

Mount Elephant Management Plan

Prepared for:
**Mount Elephant Community Management Inc.
and
Trust for Nature**

By:
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This Management Plan is approved for release by the Mount Elephant Community Management Inc. Copies of the plan can be obtained from:

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FOREWORD

The year 2000 not only saw the beginning of a new millennium, but for the 50 residents of Derrinallum and Lismore, who climbed Mount Elephant to see the sun rise on the first morning of the year, it was the beginning of a dream to one day purchase the Mount for the community, and to revegetate and develop it as a tourist destination and place of recreation. Little did we know that this dream would become a reality in December of that year.

Known as the Swagman's Lighthouse, a landmark for all to navigate their way throughout the western district, Mount Elephant had been privately owned by the Eldridge family since European settlement. Heavily grazed, ravaged by bush fires in 1944 and 1977, invaded by Pattersons Curse, thistles and rabbits, but Mount Elephant has always been loved by all.

The Eldridge Family offered the Mount for sale by auction in December 2000. The communities of Derrinallum and Lismore rallied and with the Derrinallum Lismore Community Association Inc. (DLCA) as the steering committee, a partnership was formed with Trust for Nature to purchase the Mount. The Eldridge family fully supported the community initiative and the Mount was purchased before auction in December 2000.

Trust for Nature initially financed the purchase with the agreement that the DLCA would raise half of the purchase price, so on February 2001 a fundraising appeal was launched. Letters were written asking for donations, door knocks were held in Derrinallum and Lismore and extensive media promotion was undertaken. That \$100,000.00 was raised in just 5 months demonstrates the broad community support and esteem with which the Mount is held.

In February this year the communities of Derrinallum and Lismore, in partnership with Trust for Nature, formed Mount Elephant Community Management Inc. to manage, protect and appropriately develop the Mount. Two very significant steps forward taken by the Committee this year are the building of the access road from the Hamilton Highway into the ballast pit area and the development of this management plan that gives us a plan for the next 5 years and beyond. The Corangamite Shire has funded construction of the road, and the adjoining landowner Mr Jamie Maconachie generously leased the land for the road to the Committee. Funding for the management plan was provided by Alcoa World Alumina and the Department of Natural Resources and Environment.

The Committee has continued to hold regular open days on the first Sunday of each month and the Mount is also open at request from interested individuals and groups. The Committee has its own web site www.mountelephant.com sponsored by Datafast, for which we are very grateful. The web site has helped us to communicate with a broader range of people. We have developed strong links with a number of organisations and groups and continue to work closely with the Corangamite Shire and in partnership with Trust for Nature. The Committee is undertaking several important projects including the eradication of rabbits and Pattersons Curse and revegetation.

We continue to apply for funding at every opportunity and thank all organisations that have supported us to date. Most recently \$29,000.00 was received from the Federal Government Enviro fund, for revegetation and fencing on the northern

slopes above the ballast pit. We have also received \$80,000.00 from a former resident of our community, Mr Jack Borbidge, who wanted to give a lasting gift to the community.

All of the above would not be possible without the diverse skills and hard work of the Mount Elephant Community Management Inc. committee. One day we are planting trees and climbing all over the Mount destroying rabbit warrens, the next day we can be hosting a visit by the Governor John Landy and Mrs Landy and other officials, and the next we are meeting with the management plan consultants and holding public meetings.

I congratulate the consultants from the Centre for Environmental Management at the University of Ballarat for developing a management plan that is a usable working document for the development of Mount Elephant. We can all look forward to the next five years and beyond and watch our 'Mount' develop into a place of recreation, education, enjoyment and a benchmark for sustainable land management.

Mrs Lesley Brown

President, Mount Elephant Community Management Inc. December 2002.



Plate 1. View across Deep Lake

VISION AND MAJOR DIRECTIONS

Vision: The bold landscape presence of Mount Elephant will be protected and local native plants restored. Vibrant community involvement and management will be a source of inspiration for communities far and wide. Visitors will be attracted to the Mount to explore it as a natural wonder, enjoy the magnificent views and discover its features and history. Regional tourism will recognise the national significance of the Mount, and it will be a focus for learning about geology and other environmental and cultural studies.

