Coastal		Haunted Mountains		King Coastal Plains		Latrobe Foothills		Latrobe Valley	
		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected	
		area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%
1	Coastal Dune Scrub Mosaic											2 079	62.2			254	62.9				
2	Coast Banksia Woodland											112	39.6			10	42.3				
3	Damp Sands Herb-rich Woodland											22	5.5			2 178	65.9				
5	Coastal Sand Heathland																				
6	Sand Heathland											7	71.7			6	67.4				
7	Clay Heathland											5	95.6								
8	Wet Heathland											208	23.6								
9	Coastal Saltmarsh											368	47.9			482	74.1				
10	Estuarine Wetland											125	35.8			741	62.0				
11	Coastal Lagoon Wetland																				
12	Wet Swale Herbland																				
15	Limestone Box Forest									2	73.2					34	89.2				
16	Lowland Forest	3 194	31.4	2 599	26.6	7	6.9			2	33.8	1 124	17.2	509	30.0	306	19.2	3 299	29.6	1 091	35.0
18	Riparian Forest	662	46.8	726	86.6	1	88.1	417	84.4	748	66.0	6	16.2	233	79.5			396	44.5		
19	Riparian Shrubland	50	60.2	149	23.4			8	11.6	58	91.6			70	52.4	5	21.6				
20	Heathy Dry Forest	3 317	38.2	4 862	78.0			15 756	78.4	914	46.5			1 297	41.2			90	100.0		
21	Shrubby Dry Forest	10 080	30.1	34 320	54.8			2 350	58.3	16 261	39.1			8 309	46.6			699	100.0	97	49.5
22	Grassy Dry Forest	403	43.5	3 869	64.4			20	1.7	3 612	48.9			1 444	27.3			421	52.0		
23	Herb-rich Foothill Forest	3 753	40.3	6 805	89.1			10 831	67.9	6 208	37.6			1 513	42.4						
27	Blackthorn Scrub			145	36.6					1 154	73.6			1 231	77.0						
28	Rocky Outcrop Shrubland	4	100.0					665	97.1	99	100.0			22	100.0						
29	Damp Forest	5 416	26.0	4 768	59.5			1 732	84.9	2 360	30.3	156	28.4	4 666	26.3			1 557	30.3	26	5.2
30	Wet Forest	635	21.4	508	46.0			78	100.0	458	14.4	115	3.2	1 863	21.7			75	32.2		
31	Cool Temperate Rainforest	29	100.0	19	100.0							5	95.1	16	100.0						
32	Warm Temperate Rainforest			23	100.0									136	100.0						
34	Dry Rainforest													3	100.0						
35	Tableland Damp Forest	61	11.5	1 507	80.9			33	100.0	2	0.4			225	6.2						
36	Montane Dry Woodland	424	21.9	2 746	93.8			12 107	52.4	5 015	28.2			3 140	29.0						
37	Montane Grassy Woodland			217	94.8			5 794	35.4	596	73.6			496	21.4						
38	Montane Damp Forest	142	5.2	1 241	85.9			9 453	58.8	2 644	28.1			509	5.3						
39	Montane Wet Forest	21	2.3	26	95.6			3 362	92.6	0	0.1			66	3.6						
40	Montane Riparian Woodland				100.0			241	38.2	0	100.0			13	5.5						

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Representative Conservation of Ecological Vegetation Classes in Geographic Representation Units continued

	Ecological Vegetation Class	Macalister Mountains		Matlock Mountains		Mullungdung Coastal		Nunniong Mountains		Strzelecki Foothills		Taylor Foothills		Upper Murray Mountains		Wellington Coastal Plains		Wellington Mountains		W. Gippsland Foothills		Wilsons Promontory	
		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected	
		area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%
1	Coastal Dune Scrub Mosaic					1 387	74.5									841	68.1					2 078	99.9
2	Coast Banksia Woodland					47	22.0									68	22.9					564	100.0
3	Damp Sands Herb-rich Woodland					3 169	54.6									1 975	47.9					540	100.0
5	Coastal Sand Heathland																					17	73.2
6	Sand Heathland					234	66.6									5 789	92.3					759	99.8
7	Clay Heathland					563	87.6					37	100.0										
8	Wet Heathland					416	82.7					21	54.8									5 985	100.0
9	Coastal Saltmarsh					2 353	60.5					14	74.7			1 039	65.2					134	100.0
10	Estuarine Wetland					1 593	45.8					5	16.6			3 939	56.5					238	100.0
11	Coastal Lagoon Wetland																					59	100.0
12	Wet Swale Herbland																					193	100.0
15	Limestone Box Forest							47	100.0			247	37.5										
16	Lowland Forest	8	99.6			8 704	47.9	2 451	88.9	675	10.8	11 683	29.4			30	37.7			15	0.9	3 871	100.0
18	Riparian Forest	994	89.1	76	76.1			631	77.8			418	63.5	38	100.0			836	94.9			43	100.0
19	Riparian Shrubland	92	50.5					98	48.5			153	85.6					81	100.0				
20	Heathy Dry Forest	4 327	87.8	532	35.4			3 351	37.2			98	14.2	16 982	64.7			2 264	94.6				
21	Shrubby Dry Forest	18 669	75.4	1 128	23.5			10 902	57.6			13 039	31.5	41	93.4			12 988	96.6				
22	Grassy Dry Forest	2 034	72.6	0	0.5			3 662	46.6			136	38.1	0	0.1			577	100.0				
23	Herb-rich Foothill Forest	12 854	69.3	1 012	18.7			3 627	47.6	457	23.3			9 374	67.7			14 939	92.8				
27	Blackthorn Scrub							2 140	81.7			720	60.3										
28	Rocky Outcrop Shrubland	69	87.9					115	100.0					778	99.5								
29	Damp Forest	2 525	39.2	315	13.2	400	59.9	6 901	57.4	302	4.0	1 629	18.3	318	80.3			263	94.7	11	1.4	3 880	100.0
30	Wet Forest	509	28.9	42	3.1			1 315	33.0	2 677	8.1	49	33.0	49	59.2			42	100.0	887	20.9	3 851	100.0
31	Cool Temperate Rainforest	4	100.0					112	100.0	191	33.7											141	100.0
32	Warm Temperate Rainforest					3	77.0	269	100.0	30	36.0	810	82.7									1 009	100.0
34	Dry Rainforest							4	74.9			3	59.6										
35	Tableland Damp Forest	46	9.8	3	12.4			616	16.9					130	100.0			44	50.2				
36	Montane Dry Woodland	7 530	72.1	283	6.4			3 395	34.7					16 356	55.9			17 561	83.2				
37	Montane Grassy Woodland	15	100.0					324	99.5					2 865	37.7			1 448	62.8				
38	Montane Damp Forest	3 460	61.0	244	8.0			723	12.9					18 018	52.2			11 490	72.1				
39	Montane Wet Forest	12	11.2	13	10.4			349	20.0					1 216	40.0			64	53.3				
40	Montane Riparian Woodland							21	100.0					971	60.5			259	100.0				

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Representative Conservation of Ecological Vegetation Classes in Geographic Representation Units continued

Ecological Vegetation Class	Aberfeldy Foothills		Avon Foothills		Bunyip Foothills		Cobungra Mountains		Dargo Mountains		Fish Creek Coastal		Haunted Mountains		King Coastal Plains		Latrobe Foothills		Latrobe Valley	
	Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected	
	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%
41 Montane Riparian Thicket	1	100.0					548	89.3	35	100.0			651	99.3						
42 Sub-alpine Shrubland																				
43 Sub-alpine Woodland	50	8.6	850	98.7			8 281	82.4	2 202	55.3			30	12.3						
44 Treeless Sub-alpine Mosaic																				
45 Shrubby Foothill Forest	2 498	42.2	1 823	54.7			142	60.4	666	29.5			1 741	24.9			481	21.8		
47 Valley Grassy Forest	1	0.3	201	71.9					119	15.7			265	52.9						
48 Heathy Woodland											26	5.1			476	56.0	1	2.3	27	9.4
53 Swamp Scrub	5	24.2									170	18.5			692	88.9			1	3.7
55 Plains Grassy Woodland	104	63.5	110	22.9											542	45.3			11	8.5
56 Floodplain Riparian Woodland	1	3.1																	3	0.6
61 Box Ironbark Forest	1 051	52.1																	341	80.0
72 Granitic Hills Woodland																				
73 Rocky Outcrop Shrubland/ Herbland Mosaic	101	41.1	1 665	88.7			53	85.8	1 369	49.4			26	65.9	9	70.7	6	100.0		
74 Wetland Formation											1	7.9			7	77.1				
82 Riverine Escarpment Scrub	762	42.3	1 758	82.1			44	97.6	341	55.4			383	75.1			60	100.0		
83 Swampy Riparian Woodland			15	96.9																
84 Riparian Forest/Swampy Riparian Woodland / Riparian Shrubland / Riverine Escarpment			2	42.0																
107 Lake Bed Herbland							686	100.0												
126 Swampy Riparian Complex																				
127 Valley Heathy Forest			159	100.0																
128 Grassy Forest																				
132 Plains Grassland																				
133 Limestone Pomaderris Shrubland																				
135 Gallery Rainforest															2	30.4				
136 Sedge Wetland															34	41.6				
140 Mangrove Shrubland											700	80.9								
141 Sandy Flood Scrub																				

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Representative Conservation of Ecological Vegetation Classes in Geographic Representation Units continued

Ecological Vegetation Class	Macalister Mountains		Matlock Mountains		Mullungdung Coastal		Nunniong Mountains		Strzelecki Foothills		Taylor Foothills		Upper Murray Mountains		Wellington Coastal Plains		Wellington Mountains		W. Gippsland Foothills		Wilsons Promontory	
	Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected	
	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%
41 Montane Riparian Thicket	32	100.0					79	100.0					850	99.6			384	100.0				
42 Sub-alpine Shrubland	24	100.0											14	100.0			73	100.0				
43 Sub-alpine Woodland	1 653	97.3	376	59.0			98	15.3					6 352	75.5			8 997	79.7				
44 Treeless Sub-alpine Mosaic	104	100.0															63	100.0				
45 Shrubby Foothill Forest	1 040	47.0	0	0.3			3 247	52.0	243	16.2	36	4.7					128	99.9			3 780	100.0
47 Valley Grassy Forest	361	85.8					145	15.4														
48 Heathy Woodland					15 819	59.8			76	13.6	83	100.0			1 534	63.1					3 292	100.0
53 Swamp Scrub					837	58.4			15	16.1	11	16.4			177	79.1					400	100.0
55 Plains Grassy Woodland					0	1.3					1	15.8			148	14.2						
56 Floodplain Riparian Woodland															4	1.7						
61 Box Ironbark Forest															52	100.0						
72 Granitic Hills Woodland																					3 977	100.0
73 Rocky Outcrop Shrubland/ Herbland Mosaic	1 843	89.6					13	99.5			177	96.2	91	67.5			1 737	97.9			215	100.0
74 Wetland Formation					337	84.4									653	52.1					61	100.0
82 Riverine Escarpment Scrub	114	98.4					1 430	80.0			1 207	82.0	82	91.2								
83 Swampy Riparian Woodland							35	100.0									15	100.0				
84 Riparian Forest/Swampy Riparian Woodland/ Riparian Shrubland/ Riverine Escarpment																						
107 Lake Bed Herbland													26	100.0								
126 Swampy Riparian Complex									5	8.6									2	0.9		
127 Valley Heathy Forest	64	50.7					838	100.0														
128 Grassy Forest																						
132 Plains Grassland					287	99.1																
133 Limestone Pomaderris Shrubland							56	100.0			0	0.8										
135 Gallery Rainforest											10	24.5										
136 Sedge Wetland					195	31.3									128	71.1					66	100.0
140 Mangrove Shrubland					1 788	81.8															22	100.0
141 Sandy Flood Scrub															100	27.7						

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Representative Conservation of Ecological Vegetation Classes in Geographic Representation Units continued

	Ecological Vegetation Class	Aberfeldy Foothills		Avon Foothills		Bunyip Foothills		Cobungra Mountains		Dargo Mountains		Fish Creek Coastal		Haunted Mountains		King Coastal Plains		Latrobe Foothills		Latrobe Valley	
		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected	
		area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%
143	Estuarine Wetland/Coastal Saltmarsh																				
144	Coast Banksia Woodland/ East Gippsland Coastal Warm Temperate Rainforest Mosaic															13	93.8				
151	Plains Grassy Forest	3	0.8																		
154	Bird Colony Shrubland																				
159	Clay Heathland/Wet Heathland / Riparian Scrub Mosaic																	37	91.0		
160	Coastal Dune Scrub																				
161	Coastal Headland Scrub											352	64.0								
163	Coastal Tussock Grassland											34	96.9								
169	Dry Valley Forest	745	30.5	2 529	61.8					465	48.9			741	42.9			45	100.0		
175	Grassy Woodland	102	43.9	799	71.9			1 040	92.1	442	28.0			803	32.9						
177	Valley Slopes Dry Forest	867	93.2	256	89.6			33	100	188	75.1			9	74.8			93	100.0		
191	Riparian Scrub											3	3.3					78	93.2	7	6.7
192	Montane Rocky Shrubland			474	100.0					91	100.0										
201	Shrubby Wet Forest	270	25.9	30	79.2					29	5.9			2	0.6						
206	Sub-alpine Grassland			11	100.0			1 005	70.6	775	69.7										
207	Montane Grassy Shrubland							1	2.3												
210	Sub-alpine Wet Heathland			1	100.0			597	97.1	0	100			68	49.6						
265	Valley Grassy Forest/Grassy Dry Forest Mosaic																				
307	Sand Heathland/Wet Heathland Mosaic											356	97.6								
309	Calcareous Swale Grassland																				
310	Wet Rocky Outcrop Scrub																				
315	Shrubby Foothill Forest/Damp Forest Complex	1 072	15.8	43	85.9													306	59.3		
316	Shrubby Damp Forest	3 044	37.3	7 726	51.1			38	100	3 399	43.9			5 293	42.8						

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Representative Conservation of Ecological Vegetation Classes in Geographic Representation Units continued

	Ecological Vegetation Class	Macalister Mountains		Matlock Mountains		Mullungdung Coastal		Nunniong Mountains		Strzelecki Foothills		Taylor Foothills		Upper Murray Mountains		Wellington Coastal Plains		Wellington Mountains		W. Gippsland Foothills		Wilsons Promontory	
		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected	
		area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%
143	Estuarine Wetland/ Coastal Saltmarsh															112	17.5						
144	Coast Banksia Woodland/ East Gippsland Coastal Warm Temperate Rainforest Mosaic																						
151	Plains Grassy Forest					9 260	55.2			276	29.8	31	2.6										
154	Bird Colony Shrubland																					50	100.0
159	Clay Heathland/Wet Heathland /Riparian Scrub Mosaic																						
160	Coastal Dune Scrub					31	100.0																
161	Coastal Headland Scrub																					392	98.3
163	Coastal Tussock Grassland					712	71.7															204	100.0
169	Dry Valley Forest	551	54.4	4	100.0			1 047	48.6			1 506	25.8	1	4.6			509	100.0				
175	Grassy Woodland	737	39.6					380	15.6			16	98.0	2 312	84.9			458	100.0				
177	Valley Slopes Dry Forest	11	10.5					13	79.2			110	96.1										
191	Riparian Scrub					408	45.4			10	13.1	190	99.9									2 351	100.0
192	Montane Rocky Shrubland	613	100.0															1 861	100.0			114	100.0
201	Shrubby Wet Forest	64	30.2	4	3.7													12	62.8				
206	Sub-alpine Grassland	125	100.0					623	69.6					3 034	99.9			8 533	97.3				
207	Montane Grassy Shrubland																						
210	Sub-alpine Wet Heathland							176	100.0					132	100.0			162	100.0				
265	Valley Grassy Forest/ Grassy Dry Forest Mosaic																						
307	Sand Heathland/ Wet Heathland Mosaic																					3 354	100.0
309	Calcareous Swale Grassland																					305	100.0
310	Wet Rocky Outcrop Scrub																					521	100.0
315	Shrubby Foothill Forest/ Damp Forest Complex	324	89.1																				
316	Shrubby Damp Forest	3 188	81.5					3 130	57.8			4 156	30.2					1 461	89.3				

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Representative Conservation of Ecological Vegetation Classes in Geographic Representation Units continued

	Ecological Vegetation Class	Aberfeldy Foothills		Avon Foothills		Bunyip Foothills		Cobungra Mountains		Dargo Mountains		Fish Creek Coastal		Haunted Mountains		King Coastal Plains		Latrobe Foothills		Latrobe Valley	
		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected	
		area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%
317	Sub-alpine Wet Heathland/ Sub-alpine Grassland Mosaic							64	7.8												
318	Montane Swamp																				
319	Montane Herb-rich Woodland							2 354	69.7	17	8.2										
320	Grassy Dry Forest/Heathy Dry Forest Complex																				
322	Dry Rainforest/Warm Temperate Rainforest / Gallery Rainforest / Riparian Shrubland Mosaic																				
334	Billabong Wetland																				
342	Rocky Outcrop Shrubland/ Herbland Mosaic/Shrubby Foothill Forest Complex																				
639	Swamp Scrub/Plains Grassy Forest Mosaic																				
681	Deep Freshwater Marsh															393	93.1				
695	Dry Valley Forest/Swamp Scrub/ Warm Temperate Rainforest Mosaic																				
701	Swamp Scrub/Warm Temperate Rainforest/Billabong Wetland Mosiac																				
702	Montane Grassland							6	100.0												
703	Montane Grassy Woodland/ Montane Grassland Mosaic							2	2.6												
858	Calcarenite Dune Woodland											0	16.8								
875	Blocked Coastal Stream Swamp																				
876	Spray-zone Coastal Shrubland																				
877	Lowland Herb-rich Forest	275	15.8	1 044	21.1									277	67.2						
878	Damp Sands Herb-rich Woodland/ Swamp Scrub Complex																				
879	Coastal Dune Grassland																				

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Representative Conservation of Ecological Vegetation Classes in Geographic Representation Units continued

	Ecological Vegetation Class	Macalister Mountains		Matlock Mountains		Mullungdung Coastal		Nunniong Mountains		Strzelecki Foothills		Taylor Foothills		Upper Murray Mountains		Wellington Coastal Plains		Wellington Mountains		W. Gippsland Foothills		Wilsons Promontory	
		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected		Protected	
		area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%	area (ha)	%
317	Sub-alpine Wet Heathland/ Sub-alpine Grassland Mosaic													1 379	53.2								
318	Montane Swamp													19	12.2								
319	Montane Herb-rich Woodland							1 484	57.3					8 799	54.2								
320	Grassy Dry Forest/ Heathy Dry Forest Complex	129	100.0											350	100.0			24	100.0				
322	Dry Rainforest/Warm Temperate Rainforest / Gallery Rainforest / Riparian Shrubland Mosaic							1	94.3			4	2.3										
334	Billabong Wetland											0	2.2										
342	Rocky Outcrop Shrubland/ Herbland Mosaic/Shrubby Foothill Forest Complex											1	31.1										
639	Swamp Scrub/Plains Grassy Forest Mosaic																						
681	Deep Freshwater Marsh															807	22.7						
695	Dry Valley Forest/ Swamp Scrub/ Warm Temperate Rainforest Mosaic											5	27.8										
701	Swamp Scrub/Warm Temperate Rainforest/Billabong Wetland Mosiac											2	87.8										
702	Montane Grassland													14	22.0								
703	Montane Grassy Woodland / Montane Grassland Mosaic													2	100.0								
858	Calcarenite Dune Woodland																					3 829	100.0
875	Blocked Coastal Stream Swamp																					32	100.0
876	Spray-zone Coastal Shrubland																					47	100.0
877	Lowland Herb-rich Forest							1 197	73.8			2 865	25.2										
878	Damp Sands Herb-rich Woodland / Swamp Scrub Complex					149	94.7																
879	Coastal Dune Grassland					34	97.6																

Note:
The figures shown in this table are based on modelled information mapped at a scale of 1:100 000 derived during the pre-1750 analysis of vegetation types in the Gippsland region, and are therefore only approximate. The area figures comprise only those areas protected in conservation reserves and State forest Special Protection Zone. The percentages represent the protected area as a proportion of the total area of the EVC across all land tenures within the GRU. Additional protection is provided 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.

