

15 APPENDIX D – ANGLESEA HEATH MANAGEMENT PLAN

MANAGEMENT PLAN - NOVEMBER 2002

ANGLESEA HEATH



This Management Plan for Anglesea Heath contains information on the natural values of the heath and a review of past and present uses. Its primary purpose is to direct management of the Anglesea Heath until the Management Plan is reviewed. A Draft Management Plan was published in February 2001; 25 submissions were received.

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This plan is prepared without prejudice to any negotiated or litigated outcome of any native title determination applications covering land or waters within the plan's area. It is acknowledged that any future outcomes of native title determination applications may necessitate amendment of this plan; and the implementation of this plan may require further notifications under the procedures in Division 3 of Part 2 of the *Native Title Act 1993* (Commonwealth).

The plan is also prepared without prejudice to any future negotiated outcomes between the Government/s and Victorian Aboriginal communities. It is acknowledged that such negotiated outcomes may necessitate amendment of this plan

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ANGLESEA HEATH - PARTNERS IN CONSERVATION

Alcoa World Alumina Australia



Parks Victoria



Department of Natural Resources
and Environment



Natural Resources
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ANGLESEA HEATH

MANAGEMENT PLAN NOVEMBER 2002





FOREWORD

Anglesea Heath is an important remnant of a once more widespread vegetation type and habitat. Heathlands are species-rich, fire-dependent communities of which detailed ecological knowledge is generally limited. There is much more to learn of the regeneration requirements for some heathland species, the effects of the season of burn, and of the management requirements of many threatened species.

It is important that Anglesea Heath is managed on the basis of the best available information. This has been achieved in this planning process by drawing upon the collective understanding of the local community, conservation groups, tertiary institutions, and conservation agencies. The Anglesea Heath Management Plan, prepared by Parks Victoria, serves the purpose of documenting this collective understanding and translating it into appropriate management strategies and actions.

The Plan provides an agreed way forward for the co-managers of Anglesea Heath: Alcoa, Parks Victoria, and the Department of Natural Resources and Environment. I am confident that key issues affecting the conservation and use of this diverse and important heathland can now be addressed in a coordinated and considered manner for the benefit of both current and future generations.

Sherryl Garbutt MP
Minister for Environment and Conservation

APPROVED MANAGEMENT PLAN

This Management Plan provides the basis and direction for the future management of Anglesea Heath in accordance with the Cooperative Land Management Agreement (2000) between Department of Natural Resources and Environment and Alcoa of Australia Limited. The Agreement was prepared under part 8, section 69 of the Conservation Forests and Land Act 1987, and provides for the co-management of Anglesea Heath by Alcoa and Parks Victoria, to protect Anglesea Heath's natural and cultural values, whilst providing access for appropriate recreation and industry use. The 25 submissions received on the Draft Plan were taken into consideration in the finalisation of the plan.

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ANGLESEA HEATH

Millions of years ago heathlands covered huge areas of Australia, but sadly very little remains today. Anglesea Heath is one of the remnants of natural vegetation in South Western Victoria that have escaped farming and urbanisation. While heathland communities exist in other areas of Australia, they are all in some sense unique. The Anglesea Heath is different from any other Australian heathland. Nowhere else can we see the plant species that combine to form the vegetation communities found in this area.

In spring, a blanket of bushes and windswept vegetation erupts into a dazzling mosaic of colour. Week by week Anglesea Heath changes; the bluish-cream of the Smoke Bush, the yellows and reds of the Bush Peas and the red, pink and white of the Common Heath combine to form a spectacular wildflower display.

Orchids are an outstanding feature of the heathlands, from the

tiny Helmet Orchid to the Great Sun Orchid. Seventy-nine orchid species occur in Anglesea Heath, making it one of the most orchid-rich sites in Australia.

Panoramic views of heathy woodlands are divided by moist river valleys that contain thickets of Scented Paperbark and Tea-tree.

This naturally sculptured tapestry of heathlands and woodlands provides a haven and food source for numerous birds, mammals, insects and other animals that all share a special relationship with the heathland vegetation.

This remarkable biological diversity is the reason for listing most of the area on the Register of the National Estate.

First-time visitors to Anglesea Heath may not be aware of the floristic richness and brilliance that exists beneath the apparently drab exterior. However, those who take the time for a closer look are richly rewarded.

ABOUT THE PARTNERSHIP

Anglesea Heath overlays the land leased by Alcoa under the Mines (Aluminium Agreement) Act 1961 (7141 ha) and 80 ha of freehold land owned by Alcoa. It comprises the area used for mining and power generation, known as the Mining Area (currently 490 ha) and the remainder known as the Land for Conservation (6731 ha). See Map 2 - Boundaries (section A.3.4).

The local community has shown a strong and diverse range of interests in Anglesea Heath. This caring and commitment have been the key impetus behind the establishment of a Land Management Cooperative Agreement for the Land for Conservation between Alcoa of Australia Limited (Alcoa) and the Secretary to the Department of Natural Resources and Environment (DNRE).

The Agreement was established and signed on 8th November 2000 to protect the biodiversity, landscape, water catchments, and cultural heritage of the Land for Conservation, while providing opportunities for public appreciation and sustainable enjoyment of the area.

The Land Management Cooperative Agreement and this management plan apply only to the Land for Conservation. The Mining Area will be managed solely by Alcoa, whose mining rights extend to 2061. Both the Agreement and the Management Plan allow continued use and management of the Mining Area and any future expansion of that area in accordance with the requirements of the *Mines (Aluminium Agreement) Act 1961*.

For the purposes of this Management Plan the Land for Conservation is referred to as Anglesea Heath, except where specified otherwise.

The aim of the Land Management Cooperative Agreement is to ensure that Anglesea Heath is managed in a like manner to the Angahook-Lorne State Park, and in accordance with the International Union for the Conservation of Nature (IUCN) protected area management guidelines.

This management approach aims to protect the internationally significant Anglesea Heath as an entire ecosystem, whilst providing access for appropriate recreation and industry use. It is fundamental to the Agreement that this aim is achieved

through the highest possible level of cooperation in conservation management.

Australia's statutory system of protected areas contains only a small proportion of ecosystem biodiversity. In some instances, key ecosystems, plant or animal species and their habitats (such as those represented in Anglesea Heath) occur on leasehold and private lands, and as such remain outside the system. Incorporation of Anglesea Heath into the Victorian reserve system can only be achieved by the voluntary inclusion of these lands by Alcoa; an unlikely outcome in the near future, due to Alcoa's mining requirements. However, by entering into the Agreement and implementing the Management Plan, Alcoa will enable similar conservation outcomes for Anglesea Heath that would result from inclusion in the protected area system.

The partnership is one of three co-management initiatives occurring on leasehold land in Victoria. It is an excellent example of government, industry and community cooperation, where State agencies have actively collaborated with industry, community organisations and individuals, to respond to the State's need to preserve biodiversity outside its own reserve system. It is the first case in Australia where a conservation agency and a mining company have come together to form a cooperative partnership to manage an area for biodiversity conservation, consistent with international (IUCN) guidelines for the management of protected areas.

Under the Land Management Cooperative Agreement, DNRE and Alcoa will fund park management services for Anglesea Heath on an annual basis. As the agency responsible for day-to-day management of Anglesea Heath, Parks Victoria will manage funded projects in conjunction with Alcoa staff and with advice from nominated working groups with interests in natural heritage, cultural heritage, research, tourism, recreation and community relations. Parks Victoria, together with Alcoa, DNRE and community groups will be responsible for implementing this plan.

The role of the local community is integral to the success of the partnership; future management of Anglesea Heath will aim to combine local interests and expertise with conservation and protection.

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Introduction to The Anglesea Heath

Dillwynia glaberrima Smooth Parrot Pea

INTRODUCTION TO THE ANGLESEA HEATH

A.1 LOCATION

Located in southwestern Victoria, approximately 100 km from Melbourne, Anglesea Heath is a substantial natural area covering 6731 hectares to the north of the coastal township of Anglesea (refer to Map 1, Locality).

Anglesea Heath forms the easternmost component of a continuum of natural and protected areas in the Surf Coast region, abutting the Angahook-Lorne State Park to the south and west, and the Anglesea Flora Reserve and Otway State Forest to the north.

Anglesea Heath's proximity to Geelong, the Great Ocean Road, and to the nearby towns of Anglesea and Aireys Inlet means that there is high accessibility and recreational use of the land. In addition, many roads and tracks within Anglesea Heath extend into the Angahook-Lorne State Park. As a result, many visitors to Angahook-Lorne State Park also visit Anglesea Heath and vice-versa.

Anglesea Heath offers one of the most diverse and spectacular areas for flora, scenic landscape and wildlife communities in Victoria.

A.1.1

See Location Map A.1.1 overleaf.

A.2 ANGLESEA HEATH TO BE MANAGED AS A PROTECTED AREA

A.2.1 INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE (IUCN) PROTECTED AREA STATUS

A protected area is an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means (IUCN, 1994).

Australia is a signatory to the Convention on Biodiversity, which requests countries to:

- establish a system of protected areas to conserve biodiversity;
- develop guidelines for the selection, establishment and management of protected areas; and
- promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species.

A key element of the Land Management Cooperative Agreement between Alcoa and the DNRE is the intent to manage Anglesea Heath in a manner consistent with the general principles established in the IUCN Guidelines for Protected Area Management Categories. There are seven IUCN internationally recognised protected area Categories, namely:

Category	Description
Ia Strict Nature Reserve	protected Area managed mainly for science.

Ib Wilderness Area	protected area managed mainly for wilderness protection
II National Park	protected area managed mainly for ecosystem conservation and recreation
III Natural Monument	protected area managed for conservation of specific natural features
IV Habitat/Species	protected area managed mainly for Management Area conservation through management intervention
V Protected Landscape/Seascape	protected area managed mainly for landscape/seascape conservation and recreation
VI Managed Resource	protected area managed mainly for the Protected Areas sustainable use of natural ecosystems

The protected area system on public land is a central part of the overall strategy for achieving conservation of biodiversity in Victoria. The system is strengthened by protective measures taken on other public land and is further complemented by conservation of private land with appropriate natural values.

A.2.2 MANAGEMENT OBLIGATIONS

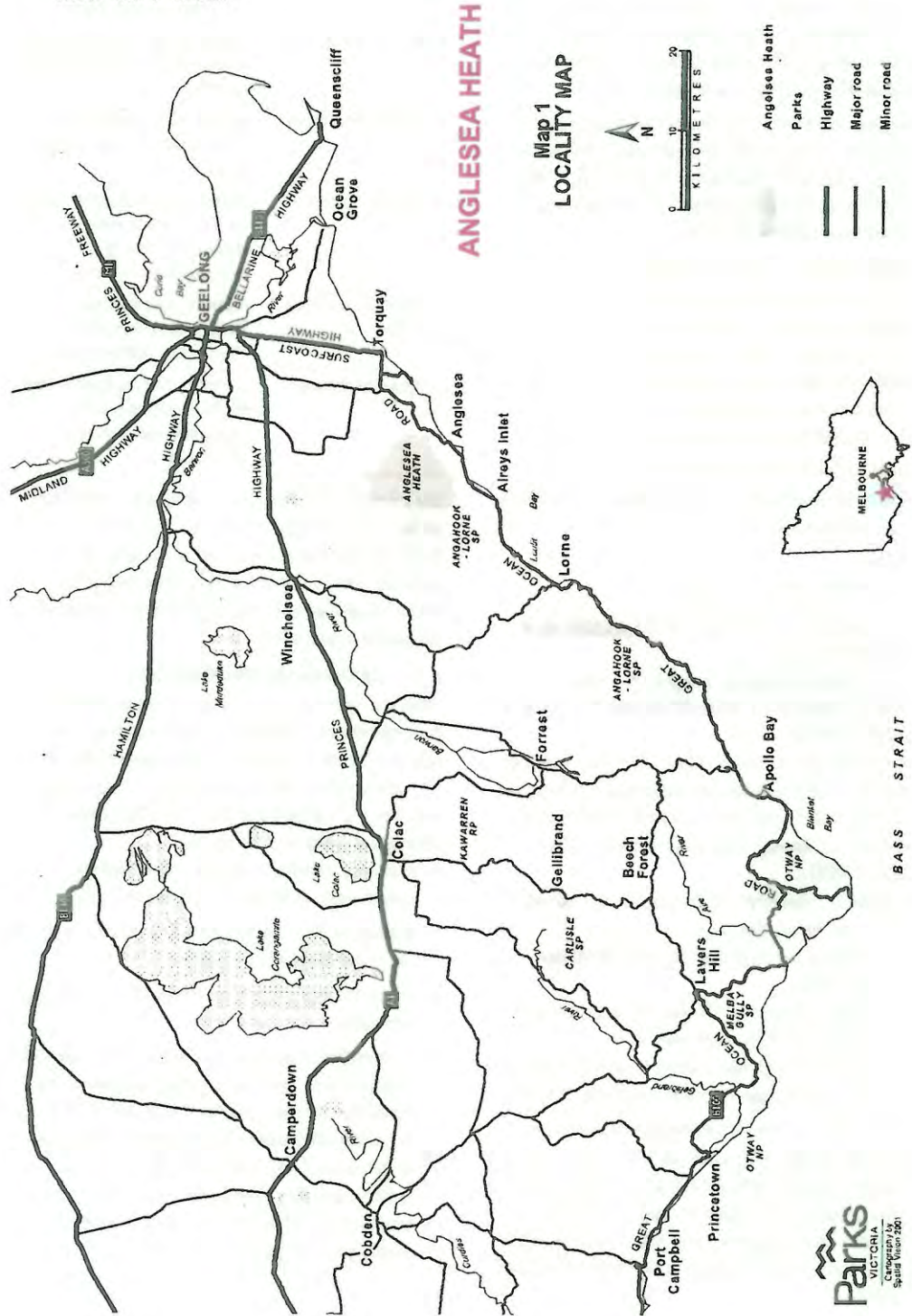
Whilst the IUCN has no powers to manage or influence the management of Anglesea Heath, the parties to the Agreement mutually agree that management of the Land for Conservation should, as far as possible, be consistent with that of a Category II National Park. The primary management obligations for this are:

- to protect, conserve and present the natural and cultural values of Anglesea Heath (section C.2);
- to integrate the protection of the area into a comprehensive planning program;
- to give the area a function in the life of the Australian community;
- to strengthen appreciation and respect of the values of Anglesea Heath, particularly through educational and information programs (section D.8.1), and to keep the community broadly informed about the condition of the values of Anglesea Heath; and
- to take appropriate scientific, technical, legal, administrative and financial measures necessary for achieving the foregoing objectives.



INTRODUCTION TO THE ANGLESEA HEATH

A.1.1 MAP 1 - LOCALITY



ANGLESEA HEATH

Map 1
LOCALITY MAP



- Anglesea Heath
- Parks
- Highway
- Major road
- Minor road

Parks
VICTORIA
Conservation
Spatial Vision 2001

BASS STRAIT

INTRODUCTION TO THE ANGLESEA HEATH

A.3 ENABLING LEGISLATION

A.3.1 OVERARCHING LEGISLATION

Alcoa's lease over Anglesea Heath was established under the provisions of the *Mines (Aluminium Agreement) Act 1961*, when the State Government granted Alcoa access to Anglesea Heath for the purposes of coal exploration and mining. Alcoa's power station and mining operations in Anglesea Heath are governed in a broad sense by the *Mines (Aluminium Agreement) Act 1961*. Specific on-ground mining operations are regulated under the *Mineral Resources Development Act 1990*.

The passing of the *Mines (Aluminium Agreement) Act 1961* granted Alcoa access (via a lease) to explore for and mine coal within Anglesea Heath until 2011, with a right of renewal for a further 50 years. It is expected that Alcoa will exercise this option to retain access to the coal reserves beyond 2011.

The *Conservation, Forests and Lands Act 1987* (Part 8, section 69) provides the legislative basis for the Land Management Cooperative Agreement under which Alcoa and Parks Victoria will manage Anglesea Heath for the primary purpose of conservation of biodiversity and consistent with general principles established in the IUCN World Conservation Union guidelines for protected area management categories. A management plan to guide the strategic and operational management of Anglesea Heath is a requirement of the Agreement.

A.3.2 ANGLESEA HEATH REGULATIONS

A specific set of regulations, the *Conservation, Forests and Lands (Anglesea Heath) Regulations 2000*, have been developed for the preservation, care and protection of Anglesea Heath and to regulate the conduct of the public in Anglesea Heath. These Ministerial regulations were published in the *Government Gazette* on 4 January 2001 (page 14) and amended in the *Government Gazette* on 1 February 2001 (page 139). The Regulations are broadly based on those set out in the *Park Regulations 1992*, so as to support the aim to achieve a consistent management approach between Anglesea Heath and the adjacent Angahook-Lorne State Park.

A.3.3 ADDITIONAL LEGISLATIVE OBLIGATIONS AND OPPORTUNITIES

Anglesea Heath will be managed in accordance with the relevant federal and State legislation that regulates various aspects of natural resources management. A comprehensive list of these Acts and guidelines is attached (see Appendix 4).

The former Land Conservation Council (LCC) in its *Final Recommendations for the Melbourne Area District 1 Review (1987)* outlined specific recommendations for Anglesea Heath. The recommendations revolved around

the division of Anglesea Heath into four management areas, with the principal recommendations including:

- most of the land continuing to be available to Alcoa for the purpose of coal mining and power generation;
- that fire protection policies would continue to be implemented in the area;
- that the land continue to be accessed by the public and contain a series of (rationalised) linked roads for motorised recreation;
- that a particularly biologically significant area (corresponding closely with the Marshy Creek Special Protection Overlay D.2.7) be excised from the Anglesea Heath and to be included into Victoria's parks and reserves system.

All recommendations of the LCC for the Anglesea Heath are consistent with the aims, strategies and actions of this Plan, however, the recommendation to excise a section of Anglesea Heath for inclusion into Victoria's reserve system was not adopted. Instead Alcoa and NRE entered into the *Cooperative Land Management Agreement (2000)* (pg 6) to provide a holistic approach to accomplishing the conservation outcomes advocated by the LCC. The resultant co-management partnership between Alcoa and the Government, means that the entire Land for Conservation will be managed as a protected area, in a like manner to Angahook-Lorne State Park. These management arrangements will be more effective in protecting Anglesea Heath in its entirety than would have been gained by dividing the area into two (or four) separately managed areas.

Other relevant planning instruments influencing the management of Anglesea Heath include:

- the *Otway Fire Protection Plan (DCNR, 1995a)*;
- the *Code of Practice for Fire Management on Public Land (DCNR, 1995b)*;
- the *Corangamite Regional Catchment Strategy (Corangamite Catchment and Land Protection Board, 1997)*; and
- the *Victorian Coastal Strategy (Victorian Coastal Council, 1997)*.
- the *Angahook-Lorne State Park Management Plan*

A.3.4

See *Map 2 - Boundaries, overleaf*.

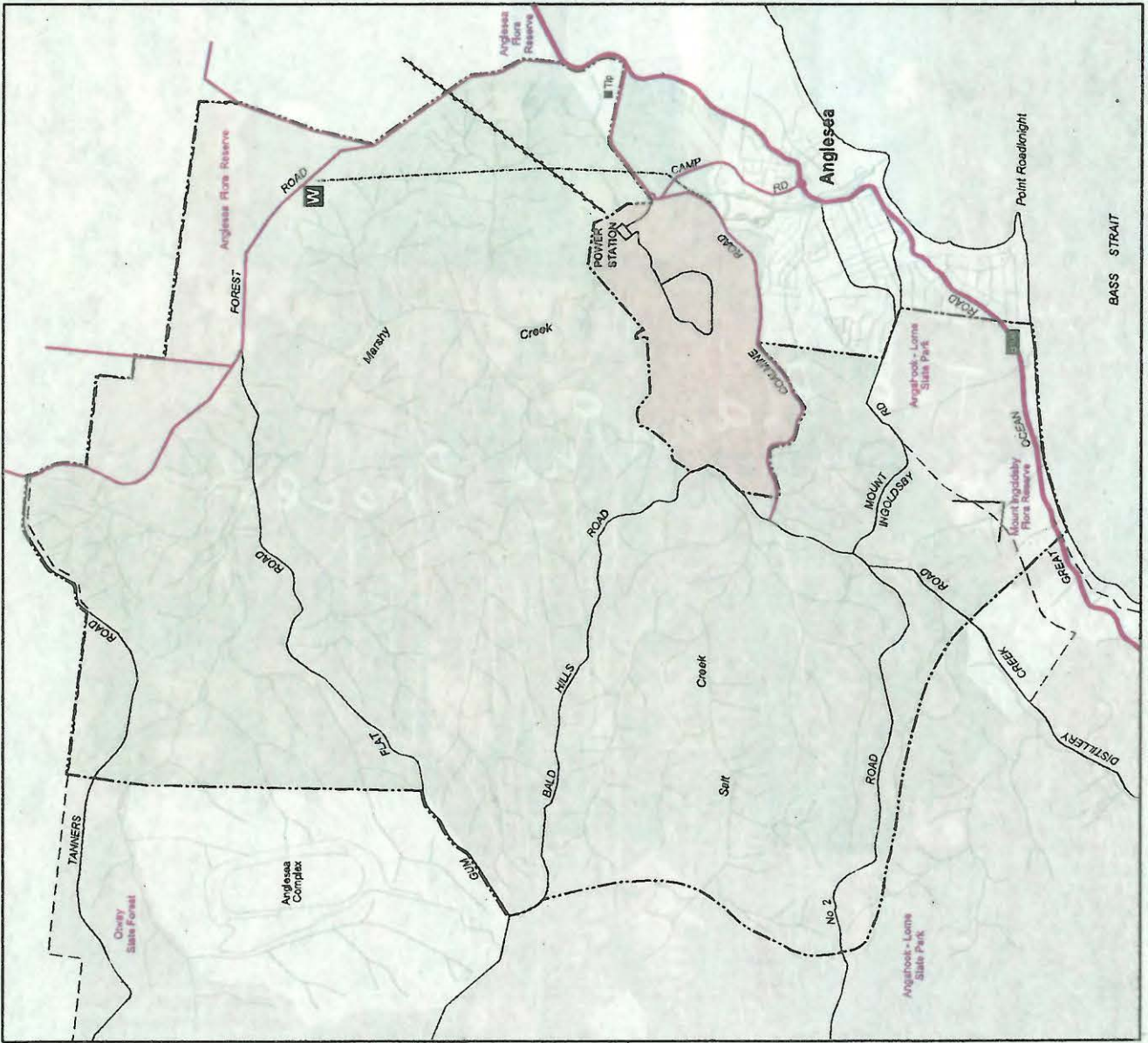


ANGLESEA HEATH

Map 2 BOUNDARIES



- Parks, Reserves & State Forest
- Land for Conservation
- Mining Area
- Poweline & Easement (Alcoa)
- Pipeline (Banwon Water)
- Water Reservoir (Banwon Water)
- National Estate boundary (approx)





The Planning Process

The Hon. Sherryl Garbutt
Minister For Environment and Conservation
Margaret MacDonald ANGAIR Inc.
Peter Burgess - Victorian Operations Manager
Alcoa World Alumina Australia

THE PLANNING PROCESS

B.1 WHY PREPARE A MANAGEMENT PLAN

Anglesea Heath is a valuable natural community asset, which for many people provides a setting for recreation and enjoyment. However, some forms of recreation and utilisation present a threat to the heath's noted biodiversity. The Management Plan has primarily been prepared to guide conservation of the heath's natural values and to provide strategies for a balanced outcome in a complex range of resource management issues.