This management plan has been prepared to guide the future management and development of Mount Elephant. It has been prepared following extensive research and consultation. The plan envisages a future for Mount Elephant as a centre for community use, enjoyment, recreation and education. As this is the first management plan that has been prepared for Mount Elephant it focuses on a number of priority areas, including:

- establishing basic facilities;
- consolidating and improving access to the site;
- commencing a marketing program;
- controlling pest plants and animals;
- commencing quarry stabilisation and rehabilitation;
- ensuring public safety; and
- commencing vegetation restoration.

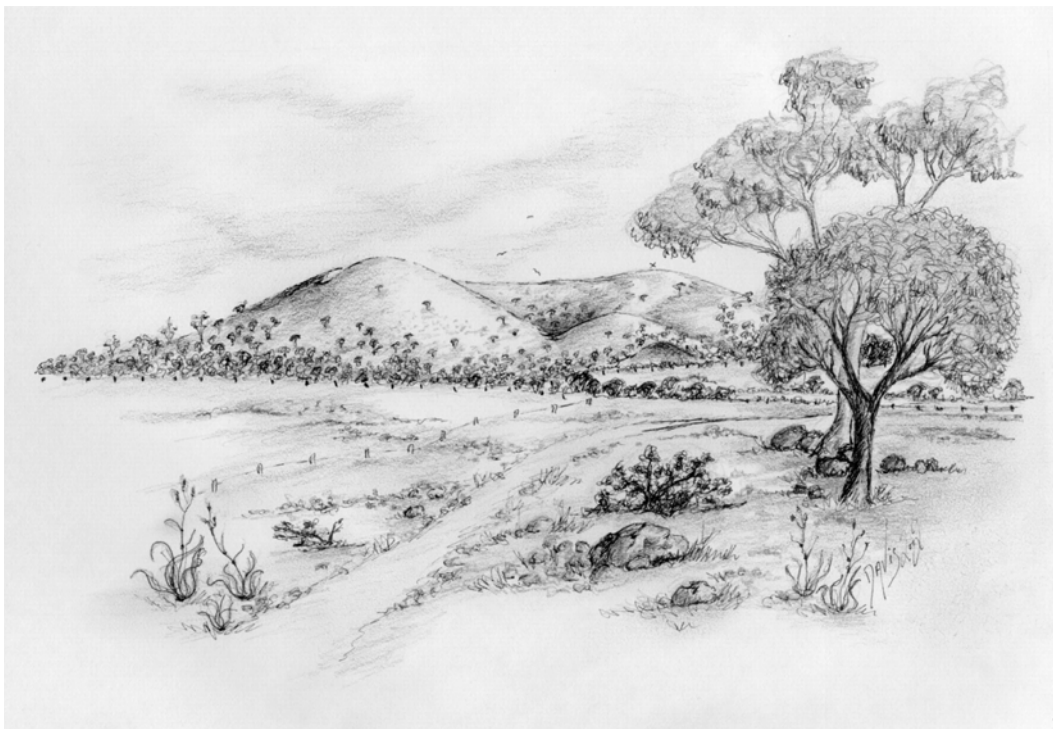


Figure 1. Impression of the Mount after restoration

Sketch by Janine Davis, 2002

During the life of this plan, it is expected that the community's involvement in management and development of the Mount will continue to grow. This will involve maintaining a strong relationship with Trust for Nature and building on networks with government and non-government organisations and the wider community. These partnerships will provide opportunities for learning about and contributing to leading community land management practice.

It is intended that Mount Elephant will become one of the major centres on the volcanic plains for interpretation of the volcanic origins of the region and its ecology. This will be achieved by developing a range of activities and programs that allow visitors to undertake formal and informal learning about the natural and cultural history of Mount Elephant. One of the key features of Mount Elephant is its geology and volcanic history. This brings with it significant opportunities for geological research and education programs, as well as areas of potential safety risk such as public access to the quarries and soil stability. Geological interpretation of the Mount will be extremely important for attracting and educating visitors.

There is a strong community desire to restore native vegetation to the Mount whilst preserving the mountain's distinctive and characteristic shape. Vegetation restoration will focus initially on planting within the crater and around the base. A pest plant and animal control program will be undertaken in a coordinated manner with this restoration project. It is expected that native fauna will gradually return to the area as habitat is created on the Mount and through surrounding regional landscape conservation programs.

