



ANGAHOOK-OTWAY INVESTIGATION DRAFT PROPOSALS PAPER

VICTORIAN
ENVIRONMENTAL
ASSESSMENT
COUNCIL



MAY 2004



WHAT IS VEAC?

The Victorian Environmental Assessment Council was established in 2002 – under the *Victorian Environmental Assessment Council Act 2001* – to replace the Environment Conservation Council (ECC) as the body providing the State Government with independent advice on strategic public land-use planning.

The five VEAC Councillors are:

(Chair) Dr Brian Robinson, AM, FTSE, B.Sc., Ph.D. – the former chair of the Environment Protection Authority, Brian has a wealth of experience in sustainable development and natural resources management.

Dr Brian Robinson, inaugural Chairperson of VEAC, passed away on Friday, 30 April 2004. Dr Robinson led the Angahook-Otway Investigation and oversaw preparation of this Draft Proposals Paper. VEAC Council members and staff wish to acknowledge his contribution to the Council, and his commitment to a fair process and sustainable public land use outcomes.

Dr Sarah Ewing, B.Sc. (Hons), M.Sc., Ph.D., Grad. Dip. Ed. – currently a member of the Victorian Catchment Management Council and formerly a deputy member of the Australian Landcare Council, Sarah has many years experience in catchment and natural resource management issues.

Mr Duncan Malcolm – currently the Chairman of the Gippsland Coastal Board and Watermark Inc.; immediate past Chairman of Lakes and Wilderness Tourism Association, immediate past chair and current board member of Irrigation Association of Australia and member of the Victorian Coastal Council.

Dr David Mercer, BA (Hons), Ph.D., Dip.Ed. – fellow of The Environment Institute of Australia and New Zealand, David has broad expertise in natural resource management, recreation and tourism and also highly regarded academic experience.

Mrs Eda Ritchie, Grad. Dip. Bus. – formerly a member of the Environment Conservation Council, Trust for Nature Board and the Chairperson of the Western Region Coastal Board, Eda has a strong background in farming in Western Victoria.

SUBMISSIONS INVITED

Submissions are now invited from interested groups and individuals on these proposals for consideration for the Final Report to be published in September 2004. Submissions should be addressed to the Executive Officer at the address below or by fax or e-mail. If submissions are sent by fax or e-mail, please include a postal address if you wish to receive progress reports on the investigation.

The submission period closes on **MONDAY 19 JULY 2004.**

NOTE THAT ONLY SUBMISSIONS SENT DIRECTLY TO VEAC CAN BE TREATED AS SUBMISSIONS.

Unless specifically requested otherwise, all submissions to VEAC become public documents. If you wish your submission to be considered confidential, a written request must accompany the submission. If the confidentiality request is not accepted, your submission will be returned to you.

Information contained in all submissions may also be stored and used by VEAC or the Department of Sustainability and Environment, for purposes relating to the Angahook-Otway Investigation and subsequent government consideration of matters related to the investigation.

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MESSAGE FROM THE COUNCIL

The Otways are greatly valued and appreciated by many in our community, including full and part-time local residents, the broader Victorian and Australian population and, of course, the many international visitors attracted to the area. Many of these residents and visitors have been attracted primarily by the high natural values and inherent beauty of the area. As a result this unique area boasts international standard facilities but retains its natural values and a small town community feel that continues to attract residents and visitors.

There is no doubt the population of the Otways will continue to grow. Growth always brings change, which in turn brings problems and issues that need to be resolved. In the Otways the opportunity now exists to ensure that long term ecologically sustainable outcomes are developed to benefit the whole community. Our task has been to assist and work with the community in this process.

We have considered the values of the area in detail, and have received considerable input from the community on the things that are valued. Our extensive community consultation has included many of those involved in management of the area, and we have endeavoured to consider all the pressures and tensions on the area itself and within the communities it supports. With so many competing demands, this has been a difficult task and we have sought to cater for these demands while protecting the area for current and future generations.

Our proposals—under the umbrella of an **Otways Park**—are intended to balance competing demands and assist in establishing a seamless and integrated management framework over the large areas of public land in the region, protecting them while enabling further development of the area to benefit the community as a whole. We hope that the community will see the proposals as a key component in planning for a stable and prosperous future in a sustainably managed and well-protected Otways region.

The proposed major new Otway Ranges National Park and the existing marine national parks will form an almost continuously linked stretch of public land and water from the inland plains to the ocean. These highly protected areas will be complemented by other areas of public land catering to a range of recreational and other uses, and by private land for residential, farming, and business occupation. Traversing the region is the Great Ocean Road and other key roads which will also be protected to ensure that the values that have attracted people to the area are not compromised.

Council appreciates greatly the assistance the community has given to date and particularly the hundreds of thoughtful and often detailed written submissions we have received. We expect that the proposals in this Paper will be

debated by the community and look forward to receiving the further views of all with an interest in this unique and beautiful area. Your input will be used as we develop our Final Report to go to the Minister for the Environment in September this year.

Dr Brian Robinson (Chairman)

Dr Sarah Ewing

Dr David Mercer

Mr Duncan Malcolm

Mrs Eda Ritchie





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THIS DRAFT PROPOSALS PAPER

This Draft Proposals Paper is the second report published in VEAC's Angahook-Otway Investigation, following the Discussion Paper published in September 2003. This paper contains draft proposals for the Angahook-Otway study area based on information on the values and uses of public land in the Otways (largely as presented in the Discussion Paper) and information and views in the 1100 submissions received to date. The draft proposals for public land are shown in Map A (for the whole study area) and Maps B and C (detail at Lorne, and Aireys Inlet and Anglesea), in the back pocket of this paper.

This paper is intended to be as self-contained as possible, providing all the key information directly relevant to the proposals themselves. Some readers, though, may wish to access the more comprehensive and detailed information contained in the previously published Discussion Paper – copies of the Discussion Paper are available from the same locations as this Draft Proposals Paper, including the free downloads at the VEAC website www.veac.vic.gov.au

VEAC will be receiving submissions in response to these draft proposals until 19 July 2004 (details inside front cover), and will be consulting with the community in the study area up until that time. The Council's next report will be the Angahook-Otway Final Report, due with the Minister for the Environment by 3 September 2004. This report will be released by the Minister within seven days of receiving it.

After the introductory section there are three major parts to this paper:

Part 1 (chapters 2 to 5) provides the draft proposals themselves, including proposals for the establishment of the over-arching Otway Park and general proposals for the entire study area (**chapter 2**), and proposals for particular public land use categories (**chapters 3 to 5**).

Part 2 (chapters 6 to 12) discusses the issues raised in the preceding stages of the investigation in the context of their bearing on the draft proposals.

Part 3 (chapter 13) analyses the social, economic and environmental implications of the proposals, including for the key public land uses and values of the Otways.

At the end of the report, **Appendix 1** lists the scientific names and conservation status of all plant and animal species mentioned in the text, **Appendix 2** is a summary of the environmental, social and economic implications of the draft proposals, and **Appendix 3** is a list of submissions received in response to the Discussion Paper.

FULL DETAILS FOR MAKING A SUBMISSION ARE INSIDE THE FRONT COVER.

THE SUBMISSION PERIOD CLOSSES ON 19 JULY 2004.



SUMMARY OF DRAFT PROPOSALS

The Otways Park

VEAC has adopted an innovative new approach with the aim of integrating and simplifying public land use in the Otways. Firstly, VEAC has proposed that the great majority of public land in the Otways (146,005 ha) be included within an **over-arching Otways Park**—to create a focus for coordinated and integrated management. VEAC has further simplified public land use by assigning the public lands encompassed by the umbrella Otways Park to just two units—a single national park and a new land-use category, the suggested name for which is “Forest Park”.

The objective of placing these two units under the ‘Otways Park’ umbrella is to provide a framework for improved and cost-effective public land management, with seamless management across the two units ensuring maximum benefits and clarity of responsibility for all stakeholders.

The proposed **Otway Ranges National Park** covers 98,205 ha, linking the existing Otway National Park, and Angahook-Lorne, Carlisle, and Melba Gully State Parks and many state forest areas and smaller reserves. The proposed national park will provide for biodiversity conservation and a range of exciting opportunities for visitors to the region and encompasses a range of environments, including the majestic mountain forests, spectacular coastal views along the Great Ocean Road and inland waterfalls.

The **Otway Forest Park** encompasses some 47,800 ha and provides for recreation, nature conservation and minor resource utilisation. This new category is similar to the existing state forest and regional park categories, and is proposed in response to the desire for a diverse range of recreation activities in the natural environment of the Otways. Compared to state forest, the forest park category is focussed more strongly on recreational use and protection of natural values, and significantly less strongly on commercial resource. The forest park category has broad applicability, unlike regional parks which are generally associated with particular towns.

Conservation Reserve System

VEAC is proposing to double the total area of permanent conservation reserves from the existing 49,355 ha to 101,960 ha. The total area with the highest level of protection—in national or state parks—is proposed to increase from 38,690 ha to 98,205 ha.

The proposed reserve system has been designed to maximise protection of natural values, particularly where protection in reserves is a key conservation requirement.

This approach results in much better representation of threatened species sensitive to major habitat disturbance and requiring large contiguous areas of habitat (such as the spot-tailed quoll and masked owl) than is currently the case.

In addition, the proposed reserve system significantly increases the representation of a number of key vegetation types that are currently poorly protected in permanent reserves: lowland forest, herb-rich foothill forest, riparian forest and cool temperate rainforest, for example.

Outside the permanent conservation reserve system, the Otway Forest Park will also offer protection for natural values. Here, significant values at particular sites—such as waterfalls, historic places, threatened species and poorly represented vegetation types—are to be protected. Furthermore, reduced emphasis on commercial resource utilisation (particularly after the phase-out of logging and woodchipping by 2008) will reduce pressure on natural values.

Finally, the umbrella Otways Park will enhance biodiversity conservation by improving management arrangements, for instance by enabling coordinated control of pest plants and animals.

Recreational Access

The Otways region is an important and popular location for a wide range of recreational pursuits from fishing and four wheel driving, to walking and birdwatching. VEAC keenly appreciates the need to ensure that opportunities for such activities are maintained under its proposals.

A key objective of the proposed forest park is the provision of opportunities for recreational pursuits in enjoyable natural settings. Dog walking, dispersed camping and hunting are some of the activities that are specifically catered for within the proposed forest park, along with other active pursuits such as trail and mountain bike riding. Of course, more passive undertakings like nature study, walking and sightseeing will also be able to take advantage of the considerable natural assets of the forest park.

The proposed national park, while protecting conservation values, also offers facilities and access to key natural assets such as waterfalls and rainforest. Provision of access for many popular recreational pursuits including four wheel driving will continue on the roads across the Otways. Localised areas within the proposed national park can accommodate activities such as horse riding, and dog walking that, more generally, are not compatible with national park values.

Industries and Commercial Uses

In preparing its proposals, VEAC has endeavoured to minimise the negative effects on industries operating on public land in the Otways. Establishment of the Otways Park will offer significant benefits to many industries operating on public land through improved management of that land, and simpler administrative and planning arrangements. In summary, implications for each industry are as follows:

Tourism: Tourism is the largest industry in the Otways, and VEAC's proposals will allow this dynamic industry to continue its rapid expansion while ensuring that the natural values on which it depends are protected.

Sawlog and Woodchip Harvesting: Sawlogging and woodchipping will be allowed in the proposed forest park until 2008 when the Government's phase-out of these industries from public land in the Otways will come into effect.

Minor Forest Produce: Large areas of forest park are proposed to continue to remain available for firewood and other minor forest produce such as tea tree stakes. Some areas close to Colac—the area of main demand for firewood—are proposed for inclusion in the national park and will not be available for minor forest produce. This change may displace some firewood production to more distant areas.

Extraction of Sand, Gravel and Stone: The Otways public lands are an important source for many extractive industry products and no current operations will be adversely affected by the proposals. Current operations will continue either outside the proposed national park or under provisions of the *National Parks Act 1975*. New licences can be issued in all public land categories (generally subject to approval by the Minister for the Environment) except the proposed national park.

Mining and Exploration: There are no operating mines on public land in the Otways, although some public land is subject to exploration licences. It is proposed that these licences be allowed to continue under provisions of the *National Parks Act 1975*. New licences can be issued in all public land categories (generally subject to approval by the Minister for the Environment) except the proposed national park.

Agriculture: There are around 540 current licences, covering about 2040 ha, for grazing domestic stock on public land in the Otways. Nearly all of these licences (97 percent by number, 94 percent by area) will continue unaffected by the proposals. The proposals will result in cancellation of all or part of 16 licences, covering about 126 ha, although approximately 56 ha is actually grazed. Implementation of the proposals may also require fencing of some of the currently-licensed areas.

Commercial Fishery: Apart from a small section of the Gellibrand River proposed for inclusion in the Otway Ranges National Park, all areas where eels are commercially harvested will continue to be available.

Apiculture: Beekeeping is a relatively minor industry on public land in the Otways, with only three licensed sites. While large areas near these sites (in the proposed forest park, in the Alcoa lease area and on freehold land) will be available for apiculture, the sites themselves are proposed for inclusion in the Otway Ranges National Park and, consequently, closure.

Great Ocean Road

The Great Ocean Road, and the towns, countryside and spectacular natural environment that it traverses, is a tremendous asset to the local and broader community. The very attractiveness of this asset, however, is placing great pressure on the road itself—traffic at times exceeds the road's capacity and poorly planned development along the road is a significant threat to the region's character and natural environment. It is VEAC's strong view that the general character of the road and the region it traverses should be maintained and, in particular, that protection of the natural environment is paramount.

To this end VEAC is proposing that the Great Ocean Road be restricted to a defined road reserve, that roadside vegetation be managed cooperatively between the managers of the road and of adjoining public land, and that any works outside that road reserve require the consent of the adjoining public land manager. To maintain the existing clarity, workability and consistency of management along its length, it is proposed that the Great Ocean Road continue to be managed primarily by VicRoads and not be included in the Otway Ranges National Park.



Table 1: Summary Table of VEAC Angahook-Otway Draft Proposals for Each Public Land Category.

Category	Existing Area (ha)	Proposed Area (ha)
Otway Park (146,005 ha proposed)		
National Park	11,755	98,205
Forest Park	-	47,800
Other Public Land		
State Park	26,935	0
Regional Park	665	0
Nature Conservation Reserve	6570	3400
Coastal Reserve	4100	3515
Natural Features Reserve	7170	670
Water Production	905	1090
Historic and Cultural Features Reserve	1230	0
Community Use Area	1170	620
State Forest	92,030	0
Plantation (not leased or licensed)	100	0
Earth Resources	445	330
Services and Utilities	415	445
Uncategorised Public Land	3595	480
Land Not Required for Public Purposes	2780	2780
Total Extent of Public Land included in the Investigation	158,975	159,335
Public Land Leased or Licensed for Plantations – not included in the Investigation	5715	5815
Freehold	172,810	172,260
Total Extent of Study Area	337,725	337,410
Overlays (areas included in the totals above)		
Reference Area (in various categories above)	2170	3150
Heritage River (in various categories above)	820	1160

Note: The areas in this table are rounded-off to the nearest five hectares. The areas are mostly derived from GIS mapping and, for the existing areas, may differ from (generally less precise) area statements published elsewhere (in association with the listing of areas on various Acts of Parliament, for example). Some of the existing areas differ from those in the Discussion Paper, reflecting subsequent corrections to the status attributed to many parcels of land. The variation in total areas of public land, freehold land and extent of the study area arise entirely from corrections to the VEAC data base. VEAC has not and will not make any changes to the boundaries of freehold land. Land not required for public purposes is not shown on Map A.

CHAPTER I INTRODUCTION

This Draft Proposals Paper presents the Victorian Environmental Assessment Council's (VEAC's) proposed recommendations for its Angahook-Otway Investigation.

The investigation has involved consideration of the appropriate land-use categories to be applied to the public land of the Otways—the first such investigation in the area since the work of VEAC's predecessor body (the Land Conservation Council) in 1978.

VEAC was asked to undertake the investigation by the Victorian Government defined in accordance with the following Terms of Reference.

Terms of Reference

On 8 September 2002 the then Minister for Environment and Conservation requested VEAC to carry out an investigation relating to Angahook-Lorne State Park to determine the potential for designation as a national park. On 17 February 2003, the Minister for the Environment requested that VEAC expand its investigation in line with amended Terms of Reference (see Figure 1). The Terms of Reference detail the specific matters that VEAC must take into consideration, in addition to general matters described in the *Victorian Environmental Assessment Council Act 2001*.

The study area of the investigation accompanying the terms of reference is shown in Map 1. It encompasses a total area of 337,410 ha, of which some 159,335 ha is public land that is subject to the recommendations of the investigation.

Figure 1. Terms of Reference for Angahook-Otway Investigation

Victorian Environmental Assessment Council Act 2001

Pursuant to section 15 of the *Victorian Environmental Assessment Council Act 2001* (the *VEAC Act*), the Minister for Environment hereby amends the request to the Victorian Environmental Assessment Council made by the former Minister for Environment and Conservation concerning the Angahook-Lorne State Park dated 8 September 2002.

The Victorian Environmental Assessment Council is now requested to carry out an investigation of the public land landward of low watermark within the Otway Ranges area shown on the accompanying plan [see Map 1].

The purpose of the investigation is to determine the boundaries of:

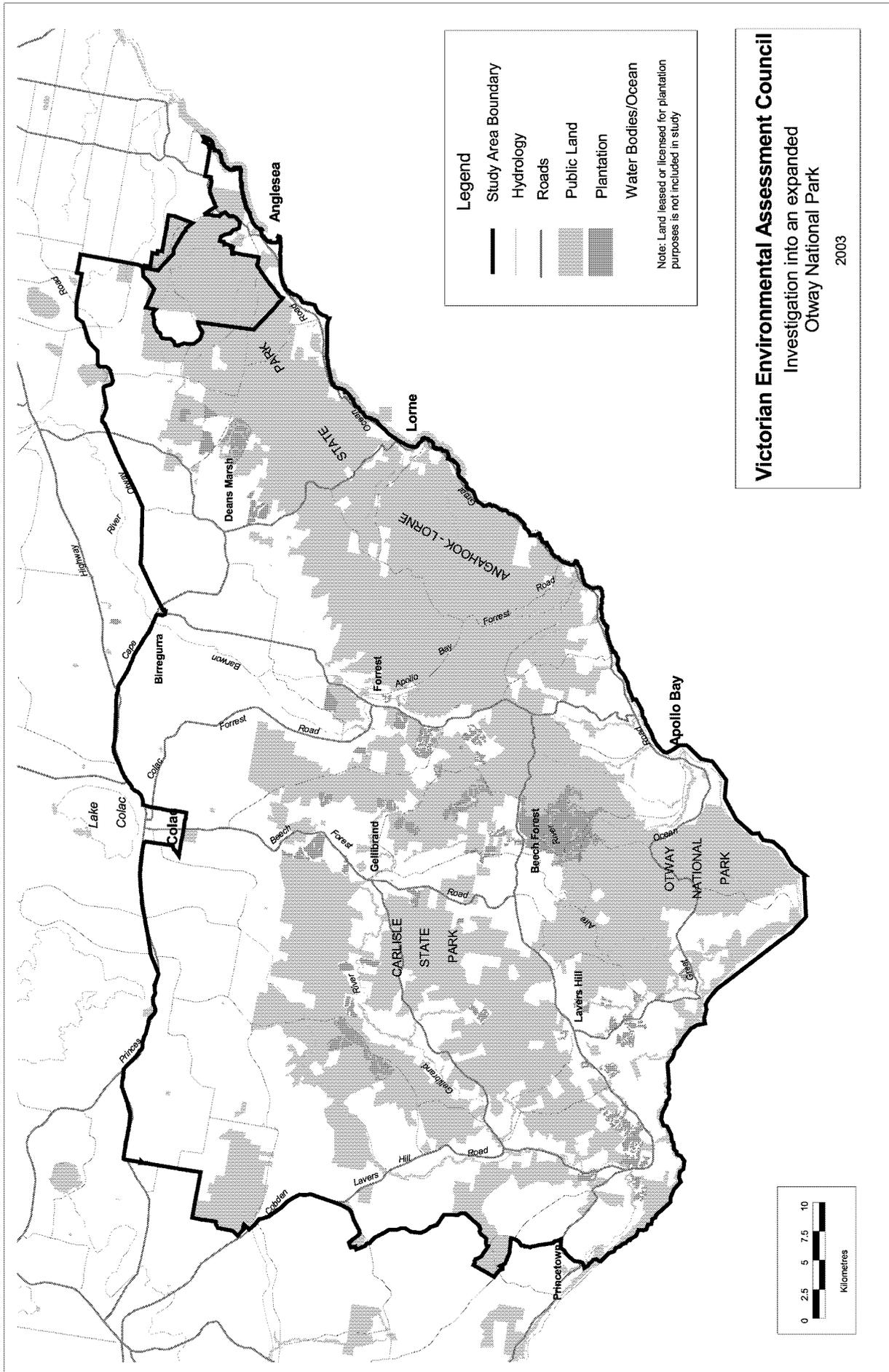
- (a) a single national park in the Otway Ranges including public land extending from Anglesea to Cape Otway, specifying whether or not the Great Ocean Road should be included in the park; and
- (b) any other public land currently managed as State Forest which would be suitable for addition to existing State Parks or nature conservation reserves, or for inclusion in new conservation reserves once native forest logging ceases in the Otways.

The Council is required to prepare a discussion paper and draft proposals paper and to submit a written report on the results of its investigation by 3 September 2004.

In addition to the considerations specified in section 18 of the *VEAC Act*, the Council must also take into consideration the following matters:

- Victorian Government's policies with regard to logging and woodchipping in the Otways;
- definition of 'national park' used by the former Land Conservation Council and the former Environment Conservation Council;
- objects of the *National Parks Act* with respect to national parks;
- Victorian Coastal Strategy 2002;
- Victorian Government's Great Ocean Road Region Strategy;
- Great Ocean Road Regional Tourism Development Plan;
- Anglesea Heathland Agreement between the Secretary to the Department of Natural Resources and Environment and Alcoa Australia Limited;
- relevant regional catchment strategies.

Map 1. Plan of Angahook-Otway Study Area accompanying the Terms of Reference for the Investigation



Investigation Process

The process for the Angahook-Otway Investigation (summarised in Figure 2) is formally specified in the *Victorian Environmental Assessment Council Act 2001* and the Terms of Reference for the investigation. There are three submission periods (each a minimum of 60 days) and the investigation is scheduled for completion by 3 September 2004.

A Notice of Investigation was published in statewide daily and weekly newspapers, and all local newspapers in or near the investigation area. Some 3000 newsletters were distributed to publicise the Notice of Investigation and submissions were actively encouraged.

A Discussion Paper was published in September 2003 and was widely distributed and publicised to foster interest in the investigation and to act as a catalyst for those wishing to make a submission. As part of its release, the Council implemented a detailed and thorough communications strategy. This involved a number of press releases, media interviews and briefings, key stakeholder group and agency briefings, community forums and wide distribution of summary brochures and the Discussion Paper itself.

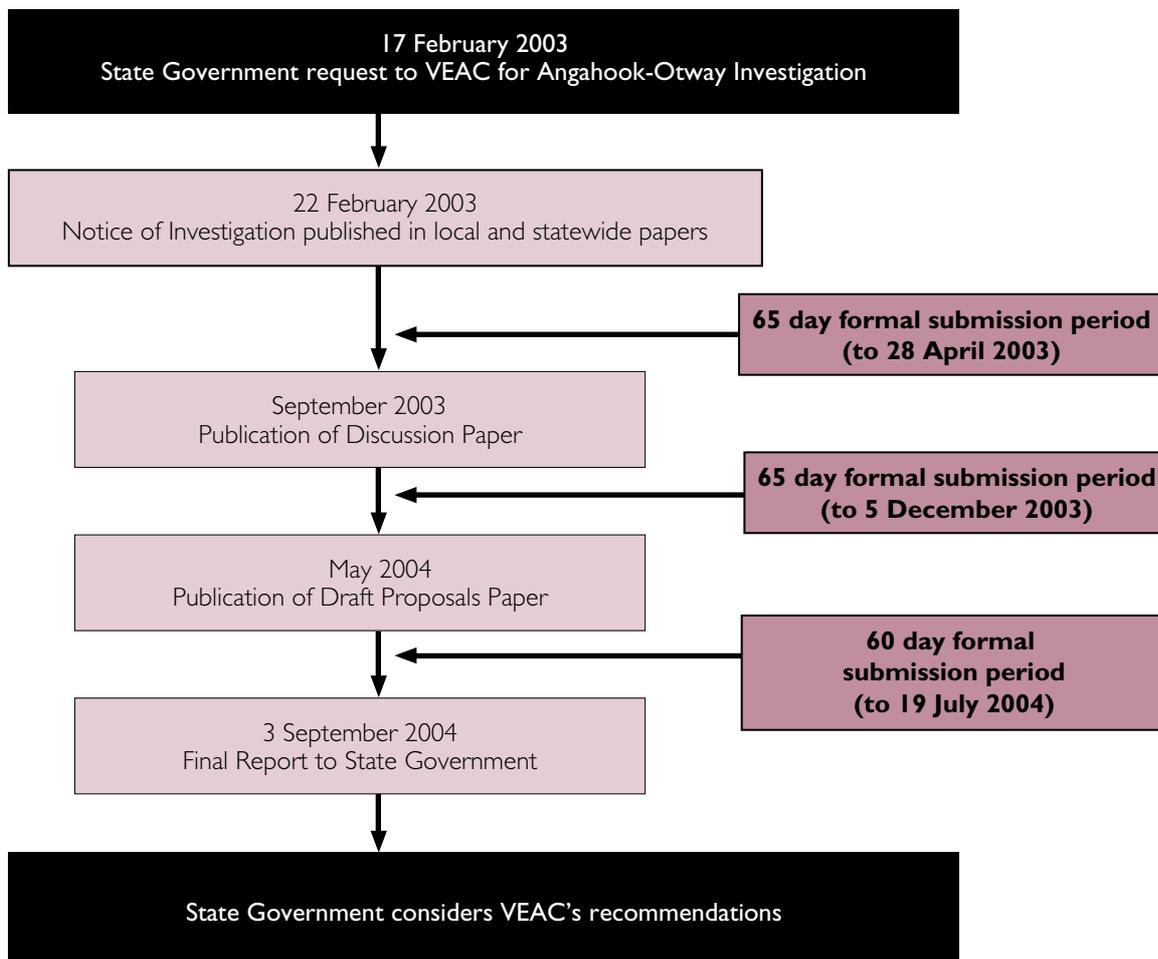
Nearly 15,000 summary brochures were distributed, including distribution to all of those on VEAC's register of interest for the investigation. All those who made submissions have been added to the register, which now has approximately 2500 individuals and groups listed. Each of these contacts will receive future mail-outs regarding the investigation.

If you wish to be added to the register of interest, contact VEAC via the details inside the front cover of this Paper.

The submission period following the Discussion Paper closed on 5 December 2003.

Copies of this Draft Proposals Paper are available for sale at the offices of the Department of Sustainability and Environment and Parks Victoria across the study area and in Melbourne. A summary brochure is also available from the same locations, and from local Government offices and information centres within and near the investigation area. The Discussion Paper, the Draft Proposals Paper, and the summary brochures for both papers can be downloaded from the VEAC website (www.veac.vic.gov.au).

Figure 2. VEAC's public consultation process for the Angahook-Otway Investigation





The current and final submission period following the release of this Draft Proposals Paper closes on 19 July 2004. All submissions and input from the consultation program will be taken into consideration in preparing a Final Report to the Minister for the Environment by 3 September 2004. The Final Report will be made publicly available within seven days of being presented to the Minister.

Consultation Mechanisms

Public consultation forms an integral part of VEAC's investigations and this has included consideration of written submissions, meeting with interested individuals and groups through community forums in the region and working with the Community Reference Group established by Council.

Submissions

Two submission periods have now been completed. Over 470 submissions were received in response to the Notice of Investigation, including 21 submissions responding to what was then the Angahook-Lorne Investigation.

Over 660 submissions were received in response to the Discussion Paper. These submissions contained an enormous amount of valuable information and contributed substantially to development of the proposals in this Paper.

VEAC is grateful for the time and effort that the community has put into preparing submissions, and looks forward to receiving further submissions in response to the draft proposals contained within this Paper. Details for making submissions are provided inside the front cover.

Community Forums

Several community forums were arranged across the region and widely advertised. Their objective was to provide an opportunity for people to learn about the investigation, discuss relevant issues, and to meet with Council members and staff. More than 160 people attended the forums which were held in Anglesea, Apollo Bay, Colac, Lavers Hill, Lorne and Geelong in October 2003. Each forum attracted a range of people, representing a wide cross-section of views.

Government Contact Group and Community Reference Group

VEAC established a Government Contact Group and a Community Reference Group for the investigation under sections 12 and 13 of the *Victorian Environmental Assessment Council Act 2001*. The Government Contact Group provides technical expertise and liaison assistance between VEAC and Government agencies. The Community Reference Group includes representatives of groups covering a broad range of interests relevant to the investigation and has met regularly to provide advice and input to Council on relevant issues.

Consultation Outcomes

Submissions Received

After publication of the Discussion Paper, over 660 submissions were received from individuals, interest groups and organisations representing a broad cross-section of the community. These submissions and the proposals in them have been considered in detail by VEAC in developing the draft recommendations in this paper. A complete list of all those who made submissions is provided in Appendix 3.

All submissions received by Council are available for public inspection at the VEAC office in Melbourne, the Colac Otway Shire office in Colac and the Surf Coast Shire office in Torquay.

Overview of Issues Raised

In summary, nearly 7000 different proposals were made in the submissions received by VEAC following the Discussion Paper.

Proposals included, for example, suggestions that particular areas be made national park or alternatively retained as state forest, as well as information on values or uses such as where wildflowers are particularly abundant or where people walk their dogs.

Many submissions proposed a significant expansion of the existing parks and other conservation reserves. Others focussed primarily on recreational access, either for specific activities (especially trail bike riding and four wheel driving) or raised recreational access as a general issue. Many of these submissions proposed that current recreational access be at least maintained, with most specifying minimal or no change to the existing public land use (and typically no expansion of the existing national and state parks, in particular).

Other submissions presented views from a broad range of other groups and individuals with specific interests—such as particular industries, government agencies, community groups and adjacent landholders.

Supporters of expanded parks and reserves often mentioned particular values, notably rainforest, old-growth forests, water supply catchments and natural landscapes for inclusion in expanded parks. Among the areas more commonly mentioned were the Wild Dog, Barham and Aire River valleys, the Arkins and Clearwater creeks, Barwon, Kennett and Cumberland catchments and Lake Elizabeth. The desirability of having a contiguous park, with blocks at least linked by corridors, was a common theme. Rileys Ridge, Delaney and Link tracks were often flagged as key sites in this context. The rationale for park expansion was usually the protection of these areas for their conservation and aesthetic values, typically from logging or other uses.

Recreational users generally wanted to continue their activities in the bush much as they do now. Most put the case that their activity was effectively benign (for the environment and other public land users) and therefore there was no reason to restrict it any further. The maintenance of vehicular access tracks was identified as a key factor for many activities, particularly for 4WD recreational users. Parks and

reserves—and national parks in particular—were seen as likely to result in further restrictions on these activities and therefore any expansion of these areas was opposed by some groups, particularly 4WD and trail-bike recreational users. By way of contrast, other user groups such as bushwalkers and field naturalists, generally saw national park status as favourable for their activity.

Those more generally opposed to park and reserve expansions were also often concerned that new parks and reserves would close tracks and reduce access for public land users. A long list of potentially-affected recreational and commercial activities were flagged, but there was also a more general perception that simply going for a walk or drive in the bush would be adversely affected. Related to track closures was the issue of fire protection and control, which was paramount for many park opponents. As well as track closures, these submissions also saw fuel reduction burning and fire control in parks and reserves as being compromised relative to other public land categories.

Some proposals, such as increasing resources available for public land management and improving coordination, had support across sectors. Such issues were raised particularly at some of the community forums.

Relationship to other Processes

In undertaking the Angahook-Otway Investigation, VEAC has liaised with those authorities managing other related government processes including the Great Ocean Road Region Strategy and the Department of Sustainability and Environment's project on public land tourism in the Otways hinterland.

VEAC has taken into account a range of policies and strategies, including the Victorian Government's logging and woodchipping policies in the Otways, the Victorian Coastal Strategy 2002, the Great Ocean Road Regional Tourism Development Plan, the Victorian Biodiversity Strategy and the Anglesea Heathland Agreement between the Secretary to the former Department of Natural Resources and Environment and Alcoa Australia Limited. A number of relevant regional catchment strategies and various local government planning documents have also been taken into consideration.



External Consultancies

To date VEAC has engaged only one external consultancy as part of the Investigation. The consultant was asked to undertake socio-economic background work and a formal assessment of the implications of Council's recommendations. A summary of the implications report is provided in Appendix 2.

Outline of the Draft Proposals Paper

This Draft Proposals Paper is in three parts.

Part 1 – VEAC's Proposals

The first part of the report details Council's draft recommendations for the Angahook-Otway Investigation.

Part 2 – Issues

This section of the paper discusses the main issues raised during the consultation program and provides a context to the draft proposals.

Part 3 – Implications

The last part describes the potential socio-economic and environmental effects of the draft proposals.

VEAC's General Approach

In the Angahook-Otway Discussion Paper, VEAC offered the following vision as a reference point for its investigation of public land in the Otways.

The public land of the Otways will become an inspiring example of sustainable and integrated land use and deliver enhanced environmental and socio-economic outcomes. Its core will be a new 'single national park' of magnificent forests and beautiful landscapes, which will permanently protect and conserve the full range of ecosystems and biodiversity in the Otway Ranges. Together with the Great Ocean Road, the park will be a focus for tourists and involve the local and wider community. The role and importance of other areas of natural vegetation for biodiversity, soil and water conservation and local landscape amenity will be recognised, and opportunities provided for recreational pursuits reliant upon, or enhanced by, natural environments. Other services and goods that can only be, or are best sourced, from the public lands of the study area will be provided for in a sustainable manner.

In Council's opinion, many of the general views and specific proposals suggested in submissions were by and large consistent with and/or reflected this vision.

Similarly, the general approach taken by VEAC in responding to the Terms of Reference and the submissions also reflects this vision.



PART 1
DRAFT PROPOSALS



CHAPTER 2 THE OTWAYS PARK

The Otways Park—an integrated management framework providing consistency for protecting the natural values and features of the contiguous public land areas of the Otway region and enabling sustainable development of their recreational and tourist potential.

VEAC is proposing the creation of a new overarching management framework to respond to the distinctive environment of the Otways and ensure a consistent approach to land management and protection of natural values across the region. It will enable the region's tourist potential to be developed and marketed in an integrated and sustainable manner. The proposed Otways Park also provides an umbrella and overall context for the two main land-use categories that have been applied by VEAC, being national park and forest park as outlined in the two following chapters.

A Distinctive Environment

The lands in and around the Otway Ranges form a distinctive and significant environment. The Otways are an island range—isolated for over a million years from similar mountain ranges in Victoria and Tasmania. The ranges rise above the surrounding inland plains and ocean and provide habitat for endemic plants and animals found nowhere else.

The rich soils and high rainfall of the Otways have produced some of the most dense forests in southern Australia including extensive rainforests and towering mountain ash forests, the world's tallest flowering plant.

For thousands of years Aboriginal people have lived with and carefully used the land of the Otways, with a particular presence near the rich resources of the lakes, rivers, estuaries and coastal environment.

Three major rivers rise in the Otways—the Aire, the Gellibrand and the Barwon—each sustained by regular and substantial rainfall. A major proportion of Victoria's waterfalls are found here, most on short, fast-flowing streams that, as a result of uplifting and faulting over millennia, plunge through steep narrow valleys to Bass Strait. The highest rainfalls in the State are recorded in the Otways, as are some of the highest average wind speeds.

Prehistoric fire regimes within the Otways forests were mostly intense late summer fires following lightning storms. Current fire management regimes attempt to moderate these wildfires, with controlled burns for the protection of towns and assets, and ecological burns to mimic natural events, combined with a policy of rapidly suppressing all wildfires.

Roads have been put through the forests, with barely an unroaded ridge remaining in the Otways. The Great Ocean Road was pushed through previously undisturbed mountain slopes and settlements are spread throughout the forests, behind sandy embayments, and on estuaries.

Over half the Otways are in private ownership, much of which is cleared farmland. The majority of public land has been extensively used for timber harvesting. Sand, gravel and rock have been quarried, and riparian environments have been cleared and grazed. While forests are still widespread, the landscape is also defined by areas devoted to grazing, dairying, fishing, small business, coal mining, urban settlements and tourism.

While no parts of the Otways meet nationally accepted definitions of wilderness, the Otways remain a fascinating mosaic of natural and cultural environments. Indeed, the scenic grandeur of the Otways coastline and the Great Ocean Road now attracts visitors from all over the world.

A New Approach to Public Land Use

Community needs and expectations of public land vary over time, but also between sectors of the community. Some needs and expectations are fully or partly compatible with each other while others are incompatible. The inherent values of the natural environment also vary. Some parts of the Otways are especially significant, while other areas have lower natural values. Some parts are quite robust, while others are sensitive to even minor changes in the intensity or type of use.

In addition to its significance for particular uses, public land also plays a vital role in meeting broader objectives that operate across entire landscapes and are important to the whole community. The proposals in this chapter deal with issues that apply broadly across the public land of the Otways, and are therefore relevant to land managers and other stakeholders alike. These issues can be of great importance but are often large, complex, and inherently difficult to manage or resolve.

VEAC's view is that the allocation of public land into a great variety of land-use categories with different managers and distinctive management regimes is not the best way forward—rather, it believes that the public lands should, as far as possible, be managed in an integrated manner. Accordingly, VEAC is proposing that the great majority of public land of the Otways be managed in the context of a single, integrated Otways Park.

The guiding principle behind the Council's proposal is to ensure that all public land is managed in an inclusive manner that is clear to all stakeholders. While VEAC cannot make recommendations for private land, it is important that programs on public land are coordinated with related programs on adjoining private land to maximise the benefits to the community as a whole.

The Otways Park Rationale

The proposed Otways Park will provide an integrated management framework for a consistent and sustainable approach to natural resource management and protection of the very special natural and tourist features on public land across the Otways region.

A number of the management issues affecting the Otways demand a regional approach, including:

- maintenance of natural landscapes, soil stability and water quality and yield;
- involvement of Aboriginal communities in land and water management;
- conservation of biodiversity, especially threatened flora and fauna;
- control of pest plants and animals and disease pathogens;
- fire management, including ecological burning and protection of settlements; and
- development, maintenance and servicing of public land recreational and other infrastructure, including fencing, signage and vehicular tracks;
- capitalising on the region's tourism potential; and
- maintenance and enhancement of the scenic amenity of the Great Ocean Road and other main roads that traverse the Otway Ranges.

By approaching such issues within a regional context, VEAC believes the Otways Park will improve public land management in a cost-effective manner.

Natural Landscapes

Natural landscapes function on a regional as well as local scale. The creation of roads, development of facilities, installation of services and utilities can, and do, visually and physically affect distant areas. The maintenance of regional landscapes thus requires that local management decisions be undertaken in a regional context.



Soil and Land Stability

While much of the Otways is naturally stable, there are extensive areas susceptible to sheet and gully erosion. There are also significant areas subject to mass movement such as rock-slides, landslips, slumps and earth flows. Mass movement is aggravated where the Great Ocean Road cuts across steep geological bedding planes and the toe of landslips.

Along the coast there is major undercutting and collapse of cliffs rising up to 100 metres in height. Coastal dunes are naturally dynamic and sea cliffs are subject to active erosion, which may conflict with the maintenance of permanent structures such as coastal roads.

While the soils in the Otway Ranges are generally deep and fertile, there are some areas of acid soils with nutrient and structure decline. Such forms of deterioration are aggravated by the modification of vegetation and soil and the natural hydrological balance, especially where such disturbance occurs on steep slopes.

Such common features underscore the logic of gathering and disseminating knowledge about land systems, land capability and soil erosion hazards on a regional basis.

Water Quality and Yield

The surface waters of the Otways and the groundwater aquifers fed by the Otways have a key role in the maintenance of in-stream and riparian ecosystems both within and beyond the Otways. They also provide water vital for the residential and industrial development of Victoria's second largest city, Geelong, and the largest coastal city in western Victoria, Warrnambool.

The definition of environmental flows, allocation of bulk entitlements to water authorities and the management of in-stream biodiversity occur on a catchment basis irrespective of land-use category.

Involvement of Aboriginal Communities in Land and Water Management

The special relationship Aboriginal people have with their land transcends an interest in a particular area or site. The relationship intertwines spiritual, ecological and economic connections with land and water and is reflected in the desire by Aboriginal communities for greater involvement in land and water management. The proposed Otways Park implements an integrated management framework across the major public land categories that aids in the development of effective relationships and consultation protocols with traditional owners, as well as providing a consistent approach to the involvement of aboriginal communities in land and water management in the Otways.

Key issues for the Aboriginal community in land and water management include: recognition and respect for the indigenous connection to country; involvement in resource management; effective consultation; protection of cultural sites and places; addressing of cultural requirements; and economic opportunities.



VEAC notes that native title may exist in regard to the study area and that Aboriginal people are concerned to ensure that these rights are not inadvertently extinguished or impaired as a result of their own actions or actions by Government agencies. In view of these concerns, VEAC stresses that nothing in the proposed recommendations should be taken to prejudice or diminish any native title rights to land, water and resources.

Biodiversity Conservation

While national parks and nature conservation reserves provide the core of biodiversity protection, remnant native vegetation across all land types has an important contribution to make. The survival of many species of threatened fauna depends on landscape-scale programs. For example, spot-tailed quoll and powerful owl (see Appendix I for a list of the scientific names of all species mentioned in this paper) distribution is more directly related to the extent of suitable habitat and predation or competition (particularly from foxes) than land-use categories as such. Consequently, regional-scale programs of protection and monitoring are required.

Control of Pest Species

Pest plants and animals do not recognise land-use category boundaries. Blackberries and foxes occur on both public and private land in the Otways. Cooperative arrangements between public land managers and adjacent landholders are critical for successful control programs.

Local programs are currently undertaken within the context of statewide and regional strategies. However, the setting of priorities and targeting of funding programs would be facilitated further by regional approaches where land managers act in concert. The ability to seek and attract research funding may also be improved.

The containment of pathogens such as cinnamon fungus requires both a localised and regional approach.

A regional approach to the control of pest species on public land will also facilitate the fostering of partnerships between DSE and Landcare groups, the Corangamite Catchment Management Authority and other community groups.