By developing and communicating aims, strategies and actions in key management areas, this Management Plan outlines which activities are appropriate in aiding the achievement of sustainable management of Anglesea Heath. It is envisaged that the implementation of this Management Plan will reduce the impact of recreational and other pursuits currently threatening the Heath's biodiversity.

In addition, the preparation of this Management Plan has encouraged communication between Parks Victoria, DNRE, Alcoa and the community. This Management Plan advocates, where appropriate, a management approach consistent with that of the adjacent Angahook-Lorne State Park.

B.2 A BRIEF HISTORY

In 1996 Alcoa and DNRE jointly called upon key stakeholders and environmental experts to discuss proposed additions to the National Heritage listed area within Anglesea Heath. During these discussions it was agreed there was a need for a more strategic approach to the management of Anglesea Heath as a whole entity. It was proposed that a Management Plan be drafted for the area, so as to guide decision making across a range of issues and key management areas. The proposal to draft an Anglesea Heath Management Plan, as a result of these discussions, was the first phase in the planning process.

A Consultative Committee was established (section C.4.4), bringing together individuals and groups with specific expertise and/or management responsibilities within Anglesea Heath. Representatives from Parks Victoria, Surf Coast Shire, Anglesea and Aireys Inlet Society for the Protection of Flora and Fauna (ANGAIR Inc.), the Geelong Environment Council (GEC), and staff from the School of Biology and Chemical Sciences, at Deakin University, Geelong, were included on this committee.

The Consultative Committee worked together to identify information required to develop a Management Plan. Alcoa employed a Project Officer to coordinate the process, collate information and develop a Draft Management Plan.

The Consultative Committee's first task was to assist in gathering all relevant background information, which was collated to form Anglesea Heath Resource Inventory. From the Resource Inventory, the Consultative Committee identified significant values of Anglesea Heath from available information. At this early stage initial contact with key stakeholders was made. A series of working parties (made up of the Consultative Committee members and user groups) was convened to develop some of the aims and strategies for management.

B.2.1 FIGURE 1: PLANNING PROCESS FOR ANGLESEA HEATH MANAGEMENT PLAN See Flow Chart overleaf.

B.3 PUBLIC CONSULTATION

Each stage in the development of this Management Plan has involved the community, either through the Consultative Committee (section C.4.4), various working parties, Issue Workshops (section C.4.5) and consideration of the 24 submissions received on the Draft Plan.

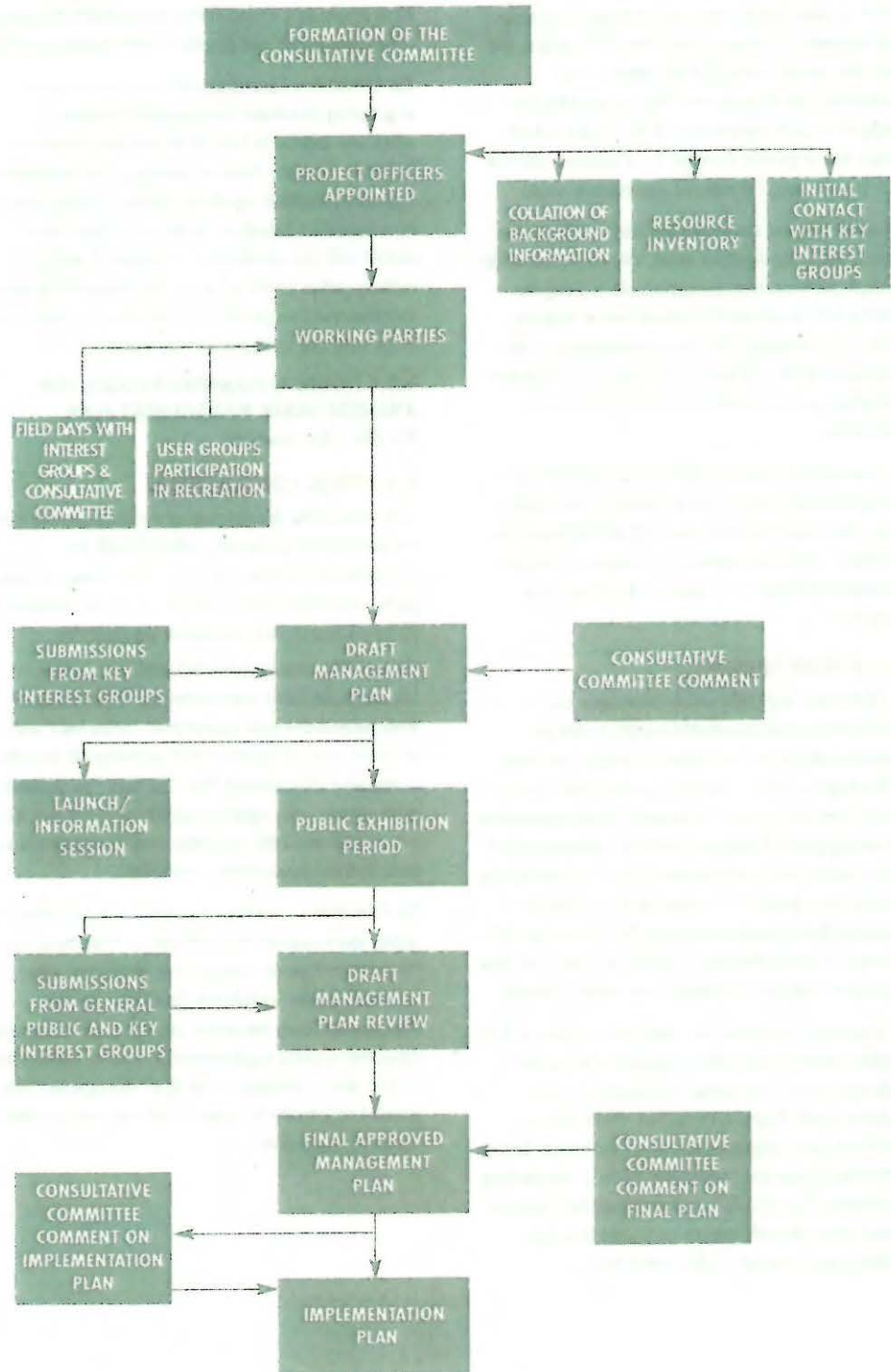
During 1996, notices requesting public submissions relevant to the future management of Anglesea Heath were advertised in local newspapers. Letters were sent to known users of Anglesea Heath outlining the intention to prepare a Management Plan. The Draft Plan underwent many reviews, with significant public input, but was then put on hold until DNRE and Alcoa could substantiate a legal basis for their management partnership.

The Consultative Committee (section C.4.4) and interested parties again reviewed the draft plan in 1999 so as to bring it to completion. Further Issue Workshops were convened and the Consultative Committee and the Management Group researched and discussed management issues that required supplementation and/or updating from the first draft. Publication of the Draft Management Plan provided opportunity for wider community comment that has been incorporated.



THE PLANNING PROCESS

B.2.1 Figure 1: Planning Process for Anglesea Heath Management



THE PLANNING PROCESS

B.4 PREPARATION OF THE MANAGEMENT PLAN

The process of preparing and reviewing the Anglesea Heath Management Plan is detailed in B.2.1, Planning Process for Anglesea Heath Management Plan.

In 1999, DNRE and Alcoa engaged Parks Victoria to finalise the Management Plan for Anglesea Heath. A revised set of aims and strategies was developed using existing information, specialist knowledge and that gained from the extensive consultative process. This Management Plan has been completed by Parks Victoria in accordance with the terms of the Land Management Cooperative Agreement entered into by DNRE and Alcoa.

This Management Plan will form the basis for the future co-management of Anglesea Heath. It concentrates on conservation, bolstering natural and cultural heritage, rationalising recreation opportunities, increasing community awareness and improving management expertise within that area. The success of the Plan will be contingent on the commitment by all participants, including DNRE, Alcoa, Parks Victoria and the community, to work cooperatively so as to achieve mutually acceptable and positive outcomes.

On release of the Draft Management Plan, new administration and management planning arrangements for Anglesea Heath were put in place (section C).

This action was taken in recognition of the urgent need for more strategic and long-term arrangements for the management of Anglesea Heath and the requirement for a community-based approach to the Management Plan. To implement the Plan actions in order of priority, the Management Group (section C.4.3), with input from the Consultative Committee (section C.4.4), will prepare an Implementation Plan.

The Implementation Plan will be reviewed annually by considering the major issues and available funding. Annual works programs will be developed from the implementation plan. This Management Plan will be updated based on evaluation of the effectiveness of management actions, and further knowledge gained about Anglesea Heath and its environs. The plan will be reviewed, including renewed public input, every ten years, or as otherwise agreed among the Management Group.

B.5 ABOUT ANGLESEA HEATH MANAGEMENT PLAN

This Management Plan is, in some ways, an unconventional plan. This is because:

- It has been written using a collaborative approach in which the State Government, conservation agencies, local government, industry, and the local community have actively participated.
- It contains five core sections, each consisting of a number of sub-sections. The five core sections will be: the Introduction to Anglesea Heath, The Planning Process, The Basis for Management, Strategic Plan (management issues, strategies and actions) and Appendices. The sections will be interrelated but designed to be relevant for a different length of time and for a different audience.





The Basis for Management

Thelymitra aff. *pauciflora* Anglesea Slender Sun Orchid
Antechinus minimus Swamp Antechinus

THE BASIS FOR MANAGEMENT

C.1 OVERVIEW

The basis for management is derived from three areas:

- The inherent values of Anglesea Heath;
- The overarching management vision and guiding principles; and
- The special co-management arrangements.

The values of Anglesea Heath form the first part of the basis for management and underpin the entire Management Plan. By firstly identifying the relative values of Anglesea Heath, the subsequent sections of the Plan can be related back to the heath's important values.

The vision and guiding principles form the second part of the basis for management. The vision defines the inspiration behind the Partnership, whilst the guiding principles are the forward-looking foundations that link the vision with the management strategies and actions. The third and final part of the basis for management relates to the administrative arrangements that have been put in place to provide sustainable and cooperative management of Anglesea Heath.

C.2 VALUES OF ANGLESEA HEATH

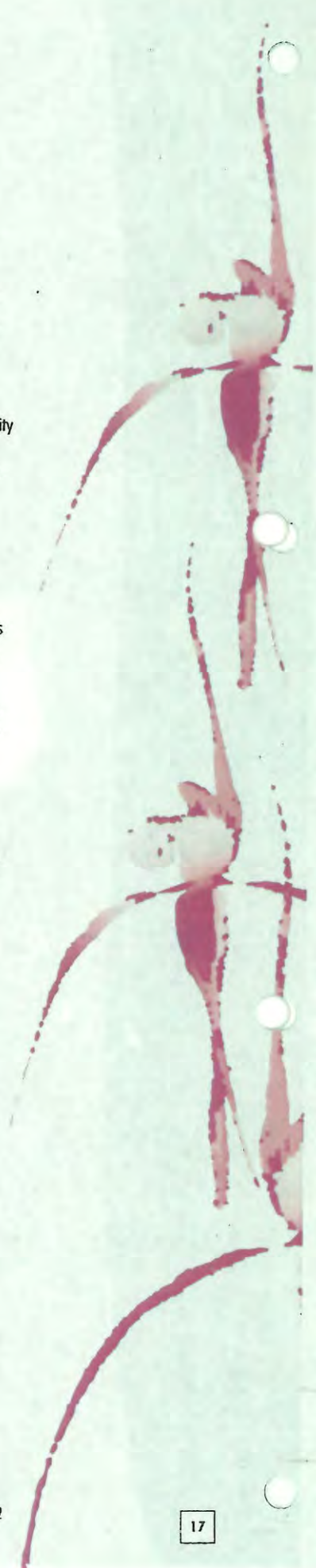
C.2.1 NATIONAL ESTATE LISTING

The Register of the National Estate is Australia's national inventory of natural and cultural heritage places that are worth keeping for the future (Australian Heritage Commission, 2001). The Australian Heritage Commission identifies and maintains the Register of the National Estate and advises the Commonwealth Government on its protection. Places listed on the Register are assessed by the Commission and are deemed to contain components of Australia's natural and cultural environment, having aesthetic, historic, scientific or social significance or other special value for future generations or the present community (Department of Natural Resources and Environment 1998). Places listed on the Register may come from all parts of Australia and can be owned by Commonwealth, State and local governments, by businesses and private landholders. Entry into the Register is not a management decision and the way owners manage listed land is not directly affected by its listing. However, under section 30 of the *Australian Heritage Commission Act 1975*, the Commonwealth Government is prohibited from taking any action which would adversely affect a place in the Register.

Listing on the National Estate Register means that a place has met various criteria of national significance. The majority (6600 hectares) of Anglesea Heath is listed on the Register because of its noteworthy natural (particularly botanical) values, see Map 2 - Boundaries. The values included in Anglesea Heath's Statement of Significance (Australian Heritage Commission) and additional known values have been categorised for planning purposes into: natural heritage values; biodiversity conservation values; cultural heritage values; economic values; social values, and research and education values. A summary of these major values is listed below.

C.2.2 NATURAL HERITAGE VALUES

- The natural plant communities of the area, including Bald Hills heath, heathy woodlands and closed shrublands are important for the presence of rare species and are of ecological value as viable examples of vegetation types that occur naturally in the region.
- The native vegetation is important for maintaining the natural habitats of associated plants and animals, in protecting the soil surface, and helping to maintain natural landforms.
- The area contains seven different vegetation communities, namely: riparian open forest (deep shaded gullies), riparian open forest (river flats and open streams), heathy open forest, heathy woodland, Bald Hills heath, Urquhart Bluff heathland and closed shrubland.
- An exceptional wildflower display occurs in Spring.
- Spectacular landscapes can be observed, particularly in the Bald Hills area.
- Significant geological, geomorphological and palaeontological features exist. Leaf fossils found within the coal mine are of international significance.
- Anglesea Heath forms part of the natural continuum between the ecosystems of the Otway Ranges and helps to protect the integrity of this biogeographical unit.





THE BASIS FOR MANAGEMENT

C.2.3 BIODIVERSITY CONSERVATION VALUES

- The heathy woodland in Anglesea Heath is the richest and most diverse vegetation community recorded in Victoria (Australian Heritage Commission, 1992).
- The native plants and animals of the area are important parts of the region's biodiversity.
- A remarkable number of flora species occur within a relatively small area: over 620 species, or approximately one-quarter of the total Victorian flora (Conservation, Forests and Lands, 1989).
- Over 100 species of native birds have been recorded in Anglesea Heath. The range of species which is attributable to the wide range of habitats in the area includes Powerful Owl (*Ninox strenua*) and Rufous Bristlebird (*Dasyornis broadbenti*).
- Twenty-nine native mammal species have been recorded in Anglesea Heath including one Victorian critically endangered species, the New Holland Mouse (*Pseudomys novaehollandiae*), and rare species including the Swamp Antechinus (*Antechinus minimus*) and the White Footed Dunnart (*Sminthopsis leucopus*).
- Significant flora includes eight species that are rare or threatened at the national level, and twenty that are rare or threatened at the State level. Two species, Anglesea Grevillea (*Grevillea infecunda*), and Anglesea Slender Sun Orchid (*Thelymitra* sp. aff. *pauciflora*), are endemic to the area (see Appendix 2).
- Over a quarter of Victoria's orchid species are found in Anglesea Heath. Over 80 species and five hybrid species have been recorded. Accordingly, the heath claims not only State, but also national significance, for its orchid flora.
- The Anglesea River valley with its biggest tributary, Salt Creek, contains spectacular stands of swamp plants; in particular Scented Paperbark (*Melaleuca squarrosa*). These swampy heaths are also significant for the unusual aquatic habitat they provide, the number of rare and restricted species found and the unusual peaty soils draining acidic waters during periods of flow.
- The waterways in Anglesea Heath provide habitat for a rare fish, Spotted Galaxias (*Galaxias truttaceus*), and the Southern Pygmy Perch (*Nannoperca australis*), which has not been recorded in any other Otway catchments east of the Gellibrand River.

C.2.4 CULTURAL HERITAGE VALUES

- Numerous significant archaeological sites are contained in Anglesea Heath.
- Anglesea Heath remains in a natural state, providing a spiritual connection between past, present and future generations of the Wathaurong Community and its territory.
- Anglesea Heath contributes significantly to the continuity and integrity of the South West and Wimmera Cultural Heritage Region and specifically to the Wathaurong area boundary.

C.2.5 ECONOMIC VALUES

- Anglesea Heath makes a significant contribution to the 'naturalness' of the Great Ocean Road experience, a drawcard that attracts tourism expenditure of an estimated \$241 million per annum.
- The high-quality economic brown coal reserves, which total approximately 80 million tonnes, have low water content and high calorific value compared to coal mined in the LaTrobe Valley.
- Anglesea Power Station output is a significant contributor to Alcoa's Point Henry Smelter power supply and that company's total aluminium export business requirements.
- Anglesea Heath is likely to have a similar economic contribution to the region as Angahook-Lorne State Park. For example, Angahook-Lorne State Park had 539,518 visitors who spent an estimated \$10.73 per person per visitor day in 1998. This amounts to \$5.79 million dollars per year to the local economy (Reed Sturgess 1998).

C.2.6 SOCIAL VALUES

- The area offers opportunities that complement other features along the Great Ocean Road. In particular, it offers the opportunity for visitors to experience a sense of remoteness.
- People who visit Anglesea Heath value the range of recreational and leisure activities that are available.
- Anglesea Heath contributes to an enhanced quality of life for the permanent and non-permanent population of Anglesea and environs, now and for future generations.
- Both the Mining Area and Anglesea Heath contribute to employment opportunities in the local community.

THE BASIS FOR MANAGEMENT

C.2.7 RESEARCH AND EDUCATION VALUES

- The area provides an outstanding opportunity to study an internationally renowned and diverse series of ecosystems at a relatively close distance from major universities and research institutes.
- The information arising from scientific research in the area has the potential to provide land managers with the latest findings and methodologies in natural resource management.
- Anglesea Heath allows researchers an invaluable opportunity to attain greater understanding of protected area management, where innovative Park Management initiatives may be trialed.
- The area provides an opportunity to promote greater co-operation and understanding between conservation agencies, the mining industry, scientists, and the wider community.
- The area offers opportunities for community education and interpretation of the natural values of Anglesea Heath.

C.3 VISION AND COOPERATIVE PRINCIPLES

The vision inspiring the establishment and management of Anglesea Heath is;
"Enhance, restore and sustain biodiversity and ecosystems integrity in Anglesea Heath through cooperative management".

The Department of Natural Resources and Environment (DNRE) and Alcoa aim to set a precedent for protected area management in Victoria by combining industry, government organisations and the community as partners in cooperative decision making. Central to achieving this vision is the Land Management Cooperative Agreement; under which State agencies, industry and local community groups are actively collaborating with one another to more effectively provide conservation and biodiversity outcomes. In pursuing this vision for Anglesea Heath, the parties will give due regard to four guiding principles:

- allowing continued use that does not threaten the area's values and integrity;
- recognising the roles of current management agencies;
- involving the local community in planning and management; and
- providing for continued access for Alcoa to coal reserves on its mining lease.