Mount Elephant has a rich Aboriginal and European cultural history that is important to protect and interpret. The local Aboriginal community, through the Framlingham Aboriginal Trust, has expressed an interest in contributing to management and interpretation programs at the Mount.

The development and management of surrounding land use has the potential to affect restoration efforts and public enjoyment of the Mount. It is desirable that any development on or near the Mount is unobtrusive and views to and from the Mount are protected. Mount Elephant will be developed to provide for a range of recreational activities consistent with the conservation, educational and community development objectives of the site. Facilities will be designed and constructed to integrate harmoniously with the landscape.

Mount Elephant's tourism potential centres around its national geological significance, its position as a gateway to Victoria's Western Plains Volcanic Region, its distinct landform and unique events such as Music on the Mount. Marketing will focus on complementing tourism along the Great Ocean Road as well as linking with other features of the volcanic region.

This plan will be implemented in stages as resources become available and visitor demand increases. Funding will be sought from a range of sponsors and partners for development and ongoing management and maintenance.

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1. INTRODUCTION

Mount Elephant is a steep-sided, large and well preserved scoria cone with a deep crater (Joyce & King 1980) and one of the highest volcanoes in Victoria. It is an excellent example of a scoria cone. Its size makes it a major landmark for many miles (Joyce & King 1980). Its unique shape gives it its name. It is a regional landmark of geological, historical, cultural and landscape value. The Mount is of national scientific importance and it is listed on the Register of the National Estate.



Plate 2. Mount Elephant viewed from the Hamilton Highway

Mount Elephant was purchased in December 2000 having been in private ownership since European settlement. The communities of Derrinallum and Lismore, in partnership with Trust for Nature, raised the monies to purchase the Mount. It is now jointly owned and managed by the community, through Mount Elephant Community Management Incorporated (MECM) and Trust for Nature (TfN).

The community and Trust For Nature share a vision for Mount Elephant that is directed toward restoration and protection of the Mount and making it available to visitors. The MECM consists of 11 members of the local community and one Trust for Nature representative. The aims are:

- To protect the heritage and environmental values of Mount Elephant;
- To develop Mount Elephant to its full potential for tourism and education;
- To develop and implement a Management Plan; and
- To develop and maintain the partnership with Trust for Nature and the wider community and all groups with shared aims.

Trust for Nature is a non-profit organisation that has helped to conserve privately owned natural bush for over thirty years (see Appendix 1 for further information). The Trust is a body corporate established by the Victorian Conservation Trust Act, 1972, responsible to Parliament, and managed by honorary Trustees. Trust for Nature:

- acquires, conserves and manages areas of conservation value;
- facilitates donations of land and monies for conservation purposes;
- protects valuable natural bushland in private ownership with a covenant;
- acts as trustee of funds and properties held for conservation purposes; and

- facilitates and promotes fundraising appeals, land purchases and other conservation activities.

This Management Plan has been prepared under the guidance of Mount Elephant Community Management Committee Incorporated and with support from Alcoa World Alumina. The planning process has involved extensive consultation with stakeholders and relevant authorities, including direct discussions, public meetings and a questionnaire, analysis of a range of reference reports and material, and publication and distribution of a draft for comment.

1.1 The Management Plan

This plan is intended to assist with the every day management of the Mount by MECM, guide projects, assist with funding applications and to be easily understood by the general public. It is however primarily **a description of what the community wants to achieve and a vehicle to guide the community in working together, with stakeholders and relevant government authorities**, to achieve mutually agreed outcomes.

The plan identifies key values and management issues for Mount Elephant, discusses management options, and for each issue identifies management objectives and actions. It also identifies stages, where appropriate, and includes estimates of costs. It is supported by a separate reference collection and digital database. It is expected that this plan will guide management for approximately five years and should be reviewed after that time or as circumstances change.

The plan aims to establish the Mount as a centre for community use, recreation, enjoyment and education. It focuses on the establishment of basic facilities, consolidating and improving site access, removing threats and pests from the site, preserving and interpreting the geology, commencing vegetation restoration and monitoring programs, and ensuring public safety. A major emphasis is placed on building community recognition of the potential of Mount Elephant and responding as use and demand develops.

The extent of development will be constrained by the time needed to complete preliminary investigations, planning and design work, the resources of the community, the capacity to undertake large scale work and recognition that the demand for facilities at the Mount is poorly understood at this stage. The plan provides for staged development as resources become available and demand expands.