Fire Management

Wildfire is a serious potential hazard in the Otway forests. Although many of the forests are located in a damp environment with a relatively low risk for most of the year, they also have the capacity to burn with the utmost ferocity under the right conditions. The drier forests in the region are more likely to carry fires in most years. Many townships lie within or close to forest and are therefore vulnerable to uncontrolled fires.

Adverse effects of fire on biodiversity can include the local extinction of particular species and reduced abundance of habitat features such as fallen timber, dead standing trees and hollow-bearing trees. In the long term however, as with almost all eucalypt forests, fire is an important element in forest ecology.

Fragmentation of the public land estate, together with the extensive existing road network means that the forests are relatively accessible for fire-fighting compared to similar forest types in the east of the State. While major fires are infrequent in the wetter forests, they are relatively frequent in the drier forest. In particular, the 1983 Ash Wednesday fires in the Otways, in which three lives were lost and 800 homes were destroyed, highlight the necessity for adequate fire prevention and suppression measures on all public land.

Fire prevention and suppression on public land of all categories is the responsibility of DSE's Fire Management Branch. Fire management planning, works and operations are currently undertaken on both a statewide and regional basis. Parks Victoria, committees of management, the Country Fire Authority, private plantation owners and other relevant agencies or groups also have a vital role to play in fire management planning.

Capitalising on the Region's Tourism Potential

The Otways Park lies in the Geelong Otway and Shipwreck Coast tourist regions, with the Great Ocean Road being an international icon for tourism. The region is already one of the key tourist destinations in Victoria and much work is being undertaken to provide directions for further growth in this tourist region—including the Great Ocean Road Region Strategy (DSE), the Great Ocean Road Zonal Tourism Development Plan (Tourism Victoria) and various regional and municipal tourism plans and strategies.

The natural landscapes and features of the Otways Park are key factors in the appeal of the region for tourists. Tourism experiences—such as scenic drives and short walks—are highly dependent on appropriate public land management. Recent studies indicate that the management and promotion of natural features of the hinterland areas will be important in meeting desired tourism outcomes, such as an expanded range of tourism products, increased length of stay and increased quality of experience.

DSE is currently preparing a tourism plan for public land in the Otway Hinterland area and the Otways Park will provide a greater focus for such consolidated planning.



Scenic Amenity of the Great Ocean Road and other Main Roads

The Great Ocean Road offers an internationally acclaimed scenic journey. Its particular attraction lies in those sections of road providing access to views of a spectacular coastline on the edge of steep forested slopes, interspersed with a diversity of views of pockets of open farmland and small settlements.

The Great Ocean Road extends from Torquay to Warrnambool and, where it traverses the Otways Park, is mostly within a road reserve of varying width. VicRoads is responsible for the road and maintains it in accordance with a regional roadside code of practice and the Great Ocean Road Roadside Management Plan. Parts of the road reserve carry remnant native vegetation and road works can have a significant effect on landscape values on both a local and regional scale. Because the road passes through areas of great physical instability, road maintenance costs are high and, in the past, sections of the road have been closed to enable major repair works to be undertaken.

The Great Ocean Road is currently declared as a tourist road, although the *Road Management Bill* (currently before State Parliament) removes this category of road, and reclassifies tourist roads as “arterial roads”.

As well as being an icon tourist road, the Great Ocean Road serves as an essential transport route for local businesses, residents and holiday makers. Although sections of the road are already over-capacity at times, there is an ongoing steady increase in use. The Great Ocean Road Region Integrated Access Study noted, for instance, that the acceptable level of service of the Great Ocean Road between Torquay and Anglesea was an average 10,000 vehicles per day—the present average is 12,000 vehicles per day, with 13,000 at Easter and 26,000 during Christmas peaks.

Recent planning studies, such as the draft Great Ocean Road Region Strategy, are looking at options to encourage as much traffic as possible to utilise hinterland routes rather than the Great Ocean Road itself. The draft strategy proposes that the Winchelsea–Deans Marsh–Lorne Road, the Birregurra Forrest–Apollo Bay Road and the Colac–Lavers Hill Road should be further developed and promoted as alternative routes. All of these roads pass (to a significant degree) through the Otways Park area. While road development is outside VEAC’s charter, the Council believes that the general thrust of the strategy appears reasonable and is an attempt to tackle difficult issues. VEAC further notes that these alternative roads traverse steep mountain forests in areas susceptible to erosion and that they are scenic roads in their own right in areas of high landscape quality.

Council acknowledges that upgrading of these inland routes to redirect traffic from the Great Ocean Road may in some cases require compromise with the values of the land through which these roads pass (including the proposed Otway Ranges National Park in some areas). Without prejudging the particular levels of compromise that may be required, Council believes that compromise is necessary

and appropriate. In developing the proposals and land category boundaries for future public land use, the Council has taken into account that there will be a reduction in park values in some areas.

VEAC considers that the primary management objective of the Great Ocean Road and alternative routes is their maintenance as both key tourist roads and also as through-roads catering for local business and residents. Accordingly the roads should be contained within defined road reserves and be managed by an agency whose primary function and expertise is to manage roads. While these roads are key access routes into the park, they are not envisaged to ever be primarily park access roads. VEAC does not believe that incorporating sections of the Great Ocean Road, nor other main roads, within the National Park would result in significant benefits and is likely to result in disadvantages due to confusion as to who is responsible for aspects of the road.

Nonetheless Council believes that where the roads traverse the natural environments of the Otways Park, such road reserves should be of the minimal width for operational and safety needs and managed in a manner that reflects the natural landscapes of the road. Council has developed a series of principles for the complementary management of the Great Ocean Road with the Otways Park:

- the scenic character and natural values of the road and surrounds require the highest possible level of protection;
- the tourism value of the road is internationally significant and must be protected;
- the road is currently, and will continue to be, important for local residents, holiday-makers and businesses and the ability of the road to continue to cater for these users must be protected;
- a high standard of safety and amenity is required and should continue—encompassing road maintenance, appropriate speed limits, provision of turning lanes to main roads and park access roads, and improvement of turn out points to lookouts or other attractions;
- consistent signage is important to indicate primary tourist routes and features, alternative inland routes and warn of hazardous areas;
- the natural values of adjoining park areas must be respected. Road impacts should, where possible, be contained within the road reserve; and
- where an existing road formation does not correspond to a road reservation, the road reservation should be amended or created.

Environmental Management Systems, Research, Education, Awareness and Involvement

VEAC considers that the application of two main land-use categories of national park and forest park (see chapters 3 and 4) to encompass the main areas of public land in the Otways will lead to improved outcomes with respect to Ecologically Sustainable Development (ESD). Each of the two major land-use categories has defined management



objectives as to how such areas would be appropriately managed. Council believes that managers should develop and pursue processes that will further improve ESD outcomes—that is, processes to facilitate decision-making that will increase equity, improve welfare and well-being, and protect and maintain biodiversity and ecological processes. VEAC believes that such processes are best carried out within the framework of the Otways Park rather than as separate individual land-use categories.

At an operational level, ESD decision-making frameworks are typically in the form of an environmental management system. Such systems provide for continuous review and feedback. Monitoring current activities may identify new management needs. New information and discoveries will feed into the appropriate management of the forests. VEAC encourages land managers to continue such adaptive management programs and develop and apply targeted new research and monitoring programs where appropriate.

Awareness-raising, promotion, interpretation and education are important for maximising ESD outcomes. Such activities could include materials or services provided at feature sites, posters, books, displays, field days and talks. The creation of networks between managers and local communities, and provision of opportunities for involvement in park planning and management are also important for improving ESD outcomes within the Otways Park. VEAC encourages the Government to support measures to increase awareness, appreciation, education, interpretation and promotion of all aspects of the Otways region.



Implementation of the Otways Park

VEAC has proposed that the principles and integrated management approaches across land-use categories encapsulated by the Otways Park concept be put into place through formal coordination arrangements between land managers, water authorities, road authorities and local government.

Mechanisms will need to be established for setting region-wide priorities and continuous review and improvement processes for coordinated programs. VEAC has not defined the precise mechanisms for coordinating key public land management programs in the Otways as developing such mechanisms is part of the Government's response to the VEAC recommendations. VEAC proposes that the Government prepare new legislation for the co-ordination of management agencies and programs within the Otway region.

Statutory Land-use Overlays

A number of statutory land-use overlays are available and have been applied in the past in the area now encompassed by the proposed Otways Park. It is envisaged that these mechanisms would continue to apply to relevant areas of the park.

Declared Water Supply Catchments

The proposed Otways Park encompasses all of the declared water supply catchments that include public land within the Otways. This designation alerts planners, landowners, managers and the wider community to the importance of the area for water supply. Special area plans provide the detailed prescriptions for appropriate use to ensure that harvested water meets accepted community standards. A number of declared water supply catchments are no longer harvested, and the catchment of one area proposed for harvesting is not declared.

Reference Areas

Reference areas are relatively small sections of public land, containing viable samples of one or more relatively undisturbed land types, which are reserved in perpetuity. Such areas are set aside to maintain natural systems as a scientific reference to enable comparative study of modified and unmodified environments.

Reference areas may be applied over any land-use category, including, but not restricted to national parks and nature conservation reserves.

Seven existing reference areas within the study area provide samples of most, but not all, land types within the Otways region. Three additional reference areas are proposed.

Heritage Rivers

Victoria's heritage river system was established to identify and protect those rivers with outstanding values for current and future generations. Part of the corridor of the Aire River Heritage River, the only designated heritage river within the proposed Otways Park, was previously reduced

to accommodate timber harvesting. Council proposes that the width of the scheduled corridor be extended to encompass all of the previously recognised values.

Private Land in the Otways

Because just over half (51 percent) of the Otways study area is private land, many objectives which contribute to achieving balanced public land use, such as reversing biodiversity loss or increasing the value of timber production, are more likely to be achieved if supported by sympathetic management of private land where possible. Many private landholders are already implementing management practices that make a significant contribution to achieving these objectives.

While VEAC cannot make recommendations applying directly to private land, it would be remiss not to acknowledge and support initiatives that foster sympathetic management of private land. Government can and does play a pivotal role in nurturing cooperative programs across a variety of land tenures and involving a diverse range of landholders and other stakeholders, in particular improving communication and coordination between the stakeholders. In recent years, cooperative approaches such as management agreements and Good Neighbour programs have demonstrated the valuable role to be played by Government and landholders.

Approximately 12 percent (around 20,000 ha) of native vegetation in the Otways is found on private land. Often this freehold bush and forest has characteristics that are rare on public land, making it particularly important for biodiversity conservation. For example, all but 18 ha of the 2106 ha of the Stony Rises Herb-rich Woodland EVC remaining in the study area is on private land (that is, over 99 percent).

Accordingly, the protection and restoration of native vegetation on private land across the region and programs

such as Bushcare and Land for Wildlife are important components of biodiversity conservation. Effective programs to facilitate cooperation of landholders in retaining, protecting and restoring remnant native vegetation should continue to be funded.

Private land can support existing native vegetation, revegetation with indigenous plants, plantations and farm forestry woodlots (indigenous or otherwise) in the Otways. These activities can provide alternative sources for wood products, habitat, and/or land care benefits. In recent years, plantations have been established over large areas of Victoria, and parts of the study area appear to be suitable for commercial plantations. Planting for indigenous revegetation, plantations, and farm forestry enterprises should be encouraged through new and existing programs and VEAC strongly supports the continuation of Government programs that encourage such activities.



RECOMMENDATIONS

OPI: THE OTWAYS PARK

That the area of 146,005 ha shown as dark and light green indicated on Map A be the Otways Park, and

- (a) be used to:
 - (i) provide a range of community benefits, including conservation of biodiversity, recreation and tourism activity, water supply and limited resource utilisation;
 - (ii) complement opportunities available on freehold lands; and
 - (iii) provide a framework for the integration of land management programs;
- (b) be managed in two main units, to be known as:
 - (i) The Otway Ranges National Park (see Recommendation A1-A2); and
 - (ii) The Otway Forest Park (see Recommendation B1);



- (c) be managed in a manner that gives particular emphasis to:
 - (i) maintenance of natural landscapes, soil stability and water quality and yield;
 - (ii) conservation of biodiversity, especially threatened flora and fauna;
 - (iii) control of disease pathogens and pest plant and animals;
 - (iv) fire management, including ecological burning and protection of assets;
 - (v) development, maintenance and servicing of recreational and other infrastructure on public land;
 - (vi) capitalising on the region's tourism potential; and
 - (vii) maintenance and enhancement of scenic amenity of the Great Ocean Road and other main roads that traverse the Otway Ranges;
- (d) be created by legislation that:
 - (i) establishes the Otway Ranges National Park by way of amendment to the *National Parks Act 1975*;
 - (ii) establishes the legislative basis for forest parks and, in particular, establishes the Otway Forest Park;
 - (iii) establishes arrangements for the management of public lands within the Otways, including coordination between land managers, water authorities, road authorities and local Government;
 - (iv) establishes mechanisms for the coordination of public land management programs dealing with, in particular, fire, pest plants and animals, rare and threatened species, water supply, park infrastructure, and roads within the Otway region; and
 - (v) establishes mechanisms for the setting of region-wide priorities and processes of continuous review and improvement for such coordinated programs.

Note: The proposed Jancourt Nature Conservation Reserve (CI) and the smaller reserves within townships and in the west and north of the study area are not included in the Otways Park.

OP2: ENHANCING ABORIGINAL INVOLVEMENT

That:

- (a) planning and management relating to traditional interests and uses be based on recognition and respect for the traditional and contemporary relationship of Aboriginal peoples with the land;
- (b) prior to implementation of VEAC recommendations for the Otways Park, and changes in public land management, Government consult with traditional owners and Aboriginal groups regarding their native title rights and interests;
- (c) Government, in consultation with traditional owners and Aboriginal groups, establish mechanisms to improve indigenous participation in land and water management including:
 - (i) development of principles and protocols to improve the policy and planning processes of public land and water management agencies and the representation and participation of Aboriginal peoples in these processes;
 - (ii) investigation of joint management structures and arrangements between Government and Aboriginal communities with regard to public land, water and resources in the Otways Park;
 - (iii) preparation of a strategy to improve the participation of Aboriginal peoples in land, water and resource use decision-making and day-to-day management;
 - (iv) provision of information to assist the facilitation of land and water use agreements between agencies and local Aboriginal communities;
 - (v) facilitation of surveys and site visits necessary for planning and development purposes; and
 - (vi) development of cross-cultural awareness programs for land, water and natural resources agency staff to improve knowledge and understanding of, and communication with, Aboriginal communities.

- (d) Government more actively publicise existing notification and consultation processes, required under the *Native Title Act 1993* and other relevant legislation such as the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, the *Archaeological and Aboriginal Relics Preservation Act 1972*;
- (e) the Government stringently enforce and take action against breaches of legislation that protect aboriginal cultural sites, places and objects; and
- (f) opportunities for increased employment and training for local Aboriginal people be encouraged in the implementation of the Otway Forest Park and the Otway Ranges National Park.

OP3: DECLARED WATER SUPPLY CATCHMENTS

That:

- (a) if the proposed relocation of the Barham River off-take downstream of the confluence of the west and east Barham River proceeds, the catchment of the East Barham River be considered for listing on Schedule 5 of the *Catchment and Land Protection Act 1994* as a declared water supply catchment;
- (b) declarations of the following water supply catchments which are no longer used for water production be revoked and removed from Schedule 5 of the *Catchment and Land Protection Act 1994*:
 - (i) Erskine River (a sub-catchment of the Lorne declared water supply catchment);
 - (ii) Gosling Creek (a sub-catchment of the Pennyroyal, Matthews and Gosling Creek declared water supply catchment); and
 - (iii) Skenes Creek;
- (c) special area plans be prepared under the *Catchment and Land Protection Act 1994* for all declared water supply catchments in the Otways used for water production and, once approved, incorporated into park management plans and planning schemes.

Note: Special area plans have not been prepared for the following declared water supply catchments: Barwon Downs Wellfield Intake Area, Lorne (St Georges River) and Pennyroyal and Matthews Creeks.

OP4: REFERENCE AREAS

That:

- (a) existing proclaimed reference areas be retained and continue to be managed under the auspices of the *Reference Areas Act 1978*;
- (b) the following area of 977.6 ha, indicated on Map A, be used as a reference area and proclaimed under the *Reference Areas Act 1978* and managed by the Department of Sustainability and Environment:
 - (i) Porcupine Creek (particularly representing wet heath and sedgy riparian woodland ecological vegetation classes);
 - (ii) Aquila Creek (particularly representing herb-rich foothill forest/shrubby foothill forest and shrubby wet forest ecological vegetation classes); and
 - (iii) Painkalac Creek (particularly representing shrubby foothill forest, and shrubby dry forest ecological vegetation classes).

OP5: HERITAGE RIVERS

That:

- (a) the Aire River Heritage River be retained and continue to be managed under the auspices of the *Heritage Rivers Act 1992*;
- (b) an area of 1160 ha, indicated on Map A, being a 100 metre wide addition on either side of the existing heritage river between the Aire River Gorge and public land plantations vested in the Victorian Plantation Corporation, be added to the Aire River Heritage River:

- Notes:
1. Council notes that a management plan has not been approved for this river; nor indeed for any Victorian heritage river, despite this being a statutory requirement.
 2. The 100 metre wide addition creates a consistent 200 metre width through the proposed Otway Ranges National Park.



OP6: GREAT OCEAN ROAD

That:

- (a) the Great Ocean Road not be included within the Otway Ranges National Park;
- (b) where the Great Ocean Road passes through or adjoins the proposed Otway Ranges National Park or other public lands, it remain or be included within a defined road reserve (thereby excluding the road from the adjoining park or other public land);
- (c) where a road reserve is created in accordance with (b) above that, other than where the road is within a township, the road reserve be generally no greater than 20 metres in width; and
- (d) where works are necessary on adjoining public land outside the road reserve to maintain the stability of the road pavement, such works be permitted subject to the consent of the land manager and in accordance with any conditions that the land manager may determine.

- Notes:
- 1. Section 27 of the *National Parks Act 1975* provides for a public authority to exercise its functions and powers within a park subject to consent and any conditions that may be determined.
 - 2. Where a realignment of a road is required outside a road reserve, this would entail revision of the road reserve boundary and consequential adjustment to the adjoining park boundary. Such realignments may require environmental assessment.
 - 3. Recommendation A2 also covers various matters associated with the Great Ocean Road and the management of other roads that traverse the proposed Otway Ranges National Park.

OP7: DECLARED MAIN ROADS

That:

- (a) where declared main roads pass through or adjoin the proposed Otway Ranges National Park or other public lands, they remain or be included within a defined road reserve (thereby excluding the road from the park or reserve);
- (b) where a road reserve is created in accordance with (b) above, the road reserve be generally no greater than 20 metres in width; and
- (c) roadside management plans be prepared by the responsible road authority in consultation with the adjoining land manager; to define roadside management goals, outline management prescriptions and apply relevant codes of practice.

CHAPTER 3 NATIONAL PARKS

National parks are generally extensive areas of public land with national significance because of their outstanding natural features and diverse ecosystems. They are securely set aside primarily to conserve those values and to provide public enjoyment, education and inspiration.

Victoria's national parks system aims to protect viable representative samples of the State's natural ecosystems occurring on public land. National parks provide high-level, long-term protection of relatively undisturbed natural environments and their indigenous flora and fauna. They also protect features of ecological, geological, scenic, archaeological, historic and cultural interest. National parks are particularly important for the conservation of features or species that are rare, threatened and/or susceptible to disturbance.

As a result of their outstanding features, national parks are also important and popular visitor destinations, providing unrivalled opportunities for enjoyment, education, recreation and inspiration in natural environments. However, protection of cultural and natural values, particularly biodiversity, remains the primary role of national parks. Consequently, activities that involve the removal or damage of natural resources, such as timber harvesting, mining, prospecting, stock grazing, hunting (and carrying of firearms), are normally not permitted. Activities that involve the introduction of non-indigenous plants or animals into the parks, such as beekeeping, horse-riding and dog-walking are permitted only in defined areas, if at all.

Many activities are, however, compatible with national parks, including bushwalking, car touring, picnicking, nature observation, camping, canoeing, bird-watching and visiting scenic and historic sites. Many other outdoor activities, such as 4WD motoring, mountain-bike riding, trail-bike riding, fishing, hang-gliding, rock climbing, caving, orienteering and rogain, and defence force training are undertaken in suitable areas. Visitor rates can be very high.

Interpretative services and other facilities are required to direct and enhance visitor experiences. At the same time, facilities and activities may need to be confined to sites of appropriate size and location to minimise their effect on sensitive values and other uses.

Another important element of national park status is the imperative for active conservation management. Management of fire, overuse, soil erosion, water quality, track networks, illegal activities, commercial concessions, visitor facilities and pest plants and animals are also integral aspects of the management of national parks.

Astute planning is required to minimise potential conflicts between different uses and particularly the conflict between access to, and protection of, special features. The precursor for such management is the preparation of management

plans. Community involvement in the planning and management of these areas of public land is essential. The protection and recovery of natural ecosystems, protection and respect for cultural sites and places, and involvement in the management of national parks are aspects of special interest to local Aboriginal communities.

The management and use of national parks is primarily directed by the *National Parks Act 1975*, although other legislation may apply, for example where a national park encompasses reference areas, heritage rivers and declared water supply catchments.

VEAC is proposing the creation of a single contiguous national park within the study area—the Otway Ranges National Park—to form a highly protected core within the wider sustainable land-use framework envisaged for the Otways.



AI OTWAY RANGES NATIONAL PARK

The proposed Otway Ranges National Park encompasses an area renowned for its spectacular waterfalls, impressive forests and scenic landscapes. It supports a remarkable number of threatened species, extraordinarily diverse heathlands, significant areas of old-growth forest, majestic tall trees and extensive areas of rainforest. The proposed national park offers a wide variety of recreational opportunities and its outstanding biodiversity, landscape and cultural heritage values attract an increasing number of visitors, enhanced by its proximity to the world-renowned Great Ocean Road.

The proposed park covers an area of 98,205 ha. It straddles the main range of the Otway Ranges, extending along the coast and inland to encompass the forests of the foothills and inland plains. The park is readily accessible from a number of main roads, including the Great Ocean Road, but also includes deep remote valleys, windswept heathlands and impenetrable mountain forests. While parts have been disturbed by past land uses, the park encompasses the largest relatively undisturbed areas remaining in the Otways. The protection of nature conservation values is an overriding objective of the proposed park.

The park comprises ten main sectors across three bioregions:

Otway Ranges Bioregion

- Southern fall
- Northern catchments: Pennyroyal, Lake Elizabeth, Olangolah, West Gellibrand and Arkins Creek and Marchbank link
- Aire River catchment

Otway Plain Bioregion

- Anglesea heathlands
- Barongarook forest
- Wonga forest
- Gellibrand heathlands: Carlisle, Mt. McKenzie/Crinoline Creek and Devondale
- Gellibrand escarpment

Warrnambool Plain Bioregion

- Kennedy Creek valley

with a western coast sector lying across all three bioregions.



Natural Features

The proposed park provides excellent representation of the landforms and vegetation of this unique part of Australia. It ranges from spectacular coastlines, with their salt-hardened cliff-top heaths, extending inland to the cloud-shrouded ranges of towering mountain ash. Together with the nationally significant rainforests and their cascading waterfalls, the landscape diversity of the Otways provides habitat for a large suite of fauna, some of which are found nowhere else in the world.

Physiography

The proposed park encompasses all of the geomorphic units that occur in the Otways. In particular, the park is dominated by the Southern Victorian Uplands. These uplands have an average elevation of 500 metres, but extend from sea level to 675 metres at Mt Cowley. They are composed mostly of Lower Cretaceous non-marine sedimentary rock (geologically the oldest strata in the study area) which has been uplifted and eroded to produce steep, rugged terrain. The south-east slopes of the park descend rapidly to the sea, producing short, fast-flowing streams and an abundance of waterfalls.

Parts of the proposed park, at Barongarook, Carlisle and Chapplevale, consist of undulating country on Tertiary marine sediments. Elevation of these areas is between 100-300 metres above sea level, and outcrops along the coast as high vertical cliffs, in areas such as west of Moonlight Head. Elevated plains of windblown coast dunes also lie within the study area, with most included within the park. These plains are only found within five kilometres of the coast and rise to a maximum of 150 metres elevation.

Average annual rainfall of the park varies from 600 mm to 2000 mm and the park encompasses some of the wettest forests in Victoria.

Geology and Geomorphology

The landscapes of the Otways are not only diverse and spectacular, but also of great geological and geomorphological importance. Two sites of international significance and three sites of national significance are within the proposed park.

International geologists use the stretch of coastline between Torquay and Aireys Inlet (now within the park) to undertake sequence stratigraphic analysis of the exposed sedimentary rocks. The site enables viewing of sedimentary depositional cycles from approximately 10 million to 40 million years ago.

Dinosaur Cove is the other internationally significant site in the proposed park. Scientific study—requiring specialised excavation of fossils—has made a major contribution to our knowledge of dinosaurs in the Australian part of Gondwana. The nationally significant dinosaur bone site at Point Lewis is also in the park.



Other nationally significant sites in the park are impressive features along the eastern Port Campbell coastline—including large landslip amphitheatres, caves and one of only two dinosaur footprints known in Victoria, and Lake Elizabeth and its catchment—an excellent example of a recent (1952) major landslip and its consequences.

The park also contains many and diverse geological features, such as waterfalls ranging from small cascades, fast-flowing rapids, tall single-drop falls, and large multiple-drop waterfalls. The park includes the entire length of the Aire River Gorge, which is the most rugged river gorge and the least modified large river in south-western Victoria.

Vegetation Types

The proposed Otway Ranges National Park contains several unbroken corridors spanning the range of vegetation types from dark, damp cool temperate rainforest, through wet and dry eucalypt forests to the botanically diverse coastal and inland heaths. In high rainfall areas, the eucalypt forests may be pure stands of tall mountain ash, whereas drier foothill sites may consist of a range of eucalypts such as messmate and narrow-leaf peppermint. The understoreys of these forests vary greatly, from open, grassy and herb-rich, to dense low heaths and shrubs. The park's heathlands and heathy woodlands are of particular significance. The Anglesea heath alone contains seventy-nine orchid species, presenting a dazzling wildflower display in spring.

Protection of ecosystems (or Ecological Vegetation Classes—EVCs) in a comprehensive, adequate and representative system of dedicated reserves is the backbone of biodiversity conservation. The proposed Otway Ranges National Park comprises virtually all of the dedicated reserve system within the Otways. In particular, the park includes significant areas of several widespread EVCs that are currently poorly represented in the dedicated reserve system—Lowland Forest (notably in the existing Barongarook State Forest), Herb-rich Foothill Forest/Shrubby Foothill Forest Complex (north-east of Lake Elizabeth), Shrubby Wet Forest (many areas), and Herb-rich Foothill Forest (in parts of the Wonga Forest and Kennedy Creek Valley).

As well as being poorly represented in existing dedicated reserves, cool temperate rainforest is highly valued for its rarity and beauty, as testimony to the evolutionary history of flora in Australia. This fragile vegetation community is particularly in need of protection from fire, weeds and disease. The proposed park contains over two-thirds of cool temperate rainforest and all rainforest sites of national and state significance in the Otways—delivering secure, long-term protection for this ancient vegetation type and its unique biodiversity.

Old-Growth Forest

As with rainforest, the importance of secure long-term protection for old-growth forest was a recurring theme in submissions to VEAC—particularly given its antiquity, scarcity and susceptibility to several common threats. To this end, all major areas of old-growth forest in the Otways

are contained in the proposed park, focussing especially on the largest patches and a broad range of vegetation types.

The inclusion of these areas will ensure that this irreplaceable source of inspiration and information on the function of undisturbed natural systems is not compromised. Their value to future generations—and specifically in management decision-making and research—is invaluable.

Threatened Flora

The proposed park encompasses all of the wetter vegetation communities for which the Otways are recognised. Many of the threatened flora species found in the study area occur in these wetter environs. Tall astelia and slender tree fern (see Appendix 1 for a list of scientific names of all species mentioned in this paper) are examples of threatened flora found within cool temperate rainforest, riparian or poorly drained sites of the Otways. The Otway Ranges are a stronghold for these two species in particular. The cool, damp environment also favours many of the other threatened flora species like the small ferns and fern allies including beech finger-fern and slender fork-fern.

In contrast, wrinkled buttons, found primarily in the vegetation communities between Lorne and Aireys Inlet, depend upon periodic fire to maintain significant populations. The proposed park includes the vast majority of locations where wrinkled buttons have been recorded. This species was not detected in the study area for many years until after the 1983 Ash Wednesday fires. More recently, a decline in numbers has been noted. The future conservation focus of management in these areas will contribute to ensuring the long-term survival of this species.

The well-known coastal heathlands near Anglesea exhibit a number of botanical differences from those of Carlisle River and Devondale. The heathlands within the proposed park are a stronghold for many orchids, with a number listed as rare or threatened, including the endemic Anglesea sun-orchid. The Otways also contain key populations in the coastal and western Victorian distribution of the wine-lipped spider-orchid and heart-lip spider-orchid.

The Otways population of the rare Otway bush-pea is a Victorian stronghold. The inclusion of the Devondale heaths in the proposed park encompasses the vast majority of known records for this species in the study area. This population forms an important link to the other populations in Western Victoria, found mainly around Portland.

The Otways are also a stronghold for the rare dwarf silver wattle. The proposed park will include a significant proportion of the known records of this species, as well as their only coastal representations in the state.

Anglesea grevillea is one of the flowering plants found only in the heathy woodlands to the north and north-west of Anglesea. Many of the known records for this species will be protected within the proposed park. In contrast, white daddy long legs orchid, also found near Anglesea, is not rare or threatened, however the Otways represent the

southern-most limit of their distribution. These important records are also within the proposed park.

The Otway Ranges provide the ideal conditions for the rare Brooker's gum to flourish, resulting in reasonably wide distribution across the main Otway Range. It is found from approximately 160 metres elevation near Chapplevale, in the west, up to 500 metres elevation near Mt Cowley on the Benwerrin–Mt Sabine Ridge. The populations of Brooker's gum in the Otway Ranges are at the edge of a more extensive distribution in Tasmania. The proposed park includes representation of Brooker's gum, whether occurring as a pure stand, or mixed with other eucalypts.

In addition to Brooker's gum, a number of other species demonstrate close evolutionary links between the Otways and Tasmania, including the starry daisy-bush, beech finger-fern and slender tree-fern. The majority of the known records of these species are within the proposed park.

Tall Trees

Tall trees are one of the defining features of the Otway Ranges. The wet, relatively fertile conditions ensure that maximum growth is achieved by many of the tall forest eucalypts. They display high aesthetic values and are regarded in awe by the many visitors attracted to the region to view these giants.

The relatively undisturbed Olangolah and West Gellibrand catchments, and the forests of the southern fall of the Otway Range, contain the majority of known examples of exceptionally tall mountain ash and Otway messmate. Of particular note, the Olangolah catchment has managed to avoid significant disturbance, even from wildfire, since the 1850s. All these areas are contained within the proposed park.

Fauna

The proposed park will provide permanent, high-level protection over extensive contiguous areas for the fauna of the Otway ranges and foothills. Substantial areas of contiguous habitat are essential for species such as the powerful owl and spot-tailed quoll. Individuals of these species range over large areas (up to 4500 ha in the case of the quoll) with viable populations of many individuals needing much larger areas. The Otways is a key area for the quoll, being by far the largest of the two areas in western Victoria where the quoll survives. Clearfelling and poisoning with 1080 have been documented as the main threats to its survival.

At the other extreme, the park also protects some animals that do not range far at all. For example, there are four species of land snails that are thought to be endemic to the study area—although much remains to be learnt about their distributions and ecological requirements. Three of these snails are currently known from only one or two localities, while the Otway black snail is widespread in the damp environs of the cool temperate rainforests and wet forests of the park. Other endemic or threatened invertebrates known from the park include the Otway Burrowing Cray, Otway Stonefly, Glenelg Freshwater Mussel,

and three Caddisfly species. There are likely to be many other invertebrates—including many threatened or undiscovered species—inhabiting the broad range of ecosystems protected in the park.

Two vertebrates are endemic to the study area and will be protected in the park. The Anglesea form of the mountain dragon has been found at a small number of sites in the Anglesea heath. All sites within the study area reported as containing this small lizard are included in proposed park. The Otways subspecies of the rufous bristlebird is almost entirely confined to the study area, and is classified as vulnerable, with an estimated population of around 4000 birds. They rarely leave their preferred habitat of dense understorey vegetation (in coastal scrub, heathland, rainforest, and wet forest) and, accordingly, the population is susceptible to habitat fragmentation—further emphasising the importance of a large contiguous park.

The birdlife of the park is as diverse as the habitats represented. Australian king-parrots, powerful and masked owls, gang-gang and yellow-tailed black-cockatoos breed in large tree hollows that take many decades to develop, and the high representation of old-growth forest and tall trees in the park will ensure long-term protection for these birds. On the other hand, the park's heathlands provide essential habitat for species such as the endangered ground parrot and smoky mouse. The proposed park will substantially increase the area of ground parrot habitat within the reserve system by the inclusion of the Devondale heathlands, west of Lavers Hill.

Although difficult to see, the unique platypus is a relatively common inhabitant of waterways of the Otways. Lake Elizabeth, in the proposed park, is a well-known and popular location to view these egg-laying mammals. Waterways of the park are also home to 14 native freshwater fish, notably the vulnerable Australian grayling and critically endangered Australian mudfish.



Cultural and Historic Features

Indigenous Heritage

Interpretation of the density of the known archaeological sites in the study area indicates a mostly mobile society seasonally using the coastal, estuarine and riverine resources of the region. The coastal strip may have been occupied year-round, with residential movements along the coast, with or without seasonal movements into the ranges. Regular movement of groups between the coast and the more densely populated, productive basalt plains in the hinterland may have also occurred. It is understood that the majority of activity occurred along the coastal strip and also along the northern-western periphery of the main Otway range, areas well represented in the proposed park.

Currently Aboriginal communities are formally involved in identification, protection and management of cultural heritage sites and places via the cultural heritage program of Aboriginal Affairs Victoria (AAV) and through consultation and negotiation obligations required under the *Commonwealth Native Title Act 1993*.

In addition to the specific management of cultural heritage sites and places, Aboriginal communities have much to contribute to overall management of the proposed park. This can be achieved via the establishment of, and adherence to, consultation protocols, the provision of cross-cultural training for park managers, users and tourism operators, as well as the use of appropriate naming and interpretive information that recognises and respects the traditional owners connection to country.

European Heritage

The proposed park includes many historic features that recognise the 150-year presence of Europeans in the region. Many of the historic features are relics of the region's previously prominent timber and shipping industries.

The Cape Otway Lightstation is more than 150 years old and was the second lighthouse constructed on mainland Australia—thus providing is one of the earliest examples of European settlement in the region. The lighthouse was built in 1848 as a warning beacon for ships entering Bass Strait. In 1859 one of the earliest telegraph stations in Australia was added to the site.

Evidence of more than 200 sawmills and tramways are distributed throughout the Otway forests. The proposed park encompasses a number of historic sites that were identified as highly significant and placed in historic and cultural features reserves by the LCC Historic Places Special Investigation in 1997.

Some of the more significant sites identified within the park include Knott's No.3 Sawmill (also known as the "Wait-a-While" mill), the Marchbank Sawmill and Tramway Historic Area (located north-west of Ferguson), Hayden's No. 2 Mill and the sites of Henry's Nettle and Carisbrook sawmills (in the forest behind Kennett River). The sawmill sites often include relics representing all of the stages of sawmilling operations, from logging and tramway transportation,

through to milling. The Marchbank site includes particularly significant examples of a zigzag tramline and also a switchback tramline—a once common tramway system needed across the hilly Otways to create a workable gradient for timber haulage. Some, such as the Henry's Nettle and Carisbrook sawmill site, contain evidence of substantial associated sawmill settlement.

The inclusion of 'The Redwoods'—a towering and very impressive stand of Californian redwoods—in the proposed park represents the period of widespread planting of exotic species on reclaimed farmland in the Otways. Of special interest are some of the early plantings where different species were trialed. Some such plantings were unsuccessful, others flourished and most have now been cleared or are being harvested. 'The Redwoods' exemplifies early government policy of widespread plantation development using sustenance labour. The site is on a picturesque section of the Aire River and contains a small picnicking area.

The Otway Ranges have been a source of gravity-fed water for Colac since the Olangolah Weir and Pipeline were built between 1909 to 1911. The rugged conditions and the basic construction method make this pipeline quite an engineering feat and historic feature.

Arkins Creek weirs and pipeline, also within the proposed park, were built in the 1930s to supply Warrnambool, Cobden, Camperdown and Terang with reliable supply of water. The workers, mainly sustenance labour, endured wet and difficult conditions to construct the first long welded steel pipeline in Victoria, and possibly Australia.

All these sites are important features for historical reference and education and provide us with an essential link to days, not so long ago, when life in the Otway Ranges was very different.

Activities and Uses

Recreational Opportunities

Without doubt the diversity of landscapes and vegetation results in a multitude of activities that visitors can enjoy in the proposed park.

Opportunities for both short and multi-day walks are features of the proposed park. The Great Ocean Walk, passing around Cape Otway, is currently under construction and will provide an exhilarating experience for the independent walker. Sheer cliff tops, sandy open beaches, wild winds and pounding oceans will all contribute to this multi-day trek.

The large size of the proposed park, combined with the significant links and diversity of attractions across the landscape contributes to further opportunities for multi-day walks. The need to minimise development in remote areas, as well as the need to protect fragile environments is vital when considering routes for multi-day walks.

Short rainforest and waterfall walks such as Melba Gully and Erskine Falls give visitors the chance to immerse themselves in the magnificent Otways experience, without the need for



navigation skills and extended exertion. Visitor interpretation signage and facilities help walkers to learn about and appreciate this unique environment.

Many of the walks also feature information on the cultural and historic values of the area. Sabine Falls walking track is an example of one of several walking tracks located on old timber tramway routes. The opportunity to see historical relics in-situ, as seen at Kalimna Falls walking track, is another feature of the proposed park.

Opportunities for nature study in the proposed park are plentiful. The heathlands of Anglesea and Carlisle have exceptional wildflower displays, as well as being very popular for bird-watching. Bird hides, such as at Distillery Creek, and nature trails assist interested people to interpret their natural environment.

Existing nature trails in the park are mostly associated with the picnic facilities. Such sites include Melba Gully, Lake Elizabeth, the Sheoak Picnic area and Blanket Bay. Of course, the more sheltered beaches are always popular as informal picnic sites.

Scenic drives include excursions to popular waterfalls like Triplet and Erskine Falls, as well as the forest touring routes, including the winding Turton's Track. The world-renowned coastal scenery along with scenic routes through the park to hinterland towns are also essential elements of any scenic drive in the Otways.

For those wanting more of a challenge, the park is well traversed by four-wheel-drive roads. Generally only tackled in the drier months, these roads provide opportunities for alternative access to the top of the range from the coastal and inland towns. Four wheel drive and trail bike visitors to the proposed park can use formed vehicular tracks to explore the forest for the many less known, yet spectacular, waterfalls and to discover relics of the past sawmilling.

From the dark, shady forest, to the stunted heaths and woodlands, the park visitor can quickly achieve a sense of isolation in the park. The wildflowers of springtime in the heaths of Carlisle and Anglesea are an added attraction. Aire Crossing, located south west of Lavers Hill, has been a popular destination on its own, or as an entry point for the more isolated southern forests. Nestled amongst the cool temperate rainforest of the Aire River, the Aire Crossing is an excellent location to experience the rushing river, its cascades and potholes.

For many, camping in national parks completes the nature appreciation experience. The proposed park includes the coastal campsites of Blanket Bay and Parker Hill, as well as the popular riverside camps of the Aire and Cumberland Rivers. The sheltered Lake Elizabeth campsite, as well as the Big Hill camping area, are among the tall trees of the Otways, where observant campers might spot a koala or hear the call of the bright and lively Australian king-parrot.

Licensed marine, estuary and freshwater recreational fishing in accordance with fishing regulations is permitted in national parks for both native and introduced fish, with areas suitable for fishing included within the proposed park. The winding Gellibrand River is popular with anglers seeking river blackfish and brown trout in the freshwater upper reaches, as well as black bream near the river mouth at Princetown. The coastline around Cape Otway also offers opportunities for the keen fisher to take a variety of species including snapper or King George whiting when the conditions are favourable.

Experiencing the forest on horseback is a popular pursuit for some locals and visitors. Meandering roads and tracks of the park are used by horse and rider for exercise as well as to access and appreciate their natural surroundings. Guided horse-riding and gipsy wagon tours provide visitors with an alternative way to experience the forests. Such activities may continue in traditionally used popular areas.

In recent years, mountain bike riding has established itself as an alternative nature-based pursuit in forested areas. The steep, winding tracks of the park on the coastal fall of the Otways provide an opportunity to ride from the top of the range to the coast. A purpose-built riding and walking track extending from the township of Forrest to the camping ground at Lake Elizabeth is also popular with bike riders, with more remote bike riding opportunities available in the west of the park.

Gemstone seeking using non-mechanical hand tools is permitted at designated beaches within the park at Moonlight Head. Dog walking will be provided for at the Old Coach Road block near Aireys Inlet, as well as at other locations deemed appropriate by the land manager.

Intrinsic Values

The Otways are not only appreciated for their important scientific or activity-based attributes; their natural features are of high intrinsic value. The ancient rainforests are often special places of reverence and spiritual revitalisation. The cathedral-like myrtle beech or blackwood canopy over the damp, mossy and quiet interior creates the ideal surrounds for personal reflection and appreciation of the wonder of nature.

The Otway Ranges are synonymous with picturesque waterfalls cascading amidst lush vegetation. The many waterfalls of the park are a key feature, attracting tens of thousands of visitors every year. Triplet Falls is popular due to its great beauty, easy access, heritage interest and the surrounding cool temperate rainforest.

Without doubt, scenic beauty is a key feature of the Otway Ranges. Along with the iconic Great Ocean Road, there are grand vistas available within the park from the top of the Otway range and along some of the strongly defined ridges. The beauty of forested landscapes can be seen from roads such as the unique Turtons Track, as well as the Cumberland Catchment and Wild Dog Ridge.

Tourism

The proximity of the proposed park to the large population centres of Melbourne, Geelong and Warrnambool, as well as its location adjacent to the Great Ocean Road, are major factors when considering the contribution the proposed park will make to tourism in the immediate region. The proposed park complements the existing tourist attractions while also offering seasonal and recreational alternatives to the main coastal activities currently undertaken. The rainforests, waterfalls and scenic coastline are attractions in their own right. The independent tourist can discover them or visitors may be assisted by tourist operators to access the area.