Under these principles, the conservation and biodiversity values will be upheld, and will be promoted as an asset to be appreciated by current and future generations. Protection and enhancement of biodiversity will be ensured through careful planning and consultation. Active management, including increased ranger presence will control activities that threaten the heath's biodiversity. Monitoring and evaluation will continue to assist management and protection of the heath's values.

Most of Anglesea Heath will remain in an undeveloped state to provide the visitor with a sense of remoteness, and an appreciation of its natural values. Recreational opportunities will be provided for on open, named tracks. Communication with key user groups will ensure that natural values will be maintained. Visitor facilities will be minimal, in keeping with the natural character of Anglesea Heath. High quality information will assist visitors to enjoy and gain an understanding of the interesting and diverse environments within Anglesea Heath.

Volunteers and user groups will be encouraged to actively participate in protection and maintenance of Anglesea Heath. The scientific community has an important role and they will be encouraged to increase knowledge and understanding of the heath. Active and collaborative management will ensure that visitor use does not detrimentally impact on Anglesea Heath's significant values, so that these values are sustained for future generations.

Cooperative management will ensure the sustainability of environmental, social and economic values of Anglesea Heath, which will offer the community and visitors a range of interesting and enjoyable experiences. This is expected to generate public support for the continued conservation of Anglesea Heath.





THE BASIS FOR MANAGEMENT

C.4 ADMINISTRATIVE ARRANGEMENTS AND PLANNING OUTPUTS

Since the recognition of Anglesea Heath through National Estate listing and the formation of the Consultative Committee, Alcoa, the lessee, has worked cooperatively with Parks Victoria to develop this Management Plan.

The Land Management Cooperative Agreement between Alcoa and DNRE outlines rights, undertakings and institutional arrangements among the parties and Parks Victoria. Under the agreement, the parties undertake to manage Anglesea Heath (Land for Conservation) (refer Map 2) for the primary purpose of conservation, and as consistent with this purpose, for public recreation, education and enjoyment.

The Secretary to the DNRE and Alcoa agree to meet annual management and maintenance costs on a proportional basis to be agreed between the parties from time to time. Alcoa will contribute to the works program, establishment of infrastructure, sponsorship of research and educational initiatives and the provision of land rehabilitation expertise.

The Agreement indicates the Secretary's intention to assign day-to-day management of Anglesea Heath to Parks Victoria including the authority and responsibility to enforce regulations.

Alcoa will retain control and management of the Mining Area. The coal reserves will be mined and rehabilitated, in keeping with the values of Anglesea Heath, the adjoining land utilisation and this Management Plan.

The allocation of resources for managing Anglesea Heath will be based on:

- the long term strategies and actions agreed to in this Management Plan;
- an annual works program to protect Anglesea Heath from immediate threat; and
- the principle of cost sharing for agreed priority areas, assessed and agreed to on an annual basis.

C.4.1 THE MANAGEMENT PLAN

The Management Plan is based on the protection of conservation values and provides guiding principles, aims and strategies for management and use of Anglesea Heath. The Plan indicates what needs to be done and provides a framework for managers, visitors and other stakeholders.

C.4.2 OPERATIONAL STRATEGY

The strategies identified in the Management Plan will be prioritised and implemented in accordance with the three year implementation plan prepared and reviewed annually by the Management Group with input from the Consultative Committee (section C.4.4).

Annual Works Programs derived from the implementation plan will outline required works and include costings for the implementation of priority actions.

THE BASIS FOR MANAGEMENT

C.4.3 THE MANAGEMENT GROUP

The Management Group is a 'cooperative partnership' between Alcoa and Parks Victoria. This group will directly and regularly liaise with the Consultative Committee.

C.4.4 THE CONSULTATIVE COMMITTEE

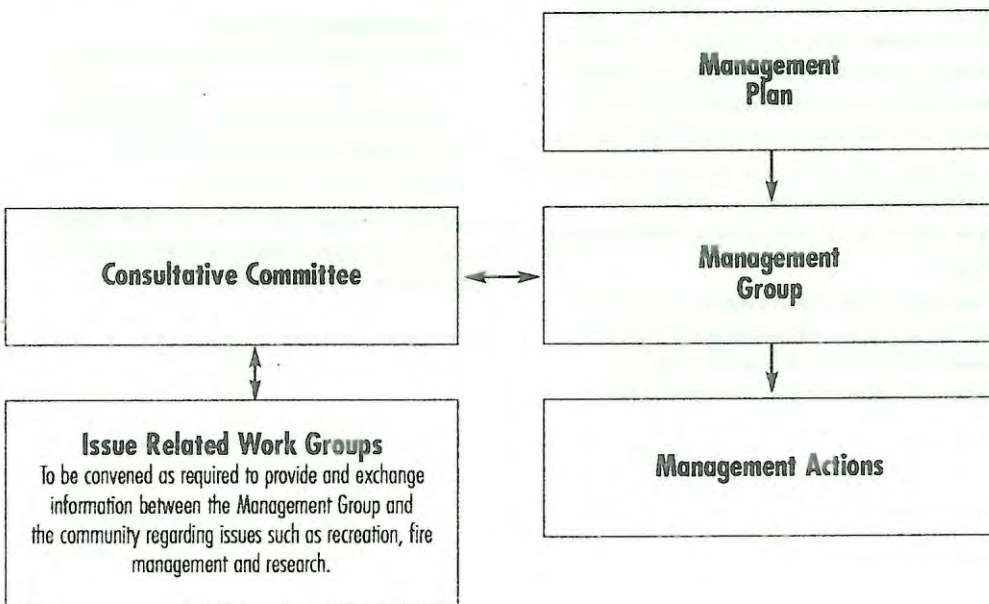
The function of the Consultative Committee is to assist the Management Group by providing expertise, local knowledge and advice on management actions proposed for Anglesea Heath.

The Consultative Committee includes representatives from: Alcoa, Parks Victoria, Deakin University; Anglesea Aireys Inlet Society for the Protection of Flora and Fauna (ANGAIR Inc.); Geelong Environment Council (GEC); and the Surf Coast Shire. The Consultative Committee will represent

community interest in Anglesea Heath and assist and encourage wider community consultation and involvement in management of the area. By liaison with key people, the Consultative Committee will obtain the necessary information to assist in decision making for Anglesea Heath. The Consultative Committee will also assist with guiding the direction of the Issue Related Workgroups.

C.4.5 ISSUE RELATED WORKGROUPS

Issue Related Workgroups will be formed and convened to enhance community and specialist involvement in management of Anglesea Heath. These groups will address issues and provide the Management Group with feedback on their area of focus.





Strategic Plan Management Issues and Strategies

Strategic Plan - Management Issues
and Strategies

Xanthorrhoea australis Austral Grass Tree
Peter Burgess - Victorian Operations Manager
Alcoa World Alumina Australia
Kate McMahon - Ranger Parks Victoria

STRATEGIC PLAN - MANAGEMENT ISSUES AND STRATEGIES

D.1 MANAGEMENT ISSUES, STRATEGIES AND ZONING.

To conserve and protect the highly significant natural and cultural values of Anglesea Heath, an important function of this Management Plan is to identify and clearly set out, aims, strategies and actions relating to the numerous management issues relevant to the area (with the exception of section D.5.5 Coal Mining, which relates to the Mining Area). The following strategic plan outlines aims, strategies and actions in each key management area and describes management zones. The strategic plan is a valuable tool for land managers and users of Anglesea Heath.

The process of identifying and categorising issues was undertaken by the Consultative Committee and the Management Group (sections C.4.3 and C.4.4). Together they identified and categorised issues by:

- Identifying significant values;
- Identifying threats to values;
- Identifying desired outcomes;
- Identifying management issues, and organising them into key management areas; and
- Drafting relevant background material, aims, strategies and actions for each key management area and sub-area.

The format of the strategic plan is to identify aims, strategies and actions for each key management area and sub-area. Aims can be described as a set of identified desired outcomes, strategies are agreed management responses to each issue and actions are steps taken to implement strategies.

Key management areas were analysed and divided into sub-areas that encompass a full range of management aims, strategies, and actions required to be achieved. It is expected that the majority of actions and strategies will be implemented over the next ten years. The implementation of strategies and actions will be prioritised to conserve the most threatened and significant biological values within Anglesea Heath subject to the constraint of funding realities.

D.2 MANAGEMENT ZONES

The zoning scheme developed for Anglesea Heath is values-based and has been modelled on those used in other protected areas in Victoria. Primary management zones and overlays were designated with reference to the Australian Heritage Commission's Statement Of Significance for the Anglesea Heath, the LCC Melbourne Area District 1 Review, Final Recommendations, the Victorian Flora Information System, the Victorian Wildlife Atlas and local knowledge. The purpose of the zoning scheme for the Anglesea Heath is to:

- provide a geographic framework for managing Anglesea Heath;
- indicate which management directions have priority in Anglesea Heath; and
- minimise conflicts between recreational use and conservation of high biodiversity values, and to provide a basis for assessing the suitability of future activities.

D.2.1 PRIMARY MANAGEMENT ZONES

Two underlying management zones will apply to Anglesea Heath, these are: the Conservation Zone and the Conservation and Recreation Zone.

D.2.2 CONSERVATION ZONE

The Conservation Zone is designated to protect sensitive natural environments and to provide for minimal-impact recreation activities and simple visitor facilities subject to ensuring minimal interference with natural processes. Conservation zones are applied to broad areas containing sensitive natural environments or ecosystems, which are unable to sustain the impact of significant levels of dispersed recreation activity and other uses. The vast majority of Anglesea Heath will be zoned Conservation to protect the sensitive and highly significant natural areas.

D.2.3 CONSERVATION AND RECREATION ZONE

The Conservation and Recreation Zone is designated to protect less-sensitive natural environments and to provide for sustainable recreation activities and small-scale recreation facilities without significant impact on natural processes. This zone is generally applied to Parks, unless there is a reason to apply a more specific zoning. The zone usually comprises broad natural areas that can sustain significant levels of dispersed recreational activities without significant impact on these areas' natural values. An area of approximately 20 ha located on Gum Flats Road will be zoned Conservation and Recreation. This area is significantly modified and is highly accessible to visitors.

D.2.4 MANAGEMENT OVERLAYS

In addition to the underlying zones, two categories of overlays have also been applied to Anglesea Heath. These overlays are Special Protection Areas (section D.2.5) and Special Management Areas (section D.2.6). The overlays have been applied to areas within Anglesea Heath where specific or additional management actions are required.

D.2.5 SPECIAL PROTECTION AREAS

Special Protection Areas are designated to protect specific areas and sites where a special management focus is required. Special Protection areas are applied to specific areas where known natural or cultural values require a special management focus to ensure their protection.



STRATEGIC PLAN - MANAGEMENT ISSUES AND STRATEGIES

In addition to the underlying zoning scheme special protection overlays are used to provide for further protection of particularly significant and sensitive catchments within Anglesea Heath.

These overlays are designated to highlight additional requirements to those of the underlying conservation and conservation and recreation zones.

The Marshy Creek Catchment and Heathlands and the Salt Creek Catchment and Heathlands are areas which contain natural values of State significance. A summary of these values is outlined below.

D.2.5.A MARSHY CREEK CATCHMENT AND HEATHLANDS

This area contains unique and regionally significant Scented Paperbark swamps; relatively intact expanses of heathy woodland with extremely high species richness (160 species per hectare).

It contains a high density for threatened species, including identified areas of optimum habitat for one rare and one critically endangered mammal species.

D.2.5.B SALT CREEK CATCHMENT AND HEATHLANDS

The area also contains regionally significant Scented Paperbark swamps that in this location are of State significance for the conservation of threatened species, including the Grey Goshawk. The species rich heathland and forest communities within, contain seven nationally, four State and many regionally significant flora species; intact and healthy Grass Tree stands; known occurrence of and habitat for three fauna species of State significance, and five species of regional significance.

D.2.6 SPECIAL MANAGEMENT AREAS

Special Management Areas are designated to highlight areas where special management actions are needed for non-standard uses. Special Management Areas apply to sites where active, non-standard activities will take place. Special Management Area overlays will cover the land currently used by the Geelong Rifle Club (section D.7.9) at Gum Flat Road and the transmission line and easement extending north-east through Anglesea Heath from Alcoa's Anglesea Power Station.

D.2.6.A GEELONG RIFLE CLUB

The Geelong Rifle Club will manage the Gun Club area (20 ha) as a rifle range facility until December 2003, when the current lease expires.

D.2.6.B ALCOA TRANSMISSION LINES

The transmission line is owned and managed by Alcoa, but the line is maintained by Powercor in accordance with the Code of Practice for Electric Line Clearance (vegetation) (OCEI, 1999).

D.2.7

See Zoning Map overleaf.

D.3 KEY MANAGEMENT AREA: BIODIVERSITY CONSERVATION

Enactment of the *Mines (Aluminium Agreement Act) in 1961* enabled Alcoa's lease over the Anglesea Heath for coal mining and power generation. However, with the exception of the Mining Area (see Map 2 - Boundaries) the area remains relatively intact and is widely recognised as a significant biological area.

Management and recreational access in conjunction with other threatening processes have divided significant vegetation communities within the Heath. This fragmentation, caused by creation of recognised and informal tracks increases the level of threat to biodiversity in Anglesea Heath by providing for dispersal of pest plants and animals, increasing the extent of soil erosion and resultant altered hydrology and dividing plant communities and fauna habitats. Many of the aims, strategies and actions set out in this plan are targeted towards reducing fragmentation of Anglesea Heath and improving the areas condition, while providing necessary access for management and visitors.

D.3.1 FLORA

The high diversity of vegetation types and the diversity of species within them are the primary reason why the majority (6600 hectares) of Anglesea Heath is listed as a significant natural place on the National Estate Register (see Map 3).

Anglesea Heath contains an outstanding diversity of flora. Over 620 species, or approximately one quarter of the total Victorian flora, are represented there (Conservation, Forests and Lands, 1989).

Significant flora include three species, which are rare or threatened at a national level, and eight, which are rare or vulnerable at a State level. Two species, Anglesea Grevillea (*Grevillea infecunda*) and Anglesea Slender Sun Orchid (*Thelymitra* sp. aff. *Pauciflora*) are endemic to the Anglesea area (see Appendix 2).

Over 80 orchid species including five hybrid species have been recorded in Anglesea Heath. Accordingly, the area is of State and national significance for its orchid flora. In addition to its floristic significance Anglesea Heath demonstrates spectacular landscape and scenic values; the wildflower displays in Spring are especially noteworthy.

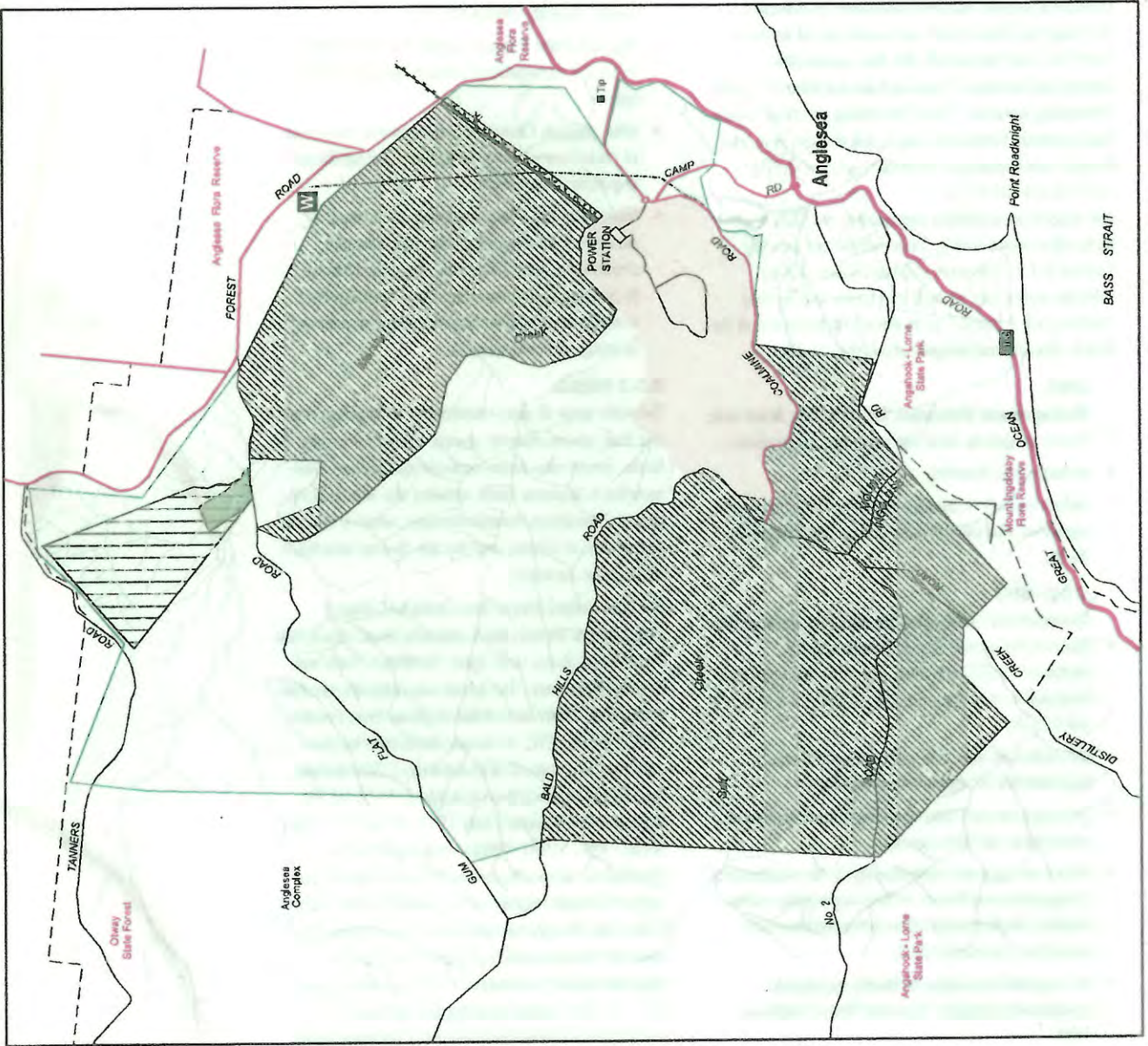
In 1986, the former Land Conservation Council (LCC) commissioned C. Meredith (Biosis Research Pty Ltd) to produce a floristic vegetation map, showing the distribution of flora communities within Anglesea Heath. Meredith observed that there were two broad vegetation categories: heathy communities and forest communities (LCC 1987).

ANGLESEA HEATH

Map 3 ZONING



- Mining Area
- Powertine & Easement (Alcoa)
- Pipeline (Barwon Water)
- Water Reservoir (Barwon Water)
- Conservation Zone
- Conservation & Recreation Zone
- Special Protection Areas
- Special Management Area - Geelong Rifle Club
- Special Management Area - Powerlines
- Other Protected Areas



STRATEGIC PLAN - MANAGEMENT ISSUES AND STRATEGIES

The heathy communities occur on infertile sandy soils and contain five separate sub-community types, namely: heathy open forest I, heathy woodland I, Bald Hills heathland, Urquhart Bluff heathland and closed shrubland.

The forest communities occur on more fertile clay soils. They contain three separate sub-communities, namely: riparian open forest I-II, fern gully, and damp open forest.

Some sites of significance have been identified, recorded and mapped by community groups with assistance from DNRE. This survey work has produced a preliminary 'Sites of Significance' map for the Anglesea Area. Further work of this nature in broader areas of Anglesea Heath will continue to provide valuable information to managers. The impact on flora of past and current use of Anglesea Heath has been substantial. The flora communities' integrity will decrease if measures are not taken to control threatening processes. These threatening processes include fragmentation, Cinnamon Fungus, soil erosion, pest plant invasion and unmanaged recreation (sections D.4.1, D.4.2, D.5.3 and D.7.1).

Any impacts on vegetation communities are likely to flow on to other values such as fauna habitat and diversity (section D.3.2). This plan addresses issues such as vehicular access, use of roads and tracks, and hygiene (sections D.5.3 and D.7.2) to ensure the protection of the floristic diversity and integrity of Anglesea Heath.

AIMS

Management Outcomes for this Key Area are:

- Protect indigenous flora and vegetation communities;
- Maintain flora diversity;
- Reduce and where possible eliminate fragmentation of vegetation and other threats to flora within Anglesea Heath.

STRATEGIES

Management Strategies for this Key Area are to:

- Minimise the impact of recreational activities, introduced species and other uses upon the vegetation communities in Anglesea Heath (sections D.5.1, D.5.2 and D.7.1);
- Rationalise the road and track network to reduce fragmentation of vegetation communities;
- Encourage research into significant or rare vegetation communities and flora species;
- Acquire an improved understanding of the requirements of vegetation and threats to flora communities within Anglesea Heath through close communication with researchers (section D.10.1);
- Use acquired knowledge to develop appropriate management programs to protect flora of Anglesea Heath.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Continue to identify and map sites of threatened, significant and localised species in Anglesea Heath;
- Fence and gate off areas as required to assist in minimising disturbance to significant species and communities;
- Revegetate degraded areas with indigenous plant species and prevent recreational access into disturbed areas;
- Conduct ecological burning programs that promote species diversity (section D.5.4);
- Map Cinnamon Fungus (section D.5.3) and assess its impact on vegetation communities and significant species;
- After mapping Cinnamon Fungus, revisit further use of control measures to protect rare and significant vegetation communities;
- Investigate and where applicable use controls to protect known rare and significant plants and communities from Cinnamon Fungus infection eg. by isolating from nearest infection, enabling direct drainage from infected vegetation and, if approved, spraying with phosphonate.