Appendix I

Working definition of rainforest Ecological Vegetation Classes in Gippsland

Rainforest can be defined as follows:

Rainforest is defined ecologically as closed broadleaved forest vegetation with a more or less continuous rainforest tree canopy of variable height, and with a characteristic composition of species and life forms.

Rainforest canopy species are defined as shade tolerant tree species which are able to regenerate below an undisturbed canopy, or in small canopy gaps resulting from locally recurring minor disturbances, such as isolated windthrow or lighting strike, which are part of the rainforest ecosystem. Such species are not dependent on fire for their regeneration.

(CFL 1987d)

More specific working definitions have been developed for field identification of rainforest in Gippsland and are described below.

Rainforest Character Species

Rainforest is recognised as forest where one or more of the following species contributes the highest proportion of foliage cover.

Cool Temperate Rainforest

West / Central Gippsland		East / Tambo	
Pittosporum bicolor	Banyalla	*Acacia melanoxylon*	Blackwood
Atherosperma moschatum	Sassafras	*Atherosperma moschatum*	Sassafras
Nothofagus cunninghamii	Myrtle Beech	*Elaeocarpus holopetalus*	Black Olive Berry
Tasmannia lanceolata	Mountain Pepper	*Notelaea*	Privet Mock Olive
Acacia melanoxylon	Blackwood	*Pittosporum bicolor*	Banyalla
		Podocarpus lawrencei	Mountain Plum Pine
		Tasmannia sp. aff. *xerophila*	Errinundra Pepper
		Telopea oreades	Gippsland Waratah

Warm Temperate Rainforest

Acacia melanoxylon	Blackwood
Acmena smithii	Lilly Pilly
Elaeocarpus reticulatus	Blue Olive Berry
Pittosporum undulatum	Sweet Pittosporum
Tristaniopsis laurina	Kanooka
Cissus hypoglauca	Jungle Grape
Rapanea howittiana	Muttonwood

To be considered rainforest, a stand of trees meeting the above criteria should be at least 0.4 hectares or linear strips along streams should be at least 20 m wide and not less than 100 m long.

These definitions are intended as simple aids to field identification. There will inevitably be areas where its strict interpretation would be inappropriate, for example:

- Large rainforest stands may include a sparse, emergent eucalypt overstorey.
- Some large areas with very well developed rainforest characteristics that are smaller than the specified minimum size for rainforest may be treated as rainforest.
- Areas dominated by Blackwood with few other rainforest characteristics should not be treated as rainforest.

Appendix J

Reservation of Sites of Significance for Rainforest Priority Areas on Public land

Site Name	Site and Priority Rating	Total Area (ha)	Conservation Reserve %	SPZ %	SMZ %	GMZ %	Code %	Protection %
EG 6 Mitchell River Gorge	National	13 125	93	–	–	1	–	93
SG 5 Paradise Valley	National	*	100	–	–	–	–	100
SG 6 Gunyah Gunyah #	National	#						
EG 8 Melwood	State 0	357	1	86	–	–	–	87
	State 1	394	57	28	–	–	–	85
	State 3	586		60	–	36	3	63
EG 11 Fairy Dell	State 1	113	53	46	1	–	–	99
	State 2	712	3	93	–	4	–	96
	State 3	408	–	83	–	14	3	86
CH 37 Mt Useful	State 0	4 865	7	6	–	61	26	39
	State 1	685		47	–	25	28	75
	State 2	1 070	19	14	–	36	31	64
SG 3 Mount LaTrobe	State	*	100	–	–	–	–	100
SG 4 Sealers Cove	State	*	100	–	–	–	–	100
SG 8 Tarra Valley	State	*	100	–	–	–	–	100
SG 9 Bulga	State	*	100	–	–	–	–	100
EG 9 Prospect Creek, Bullumwaal	Regional	2 161	–	79	2	15	3	83
EG 10 Deptford	Regional	1 983	–	6	–	77	17	23
EG 12 The Glen	Regional	402	3	96	–	–	–	99
EG 22 'Otterburn', Shaws Gully	Regional	311	–	2	–	30	4	6
CH 38 Spring Creek	Regional	997	–	5	–	81	14	19
CH 40 Twenty Acre Creek	Regional	1 501	58	1	22	–	9	68
SG 1 Turtons Creek	Regional	*	100	–	–	–	–	100
SG 2 Tidal River	Regional	*	100	–	–	–	–	100
SG 7 Agnes Falls	Regional	*	100	–	–	–	–	100
SG 10 Foster Gully, Morwell National Park	Regional	*	100	–	–	–	–	100
SG 12 Waterloo Bay	Regional	*	100	–	–	–	–	100
EG 1 Mt Moornapa	Local	105	62	–	–	34	4	66
EG 2 Pyrites Creek, Mt Blomford	Local	264	–	12	–	57	31	43
EG 3 Freestone Creek	Local	969	22	49	–	18	11	82
EG 4 Mt Difficulty	Local	1 087	–	52	–	39	8	61
EG 7 Wentworth	Local	589	–	11	–	79	10	21
EG 13 Mt Elizabeth	Local	356	–	90	–	9	2	91
EG 14 Wilkinson Creek	Local	1 733	–	6	–	75	19	25
EG 16 Back River, Timbarra Gorge	Local	188	–	66	–	34	–	66

Notes:
Protection: Includes Conservation Reserves, Special Protection Zones and areas protected by *Code of Forest Practices for Timber Production* exclusion areas. All rainforest on State forest is protected.
***:** these Rainforest Sites of Significance on public land are protected within conservation reserves.
#: the majority of the Gunyah Gunyah Rainforest Site of Significance is protected within a conservation reserve. A part of this Site of Significance extends over lands leased or licensed for plantation purposes.
Priority rating: 1 is highest; 3 is lowest; 0 is within Site of Significance with no priority rating. A national or State Site of Significance in State forest can comprise of one or more priority area rating. All priority area ratings may not occur in each Site of Significance.
Only Sites of Significance for Rainforest that occur within public land (excluding lands leased or licensed for plantation purposes) are listed in this table.

Appendix K

Management of values found in Sites of Significance in State forest

Sites of Botanical Significance

Site No.	Description	Botanical Significance	Management of values found within each site
PC&UB Site 1	Buenba Creek Valley	The site contains a diverse range of montane vegetation communities. It also includes occurrences of Blue-tongue Greenhood (*Pterostylis dubia*) and Black-tip Greenhood (*P. bicolor*).	SPZ and Alpine National Park protect the majority of this site.
PC&UB Site 2	Eastern catchment of Corner Creek	The site is floristically rich, including species such as Large-head Club-moss (*Scirpus polystachyus*).	The entire site is within the Alpine National Park and SPZ.
PC&UB Site 3	Johnnies Top	A number of significant plants were recorded at this site including Tailed Eyebright (*Euphrasia caudata*) and Slender Gingidia (*Gingidia harveyana*).	The site is within the Alpine National Park.
PC&UB Site 4	Between Pheasant Creek Track and Pheasant Creek	This site contains examples of Montane Forest and Montane Riparian Forest. Crested Hair-grass (*Koeleria cristata*) was identified at this site. The site also contained an unusual spring. Such springs and soaks may be important breeding sites for montane amphibian species.	Conservation protection measures apply to Crested Hair-grass. The *Code* and Regional prescriptions provide protection to water bodies.
PC&UB Site 5	Eastern half of Mt Gibbo Natural Features and Scenic Reserve	The site conserves three significant populations of Errinundra Pepper (*Tasmannia* ssp. aff *xerophila*). It also incorporates an Alpine Grassland community, which is restricted to Mt Gibbo.	The site is within the Mt Gibbo Natural Features and Scenic Reserve and SPZ.
PC&UB Site 6	Stony Creek and upper tributaries	River Hook-Sedge (*Uncinia nemoralis*) was identified at this site. The site also includes *Podocarpus* Heathland including Mountain Plum Pine (*P. lawrenci*).	The site is protected by SPZ. Conservation protection measures apply to River Hook-Sedge.
PC&UB Site 7	Gibbo River, Buenba and Pheasant Creeks	Native Wintercress (*Barbarea grayia*) was found at this site.	The site is protected by SPZ and Alpine National Park. Conservation protection measures apply to Native Wintercress.
PC&UB Site 8	Gibbo River valley, near Saltpetre and Pheasant Creeks	The site was identified as being important to reserve examples of Montane Sclerophyll Woodland and Montane Forest sub-communities.	The site is entirely within the Alpine National Park.
B&GR Site 1	Upper catchment of Deep Creek	This site contains Montane Forest.	Vegetation communities identified at this site are protected by representative conservation measures.
B&GR Site 2	West branch of Deep Creek	Species recorded at this site include Lanky Fescue (*Austrofestuca eriopoda*). Montane Riparian Forest is also a significant vegetation sub-community.	The site is protected within SPZ.
B&GR Site 3	South of Beloka Range and Buenba Gap Tracks	The site includes Montane Riparian Forest and Montane Forest sub-communities.	The site is protected by SPZ.

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Management of values found in Sites of Significance in State forest continued

Site No.	Description	Botanical Significance	Management of values found within each site
SR Site 1	Scrubby Creek headwaters	The site includes Montane Riparian Forest. Orange Everlasting (*Helichrysum acuminatum*) and Summer Greenhood (*Pterostylis* aff. *decurva*) were considered significant.	Montane Riparian Forest values protected by an SPZ linear reserve on Scrubby Creek. Representative conservation measures protect other values.
SR Site 2	Upper limits of Tongio Creek	Examples of Montane Forest, Damp Sclerophyll Forest and Montane Riparian Forest are included at this site.	Representative conservation measures protect vegetation values.
SR Site 3	South of Newnham Track	The site includes Wet Sclerophyll Forest.	Representative conservation measures protect vegetation sub-communities.
SR Sites 4–10	Point locations near Scrubby Creek, Old Mill Track, The Dog Track, Lee Track and Spring Hill Track	Sites 8 and 9 contain Crested Hair-grass and Site 10 is included to protect Blue-tongue Greenhood. Other sites were considered significant for populations of Austral Grass-tree (*Xanthorrhoea australis*) and Bursaria (*Bursaria lasiophylla*), which are uncommon in this part of the region. Small Vanilla Lily (*Arthropodium minus*) was also recorded.	Conservation protection measures apply to Crested Hair-grass and Blue-tongue Greenhood. Representative conservation measures will protect other species identified at these sites.
NN Site 1	Blue Shirt Creek and northern tributaries	Montane Riparian Forest, Tall Acrotriche (*Acrotriche divaricata*) and River Hook-sedge (*Uncinia nemoralis*) were recorded at this site.	Conservation protection measures apply to significant species.
NN Site 2	Tambo River (South Branch)	Site contains stands of Montane Riparian Forest, Snow Gum Woodland and Wet Alpine Heathland.	The site is protected by SPZ.
NN Site 3	Escarpment Track, Nunniong Plateau	Site includes a stand of Montane Forest containing some of the largest and most mature Alpine Ash in the forest block.	The site is protected by SPZ.
NN Site 4	Tambo River (south branch)	The site includes Riparian Forest and forms a corridor between existing reserves and other significant sites.	Vegetation communities are protected by representative conservation measures.
L Site 1	Pendergast Lookout	Midget Greenhood (*Pterostylis mutica*) and Small Vanilla-lily were recorded in the significant Dry Sclerophyll Forest at this site.	The site is protected by SPZ.
L Site 2	Northern part of Front Creek	This site contains undisturbed examples of Montane Riparian Forest. Other species that were recorded at this site include Slender Greenhood (*Pterostylis foliata*), Plain-lip Spider-orchid (*Caladenia clavigera*) and Black-tongue Caladenia (*Caladenia congesta*).	The site is protected by SPZ.
L Site 3	Mt Pendergast/ Mt Leinster Creek	Slender Gingidia (*Gingidia harveyana*) and Bitter-pea (*Daviesia mimosoides* var *laxiflora*) were recorded at the site.	Conservation protection measures apply to Slender Gingidia.
L Site 4	Macfarlane Lookout to Sandy Creek	Tiny Bent (*Agrostis australiensis*), Tufted Club-sedge (*Isolepis wakefieldiana*), Fine Leaf Tussock-grass (*Poa meionectes*) and Dwarf Milkwort (*Polygala japonica*) were recorded at this site.	Macfarlane Lookout Natural Features and Scenic Reserve and representative conservation measures will protect the values recorded at this site.
L Site 5	Limestone Road, south of Morass Creek	This site primarily protects the habitat of Dwarf Milkwort.	Conservation protection measures apply to Dwarf Milkwort.
LW&FR Site 1	Upper reaches of Ferntree Creek	This site contains examples of a number of vegetation communities including Damp Sclerophyll and Wet Sclerophyll Forests.	Vegetation communities are protected by representative conservation measures.

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Management of values found in Sites of Significance in State forest continued

Site No.	Description	Botanical Significance	Management of values found within each site
LW&FR Site 2	Lower reaches of Ferntree and Gap Creeks and their confluence with Wilkinson Creek	A variant of Dry Sclerophyll Forest, characterised by a low heathy understorey of Trailing Oxylobium (*Oxylobium procumbens*) is localised in this area. The Riparian Forest and Dry Sclerophyll Forest vegetation sub-communities are also significant.	The site is protected by SPZ.
LW&FR Site 3	Wilkinson Creek and Timbarra River	The site includes woodlands of Yellow Box (*Eucalyptus melliodora*) and But But (*E. bridgesiana*). Populations of Common Oxylobium (*O. ellipticum*) are also included.	The site is protected by SPZ.
LW&FR Site 4	Eastern tributaries of Cutts Creek	Rocky Outcrop Scrub and Warm Temperate Rainforest are present within this site. Wallaby-bush (*Beyeria lasiocarpa*) also occurs at the site.	The site is protected by SPZ.
LW&FR Site 5	Dinner Creek Track	Outcrop Guinea-flower (*Hibbertia hermanniifolia*) occurs at this site.	Conservation protection measures apply to Outcrop Guinea-flower.
LW&FR Site 6	Mt Wong Track	The site contains Rocky Outcrop Scrub and Damp Sclerophyll Forest.	The site is protected by SPZ.
LW&FR Site 7	North-east corner of Fainting Range Forest Block	Stands of Dry Sclerophyll Forest including open forests of But But and Yellow Box occur at this site.	The site is protected by SPZ.
LW&FR Site 8	Mt Elizabeth NF&SR	This site was considered to be of national biological significance. Species present include Leafy Phebalium (*Phebalium frondosum*), Mt Elizabeth Hovea (*Hovea pannosa* (Mount Elizabeth form)), Outcrop Guinea-flower, Leafless Pink-bells (*Tetratheca subaphylla*) and Monkey Mint-bush (*Prostanthera walteri*).	Mt Elizabeth Nature Conservation Reserve protects much of site. Conservation protection measures apply to significant species.
LW&FR Site 9	Breakfast and Navigation Creeks	Wallaby-bush and Leafless Pink-bells occur at this site.	Most of the site is protected by SPZ.
LW&FR Site 10	Headwaters of Navigation Creek	Values included at this site are Warm Temperate Rainforest, Wallaby-bush and Gully Gum (*E. smithii*).	Conservation protection measures apply to rainforest stands and other significant species.
LW&FR Site 11	Headwaters of Tambo River tributary	Outcrop Guinea-flower and Gully Gum occur at this site.	Conservation protection measures apply to Outcrop Guinea-flower.
LW&FR Site 12	Tambo River Natural Features Zone	The site includes patches of rainforest. Other significant species occurring at the site including Eastern Bitter-bush (*Adriana glabrata*), Tall Sedge (*Bolboschoenus* sp.) and Water Pimpernel (*Samolus valerandii*).	Entire site is protected by SPZ.
LW&FR Site 13	Collins Road	Rocky Outcrop Scrub vegetation, Outcrop Guinea-flower and Wallaby-bush occur at this site.	Entire site is protected by SPZ.
S Site A	Timbarra River flats	The vegetation at this site is diverse including riparian vegetation, wet forests and dry valley forests.	Entire site is protected by SPZ.
S Site B	Scorpion Creek	The site contains an unusual collection of Bent Grass (*Deyeuxia* sp.).	Vegetation communities are protected by representative conservation measures.
S Site C	Camp Oven Gap Track below Paling Spur Track	The Dry Silvertop forest contains several Bent Grass species (*D. scaberula* and *D. parviseta*).	Vegetation communities are protected by representative conservation measures.