Commercial tour operators offer the opportunity for alternative and adventurous methods of enjoying the magnificent natural surrounds of the proposed park. These include mountain biking from the top of the range into Apollo Bay, or discovering platypuses by canoe at Lake Elizabeth. Commercial operators also undertake horse trail rides through some areas of the park.

Research

Research is an essential part of ensuring good management practices in any park. It provides useful feedback on management techniques and monitoring can alert the manager to potential problems. National parks offer a vital source of information on relatively undisturbed natural environments for research institutions. The ability of these groups to conduct research in the proposed park contributes to a greater knowledge of the natural values of the park, and the environment as a whole. It is important to ensure that any research undertaken does not compromise the protection of natural values in the park.

Water Resource Use

A number of key water storages lie on the edges of the park. The West Gellibrand Reservoir (with a capacity of 2,000 megalitres) is the principal storage for the Colac region. The Olangolah Reservoir also supplies the Colac region, however it has a significantly smaller capacity. Three small weirs on the Arkins Creek catchment supply approximately one third of water requirements for the Warrnambool region, with the Allen Reservoir, a 220 megalitre storage on St Georges River, and the 514 megalitre Painkalc Reservoir, supplying the entire water supply for, respectively, Lorne, Aireys Inlet and Fairhaven.

The catchments of all of these reservoirs are entirely, or mostly, within the proposed park. Given the importance of these water supplies to the region, it is vital that their catchments are managed in a manner that ensures high quality reliable water supplies. Three of the catchments have a 'closed catchment' policy in place that effectively precludes timber-harvesting and public access to the catchment. The high yields generated from the small, high rainfall Arkins Creek catchment where there is no significant water storage capacity relies on a closed catchment policy.

Restrictions on public access also reduce the need for high-level water treatment.

Council recommends that the catchments of the Allen and Painkalc reservoirs, respectively 2700 ha and 3400 ha, be managed in a similar manner. Both the catchments are little disturbed and have minimal existing public access. The communities supplied by these two reservoirs are entirely reliant on these catchments for continuing good quality water and have a steadily increasing permanent population.

The sensitive domestic water supply catchment of the West Barham River that supplies the townships of Apollo Bay and Skenes Creek is also contained in the proposed park. However, augmentation proposals of the water authority involve relocating the offtake to access waters from the East Barham River, which draws water from a largely cleared catchment. Consequently, a higher level of water treatment will be required.

Approximately half of the catchment supplying the Pennyroyal Creek diversion, which contributes to the water supply for Geelong, Bellarine Peninsula, Torquay and Anglesea, is within the proposed park. The remaining area is largely freehold land. The capacity of the diversion is around 100 megalitres per day.



Management Issues

Active Management for Conservation

For many natural features the protection from large-scale disturbance provided by inclusion within the proposed park will be adequate for their protection, while other values will require active management. For example, populations of spot-tailed quoll within the park are vulnerable to predation and competition from foxes. However, traditional methods of fox control, such as the use of 1080 poison in baits, has been implicated in quoll mortality. The distribution of ground parrots and the smoky mouse are highly correlated to certain age-classes of heathland, thus requiring ecological fire regimes to ensure that adequate areas of suitable aged heath are provided. Some of the rare and threatened plant species are susceptible to minor levels of modification such as trampling; the nests of hooded plovers are vulnerable to disturbance by domestic dogs, walkers and horse-riders; and hibernating bats are also vulnerable to minor disturbance.

Monitoring of biodiversity values is required, particularly of threatened flora and fauna and of species such as koalas that have limited optimal habitat within the park.

Pest Plants and Animals and Diseases

In recent years, considerable works have been undertaken in the control of a number of weeds, most notably ragwort and blackberry. Foxes and rabbits are known to occur in areas of the park and feral cats are also a concern. The presence of such species poses a direct hazard to some threatened fauna species and significantly reduces the quality of the park's vegetation communities and habitat. Weed plants are mostly associated with disturbed areas such as roadsides, former logging coupes and gravel pits and on the park boundary with farmland. Ongoing weed control programs should continue to be a major management priority to protect park values and promote good neighbour practices.

While the spread of the pathogen *Phytophthora cinnamomi* is currently localised, extensive areas of the proposed park are particularly vulnerable to invasion by this destructive fungus. Active management programs such as the restriction of vehicular access and/or the introduction of disinfectant procedures will be required, especially in heathland areas.



A small number of exotic plantations exist throughout the proposed park. Some are remnants of farms purchased and replanted by the government. A number of pilot plantings were made. A sample of these should be retained for their historic interest, including the plantation of redwoods on the Aire River. Other sample plots and relic plantations of various non-indigenous trees scattered throughout the proposed park should be removed, especially where they are likely to be a source of weed invasion, and revegetated with local provenance indigenous plants.

Fire Management

The Otway Ranges and, in particular, the surrounding foothill forests and heathlands, have always been subject to bushfires and will continue to be. However, an option of letting nature take its course is not open to the park manager as the vegetation and fire regimes have been modified since European settlement. Deliberately lit fires became more prevalent and now all fires are suppressed as a matter of policy. Prescriptive burning has focussed on protecting assets such as the merchantable mountain ash forests, pine plantations and townships. In recent years, ecological burning has also been undertaken. All such fire management is complicated by the denser settlement in and around the proposed park.

Revegetation and Soil Conservation

The proposed park includes little-disturbed areas, but also includes many areas that have been disturbed in the past by a range of uses that directly modified the natural features of the land. These past uses include agriculture, timber harvesting, and quarrying. While such activities have been well regulated in recent times, rehabilitation and restoration have not always been attempted or been successful in the past. The park managers will have to respond actively to the impact of such past land use. Soil erosion programs, revegetation, removal of inappropriate species and ecological thinning may all be required.

Visitor Use and Tourism

Strategically located, well-designed and soundly constructed visitor facilities are required not only to enhance the visitor experience, but to ensure protection of natural values. Providing basic interpretation and visitor facilities will be required to meet current as well as likely future visitor levels in the proposed park. The provision of support facilities and interpretation programs by others, including commercial operators, may be appropriate although arrangements for public access and maintenance of park values must remain paramount. Similarly, VEAC is proposing that provision be made for three sites to remain or be available for constructed accommodation and associated facilities. Tourism opportunities in the park need to complement, rather than compete with, tourism development on freehold lands.

Resource allocation will need to respond to illegal activities such as vehicle use off-road, the taking of firewood and encroachment by abutting landowners.

Community Involvement

It will be important for the park managers to work with local communities and provide opportunities for involvement in park planning and management.

Aboriginal groups in the area have expressed a desire to be more involved in park management and the identification and protection of Aboriginal cultural sites and places. Such consultation with traditional owners and participation in public land and water management is to be encouraged.

Community groups such as the Friends of Angahook-Lorne State Park have greatly assisted management of the existing State Park and such groups should be encouraged and supported to continue their conservation activities in the proposed park.

In addition, opportunities for involvement should be provided for any interested individual.

Water Catchments

The Council is proposing that the water supply catchments above the Arkins Creek weirs, the West Gellibrand Reservoir and the Olangolah Reservoirs be included in the park and be managed co-operatively between DSE and the relevant water authorities. VEAC considers that the management of such lands is best placed under the jurisdiction of a land manager; not the water authority, but nonetheless firmly believes that an overriding function of these sectors of the park is to ensure reliable, high quality water.

It is also important that the park management plan ensure the protection of all water supply catchments within the park. The short, steep, water supply catchments serving the coastal towns are particularly vulnerable to modification of soils and vegetation, with Aireys Inlet, Fairhaven and Lorne entirely dependent on water harvested from the park. Sound hydrological research and ongoing monitoring is required to ensure that land management practices indeed meet water supply objectives.

Council is also proposing that the actual water storages and the reservoir infrastructure be excluded from the park and be managed by the respective water authority who should have sole responsibility for the management of these critical infrastructure assets, but that the buffer areas around these assets be managed co-operatively.

VEAC has developed a series of principles for the co-operative management of the Painkalac Creek (Aireys Inlet/Fairhaven water supply), St Georges River (Lorne), Olangolah, West Gellibrand and Arkins Creek water supply catchments:

- Management priorities should be the continued protection of the very high conservation values of the park together with the protection of water quality and yield.
- Continued high priority should also be given to fire prevention and control to protect water quality and yield.
- A co-operative agreement on the management of these sections of the park be drawn up between the respective water authorities and the Department of Sustainability

and Environment to recognise both the on-ground requirements and the working relationship between the bodies and should form the basis of a detailed plan of management for the park.

- Should any dispute arise in relation to the management of the park, a final determination should be made jointly by the Minister for the Environment and the Minister for Water.
- Field staff of the water authorities and DSE should have reciprocal enforcement powers.
- Priority should be given to developing a comprehensive program to control exotic flora and fauna.
- While control of public entry to the water supply catchments should continue to reduce the risk of contamination of water supplies and the possibility of fire, the provision of a limited number of strategically located walking tracks within these sectors of the park may be consistent with these requirements. Public vehicular access and camping should not be provided.
- Catchment hydrology research should continue, with other bona fide research permitted where the proposed activities do not conflict with the protection of water quality or yield or the protection of conservation values.
- Should future augmentation of domestic water supplies require the upgrading or construction of facilities within the park, this should be permitted provided adequate safeguards are implemented to protect significant conservation values and water quality.

Boundaries

The proposed park incorporates the existing Otway National Park, Angahook-Lorne State Park (other than the Aireys Inlet reservoir), Carlisle State Park (other than the Gellibrand transfer station site), Melba Gully State Park and the following reserves and state forests:

- Eumeralla Flora Reserve
- Forest Road Flora Reserve
- Mount Ingoldsby Flora Reserve
- Mt McKenzie/Crinoline Creek Flora and Fauna Reserve
- Olangolah Flora and Fauna Reserve
- Princetown Nature Conservation Reserve
- Redwater Creek Flora and Fauna Reserve
- Smythes Creek Flora Reserve
- West Barham Big Trees Flora Reserve
- Yaughers Flora and Fauna Reserve
- Hayden's Sawmills Historic Reserve (part)
- Henry's Nettle and Carisbrook Sawmills Historic Area
- Knotts No.3 Sawmill Historic Area
- Marchbank Sawmill and Tramway Historic Area
- St George Sawmills Historic Area

- Aire Bushland Reserve
- Johanna Bushland Reserve
- Tomahawk Creek Bushland Reserve (part)
- Wiridjil Bushland Reserve
- Beauty Spot Scenic Reserve
- Carisbrook Creek Scenic Reserve
- Glasgow Falls Scenic Reserve
- Hopetoun Scenic Reserve
- Sabine Falls Scenic Reserve
- Wyelangta Scenic Reserve
- Wangerrip Streamside Reserve
- Apollo Bay Coastal Reserve (part)
- Lorne Coastal Reserve (part)
- Big Hill Coastal Reserve
- Fairhaven/Aireys Inlet/Anglesea-Point Addis Coastal Reserve (part)
- Minor water frontage reserves and unreserved Crown land
- Aire State Forest (part)
- Arkins Creek Catchment

- Barongarook State Forest (part)
- Otway Forest—Barham sector
- Otway Forest—Barwon sector (part)
- Otway Forest—Boonah sector (part)
- Otway Forest—South-eastern sector
- Sheeppark Creek State Forest
- West Gellibrand Catchment
- Western Otways State Forest (part)
- Wonga State Forest (part)
- Cape Horn Stone Reserve
- Chapplevale Gravel Reserve
- Cape Otway Cemetery Reserve
- Moonlight Head Cemetery Reserve
- Cape Otway Lighthouse Reserve

Statutory Land-use Overlays

Existing statutory controls for reference areas, heritage rivers and water supply catchments continue to apply over parts of the proposed park. The park also encompasses a proclaimed optional dress (nudist) area.

RECOMMENDATIONS

AI OTWAY RANGES NATIONAL PARK

That the area of 98,205 ha indicated on Map A as the Otway Ranges National Park

- (a) be used to:
 - (i) conserve and protect biodiversity, natural landscapes and natural processes;
 - (ii) protect significant cultural and historic sites and places, including Aboriginal cultural sites and places;
 - (iii) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments and cultural heritage; and
 - (iv) supply water and protect domestic water supply catchments;
- (b) be managed to provide for, in particular, the following activities:
 - (i) bushwalking, including the development and maintenance of walker only tracks suitable for short and longer walks and walk-in campsites;
 - (ii) car touring, including the maintenance of roads and routes suitable for 4WD vehicles only as well as all-weather access for 2WD vehicles;
 - (iii) picnicking and camping, including designated areas with facilities and, at the managers discretion, dispersed camping, in appropriate locations where this will not adversely affect biodiversity values or water quality;
 - (iv) horse riding on traditionally popular, defined bridle trails, designated beaches, formed roads and firebreaks, subject to any necessary restrictions, including seasonal closures to avoid damage to tracks, introduction of weeds and conflict with other users and natural values;

- (v) accommodation and associated facilities at the Cape Otway lighthouse precinct (existing facilities), the Cumberland River camping ground (existing facilities), and the recently acquired land to the north of the Little Aire waterfalls (proposed facilities), with specific provision being made for the commercial development and operation of such facilities by way of long-term commercial leases under the provisions of the *National Parks Act 1975*;
 - (vi) existing pipelines, aqueducts, cables, communications towers, navigation aids, weirs, dams and other minor service and utility infrastructure that are necessarily within the park, subject to the creation of formal agreements with the land manager; and
 - (vii) the artificial opening of the mouths of the Aire and Gellibrand rivers in consultation with traditional landowners and other relevant groups to take into account the needs of wildlife and adjoining landowners affected by inundation;
- (c) be regulated to **exclude** the following activities:
- (i) harvesting of forest products, other than, at the managers discretion, the harvesting of former pine plantations occurring within the park and the thinning of eucalyptus logging regrowth to restore ecological balance;
 - (ii) exploration and extraction of earth resources, minerals and petroleum, other than continuation of operations within existing licences or authorities, as approved;
 - (iii) grazing by domestic stock, with existing grazing licences terminated as soon as possible, but no later than 2008;
 - (iv) walking dogs, other than walking dogs on leads in the Old Coach Road block at Airey's Inlet, and other minor areas subject to the managers discretion;
 - (v) apiculture;
 - (vi) hunting and the use or carrying of firearms, other than the carrying of unloaded firearms through the Barongarook forest sector of the park by members and bona fide guest competitors of the Colac Field and Game Association traversing the shortest route through the park to the Barongarook Shooting Range; and
 - (vii) prospecting under miners right, other than for gemstone seeking along designated beaches at Moonlight Head using non-mechanical hand tools only;
- (d) be managed in a manner that gives particular emphasis to:
- (i) programs to conserve and enhance populations of spot-tailed quoll, ground parrot, and other threatened species requiring active management;
 - (ii) ensuring the quality and yield of the domestic water supply catchments and, where necessary to achieve this, restrict the timing, location, nature and intensity of scientific, educational and recreational use and development of facilities for public access and recreation and retain and/or apply 'closed catchment' policies to the Painkalac Creek, St Georges River, Olangolah, West Gellibrand and Arkins Creek water supply catchments;
 - (iii) the strategic location of the park with respect to fire protection for nearby towns and settlements; and
 - (iv) strategies to reduce the risk of introduction and spread of the dieback fungus *Phytophthora cinnamomi*, including the restriction of vehicular access and/or the introduction of disinfectant procedures, especially in heathland areas;
- (e) be created by inclusion on a schedule to the *National Parks Act 1975*; with
- (i) unused road reserves within or adjoining the park that are not required for legal or practical access to existing freehold allotments added to the park;
 - (ii) licensed or leased Crown land abutting or surrounded by the park when no longer required for their existing purposes, rehabilitated and added to the park; and
 - (iii) the seaward boundary of the park being low-water mark; and

- (f) be managed in consultation with the relevant water authorities within declared water supply catchments with respect to ensuring reliability, quality and yield of water supply.

A2 JOINT MANAGEMENT AGREEMENTS

That agreements be entered into within two years of the acceptance of this recommendation by the park manager and the relevant water authority or road authority, for:

- (a) the water supply catchments listed above within the park to ensure co-ordinated management in line with the principles outlined in the preamble;
- (b) the buffer areas of the Arkins Creek weirs, the West Gellibrand Reservoir and the Olangolah Reservoir adjoining the park, together with the land exposed at any time below full-supply level, to ensure co-ordinated consistent management that provides for both the protection of water quality and appropriate use of the adjoining areas of national park; and
- (c) the management of the road reserves of declared main roads and tourist roads, including the Great Ocean Road and Turtons Track, which pass through the park to ensure co-ordinated management that provides for the safety and trafficability of roads and the appropriate use and protection of the adjoining areas of national park.

Notes:

1. The park encompasses nine existing and proposed reference areas. Reference areas must be managed in accordance with the *Reference Areas Act 1978*.
2. The Bambra Road quarry has pre-existing rights of operation that preceded the creation of the Angahook-Lorne State Park. Its occupation has not, to date been formalised under the *National Parks Act 1975*. It is subject to a current work authority application under the *Extractive Industries Development Act 1995*.
3. Should ecological management (Rec A1c(i) above) require removal of wood from parks, that wood may be sold.
4. Practical access should continue to be provided to existing private land holdings surrounded by the park.
5. Inclusion of the Arkins Creek, West Gellibrand and Olangolah water supply catchments into the proposed park will involve transfer of land from South West Water and Barwon Water.
6. The buffer areas to Painkalac Creek Reservoir, Olangalah Reservoir, West Gellibrand Reservoir and Arkins Creek weirs are defined and subject to special area plans (previously known as land use determinations or LUDs) made under the *Catchment and Land Protection Act 1994*.
7. The Council supports the continuance of land-acquisition programs by opportunistic purchase to consolidate park boundaries. Boundary rationalisation, perhaps by way of land exchange, should also be explored. Implementation of the park is intended to allow flexibility for minor boundary adjustments.
8. Where appropriate, the land manager may enter into formal agreements with private operators to build and/or operate and/or park programs and/or facilities in accordance with approved management plans.
9. Council supports the re-opening of negotiations between DSE and the Surf Coast Shire Council with a view to ensuring the complementary management of the municipal land known as the Ironbark Basin and possible transfer of the land for inclusion in the park.
10. Council has included areas to the east of the Alcoa leasehold within the park on the presumption that the significant vegetation of the Anglesea heath lying within the Alcoa leasehold continues to be subject to a co-operative management agreement between the State government and Alcoa of Australia Limited. When the current lease comes up for renewal in 2011, consideration should be given to amending the boundaries of the lease to enable areas of high conservation value to be added to the park.
11. Licensed or leased Crown land suitable for inclusion in the park when no longer required for their existing purposes, include the Tallawalla Guide Camp at Moggs Creek; Belmont High School camp at Tanybryn (an unused part of the current licensed area is included in the proposed park); the Colac Field and Game Association's shooting ground, the Colac-Otway Archers's field range, the Patonga Scout Camp, and the Colac Motor Cross Track at Barongarook; and the Babington Bros. Sawmill at Benwerrin.
12. The Moonlight Head and Cape Otway cemeteries are closed for further burials.
13. A number of small parcels of cleared Crown land adjacent to the park between Castle Cove and Aire River have not been included in the park, but allocated to uncategorised public land. It is intended that they be available for exchange with neighbouring freehold land with higher conservation values, at which time the latter areas should be added to the park.

CHAPTER 4 FOREST PARKS

Forest parks—a new land-use category for extensive areas of land supporting native forests and bushland, with a range of recreation, nature conservation and resource utilisation values.

'Forest Park' has been chosen by Council as a working title of the new land-use category. Council seeks submissions on this name or alternative names that would be appropriate for the category.

One of the primary attributes of much of Victoria's state forest is the provision for timber harvesting. In the Otway forests, the native forest-based timber industry is to be phased out by 2008, providing an opportunity for former state forest land, and other forested areas, to be reassigned to a new land-use category that better reflects community expectations and needs for forest conservation and recreation.

VEAC proposes that a new land-use category be created to provide for the protection of extensive areas of forest for recreation, conservation and minor resource utilisation where timber harvesting is to be prohibited. Council envisages that the new land-use category could also be applied outside the Angahook-Otway Study Area.

The three management objectives of the new land-use category are recreation, nature conservation and compatible minor resource utilisation. Flowing from these management objectives, appropriate uses would include a wide range of recreational activities reliant on extensive areas of land, a limited range of utilisation (in a manner consistent with recreation and conservation), with timber production (specifically, sawlogs and pulpwood) not being permitted once it has been phased out in the Otways by 2008.

While national parks provide the core area of nature conservation protection across the State, forest park in the Otways will provide complementary protection for plants, animals and natural landscapes, as well as for those rare and threatened species outside national park boundaries.

Providing access for a broad range of recreational activities, particularly those already established in the former state forests, is an important part of the forest park concept. Such activities will require on-ground management supervision and the maintenance of infrastructure, including roads. Development nodes to facilitate recreational use may be required within areas of forest park, including commercial developments such as 'eco-lodges' or other businesses under long-term lease.

Appropriate resource utilisation could include apiculture and low-intensity harvesting of minor forest products such as firewood, posts and poles, woodchop blocks and other plant products.

Unlike state forest, forest parks are recommended to be 'restricted Crown land', where the consent of the Minister for the Environment is required for the exploration and extraction of earth resources, minerals, and petroleum and other fossil fuel products. Such uses would only be permitted where consistent with the maintenance of overall recreation and conservation values.

As the forest park category has three very different management objectives, it will be necessary for the land manager to identify and apply management zones to reduce conflict between uses. For example, management may need to identify firewood collection zones, areas unsuited for utilisation, special feature zones and so forth.

Council does not consider that forest parks should be created under existing land-use legislation such as the *National Parks Act 1975*, *Crown Land (Reserves) Act 1978* or the *Forests Act 1958*; rather that they be established under new legislation, perhaps in a form that could be applied elsewhere where timber harvesting has been or is to be excluded from state forest.

Council is recommending the creation of one forest park within the study area—the Otway Forest Park—to unify the areas across the Otways which provide opportunities for a wide range of activities and also to complement the values and uses offered by the Otway Ranges National Park.



BI OTWAY FOREST PARK

The recommended Otway Forest Park encompasses extensive areas of mountain and foothill forests extending from the main ridge of the Otway Ranges to the undulating plains and plateaus further inland. The park can be explored from a network of vehicular tracks and roads and offers a wide variety of recreational opportunities that complement those available in the adjoining proposed Otway Ranges National Park.

The proposed park extends over 47,800 ha across public lands both in and around the Otway Ranges, and across the dissected inland plains to the north and west of the Otways. The park brings together a large number of separate blocks of public land, forming ten main sectors:

- Anglesea headwaters/ Wormbete forest
- Otway Ranges inland fall, including Lardners Creek forest
- Yaugher forest
- Lorne environs
- Aire forest—head of Aire and Ford River blocks
- Western Otways
- Kennedy Creek forest
- Tomahawk Creek/ Wonga forest
- Kawarren block
- Water frontages and streamside areas



Recreational Opportunities

The proposed forest park provides opportunities, facilities and enjoyable natural settings for active recreation pursuits that may not always be well suited to the protection of national park values. Prudent management and responsible use will ensure that sustainable recreation experiences are achieved and that conservation values are not compromised.

The range of landscapes and vegetation in the forest park ensures forest recreation experiences that are diverse and stimulating. From walking to the cascading Aire River at Beauchamp Falls to trail biking on the roads in the healthy woodlands of the Wormbete Forest, many visitor expectations can be realised.

The breadth of the proposed forest park will also ensure that many communities have good access for forest recreation activities. Kawarren block is an example of proposed forest park that is close to the major town of Colac. The recreation opportunities available in this area include cycling, historic discovery, walking, picnicking and nature study.

Camping

The proposed forest park provides excellent camping opportunities. All groups are provided for, from families and retirees with caravans, to those who just want some peace and quiet in their swag under the stars.

Dandos campground on the Gellibrand River is an ideal base for those wanting a formal campsite amongst the tall Otway forests. The open space at this campsite also appeals to groups and families needing some room to move. Stevensons Falls provides another formal campsite, amongst exotic conifers just downstream from a picturesque waterfall.

A number of submissions stressed the importance of having the opportunity to undertake dispersed camping in natural settings. Opportunities for dispersed camping are an important element of multi-day walking, horse-riding, driving and trail-biking treks. The proposed forest park will provide for dispersed camping across extensive areas of forest.

Car Touring

The well-formed roads of the proposed forest park provide for car touring. While some of the roads in the forest park are unsuitable for all-weather 2WD access, there are still many opportunities to access the forest. Delaneys Road, near Barwon Downs provides access to the top of the main range of the Otways. It passes through a range of vegetation types and allows the visitor to experience some of the wet Otway forests.

Some of the roads through the Wonga block, while unsealed, also allow 2WD vehicles good access. Kennedys Creek block, close to Princetown, also has excellent vehicle access to virtually all sections.

Picnicking

The forest park has a number of formal picnicking locations, including those at Birnum Station, near Kawarren, Loves Creek, Dandos and Stevensons Falls. These sites provide



good access, parking and tables in natural settings. Usually basic toilet facilities are also provided. Shelters are important to protect picnickers from the characteristically inclement Otways weather.

Informal picnicking is also encouraged in the forest park. Extensive options for impromptu picnicking occur throughout the forest and especially beside waterways.

Four Wheel Driving

Four wheel driving is a recreational pursuit in its own right, but may also provide essential transport to undertake other activities like camping, hunting and fishing. The formed roads of the proposed forest park provide challenging opportunities for accessing a range of attractions, historic features and as alternative access through the Otways.

In the drier months the roads in the West Barwon catchment offer the opportunity to venture into the wet forests. The forest park includes many historic sites and relics of pre-war timber harvesting that are of special interest to the keen explorer and accessible only to 4WD vehicles. The steep slopes and river crossings make a good test for those wanting to extend their skills.

Access into the forested environments helps people to appreciate and learn about natural values, potential impacts on fragile systems and their need for careful management.

Local four wheel drive groups of the Otways actively contribute to public land management by assisting with development of road maintenance priorities, track clearing, reporting of track hazards, removal of dumped vehicles and more recently through the development of a track classification and rating system. Such co-operative relationships should continue.

Trail-biking

The formed roads of the proposed forest park also provide extensive opportunities for trail-biking. The roads of the Wormbete forest are popular for trail-biking due to proximity to population centres situated along the coast, including Geelong. The diversity of vegetation and the undulating nature of the country in this part of the forest park contributes to the experience.

Careful monitoring and enforcement will be required to prevent damage to fragile natural systems. Local trail-bike groups are currently involved on committees and programs that will assist in ensuring that this popular recreational pursuit is conducted in a sustainable manner.

Hunting and Fishing

Provision is made for hunting in areas of the proposed forest park. Four-wheel drive access, combined with a range of camping options, further enhances this experience. Opportunities exist for the hunting of deer (red, fallow and sambar) in the western Otways, and ducks (seasonal restrictions apply).

The water bodies of the proposed forest park provide numerous opportunities for fishing. The Gellibrand River

and its tributaries, mostly within the proposed forest park, are popular fishing destinations of those seeking river blackfish and brown trout. Other streams with water frontages included in the proposed Otway Forest Park also offer opportunities for fishing.

Walking

Walking is one of the most popular activities in the proposed forest park. Many people limit themselves to short, structured walks to specific attractions like Beauchamp and Stevensons Falls.

Others however appreciate the extensive landscapes found in the forest park to extend and test their abilities. Vehicle tracks contribute to walkers gaining access to isolated locations. Dispersed camping opportunities cater to these multi-day bushwalk endeavours.

Part of the proposed Old Beechy Line rail trail passes through the park and will provide an excellent walking experience from Colac, through hinterland towns and communities, to the top of the Beech Forest ridge, whilst also informing visitors about the history of the Otways.

Horse-riding

The proximity of the forest park to many Otway communities ensures opportunities for local horse-riding individuals and groups. The ability to exercise in and experience the natural environment on horseback is highly valued. The Wonga block, in particular, provides a safe environment to ride due to a number of wide, slashed roadsides that easily accommodate horse and rider.

Opportunities for more remote and challenging treks are provided on the formed roads of the western Otways and inland fall sections of the proposed forest park, where provision is also made for dispersed camping.

The proposed forest park at Kennedys Creek includes a designated short, cross-country course that is well utilised and maintained by the local pony club. Opportunities also exist for commercial horse-riding tours in the proposed park. These services provide visitors with an alternative way of experiencing the Otways.

Bike Riding

In recent years mountain bike riding in particular has become a popular pursuit in natural environments. The formed roads and tracks of the proposed forest park provide ideal trails for this active endeavour.

The development of the Old Beechy line rail trail that passes through the proposed forest park at Kawarren, and also runs adjacent the park north of Beech Forest, will greatly enhance cycling opportunities in the Otways. This rail trail is envisaged to provide a riding route from Colac to the top of the ridge at Beech Forest.

Dog Walking

People are able to walk dogs through most of the proposed forest park. The proximity of the proposed park to many Otway towns and localities ensures that many community



members can exercise their dogs (and themselves) in a natural setting. In keeping with the conservation objectives of the forest park, it is expected that dogs will be kept under control of their owner at all times.

Nature Study

The proposed forest park makes provision for independent nature study where visitors are encouraged to seek natural experiences largely without the assistance of formed nature trails and interpretation facilities.

Good access and a range of camping options assist in undertaking both informal and formal nature study. Observing natural features in their settings is an essential feature of environmental education and future conservation of natural resources. Schools and organisations utilise the proposed forest park to stimulate and extend participants' interest and knowledge of natural systems.

Gold Prospecting and Gem Fossicking

The proposed forest park is not particularly prospective for precious metals and gem stones, however provision is made for recreational fossickers and prospectors to pursue their interest.

Tourism

There is increasing demand for high quality nature-based tourism opportunities in the study area. The proximity of the Otways to large population centres and the excellent conservation values and recreation opportunities available greatly contribute to this demand.

The proposed forest park enhances tourism opportunities in the study area due to the large range of recreational activities that can be undertaken, both by the independent visitor and those who prefer commercial tours. The natural features of the proposed forest park, like Beauchamp Falls, are also easily accessible attractions in their own right.

The forest park provides the opportunity for development nodes to facilitate recreational use. This includes constructed accommodation and may be in the form of commercial operations and developments.

The primary conservation objectives of national parks, the other major public land category in the study area, may not provide the flexibility for these developments to be undertaken in a natural setting.

Natural Features

Conservation of natural values is one of the objectives of the proposed forest park. There is a wide range of landscape and vegetation types represented. It therefore contains a wide range of natural values that are a key attraction for many visitors. Management of the proposed forest park must ensure that these important values are not compromised.

The proposed forest park is comprised of large consolidated areas of forested land as well a numerous smaller blocks that also contain important natural values. These smaller vegetated blocks are important in protecting

remnant vegetation and landscape amenity in areas where cleared farmland is the dominant land use.

Physiography, Geology and Geomorphology

The proposed forest park extends across the undulating country of the South Victorian Coastal Plains (Dissected Plains) from the coast near Princetown and around to the north of the main Otway Range. Most of the park is, however, within the South Victorian Uplands dominated by high ranges and dissected valleys. An outlier of this land unit occurs in the Wonga forest where the landscape rises in some sections to an escarpment.

A number of geological and geomorphological sites of scientific interest are found in the proposed forest park. All are of local significance. They include gravel pits and road cuttings, like the Jacobsons Road gravel pit, which provide good access to rock exposures. These exposures may be typical of a particular formation or exhibit notable features not generally seen in the formation.

Waterfalls that have been listed for local significance, such as the Beauchamp and Stevensons Falls, demonstrate the relationship between lithology and stream development.

Vegetation

The plant communities found in the proposed park encompass the diversity of the Otways. There are examples of cool temperate rainforest, tall mountain forests, drier foothill forests and woodlands, as well as the heathlands and riparian zones.

Two of the main ecological vegetation communities in the proposed forest park are Lowland Forest and Shrubby Foothill Forest. These two communities often occur close to each other, with elevation and soil type being contributing factors in determining their respective distributions. Both communities are characterised by the diversity of their understorey layers.

Another well-represented vegetation community is the Shrubby Wet Forest. This community often contributes to the tall, wet eucalypt forests for which the Otways are well known. It occurs generally on northern and westerly aspects with rainfall greater than 1200mm.

Beauchamp Falls is an easily accessible example of cool temperate rainforest in the proposed forest park. Other rainforest examples are found deeper in the Aire Valley, east of Lavers Hill.

Pockets of old-growth forest are found distributed across a variety of vegetation types. Not only do the large, hollow trees provide habitat in these areas, but the forest floor debris including hollow logs provides nest and den sites for some of the less conspicuous species like forest bats.

The proposed forest park features large areas of the tall eucalypts for which the Otways are renowned, with the high rainfall and ideal site conditions creating an environment where mountain ash, Otway messmate and Brooker's gum are growing to their full potential.



Threatened Flora

The majority of records of threatened species have been included in the proposed national park, nonetheless a number of threatened and near threatened species occur in the forest park. In particular, the heath-based and wet forest/rainforest communities within the forest park are locations of threatened flora.

Skirted and slender tree-ferns, along with the smaller beech finger-fern and long club-moss are generally found in the very wet environs of the cool temperate rainforest or wet forest. Anglesea grevillea and wrinkled buttons are found further east in the heath-dominated communities near Anglesea.

Near-threatened species occur throughout the proposed forest park. They range from the tall Brooker's gum to the small ground spleenwort. Showy lobelia and currant wood are two near-threatened species that only exist in one area other than the Otways. Currant wood is a species with strong Tasmanian links as is Brooker's gum. This rare gum tree flourishes in the Otways, with a wide distribution across the main range. It particularly favours high-rainfall, northerly aspect locations.

Otway bush-pea, ground spleenwort, satinwood, dwarf silver wattle and netted daisy-bush are all found in the proposed forest park. The Otway populations for all of these species provide a stronghold in Victoria. Dwarf silver wattle is one of the species that occurs in the forest around Lorne. Other near threatened species in this part of the forest park are southern blue-gum, madeira moss and wiry bossiaea.

Fauna

The diversity of landscapes and vegetation communities in the proposed forest park provides habitat for a wide range of species.

The Otways provides habitat for species that are found nowhere else, like the Otway black snail. The eastern subspecies of the rufous bristlebird is confined almost entirely to the study area. This species' range is primarily located in the dense coastal heaths and wet forests of the proposed Otway Ranges National Park, although the myrtle beech and mountain ash forests of the proposed forest park also occur make an important contribution to its survival.

Two of the forest park's carnivores, the swamp antechinus and the grey goshawk, have strong affinities to Tasmania, where they are more common. The populations of swamp antechinus in the study area are, however, a local stronghold and may link the western Victorian and coastal populations of the species. A number of populations of other species in the forest park are also potential links between the coast and western Victoria, including the long-nose potoroo, southern brown bandicoot, swamp skink, yellow-bellied glider and eastern false pipistrelle. The eastern false pipistrelle (a small forest bat) and yellow-bellied glider are typical prey for the large predatory birds of the Otways like the powerful owl.

The broad toothed rat is primarily found in the high rainfall forests, heathlands and grasslands of eastern Victoria, however the population in the forest park represents the southwest limit of this species' east coast distribution.

The forest park on the southern fall of the range surrounding Lorne provides habitat for some threatened species not seen elsewhere in the forest park, including the Australian grayling and chestnut-rumped heathwren.

Cultural and Historic Features

Indigenous Heritage

The proposed forest park includes a large area on the north-western periphery of the main Otway range. Interpretation of the known archaeological sites in the study area has identified a high level of past Aboriginal activity. This mostly mobile society would have seasonally utilised the natural resources of the rivers, wetlands and oceans of the region.

Archaeological survey of the proposed forest park has been reasonably limited and a more thorough survey is required. Land managers and tourism operators need to be aware of the importance of such sites and monitoring should be undertaken of known sites to ensure that any indigenous heritage values are not compromised.

European Heritage

The timber and transport industries provide the majority of historic features in the proposed forest park. The park allows visitors to explore the forest and discover some of the heritage of the Otways.

The Henry and Sanderson sawmill complex, active in the West Barwon catchment in the early 1900s, was recognised as a historic and cultural features reserve by the LCC in 1997. Henry's No. 1 mill and settlement is one of the largest in the Otways and the whole complex represents the application of clever engineering and technological solutions to the challenging terrain and conditions. This complex is considered to be the pinnacle of steam-driven sawmilling operations in the Otways.

Notable features of the complex include the 15 km of relatively intact tramlines and the remains of hauling technology. Particularly remarkable is the presence of two of the three known tunnels in Victoria that serviced a sawmill. The tunnels, one of them 440 metres long, provided access to the timber and also provided the main access to the isolated sawmill and settlement for the workers. The settlement itself was home to up to 100 inhabitants, with a post office, school, boarding house, billiard room and general store.

Numerous other sawmills and their associated features are also found in the proposed forest park. Despite not being of state significance they are valuable historic assets and contribute greatly to our knowledge of the Otways. At the Henry No.2 mill, logs can still be seen sitting on the mill landing still waiting to be sawn, 85 years after the mill was abandoned.



Notable features in the Lardners Creek forest include the McDonald tramway and associated water race, the well-preserved tramway of the Hitt No.1 mill and the incline and winch site of the Devitt sawmill. Other northern fall historic features are the comparatively intact tramway and relics of the Royle sawmill, south of Pennyroyal. Nearby are the turn-of-the-century Hayden's sawmills with their noteworthy log lines and snig tracks.

The western Otways portion of the forest park also has sawmill and tramway remains, as well as the associated access, winch and log lines for a number of mills including Kincaid, Northern Timber Co. and one of the Knotts mills. Knott was also the operator of one the better known mills adjacent to Triplet Falls.

The Kawarren block is the site of Birnum station, one of the numerous railway stations and sidings that once existed on the Colac–Beech Forest–Crowes railway line, also known as the Old Beechy. This narrow gauge railway, curving in and out of the forest park, has captivated rail enthusiasts since its inception in 1901. It played a key role in opening up the Otways to settlement and timber. At various times it operated as a mixed train carrying passengers, however its primary function was carrying timber and general supplies for communities.

Resource and Other Uses

Timber Extraction

The forest park excludes timber harvesting for the production of sawlogs and pulpwood, other than for harvesting in accordance with approved Wood Utilisations Plans to meet existing timber licence obligations to 2008. Therefore logging will occur within the proposed forest park until 2008.

Non-licensed Plantations

Areas of non-licensed plantations exist in the proposed forest park. These are generally low-yielding plantations that are of low economic value. While timber harvesting is excluded from the proposed forest park, the harvesting of such trees and revegetation of these areas would be an appropriate part of park management.



Firewood

The foothill forests of the Otways are the main source of firewood for commercial and domestic firewood collectors, the majority of which is consumed locally.

The proposed forest park includes large sections of suitable foothill forest to cater for this use and its proximity to many Otway communities facilitates collection of firewood by local residents. Firewood collection from public land provides both an economic and cultural need in rural areas. Firewood is a relatively inexpensive heating and cooking resource, particularly in areas that are not connected to the main gas network. The collection of firewood is also often one of the regular traditional activity conducted in rural communities by many families.

Currently the extent of firewood harvesting is moderate, with the amount of firewood in the proposed forest park expected to sustainably provide for existing and future local requirements. Management zones will need to be assigned to ensure that firewood collection does not compromise conservation values or impair recreational experiences in the forest.

Other Minor Forest Produce

The proposed forest park allows low-intensity harvesting of minor forest products. The collection of minor forest produce, other than firewood, in the study area is not a major forest use. Products currently sourced from the Otway forests in significant quantities are grass-tree fronds and heads, tea tree stakes and wood chop logs. Other products include craftwood, posts and poles. Currently these activities are undertaken by a few small operations.

Tea tree stakes, for example, are selectively harvested by a small local family business, from mostly lowland forests. A machete is used to cut individual tea tree stems that are greater than 2.5cm diameter. Sites are revisited as the tea tree grows to meet specification. The stakes are then sold to markets including Geelong, Melbourne, Adelaide and Sydney.

The range of landscapes and vegetation types in the proposed forest park will enable the collection of a wide range of minor forest produce. Prudent management of this resource will ensure that harvesting of these products does not impact negatively on recreations and conservation values.

Grazing

The proposed forest park will continue to provide grazing opportunities where they currently exist. The greater majority of grazing licences occur on water frontages within the forest park.

Water Production

The majority of the proposed forest park is within declared water catchments. The catchments supply the Geelong and Warrnambool schemes. Seven catchments provide 70 percent of the total water supply for Geelong and of these five occur predominantly in the forest park. As Geelong's water supply is sourced from a variety of catchments, there is reasonable security for the water resource as any impact



on a single catchment need not excessively affect the overall quality or quantity of water supplied.

The West Barwon catchment, almost entirely within the proposed forest park, supplies the West Barwon Reservoir. Matthews and Callahans Creek catchments are both almost completely within the proposed forest park and supplement the flows for Geelong via concrete-lined diversions.

Recently, commitments have been made to improve natural conditions for aquatic life in the Barwon River. This has been achieved by increased passing flows from the West Barwon Reservoir and by Barwon Water forgoing its right to harvest water from Gosling Creek.

Water for Gellibrand is pumped from Lardner Creek, which flows for most of its length through the proposed forest park. The Gellibrand and Carlisle Rivers contribute a significant portion of Warrnambool's domestic water supplies. These domestic supplies also provide for some agricultural uses, like dairy farming. The area of forest park covering the western Otways, Lardner forest and a portion of the Wonga forest falls within these catchments.

Mining and Extractives

There are no existing mining licences or leases in the proposed forest park, however a petroleum exploration permit covers the majority of the proposed forest park area. There are also a number of gravel pits. None of these pits are currently operating, however some of them are considered to have a useful gravel resource.

Mining and exploration may be allowed subject to the approval of the Minister for the Environment and where consistent with recreation and conservation management objectives.

Apiculture

The recommendations provide for apiculture where consistent with recreation and conservation management objectives. Currently, there are no known licensed apiculture sites in the proposed forest park.

Defence Force Exercises

Defence force exercises are regularly carried out on public land in the study area. The most common exercises are navigation and camping skills training for local cadet groups. The proposed forest park provides for defence force exercises to continue, subject to the land manager's discretion and conditions.

Research

Research and monitoring is an essential tool of all land managers as it assists in the development of effective management practices. The proposed forest park will be an ideal location for research on recreation management techniques and road drainage, as well as for research on specific natural values. This research may be undertaken by the land manager or other approved researchers or research institutions. Research activities must ensure that recreation and conservation values of the forest park are not diminished.

Environmental Education

The proposed forest park includes two former education areas located at Barongarook and Bamba. These areas will continue to offer schools, tertiary institutes and other educational bodies the opportunity to undertake active hands-on field studies, including physical trials and long term plots, that would not normally be permitted in parks. These two areas, in mountain ash forest and foothill forest respectively, complement the resource offered by the Eumeralla Education Area in the coastal scrub east of Anglesea.