D.3.2 FAUNA

The wide range of plant communities in Anglesea Heath and their species diversity provide habitat for a range of fauna. Twenty-nine native mammal species have been recorded in Anglesea Heath including the New Holland Mouse (*Pseudomys novaehollandiae*), which is critically endangered in Victoria, and the rare Swamp Antechinus (*Antechinus minimus*).

The New Holland Mouse has a restricted, disjunct distribution in Victoria and is presently found at only four localities: Anglesea, Loch Sport, Providence Ponds and Wilsons Promontory. The species was originally recorded in Anglesea Heath west of the Anglesea River (Kentish, 1982). Since 1982, its known distribution has been restricted to an area of approximately 2,300 hectares, east of the Anglesea River in Anglesea Heath and the Anglesea Flora Reserve (Lock, 1995; Mills, 1992; Wilson, 1990, 1991, 1994, 1996). Management actions identified to recover the species include: reduction and control of habitat fragmentation, enhancement of habitat at key sites through management of fire (section D.5.4), restriction of access and high impact recreation in important habitat; cat and fox control (sections D.5.2, D.7.1, D.7.2); captive breeding and possible re-introduction of captive-bred animals to Anglesea Heath.



STRATEGIC PLAN - MANAGEMENT ISSUES AND STRATEGIES

The survival of the New Holland Mouse in Anglesea Heath depends largely on the conservation and health of suitable plant communities (section D.3.1). Protection of such habitat within Anglesea Heath is therefore a high priority for land managers.

A predictive spatial model for the distribution of optimum habitat for the New Holland Mouse in the Anglesea area has been developed using a Geographical Information System (GIS) (Wilson, 1997a,b; O'Callaghan, 1998; Slattery, 1998). The habitats revealed by this study will be managed to protect important habitat for the New Holland Mouse within Anglesea Heath. The Marshy Creek Special Protection Area (section D.2.5) includes sites where the New Holland Mouse has historically been recorded. These areas have also been revealed by the GIS model to be important habitat. This Marshy Creek Special Protection Area will be managed to provide habitat of optimal successional age, that is between three to seven years post fire (Wilson, 1999).

Ecological burning has been, and will continue to be, undertaken within the Anglesea Heath and adjoining areas, to provide a mosaic of optimum conditions in areas of critical habitat for threatened species (section D.5.4).

Over 100 species of native birds have been recorded in Anglesea Heath, of which seven are significant (see Appendix 3). The range of species is attributable to the wide range of habitats in the area.

The waterways in Anglesea Heath, particularly those close to the Anglesea River mouth, provide habitat for a rare fish, the Spotted Galaxias (*Galaxias truttaceus*) (section D.4.2). The Southern Pygmy Perch (*Nannoperca australis*), which has also been recorded in the Anglesea Heath, is not found in any other Otway catchments west to the Gellibrand River. The unusual distribution for the Southern Pygmy Perch could possibly be associated with the last glacial epoch (Atkins and Bourne, 1983; Koehn and O'Connor, 1990).

There is only very limited information on the distribution, abundance and habitats of reptiles, amphibians and invertebrates within Anglesea Heath. One known rare reptile species known to occur in the area is the Swamp Skink (*Egernia coventryi*).

Two species that occur in Anglesea Heath are listed under the *Flora and Fauna Guarantee Act 1988*. These species are the New Holland Mouse (*Pseudomys novaehollandiae*) and Rufous Bristlebird (*Dasyornis broadbenti*). Action Statements have been prepared for both. Further information on the distribution, ecological and management requirements of fauna, especially significant fauna, will continue to be sought. Information revealed by

studies on the requirements of threatened fauna will then be used to guide management of important habitat. Continuing surveys and research (section D.10.1) are increasing knowledge and understanding of significant fauna and their habitat requirements within Anglesea Heath.

Management actions undertaken in Anglesea Heath for the protection of fauna will focus on the conservation of habitat, in particular critical habitats for rare and threatened species such as the New Holland Mouse.

AIMS

Management Outcomes for this Key Area are to:

- Conserve indigenous fauna and maintain species diversity and genetic diversity;
- Protect endangered species and maintain and/or enhance the integrity of their habitats.

STRATEGIES

Management Strategies for this Key Area are to:

- Ensure the habitats of New Holland Mouse and Rufous Bristlebird are managed to provide the optimum requirements for those species;
- Encourage and promote research on significant fauna species and communities (section D.10.1);
- Develop an ecological burning program that promotes species diversity and protects habitats of significant fauna and their communities (section D.5.4);
- Minimise the impact of pest animals, pest plants and other threatening processes on the fauna of Anglesea Heath (section D.5).

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Implement the recommendations of the Action Statements for New Holland Mouse and Rufous Bristlebird;
- Develop and implement a coordinated pest animal control program involving Deakin University, adjacent land managers and other interested parties (section D.5.2);
- Work in conjunction with the recovery team, as required, to ensure the highest possible likelihood of success and continued vigour of the New Holland Mouse.

D.3.3 RESEARCH

Significant information and knowledge about the natural values of Anglesea Heath have been gained through research. Continued support by the Management Group (section C.4.3) in the pursuit of further understanding about the ecology of Anglesea Heath will be integral to the conservation of the Heath's biodiversity.

STRATEGIC PLAN - MANAGEMENT ISSUES AND STRATEGIES

Anglesea Heath has been the subject of continuous research for over a decade. The main advocates of this research have been Deakin University, Alcoa, Parks Victoria/Department of Natural Resources and Environment, ANGAIR Inc. and the Australian Heritage Commission. In the case of Alcoa and Parks Victoria, the research has often been commissioned to scientists and consultants. Recent research has been substantial and has assisted in the listing of most of Anglesea Heath on the National Estate Register.

Due to its past contribution, and the importance of research in the future management of Anglesea Heath, a Research Workgroup will be convened to exchange information with the Management Group regarding research (sections C.4.3 and C.4.5). Close liaison is required between the Management Group and the Research Issue Workgroup to ensure that the most needed and relevant research is undertaken in Anglesea Heath. This liaison will also ensure that management actions are undertaken with a sound understanding of the findings of current research. It is intended that the Research Issue Workgroup will play an active role in the coordination of research within Anglesea Heath to increase the knowledge and effectiveness of management.

Protection of the natural values and conservation significance of Anglesea Heath will, in the future, depend greatly on research into the areas of Cinnamon Fungus identification and control, pest plant and animal control, and fire ecology (sections D.5.1, D.5.2 and D.5.4). For example, Cinnamon Fungus was identified in Anglesea Heath in 1972, and represents a serious threat to its nationally significant flora and fauna. Current studies into possible control methods for Cinnamon Fungus may have major implications for the management of Anglesea Heath. Research in Anglesea Heath involves people, use of vehicle tracks and, in some cases, work away from tracks (section D.7.2). It is important that whilst doing research, people are not causing an unacceptable impact. A code of conduct for all researchers within Anglesea Heath is required. It is expected that the Research Workgroup will develop this policy for researchers and other users.

AIMS

Management Outcomes for this Key Area are to:

- Encourage research within Anglesea Heath;
- Acquire research information that is lacking, or most required, to maintain the biodiversity and other values of Anglesea Heath.

STRATEGIES

Management Strategies for this Key Area are to:

- Support research into key biodiversity conservation areas including: Cinnamon Fungus, pest plant and animal control, soil conservation, and threatened

species conservation and management (sections D.3.1, D.3.2, D.5.1, D.5.2 and D.5.4);

- Utilise current research findings and recommendations for innovative management of biodiversity conservation and cultural protection in Anglesea Heath.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Develop a library of all study documents at an accessible site;
- Establish a Research Issue Workgroup (section C.4.5);
- Coordinate and target research projects to protect the most significant and threatened values within Anglesea Heath (sections D.3.1 and D.3.2).

D.4 KEY MANAGEMENT AREA: PROTECTION OF NATURAL VALUES.

D.4.1 SOIL CONSERVATION AND EROSION

The soil types present in Anglesea Heath reflect the various soil-forming factors such as climate, parent material, position in the landscape, age of formation and vegetation. Variations in these factors have led to a range of soil types occurring in Anglesea Heath. The main characteristic of the vast majority of soils in the area is the distinct texture contrast between the relatively light-textured surface soils and clay subsoil.

The shallow surface soils are highly erodible; this erodibility is a major threat to the vigour, distribution and diversity of flora of the area (section D.3.1).

The retention of a healthy vegetative cover is the only way to protect and hold in place the shallow light textured surface soils, therefore the conservation of vegetation and re-vegetation of denuded sites are imperative management actions within Anglesea Heath. The relatively low rainfall of the area (approximately 700 mm annually) restricts the ability of vegetation to quickly re-establish once lost.

The area's soils and vegetation, in their natural condition, are generally stable. When soil is deprived of its protective vegetation cover, it is particularly susceptible to a variety of soil deterioration processes. Soil erosion is a problem that is most prevalent on some of the roads and tracks (section D.7.2) and the loss of soil can have consequences for many natural values of Anglesea Heath. For example, as Geoff Carr (Ecology Australia) suggests, 'disturbances such as soil erosion can facilitate weed invasion, as opportunistic species colonise disturbed sites. In addition, eroded material moving downslope can change site conditions where it is deposited ultimately in drainage lines, causing smothering of ground cover vegetation, altering soil structure, nutrient status, and siltation and turbidity of waterways'. (Carr, 1995).



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Within Anglesea Heath these effects are often localised by the natural filtering characteristics of the Scented Paperbark swamps. Many creek crossings create sites of localised erosion where pools of water are formed that do not freely drain.

Widespread erosion is a problem that land managers cannot easily address without costly and visually intrusive earthworks and therefore prevention is essential.

Soil erosion caused by recreation and poorly located tracks is a continuing major issue in the Anglesea area (sections D.7.1 and D.7.2) and has led to degradation of values and threatened soil stability. Identifying causes, monitoring effects and implementing measures to prevent, control and rehabilitate soils are imperative.

AIMS

Management Outcomes for this Key Area are to:

- Protect soils from erosion;
- Maintain natural fertility levels and structure of the soil.

STRATEGIES

Management Strategies for this Key Area are to:

- Minimise vegetation and soil disturbance associated with recreation and management actions;
- Develop an erosion-monitoring program that identifies causes and locations of erosion;
- Ensure erosion control works do not further contribute to threatening processes including the spread of Cinnamon Fungus.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Stabilise and rehabilitate known eroded sites;
- Physically restrict public access to areas assessed to be Erosion Hazard Areas, and enforce the Land Conservation (Vehicle Control) Act 1972;
- Rationalise the road and track network to reduce fragmentation and minimise disturbance of soil, following the track audit (section D.7.2);
- Implement erosion monitoring, identifying, documenting and assessing locations of erosion as part of the track audit (section D.7.2);
- Conserve topsoil during any development works and re-use in Anglesea Heath;
- Identify creek crossings that are causing excessive modification of aquatic habitats (section D.4.2) and undertake programs to ensure such sites are rehabilitated and maintained;
- Test soil for Cinnamon Fungus prior to any significant soil movement (section D.5.3);

- Construct new fire control lines, where possible on appropriate grade, and rehabilitate tracks after use (section D.5.4).

D.4.2 WATER RESOURCE MANAGEMENT

Anglesea Heath is drained by the Anglesea River (Marshy Creek) and Salt Creek flowing southeast into an estuary that is intermittently open to Bass Strait. For most of their length the waterways within Anglesea Heath exist as Tea-tree swamps on a porous peaty soil with the flow alternating between surface and sub-surface seepage (Atkins and Bourne, 1983). The waterways in the lower Anglesea Heath provide habitat for a rare fish, the Spotted Galaxias (*Galaxias truttaceas*) (McCarraher, 1986).

Another aquatic species, Southern Pygmy Perch (*Nannoperca australis*) is found in Anglesea Heath; this species is not recorded in any other Otway Catchments (section D.3.2).

If the unique Paperbark Swamps and aquatic values of Anglesea Heath are to be upheld, then threatening processes that alter hydrology, must be mitigated through management.

AIMS

Management Outcomes for this Key Area are to:

- Maintain natural hydrological systems and regimes;
- Maintain riverine and wetland ecology and health.

STRATEGIES

Management Strategies for this Key Area are to:

- Ensure siltation and turbidity do not detrimentally effect water quality;
- Ensure that all management actions are undertaken to minimise detrimental effects on hydrological systems and are generally in accordance with the Code of Forest Practices (sections D.5.4 and D.7.2);
- Investigate and mitigate processes that threaten aquatic values or alter hydrology.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Implement erosion control measures where water quality is being compromised by soil disturbance and erosion (section D.4.1);
- Monitor ground water quality and surface water quality;
- Rationalise river/creek crossings and remove those that are not identified by Appendix 1, Map 4, or the track audit, as being open to the public.

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D.5 KEY MANAGEMENT AREA: IMPACT MANAGEMENT

D.5.1 PEST PLANTS

The infestation and spread of pest plants is a major management issue within Anglesea Heath. Pest plants pose a considerable risk to its natural values by depleting the diversity and integrity of flora and fauna that occur there (sections D.3.1 and D.3.2).

Sixty-three pest plant species are known to occur in Anglesea Heath. Many are environmental weeds that are native to Australia (a native plant species is classified as a weed if it is planted or germinates where it does not naturally occur).

Environmental weeds are a category of pest plants that have detrimental impacts on indigenous vegetation. The invasion by environmental weeds is of particular concern in Anglesea Heath as their infestation threatens the regeneration and survival of indigenous flora and fauna (sections D.3.1 and D.3.2).

The infertile soils of Anglesea Heath (section D.4.1) are not particularly conducive to exotic weed species. This, coupled with the fact that many disturbed areas within Anglesea Heath are surrounded by indigenous vegetation (section D.3.1), means that large sections of Anglesea Heath are relatively weed-free. However, fragmentation of vegetation communities caused by excessive roads and tracks can increase invasion by pest plants as roads provide dispersal points penetrating otherwise intact vegetation communities.

The vegetation within Anglesea Heath has the potential to be invaded and seriously degraded by pest plants that exist both within its boundaries and that have been planted on adjacent land. This is demonstrated by the prevalence of weed infestations in sections of Anglesea Heath and nearby Parks and Reserves that have large areas of residential interface.

Numerous pest plant species in Anglesea Heath have escaped from adjoining areas previously planted with species that are now known to be environmental weeds. Some areas adjacent to Anglesea Heath have been revegetated and landscaped with non-indigenous species, some of which are now known to be environmental weeds. These species have the potential to spread beyond existing boundaries, providing a seed source that potentially allows pest plants to germinate and spread into Anglesea Heath.

The Anglesea town itself, the waste disposal site, and freehold properties abutting Anglesea Heath are also a source of pest plants; for example, garden escapees such as Bluebell Creeper (*Sollya heterophylla*) can smother indigenous vegetation and reduce flora diversity (section D.3.1).

In general woody weeds are the most threatening pest plants in Anglesea Heath, as the woody weed species that occur in Anglesea Heath are particularly invasive. Included in this group is Coast Wattle (*Acacia longifolia* var. *sopharae*), which is most widespread around the town of Anglesea and in the Mount Ingoldsby area and Boneseed (*Chrysanthemoides monilifera*). Boneseed is rapidly extending its range in the heathy woodlands near the town; it smothers native species reducing local plant diversity.

Introduced pine species are widespread in Anglesea Heath; many parent plants originate from softwood trials undertaken during the 1930s. The spread of pines throughout Anglesea Heath is not only an environmental problem, but also creates a visual intrusion from vantage points throughout the area.

Birds can disperse the seeds of pest plants, sometimes transporting them kilometres from the source plant. Seed dispersal by birds creates new infestations that need to be targeted swiftly while they are small.

Prescribed burning and wildfire events (section D.5.4) can result in seed germination on an immense scale, increasing the size and density of weed infestations. Boneseed, for example, germinates readily after fire. These effects need to be considered when planning weed control and fire strategies.

Other environmental weeds in the area include: Coast Tea-tree (*Leptospermum laevigatum*), Sweet Pittosporum (*Pittosporum undulatum*), Giant Honey Myrtle (*Melaleuca armillaris*), Green Honey Myrtle (*Melaleuca diosmifolia*), Wirilda (*Acacia retinoides*) and Myrtle Wattle (Western Australian province) (*Acacia myrtifolia*) (Carr, 1995).

Depletion of the natural values of Anglesea Heath is probable without appropriate management of pest plants. This management needs to be cooperative, involving all land management agencies in the region, 'unless managed, plant communities will become floristically impoverished and indigenous species will ultimately be unable to regenerate due to competition from non-indigenous species' (Carr et al, 1992).

Local community groups have worked tirelessly to control pest plants in Anglesea Heath (section D.9.1); this involvement should be encouraged and supported by larger scale programs undertaken by land managers. A preliminary list of major environmental weeds of the area has been compiled (see Appendix 5).

AIMS

Management Outcomes for this Key Area are to:

- Maintain biodiversity within Anglesea Heath;
- Minimise the introduction and spread of pest plants;



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- Minimise the impact of pest plant control programs on indigenous flora and fauna (sections D.3.1 and D.3.2).

STRATEGIES

Management Strategies for this Key Area are to:

- Control and where possible eradicate pest plants through the employment of an integrated program;
- Monitor and evaluate the effectiveness of all pest plant control programs. Vary programs as necessary to improve effectiveness and discontinue ineffective programs;
- Raise community awareness (section D.8.1) in relation to the role individuals can play in the spread and control of pest plants;
- Consider the implications of the possible increase of infestations due to seed germination following prescribed burns and attempt to control any resulting infestations (section D.5.4).

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Continue to control the key invasive weeds within Anglesea Heath, before an integrated pest plant control strategy is developed;
- Develop and implement a pest plant control strategy for Anglesea Heath incorporating the following principles:
 - prioritise protection of areas of high biodiversity;
 - prioritise control of weeds with a high potential to spread and become uncontrollable;
 - identify and control new or isolated infestations before they spread;
- Continue to support community groups in their activities to control the spread of weeds in and around Anglesea Heath (section D.9.1);
- Implement a GIS weed-mapping and weed-monitoring program;
- Liaise with the Surf Coast Shire, the Corangamite Catchment Management Authority, VicRoads, local interest groups and landowners to develop an integrated and cooperative approach to pest plant management in and around Anglesea Heath;
- Liaise with adjacent landowners and the Surf Coast Shire to seek reductions in the planting of invasive species near Anglesea Heath. Promote public awareness of the impacts of environmental weeds (section D.8.1).

D.5.2 PEST ANIMALS

Pest animals are introduced species that occur in an environment with few, if any, natural predators or biological controls. This imbalance often results in a rapid

increase in their populations, which can cause a range of problems for the natural environment. Some pest animals, such as feral cats, are escaped domestic animals; others such as rabbits and foxes were introduced for hunting.

The impact of pest animals upon the biodiversity of Anglesea Heath is not fully understood, although the problems they cause can be generally summarised as:

- competing with native animals for food, nesting sites and other resources;
- preying on native animals (section D.3.2);
- dispersing seed of weed species;
- increasing soil erosion (section D.4.1); and
- carrying disease, which can be transmitted to native animals (section D.3.2).

A study by Sue Hutchings of Deakin University at Geelong (Hutchings, 1996) has confirmed that, in Anglesea Heath, the major pest animal threats are from foxes and cats, which are widespread and are known to prey on native fauna.

Sue Hutchings' research on cats and foxes in Anglesea Heath has provided an increased understanding of the specific behaviours of cats and foxes and their impacts on native mammals. The density of foxes in Anglesea Heath is extremely high, with between five and seven foxes every square kilometre (Hutchings, 1996). A wide range of native fauna is eaten by foxes in Anglesea Heath, including Swamp Wallaby, Eastern Grey Kangaroo, Common Ringtail Possum, Southern Brown Bandicoot and Bush Rats (Hutchings, Wilson and Wolridge, 2000). Investigations into fox control programs show that they need to be conducted regularly, and over a long term, to reduce fox numbers and improve the survival rate of mammals (Hutchings, 1996; Wolridge et al, 1996). The effects of foxes on rare and endangered fauna are unclear. However the prevention of predation on species such as the New Holland Mouse is a priority (section D.3.2).

Research on the behaviour and predation habits of cats in Anglesea Heath is currently underway (Hutchings, 1999). Results from studies so far confirm that the Anglesea waste tip supports a large population of cats.

Rabbits are common around the periphery of Anglesea Heath, while they are less abundant in the dense intact vegetation communities. The impact of rabbits on the ecology of the area is not well understood.

Four exotic bird species are present in Anglesea Heath. The introduced Starling, which is widespread, is known to soil and takeover tree hollows that may otherwise be used by native species. Spotted (Indian) Turtledoves, Sparrows and Blackbirds are also quite common in and around the town of Anglesea. The Indian Mynah has been sighted at Anglesea, and has the potential to displace native bird

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species by out competing for nesting sites (Traynor, pers. comm.). The Indian Mynah's spread into the Anglesea area is a major environmental concern. There are at this stage no safe or effective control methods for exotic bird species on public land.

Members of the public have reported sightings of feral pigs and goats to Parks Victoria staff. Follow-up patrols undertaken by Parks Victoria to trial control measures have not been successful in confirming the presence of pigs and goats in Anglesea Heath or Angahook-Lorne State Park. Because of their ability to cover large areas, monitoring of the occurrence of pigs and goats will require a continuing and coordinated approach between land management authorities.