Continued next page

Management of values found in Sites of Significance in State forest continued

Site No.	Description	Botanical Significance	Management of values found within each site
S Site D	Northern side of Camp Oven Gap Track	This site contains examples of Cool Temperate Rainforest. Forest adjacent to the rainforest includes Hairy Mint-bush (*Prostanthera hirtula*).	Conservation protection measures apply to rainforest stands and other significant species.
F&P Site 1	Conners Creek headwaters	This site is intended to conserve a representative sample of Montane Forest. It also contains an occurrence of Raleigh Sedge (*Carex raleighii*).	Entire site is within Alpine National Park.
F&P Site 2	Upper reaches of Pyke Creek	Snow Gum Woodland, Montane Forest and Montane Riparian Forest are represented at this site. Mountain Plum Pine (*Podocarpus lawrenci*), Mountain Needlewood (*Hakea lissosperma*) and Mountain Tea-tree were recorded at this site.	Entire site is within Alpine National Park.
F&P Site 3	Mt Bluerag	This site contains a population of Spinning Gum (*E. perriniana*).	Entire site is within Alpine National Park.
F&P Site 4	Northern escarpment of King Spur	Common Spleenwort (*Asplenium trichomanes*) was recorded along this escarpment.	Entire site is within Alpine National Park.
F&P Site 5	Lankey Plain and Omeo Plain	This site encompasses the treeless areas of Lankey Plain and Omeo Plain, containing a number of significant plant species and alpine vegetation sub-communities.	Entire site is within Alpine National Park.

Note:
The abbreviations in the first column relate to the forest blocks which were surveyed and: F&P = Freezeout and Pyke (CFL 1987b); S = Scorpion (CFL 1984); LW&FR = Lower Wilkinson and Fainting Range (DCE 1990a); L = Leinster (CFL 1989a); NN = Nunniong North (CFL 1987c); SR = Splitters Range (CFL 1989b); UB&PC = Upper Buenba and Pheasant Creek (DCE 1990b); B&GR = Beloka and Gibbo River (CFL 1987a).

Sites of Zoological Significance

Site No.	Description	Zoological Significance	Management of values found within each site
PC&UB Site 1	Buenba Creek Valley	The open grassy areas associated with Buenba Flat supports a diverse range of birds including Powerful Owl, Rose Robin and Pink Robin. Broad-toothed Rat and Yellow-bellied Glider were also identified at this site.	SPZ and Alpine National Park protect the majority of this site.
PC&UB Site 2	Eastern catchment of Corner Creek	A high diversity of bird species, including the Emu, Rufous Songlark and Little Friarbird, is associated with vegetation communities along Corner Creek.	Entire site is within the Alpine National Park and SPZ.
PC&UB Site 6	Stony Creek and upper tributaries	The site contains a high diversity of avifauna, particularly in Montane Riparian Forest.	Site is protected by SPZ.
PC&UB Site 7	Gibbo River and Buenba and Pheasant Creeks	The presence of Macquarie Perch in the Gibbo River is significant. Rocky River Frog, Cunningham's Skink and Tree Dragon were identified on the banks of the Gibbo River at this site. Other significant species recorded in this site include Broad-toothed Rat, Cicadabird and Peregrine Falcon.	SPZ and Alpine National Park protect this site.
B&GR Site 1	Upper catchment of Deep Creek	The site contained several bird species including the Rose Robin and Rufous Fantail in dense gully areas, as well as high bird diversity throughout.	Representative conservation measures will protect identified values.
B&GR Site 2	West branch of Deep Creek	This site has high arboreal mammal diversity.	Site is protected by SPZ.
B&GR Site 3	South of Beloka Range and Buenba Gap Tracks	Site supports both high numbers of bird species and individuals, including the Emu and Cicadabird. Broad-toothed Rat habitat, Yellow-bellied Glider and Eastern Pygmy Possum were also recorded in this site, which had high arboreal mammal numbers.	Site is protected by SPZ.
SR Site 2	Upper limits of Tongio Creek	This site supports a high diversity of arboreal mammals and bird species. Notable bird species include Powerful Owl and Cicadabird.	Representative conservation measures will protect values included in this site. Protection measures apply to Powerful Owl in accordance with the Action Statement.
SR Site 3	South of Newnham Track	An Emu population was identified at this site.	Representative conservation measures for vegetation help to protect the values identified at this site.
SR Site 4	Scrubby Creek	A high diversity of bird and bat fauna was present at this site. Species include Cicadabird, Rose Robin and large numbers of Red-browed Tree-creeper.	Site is protected by SPZ.
SR Site 7	The Dog Track	A pair of juvenile White-throated Nightjars was observed.	Site is protected by SPZ.
NN Site 1	Blue Shirt Creek and northern tributaries	Pink Robin, Southern Toadlet and Alpine Tree Frog were recorded in this site.	Protection measures apply to Alpine Tree Frog.
NN Site 2	Tambo River (south branch)	Gullies contain tea-tree scrub that provides important Pink Robin breeding habitat.	Site is protected by SPZ.

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Management of values found in Sites of Significance in State forest continued

Site No.	Description	Zoological Significance	Management of values found within each site
NN Site 4	Tambo River (south branch)	The rock faces along the river contain suitable sites for nursery caves for the Common Bent-wing Bat, which were identified in this site	Protection measures apply to Common Bent-wing Bat.
L Site 1	Pendergast Lookout	A large number of birds were recorded in this site, including Latham's Snipe and Cicadabird. Copper-tailed Skink were recorded on the rocky slopes of Pendergast Lookout.	Site is protected by SPZ.
L Site 2	Northern part of Front Creek	Significantly high bird species richness and number of breeding birds was a feature of this site. The site was also notable for the high number of common amphibian and reptile species, and overall high species diversity.	Site is protected by SPZ.
L Site 3	Mt Pendergast/ Mt Leinster Creek	The site supported a high species diversity and high numbers of birds, with Pink Robin and Cicadabird recorded in gully vegetation.	*Code* and Prescriptions protect gully vegetation.
L Site 4	Macfarlane Lookout to Sandy Creek	A Peregrine Falcon was sighted near Macfarlane Lookout, as was a substantial population of Cunningham's Skink.	Macfarlane Lookout Natural Features and Scenic Reserve and representative conservation measures will protect values included in this site.
LW&FR Site 1	Upper reaches of Ferntree Creek	The site provides habitat for species such as the Pink Robin, Pilot Bird and Red-browed Tree-creeper. Greater Glider and Yellow-bellied Glider were also recorded.	Representative conservation measures will protect identified values.
LW&FR Site 2	Lower reaches of Ferntree and Gap Creeks and their confluence with Wilkinson Creek	Fauna species recorded in this site include the Koala, Yellow-bellied Glider and a diverse range of avifauna. Blue Mountains Tree Frog and Whites Skink were also identified at this site.	Site is protected by SPZ.
LW&FR Site 3	Timbarra River and Wilkinson Creek	Species identified along these waterways include Australian King Parrot, Yellow-tufted Honeyeater, Blue Mountains Tree Frog and Eastern Water Dragon.	SPZ protects values along both these waterways.
LW&FR Site 7	North-east corner of Fainting Range Forest Block	Koalas were identified at this site.	Site is protected by SPZ.
LW&FR Site 8	Mt Elizabeth NF&SR	Significant fauna species at this site include Yellow-tailed Black Cockatoo, Gang-gang Cockatoo and Lace Monitor.	Mt Elizabeth Nature Conservation Reserve and SPZ protect much of the site.
LW&FR Site 9	Breakfast and Navigation Creeks	The site is significant for large arboreal mammal populations, particularly Greater Glider. Koala, Long-nosed Bandicoot, White-throated Nightjar and Lace Monitor were also identified.	SPZ protects most of this site.
LW&FR Site 10	Headwaters of Navigation Creek	A population of native fish *Galaxias truttaceus* is significant.	Regional prescriptions provide protection to this species.
LW&FR Site 12	Tambo River corridor	Bird species at this site include Yellow-tailed Black Cockatoo, Gang-gang Cockatoo. The site includes breeding populations of Blue Mountains Tree Frog, Long-necked Tortoise, Copper-tailed Skink, and Eastern Water Dragon.	A Natural Features Zone on the Tambo River protects the entire site.

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Management of values found in Sites of Significance in State forest continued

Site No.	Description	Zoological Significance	Management of values found within each site
S Site A	Timbarra River flats	A number of reptiles were observed in this site, as was Large-footed Myotis.	Site is protected by SPZ.
S Site B	Scorpion Creek	The Giant Burrowing Frog was identified at this site.	Conservation protection measures apply to Giant Burrowing Frog.
S Site D	Northern side of Camp Oven Gap Track	This ridge was used for feeding by Emus and roosting by Australian King-Parrots.	Representative conservation measures will protect values included in this site.
F&P Site 2	Upper reaches of Pyke Creek	High levels of diversity and density of arboreal mammals were recorded in this site including high population densities of Common Ringtail Possum and Feathertail Glider. Species richness of avifauna was high.	Entire site is within Alpine National Park.
F&P Site 4	Northern escarpment of King Spur	Populations of White's Skink and large populations of Black Rock Skink were recorded at this site.	Entire site is within Alpine National Park.
F&P Site 5	Lankey Plain and Omeo Plain	The site is of high zoological significance. Sheoak Skink has been recorded at the site and Broad-toothed Rat is found in drainage line vegetation on these plains.	Entire site is within Alpine National Park.

Note:
The abbreviations in the first column relate to the forest blocks which were surveyed and: F&P = Freezeout and Pyke (CFL 1987b); S = Scorpion (CFL 1984); LW&FR = Lower Wilkinson and Fainting Range (DCE 1990a); L = Leinster (CFL 1989a); NN = Nunniong North (CFL 1987c); SR = Splitters Range (CFL 1989b); UB&PC = Upper Buenba and Pheasant Creek (DCE 1990b); B&GR = Beloka and Gibbo River (CFL 1987a).

Appendix L

Management of featured flora occurring in State forest

Flora listed (or nominated for listing) as threatened under the Commonwealth *Environment Protection Biodiversity Conservation Act 1999* and the Victorian *Flora and Fauna Guarantee Act 1988*

Species Name	Common Name	Status			Zone*	Habitat / Management
		Vic.	FFG	EPBC		
Acacia caerulescens	Limestone Blue Wattle	v	–	VU		There are currently no confirmed records of this species from State forest. As an interim measure, any populations discovered in State forest will be included in the SMZ. An SMZ plan will need to be prepared prior to harvesting activities or prescribed burns proceeding.
Adiantum diaphanum	Filmy Maidenhair	e	L(AS)	–	SPZ	Grows along streams in shaded fern gullies surrounded by wet sclerophyll forest. Include all State forest populations in the SPZ.
Almaleea capitata	Slender Parrot-pea	v	L	–	SMZ	As an interim measure, any populations discovered in State forest will be included in the SMZ. An SMZ plan will need to be prepared prior to harvesting activities or prescribed burns proceeding.
Amphibromus fluitans	River Swamp Wallaby-grass	k	I	VU		There are currently no confirmed records of this species from State forest. Grows in permanent swamps. Conservation of all wetlands and riparian vegetation in SPZ and FMA Timber Harvesting Prescriptions provide adequate protection if species is located in State forest.
Boronia galbraithiae	Aniseed Boronia	v	L	VU	SPZ	Grows in dry sclerophyll forest on skeletal spurs and upper slopes between approx. 420–540 m altitude. Include all State forest populations in the SPZ.
Cyathea cunninghamii	Slender Tree-fern	v	L	–		There are currently no confirmed records of this species from State forest. Confined to deep wet fern gullies and temperate rainforests protected from fire and wind. Include all State forest populations in SMZ. Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Cyathea leichhardtiana	Prickly Tree-fern	v	L	–		There are currently no confirmed records of this species from State forest. Grows in densely shaded and often damp sites, in warm temperate rainforests on stream banks and on valley slopes. As an interim measure, any populations discovered in State forest will be included in the SMZ. An SMZ plan will need to be prepared prior to harvesting activities or prescribed burns proceeding.
Discaria nitida	Shining Anchor Plant	e	L	–	SPZ	Grows in riparian environments. Include populations in State forest in the SPZ.
Discaria pubescens	Hairy Anchor Plant	r	L(AS)	–	SPZ	Occurs in open grassy woodland and forests. Grazing may hinder seedling establishment and new growth on adult plants. Include populations in State forest in the SPZ.
Diuris lanceolata s.l.	Golden Moths	e	L	EN		There are currently no confirmed records of this species from State forest. Occurs in damp depressions in grasslands, woodlands, open forest and alpine meadows. Include all State forest populations in the SPZ.
Diuris punctata var. *punctata*	Purple Diuris	v	L	–	SPZ	There are currently no confirmed records of this species from State forest. Found on fertile grasslands and woodland areas and in heathy coastal areas on the Gippsland Plain and coast. Include all populations in State forest in the SPZ.
Eucalyptus strzeleckii	Strzeleckii Gum	v	–	VU	SPZ	Found on ridges, slopes and streambanks in the Strzelecki Range. Include populations in State forest in the SPZ.

Continued on next page

Management of featured flora occurring in State forest continued

Species Name	Common Name	Status			Zone*	Habitat / Management
		Vic.	FFG	EPBC		
Euphrasia collina ssp. *muelleri*	Purple Eyebright	e	L	EN	SPZ	Establish a 200 m radius SPZ around known populations.
Euphrasia scabra	Rough Eyebright	e	L(AS)	–	SPZ	Occurs in montane herbfields and grasslands. Include all State forest populations in the SPZ. Review and, if necessary, modify grazing licences, in the vicinity of confirmed records.
Glycine latrobeana	Clover Glycine	v	L	VU		There are currently no confirmed records of this species from State forest. Occurs in grassland, grassy woodland and grassy heathland. As an interim measure, any populations discovered in State forest will be included in the SMZ. An SMZ plan will need to be prepared prior to harvesting activities or prescribed burns proceeding.
Grevillea celata	Colquhuon Grevillea	v	–	VU	SPZ	Establish a 200 m radius SPZ around known populations.
Isopogon prostratus	Prostrate Cone-bush	e	L	–		There are currently no confirmed records of this species from State forest. Occurs in heathland and dry sclerophyll forests. Any populations discovered in State forest will be included in the SPZ.
Prasophyllum niphopedium	Marsh Leek-orchid	e	L	–	SPZ	Establish a 200 m radius SPZ around known populations.
Pterostylis chlorogramma	Green-striped Greenhood	v	–	VU	SPZ	Occurs in open forest. Include all State forest populations in the SPZ.
Pterostylis cucullata	Leafy Greenhood	v	L(AS)	VU	SPZ	Occurs in open forest and shrubland. Include all State forest populations in the SPZ.
Pultenaea setulosa	Stony Bush-pea	v	L	–	SPZ	Establish a 200 m radius SPZ around known populations.
Thelymitra epipactoides	Metallic Sun-orchid	e	L	EN		There are currently no confirmed records of this species from State forest. Grows in open heathland, grassland and woodland communities. Any populations discovered in State forest will be included in the SPZ.
Thelymitra matthewsii	Spiral Sun-orchid	v	L	VU	SMZ	Occurs in open forests and woodlands. Include all State forest populations in SMZ. Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Thesium australe	Austral Toad-flax	v	L(AS)	VU		There are currently no confirmed records of this species from State forest. Occurs in grasslands, grassy woodlands and sub-alpine grassy heathlands. Any populations discovered in State forest will be included in the SPZ.
Utricularia monanthos	Tasmanian Bladderwort	v	L	–	SMZ	Include all State forest populations in SMZ. Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Wahlenbergia densifolia	Fairy Bluebell	v	L	–	SPZ	Occurs in open grassland, herbfields and occasionally in shrubland at high altitudes. Include all State forest populations in the SPZ.
Xerochrysum palustre	Swamp Everlasting	v	L	VU		Grows in lowland swamps. Conservation of all wetlands and riparian vegetation in SPZ and FMA Timber Harvesting Prescriptions provide adequate protection.

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Other threatened flora species recorded from State forest

Species Name	Common Name	Status Vic.	Zone*	Management
Acacia alpina	Alpine Wattle	r	SPZ	Establish a 200 m radius SPZ around known populations.
Acacia dawsonii	Poverty Wattle	v	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Acacia howittii	Sticky Wattle	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Acacia lucasii	Woolly-bear Wattle	v	SPZ	Establish a 200 m radius SPZ around known populations.
Aciphylla glacialis	Snow Aciphyll	v	SPZ	Establish a 200 m radius SPZ around known populations.
Aciphylla simplicifolia	Mountain Aciphyll	r	SPZ	Establish a 200 m radius SPZ around known populations.
Acrotriche leucocarpa	Tall Ground-berry	r	SPZ	Establish a 200 m radius SPZ around known populations.
Adriana quadripartita (pubescent form)	Coast Bitter-bush	v	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record
Adriana tomentosa var. *tomentosa* (glabrous form)	Eastern Bitter-bush	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Adriana tomentosa var. *tomentosa* (pubescent form)	Eastern Bitter-bush	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Agrostis australiensis	Tiny Bent	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Agrostis muelleriana	Mueller's Bent	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Aristida calycina var. *calycina*	Dark Wire-grass	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Arthropodium sp. 1	Tall Vanilla-lily	r	SPZ	Establish a 200 m radius SPZ around known populations.
Asplenium trichomanes	Common Spleenwort	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Australopyrum retrofractum	Comb Wheat-grass	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Australopyrum velutinum	Mountain Wheat-grass	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Austrofestuca eriopoda	Lanky Fescue	r	SPZ	Establish a 200 m radius SPZ around known populations.
Baeckea latifolia	Subalpine Baeckea	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Barbarea grayi	Native Wintercress	v	SPZ	Establish a 200 m radius SPZ around known populations.
Beyeria lasiocarpa	Wallaby-bush	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Beyeria viscosa	Pinkwood	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Billardiera scandens var. *brachyantha*	Velvet Apple-berry	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Bossiaea bracteosa	Mountain Leafless Bossiaea	r	SPZ	Establish a 200 m radius SPZ around known populations.
Brachyscome obovata	Baw Baw Daisy	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Brachyscome petrophila	Rock Daisy	r	SPZ	Establish a 200 m radius SPZ around known populations.

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Management of featured flora occurring in State forest continued

Species Name	Common Name	Status Vic.	Zone*	Management
Brachyscome radicans	Marsh Daisy	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Cardamine tenuifolia	Slender Bitter-cress	k		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Carex capillacea	Hair Sedge	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Carex chlorantha	Green-top Sedge	k	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Carex iynx	Tussock Sedge	k	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Carex raleighii	Raleigh Sedge	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Clematis microphylla var. *leptophylla*	Skeleton Vine	k	SPZ	Establish a 200 m radius SPZ around known populations.
Coprosma nivalis	Snow Coprosma	r	SPZ	Establish a 200 m radius SPZ around known populations.
Corunastylis arrecta	Erect Midge-orchid	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Corysanthes hispida	Bristly Helmet-orchid	r	SPZ	Establish a 200 m radius SPZ around known populations.
Craspedia alba	White Billy-buttons	v		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Craspedia jamesii	Green Billy-buttons	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Cyphanthera anthocercidea	Large-leaf Ray-flower	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Desmodium varians	Slender Tick-trefoil	k	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Deyeuxia contracta	Compact Bent-grass	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Deyeuxia crassiuscula	Thick Bent-grass	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Dipodium variegatum	Blotched Hyacinth-orchid	r	SPZ	Establish a 200 m radius SPZ around known populations.
Elymus multiflorus	Short-awned Wheat-grass	k	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Entolasia stricta	Upright Panic	k	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Epacris celata	Cryptic Heath	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Eragrostis leptostachya	Paddock Love-grass	k		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Eragrostis trachycarpa	Rough-grain Love-grass	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Eucalyptus aff. *willisii* (Gippsland Lakes)	Gippsland Lakes Peppermint	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Eucalyptus bosistoana	Coast Grey Box	r		Timber harvesting is excluded from Coast Grey Box stands, except for when it is undertaken to facilitate propagation or regeneration of these species.