Management Issues

Visitor Use and Tourism

The forest park is likely to be a focus for active vehicle-based forms of recreation and horse-riding, which are less well-suited to national park areas. Increased levels of four-wheel driving, trail-bike riding and horse-riding will place greater pressure on track surfaces, especially at creek crossings and on steep slopes.

Active management will be required to ensure that such pressures do not adversely affect the natural environment. Monitoring of road conditions in the forest park, such as the current Stream Crossing Project, should continue. Such monitoring of the stream/road interfaces assists in identifying required improvements.

The narrowness and undulating nature of many forest tracks means that safety of park users will be an important issue to address. Provision for dispersed camping will require a strong management presence to ensure that regulations dealing with fires, latrines, set backs from water courses and rubbish disposal are all met.

Designated campsites and popular visitor localities, such as at Stevensons Falls, will require a high level of management with well-designed and soundly constructed visitor facilities with regular maintenance. The provision of support facilities, including constructed accommodation by commercial operators, may be appropriate in some locations. Guided tours and professionally supported recreation, such as mountain bike and four-wheel driving trips, should be encouraged to assist visitors to experience the Otway forests in a safe manner.

Park managers must also apply resources to respond to illegal activities such as off-road vehicles driving and riding and unauthorised firewood collection.

Community Involvement

It will be important for park managers to work with local communities and provide opportunities for involvement in park planning and management activities in the proposed park.

Conservation and Protection

Many of the environmental and cultural features of significance found in the park, in particular the habitat of a number of recorded threatened species, will require active management.



Pest plant and animal control must be continued, with ragwort, blackberries, foxes and rabbits of particular concern. Control programs in disturbed areas, such as roadsides, former logging coupes, gravel pits and park/farmland boundaries should continue to be a major management priority to protect park values and promote good neighbour practices.

Rehabilitation of areas disturbed by past uses such as agriculture, timber harvesting, and quarrying, will require active responses, including soil erosion control and revegetation.

The condition of water frontages in the proposed forest park varies widely. All areas of remnant riparian vegetation have high conservation value and require protection from further degradation. Extensive areas of river frontages have, however, been substantially modified, with little native vegetation remaining and weeds rampant. The rehabilitation of such damaged areas, including fencing and revegetation will be a significant and important management priority.

The forests of the Otway Ranges have always been and will continue to be subject to wild fires. Prescriptive burning programs and fire suppression will remain an overriding task of the land manager, in consultation with other fire management bodies.

Water Catchments

Much of the proposed park is within declared water supply catchments that supply water to the Geelong and Warrnambool schemes. Park management must ensure the protection of all such water supply catchments within the park. Should future augmentation of domestic water supplies require the upgrading or construction of facilities within the park, this should be permitted provided adequate safeguards are implemented to protect significant conservation values and water quality.

Timber Production

Government policy dictates the phase-out of timber production by 2008. Consequently the forest park manager will need to oversee timber harvesting during the next four years. It is important that wood utilisation plans be prepared in accordance with the code of forest practices and management prescriptions—and be distributed across the forest park, including the northern fall catchments. Special protection zones (for rare and threatened species) and special management zones (to protect quoll habitat), designated under the Regional Forest Management Agreement, should continue to be applied.

The park manager will also need to work closely with licensed operators to identify appropriate areas for minor forest production such as firewood, posts and poles, woodchop blocks and other plant products and ensure that harvesting is sustainable and conducted with minimal impact on other users and values.

Services and Utilities

A number of transmission lines, communication towers, water supply tanks, pumps and pipelines occur in the forest park. Where such facilities are required for ongoing use, they should be permitted under license.

Boundaries

The recommended forest park area incorporates areas of uncategorised public land and the following existing parks, reserves and state forests:

- Kawarren Regional Park
- Haydens Sawmills Historic Area (part)
- Henry and Sandersons Sawmills Historic Area
- Gellibrand Bushland Reserve
- Latrobe Bushland Reserve
- Pennyroyal Bushland Reserve
- Tomahawk Creek Bushland Reserve (part)
- Barham Paradise Scenic Reserve
- Beauchamps Falls Scenic Reserve
- Johanna Falls Scenic Reserve
- Stevensons Falls Scenic Reserve
- Yaughers Streamside Reserve
- Wild Dog Creek Streamside Reserve
- Yeo Streamside Reserve
- Most water frontage reserves (other than those included in the proposed Otway Ranges National Park)
- Pennyroyal Creek (Bambra) Water Reserve
- Aire State Forest (part)
- Anglesea River headwaters
- Barongarook State Forest (part)
- Kennedys Creek State Forest
- Lardner Creek State Forest
- Otway Forest—Boonah sector (part)
- Otway Forest—Barwon sector (part)
- Pennyroyal forest
- Tomahawk Creek State Forest
- Western Otways State Forest (part)
- Wonga State Forest (part)
- Wormbete State Forest
- Yaughers Forest
- Bambra Education Area
- Barramunga Education Area
- Forrest Recreation Reserve (part)

- Kwarren Recreation Reserve (part)
- Barongarook Watering and Camping Reserve
- Kwarren Camping and Water Reserve (Loves Creek Picnic Area)
- Yaugher Stone Reserve
- Yan Yan Gurt Sanitary Depot Reserve
- Lorne Water Supply Reserve

Statutory Land-use Overlays

Existing statutory controls for water supply catchments apply over parts of the proposed park. These should remain in place.



RECOMMENDATION

BI OTWAY FOREST PARK

That the area of 47,800 ha indicated on Map A as the Otway Forest Park

- (a) be used to:
 - (i) provide opportunities for informal recreation associated with the enjoyment of natural surroundings;
 - (ii) protect and conserve biodiversity, natural and cultural features and water supply catchments; and
 - (iii) supply a limited range of natural resource products;
- (b) be managed to provide for, in particular, the following activities:
 - (i) recreational fishing along public water frontages;
 - (ii) horse-riding, trail-bike riding and 4WD-driving on formed vehicular tracks and designated trails;
 - (iii) camping at designated sites and dispersed camping, including overnight camps for horse-riders;
 - (iv) development nodes to facilitate recreational use, including constructed accommodation, which may be in the form of commercial operations and developments;
 - (v) low-intensity grazing of domestic stock where pre-existing and consistent with recreation and conservation management objectives;
 - (vi) apiculture and low-intensity harvesting of minor forest products such as firewood, posts and poles, woodchop blocks and other plant products; and
 - (vii) exploration and extraction of earth resources, minerals, and petroleum and other fossil fuel products where consistent with recreation and the conservation management objectives, and subject to the approval of the Minister for the Environment;
- (c) be regulated to **exclude** the following activities:
 - (i) timber harvesting for sawlog and pulpwood production, other than for harvesting in accordance with approved Wood Utilisation Plans to meet existing timber licence obligations up to 2008;
- (d) be managed in a manner that gives particular emphasis to:
 - (i) strategies to reduce the risk of soil erosion from vehicular use of steep forest vehicular tracks;
 - (ii) ensuring the safety of riders and drivers on narrow, undulating vehicular tracks;
 - (iii) ensuring the quality and yield of the domestic water supply catchments and, where necessary



to achieve this, restrict the timing, location, nature and intensity of scientific, educational, recreational and resource use and development of facilities for public access and recreation;

- (iv) fire protection in the vicinity of Lorne, and other communities;
 - (v) pest plant and animal control on park margins and water frontages;
 - (vi) fencing and revegetation of water frontages;
 - (vii) maintaining opportunities for environmental education and research in mountain ash forest and foothill forest at, respectively, Barrumunga and Bamba; and
 - (viii) protecting the special features listed in the schedule below;
- (e) be permanently protected under new legislation.

- Notes:
1. Active recreational use and resource utilisation will not be generally appropriate in parts of the forest park consisting of small (less than 100 ha) blocks, nor on the beds, banks and areas of remnant riparian vegetation within water frontages.
 2. Council is aware that the requirement for the consent of the Minister for the Environment for the exploration and extraction of earth resources, minerals and petroleum and other fossil fuels will require amendment to the *Extractive Industries Development Act 1995* and the *Mineral Resources Development Act 1990*.
 3. Council is aware that amendments may be required to the *Land Act 1958* and the *Water Act 1989* to provide for the continuation of grazing over water frontages and the extraction of water from areas included as forest park.
 4. The buffer areas to the West Barwon Reservoir and northern catchment weirs are defined and subject to special area plans (previously known as land use determinations or LUDs) made under the *Catchment and Land Protection Act 1994*. These arrangements should continue.
 5. Where appropriate, the land manager may enter into formal agreements with private operators to build and/or operate facilities in accordance with approved management plans. Similar arrangements may apply for relevant park programs.
 6. Practical access should continue to be provided to existing private land holdings surrounded by the park.
 7. Council supports the continuation of land-acquisition programs by opportunistic purchase to consolidate park boundaries. Boundary rationalisation, perhaps by way of land exchange should also be explored. Implementation of the park is intended to allow flexibility for minor boundary adjustments.

Schedule Of Special Features To Be Protected

These have been grouped by geographic regions to assist managers and others to locate the sites.

Anglesea Headwaters/ Wormbete Forest

Nature Conservation

- A stand of old growth forest within the Wormbete forest.
- Habitat for ground-dwelling mammals such as the swamp antechinus and southern brown bandicoot.
- The locality of the only recorded emu sighting within the public land of the Otways.
- The large untracked area of the Anglesea River headwaters block.

Historical Sites

- Site of the Great Western Colliery Company coal mine (1890s to 1940s).

Otway Ranges Inland fall, including Lardners Creek forest

Recreation Sites and Landscape

- Stevensons Falls picnic area, camping ground and walking tracks, together with the associated early exotic tree plantings and waterfall.
- Beauchamp Falls picnic area and walking tracks and associated forest and waterfall.
- Dandos picnic and camping ground.
- Network of four wheel drive tracks, especially in the West Barwon catchment.

Nature Conservation

- Stands of old growth forest.
- Threatened fauna including the long-nosed potoroo, white-footed dunnart, long-nosed potoroo, powerful owl, Otway black snail and smoky mouse.

- Habitat for ground dwelling mammals such as the broad-toothed rat and southern brown bandicoot as well as the yellow-bellied glider.
- Populations of the threatened plant, wrinkled buttons.
- Geomorphological features of the Stevensons (Upper Gellibrand) falls.

Historical Sites

- Historic sawmill sites and associated landings, log lines, snig tracks, and tramways including Haydens No 2 and No 3, Mackie No 4 and No 6, Hayden No 4 and No 5, Henry No 2, Hitt No 4 and Kincaid sawmills.
- Historic tramways including the McDonald tramway (1920s) and Sanderson sawmill tramway (c 1920s).
- The Henry and Sanderson sawmill sites, tramlines and tunnels of the West Barwon catchment which have been classified as being of state significance.

Yaugher Forest

Nature Conservation

- Two small stands of old growth forest.
- Threatened fauna including the long-nosed potoroo and southern toadlet.
- Habitat for ground dwelling mammals such as the southern brown bandicoot.

Lorne Environs

Recreation Sites and Landscape

- Small waterfalls on the Erskine River.
- The natural environs of Teddys Lookout.
- Network of walking tracks.

Nature Conservation

- The habitat of the threatened Australian grayling, chestnut-rumped heathwren, long-nosed potoroo and masked owl.
- Populations of the threatened wrinkled buttons and the near threatened netted daisy-bush, southern blue-gum, dwarf silver wattle, Madeira moss and wiry bossiaea.

Historical Sites

- Teddys Lookout, especially its 1920s picnic shelter/pavilion; and its association with Queens Park.
- The 'sanctuary', a natural amphitheatre on the Erskine River; used as a church and later scenic picnic spot from the 1850s to the 1900s.

Aire Forest—Head of Aire and Ford River Blocks

Recreation Sites and Landscape

- Networks of four-wheel drive tracks.

Nature Conservation

- Three small stands of old growth forest.
- Threatened fauna, including the Otway black snail and powerful owl.

Western Otways

Nature Conservation

- Stands of old growth forest.
- Threatened fauna including the Otway black snail.
- Stands of slender tree-fern.



- The habitat of the spot-tailed quoll, especially in the vicinity of recent records in the Charlies Creek forest, and the habitat of the yellow-bellied glider.

Historical Sites

- Features and relics of the Northern Timber Co sawmill (and associated snig tracks, winch sites and tramline), Knott sawmill (mill, access line and log line - 1923-1928) and the Robins and Kincaid sawmills and tramways (early 20th century).

Kennedy Creek forest

Nature Conservation

- Three small stands of old growth forest.
- Threatened fauna including the powerful owl, long-nosed potoroo and barking owl.
- Habitat of the eastern false pipistrelle.

Tomahawk Creek/ Wonga Forest

Nature Conservation

- Stands of old growth forest.
- Threatened fauna including the swamp skink and white-footed dunnart.
- Habitat of ground-dwelling mammals such as the long-nosed bandicoot and spot-tailed quoll.

Kawarren Block

Recreation Sites and Landscape

- Birnum Station Ground picnic area and associated rail trail walking and cycling path.
- Loves Creek picnic ground and surrounding forest.

Nature Conservation

- A stand of old growth forest.
- Habitat for ground-dwelling mammals such as the swamp antechinus.
- Threatened fauna including the long-nosed potoroo and southern toadlet.
- Fossil site in former limestone quarry at Loves Creek.

Historical Sites

- Site of the Birnum Station on the Old Beechey narrow gauge railway line.

Park-wide Features

- Archaeological sites and other sites and places of Aboriginal cultural significance.

CHAPTER 5 OTHER PUBLIC LAND

Other public land in the Otways include small reserves protecting natural features and areas providing services and utilities for local communities.

In addition to the main large blocks of public land in the Otways, there are many smaller, more isolated, blocks that contribute to the protection of natural landscapes and biodiversity and provide a base for services and utilities required by the community. Investigations have focused on larger blocks of public land where a deliberate effort to reduce the number of land-use categories has been applied. In responding to the terms of reference, however, VEAC has taken a comprehensive approach and assessed the values of all areas—both large and small—prior to the consideration of new parks and reserves. Council has proposed that a number of the smaller existing parks and reserves be included within the larger proposed national park or forest park. Many of the smaller, more isolated blocks of public land not within the proposed national park or forest park do, however, also contain important community values. VEAC proposes that such smaller public land areas remain allocated to distinct land-use categories in order to clearly identify their roles.

Proposals for such areas of public land are based on the ten broad land-use categories which form the basis of existing legislation and management arrangements. Most of the land-use categories have been used in the past for public land in the Otways. Most recently, marine parks have been proclaimed at the western and eastern extremities of the Otways respectively, at Princetown (the Twelve Apostles Marine National Park) and at Anglesea (Point Addis Marine National Park). Such marine parks complement the protection of the Otways terrestrial environment now being proposed by Council in the Otway Ranges National Park. No changes to these are proposed.

Parks, including national and forest parks, have been discussed in the preceding chapters 3 and 4, under section A and B respectively. All existing reserves lying outside the proposed national park and forest park are listed below, together with Council's proposals for a number of new or amended nature conservation and other reserves. A small portion of public land in the study area will be unreserved and appears as uncategorised public land. All of these land-use categories appear as follows:

- C: Nature conservation reserves
- D: Natural feature reserves, including water frontage, streamside, scenic, wildlife and bushland reserves
- E: Water production areas
- F: Coastal reserves
- G: Community use areas, including education areas, parklands and gardens, recreation reserves and buildings in public use

H: Other land-use categories

- Historic and cultural features reserves
- State forest (and plantations)
- Earth resources, including stone reserves
- Services and utilities reserves

C NATURE CONSERVATION RESERVES

Nature conservation reserves are set aside to conserve rare or threatened species and significant plant associations or communities. The primary land-use objective is nature conservation, although education, scientific study and passive recreation are permitted subject to the maintenance of the values of the particular reserve.

The majority of existing nature conservation reserves are to be included in the proposed Otway Ranges National Park. Other existing nature conservation reserves lie within township areas or occur as distinct public land blocks within the study area beyond the Otway Ranges. These have been reviewed and, on the basis of their values and proximity to other existing reserves, VEAC proposes that they be retained as nature conservation reserves, included in adjoining reserves or reclassified to another land-use category.

VEAC proposes one new reserve and that three existing nature conservation reserves be retained, with two of these enlarged, as follows, to encompass nearby or adjoining areas of high nature conservation value.



PROPOSED NEW OR ENLARGED NATURE CONSERVATION RESERVES

CI JANCOURT NATURE CONSERVATION RESERVE

The proposed Jancourt Nature Conservation Reserve encompasses the largest remnant of the once extensive Heytesbury Forest. This land lies on the western edge of the study area surrounded by open pastures, much of which was developed in the 1950s and 60s.

The proposed reserve would significantly improve the protection of a number of vegetation communities that are currently poorly represented within the reserve system.

Nature Conservation Features

The proposed reserve is of high species richness and a number of threatened flora and fauna have been recorded within its boundaries, including the powerful owl and the forest bitter-cress, both of which are vulnerable in Victoria. Near-threatened species recorded include the tufted club-sedge and the parsley xanthosia, both of which are rare in Victoria. The proposed reserve has the only record of forest bitter-cress within the study area and is one of only four sites in Victoria where the plant has been recorded.

The proposed reserve would make a significant contribution to the representation of a number of ecological vegetation classes (EVCs). A number of EVCs are considered vulnerable within the Warrnambool Plains bioregion: herb-rich foothill forest (1476 ha), lowland forest (455 ha), and damp heath scrub (39 ha). The proposed reserve encompasses the largest consolidated block of herb-rich foothill forest remaining on the Warrnambool Plains as well as in the study area.

Sedgy riparian woodland is considered endangered within the bioregion and is well represented in the proposed reserve. These woodlands extend across 157 ha, of which two blocks with a combined area of about 50 ha, consist of old growth woodlands.



Management Issues

Parts of the proposed reserve were logged in the 1990s and 2000s for firewood, mostly along a well-constructed network of vehicular tracks, and have been subject to an active program of silvicultural improvement. Additional silvicultural works and ecological burns may be required in the future to maintain the ecological diversity of, in particular, the herb-rich foothill forest. Weed control within the understorey will continue to be required. While the existing track network provides good access for visitors, there is scope to rationalise the number of tracks and, where possible, divert through traffic to other routes.

Boundaries

The proposed new reserve includes the existing Carpendeit Flora and Fauna Reserve and the Jancourt State Forest.

C2 STONY RISES (BUNGADOR) NATURE CONSERVATION RESERVE

There is virtually no public land remaining within the stony rises region of the western district. It is proposed that an additional remnant block of public land be added to the existing Stony Rises Flora and Fauna Reserve.

Nature Conservation Features

The proposed reserve consists of two separate blocks, both of which are representative of the unusual stony rises landform and associated vegetation community. The vegetation of the reserve consists of stony rises woodland, an open grassy woodland, with an overstorey dominated by manna gum and swamp gum. This ecological vegetation class is considered vulnerable in Victoria. The proposed Stony Rises Nature Conservation Reserve is one of only two public land reserves where the EVC is found.

The fauna of the stony rises has been greatly depleted and species such as the eastern quoll and common wombat no longer occur there. The open woodlands are, however, important for bird species otherwise only found in northern Victoria and the rocky terrain provides habitat for ground dwelling fauna, especially reptiles.

Management Issues

A number of pest plant species have been recorded in the understorey of both blocks and require control. Fencing and signage will assist in raising awareness of the status of the land and reducing pressure from wandering stock.

Boundaries

The proposed reserve includes the existing Stony Rises (Bungador) Flora and Fauna Reserve (also known as the Stony Rises Wildlife Reserve) and CA15D, Parish of Pomborneit—a 1.8 ha block that is currently unreserved. See also Recommendation D2 below.

C3 MARENGO FLORA RESERVE

The proposed additions to the Marengo Flora Reserve will extend and consolidate protection of the remnant coastal heathlands at Marengo.

Nature Conservation Features

Three EVCs are found in this small reserve: wet sands thicket, damp heath scrub and swamp scrub. These communities have limited distribution within the study area and have been greatly modified elsewhere in Victoria. At Marengo, the three vegetation communities merge into each other and form an impenetrable block of highly diverse flora.

Management Issues

Parts of the proposed reserve have been disturbed in the past by a mini bike track and drainage works, and may require rehabilitation, and pest plants on the reserve margins require control. Monitoring will be required to ensure that there is no leaching of contaminants from the adjoining former Marengo rubbish tip.

Boundaries

The proposed reserve includes the existing Marengo Flora Reserve (CA7G of Sec2A, Parish of Krambruk and CA2 of Sec 3A and CA2 of Sec 3C, Township of Marengo), together with CA11-19 of Sec 3, Township of Marengo, a 3.0 ha block that is currently unreserved, and the three intersecting road reserves.



RECOMMENDATIONS

CI-C4 NATURE CONSERVATION RESERVES

That the following existing, enlarged or new nature conservation reserves as indicated on Map A and described above and listed below be, or continue to be, used as nature conservation reserves:

- C1 Jancourt Nature Conservation Reserve (3358 ha)—new reserve
- C2 Stony Rises (Bungador) Nature Conservation Reserve (15.1 ha)—existing reserve with addition, see also Recommendation D2
- C3 Marengo Flora Reserve (24.4 ha)—existing reserve with additions
- C4 Edna Bowman Flora Reserve (0.8 ha)—existing reserve

Notes:

- 1. The Jancourt Nature Conservation Reserve includes the existing Carpendeit Flora and Fauna Reserve.
- 2. The following existing nature conservation reserves have been proposed for inclusion in the new Otway Ranges National Park:
 - Eumeralla Flora Reserve (286 ha)
 - Anglesea (Forest Road) Flora Reserve (569 ha)
 - Mount Ingoldsby Flora Reserve (48 ha)
 - Mt McKenzie/ Crinoline Creek Flora & Fauna Reserve (2159 ha)
 - Olangolah Flora & Fauna Reserve (1694 ha)
 - Princetown Nature Conservation Reserve (68.5 ha)
 - Redwater Creek Flora & Fauna Reserve (370 ha)
 - Smythes Creek Flora Reserve (78 ha)
 - West Barham Big Trees Flora Reserve (220 ha)
 - Yaughar Flora & Fauna Reserve (121.5 ha)
- 3. The Barongarook West Flora and Fauna Reserve (0.7 ha) is now proposed to be a natural features reserve, as Council considers that this category better reflects the values of the land—see Recommendation D5.
- 4. The Yan Yan Gurt Flora & Fauna Reserve (16 ha) is now proposed for addition to the adjoining Bamba Education Area—see Recommendation G1.
- 5. Local names for existing reserves have been retained.

D NATURAL FEATURES RESERVES

Natural features reserve is a general public land-use grouping that includes land with natural features (such as a river, stream, lake, scenic area, bushland, geological or geomorphological features) worthy of protection. These reserves are protected (especially in land types that have been largely cleared) – for conservation of habitat, maintenance of landscapes and prevention of land degradation, while providing opportunities for passive recreation and, where relevant, recreational duck-hunting.

VEAC has reviewed all existing natural feature reserves and other small uncategorised blocks of public land with a view to assessing the appropriateness of including such land into the proposed Otway Ranges National Park or upgrading them as a nature conservation reserve.

Most reserves previously set aside to protect waterfall areas have been included in the Otway Ranges National Park, as have the Tomahawk Creek and Wiridjil Bushland Reserves (by far the largest bushland reserves in the study area). All river frontage reserves have been proposed for inclusion in the Otway Forest Park. Most of the remaining existing natural features reserves are small isolated blocks. Council is recommending that these remain as natural feature reserves. A number of other smaller blocks of public land assessed as not appropriate for addition to a national park or as a stand-alone nature conservation reserve, were nonetheless considered to contain features that should be recognised and they have been proposed for inclusion in new natural features reserves.

RECOMMENDATIONS

D1-D20 NATURAL FEATURES RESERVES

That the following existing, enlarged or new natural features reserves as indicated on Map A and listed below be retained, and continue to be used, as natural features reserves:

- D1 Coradjil Bushland Reserve (166.2 ha)—existing reserve with addition
- D2 Stony Rises (Bungador) Natural Features Reserve (1.1 ha)—new reserve
Note: This reserve is currently severely infested with several environmental weed species. These should be removed and, when native ground cover has been substantially restored, the reserve should be added to C2 Stony Rises (Bungador) Nature Conservation Reserve.
- D3 Carpendeit Natural Features Reserve (11.2 ha)—new reserve
- D4 Irrewillipe Natural Features Reserve (26.1 ha)—new reserve
Note: Part of this reserve has been cleared and requires revegetation.
- D5 Barongarook West Natural Features Reserve (0.7 ha)—new reserve
Note: This reserve was previously classified as a flora and fauna reserve.
- D6 Six Mile Dam Lake Reserve (5.4 ha)—existing reserve
- D7 Gellibrand North Bushland Reserve (0.6 ha)—existing reserve
- D8 Aire River Wildlife Reserve (279.2 ha)—existing reserve with additions
Note: Fencing will be required to exclude grazing from the wetland areas and connecting watercourses.
- D9 Marengo Bushland Reserve (2.4 ha)—existing reserve
- D10 Wongarra Bushland Reserve (1.3 ha)—existing reserve
- D11 Barwon Downs Bushland Reserve (22.7 ha)—existing reserve with additions
Note: Part of the proposed addition includes the site of the former Barwon Downs tip; this requires revegetation.
- D12 Yeo Streamside Reserve (5.8 ha)—existing reserve
- D13 Murroon Bushland Reserve (2.1 ha)—existing reserve
- D14 Parkers Road (Bambra) Bushland Reserve (2 ha)—existing reserve
- D15 Bambra Bushland Reserve (37.1 ha)—existing reserve with additions
- D16 Wensleydale Bushland Reserve (11.2 ha)—existing reserve
- D17 Gherang Gherang Bushland Reserve (107.4 ha)—existing reserve
- D18 Aireys Inlet Bushland Reserve (2.1 ha)—existing reserve

- D19 Elizabeth Street (Anglesea) Natural Features Reserve (1.5 ha)—new reserve
- D20 Minor isolated water frontage reserves to the west and north of the Otway Ranges

Notes: 1. Local names for existing reserves have been retained.

E WATER PRODUCTION AREAS

Water production areas encompass water storage areas, diversion weirs, pump intakes and associated buffer areas used primarily for water supply purposes.

The Otways are a vital source of water for Warrnambool, Colac, Geelong and a number of other towns and settlements in south-western Victoria. The actual land from

which the water is harvested has been included within national or forest parks, with special provision made to ensure the continued supply of high quality water. VEAC proposes that the following areas remain as water production areas. Note that public land used for the distribution of water, including small storage tanks and reservoirs are classified as service and utility reserves.

RECOMMENDATIONS

E1-E15 WATER PRODUCTION AREAS

That the following water production areas as indicated on Map A and listed below continue to be used for water supply purposes.

- E1 South Otway Offtake (and pumping stations)
- E2 Gellibrand Offtake (and pumping stations)
- E3 Arkins Creek diversion weirs and buffer
- E4 Lardner Creek Offtake (and pumping station)
- E5 West Barham Weir
Note: Council is aware that Barwon Water proposes to relocate this weir to a downstream offtake; at which time the existing weir should be removed and a new water production area defined.
- E6 West Gellibrand Reservoir and buffer
- E7 Olangolah Reservoir and buffer
- E8 West Barwon Reservoir and buffer
- E9 East Barwon River Diversion Weir
- E10 Callahan Creek Diversion Weir
- E11 Barwon Downs Groundwater Bore
- E12 Matthews Creek Diversion Weir
- E13 Pennyroyal Creek Diversion Weir
- E14 Allen Reservoir
- E15 Painkalac Reservoir and buffer



F COASTAL RESERVES

Coastal reserve is a multi-use land-use category set aside primarily to provide informal recreation for large numbers of people, including fishing and boating, in a coastal environment, as well as protection of natural coastal landscapes, ecosystems and flora and fauna.

Coastal reserves are a focal point of recreational activity in the Otways, with ocean beaches and sheltered sandy bays of the foreshores at Apollo Bay, Kennett River, Loutit Bay (Lorne), Fairhaven and Anglesea especially popular. The waters beyond high water mark are best considered a transition zone between terrestrial and marine processes and are used for swimming, sailing and fishing. Jetties and harbours also extend beyond the low water mark.

The Apollo Bay harbour and Lorne Jetty are managed as local ports, which are important for the local fishing industry as well as for visitors. The Apollo Bay harbour is especially important as a safe haven for recreational boats and inshore and offshore fishing fleets.

Coastal reserves are currently managed by various committees of management. These arrangements have recently been reviewed, with two consolidated committees being proposed—one encompassing most of the coastal reserves in the Shire of Colac-Otway and the other covering most coastal reserves in the Surf Coast Shire. VEAC has proposed that some sections of the existing coastal reserve be included in the proposed Otway Ranges National Park.

RECOMMENDATIONS

FI-F2 COASTAL RESERVES

That the following coastal reserves as indicated on Map A and listed below be, or continue to be, used as coastal reserves.

- F1 Apollo Bay Coastal Reserve
Note: This reserve includes existing coastal reserves, foreshore reserves and unreserved lands between Marengo and Carisbrook Creek and at Kennett River and Wye River.
- F2 Lorne-Anglesea Coastal Reserve
Note: This reserve includes the existing coastal reserves, foreshore reserves and unreserved land at Lorne, between Eastern View and Aireys Inlet and at Anglesea.



G COMMUNITY USE AREAS

Community use areas are primarily used for education, recreation or other specific community purposes.

All public land is utilised either directly or indirectly for the benefit of the community. Designated community use areas are those where education, recreation or other specified community use is the primary land-use goal. They include land used for environmental education, recreation reserves such as sports grounds, local parks and formal gardens and buildings such as schools, public halls, kindergartens, or libraries. Most of these reserves are currently managed by committees of management.

VEAC is aware of proposals to develop the former Beech Forest narrow gauge railway line and the former Birregurra-Forrest railway as rail trails for informal recreation, such as walking, cycling and horse-riding, and to protect remnant features of the former railway, such as the track formation and embankments. Council supports such proposals and notes that such rail trails may form desirable links between the larger blocks of public land.

Other community use areas that offer additional recreational opportunities include shooting ranges, speedways, moto-cross complexes, and youth camps.

Should a building or site no longer be required for its primary designated use, it should be assessed for its cultural and natural heritage values and capability for other public uses before, in consultation with the community, being either added to an adjoining public land-use category, re-categorised, exchanged or disposed of.



RECOMMENDATIONS

GI-G7 COMMUNITY USE AREAS

That the following community use areas as listed below, and mostly indicated on Map A be, or continue to be, used as community use areas:

- G1 Bambra Education Area (22 ha)—additional area
- G2 Eumeralla Education Area (125.9 ha)—part of existing area
- G3 Recreation reserves—existing areas, other than where amended by another recommendation
- G4 Parklands and gardens—existing areas and minor additions
- G5 Buildings in public use—existing areas
- G6 Rail trails—existing areas and possible additions
Note: Where remnant native vegetation occurs, this should be protected.
- G7 Shooting ranges, golf courses, speedways, moto-cross complexes, and youth camps—existing areas

Notes:

1. Council has proposed that the existing Barramunga Creek Education Area and pre-existing Bambra Education Area be part of the proposed Otway Forest Park and that part of the existing Eumeralla Education Area be included in the proposed Otway Ranges National Park. The re-categorised areas are currently seldom used and retain little-disturbed vegetation.
2. Council considers that the values of the existing Marengo Tramway Historic Area are more commensurate with designation as a parkland and garden. Remnants of the former tramway embankment should be maintained.



H OTHER LAND-USE CATEGORIES

Historic And Cultural Feature Reserves

Most of the existing historic and cultural features reserves have been included in the proposed Otway Ranges National Park, which will provide a similar to current level of protection for their historical values. Two of the existing reserves have been proposed for inclusion in the proposed Otway Forest Park and one, the Marengo Tramway Reserve, has been reclassified as a community use reserve (parklands and garden)—but in each case their historical values have been listed as a value to be protected. VEAC is not proposing any stand-alone historic and cultural features reserves.

State Forest

All existing state forest areas are included in the proposed Otway Ranges National Park, Otway Forest Park or other land-use categories.

Earth Resources and Stone Reserves

Provision has been made for the continued extraction of earth resources within the proposed forest park (see Recommendation B1), pre-existing operations within the proposed Otway Ranges National Park (see Recommendation A1) and within a number of stand alone existing stone reserves (see below).

RECOMMENDATIONS

HI-H3 STONE RESERVES

That the following areas as indicated on Map A and listed below be, or continue to be, used as stone reserves:

- H1 Gellibrand Stone Reserve (2.1 ha)—existing reserve
- H2 Gerangamete Stone Reserve (13.2 ha)—existing reserve and addition
- H3 Gherang Gherang Stone Reserve (110.2 ha)—existing reserve

Notes: 1. The existing Rochford Road Stone Reserve (2 ha) in the Parish of Gherang Gherang has not been developed and is currently subject to a grazing licence. Council has proposed that it be more appropriately assigned as uncategorised public land.

Services And Utilities

VEAC has made provision for the continued use of existing services and utility facilities within the proposed Forest Park, pre-existing operations within the proposed Otway Ranges National Park and within existing stand alone reserves in township areas and where located on isolated blocks. Examples of service and utility reserves include water and sewerage services, waste disposal facilities, cemeteries, and government offices.

Should a facility no longer be required for its primary designated use, the land and facility should be assessed for its cultural and natural heritage values and capability for other public uses before, in consultation with the community, being either added to an adjoining public land-use category, re-categorised, exchanged or disposed of.

RECOMMENDATION

H4 SERVICE AND UTILITY RESERVES

H4 That existing service and utility reserves as indicated on Map A be, or continue to be, used as service and utility reserves.

I UNCATEGORISED PUBLIC LAND

This category includes public land, often in small rural parcels or in townships, for which no other category is recommended. Many such parcels were previously recommended as “other reserves and public land or township land”. In some cases, no previous recommendations were indicated on public land use maps.

Where no specific recommendation for a public land block has been made, existing legal use and tenure should continue, and those areas not currently used for any particular purpose should be used in a way that will not reduce future options. A substantial area of public land on

Dewings Creek is owned by Barwon Water and may be required in the long term for water storage. Accordingly, this area is proposed to remain as uncategorised public land and present use should continue until such time as a decision is made regarding the use of this land for water production.

Should any such land no longer be required for its existing use, it should be assessed for its cultural and natural heritage values and capability for other public uses before, in consultation with the community, being added to an adjoining public land-use category, re-categorised, exchanged or disposed of.

RECOMMENDATION

II UNCATEGORISED PUBLIC LAND

II That:

- (a) public land other than that:
 - (i) recommended for specific uses in this report, or
 - (ii) subject to previous approved specific land use recommendations, be uncategorised public land;
- (b) existing legal use and tenure continue for the time being; and
- (c) when Crown land assessments are completed, and following appropriate consultation, the land may be either:
 - (i) assigned to a DSE land manager if assessed as 'public land', or
 - (ii) used in a land exchange or disposed of if assessed as surplus.



PART 2
ISSUES

CHAPTER 6 NATURAL AND CULTURAL HERITAGE

The Angahook-Otway study area has a wide range of natural and cultural heritage values, from fragile ecosystems that support rare and threatened species, to internationally significant geological and geomorphological features. It is rich in the history of the indigenous peoples whose shell middens, quarries, rock shelters, axe grinding grooves and artefact scatters are evidence of a long and profound association with the land. The history of European occupation is also apparent, with many relics of the timber, shipping and transport and other industries.

Natural Heritage

Central to VEAC's vision for the Otways is an enhanced environmental outcome, at the core of which are biodiversity protection and conservation, provided by the proposed Otway Ranges National Park and other parks and reserves. The proposed reserve system has been designed to maximise protection for natural values, especially those for which adequate reserve protection is a key conservation requirement. The objective of biodiversity conservation is to protect natural ecosystems and thereby ensure the survival of the 1230 recorded plant species, 341 recorded vertebrates, indigenous invertebrates and other unrecorded species found in the Otways.

Community Views on Biodiversity

Biodiversity protection in the Otways has substantial community support, with many submissions recognising the area's outstanding natural values, including old-growth forest, cool temperate rainforest, diverse heathlands and coastal habitats. Many submissions to VEAC's Discussion Paper specifically refer to the importance of nature conservation, through protection of either wildlife habitat or threatened species. Many submissions proposed including specific places or extensive areas in the national park.



Ecosystem Protection

The proposals outlined in this report would establish a substantially increased area of permanent reserves dedicated primarily to biodiversity conservation. Such reserves implement the principles of a comprehensive, adequate and representative reserve system. VEAC's proposals aim at including areas of all ecosystem types in permanent parks and reserves, ensuring these areas are of suitable size and represent an appropriate extent of each ecosystem. This approach seeks to protect all plant and animal species within those ecosystems.

To ensure the protection of rare and threatened species, information from the Department of Sustainability and Environment's Atlas of Victorian Wildlife and Flora Information System databases was used in the design of the proposed formal reserves. Considerations included habitat requirements, species ranges and habitat linkages.

The species with the highest conservation status—those at most risk—may require recovery programs. However such programs consume extensive resources and can only be applied to a small number of species. The only practical way to provide habitat for all species (as far as possible) is to conserve large areas representing the range of habitat types.

Old-growth, or ecologically mature forest, contains key habitat resources for many species and is an important repository of both flora and fauna. Long-term protection in permanent reserves protects current old-growth and, over time, allows more ecologically mature forests to replace old-growth forests lost to wildfire.

The protection of natural values from over-use or inappropriate use by visitors is a high priority in national parks. Visitor management techniques may be implemented to protect natural heritage and to rehabilitate damaged areas.

As well as conserving natural heritage, national parks and other permanent reserves such as nature conservation reserves provide long term protection for other whole of landscape values such as scenic amenity, and ensure priority for the protection of sensitive species or features.

Climate Change

Climate change is expected to lead to a more erratic climate pattern in the study area. There are likely to be more extreme events such as storms and droughts against a background of higher average temperatures and reduced annual rainfall.

VEAC has applied design principles for reserves in the study area that aim at minimising the impact of climate change on threatened species and ecological communities. These principles include: the permanent protection of important habitat areas; ecological connectivity to facilitate migration and dispersal of species through the provision of habitat



links; and the protection of drought refuges for wildlife, including wetter habitats and gully vegetation.

Actions to reduce greenhouse gas emissions are being taken under the Victorian Government's Greenhouse Strategy.

Ecological Vegetation Classes

Vegetation types are commonly grouped into ecological vegetation classes (EVCs), which consist of one or more vegetation communities occurring under similar environmental conditions. Bioregions are larger areas that have been classified according to a number of environmental variables including landform, rainfall and soil fertility. The representation of specific EVCs within bioregions is often used as a measure of ecosystem representation. VEAC's proposals significantly increase the representation of EVCs in permanent reserves (see chapter 13).

Zoning

Management zoning is another method of achieving natural heritage protection in all land use categories. Zoning can be used to exclude particular activities with negative impacts from areas with high conservation value, or to highlight particular requirements of an area, such as a specific fire regime. While both the national park and forest park categories will have management zoning applied, zoning will be of particular importance with respect to protecting natural values in forest park areas, where the demands of more intensive recreation and minor forest produce utilisation will also need to be accommodated.

VEAC's proposals include a schedule of special features to be protected within the forest park estate. This emphasis on the protection of particular values and locations highlights their importance to land managers and the community, and will contribute to ensuring their conservation.

Small Parcels of Public Land

Smaller vegetated blocks of public land in the study area (a number of which are currently natural features reserves or bushland reserves) are important for protecting remnant vegetation and landscape amenity in areas where cleared farmland is the dominant land use. These significant areas are particularly susceptible to threats such as weed invasion because of their large exposed boundary. In addition, these blocks have a limited capacity to cope with impact from recreational pursuits and minor forest produce utilisation. Astute planning and management will be required to ensure that these sites continue to play a significant nature conservation role across the study area.

The Otways Park

The Otways Park aims to protect natural and cultural heritage through integrated management across contiguous public land areas of the Otway region. The Otways Park concept responds to the reality that some land management

issues extend beyond land-use category boundaries, and aims to ensure that such issues are dealt with effectively. For example, habitat protection for threatened species requires active management across land-use categories. Habitat maintenance for some species, such as the ground parrot, requires ecological burning regimes or "eco-burns" to maintain vegetation of appropriate species and age-classes.

Pest plant and animal control also requires active management within the Otways Park. Pests are significant threats to biodiversity across the landscape, from blackberries along water frontages to the impact of foxes on threatened fauna populations, such as spot-tailed quolls. Management of pest plants and animals is a priority for all land managers, public or private. Integrated management of pest plants and animals on public land will result in improved conservation of natural values in the study area.

Cinnamon fungus is a well-known soil borne pathogen that has a dramatic impact particularly upon heathland and other vegetation communities. The national park proposals emphasise the need for careful management of this pathogen to ensure that it does not become a significant presence in the extensive heathland communities of the Otways.

Protecting Natural Values

EVC representation in national parks offers long-term conservation of natural values in the permanent reserve system. VEAC's proposals result in an increase in the area of a number of EVCs that were previously under-represented in permanent reserves, including:

- lowland forest, dominated by brown stringybark, or occasionally co-dominated by messmate, narrow-leaved peppermint and the rare bog gum;
- herb-rich foothill forest, with messmate dominant or co-dominant with mountain grey gum; and
- shrubby wet forest, dominated by messmate, mountain grey gum and manna gum.

Permanent representation of the several other habitats would also be substantially increased by VEAC's proposals. Cool temperate rainforest, for example, is home to a large number of threatened species, including tall astelia, slender tree-fern, beech finger-fern and slender fork-fern. These cool, damp environs are also habitat for species found nowhere else, such as the Otway black snail and Otway stonefly. The proposed national park delivers secure, long-term protection for all rainforest sites of national and state significance in the Otways, and over two-thirds of extant cool temperate rainforest.

Another vegetation type with a high proportion of rare and threatened species is heathy woodland. Substantial areas occurring near Anglesea, Carlisle River and Devondale are included in the proposed national park. These heathlands are strongholds for many orchids, some listed as rare or threatened including the endemic Anglesea sun-orchid.



Old-growth forest is valued for its scarcity, habitat value, and species diversity. It is well-represented in the proposed national park, with inclusion of all the largest patches of old growth occurring across a broad range of vegetation types.

Several rare and threatened species in the study area require large, contiguous areas of suitable habitat, notably the powerful owl and the spot-tailed quoll. Habitat links are also important for many other species in the study area, providing increased security against habitat fragmentation, which often leads to extinction. The extended national park contributes to meeting these requirements.