The dense heathy vegetation predominant in Anglesea Heath restricts the activity of some pest animal species by reducing their mobility. This protection is temporarily lost if an area is burnt by wildfire or prescribed burning (section D.5.4). Follow-up control measures may be required at these times, especially where significant flora and/or fauna are known to occur.

AIMS

Management Outcomes for this Key Area are to:

- Maintain biodiversity within Anglesea Heath;
- Minimise the introduction and spread of pest animals;
- Minimise the impact of pest animal control programs on native fauna (section D.3.2).

STRATEGIES

Management Strategies for this Key Area are to:

- Control and where possible eradicate pest animals through the employment of an integrated program;
- Raise community awareness (section D.8.1) in relation to responsible pet ownership and the threat of pest animals to Anglesea Heath;
- Monitor and evaluate the effectiveness of all pest animal control programs. Vary programs as necessary to improve effectiveness and discontinue ineffective programs.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Liaise with Deakin University regarding the pest animal control programs required for the protection of the New Holland Mouse and implement recommended strategies (section D.3.2);
- Implement a pest animal control program that is targeted to:
 - protect significant flora and fauna species and their habitats (sections D.3.1 and D.3.2);
 - reduce predator numbers in recently burnt or

slashed areas, or where significant fauna are more vulnerable to predation;

- complement adjoining landowners, and managers' control programs;
- Liaise with other land managers, Deakin University and the Surf Coast Shire, to develop an integrated and cooperative approach to pest animal management in and around Anglesea Heath;
- Liaise with the Surf Coast Shire to reduce the numbers and impact of feral cats around the Anglesea waste tip;
- Continue to assist and support research programs for pest animals and their impacts on native flora and fauna (section D.10.1).

D.5.3 CINNAMON FUNGUS (*PHYTOPHTHORA CINNAMOMI*)

Cinnamon Fungus (*Phytophthora cinnamomi*) is an introduced pathogen that invades plant roots, of susceptible species preventing water transport in the root systems, which results in death or severe drought effects. It is responsible for extensive 'dieback' of native vegetation and is widespread in forests, woodlands and heathlands, ranging from Western Australia to Queensland. In severely affected localities, large areas have been denuded of colourful nectar and pollen producing indigenous species that are replaced by resistant grasses and sedges. The resultant change in species composition reduces flora and fauna diversity. In addition, steep sites may undergo severe erosion and a more widespread loss of indigenous flora and fauna.

Cinnamon Fungus has been listed as a threatening process under the *Victorian Flora and Fauna Guarantee Act 1988*, and the *Endangered Species Act of Australia 1992*. Depletion of vegetation diversity caused by Cinnamon Fungus often has detrimental effects on habitat quality and can reduce mammal and invertebrate populations and communities (Wilson et al, 1997, 1999).

In Anglesea Heath, Cinnamon Fungus has lethal effects on a number of indigenous species including Grass Trees, Horny Cone Bush, various pea species and most plants in the Proteaceae family.

Evidence of Cinnamon Fungus damage was initially observed in Anglesea Heath in 1972. However, the pathogen was not there until recently (Wilson et al, 1997). The pathogen represents a serious threat to the nationally significant flora and fauna communities that exist there (section D.3.1 and D.3.2). The occurrence of Cinnamon Fungus within Anglesea Heath has not fully been mapped. However, field observation suggests it is widespread (Wilson et al, 2000).

The pathogen is most frequently spread downhill with drainage water. Zoospores swim or are carried in this



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water. It is commonly spread and transported in gravel and other roading materials, on vehicle tyres, horses' hooves and people's shoes. Native animals may also transport the pathogen as they move from an infected area to an uninfected area. The greatest risk of spread of the disease is likely to be large-scale earth works such as roadworks and construction of fire breaks during wildfires or prescribed burns (section D.5.4). It is clear that tracks, roading, vehicles and people have contributed substantially to its spread, (Wilson et al, 1997, 2000). Its growth and distribution are influenced by temperature, soil type, nutrient status and water availability (Wilson, 1996). Cinnamon Fungus is most active when moisture levels in the soil are high and temperatures are moderate (between 12-32 degrees Celsius). Field sampling for the pathogen needs to be undertaken during such conditions to increase the probability of detection (Aberton and Wilson, 1998).

The most effective and appropriate control method for reducing the spread of Cinnamon Fungus at this stage is to control the spread of the disease from infected to non-infected areas. This can be achieved in Anglesea Heath by protecting uninfected areas from contamination by restricting access. Widespread testing and mapping for the occurrence of Cinnamon Fungus is urgently required to enable an effective hygiene plan to be implemented. Hygiene procedures for management works that involve earthmoving have been developed and recently implemented. These measures will be used in Anglesea Heath to ensure management activities do not increase the incidence of Cinnamon Fungus within Anglesea Heath and to other areas that machinery may be transported to after operating in Anglesea Heath. These measures include hosing down all off-road vehicles, equipment, machinery, tools and boots before they leave a diseased area. It is important that only pathogen-free gravel is used in future road works.

An assessment of Cinnamon Fungus was undertaken by Ian Colquhoun (Alcoa) and he subsequently wrote a report on the implications of Cinnamon Fungus in large areas of Anglesea Heath in 1996. The recommendations in this report form part of the basis for the strategies to be implemented at Anglesea Heath.

Deakin University, Geelong is currently undertaking research to investigate major factors contributing to the spread of Cinnamon Fungus (section D.10.1) and possible control methods. These studies are trialing the application of phosphonate as a foliage spray to control the disease. The results of this research will be monitored for their potential applicability to Anglesea Heath. Results will need to prove the application of phosphonate is effective in killing and preventing the spread of the pathogen, while not adversely affecting other plants and animals, including

beneficial soil organisms. Deakin University is also undertaking the mapping of Cinnamon Fungus in the area.

AIMS

Management Outcomes for this Key Area are to:

- Protect healthy vegetation from infection;
- Minimise the spread of Cinnamon Fungus in Anglesea Heath.

STRATEGIES

Management Strategies for this Key Area are to:

- Prepare a comprehensive Cinnamon Fungus management strategy that:
 - maps the incidence of Cinnamon Fungus in Anglesea Heath;
 - outlines detailed measures to manage and control infestations and protect non-infected sites.
- Monitor and evaluate the effectiveness of all Cinnamon Fungus minimisation strategies in Anglesea Heath. Vary measures as necessary to improve effectiveness and discontinue ineffective programs.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Encourage and support research into the occurrence of Cinnamon Fungus, possible control methods and further investigation into susceptible species (section D.10.1);
- Increase the awareness of Cinnamon Fungus among user groups and visitors to Anglesea Heath and in particular educate users about the impacts and ways to prevent the spread of Cinnamon Fungus (section D.8.1);
- Enforce Anglesea Heath Regulations to ensure all recreational users stay on open named roads and tracks, in accordance with Appendix 1;
- Continue to attempt to minimise the risk of spread of Cinnamon Fungus in Anglesea Heath by implementing the following strategies, before a comprehensive Cinnamon Fungus control strategy is developed:
 - identify non-infected sites and give priority to ensuring the long-term protection of these areas against the spread of the disease;
 - minimise or where possible exclude access to non-infected sites;
 - undertake slashing rather than grading, road and track batters (section D.7.2);
 - erect signs at entrance points within Anglesea Heath alerting visitors to the threat of Cinnamon Fungus and basic control measures;
 - conduct Cinnamon Fungus surveys before any works that will involve substantial soil disturbance;

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- maintain roads and tracks within Anglesea Heath to ensure most efficient drainage, including regular clearing of drains and culverts (section D.7.2);
- avoid moving or relocating infected gravel or soil during road and track construction and maintenance works (section D.5.6);
- ensure that road gravel relocated within Anglesea Heath is taken from a source that is free from Cinnamon Fungus, by testing samples and ensuring surrounding vegetation is green and healthy downhill from the source;
- wherever possible, use existing roads and tracks and slashed breaks, rather than mineral earth breaks for fire control lines (section D.5.4);
- avoid constructing control lines during burns that pass between infected and uninfected areas (section D.5.4);
- if for any reason works are undertaken off-track in Anglesea Heath ensure vehicles, plant, tools and boots are effectively disinfected before and after works;
- ensure that testing for Cinnamon Fungus is undertaken at times when the pathogen is most likely to be detected if present;
- in conjunction with user groups, identify and implement suitable hygiene measures to reduce the spread of Cinnamon Fungus into uninfected areas;
- Liaise with Surf Coast Shire to minimise the risk of spread of Cinnamon Fungus during road maintenance works;
- In all track maintenance prioritise the draining and or raising of waterlogged areas that favour Cinnamon Fungus (use uninfected gravel).

D.5.4 FIRE MANAGEMENT

Fire has played an integral part of the biological evolution in Australia. Our vegetation has evolved with fire and many species have adapted either to survive fire or re-colonise after fire. Some species depend on fire to maintain or increase population levels (Carr, 1995).

As Carr suggests, 'while current prescribed burning is done from the point of view of public and assets safety, it is not necessarily the optimal fire regime for indigenous vegetation or fauna.

The frequency, timing and intensity of prescribed burns need to be considered in the maintenance of biological values'.

The Department of Natural Resources and Environment (DNRE) is responsible for fire management within Anglesea Heath. Current fire protection measures are in accordance

with the Otway Fire Protection Plan (DCNR, 1995a) and the Code of Practice for Fire Management on Public Land in Victoria (DCNR, 1995b). The whole of Anglesea Heath was burnt during the 1983 Ash Wednesday fires.

The Otway Fire Protection Plan aims to protect life, property and natural resources from fire by frequent burning of small areas close to towns and other assets. This document sets out fuel reduction burning zones for all public land within the Otways. The fuel reduction burning zones for the Otways (DCNR 1995b) are categorised into four zone types. The zones range from providing the highest level of protection of life, property and public land values and assets (Zone 1) to areas where fire protection requirement is lower (Zone 4) and where environmental constraints necessitate a different frequency (DCNR, 1995).

While fire protection takes priority over ecological management in all Burning Zones within Anglesea Heath, both are considered. Priority 4 Burning Zones allow for flexibility to incorporate ecological management practices into burning regimes. The Otway Fire Protection Plan includes, as an aim for Burning Zone 4, that ecological management of significant flora and fauna be considered and allowed for. Recent fuel reduction burning efforts in Anglesea Heath have been undertaken with the dual purpose of township protection and enhancement of habitat for rare species. Ecological burns are planned for the 2002-2003 season to provide areas of optimum post-fire conditions for the New Holland Mouse (section D.3.2). All prescribed burns impact on landscape values, pose the risk of escape and increase the risk of soil erosion. Prescribed burning in Anglesea Heath will be planned to minimise these impacts. Known information about the vegetation of Anglesea Heath could be used to further determine the sensitivity or dependence of vegetation communities on fire (section D.3.1). Research that will determine the vital attributes of species within Anglesea Heath should be encouraged, as this information could help to guide future ecological management of fire for the area (section D.10.1).

The risk of fire spreading from open campfires is a significant threat to Anglesea Heath and the adjoining Angahook-Lorne State Park. This risk will be minimised through the prohibition of open fires in conjunction with increased visitor awareness and ranger patrols (section D.8.1).

The risk of spread of Cinnamon Fungus (section D.5.3) from fire management vehicles is present whenever fire fighting or prevention works occur off-road in Anglesea Heath. This risk will be minimised by the implementation of washdown procedures.



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AIMS

Management Outcomes for this Key Area are to:

- Protect human life, property and Anglesea Heath's natural values from the adverse effects of fire;
- Minimise the adverse effects of fire protection and suppression activities on Anglesea Heath values;
- Maintain ecologically appropriate fire regimes.

STRATEGIES

Management Strategies for this Key Area are to:

- Promote public awareness of the fire danger within Anglesea Heath and the rationale behind fire management actions;
- Coordinate fuel reduction and ecological fire management so that, wherever possible, they complement one another;
- Develop a heathland Fire Management Plan for Anglesea Heath that determines ecologically appropriate fire regimes and integrates relevant aspects of fire management;
- Promote the key measures of the Fire Management Plan for Anglesea Heath to be included, where appropriate, in the Otway Fire Protection Plan, when it is reviewed.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Provide interpretative material regarding fire safety and management (section D.8.1);
- Prohibit open fires and fuel stoves in Anglesea Heath;
- Patrol sites of highest visitor use, particularly in periods of high fire danger;
- Enforce fire regulations and restrictions on the use of fire within Anglesea Heath;
- Use, where possible, the following least disturbance strategies for wildfire suppression in Anglesea Heath (in accordance with the Code of Practice for Fire Management on Public Land in Victoria, (DCNR, 1995a):
 - fireline construction using hand crews;
 - air attack to drop fire retardant, water or foam;
 - back burning from existing roads and tracks;
 - using existing roads and tracks or topographic features as control lines;
 - where possible avoid the use of bulldozers within the Heritage Area;
 - where possible avoid the use of bulldozers in areas infected with Cinnamon Fungus;
- Undertake washdowns and other available measures to prevent the introduction and/or spread of pest plants

and Cinnamon Fungus (section D.5.3) during prescribed burning activities;

- Close and revegetate any new control lines after fire in accordance with the Code of Practice for Fire Management on Public Land in Victoria;
- Develop Anglesea area ecological burn strategy,

D.5.5 COAL MINING

This Management Plan has been developed to guide the management of the Land for Conservation, as distinct from the Mining Area, which is managed by Alcoa (refer to Map 2). Coal mining is recognised in this Management Plan as an impact that requires management due to the close geographic and legal relationship between the Mining Area and the more extensive Land for Conservation.

The current Mining Area comprises the open cut mine, power station buildings and other associated infrastructure, an area covering 490 hectares in total (of which some 80 hectares is freehold land owned by Alcoa). The Anglesea Power Station was commissioned in 1969 and has been operated since then by Alcoa and is essential to the production of aluminium at Alcoa's Point Henry Smelter, near Geelong. Alcoa's mining rights extend to 2061 and this Management Plan allows Alcoa continued use and management of the Mining Area and any future expansion of that area, in accordance with the requirements of the *Mines (Aluminium Agreement) Act 1961*.

The aims, strategies and actions listed below are and will remain the responsibility of Alcoa. Where possible, opportunities will be sought to utilise the post-mined area for the future benefit of Anglesea Heath, possibly through research and/or recreation opportunities. In addition, any rehabilitation works undertaken within the Mining Area will be undertaken to be consistent with, and complement the values and management strategies of, the surrounding Anglesea Heath.

AIMS

Management Outcomes for this Key Area are to:

- Minimise impact of coal mining and power generation on surrounding environment;
- Utilise economic reserves of coal;
- Restore post-mined areas to meet community and legislative requirements.

STRATEGIES

Management Strategies for this Key Area are to:

- Coordinate mine planning to minimise impact on Anglesea Heath;
- Investigate viability of the post-mined area providing for recreational and other activities as an alternative to the Anglesea Heath;
- Investigate the suitability for post-mined areas to be used as a venue for trialing environmental monitoring

ANGLESEA HEATH

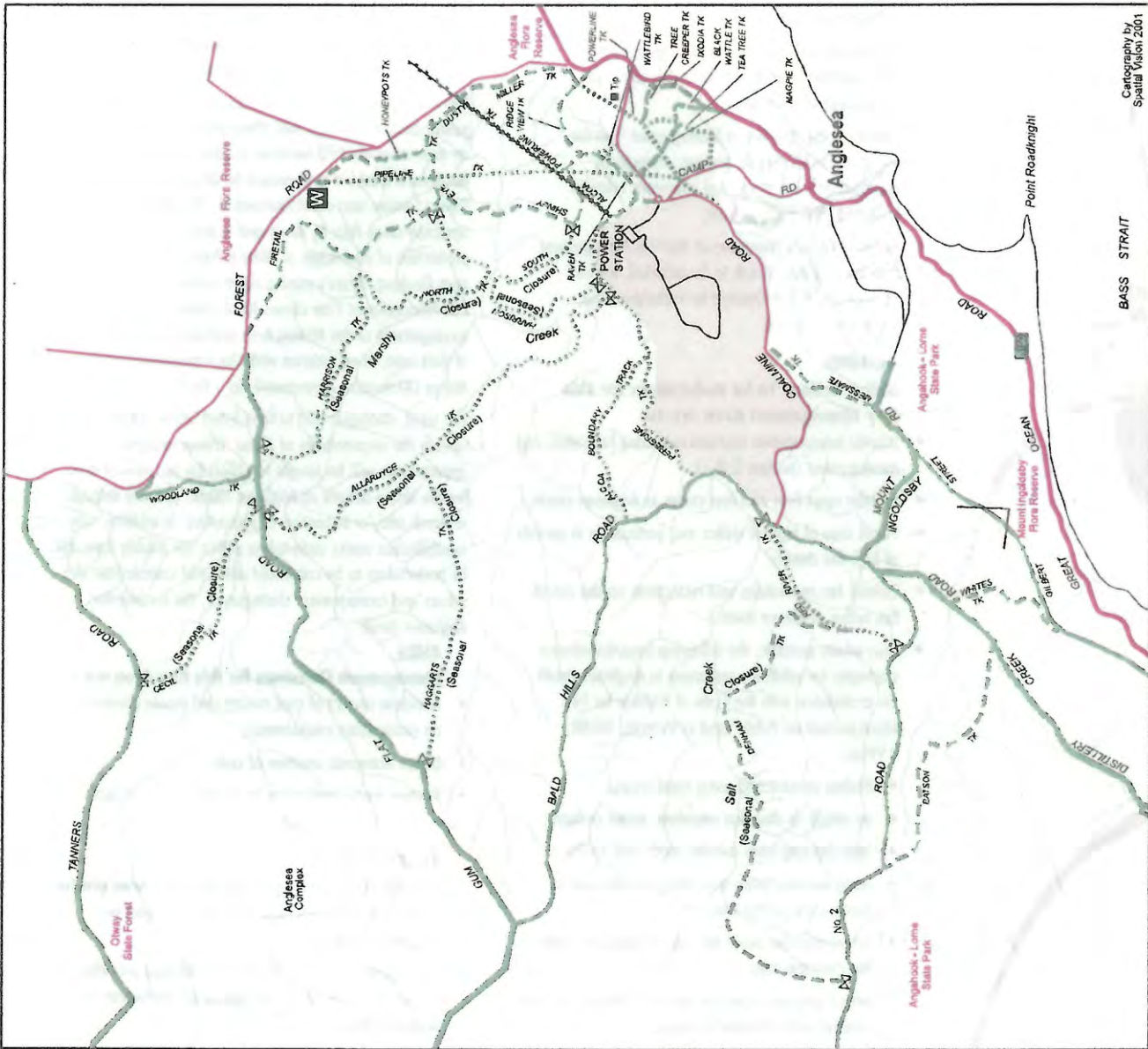


Parks, Reserves & State Forest
Land for Conservation

- Mining Area
- Powerline & Easement (Alcoa)
- Pipeline (Barwon Water)
- Water Reservoir (Barwon Water)

Seasonal closure track
(May contain Class 4 or Class 5 tracks)

- Class 1** - all weather, two lanes
- Class 2** - all weather, one lane
- Class 3** - dry weather only, minor road
- Class 4** - dry weather only, 4WD, unsurfaced tk
- Class 5** - dry weather only, 4WD, vehicle tk



Cartography by Spatial Vision 2001

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STRATEGIC PLAN - MANAGEMENT ISSUES AND STRATEGIES

and research (e.g. Cinnamon Fungus control (section D.5.3));

- Utilise accumulated rehabilitation knowledge for restoration of other degraded sites on Anglesea Heath (section D.5.6);
- Use the site to trial fund-generating initiatives that can be used to support the management of Anglesea Heath.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Monitor impact of operation on the surroundings and the community;
- Investigate the provision of an appropriate water body for community use as part of the mine closure;
- Provide opportunities for further study into leaf fossils uncovered in the mining process.

D.5.6 GRAVEL EXTRACTION

Within Anglesea Heath several former gravel extraction sites exist, most of which are only partly rehabilitated. Revegetation efforts that have been undertaken have not been completely successful due to disturbance by illegal vehicle traffic and loss of topsoil (sections D.4.1 and D.7.2). Further works are necessary at former gravel extraction sites to arrest further soil loss and re-establish vegetative cover. For successful rehabilitation of these areas it is important that the sites are effectively closed off to vehicles and that this strategy be enforced. Also it is essential that sound principles be utilised, including revegetating with indigenous plants and strategically controlling water run off. Monitoring the success of rehabilitation and reviewing methods should be part of the rehabilitation strategy.

AIMS

Management Outcomes for this Key Area are to:

- Rehabilitate former gravel extraction sites;
- Prevent further commercial gravel extraction from the Anglesea Heath (refer to Map 2).

STRATEGIES

Management Strategies for this Key Area are to:

- Close off and rehabilitate extractive sites, and then restrict vehicle access to sites (section D.7.2);
- Utilise knowledge already gained by Alcoa in future rehabilitation actions;

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Prohibit commercial sand and gravel extraction from within the Anglesea Heath;

- Investigate minor sand and gravel extraction as an element of a restoration strategy and an opportunity to provide track maintenance material;
- Utilise the principles for rehabilitation within Anglesea Heath as follows:
 - drainage works;
 - indigenous plants of local provenance only;
 - pre-rehabilitation weeding and, where necessary, follow-up weeding;
 - consultation with conservation groups and individuals in planning of rehabilitation;
 - assessment of soil type and aspect to determine appropriate species mix;
 - monitor success rates and, when necessary, review methods.