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Management of featured flora occurring in State forest continued

Species Name	Common Name	Status Vic.	Zone*	Management
Eucalyptus ignorabilis s.s.	Grey Scentbark	r	SPZ	Establish a 200 m radius SPZ around known populations.
Eucalyptus kybeanensis	Mallee Ash	r	SPZ	Establish a 200 m radius SPZ around known populations.
Eucalyptus neglecta	Omeo Gum	r	SPZ	Establish a 200 m radius SPZ around known populations.
Eucalyptus pauciflora ssp. *acerina*	Baw Baw Sally	r	SPZ	Establish a 200 m radius SPZ around known populations.
Eucalyptus perriniana	Spinning Gum	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Euchiton fordianus	Alpine Cudweed	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Euchiton traversii	Mat Cudweed	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Euchiton umbricola	Cliff Cudweed	r	SPZ	Establish a 200 m radius SPZ around known populations.
Euphrasia caudata	Tailed Eyebright	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Euphrasia crassiuscula	Thick Eyebright	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Gahnia microstachya	Slender Saw-sedge	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Galium curvihirtum	Tight Bedstraw	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Gingidia harveyana	Slender Gingidia	v		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Goodenia macmillanii	Pinnate Goodenia	v	SPZ	Establish a 200 m radius SPZ around known populations.
Gratiola nana	Matted Brooklime	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Gratiola pedunculata	Stalked Brooklime	k	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Grevillea brevifolia ssp. *brevifolia*	Cobberas Grevillea	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Grevillea brevifolia ssp. *polychroma*	Tullach Ard Grevillea	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Grevillea chrysophaea	Golden Grevillea	r	SPZ	Establish a 200 m radius SPZ around known populations.
Grevillea sp. aff. *monslacana*	Selma Saddle Grevillea	v	SPZ	Establish a 200 m radius SPZ around known populations.
Grevillea miqueliana ssp. *miqueliana*	Oval-leaf Grevillea	r	SPZ	Establish a 200 m radius SPZ around known populations.
Grevillea willisii	Rock Grevillea	r	SPZ	Establish a 200 m radius SPZ around known populations.
Gynatrix macrophylla	Gippsland Hemp Bush	r	SPZ	Establish a 200 m radius SPZ around known populations.
Hibbertia diffusa	Wedge Guinea-flower	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Hibbertia hermanniifolia	Outcrop Guinea-flower	r	SPZ	Establish a 200 m radius SPZ around known populations.
Hibbertia pedunculata	Stalked Guinea-flower	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.

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Management of featured flora occurring in State forest continued

Species Name	Common Name	Status Vic.	Zone*	Management
Huperzia australiana	Fir Clubmoss	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Hybanthus monopetalus	Slender Violet-bush	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Irenepharsus magicus	Elusive Cress	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Isolepis montivaga	Fog Club-sedge	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Isolepis wakefieldiana	Tufted Club-sedge	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Juncus falcatus	Sickle-leaf Rush	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Juncus phaeanthus	Dark-flower Rush	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Juncus revolutus	Creeping Rush	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Koeleria cristata (= K. macrantha)	Crested Hair-grass	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Lawrencia spicata	Salt Lawrencia	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Leionema bilobum ssp. 3 (West Gippsland)	Toothed Leionema	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Leionema lamprophyllum ssp. *lamprophyllum*	Shiny Leionema	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Leptorhynchos elongatus	Lanky Buttons	e	SPZ	Establish a 200 m radius SPZ around known populations.
Leptorhynchos sp. 1	Alpine Buttons	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Leptospermum emarginatum	Twin-flower Tea-tree	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Leucopogon attenuatus	Grey Beard-heath	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Leucopogon juniperinus	Long-flower Beard-heath	k	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Leucopogon pilifer	Thready Beard-heath	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Lomandra glauca s.s.	Blue Mat-rush	k		The majority of preferred heathland habitat is protected in State forest.
Lotus australis	Austral Trefoil	k	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Luzula alpestris	Tussock Woodrush	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Marsdenia flavescens	Yellow Milk-vine	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Muehlenbeckia rhyticarya	Wrinkle-nut Lignum	r	SPZ	Establish a 200 m radius SPZ around known populations.
Myriophyllum alpinum	Alpine Water-milfoil	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Nymphoides geminata	Open Marshwort	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.

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Management of featured flora occurring in State forest continued

Species Name	Common Name	Status Vic.	Zone*	Management
Olearia adenophora	Scented Daisy-bush	r	SPZ	Establish a 200 m radius SPZ around known populations.
Olearia phlogopappa var. *flavescens*	Dusty Daisy-bush	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Olearia speciosa	Netted Daisy-bush	k	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Ophioglossum reticulatum	Stalked Adder's-tongue	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Oreobolus oxycarpus ssp. *oxycarpus*	Tuft-rush	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Oschatzia cuneifolia	Wedge Oschatzia	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Ozothamnus adnatus	Winged Everlasting	v	SPZ	Establish a 200 m radius SPZ around known populations.
Ozothamnus argophyllus	Spicy Everlasting	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Ozothamnus stirlingii	Ovens Everlasting	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Persoonia subvelutina	Velvety Geebung	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Petalochilus alatus	Fairy Caladenia	k	SPZ	Establish a 200 m radius SPZ around known populations.
Petalochilus aurantiacus	Orange-tip Caladenia	r	SPZ	Establish a 200 m radius SPZ around known populations.
Pimelea pauciflora	Poison Rice-flower	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Platysace ericoides	Heath Platysace	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Poa clivicola	Fine-leaf Snow-grass	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Poa halmaturina	Dwarf Coast Tussock-grass	v		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Poa hothamensis var. *parviflora*	Soft Ledge-grass	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Poa meionectes	Fine-leaf Tussock-grass	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Poa sieberiana var. *cyanophylla*	Blue-leaf Tussock-grass	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Poa sp. aff. *tenera* (Hairy)	Soft Slender Tussock-grass	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Poa ssp. aff. *gunnii*	Avon Tussock-grass	r		Locally abundant species and tolerant of disturbance, or management activities not considered a threat to their habitat in State forest.
Polygala japonica	Dwarf Milkwort	v	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Polystichum formosum	Broad Shield-fern	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Pomaderris aurea	Golden Pomaderris	r	SPZ	Establish a 200 m radius SPZ around known populations.
Pomaderris betulina ssp. *betulina*	Birch Pomaderris	r	SPZ	Establish a 200 m radius SPZ around known populations.
Pomaderris discolor	Eastern Pomaderris	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.

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Management of featured flora occurring in State forest continued

Species Name	Common Name	Status Vic.	Zone*	Management
Pomaderris eriocephala	Woolly-head Pomaderris	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pomaderris helianthemifolia	Blunt-leaf Pomaderris	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pomaderris ligustrina ssp. *ligustrina*	Privet Pomaderris	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pomaderris oraria ssp. *calcicola*	Limestone Pomaderris	r	SPZ	Establish a 200 m radius SPZ around known populations.
Pomaderris oraria ssp. *oraria*	Bassian Pomaderris	r	SPZ	Establish a 200 m radius SPZ around known populations.
Pomaderris phylicifolia ssp. *ericoides*	Slender Pomaderris	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pomaderris pilifera	Striped Pomaderis	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pomaderris subcapitata	Convex Pomaderris	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Prasophyllum montanum	Mountain Leek-orchid	r	SPZ	Establish a 200 m radius SPZ around known populations.
Prostanthera decussata	Dense Mint-bush	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Prostanthera walteri	Monkey Mint-bush	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pseudanthus divaricatissimus	Tangled Pseudanthus	r	SPZ	Establish a 200 m radius SPZ around known populations.
Pseudanthus ovalifolius	Oval-leaf Pseudanthus	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pterostylis aestiva	Long-tongue Summer Greenhood	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pterostylis fischii	Fisch's Greenhood	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pterostylis grandiflora	Cobra Greenhood	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pterostylis oreophila	Blue-tongue Greenhood	e	SPZ	Establish a 200 m radius SPZ around known populations.
Pterostylis uliginosa	Marsh Greenhood	k	SPZ	Establish a 200 m radius SPZ around known populations.
Pultenaea capitellata	Hard-head Bush-pea	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pultenaea fasciculata	Alpine Bush-pea	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pultenaea foliolosa	Small-leaf Bush-pea	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Pultenaea tenella	Delicate Bush-pea	r	SPZ	Establish a 200 m radius SPZ around known populations.
Ranunculus collinus	Strawberry Buttercup	r	SPZ	Establish a 200 m radius SPZ around known populations.
Ranunculus eichlerianus	Eichler's Buttercup	r	SPZ	Establish a 200 m radius SPZ around known populations.
Ranunculus millanii	Dwarf Buttercup	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.

Continued on next page

Management of featured flora occurring in State forest continued

Species Name	Common Name	Status Vic.	Zone*	Management
Rhytidosporum inconspicuum	Alpine Marianth	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Sagina namadgi	Native Pearlwort	v		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Samolus valerandii	Water Pimpernel	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Scirpus polystachyus	Large-head Club-sedge	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Scleranthus fasciculatus	Spreading Knawel	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Scleranthus singuliflorus	Mossy Knawel	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Senecio diaschides	Shingle Fireweed	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Senna aciphylla	Sprawling Cassia	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Solanum linearifolium	Mountain Kangaroo Apple	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Sorghum leiocladum	Wild Sorghum	v	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Stegostyla hildae	Honey Hood	r	SPZ	Establish a 200 m radius SPZ around known populations.
Stylidium montanum	Montane Swamp Trigger-plant	k		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Taraxacum aristum	Mountain Dandelion	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Tasmannia xerophila ssp. *robusta*	Errinundra Pepper	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Tetratheca subaphylla	Leafless Pink-bells	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Thelymitra circumsepta	Naked Sun-orchid	v	SPZ	Establish a 200 m radius SPZ around known populations.
Thelymitra X chasmogama	Globe-hood Sun-orchid	v	SPZ	Establish a 200 m radius SPZ around known populations.
Triglochin minutissimum	Tiny Arrowgrass	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Trochocarpa clarkei	Lilac Berry	r	SPZ	Establish a 200 m radius SPZ around known populations.
Uncinia nemoralis	River Hook-sedge	r		Timber harvesting prescriptions for wetlands, riparian vegetation and rainforest protect the majority of the species habitat in State forest.
Vittadinia tenuissima	Delicate New Holland Daisy	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.
Zieria smithii	Sandfly Zieria	r	SMZ	Field inspection to determine appropriate protection measures is required prior to any disturbance proposed in the vicinity of the record.

Note: *
Current known records in State forest for each of the species is zoned as specified in this table. The zoning of current known records and new records may be varied in accordance with the Conservation Guideline for featured flora.

Status

Victorian

Vic: *Advisory List of Rare or Threatened Plants in Victoria* (DSE2003a)
e Endangered v Vulnerable r Rare k Poorly known x Presumed Extinct

FFG *Flora and Fauna Guarantee Act 1988*
L Listed as threatened under Schedule 2 N Nominated for listing as threatened under Schedule 2
I Rejected for listing D Removed from list

Australian

EPBC: *Environment Protection Biodiversity Conservation Act 1999*
EN Endangered VU Vulnerable EX Presumed Extinct

Appendix M

Management of threatened and other forest fauna

Species Name	Common Name	Status[1]			Management
		VIC	FFG	EPBC	
Mammals					
Potorous longipes	Long-footed Potoroo	EN	L(AS)	EN	There are currently no confirmed records of this species from State forest. Confirmed records of the Long-footed Potoroo in Gippsland adjacent to the North East region will need to be reviewed in light of North East records.
Dasyurus maculatus	Spot-tailed Quoll	EN	L(AS)	VU	See Conservation Guideline, Chapter 3.
Phascogale tapoatafa	Brush-tailed Phascogale	VU	L(AS)	–	There have been no recent records of this species from Gippsland. Manage according to Action Statement if species is located in State forest.
Mastacomys fuscus	Broad-toothed Rat	NT	–	–	Regional (FMA) Prescriptions are considered adequate protection of preferred habitat of dense sedges and grasses along drainage lines. Coupe plans should protect preferred habitat areas near confirmed records in State forest.
Pseudomys fumeus	Smoky Mouse	EN	L	EN	See Conservation Guideline, Chapter 3.
Pesudomys novaehollandiae	New Holland Mouse	EN	L(AS)	–	There are currently no confirmed records of this species from State forest. As an interim measure, any populations discovered in State forest will be included in an SPZ of 100 ha of preferred habitat including the detection site wherever possible. Address fire management regimes through the processes established by the Fire Ecology Working Group. Management will be in accordance with the Action Statement.
Miniopteris schreibersii oceanensis	Eastern Bent-wing Bat	VU	L	–	See Conservation Guideline, Chapter 3.
Rhinolophus megaphyllus	Eastern Horseshoe Bat	VU	L	–	See Conservation Guideline, Chapter 3.
Myotis macropus	Large-footed Myotis	NT	–	–	See Conservation Guideline, Chapter 3.
Pteropus poliocephalus	Grey-headed Flying-fox	VU	L	VU	There are currently no confirmed records of these species from State forest. If active colonies of these species are found on State forest, timber harvesting, roading and fuel reduction burning should be scheduled to minimise disturbance of the colonies. A SPZ of 100 m should be considered for a roost site that has a pattern of regular seasonal use.
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	–	L	–	
Phascolarctos cinereus	Koala	–	–	–	Translocation of koalas into State forest in South Gippsland from outside the South Gippsland exclusion zone is not permitted.
Birds					
Rallus pectoralis	Lewin's Rail	VU	L	–	There are currently no confirmed records of this species from State forest. Regional (FMA) Prescriptions and areas protected by the *Code* are considered adequate protection for the species if found in State forest.
Rostratula benghalensis	Painted Snipe	CR	L	–	
Ixobrychus minutus	Little Bittern	EN	L	–	
Botaurus poiciloptilus	Australasian Bittern	EN	L	–	
Porzana pusilla	Baillon's Crake	VU	L	–	Regional (FMA) Prescriptions and areas protected by the *Code* are considered adequate protection.

Continued next page

Management of threatened and other forest fauna continued

Species Name	Common Name	Status[1]			Management
		VIC	FFG	EPBC	
Lophoictinia isura	Square-tailed Kite	VU	L	–	Establish a 250 m buffer of SMZ in line of sight around all known nest sites. Timber harvesting, road construction and fuel-reduction burning will be avoided in this area during the breeding season. At other times harvesting and road construction will be permitted to within 100 m of nest trees. Visitors will be discouraged and sites will not be publicised.
Haliaeetus leucogaster	White-bellied Sea-eagle	VU	L(AS)	–	Establish a 500 m buffer of SMZ in line of sight around all known nest sites. Timber harvesting, road construction and fuel-reduction burning will be avoided in this area during the breeding season. At other times harvesting and road construction will be permitted to within 100 m of nest trees. Visitors will be discouraged and sites will not be publicised.
Accipiter novaehollandiae	Grey Goshawk	VU	N	–	There are currently no confirmed records of this species from State forest. If found in State forest, establish a 250 m buffer of SMZ around all known nest sites. Timber harvesting, road construction and fuel-reduction burning will be avoided in this area during the breeding season. At other times harvesting and road construction will be permitted to within 100 m of nest trees. Visitors will be discouraged and sites will not be publicised.
Ninox connivens	Barking Owl	EN	L(AS)	–	See Conservation Guideline, Chapter 3.
Ninox strenua	Powerful Owl	VU	L(AS)	–	See Conservation Guideline, Chapter 3.
Tyto novaehollandiae novaehollandiae	Masked Owl	EN	L(AS)	–	See Conservation Guideline, Chapter 3.
Tyto tenebricosa	Sooty Owl	VU	L(AS)	–	See Conservation Guideline, Chapter 3.
Melanodryas cucullata	Hooded Robin	NT	L	–	Vagrant and occasional visitor to Gippsland planning area. No special management required in the planning area.
Chthonicola sagittata	Speckled Warbler	VU	L	–	Vagrant and occasional visitor to Gippsland planning area. No special management required in the planning area.
Neophema pulchella	Turquoise Parrot	NT	L	–	EVC protection incorporates the majority of preferred heathland habitat that occurs in State forest.
Calyptorhinchus lathami	Glossy Black-Cockatoo	VU	L	–	Management will be consistent with the Action Statement that is being prepared and will include mechanisms to conserve stands of She-oak *Allocasuarina littoralis* which occur to some extent in State forest, and are the preferred food source of this species. In the interim, all substantial stands of She-oak will be excluded from harvesting, and nest trees protected as for diurnal raptors.
Pezoporus wallicus	Ground Parrot	EN	L	–	There are currently no confirmed records of this species from State forest. EVC protection incorporates the majority of preferred heathland and sedgeland habitat that occurs in State forest.