The proposed national park and forest park play a significant role in protecting populations that may be key links in their species' western Victorian or coastal distributions, such as the long-nosed potoroo, swamp skink, wine-lipped spider-orchid and heart-lip spider-orchid. The Otways are the south-west limit of the distribution of many Australian east coast species such as the broad-toothed rat and satin bowerbird.

For other species, geographic isolation has resulted in a high level of endemism the Otways. For example, the endemic Otway population of the rufous bristlebird has been identified as a separate subspecies to other populations in far western Victoria. Protection of such rare and threatened species will be a high management priority for the proposed national park and forest park. The poorly known status of a number of other apparently endemic species highlights the importance of careful management and long-term protection for the Otway forests. While some knowledge exists for the rare carnivorous Otway black snail, there is limited information regarding the distribution and ecological requirements of several other land snail species thought to be endemic to the area.

Rivers and Streams

The waterways of the Otways are home to at least 14 native freshwater fish species including the critically endangered Australian mudfish and the vulnerable Australian grayling.

Most public land water frontages are proposed for inclusion in the forest park category. These water frontages are to be managed with particular emphasis on fencing and revegetation. With many water frontages in the study area in poor condition, this proposal will improve native vegetation cover and reduce streambank disturbance and weed infestation.

Riparian zones are particularly sensitive environments—important for biodiversity in themselves—and with potentially significant effects on instream characteristics such as nutrient levels and turbidity. Protection and enhancement of natural values along water frontages will contribute to overall conservation management objectives. In addition, proposals to fence and revegetate water frontages help develop a culture of integrated land management involving farmers, resource users and Government.

The outstanding values of the Aire River were recognised with its designation as a heritage river under the *Heritage Rivers Act 1992*. The majority of the river's length, and the entire Aire River gorge, are encompassed by the proposed national park. The gorge is one of the most rugged river gorges in south-west Victoria.

Geological and Geomorphological Sites

The proposed national park includes most sites of geological and geomorphological significance in the study area. While many of these sites are reasonably robust, care must be taken to ensure appropriate management particularly regarding access and sensitive rehabilitation works. These sites are vital for education about landscape formation.

For example, Dinosaur Cove and the stretch of coastline between Torquay and Aireys Inlet are of international significance, and continue to make major contributions to furthering geological and evolutionary knowledge. The proposed national park encompasses these and the three sites of national significance in the study area.

Waterfalls, a prominent feature of the Otways landscape, demonstrate the relationship between lithology and stream development and offer easily accessible views of the underlying rock. The steep southern slopes of the proposed national park have an abundance of dramatic waterfalls, cascades and fast-flowing rapids.

Reference Areas

The proposed national park encompasses six existing reference areas, managed in accordance with the *Reference Areas Act 1978*. The Council has proposed three new reference areas in the eastern part of the study area. These areas offer the highest level of protection for little-disturbed representative land-units.

Cultural Heritage

Historic places and objects are a tangible link to our past. They give meaning and enlightenment to the stories, both written and verbal, that describe how life once was.

Cultural Heritage Protection

The Land Conservation Council's 1997 special investigation into historic places across south-western Victoria recommended seven historic and cultural features reserves, as well as a range of other significant and notable historic places in Otways public lands. Those reserves were established to protect places with highly significant historical values. The proposed national park and forest park will continue to protect these sites and their values.

The recommendation for the Otway Ranges National Park specifies that the park be used to (among other things):

protect significant cultural and historic sites and places, including Aboriginal cultural sites and places

via inclusion on a schedule to the *National Parks Act 1975*.



The Otway Forest Park is to be used to:

protect and conserve...natural and cultural features, and water supply catchments

under proposed new legislation.

A schedule of special features which includes historic sites and features is listed in the forest park recommendations, highlighting the need for management to protect cultural heritage.

Indigenous Heritage

Chapter 10 provides an overview of Aboriginal cultural heritage and measures for the protection of archaeological sites. VEAC's national park and forest park proposals supplement such protection.

European Heritage

The proposed national park and forest park contain numerous historic sites revealing the story of 150 years of occupation by Europeans. Many sites, such as Knotts No.2 sawmill at Triplet Falls and Cape Otway Lighthouse are highly accessible and well known. Others demand some research and exploration before yielding their stories.

Timber getting, transport, water supply infrastructure and shipping are the main sources of historic relics in the study area. Features are often notable for their intactness, scarcity or their setting in rugged terrain.

While there are few remaining sawmill buildings, many associated features of the sawmills remain intact, such as the well preserved tramways of the Hitt No.1 mill in the

Lardner forest, and hand dug sawpits and sizeable sawdust mounds at numerous sites. One of the many notable features of the Henry and Sanderson sawmill complex, in the West Barwon catchment, is the presence of two of only three tunnels known to have serviced sawmills in Victoria.

The 150 year old Cape Otway Lighthouse was only the second lighthouse constructed on mainland Australia. It is one of the earliest examples of European settlement in the region.

The narrow gauge Colac–Beech Forest–Crowes railway line operated on and off from 1902 until 1962, providing all-weather access through the steep terrain. It primarily carried general supplies to communities along the line, as well as timber and agricultural produce. This line had more than 150 curves on the 19 kilometres between Gellibrand and Beech Forest.

The Great Ocean Road, constructed between 1918 and 1932 is another historic transport feature. The road opened up access to the bays and townships along the relatively isolated coast, eventually becoming the major transport and tourist route that we know today.

The wet and difficult conditions of the Otways posed challenges in construction of Colac's water supply. From 1909 to 1911, mainly sustenance labour was used to construct the Olangolah Weir and gravity-fed pipeline, the first long, welded steel pipeline in Victoria, and possibly Australia.

All such features are offered protection through VEAC's national park and forest park proposals.

CHAPTER 7 WATER PRODUCTION

The Otways supply water to a large part of south-west Victoria, including the major centres of Warrnambool, Colac and Geelong. This chapter outlines water supply systems and the rationale for VEAC's proposals for water supply catchments.

The South West Water Supply System

Regional water authority South West Water provides domestic supply to Warrnambool, Camperdown, Terang, Cobden, Koroit, Mortlake, Timboon, Lismore, Derrinallum, Allansford, Peterborough, Port Campbell, Carlisle River, Simpson, other small towns and around 1000 rural stock and domestic users. Water is drawn from a complex "run-of-the-river" system, with little bulk water storage and town service basins which only store 8-10 weeks supply.

A crucial component of this system is Arkins Creek catchment, which produces high quality, gravity fed water contributing about one third of the total volume being used. Arkins Creek weirs feed the Otway Main Pipeline which, supplemented at Carlisle River by pumping from the Gellibrand River, extends to Warrnambool via Cobden. The Gellibrand River downstream is also the raw water source for the separate South Otway Pipeline (Warrnambool via Port Campbell).

Otway Main Pipeline water is treated for bacteriological quality at major towns. South Otway Pipeline water from the Gellibrand River has full bacteriological, physical and chemical treatment.

The Barwon Water Supply Systems

Water supplies for Geelong region and coastal towns from Anglesea eastwards are drawn from the Barwon Water systems. West Barwon Reservoir of 21,000 megalitres has a large catchment—all of which is Crown land except 670 ha of public land owned by the water authority. Water released from the storage enters the 55 km Wurdee Boluc Inlet Channel, augmented by flows from the East Barwon River, Callahans Creek, Pennyroyal and Matthews Creeks catchments. Wurdee Boluc Reservoir (just outside the study area) stores some 38,000 megalitres.

The 2000 megalitre West Gellibrand Reservoir and 136 megalitre Olangolah Reservoir are the principal water storages for the Colac region. Gellibrand township takes water from Lardners Creek. The West Barham catchment, supplying Apollo Bay and Skenes Creek, has a small off-take weir which diverts water to the 125 megalitre Marengo Service Basin. Lorne's 220 megalitre Allen Reservoir is in the St Georges River catchment. Painkalac Reservoir holds 514 megalitres for Aireys Inlet and Fairhaven supply.

Barwon Water's supply is augmented by groundwater pumping at Barwon Downs, and Geelong also takes substantial volumes from the Moorabool River catchment (to the north). To ensure reliable water quality, Barwon Water has constructed water treatment plants in the following places: Wurdee Boluc (main Geelong plant); Lorne; Aireys Inlet; Apollo Bay; Colac; Birregurra; Forrest; and Gellibrand. The West Barwon Reservoir catchment and tributaries supplying Geelong have the additional water quality benefit of a long run of channel flow allowing aeration, and detention time in the Wurdee Boluc Reservoir.



Trends in Water Demand

Apollo Bay's water demand now exceeds the system yield, necessitating water restrictions. Demand is expected to increase 2.1 percent per year. There are current plans to enlarge the Marengo basin to 325 megalitres and substantially increase potential yield by establishing a new Barham River off-take downstream of the confluence of the East and West branches. This catchment would include substantial private land areas.

Barwon Water's Geelong system is approaching the volume limits of its current supply sources, and the following measures are being investigated:

- water conservation;
- alternative resources such as recycled water; greywater; stormwater and household tanks;
- improving system efficiency; and
- new supply sources.

Barwon Water's preferred new source options, in order of increasing cost per megalitre, are:

- further groundwater development at Barwon Downs or Bambra;
- interconnection with the West Gellibrand Reservoir or Melbourne system; and
- potable recycled water or desalination of seawater.

In 2001 Barwon Water investigated 15 future surface water supply options, including possible dams on the Dewings and Callahan Creeks, where some farmland has been purchased. These are now not preferred options.

Demand in the South West Water supply area is within the system capacity.

Catchment Land Uses and Effects

The small Arkins Creek, Olangolah Reservoir and West Gellibrand Reservoir catchments are effectively closed to uses other than water production and biodiversity conservation. Elsewhere in the Otways, water supply catchments have been in state park, state forest, or had a range of land tenure and uses.

The Gellibrand River water supply catchment to the South Otway pump at Chapple Vale has several land uses which may cause earth disturbance or increase the risk of pollution by pathogenic organisms. These include some farming activities, road construction, softwood and hardwood harvesting operations and extractive industries. The townships of Gellibrand and Carlisle River (both of which adjoin the river) and Lavers Hill, Beech Forest and Kawarren in the catchment, are unsewered. South West Water's two offtakes have freehold farmland close by. The water authority fully treats supply taken from this river—treatment costs are higher with poor raw water quality.

Recreation activities vary in their effects on water quality. Direct human contact with water used for domestic supply

can increase the risks of water borne diseases, most commonly gastro-intestinal illnesses. Some recreation activities can contribute to degradation of tracks, encouraging erosion and reducing quality.

"Run-of-the-river" water supply off-takes and small water storages are particularly susceptible to water quality problems arising from their catchments. Retention in large water storages generally allows passive improvement in water quality. Aeration of flowing water in stream or channel flows contributes to improvement in microbiological quality by oxidation of organic substrates for pathogens.

Water yield is a significant issue with supply systems at the limit of their capacity, especially with "run-of-the-river" systems dependent on reliable stream flow.

Views on Water Catchment Protection

The Discussion Paper outlined several issues associated with water supplies, in particular the effects of catchment land uses on water quality and yield, and appropriate levels of protection.

There has been much debate over the potential effects of forestry operations. Supporters of expanded parks and reserves often mentioned water (supply) catchments for inclusion in expanded parks. Among the catchment areas more commonly mentioned in this context were the West Barham River, Arkins Creek and Barwon catchments. The rationale for park expansion was usually the protection of these areas, typically from logging or other uses perceived as adversely affecting water supply.



Draft Proposals

In considering public land uses in water supply catchments, VEAC considered land tenure, current catchment uses, the water supply systems and water treatment methods.

VEAC is proposing that the majority of the water supply catchments above the Arkins Creek weirs, the West Gellibrand and Olangolah Reservoirs, Allen Reservoir, Painkalac Reservoir and West Barham off-take be included in the proposed Otway Ranges National Park and be managed co-operatively between the Department of Sustainability and Environment (DSE) and the relevant water authorities. Council considers that the management of such lands is best placed under the jurisdiction of a land manager, not the water authority, but nonetheless firmly believes that an overriding function of these sectors of the national park is to ensure reliable, high quality water.

The current status of the Olangolah, West Gellibrand and Arkins Creek catchments will be maintained under these proposals. These catchments have been managed by relevant water authorities for many years. They have not been available for timber harvesting and, being fenced and untracked, are not accessible for recreation.

Colac's high rainfall catchments total just 2900 ha. The small Arkins Creek catchment plays a very important role in the Warrnambool region's water supply. Its reliable, high yield is generated from a high rainfall catchment of 1200 ha, in a system with no significant water storage capacity.

The 2700 ha St Georges River catchment and 3400 ha Painkalac Creek catchment are largely forested and undisturbed with minimal existing access. Vehicular tracks in these catchments are "management vehicle only" and there are no recreational facilities. Application of "closed catchment" policies will formalise a de facto arrangement. Communities supplied by these two reservoirs are entirely reliant on these catchments for continuing good quality water.

Limiting access to the above catchments in park management provides consistent treatment for small catchments with limited bulk water storage, with the exception of the West Barham catchment, addressed below. It is expected that the limited access policy would have little to no adverse impact on the current uses of these areas. In contrast, there are significant benefits from the supply of consistent, high quality water (with low requirements for treatment) to communities with a steadily increasing permanent population.



The 1050 ha West Barham River catchment is also contained entirely in the proposed national park. However the planned new off-take below the junction with the East Barham substantially alters the situation in relation to catchment area, tenure and land uses.

Under these proposals, public land in the East Barwon and Pennyroyal Creek catchments is largely in the national park (reflecting the presence of other values which merited that status), while West Barwon catchment and other Barwon tributary catchment public land is in the proposed Otway Forest Park. In reaching this decision, VEAC took into account the size of water storages, length of channel flow, mix of land tenure and level of water treatment.

Water Production Land

VEAC proposes that the following water storages, offtakes and infrastructure not be included in the national park or forest park:

- South Otway offtake;
- Gellibrand offtake;
- Arkins Creek weirs;
- Lardner Creek offtake;
- West Barham weir;
- West Gellibrand Reservoir and buffer;
- Olangolah Reservoir and buffer;
- West Barwon Reservoir and buffer;
- East Barwon River diversion weir;
- Callahan Creek diversion weir;
- Barwon Downs groundwater bore;
- Mathews Creek diversion weir;
- Pennyroyal Creek diversion weir;
- Allen Reservoir; and
- Painkalac Reservoir and buffer

These areas should be managed by the respective water authority, with sole responsibility for the management of this infrastructure. The buffer areas around these water bodies, as identified in special area plans under the *Catchment and Land Protection Act 1994* should be managed cooperatively with DSE. At present the Painkalac Reservoir is partly in the Angahook-Lorne State Park. It is proposed that this small area be removed to become water production land, for consistency of management.

Allen Reservoir is not subject to a special area plan, but should similarly be excluded from the national park and managed by the water authority. The two Gellibrand River off-takes, Lardner Creek off-take, and East Barwon River Weir are subject to special area plans, but have little public land at the off-take points. Small water production areas are proposed. Pennyroyal and Mathews Creeks off-takes do not have special area plans or much surrounding public land.



Barwon Water-owned farmland on Dewings Creek may be required in the long term for a new water storage. Accordingly, this area is proposed to remain as uncategorised public land and present use should continue.

Catchment Management

In 1995 Melbourne Water's "closed catchments" were included in the Yarra Ranges and Kinglake National Parks, with land use subject to management agreements between Melbourne Water and DSE. These areas provide for biodiversity conservation, and very limited recreation, with public access only to areas away from creeks and water infrastructure. VEAC is proposing similar arrangements for the catchments of the Arkins Creek weirs, the West Gellibrand and Olangolah Reservoirs, Allen Reservoir and Painkalac Reservoir.

The Otway Ranges National Park will protect these areas to ensure the quality and yield of domestic water supply produced and, where necessary to achieve this:

- restrict the timing, location, nature and intensity of scientific, educational and recreational use;
- restrict the development of facilities for public access and recreation; and

- retain and/or apply "closed catchment" land use policies.

It is important that the national park management plan ensures the protection of all water supply catchments within the park. To this end, VEAC developed a series of principles for the cooperative management of the Painkalac Creek, St Georges River, Olangolah, West Gellibrand and Arkins Creek water supply catchments.

The State Government is developing a risk management approach to the delivery of safe drinking water. Protection of drinking water catchments is an important part of this program. Sound hydrological research and ongoing monitoring is required to ensure that land management practices indeed meet water supply objectives. Elements of the Government's approach are:

- to evaluate land-use proposals against river water quality and quantity requirements;
- to develop and implement catchment management strategies that minimise the impact of identified risks; and
- review and continually improve catchment management strategies.



CHAPTER 8 RECREATION AND TOURISM

The Otway Ranges offer diverse, accessible natural environments that cater for a variety of recreational activities for residents and visitors alike. Features of world renown attract more visitors every year with the tourism industry continuing to play a larger role in the economy of the region.

From an on-ground management perspective, there is often little difference between the requirements for recreation and the requirements for tourism. Management of tourism, however, requires a more strategic approach to address current needs and future trends, which also informs planning decisions on public land.

The expectations of visitors to an area may be widely divergent. A tourist's initial expectations may be of scenic beauty and special interest attractions, whereas the expectations of those undertaking active recreation may demand infrastructure, access and facilities as well as specific landscape characteristics.

In keeping with the principle of ecologically sustainable development for public land management, the conservation of natural and cultural values of public land must be paramount, while also providing for long-term individual and community well-being. Personal and community well-being relies upon providing adequate opportunities and facilities for desirable recreation and tourism activities. Sound planning and procedures are required to ensure that biological diversity and ecological processes are protected now and into the future in a climate of increasing visitor demands and expectations.

Recreation

Recreation is a major attraction for visitors to the study area and also contributes to the health and well-being of residents. The study area offers a lifestyle with close links to the natural environment. Access to this environment, and protection of its natural assets, are high priorities for the local community.

Recreational activities are generally managed through regulation and management plans rather than legislation. Different restrictions and exceptions may apply in different parks or between different public land categories but, overall, very few recreational activities are totally prohibited in any public land category—including national parks.

A fundamental difference between national park and forest park is the approach taken to recreation. In national parks the objective is to provide for recreation 'associated with the enjoyment and understanding of the natural environment'. The promotion and encouragement of such use is a specific legislative objective of national parks. The new category of the forest park has three equal management objectives of recreation, nature conservation and compatible minor resource utilisation. It would be

desirable for the land manager to identify and apply management zones to reduce conflict between those competing uses.

Additionally, the nature of the two park categories is such that the utilisation patterns are likely to be substantially different with high impact or widely dispersed activities occurring in the forest park, and highly localised impacts around the facilities and services offered in the national park. The current distribution of visitors to the region is heavily skewed towards the coastal setting and warmer seasons. The development of targeted recreation and tourism opportunities in the Otways hinterland is intended to assist visitor dispersal, spread seasonal visitation and extend length of stays. In addition, the forest park land-use category provides the flexibility that may be required to cater for recreational uses that are not yet realised.

A large number of submissions focused on recreational access issues. It was evident that a wide diversity of recreational pursuits is undertaken on public land in the study area, including bush walking, fishing, four wheel driving, nature study, horse and trail bike riding, gem fossicking, fishing and hunting. Numerous submissions proposed that access be maintained for recreational users in general, with arguments both for expansion of national park area and for the status quo, based on assumptions about continuing recreational access in each public land category. Several submissions were concerned with the potential threats posed by some recreational pursuits to natural values.

Some key points regarding recreation use in the study area are:

- walkers, horse-riders, cyclists and trail bike riders often prefer designated tracks for their own use;
- active recreation activities are often combined, for example four wheel driving, camping and hunting may be undertaken together;
- an array of recreational activities are undertaken—some areas are intensively used, other areas are valued for their remoteness; and
- flexibility of use is important in catering for a wide range of recreation needs.

Bush Walking

Bush walking is a popular recreational use of public land in the study area undertaken by individual residents and visitors, as well as walking clubs, school groups and commercial operators. Bush walking on well-maintained tracks is generally compatible with the conservation objectives of both the proposed national park and the forest park.



Many opportunities exist for walks of varying length and difficulty in the study area. A large number of short walks and facilities to special features, like waterfalls and lookouts are present in the study area and visitor interpretation facilities at some of these sites add to the experience and improve understanding and appreciation of natural and cultural values.

Provision is also made for those seeking more remote and challenging experiences on longer day and multi-day walks. The two-day Great Ocean Walk currently links Apollo Bay and Cape Otway, however work is underway to provide a eight-day walk that continues across the coastal cliffs and beaches to Glenample Homestead. More recently, an 18 km return walk linking Forrest to Lake Elizabeth has been established to encourage extended visitation to hinterland towns of the Otways.

Bush walking clubs have proposed the development of several new walking tracks, most notably the Trans-Otway walking track connecting Lorne and Apollo Bay as well as other walks in the Apollo Bay and Gellibrand areas. Such long distance walking tracks will require improved facilities including designated campsites and signage, as well as careful planning and maintenance to minimise environmental impacts.

When they specifically mention public land categories, bush walkers support expansion of the park and reserve system, and especially national parks. The availability of camping grounds and facilities is also of importance to bush walkers to facilitate longer distance walks. Additionally submissions suggested that more educational resources and information boards would enhance the walking experience while promoting an understanding of natural and cultural values of the area. A small number of submissions proposed access to tracks for a range of recreational activities and not exclusively for bush walkers.

VEAC recognises the growing popularity of bush walking and the proposals for the Otway Ranges National Park encourage the development and maintenance of walker-only tracks suitable for short and longer walks, as well as the provision of walk-in campsites.

Four Wheel Driving and Trail Bike Riding

Within public land, four wheel driving and trail bike riding are restricted to formed vehicle tracks, although some trail bike riders would like to see areas designated for off-road riding. The Otways has a large number of roads and tracks that provide opportunities for individuals and clubs to undertake four-wheel driving and trail bike riding.

In the past, pine plantations on public land provided extensive opportunities for four wheel driving and trail bike riding but the licensee of these plantations has told VEAC that it discourages such use due to safety concerns.

Seasonal closures are applied to many tracks between May and November to limit impact on water quality and the road surface as well as for driver safety. Local four wheel drive clubs recognise the value of seasonal closures in the Otways for safety and for protecting natural values. In regard to safety issues, some four wheel drive clubs have offered to classify tracks to provide users with guidance to

make informed decisions about vehicle capabilities, equipment requirements and driver training or experience.

Many four wheel drive clubs have established collaborative relationships with the Department of Sustainability and Environment and Parks Victoria to discuss track closures and budget allocations as well as assisting with maintenance works including, track clearing, reporting and rubbish removal. VEAC recognises the importance of these relationships in ensuring good management outcomes.

The tracks and the varied terrain of the Otways have particular appeal for four wheel driving and trail bike riding. Drivers and riders seek challenging conditions, as well as access to places of interest (such as forests, waterfalls and scenic views). There is also a preference for roads that provide through access across the Otways, rather than dead-ends. Trail bike riding is particularly popular in the forests and heaths around Anglesea where riders have a reasonably short travel distance from the large population centres of Geelong and the larger coastal towns.

Some submissions called for a restriction on the use of four wheel drive vehicles in national parks in order to protect natural values, whereas continued access to public land for four wheel driving and trail bike riding was a high priority in many other submissions.

Both trail bike riding and four wheel driving have potential to have a high impact on natural values when undertaken off formed roads, or in heavily used areas. Enforcement of legislation and management of erosion and track widening must be undertaken to protect environmental values. Monitoring and research, such as the Stream Crossing project and Sayers Track road drainage trials currently underway, are essential to effective management of recreation on roads and tracks.

Four wheel driving and trail biking are popular recreational activities for both local residents and visitors. In response, VEAC has ensured that the proposals for both the national and forest park provide for four wheel driving and trail biking on formed roads. However VEAC also recognises that catchments must be protected to ensure water quality and yield for domestic supply and restrictions may be necessary on the timing, location, nature, intensity of recreational use.

The forest park proposals recognise the potential for conflict between vehicular and other recreational users and highlights the importance of safety for all users of narrow, undulating vehicular tracks. The schedule of features to be protected in the proposed forest park also identifies the network of four wheel drive tracks in the West Barwon, Head of Aire and Ford River blocks as important recreational sites.

Camping

Camping options are provided on public land across the study area from the foreshore reserves in coastal townships such as Skenes Creek and Anglesea, to quieter, more nature-based experiences in the forested hinterland. These inland campsites are often used as a base for other recreation activities in the forest, for example four wheel driving or trail biking.



Dispersed camping in the bush with no facilities (rather than at formalised camping areas) appeals to visitors who prefer a more isolated and natural camping experience. It also tends to have greater potential impact on natural and water values due to vegetation damage, soil disturbance and disposal of excrement and rubbish.

Submissions to the Discussion Paper, particularly from four-wheel drivers expressed concern that the expansion of a national park in the Otways will restrict access to vehicle-based dispersed camping. Many people called for more camping facilities (especially for longer walking tracks, such as the proposed Trans-Otway walking track) while also supporting an expansion of national parks. Other user groups emphasised the need for routine maintenance of existing facilities to ensure that sites are not closed due to safety concerns or lack of resources.

Demand for camping in the study area is likely to increase and campsite management will become an important issue with a strong bearing on the visitor experience. Allocation of resources to maintain and improve facilities will be necessary to meet the increasing demand.

The proposals for the Otway Ranges National Park include reference to the provision of walk-in campsites as part of the development and maintenance of walker-only tracks. In addition, it is proposed that the national park be managed to provide for camping in designated areas, as well as opportunities for dispersed camping at the land manager's discretion, in appropriate locations where biodiversity values and water quality will not be adversely affected.

The proposed forest park land use category also provides for camping at designated sites, and provides increased opportunities for dispersed camping, including overnight camps for horse-riders.

Hunting

Parts of the study area are used by recreational hunters who target both pest animals and game species. Commonly hunted pest species include rabbits and foxes. Game species include red, fallow, and sambar deer. During the duck season hunters also shoot ducks on some of the water bodies of the study area, such as the lower Aire and Gellibrand Rivers.

Recreational hunters and hunting groups are interested in maintaining current access to public lands in the study area for the purposes of hunting. One group proposed that access to current areas available for hunting should be maintained as a means of controlling pest animal species. Some submissions suggested that hunting should be across the entire study area, while others suggested that there should be exclusion zones. Some believe that recreational hunting provides a service by reducing pest animals and that management authorities are unable to undertake this role effectively by other methods.

Three freshwater lakes on the Aire River floodplain comprise a designated state game reserve (the Aire River

Wildlife Reserve) and are used by duck hunters during duck season. VEAC is proposing that this wildlife reserve remain.

While hunting and the carrying of firearms is not permitted in the proposed national park, VEAC proposes to exclude the current Barongarook Shooting Ground licence (on public land in the existing Barongarook state forest) from the proposed national park and recommends special provisions be made for continuing access to these facilities (as described in chapter 3). In addition, continued access for hunting is provided in the proposed forest park.

Fishing

Many waterways in the study area are popular with fishers, and a small number of submissions proposed that those areas currently available for fishing should be maintained near towns and populated centres as well as specific areas including Princetown camping reserve and Aire River wildlife reserve. Ongoing access for fishing was an issue for some recreational users of the area and this led to a call for the status quo or limited areas to be included in the proposed national park.

Licensed marine, estuary and freshwater fishing in accordance with fishing regulations are permitted for native and introduced fish in both the proposed national park and forest park. The proposals for the forest park also have specific reference to the provision of recreational fishing along public water frontages.





Horse-Riding

Horse-riding and carriage driving are popular activities undertaken by individuals or as part of club activities or commercial tour operations in the Otways. Horse-riding occurs on tracks throughout the Otways, but is particularly focused on locations with good access and proximity for local residents, for example areas near Anglesea, Princetown and Barongarook.

Some local clubs have their facilities located on public land. These clubs include the Lochard Pony Club, operating at the Wiridjil Recreation Reserve and the Anglesea District Riding Club that operates adjacent to the Anglesea River. The social benefit of horse-riding is highly valued and provides a sense of ownership and recreational activity for youth in small communities, particularly through pony clubs. VEAC does not propose any change to the status of the public land where these two clubs operate.

Opportunities for longer distance trail rides are generally found on public rather than freehold lands and some riders particularly seek the experience of riding through forested areas. Generally, riders are keen to continue access along formed roads and vehicle tracks in all public land use categories.

Many people support horse-riding on public land while acknowledging prudent management is required. Horse-riding has the potential to conflict with the conservation objectives of public land, particularly national parks, and also to conflict with other recreational users. Provision for horse-riding is largely dealt with in management plans, which are required to be prepared in consultation with the public.

VEAC recognises that horse-riding is a popular and important recreational activity for both visitors and the local community. Accordingly, the proposed Otway Ranges National Park provides for horse-riding on traditionally popular, defined bridle trails, designated beaches and formed roads and firebreaks, subject to restrictions including seasonal closures to avoid damage to tracks, introduction of weeds and conflict with other users and natural values. The proposed forest park provides access for horse-riding on formed vehicular track and designated trails, subject to the same restrictions.

Further development of a horse-riders' code of practice designed to minimise impact on environmental, historical and cultural features, and ensure rider safety for the study area could be undertaken between public land managers and horse-riding groups including commercial operators.

Access for Walking Domestic Dogs

Dog walking is a popular activity undertaken in many areas, including accessible areas of public land near towns, picnic grounds and beaches. Several submissions were received from people wishing to continue existing dog walking on public land and therefore opposing the creation of, or addition of areas to, national parks.

The presence of domestic dogs is generally in conflict with the primary conservation objective of national parks. Nonetheless, dog walking may be accommodated in designated dog walking areas (in special zones within a park or reserve) selected for low impact on natural features and minimal interference with other recreational users. For example, the hooded plover breeds along the coastal beaches of the Otways between August and March and is vulnerable to disturbance by dogs, as well as bushwalkers and horse-riders, and so recreational access may need to be restricted on coastal beaches during that time. Detailed management of dogs on public land is part of the management planning processes, which involves extensive public consultation.

VEAC has generally provided for dog walking in key areas such as near townships and camping areas. For example, the area of proposed forest park surrounding Lorne recognises this need, as dog walking is permitted in this park. In keeping with the conservation objectives of forest park, it is expected that dogs will be kept under control of their owner at all times.

It is proposed that domestic dogs generally not be permitted in the Otway Ranges National Park, other than on leads in the Old Coach Road block at Aireys Inlet and in other minor areas zoned for dog walking at the land manager's discretion.

Coastal Recreation and Coastal Reserves

The coastline of the study area has long attracted large numbers of people seeking beach-based recreation such as surfing, swimming, beachcombing, diving, kayaking and boating. Such use is highly seasonal, with a major influx of visitors over summer. The great majority of these people are from outside the study area, predominantly from Melbourne.

The volume of people enjoying this fragile coastal environment has led to significant modification of many popular coastal settings especially in the immediate environs of townships on coastal reserves. These locations, usually managed by a committee of management, often provide public facilities, planned beach and water access points and car parking. VEAC recognises the importance of these township coastal reserves (and their management committees) in providing facilities and desirable settings for large volumes of people. VEAC proposes that all township coastal reserves are retained.



Away from townships, the coastal experience is less structured, however most beach access points are carefully planned to limit environmental damage, most notably erosion and vegetation trampling. Natural values along these coastal strips are often high and where existing coastal reserves are adjacent to, or provide strong links to large areas of well vegetated public land they have generally been included within the proposed national park.

Nature Study

The heathlands, woodlands, forests and wetlands of the Otways offer many opportunities for nature study. The study of natural features in their settings is essential to understand and appreciate the environment and promote the conservation of natural resources for the future.

Most people undertaking independent nature study seek experiences largely without the assistance of formal nature trails with interpretative facilities. However, others who may be less experienced greatly appreciate the provision of interpretive nature trails that extend participants' interest and knowledge of natural systems. Some of the nature trails in the study area are found at Maits Rest, Triplet Falls, Sheoak Creek, Melba Gully and Lake Elizabeth.

Overall, nature study on its own has relatively little impact on natural values, other than occasional trampling of vegetation. The bird hide at Distillery Creek, near Anglesea, is an example of a facility that provides for nature study with minimal impact on the environment. Severe localised impact may result from nature study activities involving the illegal collection of plants or destruction of vegetation in order to access sites.

Factors contributing to satisfying nature study include good access, a range of camping options, diversity of landscapes and vegetation, as well as presence of key species, for example rare or charismatic animals.

VEAC proposes that one of the three key objectives of the proposed national park be to:

provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments and cultural heritage.

This objective ensures nature study opportunities will be well provided for in the proposed national park. The proposals for the forest park complement the nature study opportunities and values of the proposed national park.

Car Touring

The two wheel drive roads of the study area provide a wide range of touring alternatives and also provide good access through the tall forests to popular special interest sites such as waterfalls, rainforest and scenic lookouts. The Great Ocean Road remains the focus for most car-touring visitors to the region.

VEAC recognises that the management and enhancement of the Great Ocean Road and other main roads that traverse the Otway Ranges is largely a regional issue rather than specifically related to a particular land-use category.

The Otways Park concept addresses the need for this regional approach to achieving effective management outcomes in the study area.

Picnicking

The majority of formal picnic areas across the study area are either linked to specific attractions (for example, the rainforest nature trail at Melba Gully), located with existing camp sites, or on the coastal foreshore. Picnicking is usually associated with a broad range of recreational activities, from car touring to horse-riding. Formal picnic areas cater for both the local community and visitors, and generally have associated toilet facilities.

The proposals for the Otway Ranges National Park specifically provide for picnicking at designated areas with facilities. While VEAC has not made any specific proposals for picnicking in the forest park, several formal picnic areas with good facilities are already established and informal picnicking in the forest park is encouraged.

Cycling and Mountain Biking

Long distance cycling and mountain biking have greatly increased in popularity in recent years. Cycle touring to townships and attractions is mainly limited to bitumen roads. Mountain biking, on the other hand, is focused on dirt roads and tracks in natural settings, and tends to be limited to single day routes.

Mountain bikers generally seek challenging and diverse terrain, where their skills are tested. The numerous roads and tracks on public land in the Otways provide a range of opportunities for mountain biking. A new designated walking and cycling trail has also been created from Forrest to the Lake Elizabeth camping ground.

The impact of mountain biking can be significant if it is not confined to defined roads or designated tracks. Impacts include damage to vegetation, soil disturbance and conflict with other users. Track maintenance is essential to limit soil movement and reduce impact on water quality, particularly when close to, or crossing, waterways. Management plans for public land should accommodate and manage this increasingly popular activity.

There are no specific proposals regarding cycling and mountain bike riding in the proposed national or forest park, however it is envisaged that these activity will be continue to be confined to formed vehicular roads and tracks, as well as designated trails, such as along the Beechy Line and the track from Forrest to Lake Elizabeth.

Gold Prospecting and Gem Fossicking

Agates and other semi-precious stones can be found along the beaches and bays near Moonlight Head, and a designated fossicking area at Wreck Beach (within the Otway National Park) is of ongoing interest to gem collectors. While prospecting is generally excluded from the proposed Otway Ranges National Park, continued access to the existing designated areas has been specifically permitted. VEAC recognises that careful management of



the existing resource is required to ensure this activity is able to continue at these sites.

While other public land categories are not considered to be prospective for precious metals and gemstones, provision is made for recreational prospectors and fossickers to pursue their interest in the proposed forest park.

Sporting Facilities

Sports requiring specific facilities are provided for in a number of coastal and inland towns and are mostly located on recreation reserves. They provide for activities such as golf, tennis, football, cricket, basketball and swimming. Many of these facilities are managed by local committees and clubs and are used predominantly by local residents.

VEAC recognises the important role these reserves and their committees of management contribute to both the physical and social health of the communities that they serve. All recreation reserves that are currently actively used and those that are situated within the townships are proposed to remain unchanged.

Tourism

The Otway region, and particularly the Great Ocean Road, is one of Victoria's major tourist destinations, with the highest visitation outside Melbourne. The tourism industry supports a significant part of the region's economy. It is estimated that visitation is growing at around 7 percent per year and the Great Ocean Road is recognised as one of the world's great touring routes. Visitors come to the region to experience diverse, accessible natural environments with an increasing demand for nature-based or ecotourism.

The tourism industry is increasingly focused on enhancing the value of tourism by increasing the length of stay, spreading seasonal visitation patterns, improving visitor dispersal and avoiding duplication of experience. The economic result of this is described as visitor yield. Increasing visitor yield is favoured as an alternative to building capacity for more short stay visits that often provide little economic return for input, and increases demand on limited resources. For example, some sections of the Great Ocean Road are over carrying capacity at times during the year, as well as all sections being over capacity at peak times. The widening of roads or provision of alternative routes may increase capacity but not increase the length of stay within the region and may have a negative effect on the driving experience by diminishing the environmental values adjoining the road.

The proximity of the study area to major population centres aids its popularity, however it also provides challenges to increasing yield, as visitors often limit their visit to a day or short weekend. Another challenge to visitor yield is that many visitors to the study area are provided with accommodation by friends or relatives rather than by commercial operations. In addition, these visitors do not tend to explore the surrounding natural assets of the region, but prefer to limit their activities to the coastal fringe.

Those submissions mentioning tourism considered the promotion of tourism, particularly ecotourism, to be an important priority for the Otway region and some submissions proposed the establishment of visitor interpretation centres at specific sites, chairlifts and observation towers. Many submissions linked an expanded national park with enhanced tourism potential for the region, and nature-based tourism in particular. However, others argued that new parks would restrict some recreational opportunities such as four wheel driving, horse-riding and dog walking, and therefore opposed both the creation of an expanded national park and the promotion of tourism. Furthermore, some submissions suggested that the development of the tourism industry would be unlikely to replace the jobs lost through the phase-out of timber production and may have a negative socio-economic effect on the region.

The negative effects of tourism on the natural environment were explored by some submissions, with the overriding concern that unsustainable levels of visitation may affect the natural assets of national parks. This concern was also reflected in calls for improved park management (including more flexibility), improved tracks, roads, signage and resources, as well as promotion of inland areas to relieve some of the pressure on the coastal zone.

Council believes that concerns regarding the limitation of recreation activities in the Otway region are largely addressed by the creation of the proposed Otway Forest Park. In this park, a diverse range of recreational activities will be encouraged, some of which may also be included in specially-designated areas of the proposed Otway Ranges National Park. The flexibility to achieve sustainable recreation and tourism, while maintaining the natural and cultural resources that make the area attractive, is a key objective of this approach. Having said this, it is important to recognise the natural values that encourage such a diverse range of uses, and to manage the area so as to preserve these values.

Clearly the attraction for recreational users of the area is based upon the aesthetics of the environment and this should not be compromised or the recreational values will also be diminished. Therefore careful management is required in areas where both high natural values and recreational pursuits are undertaken. By increasing the area of national park and providing the additional land use category of forest park, VEAC is aiming to realise this balance between natural and recreational values.

Council is of the view that while it is paramount to provide a satisfying visitor experience, the range of these values should not be limited by the forecast economic value or yield of such activities to the region. To this end, accommodation developments focussed on tourism in the national parks of the study area should be largely resourced privately and not at the expense of national park values.



CHAPTER 9 RESOURCE INDUSTRIES

Resource industries utilise public land for mining, quarrying, sawlog, pulpwood and minor forest produce, commercial fisheries, apiculture, and grazing. The valuable contribution these industries make to the livelihood of local communities is an important consideration. Provision has been made for the continuation of sustainable industries on public land, where compatible with conservation and recreation objectives.

Proposals presented in this paper will offer benefits to the resource industry by simplifying land management, planning and administrative responsibilities for public land. However, resource utilisation will not generally be appropriate in national parks and in parts of forest park where not compatible with other uses.

Extractive Industry

The extractive industry produces crushed rock, sand, gravel, and blocks for building and paving from public land in the study area.

Extractive operations are potentially incompatible with activities such as recreation and conservation, because of the use of heavy trucks and the aesthetic impact of quarry works.

Work authorities, administered under the *Extractive Industry Development Act 1995*, make provision for operators to extract stone resources from a specific location. While the majority of commercial stone is extracted from private land, there are seven current work authorities on public land in the study area, and three applications for work authorities.

Under the *Extractive Industry Development Act*, work authorities are not generally granted in national parks. However stone production may be allowed to continue if a pre-existing tenement or application exists at the time of park establishment.

This was the case for Bambra Road sandstone quarry that was permitted as a pre-existing use when the Angahook-Lorne State Park was created. While this quarry does not have a current work authority, an application has been submitted. The pre-existing rights to pursue the application are recognised, however conditions relating to approval for the work authority may be more onerous following inclusion of the area in the proposed Otway Ranges National Park.

Similarly the Kaanglang quarry, located within the proposed national park, is subject to an application for a work authority. This quarry is also a geological site of state significance. Previous works have exposed interbedded sandstones and shales of the Otway Group containing plant remains, and it is the most accessible site for study of Cretaceous flora. The application can be pursued as it pre-dates park implementation, but consideration should be given to the geological values of the site in any works conducted or rehabilitation undertaken.

The land use category forest park is recommended as 'restricted crown land'. This means that exploration for, and extraction of, stone resources within forest park will be subject to approval from the Minister for the Environment. VEAC is aware that this will require amendment to the *Extractive Industries Development Act 1995*.

Extractive operations may be permitted where consistent with the maintenance of overall recreation and conservation values of forest park. A current work authority at the Lardner pit, and an application for a work authority located south of Carlisle River, are within the proposed Otway Forest Park.

Stone Reserves

VEAC considers that extraction of stone should generally be concentrated on the fewest possible sites in an area, while recognising the need for appropriate competition between suppliers.

Three stone reserves (earth resources land use category) that are immediately adjacent to national park or forest park will be encompassed by the adjacent land use category. Two are worked out and not currently in use. These stone reserves are:

- Cape Horn stone reserve was recommended by the LCC in 1978, but remained state forest; it will now be added to the proposed national park.
- Yaughner gravel reserve—this large reserve, east of Gellibrand, will be encompassed by the adjacent forest park (and could be re-opened in the future).
- Chapple Vale gravel reserve will be included in the proposed national park following completion of the rehabilitation process.

Two small stone reserves on Rochfords Road, south of Modewarre, are recommended as uncategorised public land.

The Gellibrand stone reserve is an undeveloped two hectare reserve north-east of Gellibrand for which no change to current status is proposed.

There is a current work authority adjacent to the stone reserve north east of Gerangamete. The stone reserve will be expanded to include the area covered by the work authority and the sand extraction operation will continue under the existing work authority.

All remaining current work authorities or applications for work authorities on public land in the study area are found within the Gherang Gherang stone reserve. This stone reserve will retain its current status.

Mining and Fossil Fuel Production

There are no petroleum or mining licences or leases on public land in the Angahook-Otway study area, however the majority of the area is covered by current exploration licences for minerals, petroleum and other fossil fuel products, or applications for such licences. These are all administered under the *Mineral Resources Development Act 1990*, which does not permit exploration and extraction in “exempt” areas, such as, national parks, except where approved tenements or applications existed prior to park establishment or under the *Petroleum Act 1998*.