D.5.7 APICULTURE

There are five designated apiary sites in Anglesea Heath, issued under one apiculture permit. In addition, there are a number of sites available for apiculture in Otway State Forest to the northwest of Anglesea Heath (refer to Map 2).

The effect of introduced bee species on indigenous flora, fauna and natural processes is not fully understood (sections D.3.1 and D.3.2). The existing permit will continue to be allowed to operate, and will be managed to minimise physical impacts to surrounding vegetation until monitoring or research indicates that apiculture should be modified or terminated.

AIMS

Management Outcomes for this Key Area are to:

- Minimise the effect of apiculture on Anglesea Heath values.

STRATEGIES

Management Strategies for this Key Area are to:

- Provide for apiculture at existing levels, pending the outcome of relevant monitoring and research;
- Assess the appropriateness of apiculture within Anglesea Heath based on findings.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Limit apiculture to the five designated sites;
- Take action following the outcomes of monitoring.



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D.5.8 MANAGEMENT OF UTILITIES AND EASEMENTS

An underground pipeline maintained by Barwon Water, runs north-south through Anglesea Heath. Several water supply dams are maintained throughout the area by DNRE, primarily for fire suppression activities. Trigonometric survey points are located at Wormbete Road, Mount Ingoldsby, Bald Hills Road, Coalmine Road and Forest Road.

The major power transmission line in Anglesea Heath is a high-voltage line, running from the Alcoa Power Station in an easterly direction through Anglesea Heath. This line runs 35 km to Point Henry, Geelong. A minimum 30 m wide easement is maintained beneath the line. Powercor Australia currently maintain this utility.

Telstra operates and maintains a repeater tower near Mount Ingoldsby, on the northwestern edge of Anglesea town. Underground Telstra lines radiate from the tower and run along the southern Anglesea Heath boundary and into Anglesea.

Public utility and service providers will be informed about Anglesea Heath values and issues so that maintenance and new works are consistent with maintaining these values. It is expected that this information will be used by utility and service providers to enable careful environmental considerations to be included in the planning of maintenance and new works.

AIMS

Management Outcomes for this Key Area are to:

- Provide for necessary public utilities within Anglesea Heath;
- Minimise the environmental and/or cultural impact of maintenance and new works associated with installation of utilities.

STRATEGIES

Management Strategies for this Key Area are to:

- Encourage bundling and undergrounding of cables, where appropriate, to reduce the visual intrusion;
- Ensure minimal visual impact by encouraging selective vegetation removal along powerline easements;
- Rigorously assess any proposal to install and operate utilities to minimise environmental and/or cultural impacts.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Liaise with utility and service providers to ensure that conservation, biodiversity and scenic values are considered in the planning of maintenance and new works, subject to environmental assessment;
- Ensure service providers operating utilities within

Anglesea Heath undertake maintenance and new works in a manner consistent with conserving Anglesea Heath values. For example, by retaining low-growing indigenous species below powerlines;

- Liaise with utility and service providers to identify suitable track access, use and maintenance;
- Ensure utility service providers employ proper hygiene procedures (section D.5.3).

D.6 KEY MANAGEMENT AREA: CULTURAL RESOURCE MANAGEMENT

D.6.1 ABORIGINAL CULTURE

Anglesea Heath falls within an area originally occupied by the Wathaurong tribe and under the terms of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, the Wathaurong Aboriginal Cooperative Ltd is the appropriate liaison organisation for all issues pertaining to aboriginal cultural management in Anglesea Heath.

B. Marshall (Austral Heritage Consultants) was commissioned by the Department of Conservation and Natural Resources to undertake an archaeological survey of the Angahook-Lorne State Park and Anglesea Heath in 1995. The study area was approximately 6,000 hectares but included only a small part of Anglesea Heath. The survey revealed the presence of significant archaeological sites both in Anglesea Heath and in Angahook-Lorne State Park. The accompanying report written by Marshall (1995) states: 'Anglesea Heath contains the Anglesea River and this river is likely to have been the major focus of past aboriginal occupation, both for subsistence and transport throughout the hinterland. Therefore, it is likely that topographic units such as gullies and swamps will have relatively high site densities and are more likely to be better sampled than they were in Angahook-Lorne State Park'. Marshall's report makes a series of recommendations that need to be followed, especially with regard to road and track construction and maintenance.

The Wathaurong Aboriginal Cooperative Ltd has, in conjunction with Aboriginal Affairs Victoria (AAV), recently appointed a Cultural Heritage Officer to liaise with land management agencies regarding proposed development and site identification and protection. Alcoa has appointed a Corporate Relations Officer with specific responsibilities for Aboriginal liaison and consultation. The Officer is based in Perth, but is available to support cultural liaison activities in Anglesea Heath.

AIMS

Management Outcomes for this Key Area are to:

- Protect the Aboriginal cultural heritage within Anglesea Heath;
- Protect significant archaeological sites.

STRATEGIC PLAN - MANAGEMENT ISSUES AND STRATEGIES

STRATEGIES

Management Strategies for this Key Area are to:

- Encourage further archaeological studies within Anglesea Heath to identify sites requiring management and protection. Develop site protection mechanisms in conjunction with the Wathaurong Aboriginal Cooperative Ltd for existing and newly identified sites;
- Protect and manage Aboriginal sites in consultation with Wathaurong Aboriginal Cooperative Ltd and the Heritage Services Branch of Aboriginal Affairs Victoria (AAV);
- Establish and maintain close and cooperative communications with the Wathaurong Aboriginal Cooperative Ltd and AAV.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Liaise with the Wathaurong Aboriginal Cooperative Ltd prior to any excavation works in Anglesea Heath;
- Seek advice from the Wathaurong Aboriginal Cooperative Ltd in the continuing management of culturally significant sites in Anglesea Heath;
- Involve the Wathaurong Aboriginal Cooperative Ltd in any works required to protect archaeological sites.

D.6.2 EUROPEAN HERITAGE

European settlement of the area commenced with pastoral occupations by settlers originating from Geelong. By 1846, squatting runs covered most of the lands along the coast from Barwon Heads to Aireys Inlet. The first townships were established along the Otway coast to accommodate timber exploitation.

The hardwood forests that extended down to the foreshore were considered to be a good quality timber resource; the main commercial species being Blue Gum. Successful mills and settlements operated in the Lorne-Apollo Bay area. However, the forests of Anglesea Heath were not of sufficient economic quality to warrant this type of exploitation (Department of Conservation and Natural Resources, 1991). As a result, Anglesea Heath was virtually untouched until the early 1920s, when the then Forests Commission considered the area to be poor waste country, which may be fit for a softwood plantation. Attempts to establish softwood plantations within Anglesea Heath have all been unsuccessful (Hill, pers. comm., 1996).

AIMS

Management Outcomes for this Key Area are to:

- Protect significant historic sites.

STRATEGIES

Management Strategies for this Key Area are to:

- Encourage studies within Anglesea Heath to identify

historic sites requiring management and protection;

- Encourage historical societies within the region to assist in the management of historic sites;
- Encourage historical societies involvement in the protection and management of historic sites through consultation with Parks Victoria's National Parks Policy and Strategy Division.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Maintain a register of known historic sites for management purposes;
- Identify and register any newly revealed historic sites within Anglesea Heath.

D.7 KEY MANAGEMENT AREA: RECREATION AND TOURISM MANAGEMENT

D.7.1 RECREATIONAL USE AND MANAGEMENT.

Many individuals and groups use Anglesea Heath for recreation, including:

bird observers	horse riders
field naturalists	mountain bike riders
photographers	trail bike riders
bushwalkers	four-wheel drivers

Recreational users have varying levels of impact on Anglesea Heath values. Each of the activities listed above, depending on their nature and volume, can lead to environmental degradation if not managed appropriately.

While Anglesea Heath is utilised by an array of recreational users, the main use is by trail bike riders, horse riders, four-wheel drivers, cyclists and bush walkers (sections D.7.3, D.7.4, D.7.5 and D.7.6). These popular activities rely on the use of a road and track network within Anglesea Heath (section D.7.2). The largely unmanaged recreational use of Anglesea Heath, especially the creation and use of informal tracks, has resulted in detrimental impact on the heath's values, and is currently unsustainable.

All recreation in Anglesea Heath will be managed for sustainable use. It is intended that the Management Plan shall assist in promoting responsible use through information exchange and the involvement of all recreational groups (section C.4.5).

Recreation in Anglesea Heath will be monitored, assessed for impact and managed accordingly for sustainable use. For example, it is possible that the management of Cinnamon Fungus may require areas to be closed to all recreational users to reduce its spread to 'clean' areas within Anglesea Heath.



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AIMS

Management Outcomes for this Key Area are to:

- Provide opportunities for recreational use on designated network of roads and tracks (section D.7.2);
- Protect environmental and cultural values of Anglesea Heath (section C.2);
- Promote responsible use of Anglesea Heath.

STRATEGIES

Management Strategies for this Key Area are to:

- Encourage information exchange between the Management Group and Anglesea Heath users; especially with regard to environmental impacts; sustainable use and recreational needs (section C.4.5);
- Develop voluntary codes of conduct for recreational activities through the Recreation Issue Workgroup, (section C.4.5) encouraging self-regulation;
- Minimise conflict between user groups through information exchange, the promotion of responsible use ethics and where necessary enforcement of regulations.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Encourage, assist and facilitate the formation of a Recreational Issue Workgroup (section C.4.5);
- Liaise with recreational clubs regarding track and area closures;
- Permit recreational use of a designated network of tracks in accordance with Appendix 1 and provide information on conditions of use to maintain sustainability;
- Prohibit and enforce through regulations, illegal recreation in Anglesea Heath;
- Provide on-site information at strategic points to orientate and inform recreational users (section D.8.1);
- Provide all user groups with Anglesea Heath Visitor Guides (section D.8.1).

D.7.2 ROADS AND TRACKS - VEHICLE ACCESS

Anglesea Heath contains an extensive network of formal and informal vehicle roads and tracks. The majority of tracks were originally constructed for management purposes or were created by recreational users. These tracks now provide many entry points along the perimeter and within Anglesea Heath but are suitable for four-wheel drive access only (section D.7.3). Recreational activities undertaken within Anglesea Heath, including trail bike riding, horse riding, cycling, four-wheel driving, and bush walking (sections D.7.3, D.7.4, D.7.5 and D.7.6), rely on roads and tracks for access.

The Great Ocean Road, Forest Road, Camp Road and the

eastern section of Gum Flat Road are the only sealed access roads to Anglesea Heath. VicRoads and Surf Coast Shire maintain these roads. DNRE and Alcoa have intermittently maintained the unsealed roads and formal, named tracks. The network of unnamed informal tracks throughout Anglesea Heath have not been properly constructed or maintained. Infrequent maintenance and inappropriate location of many tracks have resulted in them being subject to extensive erosion and waterlogging (section D.4.1). Highly destructive vehicle activities (section D.7.3) occurring over a number of years, have resulted in devastating effects on track conditions and undermining revegetation efforts. For example, track edges and batters that frequently provide habitat for orchids (section D.3.1) are destroyed or damaged by vehicles deviating from tracks. In some instances, poorly located tracks have also impacted on the natural and aesthetic values of Anglesea Heath, particularly in steep or sandy areas where soil erosion has resulted (section D.4.1).

While it is necessary to provide a network of roads and tracks for management and visitor access, informal roads and tracks create unnecessary fragmentation of intact vegetation, threatening biodiversity in the Anglesea Heath. A complete audit of track conditions is required to assess the current state and required maintenance of the formal, named roads and tracks within Anglesea Heath. Future management of vehicle access (section D.7.2) will be guided by the outcome of this audit, the occurrence of Cinnamon Fungus and the extent of erosion and water logging (sections D.4.1 and D.5.3). Some tracks will be upgraded and more frequently maintained (see Appendix 1, Management of Roads and Tracks).

Uncontrolled use of the informal track network has resulted in detrimental impacts on the values of Anglesea Heath, fragmenting vegetation communities, reducing floristic and habitat values, spreading Cinnamon Fungus and exacerbating erosion. Inadequate orientation information has contributed to confusion and inappropriate use of informal tracks. To conserve the natural values of the Anglesea Heath it is essential that the informal track network be closed and rehabilitated.

AIMS

Management Outcomes for this Key Area are to:

- Provide access into and through Anglesea Heath for visitor use and management purposes;
- Minimise the impact of vehicle use on Anglesea Heath's conservation, biodiversity and other natural values.

STRATEGIES

Management Strategies for this Key Area are to:

- Manage and permit the use of roads and tracks in accordance with Appendix 1;

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- Encourage accountability by user groups in the use and maintenance of roads and tracks;
- Encourage communication with, and involvement of, user groups in decision making regarding road and track use, works and closures (section D.9.1);
- Undertake an audit of the formal, named roads and tracks within Anglesea Heath to identify management issues and maintenance requirements;
- Rationalise the road and track network to reduce fragmentation of vegetation communities.
- Improve directional signage within Anglesea Heath.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Close and rehabilitate the network of informal tracks;
- Monitor the effects of vehicle use on all tracks;
- Monitor and protect track batters where significant orchids or cultural sites are present (section D.3.1 and Appendix 2);
- Continue to upgrade and standardise road and track signage throughout Anglesea Heath;
- Communicate with user groups if audit identifies the need to alter or close roads or tracks indicated as open in Appendix 1;
- Implement restrictions on use of roads and tracks where required to reduce erosion and or the spread of Cinnamon Fungus (sections D.5.3 and D.7.2);
- Provide on-site maps at strategic points within Anglesea Heath (section D.8.1).

D.7.2.1

See Map 4 - Vehicle Access, overleaf.

D.7.3 FOUR-WHEEL DRIVE (4WD) AND TRAIL BIKE USE

Anglesea Heath has a history of 4WD and trail bike use and the area's numerous roads and 4WD tracks are popular among these users (section D.7.2). Open named roads and tracks in Anglesea Heath are available for touring use by registered vehicles and licensed riders, and therefore, 4WD and trailbike riding are recognised as legitimate activities within Anglesea Heath if undertaken legally and responsibly. The use of any road or track within Anglesea Heath, not indicated on Appendix 1 - Management of Roads and Tracks is illegal.

There are a number of management difficulties associated with 4WD and trail bike activity including noise pollution, soil erosion, fire hazard, the spread of Cinnamon Fungus, fragmentation of plant communities and habitat values and conflict with other recreational users (sections D.3.1, D.3.2, D.4.1, D.5.3, D.5.4 and D.7.1).

In addition, the current expansion of the track network

by some indiscriminate four-wheel drive and trail bike enthusiasts is not sustainable. Off-road four-wheel drive and trail bike use is an inappropriate use of Anglesea Heath because of the detrimental effects it has on the biodiversity of the area.

Four-wheel drivers and trail bike riders must use Anglesea Heath in a responsible way. As major users of the area, it is important that they participate in and have representation on the Recreational Issue Workgroup (section C.4.3). The principal idea behind the Recreational Issue Workgroup is that recreational users are able to develop and present ideas, suggestions and recommendations to the Management Group and Consultative Committee (sections C.4.3 and C.4.4). By participating in Recreational Issue Workgroups, four-wheel drivers and trail bike riders will be able to communicate with managers and other users of Anglesea Heath.

To date, the most successful strategy in dealing with 4WD and trail bike use has been the 'Track Watch' Program which ran in 1994. This approach included 4WD and trail bike groups in the road and track decision-making process and focused on collaboration rather than regulation. The program addressed some of the problems associated with these activities. Members from the Otway Trail Riders Club and Geelong 4WD Club were actively involved in the program, part of which involved walking along tracks to discuss and assess proposed track closures. This was followed by a working bee involving members from ANGAIR Inc. (section D.9.1) and Parks staff. The work carried out during this program has been disturbed and is in need of re-establishment.

Vehicle access tracks may be permanently or temporarily closed on various tracks to mitigate the extent of these and other threats to the biodiversity of Anglesea Heath.

AIMS

Management Outcomes for this Key Area are to:

- Restrict four-wheel drive vehicle and trail bike access in Anglesea Heath to the designated network of roads and tracks, i.e. in accordance with Appendix 1 (section D.7.2);
- Control the impact of vehicles on the conservation and biodiversity values (section C.2).

STRATEGIES

Management Strategies for this Key Area are to:

- Promote responsible use of Anglesea Heath;
- Increase ranger presence in the Anglesea Heath;
- Control fragmentation and other environmental impacts by prohibiting off-road use by four-wheel drive vehicles and trail bikes within Anglesea Heath;
- Encourage 4WD and trail bike club involvement in management of roads and tracks.



STRATEGIC PLAN - MANAGEMENT ISSUES AND STRATEGIES

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Prohibit 4WD's and trail bikes from all closed roads and tracks, within Anglesea Heath, (section D.7.2 and Appendix 1);
- Ensure compliance with Anglesea Heath Regulations through enforcement to discourage 'motorcross' trail bike use;
- Install on-site maps at strategic points in the Anglesea Heath to inform user groups of open roads and tracks in Anglesea Heath, in accordance with Appendix 1;
- Assist the Recreational Issue Workgroup (section C.4.5) with the development of specific and Voluntary Codes of Conduct for 4WD and trail bike users that encourage sustainable use and self-regulation.

D.7.4 CYCLING

Cycling is permitted on formal, named tracks that are open to other vehicles (see Appendix 1 - Management of Roads and Tracks). Cycling is not currently permitted on Management Vehicle Only tracks. It is recognised that bicycles do not have as much impact on tracks as other vehicles (section D.7.3), but due to their speed and lack of noise, pose a potential conflict with other users, particularly walkers (section D.7.6). Cyclists can damage vegetation and exacerbate erosion and spread of Cinnamon Fungus by riding off formal tracks.

Cycling has steadily increased in popularity in Anglesea Heath with local clubs regularly holding mountain bike events there. These 'special events' involve riders meeting in one location and racing on a pre-planned course. Large groups of cyclists can damage vegetation growing along the edges of infrequently-used tracks. Proposals to conduct special events (section D.7.12) are assessed to minimise impacts on natural and cultural values and other users. Where appropriate, permits with necessary conditions are issued.

Parks Victoria has administered these permits over recent years. It is expected that the Recreation Issue Workgroup (C.4.5) will develop proposals to minimise potential conflicts between cyclists and other recreational users.

AIMS

Management Outcomes for this Key Area are to:

- Maintain opportunities for cycling within Anglesea Heath;
- Minimise the impact of cycling on the conservation and biodiversity values (section C.2).

STRATEGIES

Management Strategies for this Key Area are to:

- Permit the use of bicycles on designated roads and tracks in accordance with Appendix 1 (section D.7.2);

- Permit cycling events where environmental conditions are such that events will have low impact (section D.7.12);
- Increase ranger presence in Anglesea Heath;
- Promote responsible use of Anglesea Heath by cyclists;
- Control environmental impact by prohibiting off road use by cyclists within Anglesea Heath;
- Encourage cycling clubs' involvement in maintenance works and monitoring of tracks.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Prohibit cycles from roads and tracks within Anglesea Heath that are closed to public vehicles (section D.7.2 and Appendix 1);
- Ensure compliance with Anglesea Heath regulations through enforcement where necessary;
- Monitor and assess impacts of cycling on designated tracks;
- Assist with the development of a Voluntary Code of Conduct and conditions of use for mountain bike riding, encouraging self-regulation.

D.7.5 HORSE RIDING

Anglesea Heath's scenic landscape has made it popular among horse riding enthusiasts. Many horse riding routes in Anglesea Heath can be combined with routes along Shire roads, roads and tracks in Angahook-Lorne State Park and Otway State Forest, to provide for longer rides.

A local adult riding club and three commercial horse riding tour operations use the area (section D.7.11), as do many individual recreational riders. Horse riding is permitted on formal, named tracks; but horses are not permitted on roads and tracks that are closed to the public. Horse riding on closed and informal tracks is illegal (section D.7.2 and Appendix 1).

Commercial horse riding operators in Anglesea Heath operate in accordance with permits administered by Parks Victoria. Permits contain individual and specific conditions of use for operators (section D.7.11). It is envisaged that the Consultative Committee (section C.4.4) will advise the Management Group (section D.4.3) in relation to developing permits and use conditions in the future.

The potential impacts of horses on the conservation values of Anglesea Heath include the spreading of weeds, (carried and dispersed in horse feed and droppings), trampling of ground plant species, the spreading of Cinnamon Fungus and increased soil erosion; especially in wet weather (sections D.3.1, D4.1, D.5.1 and D.5.3). There is also the potential for conflict with other recreational users; for example, horse droppings can reduce the enjoyment for

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walkers (section D.7.6). Therefore, it is necessary that horse riding be confined to formal, named vehicle tracks only (section D.7.2).

Commercial horse riding operators and clubs have a responsibility to operate in a sustainable manner. These groups can assist in minimising the impact of horses on conservation values by informing clients about Anglesea Heath's significance and responsible use ethics.

AIMS

Management Outcomes for this Key Area are to:

- Maintain opportunities for horse riding in appropriate areas in Anglesea Heath;
- Minimise the impact of horse riding on the biodiversity values of Anglesea Heath (section C.2).