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Management of threatened and other forest fauna continued

Species Name	Common Name	Status[1]			Management
		VIC	FFG	EPBC	
Polytelis swainsonii	Superb Parrot	EN	L(AS)	VU	There are currently no confirmed records of these species from State forest. EVC protection incorporates the majority of preferred Box Ironbark habitat that occurs in State forest.
Xanthomyza phrygia	Regent Honeyeater	CR	L(AS)	EN	
Lathamus discolor	Swift Parrot	EN	L	EN	
Hylacola pyrrhopygia	Chestnut-rumped Heathwren	VU	L	–	EVC protection in SPZ incorporates the majority of preferred heathland and Box Ironbark habitat that occurs in State forest.
Reptiles					
Egernia coventryi	Swamp Skink	VU	L	–	Regional (FMA) Prescriptions and areas protected by the *Code* are considered adequate protection.
Pseudomoia cryodroma	Alpine Bog Skink	EN	L	–	Regional (FMA) Prescriptions and areas protected by the *Code* are considered adequate protection. Review and, if necessary, modify grazing licences, road construction and fuel reduction burning regimes in the vicinity of confirmed records.
Eulamprus kosiuskoi	Alpine Water Skink	CR	L(AS)	–	There are currently no confirmed records of these species from State forest. Establish an SMZ around confirmed records on State forest. Review and, if necessary, modify grazing licences, road construction and fuel reduction burning regimes in the vicinity of confirmed records discovered in State forest.
Pseudomoia rawlinsoni	Glossy Grass Skink	NT	–	–	There are currently no confirmed records of these species from State forest. Regional (FMA) Prescriptions and areas protected by the *Code* are considered adequate protection. Review fuel reduction burning regimes in vicinity of confirmed records discovered in State forest.
Varanus varius	Lace Monitor	VU	–	–	Regional (FMA) Prescriptions (e.g. retention of habitat trees) and conservation of a variety of habitats in the SPZ are considered adequate protection.
Amphibians					
Heleioporus australiacus	Giant Burrowing Frog	VU	L(AS)	VU	See Conservation Guideline, Chapter 3.
Litoria spenceri	Spotted Tree Frog	CR	L(AS)	EN	See Conservation Guideline, Chapter 3.
Litoria verreauxii alpina	Alpine Tree Frog	CR	L	VU	See Conservation Guideline, Chapter 3.
Litoria raniformis	Growling Grass Frog	EN	L	VU	Regional (FMA) Prescriptions areas protected by the *Code* are considered adequate protection for these species. The strategy will be reviewed when further information is available on these species.
Litoria aurea	Green and Golden Bell Frog	NT	I	VU	
Uperoleia martini	Martin's Toadlet	DD	–	–	Regional (FMA) Prescriptions and areas protected by the *Code* are considered adequate protection for these species.
Litoria littlejohni	Large Brown Tree Frog	DD	L	VU	
Uperoleia tyleri	Tyler's Toadlet	DD	–	–	There are currently no confirmed records of this species from State forest. Regional (FMA) Prescriptions and areas protected by the *Code* are considered adequate protection.

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Management of threatened and other forest fauna continued

Species Name	Common Name	Status[1]			Management
		VIC	FFG	EPBC	
Fish					
Prototrodes maraena	Australian Grayling	VU	L	VU	Regional (FMA) Prescriptions and areas protected by the *Code* provide protection for these species. Additional protection is afforded along sections of the *Mitta Mitta, Buchan, Mitchell, Thomson, Tambo, Avon, Turton, Dolodrook, Wongungarra and Dargo Rivers and some of their tributaries* through Heritage and Representative Rivers, Natural Catchment Areas and wildlife corridor SPZ zoning.
Gobiomorphus coxii	Cox's Gudgeon	EN	L	–	
Galaxias olidus north eastern Victoria	Mountain Galaxias	DD	–	–	See Conservation Guideline, Chapter 3.
Galaxias cleaveri	Australian Mudfish	CR	L(AS)	–	There are currently no confirmed records of these species from State forest. Regional (FMA) Prescriptions and areas protected by the Code provide protection for these species. Additional protection is afforded along sections of the *Mitta Mitta, Buchan, Mitchell, Thomson, Tambo, Avon, Turton, Dolodrook, Wongungarra and Dargo Rivers and some of their tributaries* through Heritage and Representative Rivers, Natural Catchment Areas and wildlife corridor SPZ zoning.
Galaxiella pusilla macquariensis	Dwarf Galaxias	VU	L	VU	
Maccullochella	Trout Cod	CR	L(AS)	EN	
Gobiomorphus australis	Striped Gudgeon	NT	–	–	
Invertebrates					
Hemiphlebia mirabilis	Hemiphlebia Damselfly	v	L(AS)	–	There are currently no confirmed records of these species from State forest. Regional (FMA) Prescriptions and areas protected by the Code provide protection for these species.
Plectrotarsus gravenhorstii	Caddisfly	k	–	–	
Tanjistomella verna	Caddisfly	v	–	–	
Megascolides australis	Giant Gippsland Earthworm	v	L(AS)	VU	Most records are currently from private land. A conservation guideline will be developed, consistent with the Action Statement, if the species is located in State forest.
Engaeus sternalis	Warragul Burrowing Crayfish	e	L(AS)	–	There are currently no confirmed records of these species from State forest. If found in State forest, management will be in accordance with the Action Statement.
Engaeus phyllocercus	Narracan Burrowing Crayfish	r	L(AS)	–	Regional (FMA) Prescriptions and areas protected by the *Code* provide protection for this species. Modification to stream buffer widths should be considered in developing coupe plans for harvesting operations in the vicinity of known populations. The construction of new roads or stream should be avoided within the streamside buffers for at least 1 km up-stream from the Narracan Burrowing Crayfish site. Where the species occurs in seepage or floodplain zones, snig tracks need to be designed to minimise alteration to the site's normal drainage patterns. Prescription burning within crayfish habitat should be avoided during late spring and early summer. Gullies, seepage zones and floodplain regions should not be burnt during the driest time of the year. Soil moisture should be measured prior to prescription burns within crayfish habitat.

Continued next page

Management of threatened and other forest fauna continued

Species Name	Common Name	Status[1]			Management
		VIC	FFG	EPBC	
Engaeus rostrogaleatus	Strzelecki Burrowing Crayfish	r	L	–	There are currently no confirmed records of these species from State forest. Regional (FMA) Prescriptions and areas protected by the *Code* generally are considered adequate protection, however, additional conservation measures will be developed if the species is located in State forest.
Euastacus neodiversus	South Gippsland Spiny Crayfish	r	L	–	

Notes:
[1] Status:
Victorian

VIC: Advisory List of Threatened Vertebrate Fauna in Victoria (DSE 2003b)

CR	Critically Endangered	EN	Endangered	VU	Vulnerable
EX	Extinct	DD	Data Deficient	NT	Near Threatened

VIC: Threatened Fauna in Victoria (CNR 1995e) (Invertebrates)

e	Endangered	v	Vulnerable	r	Rare
k	Insufficiently known	x	Extinct		

FFG: *Flora and Fauna Guarantee Act 1988*, Schedule II

L	listed	N	nominated for listing	I	invalid or ineligible
(AS)	action statement prepared				

Australian
EPBC: *Environment Protection Biodiversity Conservation Act 1999*

EN	Endangered	VU	Vulnerable	CD	Conservation Dependant

Appendix N

Powerful and Sooty Owl Predictive Habitat Models

Owls and arboreal mammals were surveyed from 1996–98 at 835 sites in Gippsland and the Central Highlands, using playback of owl calls. Sites were selected by stratified random sampling across all tenures of public land (eg. State forest and National Parks). This produced records of four owl species: Southern Boobook (from 340 sites), Powerful Owl (115), Sooty Owl (90), and Masked Owl (11). Habitat data were also obtained at four spatial scales from forest survey information (NRE Geographic Information System (GIS) data).

The survey demonstrated a broad but patchy distribution for these species, with patterns related to Ecological Vegetation Classes (EVCs) and other factors (including gradients of altitude and rainfall, as recognised in previous work). It emerged that Sooty Owls were quite widely distributed through mid Gippsland, whereas previous records came mainly from East Gippsland and the Central Highlands with few records in between. Sooty Owls were not confined to their traditional wet gully habitats, although they generally favoured wetter forest than other owls. Powerful Owls were found in a wide range of forest types including some at high altitude, though they were generally most numerous in foothill forests.

Data on Powerful and Sooty Owls were modelled using logistic regression, with a range of habitat and context data as independent variables. The models suggest Powerful Owls were most likely to be observed at sites with extensive Lowland Forest, Grassy Forest, Shrubby Damp Forest, or Tableland Damp Forest within 2 km, and a high diversity of EVCs at the same spatial scale. They suggest that Powerful Owls avoid sites with extensive Damp, Wet or Montane Forest within 2 km. Sooty Owls appeared most likely to be observed at sites with extensive Damp or Riparian Forest or Rainforest within 2 km, and extensive mature or senescent forest at the same spatial scale. They were least likely to be observed at sites with extensive Subalpine Forest or Grassy Forest within 2 km. Generally, they favoured wetter forest than Powerful Owls, with little overlap (though slightly more than found in North East Victoria).

Models based on mapped variables were fed back onto GIS and used to predict areas where each owl species was most likely to be found. These models were then tested in the field at 71 sites. Field tests showed that each owl species was substantially more likely to be found at sites of high predicted probability of occurrence than at random sites on the initial survey.

The probability maps have been used along with other information to select areas designated in either State forest or the formal reserve system for special management for Powerful and Sooty Owls. This approach will help conserve owls, prey species and elements of old forest within these designated areas. These areas were selected from actual records and predicted sites with high probability of occurrence, across all public land tenures. Areas of at least 500 ha were identified to include substantial areas of high-predicted probability, as well as favoured EVCs and growth stages. The strategy will be reviewed along with the Plan and as new information becomes available.

The distribution of high probability areas for Powerful Owl and Sooty Owl in the CAR reserve system in Gippsland is shown in the table below.

Powerful Owl and Sooty Owl High Probability Areas

Owl Species	High Probability Area (ha)	High Probability Area protected			Total Area Protected	
		Conservation Reserves	SPZ	*Code* Prescriptions	(ha)	%
Powerful Owl	180 565	19 197	50 914	9 783	79 894	44
Sooty Owl	342 610	77 623	87 091	39 611	204 324	60

Note:
High probability areas are those areas indicated by the models to have the highest probability of locating owls.
Code prescriptions refers to areas protected under the *Code of Forest Practices for Timber Production* prescription for exclusion of timber harvesting from streamside buffers and slopes of 30 degrees or more.

Appendix O

Special Water Supply Catchment Areas in Gippsland

Catchment Name	Water protection	Area [1] (km^2)
Agnes River	Town Supply	67
Buchan River (Buchan)	Town Supply	801
Glenmaggie	Irrigation	1 909
Lake Hume	Irrigation	10 062
Lake Hume (Northern)	Town Supply and Irrigation	6 902
Merrimans Creek (Seaspray)	Town Supply	423
Mirboo North	Town Supply	8
Mitchell River (East Gippsland)	Town Supply and Irrigation	3 900
Nicholson River	Town Supply	451
Tambo River	Town Supply and Industrial	2 650
Tarwin River	Town Supply	137
Tyers River	Town Supply	317
Upper Goulburn	Irrigation	2 836

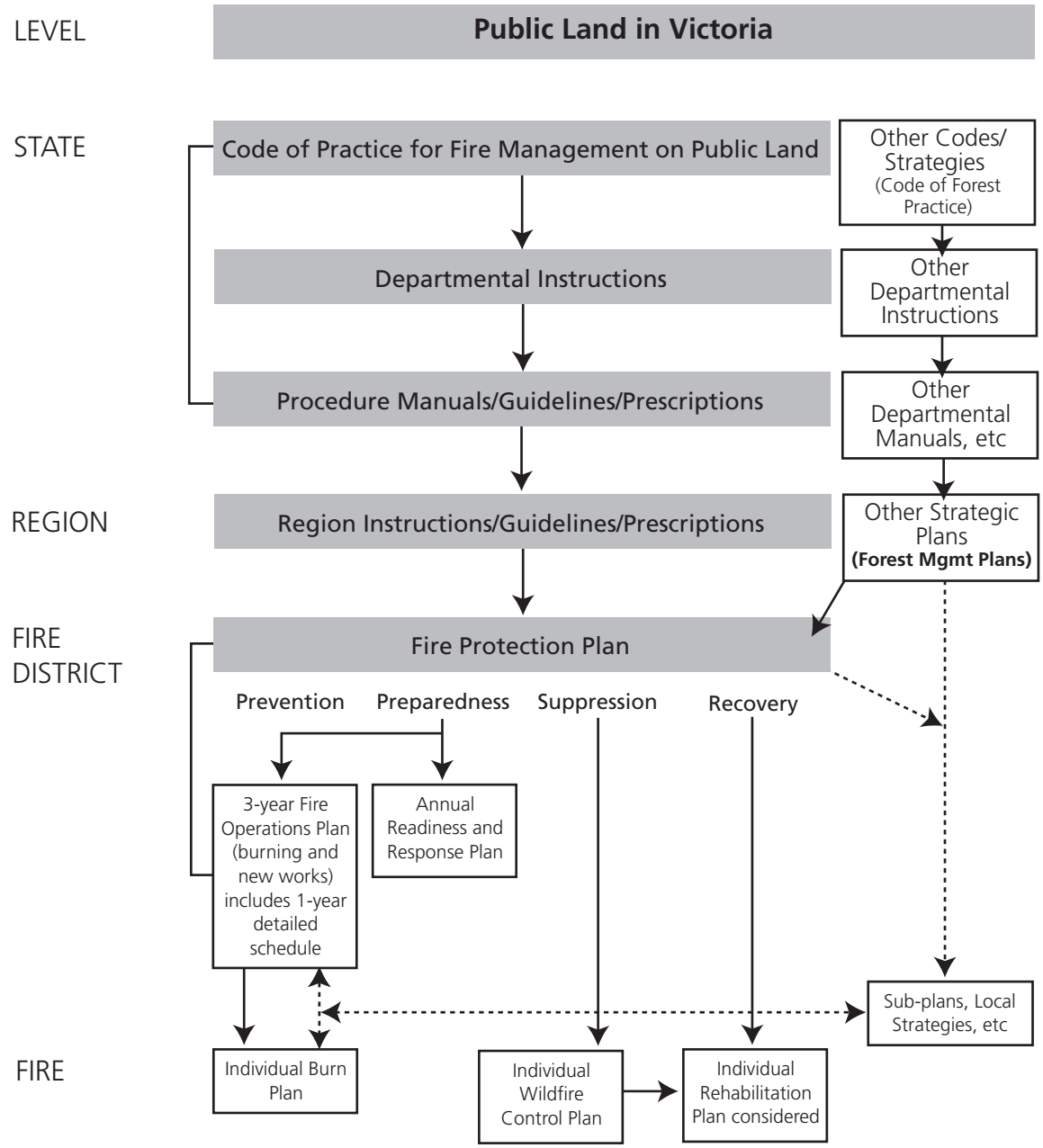
Source (VicRFASC 1999a)

Note:

1 Area indicates the area of the Special Water Supply Catchment Area within the Gippsland planning area. This table includes only Special Water Supply Catchment Areas within State forest covered by this Plan.

Appendix P

Fire management planning on public land in Victoria



(Source: CNR 1995b)

Appendix Q

Interim fire cycle and maximum and minimum fire interval for EVCs in Gippsland

Ecological Vegetation Class (EVC)		Total Area of EVC (ha)	Area in State forest (ha)	Minimum Tolerable Fire Interval [1, 3]	Maximum Tolerable Fire Interval [1, 3]	Fire Cycle [2, 3]
7.	Clay Heathland	685	287	10	50	30
8.	Wet Heathland	7 408	290	10	50	30
15.	Limestone Box Forest	746	140	10	70	40
16.	Lowland Forest	116 680	57 271	10	50	30
18.	Riparian Forest	9 014	4 394	10	70	40
20.	Heathy Dry Forest	85 014	38 017	10	50	30
21.	Shrubby Dry Forest	263 821	181 223	10	50	30
22.	Grassy Dry Forest	33 350	15 888	10	50	30
23.	Herb-rich Foothill Forest	116 605	49 781	10	50	30
27.	Blackthorn Scrub	7 378	5 774	10	60	35
28.	Rocky Outcrop Shrubland	1 807	1 093	10	50	30
29.	Damp Forest [4]	106 062	80 669	10	150	80
30.	Wet Forest [4]	68 453	22 241	20	300	160
35.	Tableland Damp Forest	11 031	9 609	10	150	80
36.	Montane Dry Woodland	131 619	66 384	10	50	30
37.	Montane Grassy Woodland	29 952	18 549	5	50	30
38.	Montane Damp Forest [4]	104 136	60 141	10	150	80
39.	Montane Wet Forest [4]	11 613	7 106	20	300	160
43.	Sub-alpine Woodland	38 388	9 461	20	150	85
45.	Shrubby Foothill Forest	36 887	26 813	10	50	30
47.	Valley Grassy Forest	3 115	498	10	50	30
48.	Heathy Woodland	34 506	7 544	10	50	30
151.	Plains Grassy Forest	19 781	13 231	10	70	40
169.	Dry Valley Forest	18 851	13 240	10	60	35
175.	Grassy Woodland	13 981	1 391	5	50	30
206.	Sub-alpine Grassland	15 386	859	10	150	80
316.	Shrubby Damp Forest	68 162	55 861	10	150	80
319.	Montane Herb-rich Woodland	22 421	12 055	10	50	30

EVCs that are not subject to prescribed fire

Ecological Vegetation Class (EVC)		Total Area of EVC (ha)	Area on State forest (ha)	Minimum Tolerable Fire Interval [1, 3]	Maximum Tolerable Fire Interval [1, 3]	Fire Cycle [2, 3]
31.	Cool Temperate Rainforest [4]	893	178	20	300	160
32.	Warm Temperate Rainforest [4]	2 513	949	20	200	110

Notes:
1 The Minimum and Maximum Tolerable Fire Interval are the minimum and maximum period of time there should be between fires without potential loss of key response species.
2 Fire Cycle is the period of time over which an area equivalent to the total area of a community is burnt.
3 The fire cycle and fire interval has been estimated using limited field information, with some data being collected from outside the Gippsland planning area.
4 These EVCs are generally not subject to fuel reduction burning, but regeneration burning may occur.

Source: (Chatto and McCarthy 2000; Fire Ecology Working Group 2002).