For the forest park, VEAC is aware that the requirement for the consent of the Minister for the Environment for the exploration and extraction of earth resources, minerals, petroleum and other fossil fuels will require amendment to the *Mineral Resources Development Act 1990* and the *Petroleum Act 1998*.

Timber Production

State Government has declared that sawlog and pulpwood production will cease in the Otways by 2008. In the intervening years, approximately 20,000 cubic metres of sawlog and approximately 60,000 cubic metres of pulpwood will be supplied under existing commitments to the sawlog and pulpwood licensees annually.

The proposed forest park makes provision to accommodate all public land timber harvesting coupes for the Otways until the end of the 2007-2008 harvesting season. These operations will be listed on the Wood Utilisation Plan for the Otway Forest Management Area (FMA), and will be prepared in accordance with the Code of Forest Practices for Timber Production and the Otway FMA Management Prescriptions.

Special Protection Zones excluding timber harvesting under the Regional Forest Agreement in order to ensure adequate representation of ecological vegetation classes (EVC) may no longer be necessary with the expanded representation of many EVCs in the proposed national park. However Special Protection Zones and Special Management Zones to protect rare and threatened species, including quoll habitat protection, will still apply until new management planning is completed.

No native forest timber harvesting will be permitted within the boundaries of the proposed Otway Ranges National Park either during or following the phase out of sawlog and

pulpwood production. However, the harvesting of former non-licensed pine plantations in both the national park and the forest park are permitted at the manager’s discretion. If these operations yield a commercial product, provision is made in the recommendations for the product to be sold.

Minor Forest Produce

The harvesting of minor forest produce is not compatible with the primary conservation objective of national parks, and as such will not be catered for in the proposed Otway Ranges National Park. Minor forest produce is, however compatible with the three management objectives of the proposed forest park—recreation, conservation and compatible minor resource utilisation.

Firewood

Firewood is the main product harvested under the banner of minor forest produce. All commercial and domestic firewood from public land in the study area is sourced from the northern fall foothill forests and from the Jancourt, Irrewillipe, Wonga and Barongarook forest blocks. The majority of firewood produced is consumed locally.

The proposed forest park includes large sections of suitable foothill forest and its proximity to many Otway communities facilitates collection of firewood by local residents. Currently firewood harvesting is modest, with the amount of suitable firewood resource in the proposed forest park expected to provide for sustainable existing and future local firewood requirements.

Some areas of the forest park may be unavailable for firewood harvesting in order to maintain conservation and recreation values. Management planning will need to ensure that firewood collection occurs in a way that does not compromise conservation values or impair recreational experiences in the proposed forest park.

In addition, the land manager will need to work closely with licensed operators to identify resource needs and locations, and ensure that where permitted, harvesting is sustainable and conducted with minimal impact on other users and values.

Firewood collection will not be permitted in the proposed Jancourt Nature Conservation Reserve nor the Barongarook forest proposed for inclusion in the Otway Ranges National Park, and this activity will need to be relocated.





Other Minor Forest Produce

The recommendations for the proposed forest park allow for the low-intensity harvesting of minor forest products. Tea-tree stakes, wood chop logs, spear grass and grass-tree fronds are some of the other minor forest products of the study area.

The range of vegetation types in the proposed forest park enables the collection of a wide range of minor forest produce. Prudent management and consultation with licensed operators, will ensure that the sustainable harvesting of these products will not impact negatively on recreation and conservation values.

Commercial Fisheries

The only commercial fishery within the study area is an eel fishery that operates on the lower reaches and estuaries of the Gellibrand and Aire Rivers, south of the Great Ocean Road. This relatively small industry is undertaken by two operators (one on each river) and relies on the harvesting of wild populations of the short-fin eel. The fishery is governed by the *Fisheries Act 1995* and operates under the Eel Fishery Management Plan 2002.

The proposed changes to the national park boundaries in the vicinity of the Gellibrand River fishery, will include part of the licence area but has little affect on commercial operations as the area fished is restricted to shallow flood waters located on private land adjoining the river.

Inclusion of water frontage south of the Great Ocean Road along the Aire River in the Aire River Wildlife Reserve is unlikely to have an impact on the existing fishery.

Apiculture

The only three apiculture sites on public land in the study area occur on Crown land near Anglesea. The proposed national park will encompass all three sites. Draft proposals for the Otway Ranges National Park specifically exclude apiculture, therefore, these operations would not continue.

Apiculture has potential to conflict with national park conservation objectives due to competition with native species for nectar, pollen and nesting hollows, and can impact upon plants that require specific native pollinators to ensure successful fertilisation. The small number of apiary sites affected, and the potential for these sites to be accommodated on in the forest park, leads to minimal impact to the apiculture industry in the study area.

The proposals for forest park make provision for apiculture where it is consistent with recreation and conservation management objectives. While there are no existing sites in the proposed forest park, the draft proposals make provision for this activity in the future.

Agriculture

While most agriculture within the study area occurs on private land, some public land is subject to grazing licences. Typically these areas are river and stream water frontages and unused Government roads.

Grazing licences are usually held by the adjacent land owner. There are approximately 540 grazing licences issued currently over public land in the study area comprising some 2040 ha. Approximately 97 percent of all grazing licences (94 percent by area) are not affected by VEAC's proposals, although in some cases, licensees may be required to fence along boundaries to restrict stock access to protect natural values.

Grazing may be incompatible with the natural values of public land via loss of native vegetation, trampling, streambank disturbance, soil compaction or erosion and a reduced water quality. In light of this, the draft proposals for the Otway Ranges National Park and the expanded Aire River Wildlife Reserve excludes grazing by domestic stock, with existing licences proposed to be terminated as soon as possible, but no later than 2008.

The result of the implementation of the proposals would be the cancellation and fencing of all or part of 16 grazing licences. The area covered by these licences is about 126 ha, although in most cases the entire area is not currently grazed and estimated as closer to 56 ha.

The proposed forest park, which includes the majority of grazing licences on public water frontages, will continue to allow grazing where it currently exists and in a manner compatible with recreation and conservation objectives.





CHAPTER 10 ABORIGINAL INTERESTS

The landscape is a central element of Aboriginal culture, arising from thousands of years of living with the land and carefully using and managing its resources.

People of the Wathaurong, Kirrae Wurrung and Gunditjmara and other Aboriginal communities have strong traditional and contemporary connections to the Otways.

As well as its intrinsic importance, Aboriginal people's continuing sense of belonging to, and responsibility for country can contribute to contemporary land management by bringing valuable insight and custodianship principles to the care of the land. Adequate consultation with, and involvement of the Aboriginal community, particularly traditional owners, is a prerequisite in the development of a sustainable future for the Otways.

Recognition and respect for the indigenous connection to country involves:

- involvement in land and water management;
- protection of cultural sites and places;
- addressing cultural requirements; and
- meeting of legislative obligations.

Protection of Cultural Sites and Places

Pre-European Contact

Aboriginal people occupied the Otways for many thousands of years, however little is contained in the written record of their culture, economy and movements. Some conclusions can be drawn from the 250 or so known archaeological sites along the main range and adjoining areas. The density of these variable sites—mostly middens and artefact scatters—is lowest along the main range itself, and greatest along the coast and hinterland, and along the north-western periphery of the range.

The coastal strip may have been occupied by the Gadabanud language group moving up and down the coast year-round. The ranges and northern periphery are more likely to have been occupied seasonally, leading to contact with people of the adjoining Girai Wurrung, Djargurd Wurrung, Gulidjan, and Watha Wurrung language groups, who occupied the inland plain and lakes country.

European Impact on Communities

The lives of Aboriginal people in the study area were significantly disrupted by European settlement. European settlers brought diseases, massacres, dispossession and the forced removal of Aboriginal people from their land to missions and reserves.

Places of Aboriginal interactions with explorers and settlers, including massacre sites, mission stations and reserves are

especially significant. These sites are important for recognising the interactions that occurred there, and because many people lost their families and ancestors there. Protection of these places is vitally important to Aboriginal communities.

Recognition of the history of cultural contact, subsequent resistance and adjustment, and awareness of places reflecting that history, are important for understanding our shared, and at times, poorly documented past.

Management and Protection of Cultural Sites and Places

The identification, protection and management of Aboriginal cultural heritage places in Victoria are primarily the responsibility of Aboriginal Affairs Victoria (AAV), who administer the Victorian and Commonwealth-delegated Aboriginal cultural heritage legislation, discussed later in the Legislative Obligations section. This responsibility is shared with the relevant Aboriginal groups and communities.

Once cultural sites are located, their spiritual and cultural sensitivity for Aboriginal communities needs to be recognised. Groups associated with the sites want to be, and indeed must be, consulted about any development or interpretation of sites, and be involved in authorising any public access to such sites.

The protection of both pre- and post-contact Aboriginal sites is vital and VEAC recognises that stringent enforcement, as well as application of mechanisms to enhance public awareness (such as community education programs, and cross-cultural training for land and water managers) are essential to ensure cultural sites and places are not damaged or violated.

Public submissions expressed considerable support for the recognition, protection and cooperative management of sites and artefacts representing Aboriginal cultural heritage with a number of submissions calling for the general protection of Aboriginal cultural sites and artefacts in national parks or other special protection reserves.

Many Aboriginal sites and places are located in the proposed Otway Ranges National Park which complements the protection these sites attract under the current State and Commonwealth legislation. The proposals for the Otway Forest Park also refer to the area being used to protect cultural features.

Survey Coverage

The Angahook-Otway study area has limited coverage of surveys for Aboriginal sites and places—in part due to the heavy vegetation coverage over much of the public land. Most of the surveys have been associated with the planning and development of specific works, such as the construction of walking tracks, and laying of communication cables.



Adequate surveys, involving traditional owners and relevant cultural heritage officers, must be done prior to any planning and development. Opportunities for further surveys should be sought to improve the existing level of information and recognition of cultural sites and places in the study area.

Cultural Requirements

Aboriginal people in the Otways have specific cultural requirements that need to be recognised by land managers. This awareness can be achieved by consulting with local Indigenous groups, developing protocols and processes to facilitate productive, open communication and implementing cross-cultural training.

Consideration and awareness of these cultural requirements enables land and water management regulations and practices to reflect the needs of traditional landowners and provide opportunities for them to continue cultural and spiritual practices such as hunting, fishing, food gathering, education, and ceremonial activities and may well lead to more sustainable land management.

Legislative Obligations

Cultural Heritage Protection

Aboriginal archaeological sites are protected under the *Archaeological and Aboriginal Relics Preservation Act 1972*, and the *Commonwealth Aboriginal and Torres Strait Islander Heritage Protection Act 1984* with substantial penalties for unauthorised disturbance of Aboriginal sites.

The regulations under the Commonwealth Acts define the boundaries of the 'local Aboriginal communities', that have standing under the legislation. Within the study area, these are Framlingham Aboriginal Trust and Wathaurong Aboriginal Co-operative Ltd.

Aboriginal communities often believe that the requirements of these Acts and the spirit of the legislation are ignored by public and private land and water management agencies. Aboriginal people want to be consulted and involved in planning, decision-making and implementation processes, rather than invoking the provisions in the legislation when a problem arises.



Native Title and Indigenous Land Use Agreements

Native title is based on the laws and customs of Indigenous people that is recognised by the common law of Australia.

Aboriginal people have significant associations with the Otways and, as previously stated, continue to assert their association with all of their ancestral areas. VEAC understands that the exercise or enjoyment of native title rights and interests includes hunting, fishing, gathering, and cultural or spiritual activities.

Under the Commonwealth *Native Title Act 1993* Aboriginal people can claim native title on Crown lands and waters in their traditional lands. In Victoria, Native Title Services Victoria coordinates the majority of native title claims, facilitates the identification of an authorised indigenous negotiation group for a particular area, and acts for native title holders and claimants in relation to matters that may affect their rights and interests in land.

The existence of native title is not dependent on a claim being lodged. The High Court has effectively confirmed the right of traditional use by claimants.

Under the 'future acts' provisions of the *Native Title Act 1993* there are obligations to notify, receive and consider comments and in some cases negotiate with groups in relation to activities which may affect native title. In the event that obligations are not observed, activities are invalid to the extent that they affect native title.

In summary, Aboriginal groups must be consulted about activities proposed on their traditional lands, with negotiation undertaken so that the activity may proceed to the satisfaction of all parties.

Negotiation rather than litigation has become the preferred approach to native title applications, as well as for broader indigenous involvement in land and water management. The identification of an authorised negotiation group greatly assists in undertaking these negotiations.

In 2000, the *Protocol for the Negotiation of a Native Title Framework Agreement for Victoria* was developed by the Victorian Government, the former Aboriginal and Torres Strait Islander Commission (ATSIC) and the then Mirimbiak Nations Aboriginal Corporation (MNAC). In this protocol, the Victorian Government acknowledges that traditional Aboriginal owners of land and waters in Victoria may hold native title to their traditional lands.

This protocol provides a framework for resolving native title claims in Victoria. The framework provides for **Indigenous Land Use Agreements (ILUAs)** which may address a range of issues including:

- recognition, protection, and exercise of native title rights and interests;
- the relationship between native title rights and other rights, and the manner in which native title rights are exercised, including co-management of and access to, national parks, state forests, etc., and any flora and fauna therein; and

- the identification, protection and management of Aboriginal cultural property.

An ILUA is a voluntary agreement made between native title groups (who hold or claim to hold native title) over a particular area, and other people or organisations, such as governments, mining companies and other commercial industries, regarding the use of land and resources in a particular area.

ILUAs allow parties to negotiate flexible and pragmatic agreements. They are intended to be living documents that set relevant, formal specifications about how the land will be used. Once registered, ILUAs bind all the parties and all persons claiming to hold native title to the terms of the agreement.

Most of the recommendations in this report, if adopted by Government, would modify permitted uses on Crown land, or change the emphasis of public land management. However, this should not occur prior to further Government consultation with relevant Aboriginal groups on native title rights and interests.

VEAC stresses that nothing in these draft proposals or subsequent final recommendations should be taken to prejudice or diminish any native title rights to land, water and resources.

Involvement in Land and Water Management

Local Aboriginal people who contacted VEAC were concerned about environmental degradation, dispossession from traditional land and water estates, loss of traditional access, fishing and hunting rights, and lack of opportunities for genuine participation in decision-making about land and resource planning and management.

Consultation and Negotiation

Consultation is the first step to involvement in land and water management. Traditional owners and local aboriginal communities need to be consulted early in land use planning and decision making processes. This provides the opportunity to:

- assess the landscape for potential sites of significance;
- identify and locate sites that may be affected; and
- ensure that appropriate protocols for dealing with archaeological sites are followed.

During the consultation process opportunities to increase public awareness of Aboriginal connections with the area can be identified, for example, naming of particular locations or interpretative material along walking tracks and visitor attractions.

The following publications provide accepted protocols and procedures to help achieve meaningful discussions and outcomes when consulting Indigenous communities:

- *Protocols, Principles and Strategies Agreement for Indigenous Involvement in Land and Water Management 2002*, (Available from the Victorian Catchment Management Council, www.vcmc.vc.gov.au or Ph. 9412 5045).

- *Strategy for Aboriginal Managed Lands in Victoria 2003*, (Available from www.samliv.org).

The draft proposals for the national park refer specifically to the need for consultation with traditional owners, particularly in relation to the artificial opening of the mouths of the Aire and Gellibrand Rivers. VEAC recognises that the need for consultation should not be limited to just these events and those specified by legislation, but to overall management of the public land in the study area.

Representation and Economic Opportunities

Involvement in natural resource management may involve increased opportunities for representation on land and water management bodies and improved economic opportunities for the Aboriginal community. This could be achieved in a number of ways including:

- employment in natural resource management and liaison positions;
- representation on land and water planning bodies, or policy-making committees;
- interpretation, community education, and tourism opportunities provided through dedicated programs or interpretive centres; and
- cultural heritage protection program positions.

The provision of these opportunities would facilitate an increased involvement of the Aboriginal community in the management of public land in the study area as well as improve cultural and environmental outcomes.

One suggestion received by VEAC was for the establishment of an Aboriginal Cultural Centre at Point Bunbury, Apollo Bay, if and when the golf course relocates. This accessible, high profile site has strong associations with past Aboriginal occupation as evidenced by a number of archaeological and environmental features. It was envisaged that this area could provide a focus for visitors entering the proposed Otway Ranges National Park whilst demonstrating an appreciation of the cultural significance of the park for Aboriginal communities.

Consultation with Aboriginal Groups

To facilitate Aboriginal participation in the public consultation process following the release of Draft Proposals Paper, VEAC has proposed that Native Title Services Victoria facilitate consultation with Aboriginal traditional owners, Aboriginal Affairs Victoria, cultural heritage program officers, and other Aboriginal groups in the study area.

Native Title Services Victoria is the native title representative body for the majority of Victorian claimants. The final report for the Angahook-Otway Investigation will contain a summary of Native Title Services' report to VEAC on the outcomes of consultation with Aboriginal traditional owners and other Aboriginal groups.

CHAPTER 11 ROADS

The primary purpose of road reserves is to provide for communication, transport and access. Within the study area the Great Ocean Road is both the main access route with feeder roads extending through the Otway Ranges to the hinterland, and an iconic touring route attracting large numbers of visitors to the region.

The Great Ocean Road

The Great Ocean Road extends some 242 km from Torquay to Allansford (east of Warrnambool) and encompasses major tourist destinations such as the Twelve Apostles, Apollo Bay, Lorne and Torquay. Approximately 60 percent of the entire length is included in the study area and of that, approximately 40 percent has public land on both sides.

Although the Great Ocean Road is used by local residents and provides access for commercial traffic, the road's capacity as a major tourist route and world-class driving and touring experience is by far its greatest value. The essential character of the road and its capacity to deliver on its reputation is under increasing pressure, leading to the call by many groups to preserve the road within a national park.

VicRoads has responsibility for works and maintenance and manages the road in accordance with the detailed Great Ocean Road Roadside Management Plan. Much of the road is within a permanent gazetted road reserve. There are, however, sections of the road that are on other forms of Crown land such as coastal reserve or park without a defined road reserve, particularly between Lorne and Apollo Bay.



In such areas VicRoads ordinarily has agreements in place with land managers, such as Parks Victoria and foreshore committees of management, which cover the management of both the formed road surface and the road environs. Irrespective of the tenure of the road, the scenic and tourism attractions of significant sectors of the road continue to be important aspects of its management.

The existing pressures on the Great Ocean Road have clearly demonstrated that the road is currently at or over maximum carrying capacity with long traffic delays at peak times and a high accident rate, especially for motorcyclists. Responses to such factors elsewhere include major construction works to improve the carrying capacity, traffic calming measures and redirection of traffic and upgrading of alternative routes. The first approach would compromise both scenic and environmental values along the road and, given the physical constraints of the Otway Ranges, would likely be cost-prohibitive. Demands on the road are unlikely to decrease.

A major strategic review entitled "Great Ocean Road Region Strategy" is currently being developed by a number of Government agencies led by the Department of Sustainability and Environment (DSE), with the draft strategy released in October 2003 and submissions taken until 31 March 2004. VEAC's charter is to recommend whether the Great Ocean Road should be in a national park or not, while the Great Ocean Road Region Strategy deals more widely with issues related to the road. The Strategy identifies key initiatives such as improving the tourism function of the Great Ocean Road through better management of litter and parking and by improving road safety and interpretive information at viewing areas. Additionally, the investigation of alternative routes for through-traffic around townships and improved safety for north-south routes accessing the hinterland areas are identified. Management of peak flows and improved signage are also initiatives outlined in the Strategy.

VEAC received a number of submissions that specifically mentioned the inclusion or otherwise of the Great Ocean Road in the proposed park. Those submissions that proposed excluding the Great Ocean Road from the proposed national park generally indicated that VicRoads was the most appropriate manager, although few gave detailed rationales. Those submissions that proposed the including the Great Ocean Road in an expanded national park were largely based on conservation grounds or the enhancement of tourism values through sensitive future development. Some suggested including parts of the road only where it abuts national park. Specific concerns related to management of roadsides for conservation values, enhancing tourism potential, continued access, the establishment of a road reserve along the entire length and management of pest plants and animals.



Some submissions commented on the potential for a road toll to be introduced and whilst most preferred no tolls and a small number proposed tolls with exemptions for local residents.

Some were concerned that including the Great Ocean Road in the national park would give a false perception that the land status, funding, on-ground management and road status had changed. Some saw it as desirable for park regulations to apply to those travelling on the Great Ocean Road. Others say this is entirely inappropriate given the extent of through traffic and would require exemptions for the passage of vehicles with firearms, stock, and dogs through the national park. There was a view that declared Tourist Roads should only be included in national parks if they serve as an access road terminating in the park.

In considering all such views, VEAC was mindful that the continuation of the present form and context of the Great Ocean Road is essential to maintaining the much-loved character of the region. Whilst road planning is largely beyond the Terms of Reference of this investigation, it is within the scope of the Great Ocean Road Region Strategy, and is best served in that investigation. Through that study, future development on freehold land along the Great Ocean Road can be coordinated to maintain and enhance these values.

VEAC's proposals will ensure the protection of scenic vistas and environs along the road by including all extensive areas of public land through which the Great Ocean Road passes in the proposed Otway Ranges National Park.

Considering the above information, it seems practical to define the Great Ocean Road consistently and create a formal road reserve to ensure a consistent management approach. Council has proposed the establishment of a road reserve along the entire length of the Great Ocean Road, including in some places the re-alignment of existing road reserves to incorporate the road formation and excision from existing parks and reserves where required.

The establishment of a set road reserve width is difficult as the existing reserve varies from up to 40 metres in places near Torquay to extremely narrow sections where the road is literally blasted from the sea cliffs. Where the road reserve is created by excision from other public land, VEAC proposes that, with the exception of townships where greater provision may be required for turning lanes, the road reserve be no greater than 20 metres width corresponding to the existing Otway National Park exclusion.

VEAC is mindful that the natural vistas and vegetation integrity along roadsides contributes to the values of both the driving experience and the values of the adjoining park. However, rehabilitation, drainage and engineering works related to the stability of the road surface may require works outside the defined road reserve. Additionally, geological features exposed in roadside cuttings may be of scientific importance and used as a research, educational or teaching resource.

VEAC proposes that limited upgrades be undertaken along the road, primarily to address safety and access issues, and that where the road is bound by national park, that management agreements be established between the park manager and the road authority.

Council has assumed that strategic planning and upgrading of hinterland routes as described in the Great Ocean Road Region Strategy will alleviate some of the existing capacity and safety concerns related to the road, while maintaining the existing character and function as a tourist route. Nonetheless, Council envisages that in places, road widening or engineering works may be required outside the defined road reserve. Any road re-alignment outside the defined road reserve would entail a revision of the park boundaries and should be subject to environmental assessment to ensure that the essential character of the road as a tourist and scenic experience is maintained.



Hinterland Roads

Many of the principles established in the proposals for the Great Ocean Road also apply to the declared main linking hinterland roads. VEAC acknowledges that redirecting traffic from the Great Ocean Road to such hinterland routes may require minor upgrading of these roads and that this may compromise the values of the land through which these roads pass (which in some areas include the proposed Otway Ranges National Park). In developing draft proposals for future public land use, VEAC has taken into account that there may be a reduction in park values in some areas, but that the Great Ocean Road values must be maintained.

In some places within the study area the road formation does not actually lie within the designated road reserve. VEAC has delineated the boundaries of proposed parks to reflect the actual alignment of the main through road.

VEAC also proposes that roadside management plans be prepared by the responsible road authority in consultation with the adjoining land manager where main roads pass through the proposed Otway Ranges National Park.

Vehicle Tracks and Road Management

The Otway region has inherited an extensive vehicle track network created to establish fire access and to facilitate timber harvesting. Some tracks were created as part of Government relief schemes. The vehicle track network is a valuable resource for managers and users alike. However, current use of such vehicular tracks may not reflect the original rationale for their creation and their design and construction may no longer be adequate, leading to high maintenance costs and/or damage. Consequently tracks on public lands may be subject to seasonal closures, restrictions or rehabilitation.

Changes to the status of vehicular tracks usually occurs through management plan processes and/or consultation with key user groups. Some of these groups also assist park managers with the monitoring and maintenance of tracks and contribute to collaborative projects such as track rating systems to improve the safety of recreational users.

Many submissions by recreational users of the Otway forests voiced concerns that park creation would lead to all, or almost all, tracks being closed. Other submissions suggested that park creation led to tracks being created or upgraded to cater for increased visitor use. Concern was raised that closure of tracks would hinder fire fighting and other emergency operations. Some felt that organised groups had the opportunity to be involved in decisions about tracks while the opportunity for individuals to be involved were limited.

VEAC received evidence that some track closures followed creation of the Otway National Park and that the approved management plan stated that these tracks should remain open to the public. There was, however, no evidence that all tracks are or would be closed. Council also noted that tracks have been closed in state forest areas as well as in

parks and that a network of fire access tracks is still maintained.

Whilst tracks are closed by park managers for legitimate reasons, VEAC acknowledges that there is a demand for continued recreational access and has placed a high emphasis on providing for this. In particular, Council's proposed Otway Forest Park has the capacity to provide for the majority of higher impact four wheel drive and trail bike recreational requirements and includes a number of areas, such as the West Barwon catchment, that are particularly popular for such activities. VEAC has also recommended that car touring, including the maintenance of roads and routes suitable for four wheel drive vehicles only as well as all-weather access for two wheel drive vehicles be provided for in the proposed national park. It is anticipated that the expanded national park can meet conservation objectives while maintaining a viable road network and most vehicular roads and tracks through the proposed Otway Ranges National Park are expected to remain open. Nonetheless, threatened species protection, safety risk management, and other potential reasons for track closures occur within parks and are ultimately the responsibility of the land manager.

Concern was expressed about funding for track maintenance to replace timber industry contributions to road management. Some suggested that tourist operators pay road levies. VEAC considers that such funding issues need to be taken into account by the Government when considering these proposals.

Unused road reserves surrounded by public land that are not used for access have been proposed for addition to adjoining parks or reserves.



CHAPTER 12 IMPLEMENTATION AND MANAGEMENT

While implementation and management is the responsibility of respective land managers, the full value of VEAC's recommendations is dependent upon the extent to which they are successfully implemented and managed into the future.

Many of the submissions received following the Discussion Paper, referred to the need to improve the management of public land and, in particular, adequately fund parks resulting from VEAC's recommendations. Comment was also made about difficulties identifying the responsible land manager and differences between land managers in dealing with issues such as pest species control. A feeling was expressed that local knowledge and experience was undervalued and that opportunities for influencing management practices were limited.

In summary, the most common issues raised relating to implementation and management were:

- enhancing management of all public land;
- adequate resources for implementation of VEAC recommendations;
- provision of assistance to those adversely affected;
- desirability of integrated management;
- support for ecological sustainability; and
- community participation.

Enhancing Public Land Management

Throughout the consultation process, a frequent issue raised in submissions, briefings and meetings was the perceived need for more expenditure on public land management. Some of the issues raised as needing more resources include:

- pest plant and animal control, particularly foxes and feral cats;
- fire protection;
- presence of Parks Victoria rangers and DSE staff;
- provision and servicing of recreation facilities; and
- track maintenance.

These comments applied both to parks and reserves and state forests. Concerns arose from effects on biodiversity conservation in these areas as well as their impact on adjoining landowners.

VEAC's view is that these concerns result from genuine public observation about what public lands require, and that the Otways forests are in real need of additional resources for on-ground management and for the scientific research upon which on-ground management must be based—irrespective of any VEAC recommendations to change existing land-use categories.

Resources for Implementation

VEAC stresses the importance of appropriate resources being allocated for the implementation of its proposals.

Most public land in Victoria is managed, directly or indirectly (through delegation), by DSE regardless of the current or proposed land-use category. While land status changes do not necessarily imply a greater level of management, community expectations may differ between land-use categories. Additional resources are required to respond to these expectations and, in particular, will be required where the intensity of management needed increases as a result of the acceptance of VEAC's proposals.

Implementation involves establishment costs, such as fencing, signs and management planning, as well as an on-going commitment to ensure that the management objectives of each park or reserve are met.

VEAC will make strong representations to the Government to allocate adequate resources for the implementation of its approved final recommendations.

Assistance to Affected Parties

VEAC's proposals have been designed to provide for a net benefit to all Victorians, and to minimise the impacts on current users of resources of the Otways.

On the basis of its own work and that of independent social and economic consultants engaged by VEAC, Council anticipates that any negative effects of the proposals on resource users are likely to be minor (see Appendix 3 for details). However, where individuals or communities are disproportionately affected, VEAC considers it appropriate for the community, through Government, to provide assistance in overcoming those effects.

Note that the Government has a separate process for dealing with the impacts of its decision to phase out the timber industry from the Otways.

Where individuals or local communities are directly and adversely affected as a result of the implementation of the approved final recommendations, VEAC will request that Government establish a process to evaluate mechanisms and levels of assistance that may be required.

Integrated Management

Management issues of concern such as fire protection and pest species are currently the responsibility of a number of agencies who operate irrespective of land-use category.

Fire protection in the Otways, like other public land across Victoria is, and will continue to be, the responsibility of the Department of Sustainability and Environment's Fire Management Branch (FMB). The Department develops fire management plans and co-ordinates fire-fighting efforts



between government and other agencies. Such fire management plans take into account special natural values as well as ensuring the protection of assets.

Particular pest species are currently targeted in the Otways according to regional and statewide priorities and program directions.

VEAC's proposed umbrella Otways Park concept is envisaged to foster a more integrated approach for such issues and engender synergies that will lead to better land management.

For example, foxes, feral cats and rabbits are species of concern in the Otways because of their impact on wildlife either as predators or competitors, or through habitat modification. Co-ordinated pest reduction/eradication programs between adjacent landholders and public land managers would be facilitated. VEAC's simplification of land-use categories should also assist.

Ecologically Sustainable Development

VEAC strongly believes that its proposed Otway Ranges National Park will form the core of a sustainable future for the Otways. The complementary Otway Forest Park will not only provide protection for other areas of forest but VEAC's recommendations seek the active management and support of recreational activities, so that they are carried out in a manner which is safe and within the capability of the environment.

Informed decision-making for ongoing sustainability requires reliable and relevant data—the collection of environmental and biological data on species and ecological communities and, especially information on specific threatened species and indicator species for environmental health, such as the spot-tailed quoll. Monitoring of higher order predators or species that are highly vulnerable to perturbations in the ecosystem that supports them, not only improves management strategies for that species, but also provides a cost-effective measure of the health of the entire ecosystem.

VEAC also advocates that land managers make greater use of processes of continuous review and improvement as a form of environmental management system for planning, implementation and review of their efforts to manage the environment.

Community Participation

Community understanding and involvement will help achieve the vision for the sustainable management of the Otways. An informed community that values the many natural attributes and habitats of the Otways and understands the impacts of different uses upon them is more likely to act in ways that protect and enhance the environment. An informed community can facilitate management goals. By participating in planning and implementing the proposed Otways Park, the local and wider community will develop a sense of ownership and responsibility for the park. The vibrant and diverse Otways

community already shows a degree of ownership which VEAC anticipates its proposals will further encourage.

During the implementation of Council's recommendations it will be necessary to widely distribute maps and other information clearly showing boundaries and permitted activities in the different land use categories, particularly those of the national and forest park. This should be supported with a presence of rangers or other staff at community events and institutions. Emphasis should be placed on education as an adjunct to enforcement, especially during the implementation phase. Compliance programs will, however, also be necessary to address potential threats to the park and its biodiversity such as the theft of flora and fauna and forest produce or damage to the environment through inappropriate uses (for example, off-track trail bike riding). A suite of education and enforcement approaches developed specifically to achieve compliance within the Otways context will be required.

Relevant Legislation

VEAC believes that its recommended approach of an umbrella Otways Park and the creation of a new land-use category, tentatively named forest park, cannot be adequately implemented through existing legislation. It has proposed the enactment of specific purpose legislation to implement its recommendations. The proposed Otways Ranges National Park will be created under the *National Parks Act 1975* by amendment.



PART 3
IMPLICATIONS



CHAPTER 13 SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPLICATIONS OF THE DRAFT PROPOSALS

Optimising net social, economic and environmental benefits for the whole community is a major objective and guiding principle of the Angahook-Otway Investigation. Throughout the lengthy and detailed process of developing its draft proposals, VEAC has been continually assessing the proposals against these outcomes and refining them accordingly. This chapter summarises VEAC's assessment of the social, economic and environmental implications of the draft proposals.

There are very many parameters and measures of social, economic and environmental implications, and this chapter focuses on those that have been foremost in VEAC's deliberations.

Overall Assessment

VEAC commissioned URS Sustainable Development consultants (URS) to provide detailed, comprehensive and independent advice on, and assessment of, the social and economic implications of its draft proposals. Appendix 2 is a summary of URS' lengthy assessment—the full report is available at VEAC's website (www.veac.vic.gov.au) or by request from the VEAC office (see the inside front cover for contact details).

As part of this work, URS estimated the dollar value of the social, economic and environmental costs and benefits of the draft proposals. These estimates allow a quantification of the net cost/benefit of the draft proposals. Such analyses, and the data on which they are based, involve many assumptions and caveats (which are documented in the full URS report), and they should be used cautiously. That said, the results of the analysis indicate that implementation of the proposals should lead to a net increase in economic value of between \$6.4 million and \$31.2 million a year, with a 'conservative case' net benefit of about \$19 million per year. The bulk of the net benefit comes from increased tourism and the non-use values for biodiversity protection (\$4.8 and \$15 million per year respectively in the 'conservative case').

It should be noted—and is apparent in the following sections of this chapter—that VEAC's emphasis has been on seeking proposals that optimise the social, economic and environmental implications themselves, rather than their dollar value as such. That is, the quantification and net economic benefit calculations have only come afterwards.

Social and Economic Implications

With over 1100 submissions received to date, VEAC certainly recognises the wide range of views in the community on both the appropriate social and economic future for the Otways, and the public land settings that may realise these different futures. To take a simple example,

there are obvious difficulties in satisfying—as far as possible—both the many people who see no change to public land use as the most socially desirable outcome and those who see it as a very large national park.

Ultimately, though, two things are clear—firstly, it is the character of the region that makes it so popular for people and secondly, that popularity (and its associated pressures) will continue to increase. The challenge is to maintain the region's character so as to continue reaping the benefits of its popularity.

Among the special characteristics that are most under threat are the region's natural and cultural heritage, the rural or seaside village feel of many towns and districts, and the associated relatively low-key, affordable summer holiday venues. VEAC's proposals contribute in particular to the protection of heritage values and characteristics, as well as the region's status as rural Victoria's premier destination for tourists.

Recreation

Maintaining and, where possible enhancing, the existing recreational opportunities in the Otways is one of the keys to maintaining the area's popularity and values. Most of the current popular recreational activities are generally not intrinsically damaging to the environment, and usually only cause damage when excessively focussed on particular sites or when illegal—when trail bike riders leave formed tracks, for example. Generally, these problems, and conflicts with other users, can be avoided or solved with good management planning and implementation.

VEAC's proposals provide a framework to assist such management—the proposed national park provides for most existing recreational uses in the context of strong and secure protection for the high natural and cultural values in that park; the proposed forest park is generally located in areas of most interest for those activities that are least compatible with national park status. The forest park provides for these activities and protection of natural and cultural values.

Examples of areas of most interest for particular activities in the forest park include areas near towns (e.g. Lorne, Forrest and Lavers Hill) for dog walking, and the West Barwon, Head of Aire and Upper Ford forest areas for four wheel driving. That is not to say that four wheel driving—and, for that matter trail bike and horse-riding—are not permitted in the proposed national park; only that it would be generally more appropriate, for example, to locate focal points (such as trail bike unloading areas, or bridal paths) for these activities in the forest park areas. Similarly, key areas for hunting remain available—duck hunting in the existing Aire River Wildlife Reserve for which a minor extension is proposed, and deer



hunting in Kennedys Creek forest and parts of the western Otways Forest proposed as forest park.

Furthermore, a zone for dog walking is proposed in the Otway Ranges National Park near Aireys Inlet, and the existing zone for gem fossicking at Wreck Beach near Moonlight Head is proposed to be retained.

A key issue for many recreational activities—particularly four wheel driving, and trail bike-riding—is the maintenance of access to roads and tracks through the forest, especially in national parks. VEAC does not envisage the high proportion of track closures that may be appropriate in a relatively small national park such as the existing Otway National Park being applied across the much larger proposed national park. With the phase-out of sawlog harvesting and woodchipping by 2008, the requirement for new roads to service the timber industry will be greatly reduced and, all other things being equal, minor dead-end logging tracks closed.

Land managers also need flexibility to manage the track network in response to particular circumstances as they arise—detailed proposals on particular tracks are generally beyond VEAC's broad, strategic and long-term scope and would generally be an undesirable restriction on land managers' flexibility.

In summary, the implications of VEAC's proposals for recreational opportunities is expected to be:

- enhanced protection of the key natural and cultural heritage values that underpin most recreation—such as native flora and fauna, waterfalls, historic sites and unspoilt landscapes and scenery;
- increased accessibility for a number of activities and sites as facilities are developed in the new parks;
- better integration of public land management, and simpler administrative and planning arrangements under the Otways Park umbrella;
- continuation of existing access for virtually all current activities, including possible changes as a result of ongoing management planning; and
- continuing access to key areas for hunting (particularly the lower Aire wetlands) and dog walking (particularly around towns), but exclusion of these activities from relatively large areas of the proposed national park, where there is currently little interest in hunting and dog walking.

On this basis, URS concluded that VEAC's proposals would attract more visitors to the study area, leading to economic benefits for the tourism industry (see below)—the increased accessibility of activities and sites being a key factor for tourists relative to the other implications listed above. Any negative effects of the proposals on recreational activities are likely to be small and heavily outweighed by the benefits.

Industries and Commercial Uses

The industries and commercial activities currently operating on public land make an important contribution to the social and economic character of the region and, apart from sawlog and woodchip harvesting—which is to be phased out by 2008—will continue to do so with relatively little impact on other values.

Overall, establishment of the Otways Park will offer significant benefits to many industries operating on public land through improved management, and simpler administrative and planning arrangements.

Specific implications for each industry are as follows.

Tourism

Tourism is the largest industry in the Otways. As indicated above, VEAC's proposals are likely to attract more visitors to the region, which should allow this dynamic industry to continue its rapid expansion while ensuring that the natural values on which it depends are protected.

With a large expansion from an already large base, URS' has quantified significant social and economic benefits for the region.

Sawlog and Woodchip Harvesting

Sawlogging and woodchipping will be allowed in the proposed forest park until 2008 when the Government's phase-out of these industries from public land in the Otways will come into effect.

The sawlog potential of many parts of the forest park are poorly known, in part because some areas have not been available for harvesting for several years (for example special protection zones that represent vegetation types proposed to be well represented in VEAC's permanent reserves—see below). Consequently, it is difficult to be confident at this point that existing commitments can be met, but the large area of mixed species forest in the forest park would suggest that sufficient product would be available from this source at least.

Minor Forest Produce

Large areas of forest park are proposed to continue to remain available for firewood and other minor forest produce such as tea-tree stakes. Some areas close to Colac—the area of main demand for firewood—are proposed for inclusion in the national park and will not be available for minor forest produce. This change may displace some firewood production to more distant areas, resulting in a very small, if any, impact on commercial or domestic harvesters.

Extraction of Sand, Gravel and Stone

Table 2 summarises the implications of the draft proposals for extractive industries. It shows that none of the several current operations on public land will be adversely affected by the proposals. Current operations will continue either outside the proposed national park or under provisions of the *National Parks Act 1975*. New licences can be issued in all public land categories (generally subject to approval by



the Minister for the Environment) except the proposed national park.

As with mining and exploration (see below), adverse effects are restricted to potential future developments and therefore cannot be quantified, but are likely to be small.

Mining and Exploration

There are no operating mines on public land in the Otways, although some public land is subject to exploration licences for coal bed methane and petroleum (see Table 2). It is proposed that these tenements continue in accordance with existing practise. New mining tenements can be issued in all public land categories except the proposed national park and reference areas, although by far the majority of other public land is forest park that is proposed as restricted Crown land for which the approval of the Minister for the Environment will be required for the granting of new licences.

Accordingly, the implications of the draft proposals are the effective loss of potential for future resource developments in those areas that are not currently covered by tenements and are proposed to be added to the national park, and higher approval standards in the proposed forest park. Both of these implications are impossible to quantify without knowledge of what future developments may eventuate, and the relative low level of exploration of the Otways and the impact of the higher approval standards are likely to be small.

Agriculture

Table 3 summarises the implications of the draft proposals for agriculture specifically. It shows that public land grazing by domestic stock in the Otways occurs under licence over about 2040 ha under some 540 current licences generally held by adjoining landholders. Nearly all of these licences (97 percent by number, 94 percent by area) will continue unaffected by the proposals. The proposals will result in cancellation of all or part of 16 licences covering some 126 ha, of which some 56 ha is actually grazed—mostly in areas proposed to be added to the Otway Ranges National Park, but also in some areas to be added to the existing Aire River Wildlife Reserve. Implementation of the proposals may also require fencing of some of the currently licensed areas.

Grazing by domestic stock can adversely affect natural values, particularly along water frontages where both the riparian and aquatic environments can be affected by soil disturbance, fouling, trampling and removal of native vegetation, and invasive plants.

Although some licence areas can play an important role in overall farm management, URS' analysis concluded the direct economic effect of the proposals was likely to be small.

Commercial Fishery

Apart from a small section of the Gellibrand River proposed for inclusion in the Otway Ranges National Park, all areas where eels are commercially harvested will continue to be available. This area is very rarely, if ever, used by the current licensee—harvesting mostly occurs in floodwaters over the adjoining freehold pastures—and the implications of the proposals are negligible.

Apiculture

Beekeeping is a relatively minor industry on public land in the Otways, with only three licensed sites in the eastern part of the study area. All of these sites are proposed for inclusion in the Otway Ranges National Park.

While many national parks in other parts of Victoria contain bee sites, as an exotic species with potential adverse impact on natural values—through competition with native wildlife for tree hollows (in the case of feral bees) and nectar—the presence of honey bees conflicts with the purposes and objectives of national parks. There are several possible options for relocation of the affected bee sites in nearby areas (such as the proposed forest park). VEAC's proposal is to maintain the integrity of the proposed national park and close the bee sites when it is established. If alternative sites can be found nearby, the closure of the sites will have no significant impact, otherwise there may be a relatively small impact on one licensee.