STRATEGIES

Management Strategies for this Key Area are to:

- Permit horse riding on formal named tracks in accordance with Appendix 1;
- Encourage an increased exchange of information between the Management Group (section C.4.3) and horse riders;
- Increase ranger presence in Anglesea Heath;
- Foster an accountable and sustainable use ethic among commercial horse riding operators, clubs and individuals;
- Encourage local clubs to promote information and education about Anglesea Heath to the riders.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Prohibit horse riding on closed tracks, ie tracks not in Appendix 1;
- Ensure compliance with regulations, through issuing Penalty Infringement Notices and prosecution where necessary;
- Assist the Recreational Issue Workgroup with the development of a Voluntary Code of Conduct and conditions of use for horse riding in Anglesea Heath, encouraging self-regulation;
- Monitor and assess impacts of horse riding on formal, named roads and tracks;
- Encourage a horse riding representative to participate in the Recreational Issue Workgroup (section C.4.5);
- Encourage involvement of horse riding clubs in track management.

D.7.6 WALKING

Many vehicle tracks within Anglesea Heath are used by walkers who enjoy the area's natural attractions, including

remoteness, coastal views and diverse landscape. There are currently no designated walking-only tracks in Anglesea Heath. A section of the Surf Coast Walk traverses the southwest boundary of Anglesea Heath and this section of the walk is on a vehicle track. Walking clubs such as the Geelong Bushwalking Club, and ANGAIR Inc, frequent Anglesea Heath for organised recreational walks. A network of walking tracks could heighten the walking experience through Anglesea Heath and the Management Group (section C.4.3) will investigate opportunities for disused and informal vehicle tracks to form a network of walking tracks. Threatening processes such as Cinnamon Fungus, weeds and erosion (sections D.4.1, D.5.1 and D.5.3) will need to be considered during the investigation of a network of walking tracks. Potential conflict with other users and safety issues will also need to be considered. The Recreational Issue Workgroup (section C.4.5) is expected to suggest ways in which potential conflict with other users and safety issues could be minimised. Therefore, it would be advantageous if a bushwalking representative were to be involved in this workgroup.

AIMS

Management Outcomes for this Key Area are to:

- Provide opportunities for bushwalking in Anglesea Heath;
- Minimise the impact of walkers on Anglesea Heath values (section C.2).

STRATEGIES

Management Strategies for this Key Area are to:

- Investigate the feasibility of establishing walking track linkages with Angahook-Lorne State Park and the Surf Coast Walk on disused and informal vehicle tracks;
- Encourage bushwalking clubs' involvement in maintenance works and monitoring usage of tracks.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Continue to promote vehicle tracks as the primary location for walking opportunities;
- Monitor and assess impacts of walkers on current and any proposed tracks;
- Undertake an environmental assessment of any proposed walking track development and proceed according to outcomes;
- Encourage a bushwalking representative to participate in the Recreational Issue Workgroup (section C.4.5);
- Assist the Recreational Issue Workgroup in the development of a voluntary Code of Conduct for walkers in Anglesea Heath.



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D.7.7 CAMPING

There are no developed camping facilities in Anglesea Heath; dispersed camping in the area has been informal and has been discouraged. Anglesea Heath Regulations (section A.3) prohibit camping within the area. Visitors undertaking activities such as bushwalking over a number of days usually stay overnight in Anglesea or in the Angahook-Lorne State Park, where bush camping is provided for.

The impacts of informal camping include the spread of rubbish, indiscriminate collection of firewood (DCNR, 1991), the potential for accidental fire, vegetation disturbance, increased erosion, spread of weeds and Cinnamon Fungus (sections D.3.1, D.5.1, D.5.3 and D.5.4). The consequences of a fire in Anglesea Heath are taken very seriously and open fires pose a high risk to life and property. Due to the high fire danger in Anglesea Heath and surrounding areas, the use of open fires and fuel stoves have been prohibited.

The demand for camping in Anglesea Heath is difficult to gauge. Dispersed camping is currently occurring, but these campers may believe they are in the Otway State Forest (refer to Map 2) or may be unaware that camping is prohibited in Anglesea Heath. A camping area in Anglesea Heath may be investigated in the future, if a suitable modified site becomes available. Any investigation would rely on the availability of an accessible site that required minimal disturbance to native vegetation (section D.3.1). Should a site be considered for camping, the investigation will be subject to a full environmental assessment.

Opportunities for camping outside Anglesea Heath on private land should also be explored and environmentally sensitive ecotourism ventures of this nature should be encouraged.

AIMS

Management Outcomes for this Key Area are to:

- Ensure camping does not impact on the values of Anglesea Heath.

STRATEGIES

Management Strategies for this Key Area are to:

- Change current use and behaviour through education and enforcement to reduce and ultimately eliminate camping in Anglesea Heath;
- Increase ranger presence in Anglesea Heath;
- Investigate the future provision of a camping area within Anglesea Heath, if an appropriate site becomes available.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Patrol known illegal camping sites, particularly in periods of high visitor-use;
- Enforce regulations pertaining to camping, open fires and wood/fuel stoves within Anglesea Heath.

D.7.8 DAY VISITOR FACILITIES AND SERVICES

Picnicking and day-visitor use within Anglesea Heath is moderately popular, with visitors enjoying the natural values and scenic landscape that the area offers. Day visitors utilise an extensive road and track network to gain access to the heath (section D.7.2) and many of these tracks provide opportunities for walking and picnicking. Day visitors to Anglesea Heath are largely unmanaged. There are no formal picnic or information facilities for day visitors within Anglesea Heath but there are developed facilities close by in Angahook-Lorne State Park.

It is important for the protection of the natural values of Anglesea Heath, that the day visitor's experience is guided and managed.

A suitable site for picnicking and the provision of information and interpretation will be investigated (section D.8.1). A designated day-visitor site could provide a venue for interpreting the natural values of Anglesea Heath to visitors (section C.2).

Any investigation and subsequent development of a day-visitor and/or picnicking facility would be subject to the availability of a previously modified site and subject to an environmental assessment.

Fuel fires will not be permitted in any designated day-visitor or picnicking area due to the threat of wildfire (section D.5.4) and the potential damage to vegetation caused by collection of firewood:

AIMS

Management Outcomes for this Key Area are to:

- Provide opportunities for picnicking and day-visitors in Anglesea Heath;
- Minimise any impact of picnicking and day-visitors on conservation and biodiversity values (section C.2).

STRATEGIES

Management Strategies for this Key Area are to:

- Promote responsible day-visitor use of Anglesea Heath;
- Investigate the provision of a strategically positioned day-visitor area that could be used as a picnic area and to provide information and interpretation to visitors;
- Locate any new day-visitor facilities on an already cleared or modified area and subject to an environmental assessment.

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ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Establish low impact and environmentally sustainable picnic and day-visitor facilities, if developed;
- Adopt and enforce a no-bins (take rubbish home) policy for any visitor sites;
- Provide on-site interpretation (section D.8.1) for day-visitors and picnickers about the values and threats to Anglesea Heath;
- Prohibit open fires at any picnicking and day-visitor sites within Anglesea Heath.

D.7.9 SHOOTING

A rifle range is situated within Anglesea Heath off Gum Flat Road. The rifle range is occupied by the Geelong Rifle Club, who are licensed to hold training and events at the site. The Geelong Rifle Club plans to operate the range until December 2003, when it will relocate to a facility at Lara. The Geelong Rifle Club is required, as a condition of its licence, to remove any structures from the site upon vacating the area.

The rifle range and facilities are sometimes utilised by other groups for their activities. As with other groups using Anglesea Heath, the Geelong Rifle Club's activities will be monitored for their effects on the area's values while they continue to operate at Gum Flat Road.

Throughout Anglesea Heath, the use of firearms will be restricted to Geelong Rifle Club members (and other affiliated shooters) at the rifle range only.

A Special Management Area Overlay (section D.2.2) exists over the rifle club grounds and cone area (refer to Map 3, Zoning).

AIMS

Management Outcomes for this Key Area are to:

- Minimise the impact of the activities on and the infrastructure of the rifle range on Anglesea Heath values;
- Minimise any risks to Anglesea Heath visitors imposed by use of the rifle range.

STRATEGIES

Management Strategies for this Key Area are to:

- Restrict the use of firearms to the existing rifle range and by Geelong Rifle Club Members only;
- Support the relocation of the Geelong Rifle Club and other affiliated shooters from Anglesea Heath to proposed facilities at Lara;
- Ensure adequate clean-up measures are undertaken at the rifle range to minimise long-term contamination of the site.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Investigate develop and implement appropriate management actions that are required to be undertaken within the rifle range and cone area to minimise conflict with, and risk to, other Anglesea Heath users, in consultation with the Surf Coast Shire and the Geelong Rifle Club;
- Support and assist the Geelong Rifle Club in their relocation from the rifle range at Gum Flat Road;
- Monitor and guide removal of infrastructure and expended and unexpended ordnance (particularly any lead shot), when the Geelong Rifle Club relocates from the rifle range.

D.7.10 DOG WALKING

Currently some visitors to Anglesea Heath walk their dogs along vehicle tracks (section D.7.2). The presence of dogs in Anglesea Heath could pose a risk to native fauna, especially the New Holland Mouse (section D.3.2). Dog walking also has the potential to create conflict with other recreational users, especially if dogs are not kept on a lead.

To protect the fauna and other natural values of Anglesea Heath, dogs will be permitted on a lead in the Conservation and Recreation Zone only (section D.2.). Dogs will not be permitted in the Conservation Zone (except if confined to vehicles passing through Anglesea Heath on class 1 or 2 roads and tracks, shown in Appendix 1).

AIMS

Management Outcomes for this Key Area are to:

- Provide opportunities for dog walking on a lead in the Conservation and Recreation Zone only (section D.2);
- Discontinue dog walking within Anglesea Heath outside the Conservation and Recreation Zone (section D.2).

STRATEGIES

Management Strategies for this Key Area are to:

- Change visitor use patterns so that dog walking is undertaken (on lead) in the Conservation and Recreation Zone only (section D.2);
- Increase ranger presence in Anglesea Heath;
- Permit dogs to be carried through the Conservation Zone if confined in a vehicle on class 1 or 2 roads and tracks, refer to Appendix 1.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Undertake an education program (section D.8.1) to inform dog owners of the impacts of dogs on wildlife



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and potential conflicts with other users (sections D.5.4 and D.7.1);

- Provide information to dog owners that currently utilise Anglesea Heath about the prohibition of dogs outside the Conservation and Recreation Zone (section D.2).

D.7.11 COMMERCIAL TOURISM OPPORTUNITIES

Currently five commercial tour operations offer tours within Anglesea Heath. They are: Blazing Saddles Trail Rides, Seamist Trail Rides, Spring Creek Trail Rides, Great Ocean Road Adventure Tours and Ecologic Environmental Services.

The activities offered by these operators include: horse riding, mountain bike riding, nature study and bushwalking (sections D.7.1, D.7.4, D.7.5 and D.7.6). School holiday environmental activities provided by Ecologic Environmental Services are sometimes undertaken within Anglesea Heath.

Parks Victoria administers permits for commercial operators on public land and liaises with operators and local land managers to draft permit conditions that mitigate environmental impacts associated with operators' activities. Where possible, any written authorities for commercial operators' activities will be consistent with current Parks Victoria permits. The Management Group will develop these permits and conditions in the future, with advice from the Consultative Committee (sections C.4.3 and C.4.4).

Commercial operators conducting tours in Anglesea Heath have the ability to educate their clients about the natural values of the area and key management issues. The delivery of conservation themes to visitors by commercial operators can enhance the experience for visitors and improve use ethics within Anglesea Heath (section D.8.1). This level of involvement by commercial tour operators will be encouraged in Anglesea Heath.

It is important that Anglesea Heath can continue to provide a venue of peace and tranquillity where visitors can experience nature in a relatively undisturbed state. All commercial tourism activities within Anglesea Heath need to be assessed carefully so that visitor numbers and activities provided by tour operators are not detrimental to the environmental and social values that currently exist there (section C.2).

AIMS

Management Outcomes for this Key Area are to:

- Provide for commercial tourism opportunities that are consistent with the management vision (section C.3);
- Maintain an appropriate balance between commercial and private use of Anglesea Heath.

STRATEGIES

Management Strategies for this Key Area are to:

- Continue to monitor the activities of commercial tour operators in relation to environmental impacts;

- Increase ranger presence in Anglesea Heath ;
- Encourage and cooperate with commercial operators to provide information and services, which reflect and interpret the conservation values of Anglesea Heath;
- Encourage operators to become involved in the maintenance of those tracks in Anglesea Heath that they utilise for commercial tours.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Ensure all commercial tour operators operating within Anglesea Heath are appropriately authorised under the regulations;
- Liaise with all commercial tour operators to increase their awareness of the environmental threats and issues within Anglesea Heath;
- Require commercial tour operators to record and present sufficient information about their operations to enable environmental monitoring of their activities;
- Regularly inspect routes of commercial tour operators conducting activities in Anglesea Heath to ensure they are operating in accordance with permit conditions;
- Liaise with commercial tourism operators to reduce conflict with other users;
- Liaise with local tourism bodies to coordinate and ensure tourism initiatives do not cause detrimental environmental impact.

D.7.12 SPECIAL EVENTS

A small number of special events are held annually in Anglesea Heath with event organisers usually seeking permission from Parks Victoria. Occasionally organisers have also contacted the Surf Coast Shire and Alcoa. The events have generally been recreational group activities with a nature-based focus. For example, ANGAIR Inc. hold an annual wildflower show and use Anglesea Heath as a venue for guided tours to view the heath's spectacular wildflowers.

Special events involve relatively large numbers of participants. Groups have the potential to cause safety, environmental, and management concerns. Accordingly, it is important that, any special events held in Anglesea Heath are low impact activities in keeping with the conservation objectives for managing the area. If permission is granted for special events it is important that their activities are well managed and evaluated for future suitability.

AIMS

Management Outcomes for this Key Area are to:

- Provide opportunities for special events that are consistent with the management vision (section C.3);

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- Minimise impacts on the values of Anglesea Heath resulting from the conduct of special events.

STRATEGIES

Management Strategies for this Key Area are to:

- Develop specific use conditions, if special events are permitted, by the Management Group (section C.4.3) with reference to the guidelines employed in the Angahook-Lorne State Park;
- Ensure special event applications are sufficiently assessed by rangers, and ensure those events occurring are subsequently adequately monitored and evaluated.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Assess all special event applications for numbers, routes and seasonality, to ascertain their potential impact on Anglesea Heath values (section C.2);
- Undertake follow-up monitoring of special events to evaluate their suitability in Anglesea Heath for the future;
- Conduct debriefing sessions as required with event coordinators after special events are held in Anglesea Heath;
- Ensure that all special events conducted in Anglesea Heath are appropriately authorised (with special conditions) compatible with Anglesea Heath regulations.

D.7.13 MILITARY TRAINING

The Australian Defence Forces has have used Anglesea Heath for training; on average four times per year. The training activities have mostly been conducted by the Army, Air School Cadets and Reserve Units. The training has usually been conducted over weekends with base camps commonly restricted to Haggarts Track and Gum Flats Road area. This type of defence force training has the potential to conflict with the conservation objectives and management vision for Anglesea Heath. Due to this potential conflict, some restrictions will be placed on the nature and extent of Defence Force Training conducted within Anglesea Heath. The Defence Force has volunteered to cease using the Anglesea Heath for base camp related training exercises.

Australian Defence Force training is divided into five levels, depending on the nature and objective of training activities, from Level One (small scale adventure and bushcraft training), to Level Five (large scale tactical manoeuvres incorporating hundreds of soldiers, heavy machinery and earthworks). In line with management objectives for Anglesea Heath, which are, similar to that of the adjacent Angahook-Lorne State Park, opportunities for Defence

Force training will be restricted to Level 1 activities.

In addition, all applications for Defence Force training will be assessed individually, with consideration to the flora and fauna values at the proposed site. Close liaison between the designated Unit Training Coordinator responsible for training exercises and the Management Group will be undertaken to ensure that Defence Force personnel understand the relevant values and threats to Anglesea Heath posed by their activities.

Permits are currently, and will continue to be, applied to Defence Force training; the conditions of the permits aim to minimise impacts to flora and fauna and the spread of weeds and Cinnamon Fungus (sections D.3.1, D.3.2, D.5.1 and D.5.3). It is envisaged that the Consultative Committee (section C.4.4) will provide advice to the Management Group (section C.4.3) to develop Defence Force training permits in the future.

AIMS

Management Outcomes for this Key Area are to:

- Provide opportunity for some military training within Anglesea Heath;
- Minimise environmental impact of military training within Anglesea Heath.

STRATEGIES

Management Strategies for this Key Area are to:

- Allow for Level One Defence Force training in appropriate areas within Anglesea Heath, involving activities restricted to those compatible with management objectives;
- Ensure all Defence Force training applications are assessed for environmental impact within Anglesea Heath;
- Encourage low impact and sustainable use behaviours to be adhered to by Defence Force personnel.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Ensure that all military training operates under a permit or authority developed by the Management Group (section C.4.4);
- Permit military training on a limited number of specific sites and monitor and evaluate impacts on conservation values (section C.2) and adherence to permit conditions;
- Apply a no fires condition to all Defence Force training permits;
- Liaise with the relevant designated Defence Force Unit Training coordinator in planning and monitoring training in Anglesea Heath.



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D.8 KEY MANAGEMENT AREA: INTERPRETATION AND INFORMATION

D.8.1 INTERPRETATION AND INFORMATION

Anglesea Heath has natural values that could form excellent interpretation themes enabling an improvement in visitors' experience and appreciation of the heath. Interpretation is a valuable management tool that is currently lacking in Anglesea Heath. Also, little basic information is available to the public, apart from road signage and one information panel at the coal mine lookout. Little on-site information is provided.

The number of tracks in Anglesea Heath and the lack of on-site information have ensured that recreational users have little way of knowing which tracks they are allowed to use and why.

Many visitors to Anglesea Heath are uncertain of the land tenure of the area and have little sense of 'arrival'. The recreational activities undertaken by some visitors demonstrate a low level of understanding and appreciation of the values that exist there (section D.7.1). It is likely that availability of on-site interpretation and the continued provision of the Visitor Guide pamphlet will improve the understanding and use of the area by visitors.

An Interpretation Plan is required for Anglesea Heath that will strategically combine orientation information and interpretation of natural and cultural values so that adequate information is available to visitors.

A Visitor Guide has been prepared for Anglesea Heath, it is distributed by rangers on patrol. It is envisaged that the current Visitor Guide will be improved to incorporate an A3 map of Anglesea Heath and higher quality illustrations by local artists.

The Visitor Guide is available at local Parks Victoria and DNRE offices, and is available on-line at www.parkweb.vic.gov.au.

Commercial tour operators provide information to visitors by conducting 'ecotours' in Anglesea Heath (section D.7.1.1). For the benefit of visitors and to help achieve management aims, communication between the Management Group (section C.4.4) and commercial tour operators needs to be clear and frequent. The Management Group will attempt to ensure that visitors participating in 'ecotours' receive the desired information and messages about Anglesea Heath.

Visitors also need to be informed about management strategies so that they are more likely to understand them and comply with desired outcomes. For example, the management role of Alcoa, the community and Parks Victoria needs to be communicated. Additionally, the opportunity for visitors' input and involvement should be made clear. Visitors need to be informed about the

regulations for Anglesea Heath as well as on-ground management actions such as track rationalisation, zoning, fuel reduction and ecological burning (sections D.2, D.5.4 and D.7.2).

The proposed Great Ocean Road Discovery Centre at Anglesea could provide an excellent opportunity to inform a substantial number of visitors to the area about the values of Anglesea Heath from one location. The centre would be an excellent venue for distribution of the Visitor Guide and a static display to interpret Anglesea Heath.

AIMS

Management Outcomes for this Key Area are to:

- Manage recreational use ethics in Anglesea Heath through the provision of information and interpretation;
- Enhance visitors' enjoyment and appreciation of Anglesea Heath's natural and cultural values through the provision of quality interpretative services and facilities.

STRATEGIES

Management Strategies for this Key Area are to:

- Investigate, identify and establish 'Gateway' entrances at strategic points that provide visitors with information to orientate them and that interprets the natural and cultural values of Anglesea Heath;
- Develop an Interpretation Plan that identifies and refines themes for visitors, to enable them to interpret the biodiversity values of, and threats to, Anglesea Heath;
- Liaise with the relevant managing authority to assist in the provision of displays interpreting Anglesea Heath if the proposed development of the Great Ocean Road Discovery Centre at Anglesea proceeds.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Continue to distribute the Anglesea Heath Visitor Guide and promote its acquisition by users via the Internet;
- Write and implement an Interpretation Plan for Anglesea Heath that:
 - provides for a range of interpretative facilities and services that meet the orientation needs of visitors, interprets environmental themes, and that are appealing and attractive to visitors;
 - informs visitors of appropriate codes of conduct and Anglesea Heath Regulations;
 - encourages visitors to follow appropriate codes of conduct and Anglesea Heath Regulations through understanding;
 - is consistent with, and complementary to, the

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Angahook-Lorne State Park Interpretation Plan and to the interpretative facilities and services that are provided there;

- gives information on hazards and safety warnings where applicable;
- Install signs at appropriate vehicle tracks to interpret the major values and threats present within Anglesea Heath;
- Liaise with commercial tour operators to enhance the quality of eco-tourism in Anglesea Heath (section D.7.11);
- Install static and interactive displays interpreting Anglesea Heath, if the proposed development of the Great Ocean Road Discovery Centre at Anglesea proceeds.