The plan includes recommendations that apply beyond the precinct of the Mount where relevant to the improved use and management of the Mount. It is understood that the plan has no jurisdiction outside the boundaries of the Planning Area, however relevant authorities and landowners may consider these suggestions.

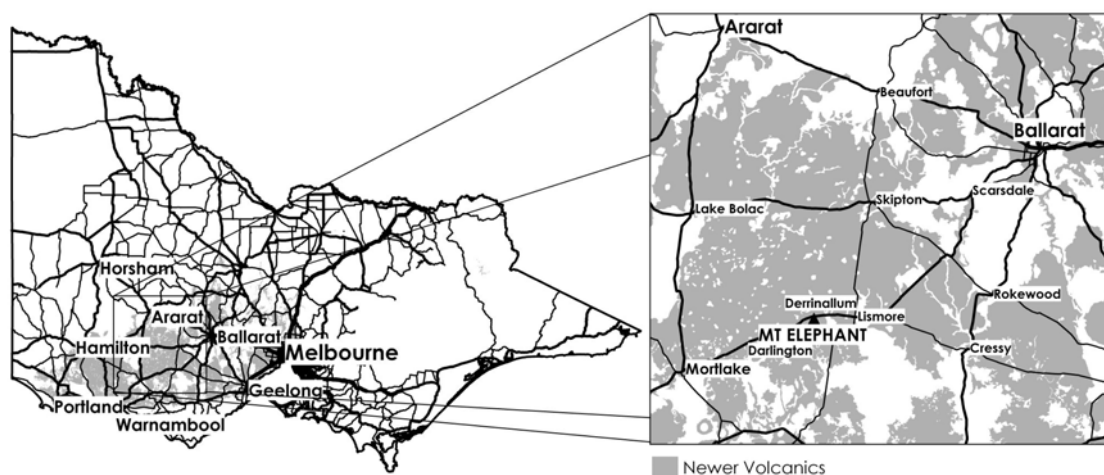
1.2 Location and planning area

Mount Elephant is located in the western plains of Victoria approximately 180 kilometres west of Melbourne, approximately 30 kilometres north of Camperdown and on the western edge of Derrinallum (see Map 1, page 3).

The Management Plan encompasses the area of freehold land and the access road leasehold held jointly by Trust for Nature and MECM. These areas are referred to as the 'Planning Area' in this management plan (see Maps 2 & 3 at back of plan).

1.3 Site description

The Mount has been grazed for many years and been affected by rabbits, timber cutting and bushfires. It has a cover of exotic pasture grasses and annual weeds with virtually no original vegetation. Some native vegetation has been planted in recent years on the western and northern edges of the property. The surrounding region features predominantly grazing and cropping landscapes with scattered urban settlements. It is located within the Corangamite Shire, the Corangamite Catchment Management Authority region and the Victorian Volcanic Plains bioregion.



Map 1. Mount Elephant location

The Planning Area consists of 140 ha freehold land held by Trust for Nature, with codicil recognising part ownership of MECM, and access road leasehold of 2.138 hectares (99 years) by Trust for Nature and MECM. The leasehold provides for vehicular access to Mount Elephant and includes conditions regarding fire prevention, closure on days of total fire ban, protection of the railway ballast, pest plant and animal control and indigenous plantings.

The freehold area of the Planning Area is currently leased for grazing purposes. The lease includes conditions prohibiting the destruction of vegetation, removal of soil, cultivation and alterations and conditions requiring weed control.

1.4 Legislation and policy framework

This management plan is guided by the provisions of the Trust for Nature Strategic Plan which sets directions for future management of the Planning Area.

The Statement of Significance on the Register of the National Estate states, 'Mount Elephant is one of the highest and one of the major scoria cones in the largest homogeneous volcanic plain on earth. It has scientific and recreational significance.' (AHC Database July 2002). It is noted in the Register that quarrying is 'to the detriment of the place'.

The Mount also appears on the Register of Aboriginal Affairs Victoria as a Registered Aboriginal Post-contact Place. Such places provide Aboriginal people today with an important link to their culture and their past (AAV Site Identification Mini Poster 11).