Net Outcome

The net outcome for industries according to URS is favourable resulting primarily from tourism, with other industries able to continue or if affected, being small scale and not significantly changing the outcome. Tourism is expected to grow at an annual rate of at least two percent, to 2012; the Great Ocean Road Region, including the recommended national park, will feature strongly in this growth. Extractive industry and current petroleum and gas exploration can continue. Regarding sawlog harvesting before 2008, it is expected that planned coupes proposed for inclusion in the national park can either be relocated or otherwise resolved. Other industries—firewood harvesting, other forest products, apiculture, public land grazing—are only marginally affected or readily relocated, such that economic effects are generally minor. If there are disproportionate effects on some industries, consideration should be given in the implementation phase to those licensees who may be adversely affected.

Note that URS has not assessed the implications of the phase out of the nature forest sawlog and pulpwood timber industry—because this does not arise from a recommendation of VEAC.

Table 2. Implications of the Draft Proposals for Mining, Extractive and Petroleum Tenements

	Existing Area (ha)	Area under VEAC Proposals (ha)	Change (ha)
Mining and Extractive Industries			
Area of Exempt Land (not available)	39,865	98,620	+58,755
Area of Restricted Land (available subject to Ministerial consent)	6652	51,455	+44,803
Petroleum and Fossil Fuels			
Wilderness Crown Land (not available; includes reference areas)	2170	3150	+980
Parks Crown Land and Restricted Crown Land	45,342	146,925	+101,583

Note: Rights under existing tenements, including applications are unaffected by VEAC's proposals.

Table 3. Implications of the Draft Proposals for Grazing Licences

Location	Number of Licences	Total Area of Licence (ha)	Approx Area Grazed (ha)
Licences affected by proposed national park	10	85	28
Licences affected by Aire River Wildlife Reserve proposals	6	41	29
Total Number Affected by Proposals	16	126	56
Total Number of Licences	540	2040	not available



Environmental Implications

Ecosystem Protection

Biodiversity is the variety of all life forms: genetic diversity, species diversity and ecosystem diversity, and their interactions with each other and the physical environment. There is a great deal that is not known about biodiversity (and is likely to remain so for the foreseeable future)—many lower plants and animals have not been discovered, let alone been studied ecologically, and ecological relationships and genetic diversity are generally even more poorly known. The challenge for planners is to protect biodiversity for future generations in the absence of knowledge about most of it.

Confronting this challenge is the basis of the comprehensive, adequate and representative (CAR) reserve system approach—the reasoning is that if *adequate* areas of a *comprehensive* range of ecosystems are included in a *representative* system of conservation reserves (where biodiversity protection is paramount), then a large proportion of biodiversity—known and unknown—will be conserved. Consequently, establishment of a CAR reserve system is a fundamental prerequisite in the conservation of biodiversity, which is itself a core element of ecologically sustainable development. Accordingly, the establishment of such a reserve system in the Otways has been a key driver in the formulation of the draft proposals.

In developing its reserve system proposals, VEAC has used Ecological Vegetation Classes (EVCs) as surrogates for ecosystems, and the nationally-agreed JANIS criteria for a CAR reserve system. EVCs and the JANIS criteria are described in more detail in the Angahook-Otway Investigation Discussion Paper. The key elements of the JANIS criteria are reserve system representation targets of 100 percent of the current extent of rare or endangered EVCs, 60 percent of the remaining extent of vulnerable EVCs and at least 15 percent of the pre-1750 (that is, pre-European) extent of all other EVCs.

Table 4 shows the representation of the 38 Angahook-Otway EVCs in existing and proposed permanent reserves in the study area. VEAC has also analysed the EVC representation in each of the four main bioregions in the study—the results of these analyses are available on VEAC's website (www.veac.vic.gov.au) or by request from the VEAC office (see the inside front cover for contact details).

Table 4 shows that VEAC is proposing to more than double the total area of permanent reserves from 49,355 ha to 101,960 ha. It also shows that several EVCs are poorly represented in existing permanent reserves (not or barely achieving the JANIS targets summarised above). For several of these EVCs, existing informal reserves (special protection zones in state forest) complement existing permanent reserves and thereby achieve the JANIS targets. However, VEAC has been keen to see the much more secure protection afforded by permanent reserves extended to as many EVCs as practicable, especially with the phasing-out of sawlog harvesting and state forest in the Otways.

Accordingly, Table 4 shows that the proposed dedicated reserves satisfy the JANIS targets for most EVCs. Key EVCs for which permanent reserve representation is proposed to increase significantly include cool temperate rainforest, herb-rich foothill forest, herb-rich foothill forest/shrubby foothill forest complex, lowland forest, and riparian forest. Those EVCs for which the proposed permanent reserves do not satisfy the JANIS targets, either have a small absolute extent on public land or occur in small patches in the proposed forest park. In the latter instance, large additions to the national park would have been required to incorporate these small patches in the permanent reserve system, generally in places with few other known national park values and of importance for other public land uses. These patches can be protected satisfactorily by subsequent management planning in the forest park.

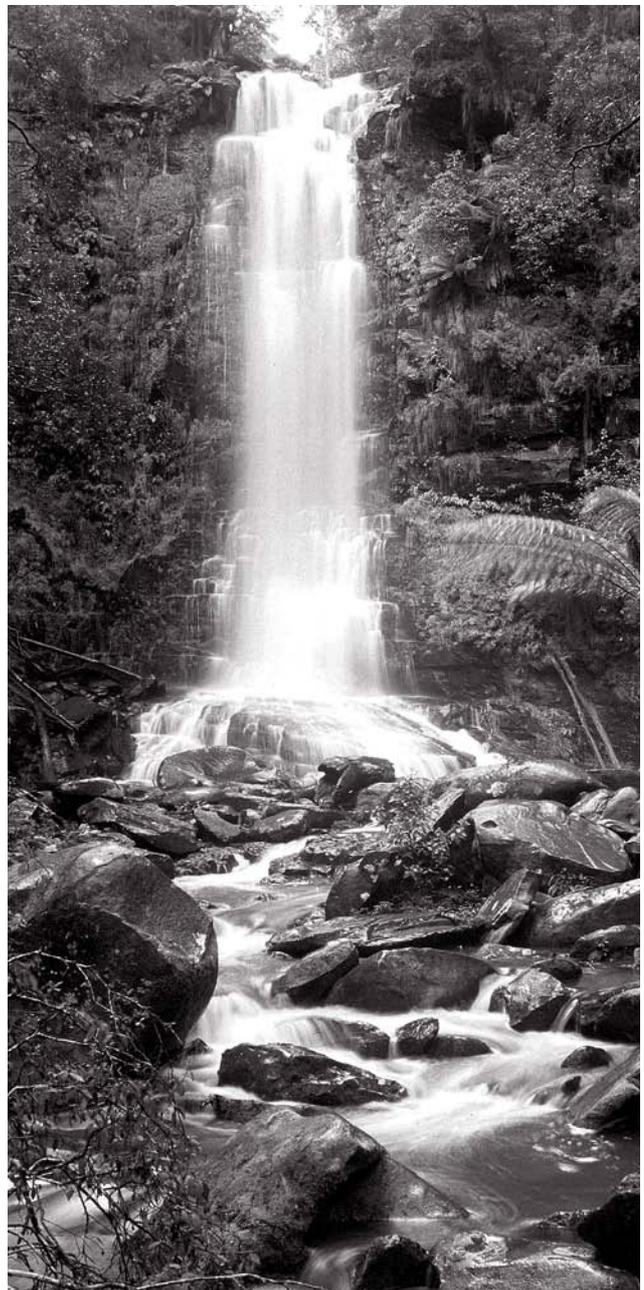


Table 4. Reservation Status of Ecological Vegetation Classes (EVCs) in the Angahook-Otway Study Area (see following page for a key to the table)

Ecological Vegetation Classes (EVCs)	Column 1												
	2		3		4	5	6		7		8	9	10
	Pre-1750 Extent	Current Extent	Area in ha	Percent Remaining	Conservation Status	Existing Permanent Reserves	Proposed Permanent Reserves	Other Public Land	VEAC Percent Change to Permanent Reserves	Permanent Reserves as Percent of Pre-1750 Extent			
Aquatic Hermland/Plains Sedgy Wetland Mosaic	690	10		1.4 E, R	0	0	0	0	-	0.0			
Calcarene Dune Woodland	25	5		2.1 V, R	1	1	1	1	0.0	2.5			
Clay Heathland	2	2		100.0 R	2	2	0	0	0.0	100.0			
Coastal Dune Scrub Mosaic	1,631	1,144		70.1	783	833	140	6.4	32.6	51.1			
Coastal Headland Scrub	2,674	2,134		79.8	805	1,068	237	39.9	40.1	39.9			
Coastal Headland Scrub/Headland Coastal Tussock Grassland Mosaic	254	194		76.5	0	102	0	-	-	40.1			
Coastal Saltmarsh	5	5		100.0 R	0	0	3	0.0	0.0	0.0			
Coastal Tussock Grassland	305	223		72.9	140	152	11	8.8	49.8	49.8			
Cool Temperate Rainforest	9,655	8,564		88.7	1,459	6,185	942	323.9	64.1	64.1			
Damp Heath Scrub	1,541	571		37.0	425	462	5	8.7	30.0	30.0			
Damp Sands Herb-rich Woodland	3,337	1,593		47.7	612	706	33	15.3	21.2	21.2			
Estuarine Wetland	208	114		54.5	26	30	40	17.5	14.6	14.6			
Floodplain Reedbed	112	0		0.0 E, R	0	0	0	-	0.0	0.0			
Floodplain Riparian Woodland	1,853	42		2.3 E, R	0	0	1	0.0	0.0	0.0			
Grassy Dry Forest	291	275		94.5	158	170	47	7.4	58.4	58.4			
Grassy Forest	1,595	138		8.6 E, R	0	0	0	0.0	0.0	0.0			
Grassy Woodland	35,785	622		1.7 E, R	1	15	6	1,271.3	0.0	0.0			
Heathy Woodland	20,367	17,733		87.1	7,586	12,008	2,255	58.3	59.0	59.0			
Herb-rich Foothill Forest	10,113	5,495		54.3	1,044	3,030	1,382	190.4	30.0	30.0			
Herb-rich Foothill Forest/Shrubby Foothill Forest Complex	6,107	4,165		68.2	0	1,241	2,187	-	20.3	20.3			
Lowland Forest	74,554	32,560		43.7	6,902	12,322	9,969	78.5	16.5	16.5			
Plains Grassy Wetland	11	2		15.3 V, R	0	0	0	-	0.0	0.0			
Plains Grassy Woodland	4,725	47		1.0 E, R	0	0	1	-	0.0	0.0			
Plains Sedgy Wetland	262	27		10.3 V, R	0	0	0	-	0.0	0.0			
Riparian Forest	5,849	3,348		57.2	798	1,162	1,409	45.6	19.9	19.9			
Riparian Scrub Complex	5,928	3,966		66.9	1,311	2,206	703	68.3	37.2	37.2			
Sand Heathland	176	167		95.2	78	132	17	68.0	75.0	75.0			
Scoria Cone Woodland	1	1		100.0 R	1	1	0	0.0	100.0	100.0			
Sedgy Riparian Woodland	2,872	1,459		50.8	223	589	433	164.1	20.5	20.5			
Shrubby Dry Forest	1,687	1,589		94.2	1,074	1,247	14	16.1	73.9	73.9			
Shrubby Foothill Forest	36,857	29,589		80.3	10,404	14,577	8,048	40.1	39.6	39.6			
Shrubby Wet Forest	37,579	32,448		86.3	5,446	13,720	12,273	151.9	36.5	36.5			
Stony Rises Herb-rich Woodland	4,471	2,106		47.1	13	16	2	20.3	0.4	0.4			
Swamp Scrub	9,367	497		5.3 E, R	5	10	104	91.2	0.1	0.1			
Swampy Riparian Woodland	1,926	239		12.4 V, R	0	6	38	98,695.9	0.3	0.3			
Wet Forest	48,829	40,910		83.8	8,571	25,943	7,051	202.7	53.1	53.1			
Wet Heathland	4,074	2,016		49.5	803	1,049	615	30.7	25.8	25.8			
Wet Sands Thicket	1,299	1,270		97.8	451	942	237	108.9	72.5	72.5			
Total:	337,407	195,450		57.9	49,355	101,960	48,309	106.6	30.2	30.2			



Key to Table 4

Data in the Representation Table were derived by GIS analysis, that is overlaying, on computer, maps of:

- the pre-1750 extent of EVCs—that is, the distribution of EVCs as it is thought to have been immediately prior to European settlement;
- current extent of tree cover—that is, areas where indigenous tree cover is present, based on satellite imagery; and
- current and proposed public land use categories.

Many small public land units are not picked up in the public land GIS layer. For example, none of these figures include roads and roadsides, for which no estimate of extent exists. In addition to the Representation Table for the study area as a whole, presented here, VEAC has prepared Representation Tables for each of the main bioregions in the study area. These tables are available by request from VEAC.

Several figures in the Representation Table—including totals—differ somewhat from the corresponding figures presented in the Representation Table in the Angahook-Otway Discussion Paper. These differences reflect GIS variations and subsequent corrections to the status of many parcels of land and other data. Also, many of the column totals are greater than the sum of the areas in their column—the differences are accounted for by relatively small areas for which no EVC is mapped, such as cleared areas and water bodies.

Column 1: Ecological Vegetation Classes

The names of the 38 Angahook-Otway EVCs mapped within the study area.

Column 2: Pre-1750 Extent

The total area in hectares thought to have been occupied by each EVC prior to European settlement.

Column 3: Current Extent (public and private land)

The total area in hectares currently occupied by each EVC—that is, that part of the pre-1750 distribution where indigenous tree cover is currently present.

Column 4: Percent Remaining

The current extent (column 3) as a percentage of the pre-1750 extent (column 2), for each EVC.

Column 5: Conservation Status (JANIS)

The status of each EVC in terms of the categories developed by JANIS. The assessments refer to the study area as a whole and take no account of EVC distributions outside the study area or in bioregions within the study area. The percent remaining (column 4) is a key factor in assigning EVCs to JANIS categories. E = endangered, V = vulnerable, R = rare.

Column 6: Existing Permanent Reserves

The total area in hectares of each EVC in existing public land categories which comprise the existing permanent conservation reserve system. The existing conservation reserve system also includes informal reserves not included in these data.

Column 7: Proposed Permanent Reserves

The total area in hectares of each EVC in existing public land categories which comprise the conservation reserve system proposed by VEAC in this Paper.

Column 8: Other Public Land

The total area in hectares of each EVC in all public land categories outside the permanent reserves proposed by VEAC in this Paper.

Column 9: VEAC Percent Change to Permanent Reserves

The percentage increase in representation in proposed permanent reserves (column 7) compared to existing permanent reserves (column 6), for each EVC.

Column 10: Permanent Reserves as Percent of Pre-1750 Extent

The area of permanent reserves (column 6), as a percentage of the pre-1750 extent (column 2), for each EVC.

Threatened Species and Geological Sites

While a CAR reserve system is implemented with a view to optimising protection of biodiversity, including those elements about which little is known, there are often key values that are reasonably well known and which are desirable to protect in permanent reserves. It is important that specific provisions are made to protect these values rather than relying on ecosystem representation. Threatened species are common examples of such values—they are often reasonably well researched because of their conservation status, and many threatened species require a high level of protection and even active management for their conservation. Inclusion of such threatened species in permanent reserves is a high priority.

Sites of geological and geomorphological significance in the Otways are also reasonably well documented, particularly the more important sites—those of international, national, and state significance.

Tables 5 and 6 show the representation of a range of threatened species and significant geological sites in existing and proposed permanent reserves in the Otways.

Table 5. Representation of Selected Threatened Species and Geological Sites in Existing and Proposed Permanent Reserves

Common Name (see Appendix I for scientific names)	Victorian Conservation Status (see Appendix I for key to symbols)	Total Number of Records in Study Area	Number of Records in Current Permanent Reserves (and percent of total)	Number of Records in Proposed Permanent Reserve Additions	Number of Records in Proposed Permanent Reserves (and percent of total)	Number of Records in Other Public Land	Number of Records in Freehold Land
Animals							
Australian Grayling	v, L	26	2 (8)	6	8 (31)	18	0
Common Bent-wing Bat	L	7	4 (57)	1	5 (71)	1	1
Ground Parrot	e, L	9	3 (33)	5	8 (89)	1	0
Masked Owl	e, L	16	8 (50)	6	14 (88)	2	0
Spot-tailed Quoll	e, 15	46	7 (15)	22	29 (63)	9	8
White-footed Dunnart	v, R	30	8 (27)	7	15 (50)	7	8
Plants							
Beech Finger fern	v, L	14	0 (0)	14	14 (100)	0	0
Brooker's Gum	r	34	7 (21)	18	25 (73)	4	5
Dwarf Boronia	r	2	0 (0)	0	1 (50)	0	1
Forest Bitter-cress	v	1	0 (0)	1	1 (100)	0	0
Slender Fork-fern	v	9	2 (22)	6	8 (88)	1	0
Starry Daisy Bush	k	7	2 (28)	3	5 (71)	2	0
Tall Astelia	v, 7	8	0 (0)	8	8 (100)	0	0

Table 6. Representation of Sites of Geological and Geomorphological Significance in Existing and Proposed Permanent Reserves

Significance (see below for list of individual sites)	Total Number of Sites	Number of Sites in Current Permanent Reserves (and percent of total)	Number of Sites in VEAC Reserve System Additions	Number of Sites in Proposed Permanent Reserves (and percent of total)	Number of Sites in Other Public Land	Number of Sites in Freehold Land
International	2	1 (50)	1	2 (100)	0	0
National	6	5 (83)	1	6 (100)	0	0
State	9	4 (44)	3	7 (78)	1	1

Feature Name	Significance
Dinosaur Cove	international
Torquay to Aireys Inlet	international
Lake Elizabeth and landslide	national
Lion Headland to Slippery Point	national
Pebble Point	national
Point Lewis dinosaur locality	national
Port Campbell National Park	national
Sentinel Rocks fossil locality	national
Binns Road quarry	state
Cape Otway	state
Cape Volney fossil locality	state
Devils Kitchen fossil locality	state
Racecourse Steps, Moonlight Head	state
Ramsdens Cave, Cape Patton	state
Kaanglang Road quarry	state
Love Creek pillow basalt	state
Point Franklin	state

APPENDICES



APPENDIX I NAMES AND STATUS OF FAUNA AND FLORA SPECIES REFERRED TO IN THE TEXT

Species are listed by common name, in alphabetical order.

¹ – denotes introduced species

LEGEND:

EPBC: status under Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

Vic: conservation status in Victoria, following the Department of Sustainability and Environment's Victorian Fauna Display and Flora Information System

IUCN (1994) categories (lower case):

- x – extinct
- ce – critically endangered
- e – endangered
- v – vulnerable
- lr – lower risk
- dd – data deficient

IUCN (1990) categories (upper case):

- X – extinct
- E – endangered
- V – vulnerable
- R – rare
- D – depleted
- K – poorly known

FFG: status under the Victorian *Flora and Fauna Guarantee Act 1988*

- N – nominated for listing, awaiting recommendation
 - R – recommended for listing
 - X – rejected or ineligible for listing
 - L – listed, no action statement published
 - D – de-listed
- numbers indicate action statement number where published

FAUNA

Common Name	Scientific Name	EPBC	Vic	FFG
Australian Grayling	<i>Prototroctes maraena</i>	v	v	L
Australian King-Parrot	<i>Alisterus scapularis</i>			
Australian Mudfish	<i>Galaxias cleaveri</i>		ce	115
Azure Kingfisher	<i>Alcedo azurea</i>		l	
Barking Owl	<i>Ninox connivens</i>		e	116
Bibron's Toadlet	<i>Pseudophryne bibronii</i>			
Black Bream	<i>Acanthopagrus butcheri</i>			
Broad-toothed Rat	<i>Mastacomys fuscus</i>		lr	
Brown Trout ¹	<i>Salmo trutta</i>			
Chestnut-rumped Heathwren	<i>Hylacola pyrrhopygia</i>		v	L
Common Bent-wing Bat	<i>Miniopterus schreibersii</i>			L
Common Wombat	<i>Vombatus ursinus</i>			
Dog ¹	<i>Canis familiaris familiaris</i>			
Dwarf Galaxias	<i>Galaxiella pusilla</i>	v	v	L
Eastern False Pipistrelle	<i>Falsistrellus tasmaniensis</i>			
Eastern Quoll	<i>Dasyurus viverrinus</i>		x	14
European Rabbit ¹	<i>Oryctolagus cuniculus</i>			
Fallow Deer ¹	<i>Cervus dama</i>			
Forest Bat	<i>Vespadelus sp.</i>			
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>			
Glenelg Freshwater Mussel	<i>Hyridella glenelgensis</i>		R	L
Grey Goshawk	<i>Accipiter novaehollandiae</i>		v	N
Ground Parrot	<i>Pezoporus wallicus</i>		e	L
Growling Grass Frog	<i>Litoria raniformis</i>	v	e	L
Horse ¹	<i>Equus caballus</i>			
Hooded Plover	<i>Thinornis rubricollis</i>		v	9
King George Whiting	<i>Sillaginodes punctata</i>			
Koala	<i>Phascolarctos cinereus</i>			
Long-nosed Bandicoot	<i>Perameles nasuta</i>			
Long-nosed Potoroo	<i>Potorous tridactylus</i>	v	e	L
Macquarie Perch	<i>Macquaria australasica</i>	c	e	L
Masked Owl	<i>Tyto novaehollandiae</i>		e	L
Mountain Dragon (Anglesea form)	<i>Tympanocryptis diemensis</i>		dd	
New Holland Mouse	<i>Pseudomys novaehollandiae</i>		e	74
Otway Black Snail	<i>Victaphanta compacta</i>		V	L
Otway Burrowing Cray	<i>Engaeus fultoni</i>			
Otway Caddisfly	<i>Taskiria otwayensis</i>		e	
Otway Stonefly	<i>Eusthenia nothofagi</i>			D,45
Platypus	<i>Ornithorhynchus anatinus</i>			
Powerful Owl	<i>Ninox strenua</i>		v	92
Red Deer ¹	<i>Cervus elaphus</i>			
Red Fox ¹	<i>Canis vulpes</i>			
River Blackfish	<i>Gadopsis marmoratus</i>		dd	
Rufous Bristlebird	<i>Dasyornis broadbenti caryochrous</i>		lr	49
Sambar Deer ¹	<i>Cervus unicolor</i>			
Satin Bowerbird	<i>Ptilonorhynchus violaceus</i>			
Shortfin Eel	<i>Anguilla australis</i>			
Smoky Mouse	<i>Pseudomys fumeus</i>	e	e	L
Snapper	<i>Pagrus auratus</i>			
Southern Brown Bandicoot	<i>Isodon obesulus obesulus</i>		lr	
Southern Toadlet	<i>Pseudophryne semimarmorata</i>		v	
Spot-tailed Quoll	<i>Dasyurus maculatus</i>	v	e	15
Swamp Antechinus	<i>Antechinus minimus</i>		lr	L
Swamp Skink	<i>Egernia coventryi</i>		v	L
White-footed Dunnart	<i>Sminthopsis leucopus</i>		v	R
Yellow-bellied Glider	<i>Petaurus australis</i>			
Yellow-tailed Black-Cockatoo	<i>Calyptorhynchus funereus</i>			

FLORA

Common Name	Scientific Name	EPBC	Vic	FFG
Anglesea Grevillea	<i>Grevillea infecunda</i>	v	v	N
Anglesea Sun-orchid	<i>Thelymitra</i> sp. aff. <i>pauciflora</i> (Anglesea)		v	X
Beech Finger-fern	<i>Grammitis magellanica</i> ssp. <i>nothofagei</i>		v	
Blackberry ¹	<i>Rubus fruticosus</i> spp. agg.			
Blackwood	<i>Acacia melanoxylon</i>			
Bog Gum	<i>Eucalyptus kitsoniana</i>		r	
Brooker's Gum	<i>Eucalyptus brookeriana</i>		r	
Brown Stringybark	<i>Eucalyptus baxteri</i>			
Californian Redwood ¹	<i>Sequoia sempervirens</i>			
Cinnamon Fungus	<i>Phytophthora cinnamomi</i>			
Currant-wood	<i>Monotoca glauca</i>		r	
Dense Leek-orchid	<i>Prasophyllum spicatum</i>	v	v	
Dwarf Boronia	<i>Boronia nana</i> var. <i>nana</i>		r	
Dwarf Silver Wattle	<i>Acacia nano-dealbata</i>		r	
Forest Bitter-cress	<i>Cardamine papillata</i>		v	
Grass-tree	<i>Xanthorrhoea australis</i>			
Ground Spleenwort	<i>Asplenium appendiculatum</i> ssp. <i>appendiculatum</i>		r	
Heart-lip Spider-orchid	<i>Arachnorchis cardiophila</i>			
Long Clubmoss	<i>Huperzia varia</i>		v	
Madeira Moss	<i>Echinodium hispidum</i>		r	
Manna Gum	<i>Eucalyptus viminalis</i>			
Messmate	<i>Eucalyptus obliqua</i>			
Mountain Ash	<i>Eucalyptus regnans</i>			
Mountain Grey-gum	<i>Eucalyptus cypellocarpa</i>			
Myrtle Beech	<i>Nothofagus cunninghamii</i>			
Naked Sun-orchid	<i>Thelymitra circumsepta</i>		v	
Narrow-leaf Peppermint	<i>Eucalyptus radiata</i>			
Netted Daisy-bush	<i>Olearia speciosa</i>		k	
Otway Bush-pea	<i>Pultenaea prolifera</i>		r	
Parsley Xanthosia	<i>Xanthosia leiophylla</i>		r	
Pine ¹	<i>Pinus</i> sp.			
Ragwort ¹	<i>Senecio jacobaea</i>			
Satinwood	<i>Nematolepis squamea</i> ssp. <i>squamea</i>		r	
Showy Lobelia	<i>Lobelia beaugleholei</i>		r	N
Skirted Tree-fern	<i>Cyathea</i> X <i>marcescens</i>		v	
Slender Fork-fern	<i>Tmesipteris elongata</i> ssp. <i>elongata</i>		v	
Slender Tree-fern	<i>Cyathea cunninghamii</i>		v	L
Southern Blue-gum	<i>Eucalyptus globulus</i> ssp. <i>globulus</i>		r	
Starry Daisy-bush	<i>Olearia stellulata</i>		k	
Swamp Gum	<i>Eucalyptus ovata</i>			
Tall Astelia	<i>Astelia australiana</i>	v	v	7
Tea-tree	<i>Leptospermum</i> sp.			
Tufted club-sedge	<i>Isolepis wakefieldiana</i>		r	
White Daddy-long-legs	<i>Calonema capillatum</i>			
Wine-lipped Spider-orchid	<i>Arachnorchis oenochila</i>		v	
Wiry Bossiaea	<i>Bossiaea cordigera</i>		r	
Wrinkled Buttons	<i>Leiocarpa gatesii</i>	v	v	98
Yacca	<i>Xanthorrhoea semiplana</i> ssp. <i>semiplana</i>		r	



**APPENDIX 2 SOCIAL AND ECONOMIC STUDIES
IN THE ANGAHOOK-OTWAY STUDY AREA**

STAGE 2

Summary*

Prepared for the

Victorian Environmental Assessment Council

by

URS

April 2004

*This Appendix is a summary of the much larger report which is available on VEAC's website (www.veac.vic.gov.au) or by request from the VEAC office (see the inside front cover for contact details).



1 Stages and tasks of the socio-economic studies

There are three stages to the Angahook – Otway socio-economic studies. These are:

Stage 1: Baseline study

Stage 2: Assessment of VEAC Draft Proposals

Stage 3: Assessment of VEAC Final Report Recommendations

The study tasks for Stage 2 'Assessment of VEAC Draft Proposals' include:

1. identifying and, as far as possible, evaluating the social benefits and costs that could arise as a result of implementation of Council's draft proposals. These benefits and costs are to include non-market values, and are to be distinguished from anticipated changes that are unrelated to the recommendations, in particular the Government's decision to phase out timber harvesting by 2008;
2. allocating the estimated social benefits and costs of the draft proposals to each industry or land use sector, and outline any assumptions made; and
3. estimating the likely social effects in terms of employment gain or loss, at the local and State levels, and other community effects, and outline possible measures to mitigate negative effects.

2 Approach

Areas proposed to be subject to draft proposals were identified by VEAC, to enable the Stage 2 social and economic assessment, building on the baseline information collected in Stage 1. Material supplied by VEAC detailed the structure and basis for the draft proposals, and indicated the range of implications expected. The Stage 2 study evaluates these implications.

Social benefit-cost analysis is used for the economic analysis. Only those benefits and costs attributable to changes to existing uses and activities which result from the Council's draft proposals are assessed and included.

Some of the benefits and costs are not readily assessed in monetary terms, but every effort has been made to do so. Where this is not possible, non-monetary or intangible benefits and costs are quantified where possible, or are at least scaled, ranked or described.

In the social effects assessment, the consultants build on the baseline study (Stage 1) to predict and describe likely effects; to identify communities or social groups who may benefit, or for whom there may be particular employment or 'quality of life' effects arising from the draft proposals; to highlight locations or communities that would be substantially affected; and to advise on relevant measures that could be applied to mitigate the effects.

VEAC received over 660 submissions in response to the Discussion Paper, and these were available to assist with Stage 2 of the project.

2.1 Estimating the economic contribution of parks

Gain in net economic value

Benefit Cost-Analysis (or Social Benefit-Cost Analysis) is the methodology most commonly used for estimating the public benefits of investing in community assets such as parks.

The appropriate measure of the benefit of parks to the Victorian community is termed the net *economic value* and represents the satisfaction people derive from visiting parks, expressed as a money value over and above what they actually pay to visit parks.

The net economic value of tourism and recreation is a prime focus of the study because the value of tourism and recreation is what brings visitors to parks where they contribute to the local and regional economies.

Contingent valuation and choice modelling surveys, and travel cost methods are applicable for estimating the net economic contribution of parks, and are described in our main report.



Regional economic activity

The economic activity generated by the spending of visitors in the local area and in the region is the other main focus of the study. From the viewpoint of the State such spending is not regarded as a benefit of parks (in the context of benefit-cost analysis) because it could occur if the investment was made elsewhere in the State. From the viewpoint of the local area, however, the economic activity created by parks is an important consideration.

Recreational use of parks provides direct economic benefits to the region from recreational and tourism expenditure, and flow on or multiplier effects as that expenditure works its way back through the suppliers of the goods and services that the tourists consume. As a general rule, the greater the local content of goods and services sold, or alternatively the larger the region within which economic effects are studied, the bigger the multiplier effects will be for a given amount of direct expenditure.

Changes in the level of economic activity of one sector or region of the economy will affect activity levels in other sectors and regions. Multipliers are a means of relating the effects of direct changes in one sector, to the indirect and induced effects felt elsewhere in the economy. 'Input-output analysis' is the analytical technique that is commonly used to derive those multipliers.

Deriving input-output multipliers specifically for the Otway Ranges parks requires detailed regional modelling which was outside the scope of this study. Instead we approximated the multipliers that might apply at the regional level by adapting the results of other work.

3 Biodiversity Values

Willingness to pay for biodiversity restoration and protection in forests in the studies listed in our main report has ranged from \$5 (for revegetation of farmland) to \$100 per household per year, with a 'modal' value of approximately \$35. The response rates for surveys used to elicit these values are up to 60 percent. If we take the conservative view that the 40 percent who didn't respond attached zero value to conserving biodiversity, the modal value becomes \$20 per household per year.

In the case of expanding the area of national park in the Otway Ranges, the *increase* in value will be some proportion of the assumed total value. The VEAC proposal is to increase the area of national park in the study area by approximately eight-fold, with a doubling in the area of Ecological Vegetation Classes (EVCs) protected in permanent reserves.

Under these assumptions, the added non-use value that can be attributed to the expansion of the national park is \$10 per Victorian household per year. The ABS 2001 Census shows 1.73 million households in the State. Total annual value is therefore \$17.3 m.

Given the level of uncertainty that surrounds estimates of biodiversity values, in the benefit-cost analysis we adopt a range of assumptions corresponding to pessimistic, conservative and optimistic scenarios.

For the purposes of the benefit-cost analysis, non-use values for biodiversity protection in the expanded national park are assumed to be \$5m per annum for the pessimistic case, \$15m per annum for the conservative case, and \$25m per annum for the optimistic case. These figures correspond to annual per household figures of about \$3, \$9, and \$15, respectively. They are higher than the values assumed in the assessment of the Environment Conservation Council's Box-Ironbark recommendations (\$0.75, \$1.50, \$3,) but can be justified by the nature of the two study areas concerned. People appear to be more willing to pay to protect mountain ash forests and rainforests than ecosystems in low rainfall areas.

We make the additional assumption that there will be no increase in the value associated with biodiversity protection in the proposed new forest park as a result of VEAC proposals, compared with those that applied to state forests. There may be some increase associated with the forest park compared to state forest, but primarily this will result from the cessation of timber harvesting in 2008 by Government decision, not as a result of VEAC proposals.

3.1 Additional park management costs

Administrative responsibility for managing recreation on public land proposed to be included in the new parks will be shared between DSE and Parks Victoria (PV). Parks Victoria have higher management costs with respect to visitors because of the higher level of facilities and promotion associated with national parks compared with state forest. In the most recent example of management cost estimates (for the Box-Ironbark recommendations), Parks Victoria supplied an estimate of the unit costs of their role in managing additional areas of parks and NRE (now DPI/DSE) provided an estimate of its unit costs for management of recreation in state forests.

- NRE estimated that it expended annually, on average, \$0.50 per visitor.
- Parks Victoria estimated that it expended annually, on average, \$0.61 per additional visitor and \$0.83 per additional hectare of park.

In this example, the results of the benefit cost analysis were additional park management costs of \$400,000 per year. This was over and above the costs of the NRE employees that were involved in managing, regulating and administering these public land areas for timber harvesting, roading, fire protection, pest plant and animal control, and various small block uses.

Responsibilities for fire protection, management of pest plants and animals, and researching ecological management, are standard costs of managing public land, regardless of who is the managing authority hence those costs should not be affected.

In the case of the Otways proposals we assume that the net additional management costs will be approximately \$1m per year.

Several people submitted the view to VEAC that the existing parks in the Otways were already under-resourced and that adding to the area of parks would only exacerbate this problem. The most recent example of park implementation contradicts this assertion, as funding allocated to implementing the Box-Ironbark parks and reserves (and other recommendations) was \$20.8m over four years. This amount included financial assistance to those that were directly disadvantaged by the establishment of the parks, and a range of other programs for park management, recreation and firewood supply. Our main report provides further details on this example, and also details expenditure on park management by DSE/NRE and PV over the past eight years. Expenditure on park management has trended upwards over this period, even in real terms (i.e. net of inflationary increases), showing an increase of about 75 percent over the period. These figures include a component of the \$20.8m referred to above.

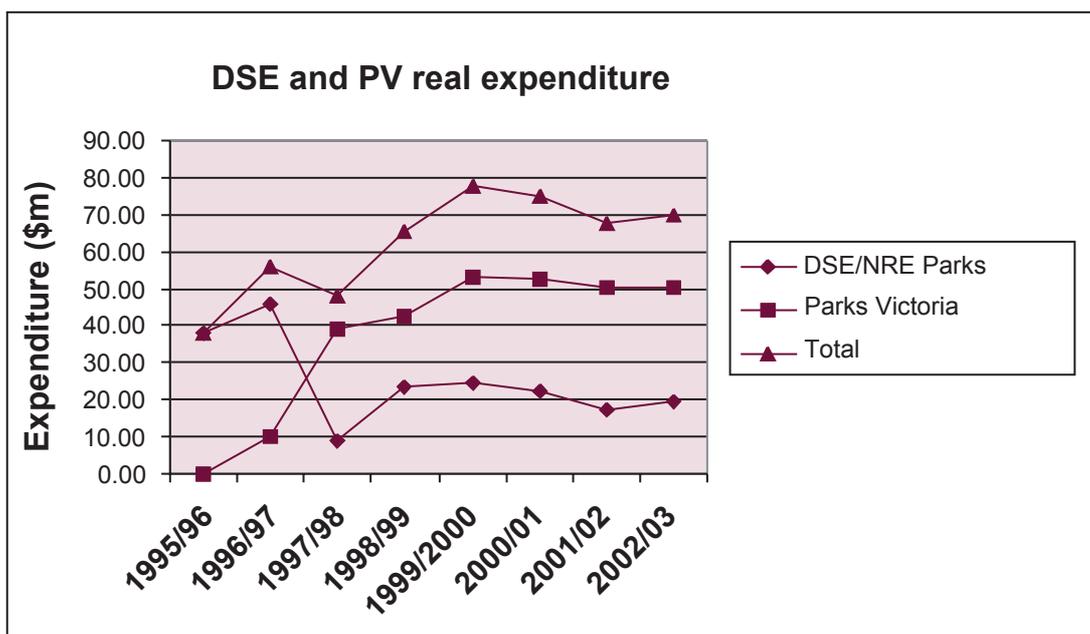


Figure 1 DSE and PV real expenditure on park management

(Source: National Parks Act Annual Reports)

- Notes:
1. National Parks Act funding varies from year to year according to whether it includes capital asset charges or one-off funding (for example for fire fighting or roading), and whether any funds have been carried over from the previous year. The parks estate also grew during this period, primarily with the addition of the Marine National Parks and sanctuaries, and Box-Ironbark parks.
 2. Parks Victoria expenditure above excludes all metropolitan park costs, but includes expenditure on numerous other areas managed by Parks Victoria.



4 Tourism and Recreation

The study area is located in the *Great Ocean Road Tourism Product Region* (GOR) as defined by Tourism Victoria. This is an extensive region which covers ten municipalities and extends from Geelong to Nelson on the South Australian border. This region has experienced considerable growth in tourism in the past few years. Significantly, the GOR region attracts the highest share of visitors outside metropolitan Melbourne according to Tourism Victoria, and the region has become an icon in the marketing of Victoria as a tourism destination.

In 2000, the GOR region attracted an estimated nine million visitors and this comprised 66% domestic day trip visits, 30% domestic overnight stays, and 4% international visitors.

4.1 Tourism and recreation activities on public land

The study area offers a combination of natural and developed tourism attractions for visitors. Public land in the region provides the basis for a diverse range of recreation activities including bushwalking, picnicking, fishing, surfing, diving, forest drives, camping and four-wheel driving. The coastal environment includes shipwreck sites and high sea cliffs.

Visiting national parks and state forests, along with bushwalking, are included among the ten most popular visitor activities in the West RFA region.

The Otway Ranges are the setting for many visits by tourists:

- many of the cultural heritage attractions of the area are located in forest reserves;
- people visiting friends and relatives may use the local forests for recreational activities;
- tourist drives travel through Otway Ranges landscapes; and
- forest scenery provides the setting for historic towns.

Most recreation and tourism activities will continue to be permitted activities in the national and forest parks recommended by VEAC, although it should be noted some have been, or will be subject to conditions or restrictions such as some activities not currently permitted in closed catchments. Some activities will be only allowed in certain areas or under defined circumstances.

The contribution of the proposed parks to tourism in the region is likely to be significant.

4.2 Estimated numbers of visitors to parks in the study area

There is some evidence that visitation has been increasing for the Angahook-Lorne State Park but decreasing for the Otway National Park. Visitor numbers are dependent on weather and the activities permitted in parks, among other things. However, there is a perception among some Parks Victoria staff that people are shifting their interests from outdoor activities in parks to other sources of recreation.

There were approximately one million visitors each year to parks in the study area during the period 1997/98 to 2000/2001.

These visitors comprise:

- *visitors* from the local area who use the public lands for recreation — estimated at approximately 350,000 visit days per year; and
- *tourists* — estimated at approximately 650,000 visit days per year.

These estimates are based on the proportion of local visitors (35 percent) versus tourists (65 percent) in the most recent comparable study.

We have adopted the definition used by Tourism Victoria which describes a tourist as someone who has travelled more than 50 km for a day-trip or overnight stay.

The visitor figures from Parks Victoria may be based on vehicle counts at the entry to parks, or sample head counts by staff at irregular intervals, and are therefore not rigorously based.



4.3 Economic valuation of recreation and tourism

The unit values for the net economic contribution for visitors to parks/reserves are based mainly on another consultancy undertaken for NRE (Read Sturgess & Associates 1999). That consultancy developed a generalised travel-cost model for the repeatable measurement of the economic value of recreation in parks. Valuations of recreational use were undertaken for approximately 30 metropolitan parks in Melbourne and 35 national parks in rural Victoria.

It included consideration of the following parks of relevance to VEAC's proposals: the Otway National Park; the Angahook-Lorne State Park; the Melba Gully State Park; and the Carlisle State Park. The main report provides specific details.

Three of the parks in the study area are in the top twelve parks in the State in terms of their economic contribution, measured as consumer surplus (refer to the main report). Carlisle State Park is the only park in the study area that has relatively little economic impact – largely due to apparently small visitor numbers.

In the period since the Read Sturgess study was completed (1997/98), visitor numbers for Angahook-Lorne State Park appear to have increased, while those for Carlisle State Park, Melba Gully State Park and Otway National Park appear to have decreased.

The existing Otway National Park attracts consumer surpluses of approximately \$36 per visitor day while the state parks range from \$10 to \$20 per visitor day.

Based on the figures from the Read Sturgess study, we assume unit values of \$30 per visitor day for national parks in the area; and \$15 per day for state parks, state forests, and forest parks.

There appear to be no reliable visitor data for State Forests so their omission is a possible source of bias¹. We assume no change in the visitation to the state forest areas that VEAC proposes to be included in Forest Park.

By applying the above unit values to the estimates of present visitation at each park, it was estimated that the net economic surplus due to the *existing* level of recreation and tourism at sites affected by VEAC's proposals would be approximately \$25m per year.

A change in status from state forest to forest park, or from state park to national park, is likely to increase visitation in most instances. The precise scale of change cannot be predicted with certainty, since this depends on a variety of factors including:

- accessibility to major markets
- nature of the scenic resource
- presence of key attractors (including well-known natural or cultural heritage attractions)
- potential activities available for visitors
- existing level of investment in surrounding tourist facilities
- expenditure by park managers on facilities and promotion

The likely increase in visitation, based on two previous cases where land has changed designation from state forest to national park, is an increase of 30 percent in visitation following designation as a national park. This assumption is important to the benefit cost analysis and to the analysis of regional economic activity.

From a State-wide perspective, increasing visitor numbers for expanded Otway Ranges parks may be at the expense of visitation to other parks in the State. It is also debatable whether all of the increases noted should be attributed to the nature of the parks. For example, it may not be necessary to increase the area of the national park to the extent proposed, as many of the additional tourists may go no further than the existing boundaries of the Angahook-Lorne State Park. (this is not to suggest that reducing the proposed size of the national park would be desirable as the biodiversity benefits would be diminished). For these reasons we discount the increases to 10 percent for the pessimistic case, and 20 percent for the conservative case, while setting the optimistic case at 30 percent.