Appendix R

Weeds

Noxious Weeds in Gippsland

Common Name	Scientific Name	West Gippsland CMR [1]	East Gippsland CMR [1]	Recorded in State forest
African Lovegrass	*Eragrostis curvula*	P	P	
Alligator Weed	*Alternanthera philoxeroides*	S	S	
Amsinckia	*Amsinckia* spp.		C	✓
Apple of Sodom	*Solanum linnaeanum*	C	C	
Bathurst Burr	*Xanthium spinosum*	C	C	✓
Blackberry	*Rubus fruticosus* agg.	C	C	✓
Black Knapweed	*Centaurea nigra*	S	S	
Boneseed/Bitou Bush	*Chrysanthemoides monilifera*	P	P	
Boxthorn	*Lycium ferocissimum*	C	C	✓
Californian/Perennial Thistle	*Cirsium arvense*	C	C	✓
Camelthorn	*Alhagi maurorum*	S	S	
Cape Broom / Montpellier Broom	*Genista monspessulana*	C	C	✓
Cape Tulip (one-leaf)	*Homeria flaccida*	P	P	
Chilean Cestrum	*Cestrum parqui*		P	
English Broom	*Cytisus scoparius*	C	C	✓
Fennel	*Foeniculum vulgare*	C	C	
Flax Leaved Broom	*Genista linifolia*	C	P	✓
Furze/Gorse	*Ulex europaeus*	P	P	✓
Great Mullein	*Verbascum thapsus*	P	C	✓
Hawthorn	*Crataegus monogyna*	C	C	✓
Hemlock	*Conium maculatum*	C	C	✓
Hoary Cress	*Cardaria draba*	P	P	
Horehound	*Marrubium vulgare*	C	C	✓
Ivy-leafed Sida	*Sida leprosa*	S	S	
Khaki Weed	*Alternanthera pungens*		P	
Lagarosiphon	*Lagarosiphon major*	S	S	
Marijuana	*Cannabis sativa*	S	S	
Mesquite	*Prosopis* spp.	S	S	
Nodding Thistle	*Carduus nutans*	S	S	✓
Ox-eye Daisy	*Leucanthemum vulgare*	C	C	✓
Pampas Lily-of-the-Valley	*Salpichroa origanifolia*	C		
Parthenium Weed	*Parthenium hysterophorus*	S	S	
Paterson's Curse	*Echium plantagineum*	C	C	✓
Perennial Ragweed	*Ambrosia psilostachya*	S	S	
Poverty Weed	*Iva axillaris*	S	S	
Prairie Ground Cherry	*Physalis viscosa*		P	
Prickly Pear (drooping)	*Opuntia vulgaris*		P	
Prickly Pear (erect)	*Opuntia stricta*	P	P	

Continued next page

Weeds continued

Common Name	Scientific Name	West Gippsland CMR [1]	East Gippsland CMR [1]	Recorded in State forest
Ragwort	*Senecio jacobaea*	C	C	✓
Saffron Thistle	*Carthamus lanatus*	C	C	✓
Salvinia	*Salvinia molesta*	S	S	
Scotch/Heraldic Thistle	*Onopordum acanthium*	C	C	✓
Serrated Tussock	*Nassella trichotoma*	C	P	
Skeleton Weed	*Chondrilla juncea*		C	
Slender/Shore Thistle	*Carduus tenuiflorus / C. pycnocephalus*	C	C	✓
Spear Thistle	*Cirsium vulgare*	C	C	✓
Spiny Rush	*Juncus acutus*	C	P	
St. John's Wort	*Hypericum perforatum*	C	C	✓
Star Thistle	*Centaurea calcitrapa*		P	
Stemless Thistle	*Onopordum acaulon*		P	
Sweet Briar	*Rosa rubiginosa*	C	C	✓
Tangled Hypericum	*Hypericum triquetrifolium*	S	S	
Thorn Apple (common)	*Datura stramonium*		C	
Thorn Apple (long-spine)	*Datura ferox*		C	
Thorn Apple (recurved)	*Datura inoxia*		C	
Topped Lavender	*Lavandula stoechas*	P		
Tree of Heaven	*Ailanthus altissima*		C	✓
Tufted Honeyflower	*Melianthus comosus*	P		
Tutsan	*Hypericum androsaemum*	C	C	✓
Variegated Thistle	*Silybum marianum*	C	C	✓
Water Hyacinth	*Eichhornia crassipes*	S	S	
Wheel Cactus	*Opuntia robusta*		P	
Wild Teasel	*Dipsacus fullonum*	C	C	
Wild Watsonia	*Watsonia meriana* 'Bulbillifera'	C	C	

Notes:
[1] CMR – Catchment Management Region
S – State Prohibited Weeds
P – Regionally Prohibited Weeds
C – Regionally Controlled Weeds

Significant Environmental Weeds

Common Name	Scientific Name
Bridal Creeper (Smilax)	*Asparagus asparagoides*
Cape Ivy	*Delairea odorata*
Dolichos Pea	*Dipogon lignosus*
English Ivy	*Hedera helix*
Pampas Grass	*Cortaderia selloana*
Sweet Pittosporum	*Pittosporum undulatum*
Willows	*Salix* spp.

Note:
These are in addition to environmental weeds already listed as Regionally Controlled or Regionally Prohibited Weeds.

Appendix S

Management of recreation sites and walking tracks

ERICA DISTRICT

Recreation Site	Toilets	Fire-places	Picnic Tables	Information	Camping	SPZ Buffer [1]	Comments
O'Tooles 1&2	Yes	Yes	Yes		Yes	50	Large camping site. Maintain.
Jorgensen's Flat		Yes	Yes			50	Maintain.
The Junction					Yes	50	Maintain.
Locks						50	Maintain.
Merringtons						50	Maintain.
Bruntons Bridge	Yes	Yes	Yes		Yes	50	Maintain.

Walking Track	Length (km)	Class	Signs	Track Notes	Camping	SPZ Buffer [1]	Comments
Australian Alps Walking Track	6	Moderate to steep	Yes	Yes	Yes	50	Maintain.
Morning Star Waterwheel	0.4	Steep	Yes			50	Maintain.
Hanging Rock	0.3	Moderate	Yes			50	Maintain.

HEYFIELD DISTRICT

Recreation Site	Toilets	Fire-places	Picnic Tables	Information	Camping	SPZ Buffer [1]	Comments
Rumpffs Flat	Yes				Yes	50	Maintain.
Barkly Bridge	Yes					50	Launch site for canoes. Maintain.
East Barkly	Yes				Yes	50	Maintain.
Mt Skene Lookout						In Mt Skene SR	
Connors Plain	Add	Add	Add	Add	Add	20	On a major touring route to the North-East; adjacent to the Chairmans Stand. Develop this site.
Cheynes Bridge	Yes				Yes	50	Maintain.
Moroka Gorge Lookout				Yes		50	Maintained by Parks Victoria.
Bennison Lookout				Yes		50	Maintained by Parks Victoria.
The Channel	Add	Yes	Yes			Within Avon-Mt Hedrick SR	Popular day use recreation site.
Dermodys Camp	Add	Add	Yes		Yes	Within Avon-Mt Hedrick SR	

Continued next page

Management of recreation sites and walking tracks continued

Recreation Site	Toilets	Fire-places	Picnic Tables	Information	Camping	SPZ Buffer [1]	Comments
Pearson Point		Yes	Yes			Within Avon-Mt Hedrick SR	
Paddy Lee Crossing			Yes		Yes	50	Maintain.
Valencia Creek			Yes			50	Maintain.
Blue Pool	Yes	Yes	Yes	Yes	Yes	100	Major site. Maintain.
Froam Camp Site		Yes	Yes		Yes	50	Maintain.
McKinnon's Point		Yes	Yes		Yes	50	Maintain.
Winke Creek		Yes	Yes		Yes	50	Maintain.
Lee Creek		Yes	Yes		Yes	50	Maintain.
Pretty Boy Hill			Add	Add		20	Upgrade.
Lennies Cutting		Yes	Yes			50	Picnicking; take-off point for canoeists. Maintain.
Orrs Creek		Yes	Yes			n.a.	Picnic site. Maintain.
Upper Dargo (including Two Mile Creek, Italian Flat, Jimmy Iversons and Ollies Jumpup)	Yes	Yes	Yes		Yes	50	Accommodates large camper numbers. Maintain.
Harrison's Cut						50	Carpark at historic site. No facilities, 4WD access only. Maintain.
Gibraltar		Yes	Yes			50	Maintain.
Black Snake	Add	Yes	Yes		Yes	50	Upgrade.
Bald Top					Yes	50	No facilities. Maintain.
Tablelands					Yes	50	No facilities. Maintain.
30 Mile Creek		Yes	Yes		Yes	50	Maintain.
25 Mile Creek		Yes	Yes		Yes	50	Maintain.
Noon Road					Yes	50 m SMZ	No facilities. Maintain.
12 Mile Creek		Yes	Yes			50 m SMZ	Maintain.
Kinleys Yards		Yes	Yes		Yes	50 m SMZ	Maintain.
Gows Hotel	Add	Add	Add	Add	Yes	50 m SMZ	Upgrade.
Black Flat	Yes	Yes	Yes		Yes	50	Maintain.
Collins Flat		Yes	Yes		Yes	50	Used as part of the Bicentennial National Trail. Maintain.

Continued next page

Management of recreation sites and walking tracks continued

Walking Track	Length (km)	Class	Signs	Track Notes	Camping	SPZ Buffer [1]	Comments
Australian Alps Walking Track	51	Moderate to steep	Yes	Yes	Yes	50	Maintain.
Bicentennial National Trail	78	n.a.	Yes	Yes	Yes	20	Maintain.
McMillans Walking Track	76	Moderate			Yes	Nil	Maintained by the Ben Cruachan Walking Club.
McEvoys Trail	55 approx	Moderate			Yes	Nil	Cultural Trail. Follows roads and tracks accessible by 2WD.
Avon-Mt Hedrick Walking Track	21	Moderate	Yes	Yes	Yes	n.a.	
Ben Cruachan	1.2	Steep				Within Ben Cruachan SR	
Lees Creek	15	Moderate	Yes	Yes	Yes	20	Maintained by the Ben Cruachan Walking Club.

YARRAM DISTRICT

Recreation Site	Toilets	Fire-places	Picnic Tables	Information	Camping	SPZ Buffer [1]	Comments
White Woman's Waterhole	Yes	Yes	Yes		Yes	50	Maintain.
The Gums			Yes			50	Maintain.
Mt Fatigue						Within Mt Fatigue SR	Lookout.

Walking Track	Length (km)	Class	Signs	Track Notes	Camping	SPZ Buffer [1]	Comments
White Woman's Waterhole	1.8	Easy	Yes	Yes	Yes	20	Upgrade signage.

BAIRNSDALE DISTRICT

Recreation Site	Toilets	Fire-places	Picnic Tables	Information	Camping	SPZ Buffer [1]	Comments
Stirling					Yes	50	Upgrade 5 Mile Spur access.
Dogtown					Yes	50	4WD through route. Maintain.
Dawson City					Yes	50	4WD through route. Maintain.
Mount Taylor	Yes					50	Former forest depot. Maintain.

Continued next page

Management of recreation sites and walking tracks continued

Recreation Site	Toilets	Fire-places	Picnic Tables	Information	Camping	SPZ Buffer [1]	Comments
Deptford	Yes	Yes	Yes		Yes	50	Maintain.
Barksheds	Yes	Yes	Yes	Yes		100	Maintain.
Jones Hut					Yes	50	Remote camp site. Maintain.
Marthavale Hut					Yes	20	Remote camp site. Maintain.
Wallers Hut					Yes	20	Remote camp site. Maintain.
Turntable Camp					Yes	20	Maintain.
Seldom Seen Hut					Yes	20	Maintain.
Mt. Elizabeth			Yes	Add	Yes	within Nature Conservation Reserve	

Walking Track	Length (km)	Class	Signs	Track Notes	Camping	SPZ Buffer	Comments
Gippsland Lakes Tramway Trail	5	Easy	Yes	Yes	No	50	
Bicentennial National Trail	3.5	n.a.	Yes	Yes	Yes	20	Maintain.

SWIFTS CREEK DISTRICT

Recreation Site	Toilets	Fire-places	Picnic Tables	Information	Camping	SPZ Buffer [1]	Comments
Bentleys Plain	Yes	Yes	Yes	Add	Yes	within Natural Features Reserve	
Washington Winch				Yes		200 m SMZ	Historic site. Maintain.
Dog's Grave	Yes	Yes	Yes	Yes	Yes	50	Maintain.
Timbarra River	Yes				Yes	50	Remote campsites. Maintain.

Walking Track	Length (km)	Class	Signs	Track Notes	Camping	SPZ Buffer [1]	Comments
Australian Alps Walking Track	4.5	Moderate to steep	Yes	Yes	Yes	50	Maintain.
McMillans Walking Track	9	Moderate to steep			Yes	n.a.	Maintain.
Bentleys Plain Walking Track	1	Easy	Yes			n.a.	Maintain.
Bentleys Plain Waterfall Track ext.	1.5	Easy	Yes			n.a.	Maintain.
Bicentennial National Trail	32.1	n.a.	Yes	Yes	Yes	20	Maintain.

Note:
1 Recreation sites and walking tracks in the Scenic Reserves (Avon-Mt Hedrick, Mt Skene, Ben Cruachan, Mt Fatigue), Bentleys Plain Natural Features Reserve, and Mt Elizabeth Nature Conservation Reserve adjoining State forest have been included within this appendix. These reserves are not subject to this Plan.

Appendix T

Priority works relating to recreation and tourism

District	Locality	Priority Works [1]
Heyfield	Connors Plain	Significant interpretive location on road through to the North-East. Provide toilets, fireplaces, picnic tables, interpretive shelter and camping sites.
Heyfield	Gows Hotel	This site is to be the recreation focus for the Dargo High Plains. Toilets, fireplaces, picnic tables, and interpretive shelter are to be added to the existing camping area.
Heyfield	Pretty Boy Hill	Add picnic tables and interpretive shelter.
Bairnsdale	Haunted Stream (Stirling)	The site is a popular 4WD track within an old mining area. Upgrade access track system and creek crossings.
Bairnsdale	Colquhoun Forest	Construct a 2 km link from the Bairnsdale-Orbost Rail Trail to the boundary of the Regional Park and a 3 km link from the southern boundary of the Regional Park to the top of the Lakes-Colquhoun Road[2].

Notes:
1 Establishment of recreation facilities is to be consistent with the Management Guideline for Recreation Facility Management (see section 7.3).
2 This trail is part of the Gippsland Lakes Tramway Trail project that will link the Bairnsdale-Orbost Rail Trail to Lakes Entrance and will complement the 11 km section of trail that will run through the Regional Park.

Appendix U

Historic value and management of huts in Gippsland

Hut Name	Historic Status[1]	Heritage Status[2]	Refuge Value[3]	Management Action
Erica District				
Walsh's Hut	I	N	C	Maintain.
Nissan Hut	N	N	E	Seek volunteer assistance to maintain the hut[4].
Heyfield District				
Gibraltar Hut	N	N	E	Seek volunteer assistance to maintain the hut[4].
Bairnsdale District				
Jones Hut	N	N	E	Seek volunteer assistance to maintain the hut[4].
Marthavale Hut	U	N	E	Seek volunteer assistance to maintain the hut[4].
Turntable Camp	N	N	E	Seek volunteer assistance to maintain the hut[4].
Seldom Seen Hut	N	N	D	Seek volunteer assistance to maintain the hut[4].
Wallers Hut (Storers Track)	N	N	E	Seek volunteer assistance to maintain the hut[4].
Swifts Creek District				
Moscow Villa	R	RNE-r	C	Maintain.
Bentleys Plain Hut	N	N	C	Maintain.
Pender's Hut	S	N	D	Maintain. Protect historic fabric.
Joe's Hut	N	N	D	Seek volunteer assistance to maintain the hut[4].
McDonald's Hut	I	N	D	Seek volunteer assistance to maintain the hut[4].

Notes:
Key to Codes:

Historic Status[1]
S = State
R = Regional
I = Of Interest
N = No Significance
U = Unclassified

Heritage Status[2]
RNE-r = Recommended for addition to the Register of National Estate
N = Nil

Refuge Value[3]
A = Very High
B = High
C = Moderate
D = Low
E = Nil

4 Assistance will be required from volunteers for these huts to be maintained.

Appendix V

Management of historic places

HPS No	Site	Significance	Management	Buffer	Zone
7540	Albion Mine	Local	Protect historic fabric		
7489	Allenvale-Mt. Taylor Township Site	Local	Protect historic fabric		
7544	Bairnsdale-Orbost Railway	State	Linear	20 m either side of railway line	SPZ
2515	Battery Site (Cast Iron Point Area)	Local		10 m radius	SMZ
2567	Battery Site (Fultons Creek Track)	Local	Protect historic fabric		
2568	Battery Site (Fulton)	Local	Protect historic fabric		
7565	Battery Site (Cassilis)	Local		10 m radius	SMZ
2574	Battle Axe Mine	Local	Protect historic fabric		
5357	Beehive Mine and Boiler	Regional		25 m radius	SMZ
7527	Binns Hotel Site	Local	Protect historic fabric		
1342	Bismark Mine & Machinery Site	State		25 m radius	SMZ
7003	Black Cat Battery	Regional		15 m radius	SMZ
7034	Black Snake Battery & Cyanide Works	Regional		100 m radius	SPZ
2917	Black Snake Creek Township Site	Local	Protect historic fabric		
2510	Blackwall Mine	Local	Protect historic fabric		
2700	Boiler and Steam Engine	Regional		25 m radius	SMZ
7520	Bonanza Mine	Local	Protect historic fabric		
7036	Boyce's Find Reef Workings	Regional	Need to record and establish extent of site		
7528	Boys Reef	Local	Protect historic fabric		
7504	Brookville Sawmill & Tramway	Local	Protect historic fabric		
2729	Brunton Township Site	Regional	Protect historic fabric		
7493	Bullumawaal Township, including Bullumwaal and Bullumwaal South Cemeteries	Regional, Nom. RNE		600 m radius	SMZ
2550	Camp Site (Black Track)	Of interest	Protect historic fabric		
7490	Chairman's Stand	Regional, Nom. RNE	Protect historic fabric		SPZ
7056	Cherry's Battery	Regional		Natural Features Zone. 25 m radius	
7494	Chesters Hut Site	Local	Protect historic fabric		
7517	Chillianwallah Mine	Local	Protect historic fabric		
2571	Clarkes Mine	Local	Protect historic fabric		
7548	Collins No.1 Mill and Tramway	Of interest	Protect historic fabric		
7551	Collins No.2 Mill	Of interest	Protect historic fabric		
7067	Commotion Battery Site	Regional		Natural Features Zone. 25 m radius	
2731	Concord Gully Township Site	Local	Protect historic fabric		
7529	Concord Mine	Local	Protect historic fabric		