The Corangamite Shire Derrinallum Strategic Development Plan 2000 – 2010 includes a number of initiatives relevant to the management of the Mount, including maintaining Mount Elephant in its natural state, strengthening township identity with the Mount, creating public access to the Mount, using the Mount as a marketing symbol and developing more facilities and events. It also includes the provision of improved tourist information in Derrinallum, including a tourism and information shelter in the main street.

The area is zoned Rural (RUZ) under the Corangamite Planning Scheme 1999, which also encompasses most of the locality of the Mount. The objective of this zone is to provide for the sustainable use of land for extensive animal husbandry and crop raising. All subdivision requires a permit and must be at least 40 hectares. Buildings, dams and earthworks require a permit if they do not meet setback requirements from roads and boundaries. The Planning Area and the adjacent Corangamite Shire quarry are shown as a Volcanic Landscape Area Significant Landscape Overlay (SLO1). The objective of this overlay is to protect and enhance the visual and environmental quality and character of volcanic features and control the impact of development. Permits are required for all new buildings, roads and construction.

The *Corangamite Regional Catchment Strategy* (CCLPB 1997) locates the Planning Area within the Western Basalt Plains Resource Management Unit (RMU). Among the priorities for this RMU are Serrated Tussock control, water quality management, and improved management of native grasslands and soils. Also important are a number of subsidiary strategies developed by the Corangamite Catchment Management Authority (CCMA) which are discussed where appropriate in later sections of this plan.

Relevant legislation and other major documents are listed below. The major elements of these and their relevance to the management of the Planning Area are also discussed in the appropriate section of this plan.

- Legislation including the Victorian *Extractive Industries Development Act 1995*, *Planning and Environment Act 1987*, *Water Act 1988*, *Catchment and Land Protection Act 1994*, *Flora and Fauna Guarantee Act 1988* and *Wildlife Act 1975* and Australian *Environment Protection and Biodiversity Conservation Act 2000*.
- The three documents that make up Victoria's Biodiversity Strategy particularly the strategy Victoria's Biodiversity, Directions in Management (NRE 1997).
- Corangamite Draft Native Vegetation Plan (CCMA 2000).
- Victorian Tourism Strategic Plan 2002 – 2006.
- Volcanic Region Tourism Development Strategy (Tonge 1998).
- Corangamite Shire Recreation Strategy Plan (2001 – 2005).
- Corangamite Municipal Fire Prevention Plan.
- Corangamite Shire Tourism Strategy (2001).

2. COMMUNITY AND PARTNERSHIPS

Mount Elephant has long been an icon for the local communities of Derrinallum and Lismore. Mount Elephant is the greatest local natural physical asset and its community ownership provides opportunities to invigorate the community and economy of the local area.

The Ö volcano has always been very dear to the locals who live on the flat grasslands of the Western District.

(The Standard Magazine, Saturday 23 December 2000, p.1)

The campaign undertaken to raise funds to purchase the Mount generated enormous support for this unique natural feature. This was an immense achievement for a small community, and the motivation and skills applied to achieve this demonstrate the importance of the Mount to the community far and wide.