D.8.2 SCHOOLS AND OTHER EDUCATION

The locality and natural attributes of Anglesea Heath make it an excellent venue for school groups, and other youth groups, to experience and learn in a diverse natural setting.

Anglesea Heath is an excellent learning environment for local schools at Anglesea, Aireys Inlet, Lorne and Geelong. Environmental and ecological programs have the capacity to be partially conducted in Anglesea Heath, enabling students to investigate ecosystems firsthand.

The Anglesea Primary school has, since 1993, been actively involved in a rehabilitation project at Coalmine Road, in Anglesea Heath. This type of participation by schools is beneficial to both students and land managers, and therefore will be encouraged and facilitated by rangers and/or project officers in the future.

For educational experiences within Anglesea Heath to be safe and most meaningful, close communication between teachers and managers is required. Teachers need to contact Parks Victoria and/or Alcoa to plan and arrange school visits to Anglesea Heath. Pre-visit information about Anglesea Heath will be made available to teachers and students to add value to their experience of Anglesea Heath.

AIMS

Management Outcomes for this Key Area are to:

- Increase the use of Anglesea Heath as an educational resource for schools;
- Enhance the quality of school visits to Anglesea Heath;
- Help develop student awareness and understanding of Anglesea Heath and its values (section C.2).

STRATEGIES

Management Strategies for this Key Area are to:

- Promote the use of Anglesea Heath as an environmental educational resource;

- Continue to foster links with local schools and universities.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Prepare educational material that can be provided as a 'kit' for schools upon request;
- Provide work experience and opportunities for local schools, where possible;
- Provide interpretative talks to schools visiting Anglesea Heath, when possible (section D.8.1).

D.9 KEY MANAGEMENT AREA: COMMUNITY PARTICIPATION AND INVOLVEMENT

D.9.1 LOCAL INVOLVEMENT

Anglesea Heath has benefited significantly from the participation of local conservation groups and volunteers. ANGAIR Inc. has active members who have extensive knowledge of the flora and fauna of Anglesea Heath. ANGAIR Inc.'s willingness to share this knowledge and contribute to pest plant control (section D.5.1) and other technical programs in the area has been a significant asset for land managers. ANGAIR Inc. has successfully sought alternative funding for environmental works in Anglesea Heath. The completion of such projects will complement core management actions and assist in protecting significant values (section C.2).

Other groups, including: The Geelong Environmental Council, Geelong Orway Trail Riders, four-wheel drive clubs, Deakin and Ballarat Universities, and local schools, have also participated in voluntary local action to protect the values of Anglesea Heath.

The management planning process (section B.2.1) has highlighted the significant amount of information that is available from individuals and groups such as ANGAIR Inc. in the local community. This information, knowledge, and understanding can contribute to management and conservation of Anglesea Heath. Currently, this information and knowledge circulates within a relatively small scientific, conservation and land management forum. Information about Anglesea Heath's natural values and major issues needs to be relayed to the broader community.

Future management arrangements will encourage a flow of information throughout the wider community (section C.4). Stakeholders will have the opportunity to exchange information with the Management Group and participate in Issue Workgroups (section C.4.5).

In addition, increased information will be available to visitors through ranger presence, the distribution of an Anglesea Heath Visitor Guide, and on-site interpretation (section D.8.1).



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It is expected that schools, recreational users, local media, scientists, clubs and local traders will participate in, and benefit from, the continuing development of information concerning Anglesea Heath. The local community is potentially a 'task force' that will be encouraged to heighten their sense of ownership and understanding of the significance of Anglesea Heath.

AIMS

Management Outcomes for this Key Area are to:

- Maintain the high level of participation and awareness local conservation groups have for Anglesea Heath;
- Increase the level and diversity of community participation in Anglesea Heath;
- Raise community awareness of major issues pertaining to Anglesea Heath (section D.8.1).

STRATEGIES

Management Strategies for this Key Area are to:

- Promote and increase community awareness through a wide range of publications (e.g. newsletters, local papers, and business and community brochures);
- Continue to encourage volunteer and community involvement in Anglesea Heath and promote participation of the wider community.

ACTIONS

Major Actions to be undertaken for this Key Management Area are to:

- Continue to support the participation of ANGAIR Inc. and other organisations in conservation programs and activities in Anglesea Heath;

- Undertake measures to record information held by community groups so that it is readily accessible to managers and the wider community;
- Develop and implement a long-term volunteer strategy that:
 - incorporates the skills and interests of volunteer groups in Anglesea Heath management activities;
 - includes a regularly updated register of suitable volunteer projects;
 - encourages younger volunteers to become involved in conservation programs in Anglesea Heath;
- Encourage volunteer groups to continue to seek alternative funding for approved projects within Anglesea Heath;
- Actively involve local community participants in the Consultative Committee and the Issue Related Working Groups.
- Inform the local community of Management Group activity.
- Actively promote and support the participation of Issue Related Workgroups (section C.4.5) in the planning process for Anglesea Heath (section B.2.1);
- Liaise closely with adjacent landowners and managers regarding management actions and projects within Anglesea Heath.

ANGLESEA HEATH - APPENDICES

E.2 APPENDIX 2 - SIGNIFICANT FLORA

National and State level

Rr	<i>Burnettia cuneata</i>	Lizard Orchid
Rr	<i>Eucalyptus yarraensis</i>	Yarra Gum
Vv	<i>Grevillea infecunda</i>	Anglesea Grevillea
Rr	<i>Caladenia venusta</i>	Large White Spider-orchid
Vv	<i>Prasophyllum spicatum</i>	Congested Leek-orchid
Kk	<i>Thelymitra</i> sp. aff. <i>pauciflora</i>	(Anglesea) Slender Sun Orchid
Ee	* <i>Prasophyllum correctum</i>	Gaping Leek-orchid
Ek	<i>Prasophyllum affine</i>	Heathland Leek-orchid
v	<i>Eucalyptus</i> aff. <i>cypellocarpa</i>	Otway Grey Gum
v	<i>Caladenia oenochila</i>	Red-Lipped Spider-orchid
r	<i>Schoenus turbinatus</i>	Top Bog-sedge
v	<i>Thelymitra benthamiana</i>	Blotched Sun-orchid
v	<i>Thelymitra mucida</i>	Hoary Sun-orchid
r	<i>Caladenia flavovirens</i>	Summer Spider-orchid

Regionally significant - (according to Carr 1995)

<i>Acianthus caudatus</i>	Mayfly Orchid
<i>Allocasuarina misera</i>	Slender Sheoak
<i>Conospermum mitchellii</i>	Victorian Smoke-bush
<i>Amphipogon strictus</i>	Grey-beard Grass
<i>Argentipallium obtusifolium</i>	Blunt Everlasting
<i>Boronia nana</i>	Dwarf Boronia
<i>Brachyloma ciliatum</i>	Fringed Brachyloma
<i>Brachyscome uliginosa</i>	Heath Daisy
<i>Caladenia caerulea</i>	Blue Caladenia
<i>Caladenia cardiochila</i>	Heart Spider-orchid
<i>Caladenia clavigera</i>	Plain-lip Spider-orchid
<i>Caladenia deformis</i>	Bluebeard Caladenia
<i>Caladenia pusilla</i>	Tiny Caladenia
<i>Caladenia tentaculata</i>	Large Green-comb Spider-orchid
<i>Coleana major</i>	Large Duck-orchid
<i>Chionochoa pallida</i>	Silvertop Wallaby-grass
<i>Comesperma calymega</i>	Blue-spike Milkwort
<i>Comesperma ericinum</i>	Heath Milkwort
<i>Daviesia brevifolia</i>	Leafless Bitter-pea
<i>Dillwynia cinerascens</i>	Grey Parrot-pea
<i>Diuris orientis</i>	Wallflower Orchid

National and State level cont.

r	<i>X Calassodia tutelata</i>	Bluebeard Waxlip Hybrid Orchid
k	<i>Caladenia australis</i>	Southern Spider-orchid
r	<i>Corybas fordhamii</i>	Swamp Helmet-orchid
k	<i>Austrodanthonia</i> sp.	Tall Wallaby-grass
k	<i>Caladenia dilatata</i>	Green-comb Spider-orchid
r	<i>Lepidosperma canescens</i>	Hoary Rapier-sedge
k	<i>Lepidosperma gunnii</i>	Slender Sword-sedge
k	<i>Genoplesium ciliatum</i>	Fringed Midge-orchid
r	<i>Prasophyllum potens</i>	Broad-lip Leek-orchid
v	<i>Thelymitra mucida</i>	Plum Orchid
r	<i>Thamasia petalocalyx</i>	Paper Flower
r	<i>Thelionema umbellatum</i>	Clustered Lily
r	<i>Baeekea ramosissima</i> ssp. <i>prostrata</i>	Tiny Baeekea
k	<i>Caladenia parva</i>	Small Spider-orchid

Regionally significant - (according to Carr 1995) cont.

<i>Drasera glanduligera</i>	Scarlet Sundew
<i>Drasera macrantha</i>	Climbing Sundew
<i>Eucalyptus baxterii</i>	Brown Stringybark
<i>Genoplesium morrisii</i>	Bearded Midge-orchid
<i>Gompholobium ecostatum</i>	Dwarf Wedge-pea
<i>Goodenia geniculata</i>	Bent Goodenia
<i>Hakea repullulans</i>	Western Furze Hakea
<i>Hibbertia fasciculata</i> var. <i>prostrata</i>	Bundled Guinea-flower
<i>Lepidosperma neesii</i>	Stiff Rapier-sedge
<i>Leporella fimbriata</i>	Fringed Hare-orchid
<i>Leptorhynchos linearis</i>	Shiny Buttons
<i>Labellia rhombifolia</i>	Tufted Lobelia
<i>Lomandra micrantha</i>	Small-flower Mat-lily
<i>Lomandra multiflora</i>	Many-flowered Mat-lily
<i>Lomatia ilicifolia</i>	Holly Lomatia
<i>Pyrochis nigricans</i>	Red-beaks
<i>Microtis rara</i>	Rare Onion-orchid
<i>Mitrasacme pilosa</i>	Hairy Mitrewort
<i>Olearia teretifolia</i>	Cypress Daisy-bush
<i>Orthoceras strictum</i>	Horned Orchid
<i>Phyllanthus hirtellus</i>	Thyme Spurge



ANGLESEA HEATH - APPENDICES

E.2 APPENDIX 2 - SIGNIFICANT FLORA cont.

Regionally significant - (according to Carr 1995)

<i>Phylloglossum drummondii</i>	Pygmy Clubmoss
<i>Pimelea octophylla</i>	Woolly Rice-flower
<i>Pimelea phyllicoides</i>	Heath Rice-flower
<i>Platysace heterophylla</i>	Slender Platysace
<i>Poa roadwayi</i>	Velvet Tussock-grass
<i>Prasophyllum elatum</i>	Tall Leek-orchid
<i>Pterostylis plumosa</i>	Bearded Greenhood
<i>Pimelea humilis</i>	Dwarf Bush-pea
<i>Pultenaea scabra</i>	Rough Bush-pea
<i>Rhytidisporum procumbens</i>	White Marianth
<i>Scaevola albida</i>	Pale Fan-flower
<i>Schizaea asperula</i>	Rough Comb-fern
<i>Schizaea bifida</i>	Forked Comb-fern
<i>Schizaea fistulosa</i>	Narrow Comb-fern
<i>Schoenus breviculmis</i>	Matted Bog-sedge

Regionally significant - (according to Carr 1995) cont.

<i>Sphaerolobium vimineum</i>	Leafless Globe-pea
<i>Spyridium vexilliferum</i>	Winged Spyridium
<i>Stipa mollis</i>	Supple Spear-grass
<i>Stipa muelleri</i>	Wiry Spear-grass
<i>Stylidium inundatum</i>	Hundreds and Thousands
<i>Stylidium perpusillum</i>	Slender Trigger-plant
<i>Thelymitra antennifera</i>	Rabbit-ears
<i>Thelymitra aristata</i>	Great Sun-orchid
<i>Thelymitra flexuosa</i>	Twisted Sun-orchid
<i>Thelymitra rubra</i>	Salmon Sun-orchid
<i>Thomasia petalocalyx</i>	Paper-flower
<i>Thysanotus juncifolius</i>	Rush Fringe-lily
<i>Thysanotus tuberosus</i>	Common Fringe-Lily
<i>Tricostularia pauciflora</i>	Needle Bog-sedge
<i>Utricularia tenella</i>	Pink Bladderwort

Key

Description of level of threat to taxa in Australia and Victoria according to Parks Victoria data 2001:

- E species endangered in Australia
- V species vulnerable in Australia
- R species rare in Australia
- e species endangered in Victoria
- v species vulnerable in Victoria, at risk of endangerment
- r species rare in Victoria but not considered otherwise threatened.
- k species poorly known, suspected to fit into a VROT category
- * denotes species listed under the Flora and Fauna Guarantee Act, 1988.

Sources:

- Carr (1995)
- M. Mac Donald (pers. comm.) (1996) Parks Victoria 2001

ANGLESEA HEATH - APPENDICES

E.3 APPENDIX 3 SIGNIFICANT FAUNA

MAMMALS

Scientific Name	Common Name	Status
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	CEn*
<i>Antechinus minimus</i>	Swamp Antechinus	LR
<i>Potorous tridactylus</i>	Long-nosed Potoroo	LR

BIRDS

Scientific Name	Common Name	Status
<i>Morus serrator</i>	Australasian Gannet	Vul
<i>Rallus pectoralis</i>	Lewin's Rail	End
<i>Accipiter novaehollandiae</i>	Grey Goshawk	LR
<i>Larus pacificus</i>	Pacific Gull	LR
<i>Sterna caspia</i>	Caspian Tern	Vul
<i>Sterna bergii</i>	Crested Tern	LR
<i>Plegadis falcinellus</i>	Glossy Ibis	Vul
<i>Ninox connivens</i>	Barking Owl	End
<i>Ninox strenua</i>	Powerful Owl	End

Key

CEn Critically Endangered

End Endangered

R Rare

Vul Vulnerable

LR Low risk near threatened

* Denotes species listed under the Flora/
Fauna Guarantee Act 1988

(Description as per threatened wildlife of Victoria)

Sources:

Ecology Australia, 1995

Wilson, B., pers. comm., 1996

Parks Victoria, 2001

Carr (1995)

M. Mac Donald (pers. comm.) (1996) Parks Victoria 2001

BIRDS cont.

Scientific Name	Common Name	Status
<i>Dasyornis broadbenti</i>	Rufous Bristlebird	LR*
<i>Ardea alba</i>	Great Egret	End*
<i>Nycticorax caledonicus</i>	Nankeen Night Heron	Vul
<i>Phalacrocorax varius</i>	Pied Cormorant	LR
<i>Platalea regia</i>	Royal Spoonbill	Vul

FISH

Scientific Name	Common Name	Status
<i>Galaxias truttaceus</i>	Spotted Galaxias	LR

REPTILES

Scientific Name	Common Name	Status
<i>Egernia coventryi</i>	Swamp Skink	Vul
<i>Litoria raniformis</i>	Warty Bell Frog	Vul



ANGLESEA HEATH - APPENDICES

E.4 APPENDIX 4 - LEGISLATION AND OTHER AGREEMENTS COMMONWEALTH OF AUSTRALIA

Public Land Use and Management

Australian Heritage Commission Act 1975
Endangered Species Protection Act 1992
Aboriginal and Torres Strait Islander Heritage
Protection Act 1984
Native Title Act 1993
Environment Protection and Biodiversity
Conservation Act 1999

Environmental Agreements

Convention on Biological Diversity 1992
National Strategy for Ecologically Sustainable Development
1990
Intergovernmental Agreement on the Environment 1992

VICTORIA

Public Land Use and Management

Land Conservation (Vehicle Control) Act 1972,
and regulations
Flora and Fauna Guarantee Act 1988
Domestic (Feral and Nuisance) Animals Act 1994
Wildlife Act 1975
Forest Act 1958, and regulations
Conservation, Forests and Lands Act 1987,
and regulations (including the Conservation, Forests and
Lands (Anglesea Heath) Regulations 2000)
Land Act 1958
Final Recommendations - Melbourne Area, District 1
Review (LCC, 1987)
Strategy for the Conservation of Biodiversity in
Victoria 1997

Fire Management

Country Fire Authority Act 1958
Otway Fire Protection Plan 1995
Code of Practice for Fire Management on
Public Land in Victoria 1995

Mineral and stone extraction

Mines (Aluminium Agreement) Act 1961
Mineral Resources Development Act 1991
Extractive Industries Development Act 1995

Cultural Heritage

Archaeological and Aboriginal Relics Act 1972
Heritage Act 1995

ANGLESEA HEATH - APPENDICES

E.5 APPENDIX 5 ENVIRONMENTAL WEEDS

Scientific Name	Common Name	Risk	Scientific Name	Common Name	Risk
<i>Acacia decurrens</i>	Early Black Wattle	V	<i>Genista monspessulana</i>	Cape Broom	V
<i>Acacia longifolia</i> var. <i>sophorae</i>	Coast Wattle	V	<i>Hakea laurina</i>	Pincushion Hakea	S
<i>Acacia myrtifolia</i> W.A. <i>provenance</i>	Myrtle Wattle	?	<i>Holcus lanatus</i>	Yorkshire Fog	V
<i>Acacia retinodes</i> var. <i>retinodes</i>	Wirilda	?	<i>Hypochoeris glabra</i>	Smooth Cats Ear	S
<i>Acacia saligna</i>	Golden-wreath Wattle	V	<i>Hypochoeris radicata</i>	Cats Ear	S
<i>Agrostis capillaris</i>	Brown-top Bent	V	<i>Leontodon taraxacoides</i>	Hairy Hawkbit	S
<i>Aira caryophylla</i>	Silvery Hair-grass	S	<i>Leptospermum laevigatum</i>	Coast Tea-tree	V
<i>Aira elegantissima</i>	Elegant Hair-grass	S	<i>Lolium perenne</i>	Perennial Rye-grass	S
<i>Anagallis arvensis</i>	Pimpernel	S	<i>Lotus corniculatus</i>	Birds Foot Trefoil	V
<i>Arctotheca calendula</i>	Cape Weed	S	<i>Malus domestica</i>	Domestic Apple	N
<i>Briza maxima</i>	Large Quaking-grass	V	<i>Melaleuca armillaris</i> ssp. <i>armillaris</i>	Giant Honey-myrtle	V
<i>Briza minor</i>	Lesser Quaking-grass	P	<i>Oxalis purpurea</i>	Large-flower Wood-sorrel	S
<i>Bromus diandrus</i>	Great Brome	V	<i>Parasenecio lophantha</i>	Cape Wattle	V
<i>Callistemon rigidus</i>	Callistemon	S	<i>Paspalum dilatatum</i>	Paspalum	V
<i>Carpobrotus aequilaterus</i>	Angled Pigface	S	<i>Pennisetum clandestinum</i>	Kikuyu	V
<i>Carpobrotus edulis</i>	Hottentot Fig	V	<i>Picris echioides</i>	Bristly Ox-tongue	S
<i>Centaureum erythraea</i>	Common Centaury	S	<i>Pinus pinaster</i>	Maritime Pine	V
<i>Cerastium glomeratum</i>	Common Mouse-ear Chickweed	S	<i>Pittosporum undulatum</i>	Sweet Pittosporum	V
<i>Chrysanthemoides monilifera</i> sp.	Boneseed	V	<i>Plantago coronopus</i>	Bucks-horn Plantain	S
<i>Cicendia filiformis</i>	Slender Cicendia	P	<i>Plantago lanceolata</i>	Ribwort	S
<i>Cirsium vulgare</i>	Spear Thistle	S	<i>Prunus cerasifera</i>	Cherry-plum	V
<i>Conyza albidia</i>	Fleabane	S	<i>Psoralea pinnata</i>	Blue Psoralea	V
<i>Caprosma repens</i>	Mirror-bush	V	<i>Senecio jacobaea</i>	Ragwort	P
<i>Crassula tetragona</i>	Crassula	P	<i>Solanum furcatum</i>	Nightshade	P
<i>Cynodon dactylon</i> var. <i>dactylon</i>	Silver-top Wallaby-grass	S	<i>Sollya heterophylla</i>	Blue Bell	V
<i>Dittrichia graveolens</i>	Stinkweed	P	<i>Sonchus asper</i> s.l.	Rough Sow-thistle	S
<i>Euphorbia paralias</i>	Sea Spurge	S	<i>Taraxacum officinale</i>	Dandelion	P
<i>Festuca rubra</i>	Red Fescue	P	<i>Sonchus oleraceus</i>	Sow-thistle	S
<i>Galenia pubescens</i>	Galenia	S	<i>Trifolium dubium</i>	Suckling Clover	S
<i>Genista linifolia</i>	Flax-leaf Broom	V	<i>Vellereophyton dealbatum</i>	White Cudweed	S
			<i>Vulpia myuros</i>	Rat's-tail's Fescue	S
			<i>Watsonia meriana</i> cv. <i>bulbillifera</i>	Wild Watsonia	V

RISK RATING CATEGORIES

(Rating as Carr, et. al., 1992)

- V Very serious threat to one or more vegetation formations in Victoria
- S Serious threat to one or more vegetation formations in Victoria
- P Potential threat to one or more vegetation formations in Victoria
- N Not a threat but may have visual impact
- ? Risk rating unknown

SOURCES:

Ecology Australia, 1995
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MANAGEMENT PLAN - NOVEMBER 2002

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