Continued next page

Management of historic places continued

HPS No	Site	Significance	Management	Buffer	Zone
7513	Coulston & Rawson Mine	Local	Protect historic fabric		
7074	Crinoline Battery	State		25 m radius	SPZ
7506	Crooked River School Site	Local	Protect historic fabric		
7530	Crooks Hotel Site	Local	Protect historic fabric		
7531	Cumberland Mine	Local	Protect historic fabric		
7563	Dahlsens Mill & Tramway	Local		50 m radius around the mill, 20 m either side of tramway	SMZ
7532	Dawes Hotel Site	Local	Protect historic fabric		
7557	Dawson City Mining Township	Of interest	Protect historic fabric	Natural Features Zone	
2545	Day Dream Mine	Local	Protect historic fabric		
7561	Degreaves Creek Mine	Local	Protect historic fabric		
7080	Deptford Proprietary Mine	State		100 m radius	SPZ
7081	Deptford Township	Regional		100 m radius	SMZ
2925	Dogs Grave	Local, Nom. RNE		10 m radius	SPZ
7082	Dogtown	Regional		Natural Features Zone. 100 m radius	
2513	Donnelly Mine	Local	Protect historic fabric		
7543	Donnellys Creek Alluvial Workings	Regional		20 m either side of creek	SPZ
7271	Donnelly's or Traill Bros. Mine	Regional	Need to record and establish extent of site		
7546	Double Bridges Hotel Site	Of interest	Protect historic fabric		
1346	Edwards Hill Township SIte	State		150 m radius	SPZ
7539	Edwards Mine	Local	Protect historic fabric		
7533	Edwards Reef Cemetery	Local	Protect historic fabric		
2523	Eldorado No. 1 Mine	Local		10 m radius	SMZ
2524	Eldorado No. 2 Mine	Local		10 m radius	SMZ
7558	Elizabeth Marshall Sawmill	Of interest	Protect historic fabric		
2606	Eureka Mine	Local	Protect historic fabric		
7534	Florence Mine	Local	Protect historic fabric		
7553	Fork Town	Of interest	Protect historic fabric		
	Freda Treasure Reserve				SPZ
5781	Freestone Creek Battery	Local		25 m radius	SMZ
7498	Froud's Sawmill	Regional, Nom. RNE		100 m radius	SPZ
2566	Fulton Mine	Local	Protect historic fabric		
2738	Fultons Creek Township Site	Local	Protect historic fabric		
2575	Fultons Hope Mine	Local	Protect historic fabric		
7088	Gambetta Reef Battery Site	State, VHR		200 m radius	SPZ
7505	Geodetic Cairn (Mt. Useful)	State	Protect historic fabric		

Continued next page

Management of historic places continued

HPS No	Site	Significance	Management	Buffer	Zone
1344	Gippsland Consols Machinery Site	State		25 m radius	SMZ
1345	Gippsland Consols Mine	State		25 m radius	SMZ
7499	Gippsland Timber Co. Mill	Regional, Nom. RNE	20 m radius	SPZ	
7092	Gladstone Creek Alluvial Gold Workings	Regional	Need to record and establish extent of site		
7524	Gladstone Mine	Local	Protect historic fabric		
7542	Golden Hill Mine	Local	Protect historic fabric		
7535	Golden Wall Mine	Local	Protect historic fabric		
7500	Goodwood Timber & Tramway Co.	State, Nom. RNE		No machine movement within mill site, bounded on the east by Morris Creek, on the north by Goodwood Road, and on the west and south by lines running due north and due east from 486500 5745000. 5 m either side of tramway formations, 20 m radius around all standing bridges	SPZ
7495	Grave of the unknown women	Local	Protect historic fabric		
7502	Hallett's Sawmill	Regional, Nom. RNE		100 m radius	SPZ
7120	Hans Battery & Mine Site	Regional		Natural Features Zone. 100 m radius	
7541	Harp of Erin Mine	Local	Protect historic fabric		
7122	Harrison's Cut Diversion Sluice	State, VHR		200 m radius	SMZ
5956	Haunted Stream Battery Site	Regional		Natural Features Zone. 25 m radius	
1343	Hit or Miss Mine	State	Protect historic fabric		
7130	Houghton's Flat Diversion Tunnel	State, VHR		200 m radius	SPZ
7567	Hut (near Mt. Phipps)	Of interest	Protect historic fabric		
2508	Hut Site (Fiddlers Green)	Local	Protect historic fabric		
2697	Hut Site (Moondarra Road Area)	Local	Protect historic fabric		
1001	Incline Tramway	Local		5 m either side of tramway	SPZ
7503	Jamieson & Thompson Sawmill	Regional, Nom. RNE		25 m radius	SPZ
2919	Jenkins Township Site	Local	Protect historic fabric		
2812	Jirnkee Water Race	Local		5 m either side of race	SMZ
7153	Lady Vera Battery	State, Nom. VHR		50 m radius	SPZ
7157	Lily Creek Battery and Mine Site	State		100 m radius	SPZ

Continued next page

Management of historic places continued

HPS No	Site	Significance	Management	Buffer	Zone
7545	Little Mississippi Tramway	Local	Linear	5 m either side of tramway	SMZ
2543	Locks Mining Area	Local	Protect historic fabric		
7514	Lord Roberts Mine	Local	Protect historic fabric		
7183	Maid of the Mountains Mine	Local	Protect historic fabric		
2751	Maidentown Township Site	Local		50 m radius	SMZ
1322	Marble Quarry	Regional, Nom. RNE	Protect historic fabric		
7560	Marthavale Farm	Of interest	Protect historic fabric		
75119	Marthavale Mill Site	Local		50 m radius	SMZ
7572	McDonalds Hut	Of interest		10 m radius	SPZ
7310	Melwood (Chinese) Workings	Local	Need to record and establish extent of site		
6212	Melwood (European) Workings	Local	Need to record and establish extent of site		
7569	Merrington's	Local	Protect historic fabric		
7566	Mill Site (south east of Mt. Phipps)	Of interest	Protect historic fabric		
2006	Mine (Deptford Road)	Local	Protect historic fabric		
2507	Mine (Mt. Selma Area)	Local	Protect historic fabric		
2522	Mine (Comet Spur Area)	Local	Protect historic fabric		
2570	Mine (Fulton)	Local	Protect historic fabric		
7564	Mine Site (Cassilis)	Local		100 m radius	SMZ
2127	Mississippi Creek Quarry & Tramline	Regional	Protect historic fabric (Quarry)	5 m either side of tramway	SPZ
7518	Montezuma Mine	Local	Protect historic fabric		
7177	Morning Star Mine and Waterwheel	State, VHR		200 m radius	SPZ
7497	Moscow Villa	Regional		10 m radius	SPZ
7491	Mount Little Dick Fire Tower	Regional, Nom. RNE	Protect historic fabric		
7492	Mount Sugarloaf Fire Tower	Regional, Nom. RNE	Protect historic fabric		
7183	Mountain Maid Battery	Regional		50 m radius	SMZ
7184	Mountaineer Mine Site	Regional		25 m radius	SMZ
7537	Mt. Baldhead Trig Station	Not assessed	Protect historic fabric		
1963	New Chum Battery	State, VHR		100 m radius	SPZ
7516	Newhaven Mine	Local	Protect historic fabric		
2511	Nil Desperandum Mine	Local	Protect historic fabric		
7522	North Commonwealth Mine	Local	Protect historic fabric		
2569	Old Fulton Mine	Local	Protect historic fabric		
2509	Oriental Mine (Aberfeldy River Area)	Local	Protect historic fabric		
2546	Oriental Mine (Fulton)	Local	Protect historic fabric		
2509	Oriental Mine (Aberfeldy)	Local	Protect historic fabric		

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Management of historic places continued

HPS No	Site	Significance	Management	Buffer	Zone
7515	O'Tooles Flat (Farmhouse)	Local	Protect historic fabric		
7547	Penders Hut	State	Protect historic fabric		
7501	Peter Ah Sen's Sawmill	State, Nom. RNE		150 m radius	SPZ
7523	Polly Coates Hotel Site	Local	Protect historic fabric		
7536	Porters Hotel Site	Local	Protect historic fabric		
7222	Red Rose Battery	Regional		25 m radius	SMZ
7559	Sawmill Site (South-west of Mt. Tambo)	Of interest	Protect historic fabric		
2598	Settlement Site	Local	Protect historic fabric		
7526	Shamrock Mine	Local	Protect historic fabric		
2924	Shanahan Township Site	Local	Protect historic fabric		
2573	Shawsar Mine	Local	Protect historic fabric		
2792	Siberia Crossing Siding	Local	Protect historic fabric		
7525	South Gladstone Mine	Local	Protect historic fabric		
6790	Stirling	Local	Protect historic fabric	Natural Features Zone	
2763	Store Point Township Site	Local	Protect historic fabric		
7571	Strobridges Farm	Of interest	Protect historic fabric		
2939	Surveyors Creek Camp	Regional, Nom. RNE	Protect historic fabric. Prepare Conservation Management Plan		
7496	T. Evans Grave Site	Local		10 m radius	SMZ
7538	The Germans (Donnelly's Creek)	Local	Protect historic fabric		
2516	The Prider Mine	Local	Protect historic fabric		
2761	The Springs Township Site	Local	Protect historic fabric		
7266	Tierneys Creek Battery & Mine Site	Regional		100 m radius	SPZ
2808	Tongio West Goldfield	Local	Need to record and establish extent of site		
2584	Tubal Cain Mine	Local		10 m radius	SMZ
7273	Tubal Cain Mine & Battery	Regional		25 m radius	SPZ
2770	Tullamore Township Site	Local	Protect historic fabric		
2547	Tunnel (Connors Plain)	Local	Protect historic fabric		
2703	Tyers-Traralgon Pipeline (incl. quarry and kiln)	Regional, Nom. RNE		10 m either side of track	SMZ
2506	Union Jack Mine	Local	Protect historic fabric		
7552	Unknown Mine (Double Bridges)	Of interest	Protect historic fabric		
7521	Walhalla Great Boulder Mine	Local	Protect historic fabric		
7570	Walsh's Hut	Local	Protect historic fabric		
7449	Washington Winch	State, VHR, Nom. RNE		200 m radius	SPZ
2512	Watson Reward Mine	Local	Protect historic fabric		

Continued next page

Management of historic places continued

HPS No	Site	Significance	Management	Buffer	Zone
2582	Wealth of Nations Mine	Local	Protect historic fabric		
7562	White Bridge Sawmill	Of interest		20 m radius	SPZ
7296	White Star No. 1 Mine Site	State, Nom. RNE		50 m radius	SPZ
7297	White Star No. 2 Mine Site	State, Nom. RNE		50 m radius	SPZ
2923	White Timber Township Site	Local	Protect historic fabric		
7568	Winch Site	Of interest	Protect historic fabric		
7005	Yahoo Creek Battery	Local		10 m radius	SMZ

Definitions:
Historic places that occur on State forest and are selected from the DSE's Historic Places Section database and places identified as containing historic and cultural values of National Estate value

Buffer:
SPZ (m): No timber harvesting or machine movement within specified number of metres from the site
SMZ (m): SMZ within specified number of metres from the site. Timber harvesting may be permitted within the buffer provided that the timber harvesting does not disturb the historic site, or detract from the site's significance

Management:
Protect historic fabric: The site should not be disturbed and all associated artefacts should be left *in situ*

Significance:
Nom. RNE: Sites that have been nominated for inclusion on the Register of National Estate
VHR: Sites listed on the Victorian Heritage Register

Appendix W

Management of aesthetic values and areas of high scenic quality in State forest

Place	Significance	Zone/Management
Erica		
Boola Road	Scenic corridor along tourist road	20 m SMZ on road
Thomson River	Victorian Heritage River	300 m SPZ on river from Coopers Creek to Cowwarr Weir, incorporating LCC Natural Features Zone
Heyfield		
Australian Alps Walking Track (Mt Singleton to Mt Skene Natural Features & Scenic Reserve)	LCC recommendation. Indicative aesthetic value (national estate)	50 m SPZ on walking track
Avon River	LCC recommendation. Indicative aesthetic value (national estate)	100 m SPZ Natural Features Zone on river upstream of Avon – Mt Hedrick Natural Features & Scenic Reserve
Barkly River	LCC recommendation	100 m SPZ Natural Features Zone on river downstream of Barkly River west branch
Ben Cruachan Creek	LCC recommendation	100 m SPZ Natural Features Zone upstream of Avon River
Blue Pool	Locally popular recreation site with high scenic value	Protection provided by Natural Features Zone SPZ on Freestone Creek
Briagolong Forest Red Gum Reserve	High scenic values from Briagolong	Entire reserve included in SPZ
Cobbannah Creek	LCC recommendation	100 m SPZ Natural Features Zone downstream of Cobbannah
Crooked River and Thirty Mile Creek	LCC recommendation	100 m SPZ Natural Features Zone from Grant Historic Area to Basalt Creek
Dargo High Plains Road	High scenic values from road. Indicative aesthetic value (national estate)	100 m SMZ
Dargo River	LCC recommendation. LCC Representative River	100 m SPZ Natural Features Zone from Little Dargo River to Grant Junction
Freestone and Sportsman Creeks, Old Dargo Road	LCC recommendation. Indicative aesthetic value (national estate)	100 m SPZ Natural Features Zone along entire length
Glenmaggie Creek (East Branch)	LCC recommendation	100 m SPZ Natural Features Zone downstream of Black Range Reference Area
Heyfield – Licola Road	Scenic views along road, particularly from Licola	SMZ to protect scenic values
Marathon Road	Scenic drive	Manage to exhibit forest management practices
Mitchell – Wonnangatta Rivers	Victorian Heritage River	The SPZ coincides with the Heritage River
Moroka River	LCC recommendation	100 m SPZ Natural Features Zone between Moroka Road and Little River
Mt Skene Creek	LCC recommendation	100 m SPZ Natural Features Zone from Barkly River to unnamed tributary above Cullen Creek
Valencia Creek	LCC recommendation	100 m SPZ Natural Features Zone downstream of Lamb Flat
Wongungarra River	LCC recommendation. Nom. RNE (Wongungarra River headwaters)	100 m SPZ Natural Features Zone upstream of the Wonnangatta River

Continued next page

Management of aesthetic values and areas of high scenic quality in State forest continued

Place	Significance	Zone/Management
Yarram		
Hyland Highway	Scenic landscapes along tourist route	50 m SMZ on road
South Gippsland Highway	Scenic landscapes along road	SMZ to protect prominent views
Strzelecki Highway	Scenic landscapes along tourist route	50 m SMZ on road
Bairnsdale		
Bruthen – Buchan Road	Scenic corridor along tourist road	50 m SMZ on road
Deptford Road	Scenic corridor along tourist road	50 m SMZ on road
Fairy Dell	LCC recommendation. Nom. RNE	Flora Reserve 50 m SMZ on associated forest drive
Great Alpine Road	Scenic landscapes from tourist route. Indicative aesthetic value. (national estate) (Tambo River Valley Road)	SMZ to protect prominent views
Haunted Stream Valley	Indicative aesthetic value (national estate). Locally popular touring destination	300 m SPZ on river includes 100 m Natural Features Zone and historic sites
Mississippi Creek	LCC recommendation	100 m SPZ Natural Features Zone downstream of Melbourne – Orbost Railway (disused)
Mitchell River	Victorian Heritage River	The SPZ coincides with the Heritage River
Nicholson River	LCC Representative River. Scenic views from locally popular touring route	100 m SPZ Natural Features Zone downstream of Marthavale including SPZ up to track on west side of river and 50 m SMZ west side of Nicholson track
Stutterin' Fred's Lookout	Scenic viewshed from lookout	Maintain site as lookout
Tambo River (part)	LCC recommendation	100 m SPZ Natural Features Zone upstream of Bruthen
Wentworth River	LCC recommendation	100 m SPZ Natural Features Zone upstream of Tabberabbera
Swifts Creek		
Australian Alps Walking Track	LCC recommendation. Indicative aesthetic value (national estate)	50 m SPZ on walking track
Bindi Lookout	Scenic viewshed from lookout	Maintain site as lookout
Buenba Flat	Scenic location	SMZ to protect aesthetic value of site
Dead Horse Creek (part)	LCC recommendation	100 m SPZ Natural Features Zone
Elphick Lookout	Scenic viewshed from lookout	Maintain site as lookout
Great Alpine Road (part)	Scenic landscapes from touring route	SMZ to protect prominent views
Haunted Stream Valley/ Stirling Ghost Town	Indicative aesthetic value (national estate). Locally popular touring destination	300 m SPZ on river includes 100 m Natural Features Zone and historic sites
Mitta Mitta River	Victorian Heritage River	200 m SPZ
Nunniong Forest Drive	Scenic drive	Managed to exhibit current timber harvesting practices. SPZ to protect significant stand of Alpine Ash

Continued next page

Management of aesthetic values and areas of high scenic quality in State forest continued

Place	Significance	Zone/Management
Pendergast Lookout	Scenic viewshed from lookout. Indicative aesthetic value (national estate)	Maintain site as lookout
Spring Creek	LCC recommendation	100 m SPZ Natural Features Zone from Spring Creek Reference Area to freehold boundary
Tambo River (part)	LCC recommendation	100 m SPZ Natural Features Zone including east branch to Garron Creek
Timbarra River	LCC recommendation	100 m SPZ Natural Features Zone from Tambo River to Nunniong Plains. Natural Features & Scenic Reserve, including area surrounding Timbarra Gorge and waterfall on Back River
The Brothers	Scenic location	SMZ to protect aesthetic value of site
Victoria River (part)	LCC recommendation	100 m SPZ Natural Features Zone
Wentworth River	LCC recommendation	100 m SPZ Natural Features Zone upstream of Tabberabbera
Wilkinson Creek	LCC recommendation	100 m SPZ Natural Features Zone from Ferntree Creek to Timbarra River

Definitions:
Nom. RNE: Sites that have been nominated for inclusion on the Register of National Estate for their aesthetic values.
Indicative aesthetic value (national estate): these values were identified in the National Estate Identification and Assessment in the Gippsland Region (VicRFASC 2000b).
Note:
SPZ or SMZ buffer widths specified are applied to each side of the feature to be protected.
Victorian Heritage Rivers are those defined under the *Heritage Rivers Act 1992* and they are shown on Map 2 as conservation reserves.