We make the conservative assumption that the above increases apply to visitors to the expanded national park and not to the establishment of forest parks.

As a result of these analyses, the increases in net economic values for tourism that potentially arise as a result of VEAC's proposals for the national park are estimated to be approximately \$2.4m per year in the pessimistic case, \$4.8m per year in the conservative case, and \$7.2m per year in the optimistic case.

¹ The VEAC Proposal to convert state forests into forest park *may* lead to increases in visitation to these areas – in addition to that for the areas of state parks and state forests that are proposed to be converted into national park. Any increase in visitation would be partly dependent on whether the new forest parks receive resources additional to those currently available to the management of state forest. However, as discussed earlier, there will be some restrictions placed on current recreational activities, at least in the state forest areas that are intended for national park. These restrictions will tend to restrict visitor numbers to some extent.

4.4 Regional economic activity: expenditure and employment

Tourism expenditure represents income for the study area. Direct expenditure on tourism to the public lands of the study area generates upstream and downstream jobs in other parts of the local and Victorian economy. In this case, a significant proportion of these indirect jobs is likely to be in the main towns of the study area — for example in retailing, wholesaling and distribution.

It is assumed that the average expenditure by *local visitors* on their recreation on public land is spent mainly on food and transport, and is equivalent to the food expenditure of tourists in the Victorian Regional Travel and Tourism Survey (approximately \$10 per person). We earlier estimated that there were approximately 350,000 local visit days to existing parks in the study area. Local expenditure on recreation in public lands in the study area is therefore approximately \$3.5 million per year (not including visits to state forests).

The expenditure by visitors to public land is estimated as follows:

- Nearby residents account for 35 per cent of all visitors to public land, with an average expenditure of approximately \$10 per person per day.
- Tourists (i.e., those travelling more than 50 km) account for 65 percent of all visitors to public land, with an average expenditure of \$36 per person per day.

The contribution of the existing 650,000 *tourists* to the regional economy is estimated to be approximately \$23.4 million. It is estimated that each \$100,000 in expenditure on tourism and recreation would support one full-time job equivalent. The expenditure would therefore support about 230 people.

The balance of visitation between local visitors and tourists will vary depending on the park in question.

The total contribution of tourism and recreation, in terms of expenditure, is therefore currently about \$27 million per year, employing 270 people.

In the optimistic case (30 percent increase in visitation), *additional* expenditure is estimated to be approximately \$6.5 million per year. The additional total expenditure would therefore support approximately 65 additional jobs, located mainly throughout the study area, but also at service outlets along the highway between Melbourne and the study area.

In the conservative case, additional expenditure is estimated to be approximately \$4.3m, supporting an additional 43 jobs.

In the pessimistic case, additional expenditure is estimated to be approximately \$2.1m, supporting an additional 21 jobs.

The additional expenditure from tourism would be expended mainly in the towns where commercial facilities are able to cater for visitors. The towns likely to benefit most from the increase in visitation are the coastal towns of Anglesea, Aireys Inlet, Lorne, and Apollo Bay. The inland city of Colac should also benefit.

Smaller inland and coastal towns would only benefit significantly if additional attractions and visitor facilities were located near them. The DSE Otway hinterland proposal to establish tourist nodes and zones in inland areas is consistent with attracting a greater share of visitor expenditure to these areas.

There is a strong case for upgrading infrastructure in the hinterland of the study area in order to ameliorate the adverse effects of increased tourism along the coastal fringe. This would also have the effect of redistributing benefits to inland towns.

4.5 Industry trends

Tourism as a whole is an industry which is forecast to grow strongly throughout Australia. In 1997, growth in the number of international visitors to Victoria was forecast by Tourism Victoria to be 9 percent per year, although these forecasts were revised downwards following the economic downturn in Asia, and more recent terrorism-related events. The Tourism Forecasting Council forecasts that total domestic nights are expected to grow at an annual rate of about 2 percent during the period 2001-2012. Day visitors to the Great Ocean Road Region increased by about 5 percent per annum over the period 1998-2000.

Small towns that are highly reliant on broadacre farming for their economic survival are most likely to be in decline. ABARE figures show the demand for farm services has not kept pace with the growth in other services like tourism and hospitality and in remote areas, employment in agriculture, forestry and fishing fell by 15 per cent between 1986 and 1996. In contrast, employment in accommodation, cafes and restaurants rose by 40 per cent and by 56 per cent in cultural and recreational services over the same period.



Real growth in visitor numbers to the study area will depend on the development of new attractions and better marketing of existing tourism products. The various tourism development plans for the regions comprising the study area suggest the development of a variety of new tourism attractions.

While it is important to avoid grossly over-estimating potential visitor numbers and tourism benefits from VEAC proposals, it is also important not to grossly under-estimate them. Tourism numbers will be subject to fluctuations from year to year but the underlying forces include shifts in consumer preferences from consumption of primary commodities to participation in nature-based activities as disposable incomes rise.

5 Timber Harvesting and Related Activities

It is Government policy to phase out logging and woodchip production in the Otways and the implications of this policy are outside the scope of this study. Our role is to assess the effects of the VEAC proposals with the impacts of existing government policy appearing in the base case for the benefit-cost and social impact analysis.

Nevertheless, one aspect of the VEAC proposals relates to the possibility of immediate cessation of logging in the areas of state forest proposed for inclusion in national parks. One remaining licensee is affected by the proposals – with entitlements amounting to approximately 20,000 cubic metres of sawlogs per year until 30 June 2008. The entitlements under the licence conditions include access to mountain ash and mixed species sawlogs.

Most of the high value mountain ash stands are included in the new national park areas and the potential to harvest sufficient quantities outside these areas (within the study area) is limited and may not be sufficient to meet full entitlements to 2008.

Based on information provided by DSE, restrictions on mixed species harvesting as a consequence of the draft proposals would probably mean that commitments for these sawlogs could be met outside the new area of national park. However further field work would be necessary to prove up the availability of mixed species outside the national park area.

In the event that there is likely to be any timber shortfall, options to resolve this should be examined before VEAC prepares its Final Report, or during the implementation stage.

We are assuming in all this that there would be no constraint on harvesting within the forest park areas for the next four years, other than those restraints which currently exist in state forest. However, we note that due to its 'park' status, there may be opposition to continued harvesting from these areas.

6 Minor Forest-Based Products

In preparing its proposals, VEAC has endeavoured to minimise the negative effects on industries operating on public land in the Otways. In our main report we include consideration of the impacts of VEAC proposals on all industries in the study area.

Minor wood products - In addition to the production of eucalypt sawlogs and woodchips, the public land forests are a source of specialty timber, firewood, timber for fencing, poles and spars, hobby wood, logs for competitive wood chopping, and tea-tree stakes. Minor wood products are not included in the Government policy to phase out logging and woodchip production in the Otways.

Firewood is harvested by commercial firewood cutters as well as by individuals – and mostly supplies local markets including Geelong and Colac. Specialty timbers, predominantly blackwood, are mostly sourced during eucalypt logging programs, with the other forms of forest product mostly harvested from the foothill forests on the northern flank of the Otways.

The most economically significant minor product from the state forests is firewood. For 2002/03 it is estimated that a total of about 4,000 cubic metres was harvested for commercial and domestic uses. The gross value of this output at \$80 per cubic metre is \$320,000.

The net economic contribution of firewood is calculated to be about \$7 per cubic metre. This gives a net economic contribution from firewood for the study area of \$28,000 per year. The economic importance of the firewood industry in the Otways is small compared with other areas of the State.

Our conclusion is that the net economic contribution of minor wood products for the Otways is unlikely to be significant and we exclude it from the benefit-cost analysis. However, some individual producers may be adversely affected by the impacts of the VEAC proposals and we recommend that their cases be considered individually. Some local consumers of firewood may also be adversely affected but the reductions in volumes available as a consequence of the VEAC proposals are likely to have little impact on prices in the State's market for firewood.



Apiculture - Much of the public lands of the study area are currently available for apiculture, although there are only five designated apiary sites, of which two are currently unoccupied. Of the three currently occupied public land apiary rights, two are held over land in the Alcoa lease area, and one in the Eumeralla Flora Reserve. Bees from hives located on private land may make use of honey flows and nectar resources located within adjoining public land. The eucalypt species of the foothill forests are an important source of honey.

VEAC is proposing to include the two unoccupied sites and that in the Eumeralla Flora Reserve in the proposed National Park, resulting in the closure of these sites.

There are over 1,000 active bee sites on public land in Victoria making a net economic contribution of over \$0.5m per year, so the three sites in the Otways do not constitute a large market share, with a net economic contribution of about \$2,500 per year. As in the case of minor wood products, we have excluded honey production from the benefit-cost analysis while recommending special consideration for any individual producers disadvantaged by the VEAC proposals.

Extraction of Sand, Gravel and Stone - The Otways public lands are an important source for many extractive industry products, and no current operations will be affected by the proposals – they will continue either outside the proposed national park, or under provisions of the *National Parks Act 1975* that allow existing operations to continue. New licences can be issued in all public land categories (generally subject to approval by the Minister for the Environment) except the proposed national park.

Mining and Exploration - There are no operating mines on public land in the Angahook-Otway study area, although some public land is subject to exploration licences. It is proposed that these licences be allowed to continue until they expire when they may be renewed. New licences can be issued in all public land categories (generally subject to approval by the Minister for the Environment) except the proposed national park.

Agricultural Use of Public Land - There are around 540 current licences, covering about 2040 ha, for grazing domestic stock on public land in the Otways. Nearly all of these licences (97 percent by number, 94 percent by area) will continue unaffected. In short, the proposals will result in cancellation of all or part of 16 licences, covering about 126 ha, although only around 56 ha is actually grazed. Also, implementation of the proposals may require fencing of some of the currently-licensed areas, particularly public land along river and stream frontages.

We conclude that the net economic of VEAC proposals on grazing licences is likely to be small and that special consideration should be given in the implementation phase to those licensees who may be adversely affected.

7 Benefits and Costs of VEAC proposals

As stated earlier, it is Government policy to phase out logging and woodchip production in the Otways and the implications of this policy are outside the scope of this study. Our role is to assess the effects of the VEAC proposals with the impacts of existing Government policy appearing in the base case for the benefit-cost and social impact analysis. In other words, we do not include the net loss of timber value from the phasing out of logging in what follows.

We have concluded that a number of industrial and commercial economic impacts of the VEAC proposals are relatively small and they have not been included in the comparison of benefits and costs.

The main economic impacts of the VEAC proposals are to be found in the broad category of biodiversity conservation; and in recreation and tourism. Because of lack of visitor data we were not able to quantify net changes in the recreational impacts in moving from state forest to forest park or national park. These data may be forthcoming before VEAC makes its final recommendations.

The estimates of the additional costs of park management (\$1m per year) are provisional and will be subject to change before final recommendations are made.

Non-use values for biodiversity protection in the expanded national park are assumed to be \$5m per annum for the pessimistic case, \$15m per annum for the conservative case, and \$25m per annum for the optimistic case.

The increases in net economic values for tourism that potentially arise as a result of VEAC's proposals for the national park are estimated to be approximately \$2.4m per year in the pessimistic case, \$4.8m per year in the conservative case, and \$7.2m per year in the optimistic case.

In summary, we estimate that the net increase in economic value that may arise as a consequence of adopting VEAC's proposals lies in the range \$6.4m – \$31.2m per year, with the 'conservative case' yielding net benefits to Victorians of about \$19m per year.



Regional impacts

In the optimistic case (30 percent increase in visitation), *additional* expenditure is estimated to be approximately \$6.5 million per year. The additional total expenditure would therefore support approximately 65 additional jobs, located mainly throughout the study area, but also at service outlets along the highway between Melbourne and the study area.

In the conservative case, additional expenditure is estimated to be approximately \$4.3m, supporting an additional 43 jobs.

In the pessimistic case, additional expenditure is estimated to be approximately \$2.1m, supporting an additional 21 jobs.

The towns likely to benefit most from the increase in visitation are the coastal towns of Anglesea, Aireys Inlet, Lorne, and Apollo Bay and the inland city of Colac.

Smaller inland and coastal towns would only benefit significantly if additional attractions and visitor facilities were located near them. The draft hinterland tourism development plan, to establish tourist nodes and zones in inland areas, is consistent with attracting a greater share of visitor expenditure to these areas.

There is a strong case for upgrading infrastructure in the hinterland of the study area in order to ameliorate the adverse effects of increased tourism along the coastal fringe. This would also have the effect of redistributing benefits to inland towns.

We have recommended that the individual businesses that may be adversely affected by VEAC's proposals should be assisted on a case by case basis in the implementation phase of establishing the parks – should VEAC's proposals ultimately be adopted by Government.

APPENDIX 3 LIST OF SUBMISSIONS RECEIVED IN RESPONSE TO THE DISCUSSION PAPER

A number of submissions and other correspondence received after the closing date for submissions (5 December 2003) are not listed here but have been taken into consideration in the preparation of the Draft Proposals Paper.

Submissions from Organisations

Organisation	Contact	Sub. No.	Organisation	Contact	Sub. No.
Aireys Inlet District Association	Ms Barbara Leavesley	572	Killala Alternative Pty Ltd	Mr Stephen Stuart	354
AKD Softwoods	Mr Neil Harris	597	Kooroongoora Rockhounds	Miss Jennie Harvie	539
ANGAIR Inc	Mr Neil Tucker	386	Lavers Hill & District Progress Assoc, Community Forestry Committee	Mr Matt Zurbo	10
Apollo Bay Kennett River Public Reserves Committee of Management	Mr Gary McPike	583	Lochard Pony Club		603
Apollo Bay Landcare Group	Mr Roger Hardley	458	Marengo Residents Group	Mr Philip Lawson	498
Australian Deer Association Western Victorian Branch	Mr E.H. Wohlers	419	Maroondah Gem Club	M- J. Knight	246
Australian Greens Party, South West Region (Vic)	Mr Stephen Chenery	628	Mordialloc Lapidary Club Inc	Ms Suzanne Jones	347
Australian Motorcycle Trail Riders Association	Mr Peter Ellard	499	Mr Fern Pty Ltd	Mr & Mrs L. & R. Vulcz	83
Ballarat & District Gem Club	Ms Jan Dyett	406	National Trust of Australia (Victoria)	Mr Jim Gardner	505
Barwon Water	Mr Paul Northey	621	Nunawading & District Lapidary Club Inc	Mr Phil Toland	500
Bayside Bushwalking Club	Ms Merrill Jusuf	405	Otway Four Wheel Drive Club Inc	Mr Geoff de la Rue	362
Birds Australia, Victorian Regional Group Conservation Committee	Mr Stuart Dashper	605	Otway Plains Venturer Unit	Mr Geoff de la Rue	316
Black Rock and Sandringham Conservation Association Inc	Ms Janet Ablitt	93	Otway Planning Association Inc	Mr Hans Fankhanel	545
Boroondara Bushwalkers Inc	Ms Jan Clark	446	Otway Ranges Environment Network	Mr Simon Birrell	582
Bush Users Group Victoria Inc	Ms Rita Bentley	591	Otway Ranges Walking Track Association Inc	M- Leslie Nosedo	630
Bush Users Group, Mt Alexander Region	Mr Robin Taylor	430	Otway Timber Communities Australia	Mr & Mrs L. & R. Vulcz	62
Bushcraft & Mountain Leadership Advisory Board	Ms Margaret Leigh	292	Otways Tourism Inc	Ms Helen Chambers	429
Calco Timbers Pty Ltd	Mr David Colless	9	Our Parks	M- & M- Jim Speirs	551
Cape Otway Centre for Conservation Ecology Pty Ltd	Ms Lizzie Corke & Mr Shayne Neal	90	Painkalac Pastoral Company Pty Ltd	Mr Graeme McKenzie MBBS	416
Colac & District Gem Club Inc	Mr Russell Adams	640	Preshil, The Margaret Lyttle Memorial School		639
Colac Motorcycle Club	Ms Sandra Barry	146	Prospectors & Miners Association of Victoria	Ms Rita Bentley	590
Colac Otway Shire	Mr Rob Small	559	Soudan Holdings Pty Ltd	Mr Christopher Tipler	600
Construction Material Processors Association	Mr Mark Halliday	607	South Gippsland Walking Adventure Club	Mr Tim Rothberg	261
Corangamite Shire	Ms Corie Jenkins	417	South West Victoria Deer Advisory Group	Mr Craig Mitchell	84
Department of Primary Industries	Mr Scott Ashby	452	Southern Otway Indigenous People	Ms Nieka Brewster	433
East Otway Residents Group	Mr David Harris	199	Sporting Motorcycle Club, Otway Trail Riders	Mr Phil Voigt	431
Echuca Moama YMCA Bushwalking Club	Ms Ann Lyons	281	Sporting Shooters' Association of Australia	Mr Philip Brown	453
Essendon Bushwalking Club	Ms Sylvia McLean	148	Surf Coast Shire	Mr Craig McKiernan	340
Federation of Victorian Walking Clubs (VicWalk) Inc	Mr David Rimmer	255	Surfers Appreciating Natural Environment	Mr Graeme Stockton	614
Field & Game Australia Inc	Mr Rod Drew	588	Timber Communities Australia Ltd, Northern Tasmanian Regional Office	Mr Adrian Coward	338
Field Naturalists Club of Ballarat	Mr John Gregurke	130	Timber Communities Australia, Meander Resource Management Group	Mr Rodney Stagg	320
Field Naturalists Club of Victoria Inc	Mr Jim Walker	335	Timber Communities Australia, Tasmanian State Office	Mr Barry Chipman	307
Four Wheel Drive Victoria	Mr Michael Coldham	580	Timboon Field Naturalists Club Inc	Ms Helen Langley	544
Friends of Angahook-Lorne State Park	Ms Margaret MacDonald	247	Tourism Victoria	Mr Wayne Kayler-Thomson	547
Friends of Bannockburn Bush	Mr Stuart McCallum	367	United Dairyfarmers of Victoria, No 8 District Council	Mr Graeme Prince	635
Friends of Queens Park	Ms Nancy Rashleigh	578	United Dairyfarmers of Victoria, Simpson/Princetown Branch	Mr Daniel van Someren	95
Friends of the Earth	Ms Gillian Blair	604	VicRoads	Mr David Anderson	622
Geelong Bushwalking Club Inc	Mr David Pinney	418	Victorian Association of Forest Industries	Mr Pat Wilson	608
Geelong Community Forum	Ms Sue Kelly-Turner	210	Victorian Farmers Federation	Ms Cathy Tischler	637
Geelong Environment Council Inc	Ms Joan Lindros	528	Victorian Farmers Federation, Geelong-Colac District	Mr Paul Weller	413
Geelong Field Naturalists Club Inc	Mr John Bottomley	634	Victorian Gem Clubs Association Inc	Mr Tony Annear	61
Geelong Gem & Mineral Club	Mr Des McKiernan	5	Victorian Mountain Tramping Club Inc	Dr Celesta Fong	18
Geelong Otways Tourism Inc	Mr Ross Ebbels	443	Victorian National Parks Association	Ms Joan Lindros	532
Gerangamete Flats Landcare Group	M- Chris Callahan	258	Warrnambool Four Wheel Drive Club	Ms Diane Riordon	149
Glen Eira Environment Group Inc	Mr Paul Caine	411	Waverley Gem Club of Victoria Inc	Ms Rae De Niese	485
Johanna River Farm & Cottages	Ms Helen Chambers & Mr Julian Flack	606			

Submissions from Individuals

Contact	Sub. No.	Contact	Sub. No.	Contact	Sub. No.
Mr & Ms John & Judy Adams	589	Mr Brett Bridges	239	Ms Mariae Curtain	301
Mr Russell Adams	617	Mr Michael Briese	273	Ms Edith Cutcliffe	383
Mr Nick Adams	363	Ms Anna Broome	503	Ms Stanley Cutler	352
Mr Michael Adler	341	Ms & Mr Mary & Simon Brown	399	Ms Jayne D'Arcy-Houlgate	359
Ms Andrea Aitken	333	Mr Tony Brown	128	Ms Heather Dale	286
M- Emrana Alavi	60	Mr Greg Brown	312	Ms & Mr Sally & John Daly	85
Ms Julie Alexander	355	Mrs Margaret Brumley	398	Ms Mary Daveson	522
Ms Gwenda Allan	558	Ms Janelle Bryce	80	Mr David Davies	20
Mr Garry Allan & Ms Justine Gorny	178	Mr Chris Bryce	464	Mr Ryan Davies	135
Mr Peter Allard	512	Mr Ian Burgess	177	Mr John Davies & Ms Judy Taylor	358
Mr Graeme Allen	56	Mr David Burgess	414	Mr Dawson	455
Miss Samantha Ambrosy	190	Mr & Ms John & Lyn Butt	28	Mr Jos de Jong	317
Ms Julie Anderson	40	Mr Bob Butt	425	Mr Geoff de la Rue	306
Mr Ian Anderson	267	Mr Russell Cairns	657	Ms Tanya Deans	87
Mr Ryan Anthony	586	Ms Margaret Cairns	660	Mr Rod Deering	322
Ms Angela Antonas	200	Ms Jan Calaby	184	Ms Kay Demmler	575
Mr Kenneth Apted	619	Ms Brooke Caldwell	526	Mr Neil Dendle	615
Mr & Mrs G. Armstrong	32	Mr Peter Capp	140	Mr Jim Dhaeze	471
Mr Ken Asplin	11	Mr Steve Cardigan	515	Ms Laila Dickson	424
Mr Phil Avery	16	Mr Hugh Carrigan	454	Ms Pam Dodsworth	390
Mr Rodney Bahn	125	Mr Gerry Carter	342	Mrs Elizabeth Doery	327
Ms Janet Baird	99	Mr Patrick Casey	508	Ms Cathy Donovan	183
Mr Rob Balaz	303	Mr John Cashion	456	Dr J.G. Douglas	143
Mr Robert Baldwin	212	Ms Joan Cashion	459	Ms Annabel Dowling	165
Ms Jocelyn Banks	15	Mr & Ms Frank & Angela Cassar	283	Mr Tony Dowling	206
Ms Fiona Baranowski	537	Mr Louis Center	188	Ms Patricia Dressel	21
Mr Ian Barbour	300	Ms Debra Chant	549	Mr Dean Duckmanton	228
Ms Beryl Barlow	376	M- Alex Chapman	27	Ms Betsy Dunne	666
M- T. Barlow	663	Ms Monica Chapman	570	Mr Merv Dunstan	13
Mr Marcel Barnard	460	Mr Graeme Chapman	517	Mr Bruce Dupe	151
M- S. Barnes	195	Mr Adam Charleston	598	Mr Geoff Durham	285
Ms Alison Barr	525	Mr Stephen Chenery	474	M- A.G. Duynhoven	557
Mr Doug Barry	51	Ms Jan Chivers	182	M- A.J. Duynhoven	495
Mr Glenn Barry	49	Ms Fiona Clark	153	Mr & Ms Mark & Wendy Dwyer	226
Ms Lorraine Barry	50	Ms Margaret Clark	73	Mr Nathan Dyer	167
Ms Makayla Barry	45	Mr Rod Clark	318	Mr Nathan Dyer	193
Ms Sandra Barry	145	Ms Lucille Clements	69	M- & M- R. & L. Edwards	209
Mr Robert Barton	624	Mr Neil Clough	221	Mr Marcus Ellard	315
Mr Frederick Bassett	43	Mrs J. Cock	284	Mr Emmanuel Ellul	253
Mr Denis Battersby	123	Mr Harold Cockerell	30	Mr Norm Endacott	2
Mr Kim Bazley	166	Mr Serge Coffa	296	Ms Angela Evers	345
M- John, Anne & Cecile Beaumont	38	M- Chris Cole	109	Mr Paul Falvey	112
Mr Lionel Beer	171	Ms Mary Coleman	536	Ms Rosemary Faris	141
Mr Geoff Beilby	473	M- R.A. Coleman	527	Mr Tom Farquhar	76
Ms Christa Bennett	461	Mr Neil Collard	469	Mr Rob Faulkner & Ms Judith Cogle	511
Mr Denis Bennett	304	Mr Michael Colledge	546	Mr Colin Fehsler	519
Mr Ken Best	4	Ms Eileen Colless	26	Mr Michael Feller	154
Mr Nathan Biggins	196	Mr Jason Colless	34	Ms Debra Ferrari	492
Mr & Mrs Henry & Marjorie Birrell	237	Mr Shane Colless	25	M- Leon, Sue, Josie, Tim & Daniel Ferrari	533
Mrs J. Black	394	Mr Serge Collichia	279	Mr Anthony Ferrari	664
M- W. Black	393	Mr Richard Collopy	373	Mr Darren Ferrier	633
Ms Susan Blandford	661	M- S.P. Colvin	104	Mr Bernard Filbay	451
Mr & Ms Peter & Lori Bowditch	3	Ms Tracy Cook	47	Mr Peter Fillmore	568
Mr Bill Bradshaw	421	Mr Trevor Coon	31	Mr Cliff Finch	658
Ms Delia Bradshaw	462	Mr Mike Corcoran	595	Mr Shannon Fitzsimons	133
Mr Rodney Brain	611	Ms Meredith Costain	344	Mr James Fitzsimons	82
M- R.A. Bramich	574	Mr Gavin Coulthard	295	Mr Bruce Fletcher	17
Ms Julie Brand	37	Ms Elaine Coutinho	245	Mr Jon Floreani	134
Mr Geoffrey Brauer	420	Ms Carol Criddle	39	Ms Judi Forrester	543
Mr Andy Breaden	481	Ms Ingrid Crosser	180	Mr Craig Forsythe	669
Mr Chris Breaden	378	Ms Christine Croydon	366	Ms Yvonne Francis	1
Ms Joy Breaden	391	Ms Marietta Cully	377	Mr Matthew Fraser	465
Mr Lance Breguet	565	Ms Jenny Cunnington	478	Mr Ashley Free	164
Ms Nieka Brewster	592	Ms Karen Currell	655	Mr & Dr Karl & Silvia Freiverts	291

Submissions from Individuals

Contact	Sub. No.	Contact	Sub. No.	Contact	Sub. No.
Ms Jackie Fristacky	204	Mr Wallis Jenkyn	520	Mr Darian Marshall	356
Mr Adam Frost	263	Ms Sandra Jennings	242	Mr Nathan Martin	593
Mr Craig Fryers	75	Mrs & Mr Margaret & Ian Jennings	626	Mrs Mary Maslen	627
Ms Belinda Gardiner	509	Mr Peter Jensen	395	Mr Steve Mason	172
Ms Geraldine Gartland	513	Mr Colin Jevons	65	M- & M- G.A. & N.J. Matheson	659
Mr Tony Gartland	444	Ms Deborah Johnson	562	Mr Greg Maxwell	302
Mr Scott Gavens	8	Mr & Mrs Jenny & Ian Johnson	472	Ms Beverley McCallum	487
Mr Andrew Gaylard	432	Ms Catherine Jones	334	Mr Darren McClelland	115
Mr Jeff Gazzard	59	M- & Ms Gwyn & Dianne Jones	24	M- L.W. McDonald	52
Ms Kersten Gentle	631	Ms Marijana Juresko	331	Mr Wayne McDonough	268
Mr Colin Gibson	29	Ms Merrill Jusuf	516	Mr Angus McKenzie	534
Mr James Gill	77	Ms Jenni Kamp	98	Mr Kenneth McKeown OAM	44
Ms Bianca Giudici	649	Mr & Ms Bernie & Diane Keating	667	Mr Jim McLaughlin	504
Mr Adrian Gray & M- Renee & Lilith Armstrong	48	Ms Estelle Kefford	484	Mr Bruce McLean	577
Mr Anthony Greene	175	M- Pat Kelleher	119	Mr Haydn Mclean	213
Mr Jim Grellis	324	M- L.L. Kelleher	117	Mr Darren McRae	251
M- S. Groeneveld	445	Mr Gerard Kelly	422	Mr R. McShane	278
Ms Vittoria Grossi	369	M- Dave Kelman & Jane & Brynnie Ralph	282	M- A.V. Melzak	567
Ms Renata Grossi	370	Mr Stephen Kennedy	266	Mr Peter Mercer	415
Mr Loyd Grosvenor	240	Mr Steve Kennedy	250	Mr John Middleton	72
Mr Simon Grummett	108	Mr Stewart Kerr	217	Ms Sharon Miller	613
Ms Jennifer Guthrie	336	Ms Dawn Kneen	271	Mr Ron Milne	435
Ms Liz Hamilton	550	Mr Steve Knope	170	Ms Paula Milo	326
Mr Paul Hand	223	Ms Benita Knox	100	Mr Paul Milosavljevic	325
Mr Lawrie Hanson	33	Ms Leeanne Koenig	541	Ms Rhonda Minchinton	437
Mr Peter Harding & Ms Kerry Martin	599	Mr John Koniw	252	Mr Mark Minchinton	442
Mr Jim Harker	22	Mr Peter Koop	540	Ms Barbara Minchinton	529
Mr David Harris	79	Mr Walter Krafft	54	Mr & Ms David & Jennifer Mitchell	147
Ms Sue Harris	569	Mr Gordon Lalonde	225	Mr Jack Mitchell & family	449
M- K. Harrowfield	122	Dr David Lancaster	19	Mr John Modra	553
M- C. Harrowfield	103	Mr Andrew Lauder	668	Mr George Molloy	381
Mr & Mrs Brian & Julie Hart	6	Mr Steven Lawson	409	Ms Annette Molloy	648
Ms Joanne Heatlie	254	Mr & Ms Dennis & Barbara Leavesley	388	Mr Michael Moolenaar	158
Mr Darron Hedge	310	Mr Peter Leavesley	173	Mr Michael Moore	208
M- N. Henry	403	Mr Rod Lee	645	Ms Julia Moore	647
Mr David Henshaw	482	Ms Kristen Lees	361	Mr Roger Morgan	42
Ms Delys Henshaw	552	Ms Jill Leisegang & Ms Grace McCaughey	576	Mr Guy Morris	126
Ms Dominique Hes	293	Ms Carol Liebscher	400	Mr Richard Morrow	524
Miss Sylvie Heywood	192	Mr Simon Liley	185	Dr Geoff Mosley	434
Mr Tim Hodgson	229	Ms Joan Lindros	535	Mr & Mrs Peter & Susan Muir	63
Russell Holloway	531	Mr Anthony Locke	113	Miss Eloise Muirhead	189
Ms & Mr Pearl & Steve Hollowood	423	Mr Glen Lockman	265	Mr Jason Munari	311
M- Centauris Holly-Schwaerzler	187	Mr Matt Lockwood	232	Ms Tamara Muncey	329
Ms Bev Holt	493	Mr Ryan Long	136	Mrs M. Munns	70
Ms Kirstin Honey & Mr Sebastian Melendez	211	Ms Rachel Lopes	573	Mr John Murray	610
Miss Caitlin Horton	194	Mr Richard Los	91	M- Adeeba Nabulsi	231
Ms Marcia Howard	665	M- M. Low	538	Mr Daniel Neale	207
Ms Norm Howell	92	Mr Colin Low	74	Ms Heather Neale	618
Mr John Howell	328	M- Kim Low	555	Ms Fiona Nelson	467
Mr & Ms Joe & Val Hubbard	102	Mr Sydney Low	556	Ms Lisa Newton	620
Mr Keith Hull	288	Ms Suzanne Luxton	243	Mrs Dawn Neylan	521
Mr Michael Hunt	629	Ms Ellen Mac Lennan	144	Ms Beth Neyland	314
Mr Jack Hurst	384	Ms Catriona MacDiarmid	174	Mr David Nicastro	579
M- D.R. Hutton	587	M- Shem Macdonald	488	M- K. Nieuwenhuizn	494
Mr Tony Jablonski	214	Ms Alexandra Mack	186	Mr Michael Nocera	382
Mr Robin Jackel	169	Mr Robert Macnab	371	Mr Charles Norman	94
Mr Peter Jackson	227	Mr David Maertin	41	Ms Paula Northfield	330
M- S.R. Jackson	36	Mr Noel Maggs	127	Mr Bruce Noske	656
Ms Louise James	632	Mr Bruce Maggs	374	Mr Rod Novak	86
Ms Wendy James	259	M- W. Manley	506	Mr Trevor O'Shannessy & Ms Taza Aratz	348
Ms Candy James	479	Ms Bernice Manley	501	Mr Rob Oke	447
Mr G.L. Jarratt	81	Ms Julie-Anne Markham	287	Mr Brett Oldfield	270
Ms Christine Jeal	349	Mr Sean Marler	46	Ms Janelle Oliver & Mr Ean Droomer	426
Ms Anne Jenkins	441	Mr Cyril Marriner	387	Mr Aaron Ong	160

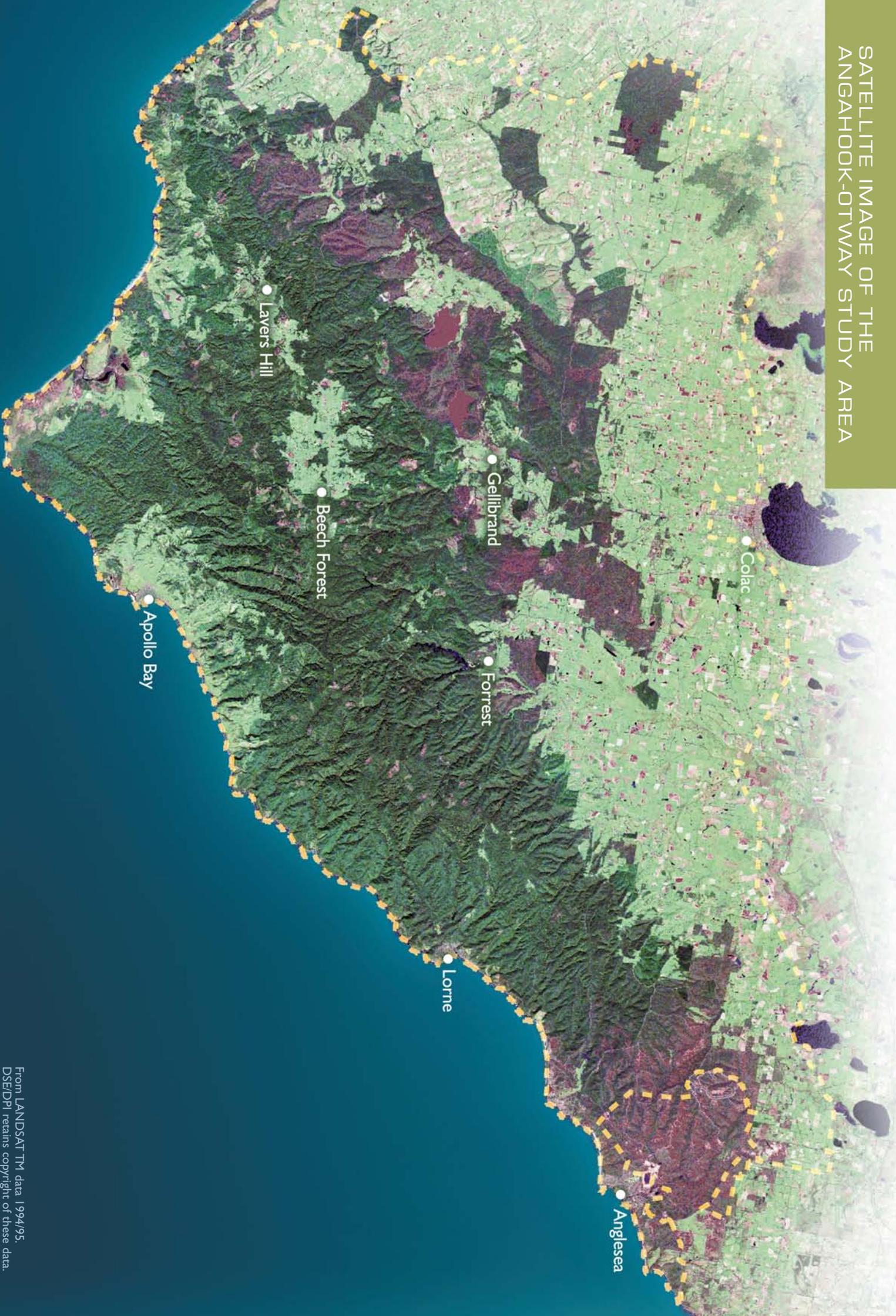


Submissions from Individuals

Contact	Sub. No.	Contact	Sub. No.	Contact	Sub. No.
Ms Wendy Orams	491	Ms Judith Rutherford	397	Ms Claire Turner	313
Dr Hector Orams	389	Ms Elizabeth Ryan	609	Ms Joanne Turner	298
Ms Mara Pacers	439	Mr David Salt	297	Mr Stuart Turner	260
M- & M- H. & I. Pacers	290	Ms Jennifer Samms	357	Mr Bernard Tyers	235
M- N. Page	142	Ms Mary Sammut	561	Ms Yasemin Ugrasbul	156
Ms Gail Palmer	350	Mr & Mrs Noel & Anne Saunders	564	Mr Tayfun Ugrasbul	155
Mr Carl Pannuzzo	57	Mr Anthony Sauter	332	Ms Sandra Valeri	483
Mr John Paras	321	Mr Peter Savic	179	Ms Jenni Venner	375
Mr Gavin Parker	560	Mr R. Schmitt	106	Mr Adam Vincent	216
Mr Simon Parker	601	Mr Peter Schott	407	Mr Martin Vrankin	502
Mr Rod Paterson	197	Mr John Schuliga	176	Ms Gillian Walker	244
Mr Nathan Pearce	427	Ms Emma Schwarcz	337	Ms Heather Walker	571
Mr Peter Pearson	410	Mr Jamie Scott	110	M- R.J. Walker	66
Ms Donna Peek	438	Ms Anneke Segrave	507	Ms Margaret Walsh	138
Mr Ian Penman	428	Ms Jennie Sell	644	Mr Rod Walter	238
Ms Susan Perron	139	Ms Glenda Shomaly	596	M- C. Walters	346
M- A.J. Perry	408	Mr Steve Simmonds	132	Mr Andrew Ward	129
Mr David Petrie	150	Ms Freda Simons	68	Ms Valerie Warner	566
Ms Pam Petschack	224	Mr David Simpson	124	Mr Len Waterhouse	159
Mr Glenn Phelps	107	Mr Ed Smart	275	Ms Alison Watson	475
M- Cush Phillips	480	Ms Joan Smethurst	379	Mrs Helen Watts	35
Mr Craig Philp	372	M- B.R. Smethurst	380	Mr Royce Watts	78
Ms Glenyse Pianta	309	Mr Cole Smith	277	Mr Geoff Westcott	436
Mr John Pierce	594	Mr Colin Smith	89	Mr & Ms John & Cheryl Westlau	396
Mr & Ms Angelo & Kerry Pietrobon	448	Mr Colin Smith	489	Mr Dave White	365
Mr David Pilley	402	Ms Lorey Smith	581	Mr Adam Whitehead	157
Ms Svea Pitman	339	Mr Paul Smith	276	Mr Adrian Whitehead	514
Ms Elizabeth Pollock	220	Mr Paul Smith	280	Mr A.J. Whitfield	64
Ms Nora Potter	636	Mr Rowen Smith	131	Ms Patricia Whittington	181
Mr Bill Poynton	490	Mr Simon Smith	168	Mr John Wigley	111
Mr Scott Prendergast	161	Mr & Mrs E.R. & S.M. Southcombe	542	Ms Beverley Williams	496
Ms Leanne Prestipino	638	Ms Judy Spafford	203	Mr Brian Williams	563
Mr Peter Price	392	Mr Darren Speirs	202	M- M. Williams	116
Mr Geoffrey Price	67	Mr Geoff Speirs	7	M- P.Williams	114
Ms Diana Primrose	97	Ms Helen Speirs	497	Mr Stephen Williams	623
Mr Simon Pritchard	360	M- & M- Jim Speirs	343	Ms Carol Wilmink	319
Mr Stefan Putyra	272	Ms Shirley Speirs	584	Mr & Ms John & Wendy Wilson	230
Mr Darren Pyne	118	Mr Ross Spokes	120	Mr Kenneth Wilson	486
Mr Ian Ray	368	Mr Warwick Sprawson	23	Mr Robert Wilson	450
Mr Nick Ray	385	Mr Peter Stafford	215	Dr Robin Wilson	616
Mr Stephan Reichert	262	Mr Brendon Stahl	241	Mr Keith Wiltshire	351
Ms Emma Reid	58	Mr Devon Starbuck	236	Mr Marc Wintle	162
Ms Alison Reynolds	440	Mr & Ms Anthony & Helen Stary	412	Miss Clara Wittwer	191
Mr Chuck Reynolds	201	Mr & Mrs Lorant & Lynette Stary	518	Mr Peter Wood	470
Mr Len Rhodes	625	Mr & Mrs Ian Stewart	71	Ms Helen Woodgate	269
Mr Michael Richards	323	Mr Ian Stone	137	Mr Bill Woods	289
Ms Andrea Richardson	457	Mr Ted Stuckey	463	Ms Wendy Wornor	646
Mr Lachlan Richardson	249	Ms Linda Suttie	353	Ms Helen Wright	96
Ms Fay Rimmer	88	Mr Robin Swan	554	Mr Roger Wyatt	12
Ms Diane Riordon	219	Ms Jenny Sykes	477	Ms Lynne Yeaman	222
M- Riordon	218	Ms Hilary Tabrett	14	Mr Alham Yusuf	602
Ms Regina Roberts	548	Ms Freda Tarr	101		
Ms Joan Roberts	476	Mr John Tatnell	55		
Mr Ashley Robertson	163	Ms Anne Taylor	53		
Mr Russell Robinson	152	Mr James Taylor	264		
Mr Ken Robinson	466	Mr & Ms Barry & Tracey Thompson	612		
Mr Peter Robinson	234	Mr Ron Topp	401		
Mr Mike Robinson-Koss	585	Ms Paula Tovey	248		
Mr Michael Roche	468	Mr Simon Townsend	530		
M- Jos Roche	510	Mr Craig Travis	299		
Ms Kerri Rodway	198	Ms Sharon Tredrea & Ms Margaret Collins	274		
Mr Mark Rosevear	105	Mr Roger Trevaskis	233		
Mr Tim Rowley	305	Mr & Mrs Neil & Ann Tribe	404		
Mr Dale Rule	205	M- M.Trotter	121		

illegible: 650, 651, 652, 653, 654, 662
no name provided:
256, 257, 294, 308, 364, 523, 641, 642, 643

SATELLITE IMAGE OF THE
ANGAHOOK-OTWAY STUDY AREA



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