Appendix X

Road and track closures in State forest in Gippsland

Road or Track Name	Category	Reason for closure
ERICA AREA		
Boola Boola State forest		
C13 and C13W Tracks	R	Rehabilitated
F23 Track	R	Rehabilitated
F22 Track	R	Rehabilitated
Part F21W Track	R	Rehabilitated
Last 0.5 km of F16 Track	R	Rehabilitated
R12 and R12–1 Tracks	P	Obsolete, redundant, duplicated or unnecessary track
R16 Track	P	Obsolete, redundant, duplicated or unnecessary track
Link between W4 and W11 Tracks	S	Protect track surface
Last 0.4 km of W11–4 Track	R	Rehabilitated
W6 Track	R	Rehabilitated
W7 Track	R	Rehabilitated
W8 and W10 Tracks	P	Obsolete, redundant, duplicated or unnecessary track
2 unnamed tracks opposite Boola Camp	R	Rehabilitated
W13 Track	P	Obsolete, redundant, duplicated or unnecessary track
W16 Track	P	Obsolete, redundant, duplicated or unnecessary track
W11–2–1 Track	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off W14 Track	R	Rehabilitated
W11–1 Track	P	Obsolete, redundant, duplicated or unnecessary track
W15 Track	R	Rehabilitated
R14 and R13 Tracks	R	Rehabilitated
W17 and W24 Tracks	P	Protection of water quality
W23 Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water quality
Last 2 km of W28 Track	R	Rehabilitated
W29 Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water quality
2 unnamed tracks north off W31 Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water quality
Last 200 m of W25 and R6 Tracks	R	Rehabilitated
R4 and R5 Tracks	P	Obsolete, redundant, duplicated or unnecessary track
R2 and R3 Tracks	P	Obsolete, redundant, duplicated or unnecessary track
R1 and W33 Tracks	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water quality
C3A Track	R	Rehabilitated
Unnamed track off C7 Track	R	Rehabilitated
Unnamed track opposite C8 Track	R	Rehabilitated
C10 Track	R	Rehabilitated

Continued next page

Road and track closures in State forest in Gippsland continued

Road or Track Name	Category	Reason for closure
Unnamed track off F6 Track	R	Rehabilitated
Unnamed track on the opposite side of Eaglehawk Creek to Humes Road	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed tracks off Eaglehawk Road (adjacent to Humes Road)	P	Obsolete, redundant, duplicated or unnecessary track
2 unnamed tracks off Eaglehawk Road opposite E1 to E4 Tracks	P	Obsolete, redundant, duplicated or unnecessary track
F17 Track	P	Protection of Reference Area
F18 Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of Reference Area
E7 Track from Eaglehawk Creek to track junction, approx 1 km from Eaglehawk Road	P	Obsolete, redundant, duplicated or unnecessary track
E4 and E5 Tracks	R	Rehabilitated
E1 Track	P	Obsolete, redundant, duplicated or unnecessary track
E2 and E3 Tracks	R	Rehabilitated
F11 Track and first unnamed track north off F10 Track	R	Rehabilitated
C5 Track (between C5–1 and C4 Tracks)	P	Obsolete, redundant, duplicated or unnecessary track
C8 Track	R	Rehabilitated
Unnamed track east off C11 Scarf Track (1.4 km from Cowwarr Road)	P	Obsolete, redundant, duplicated or unnecessary track
C15W Track	R	Rehabilitated
C14 Track	R	Rehabilitated
C28 Track	P	Obsolete, redundant, duplicated or unnecessary track
C29 Track	R	Rehabilitated
C30 Track	R	Rehabilitated
C31 Track	R	Rehabilitated
C32 Track	R	Rehabilitated
C35 and C36 Tracks	R	Rehabilitated
Link between C39 and Cowwarr Road	P	Obsolete, redundant, duplicated or unnecessary track
Deep Creek No 3 Track	P	Obsolete, redundant, duplicated or unnecessary track
Loop track at the end of Holmedale Track	R	Rehabilitated
Unnamed track west of Deep Creek No 2 Track	R	Rehabilitated
The middle two of the 4 Gladstone Mine access tracks	P	Obsolete, redundant, duplicated or unnecessary track
3 unnamed tracks off Stoney No 1 track (north of Stoney Creek) after firewood and apiary finished	P	Obsolete, redundant, duplicated or unnecessary track
6 unnamed tracks off Stoney No 1 track (south of Stoney Creek) after firewood harvested	P	Obsolete, redundant, duplicated or unnecessary track
Track incorrectly marked as Stoney No 1 Track	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed link track between Downings Road and T1 Track	P	Obsolete, redundant, duplicated or unnecessary track

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Road and track closures in State forest in Gippsland continued

Road or Track Name	Category	Reason for closure
Unnamed track south off T1 Track (0.5 km south of Stoney Creek Track)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off McEvoys Track (opposite E–W Divide Track)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Stoney Creek Track (opposite Stoney No 5 Track)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off T7 Track	P	Obsolete, redundant, duplicated or unnecessary track
T5 Track	P	Obsolete, redundant, duplicated or unnecessary track
C23–2 Track	P	Obsolete, redundant, duplicated or unnecessary track
C34–1, C34–3 and C34–4–1 Tracks	P	Obsolete, redundant, duplicated or unnecessary track
C39–1, C39–3 and C39–4 Tracks	P	Obsolete, redundant, duplicated or unnecessary track
Aberfeldy State forest		
Western branch of Fiddlers Green Link Track	R	Rehabilitated
FG Carr Track	R	Rehabilitated
Last 1 km of unnamed track off Short Spur Track into Fiddlers Green Creek tributary	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water values
Last 1.5 km of Ash Road and unnamed track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water values
Unnamed dead end track into White Star Creek	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Comet Spur Track	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Walhalla Road	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed tracks off Binns Road	P	Obsolete, redundant, duplicated or unnecessary track
2 unnamed link tracks between Donnelly Creek Track and McEvoys Track	P	Obsolete, redundant, duplicated or unnecessary track
HEYFIELD AREA		
Goulburn State forest		
Queen Bee Road	S	Protect track surface, Protection of conservation values (Spotted Tree Frog)
N17 Track	R	Rehabilitated
CS1 Track to Black River Link Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of conservation values (Spotted Tree Frog)
Black River logging road	P	Obsolete, redundant, duplicated or unnecessary track, Protection of conservation values (Spotted Tree Frog)
Monds Creek Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of conservation values (Spotted Tree Frog), Black River Track will be upgraded for all weather 4WD access
Unnamed track off N2 Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of conservation values (Spotted Tree Frog)
S3 Track and unnamed parallel track	R	Rehabilitated
Champion Spur Track	P	Obsolete, redundant, duplicated or unnecessary track
N13 and N14 Tracks	R	Rehabilitated
Spur track south of helipad above Black River	R	Rehabilitated
L10 Track	P	Obsolete, redundant, duplicated or unnecessary track Protection of conservation values (Spotted Tree Frog)

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Road and track closures in State forest in Gippsland continued

Road or Track Name	Category	Reason for closure
Last 1 km of CS4 Track and unnamed track off CS2 Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of conservation values (Spotted Tree Frog)
First 500 m of Burnt Camp Track from Champion Spur Track (600 m south of Black River Track intersection) to stream crossing	P	Protection of water values
L1–L5 Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of conservation values (Spotted Tree Frog)
Black River Track off Lazarini Spur Road	Re	Rename – Champion Spur Track
Macalister State forest		
Black Soil Gully Track	S	Protect track surface
Grimme Track	S	Protect track surface
N19 Track	R	Rehabilitated
Last 2 km of S7 Track	R	Rehabilitated
Last 1.5 km of S5 Track	R	Rehabilitated
Last 1 km of S4 Track into Water Tree Creek	R	Rehabilitated
S8 Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water values
N12 Track	R	Rehabilitated
Unnamed track off Bull Plain Road opposite Grime Creek Track (Nobs Track)	R	Rehabilitated
Unnamed road heading north at intersection of SOB Spur Track and Bull Plain Road (north of East Barkly camp site)	Re	Rename – The Nobs Track
Nobs Track from Bull Plain Road to Blue Plains Spur Track	Re	Rename – Grimme Creek Track
2 unnamed tracks off Mountain Ash Track (1 km north of Bones and Mildew Hut)	P	Obsolete, redundant, duplicated or unnecessary track
2 unnamed link tracks between Mountain Ash Track and Middle Ridge Road (2 km south east of Bones and Mildew Hut)	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water values
Unnamed track at Rumpff Saddle	P	Obsolete, redundant, duplicated or unnecessary track
Last 1.5 km of N28 Track	P	Obsolete, redundant, duplicated or unnecessary track
Last 1 km of N27 Track	P	Obsolete, redundant, duplicated or unnecessary track
N29 Track	P*	Obsolete, redundant, duplicated or unnecessary track, Protection of water values
Middle 2 km of L3–L6 Track	P#	Obsolete, redundant, duplicated or unnecessary track, Protection of conservation values (Spotted Tree Frog)
Violet Spur Track adjacent to private property	P	Obsolete, redundant, duplicated or unnecessary track
Cob Spur Track adjacent to private property	P	Obsolete, redundant, duplicated or unnecessary track
Last 2 km of unnamed track north of Green Hills	P	Obsolete, redundant, duplicated or unnecessary track
Old alignment of Green Hills Track	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Green Hills Track	R	Rehabilitated
2 unnamed tracks off Green Hills Link Road	P	Obsolete, redundant, duplicated or unnecessary track

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Road and track closures in State forest in Gippsland continued

Road or Track Name	Category	Reason for closure
Unnamed track off McEvoys Track (1 km south of White Star Track)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off McEvoys Track (1 km north of Morning Star Track)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed link track between Black Range Track and Glenmaggie Creek Track	P	Obsolete, redundant, duplicated or unnecessary track
3 unnamed tracks off Glenmaggie Creek Track	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off McEvoys Track at Yangoura	P	Obsolete, redundant, duplicated or unnecessary track
2 unnamed tracks off Bark Hut Track	P	Obsolete, redundant, duplicated or unnecessary track
Last 1.5 km of unnamed track into Morning Star Creek off McEvoy's Track	P	Obsolete, redundant, duplicated or unnecessary track
Carey State forest		
6 unnamed tracks south off Tamboritha Road between B1 Track and B2 Track	R	Rehabilitated
Unnamed track north off B1 Track (2.4 km from Tamboritha Road)	R	Rehabilitated
Unnamed track off Moroka Road (1 km east of Clover Flat)	P	Obsolete, redundant, duplicated or unnecessary track
The Dry Hills Track	P##	Obsolete, redundant, duplicated or unnecessary track, Protection of water quality, Protection of conservation values
Unnamed tracks off MacFarlane Track	P	Obsolete, redundant, duplicated or unnecessary track
5 unnamed tracks east off Tamboritha Road between both access points to B2 Track	R	Rehabilitated
BRIAGALONG AREA		
Avon State forest		
2 unnamed tracks off New Place Tracks (opposite Grand Final Spur Track)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Moroka Valencia Creek Road (3 km north of Mother Hardy)	P	Obsolete, redundant, duplicated or unnecessary track
Stans Track (alternate constructed)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track south off Avon Track (opposite Mount Hump Track)	R	Rehabilitated
2 unnamed tracks west off Ben Cruachan Road	R	Rehabilitated
Last 0.5 km of unnamed track off Huggett – Mt Angus Track	P	Obsolete, redundant, duplicated or unnecessary track
3 unnamed tracks off the southern end of Lower Block Track	R	Rehabilitated
Briagolong State forest		
Unnamed track off Insolvent Road	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed tracks 400 m south east, and 1 km north-east, off through track from Letter Box Road to pine plantations.	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Three Bridges Road	P	Obsolete, redundant, duplicated or unnecessary track

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Road and track closures in State forest in Gippsland continued

Road or Track Name	Category	Reason for closure
Middle Road	P	Obsolete, redundant, duplicated or unnecessary track, Protection of conservation values
Unnamed track off Briagolong Stockdale Road (between Middle Road and Jimmy Road)	P	Obsolete, redundant, duplicated or unnecessary track, Protection of conservation values
Jimmy Road	P	Obsolete, redundant, duplicated or unnecessary track Protection of conservation values
Unnamed track off Quarry Road (0.3 km south of Sounding Gap Road)	P	Obsolete, redundant, duplicated or unnecessary track
Snail Pace Road from intersection with Trio Gully Road to Sounding Gap Road	P	Obsolete, redundant, duplicated or unnecessary track
Coloe Creek Track (alternate constructed)	P	Obsolete, redundant, duplicated or unnecessary track
Last 4 km of Trails Track (alternate constructed)	P	Obsolete, redundant, duplicated or unnecessary track
Tabberabbera logging road between Dargo Road and Telstra Communications Tower	P	Obsolete, redundant, duplicated or unnecessary track
5 unnamed tracks off Treasure Track	P	Obsolete, redundant, duplicated or unnecessary track
2 unnamed tracks off Halloran Track	P	Obsolete, redundant, duplicated or unnecessary track
Last 3 km of 65 Fire Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water values
Bulgoback Creek Track	P	Obsolete, redundant, duplicated or unnecessary track
4 unnamed tracks off Reedy Creek Track	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed link track between Budgee Track and Dargo Road (0.5 km west of Cobbannah)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Bairnsdale Dargo Road at Stony Creek	P	Obsolete, redundant, duplicated or unnecessary track
2 unnamed tracks off Davey Knob Track	R	Rehabilitated
Calejero Road north of intersection with Boundary Track	P	Obsolete, redundant, duplicated or unnecessary track
4 unnamed tracks off Blanket Wood Track	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off the north end of Rim Track (2 km from Marathon Road)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Marathon Road (1 km north of Blomford Track)	P	Obsolete, redundant, duplicated or unnecessary track
2 unnamed tracks off Lloyd Knob and Lee Creek Tracks (1 km from Rim Track)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track along Kennedys Creek	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water values
2 unnamed tracks off Marathon Road (1.5 km south of Grand Final Spur Track)	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Marathon Road opposite Toggle Hill Track	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed link track between Toggle Hill Track and Pyrites Creek (adjacent to Wombat Gully)	P	Obsolete, redundant, duplicated or unnecessary track
DARGO AREA		
Venture Spur Track	P	Obsolete, redundant, duplicated or unnecessary track
Frosty Creek Track	P	Obsolete, redundant, duplicated or unnecessary track, Protection of water quality

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Road and track closures in State forest in Gippsland continued

Road or Track Name	Category	Reason for closure
9 unnamed tracks off Basalt Knob Track	P	Obsolete, redundant, duplicated or unnecessary track
Link track between Jeff Davis Spur Track and Dargo High Plains Road	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track on Gibraltar Spur off Riley Creek Road	P	Obsolete, redundant, duplicated or unnecessary track
Last 0.4 km of Two Mile Creek Track off Upper Dargo Road	P	Obsolete, redundant, duplicated or unnecessary track
Unnamed track off Clark Camp Road	P	Obsolete, redundant, duplicated or unnecessary track
SWIFTS CREEK DISTRICT		
Youngs Hut Track (above Grays Hill Track junction)	S	Protect track surface
Dinner Plain Track	S	Protect track surface
Victoria River Track	S	Protect track surface
Messmate Spur Track	S	Protect track surface
Sunshine Wattle Track	S	Protect track surface
Marble Gully Track	S	Protect track surface
Nunniong Plains Track	S	Protect track surface
Nunnett Road (above Glenmore Road junction)	S	Protect track surface
Nugong Escarpment Track	S	Protect track surface
Nunniong Road (above Bentleys Plain Road junction)	S	Protect track surface
Spike Jones Track	S	Protect track surface
Sawpit Road	S	Protect track surface
Sawpit Link Road	S	Protect track surface
Granite Flat Track	S	Protect track surface
Ski Road	S	Protect track surface
Wheatfield Road	S	Protect track surface
Wheatfield Track	S	Protect track surface
Diggers Hole Road	S	Protect track surface
Jam Tin Flat Track	S	Protect track surface
Wombat Creek Track (Razorback Spur Track to Wombat PO Hut)	S	Protect track surface
Eight Mile Loop Track	S	Protect track surface
Knocker Link Track	S	Protect track surface
Besford Track	S	Protect track surface
Buckwong Track (Mt. Murphy Track to Davies Plain Track)	S	Protect track surface
Misery Trail (Dapples Creek Road to Davies Plain Track)	S	Protect track surface
Lightning Creek Track	S	Protect track surface

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Road and track closures in State forest in Gippsland continued

Road or Track Name	Category	Reason for closure
BAIRNSDALE DISTRICT		
Danes Track	S	Protect track surface
Murdering Spur Track	S	Protect track surface
Quarry Creek Road	S	Protect track surface
Boomerang Spur Track (below Boomerang Spur Road)	S	Protect track surface
Dawson City Track	S	Protect track surface
Joes Track	S	Protect track surface
Valentines Track	S	Protect track surface
Turntable Track	S	Protect track surface
Mt. Dow Track	S	Protect track surface
Moomba Spur Track	S	Protect track surface
Haunted Stream Track (above Stirling)	S	Protect track surface
Colquhoun State forest		
Kennedy Track	P	Obsolete, redundant, duplicated or unnecessary track
Dead Cow Track	P	Obsolete, redundant, duplicated or unnecessary track
Gerry Track	P	Obsolete, redundant, duplicated or unnecessary track
Bo Bo Track	P	Obsolete, redundant, duplicated or unnecessary track
Evans Boundary Track	P	Obsolete, redundant, duplicated or unnecessary track
Sprano Track	P	Obsolete, redundant, duplicated or unnecessary track
Haver Track	P	Obsolete, redundant, duplicated or unnecessary track
Jim Track	P	Obsolete, redundant, duplicated or unnecessary track
Lambourn Track	P	Obsolete, redundant, duplicated or unnecessary track
Gordon Track	P	Obsolete, redundant, duplicated or unnecessary track
C.H. Cross Track	P	Obsolete, redundant, duplicated or unnecessary track
Bruce Track (from Bruce Road to Seaton Track)	P	Obsolete, redundant, duplicated or unnecessary track
Todd Track	P	Obsolete, redundant, duplicated or unnecessary track
Pine Track	P	Obsolete, redundant, duplicated or unnecessary track
Noble Track	P	Obsolete, redundant, duplicated or unnecessary track
Box Spur Track	P	Obsolete, redundant, duplicated or unnecessary track
Millies Track	P	Obsolete, redundant, duplicated or unnecessary track

Category:
S – Seasonal closure of roads and tracks
P – Permanent closure of roads and tracks, requiring rehabilitation
R – Rehabilitated tracks that need to be removed from maps of the current road network
P* – Permanent closure and rehabilitation unless the whole road is scheduled for immediate road improvement work for commercial timber harvesting purposes
P# – Permanent closure and rehabilitation unless an option can be identified to retain the track whilst ensuring protection of conservation values (Spotted Tree Frog).
P## Permanent closure and rehabilitation unless an option can be identified to retain access to Rocky Nob whilst ensuring protection of conservation values. Permanent closure of southern part of the track.
Re – Rename road or track

Appendix Y

List of individuals and organisations who made submissions in response to the Proposed Gippsland Forest Management Plan

Australian Deer Association Inc, East Gippsland Branch
Australian Paper Maryvale Mill
Bird Observers Club of Australia
City of Latrobe
Confidential (x2)
East Gippsland Catchment Management Authority
Friends of Gippsland Bush Inc
Gippsland Apiarists Association
Gippsland Coastal Board
Gippsland Water
Glen Wills Mountain Retreat
juzzysurf
Latrobe Valley 4WD Club Inc
Margaret & Peter Kurz
Mr C G Grace
Mr Fred Ward
Mr Kim Devenish & Ms Julie Constable
Mr Peter Cooney
Mr Steve Mathews
Ms Bronwyn Evelyn
National Trust Australia (Victoria), Landscape Committee
Neville Smith Timber Industries Pty Ltd
North East Catchment Management Authority
Pajero 4WD Club of Victoria Inc
Prospectors and Miners Association, East Gippsland Branch
South Gippsland Conservation Society Inc
Tambo Logging Company Pty Ltd
Victoria Association of Four Wheel Drive Clubs
Victorian Association of Forest Industries
Victorian National Parks Association Inc.
VicWalk, Federation of Victorian Walking Clubs Inc
Wellington Shire Council

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