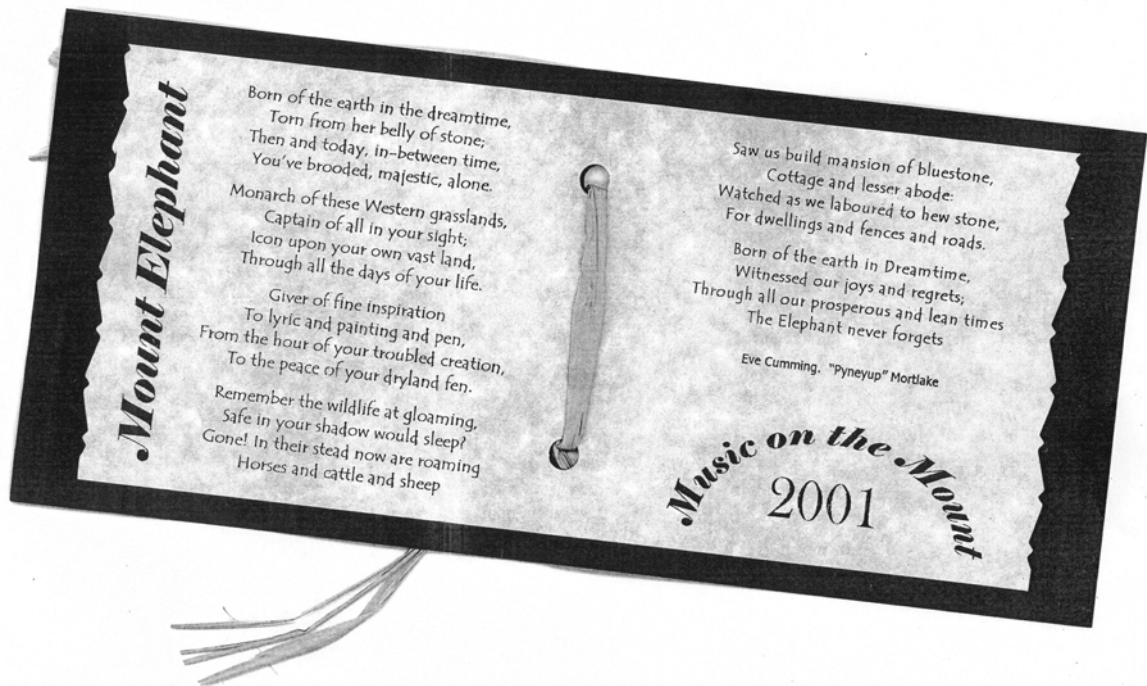


Plate 3. Mount Elephant ì Music on the Mount 2001î

Poem by Eve Cumming, ìPyneyupî, Mortlake

Community consultation undertaken in the preparation of this plan indicated strong support for ongoing community management of the Mount. Comments also identified a need to ensure that management structures allow for genuine community involvement and regular communication with all stakeholders.

The members of MECM have a broad range of skills including land management, business and community development. MECM has established a Friends group that has a growing base of members and which provides a foundation of funding to cover some management and administrative costs. Continuing to foster and

support this network of Friends is important to the future of the Mount and its management.

One of the keys to successful community management of public open space is access to technical advice and landscape professionals to provide guidance when required. The relationship of MECM with organisations and groups such as Trust for Nature, the local Landcare group, Geological Society of Australia (Victoria), Department of Natural Resources and Environment, Parks Victoria, Corangamite Catchment Management Authority and other organisations with an interest in and responsibility for natural resource management is fundamental in supporting its ability to manage the landscape.

The Mount Leura/Mount Sugarloaf Development Committee is undertaking a development program for a site similar to Mount Elephant and both sites will benefit from close cooperation between the managers. Trust for Nature provides a major resource to the management committee, particularly for technical advice regarding management, monitoring and support. The regional Volcanoes Discovery Trail Committee is an important vehicle which links a large number of organisations together and involvement offers considerable benefit to MECM and the other members.



Plate 4. Community planting along the northern boundary

As Mount Elephant grows as a centre for interpretation and education, links with other providers of environmental education, such as museums, zoos and national parks, will become increasingly important.

It is recognised that the ongoing management, maintenance and future development of the Mount will require significant funding support and/or income generation. MECM has formed strong partnerships with a range of government, non-government and community based organisations. These partnership arrangements have allowed for a number of achievements, such as revegetation, access road works, major events such as Music on the Mount and planning activities, such as this management plan.

There are a number of government grant opportunities available for infrastructure development, environmental projects, arts and cultural activities and community capacity building/community development. There are a range of private corporate sponsorship/philanthropic funds that can be accessed for community and

environmental projects. Additionally, MECM has produced a range of Mount Elephant merchandise, which is adding to its ability to generate income.

Partnership arrangements will assist the community to achieve both its long term and short-term goals for Mount Elephant. These arrangements need to recognise the role and significance of a range of partners, including government, non-government organizations, community groups and individuals.

2.1 Objectives

- Continue community management of Mount Elephant through strong partnerships with Trust for Nature, government and non-government organisations, business/corporations and community networks.
- Nurture the ongoing involvement of the local and wider community in the management and maintenance of the Mount.
- Establish partnership arrangements, which provide mutual learning opportunities in relation to community land management.

2.1.1 Actions

- Celebrate the community and Trust for Nature purchase of Mount Elephant with an annual event.
- Develop an agreement with Trust for Nature that satisfies all of its requirements for ongoing promotion and support.
- Develop and implement a communication plan that ensures there are ample opportunities for information exchange between MECM and all stakeholders.
- Establish or continue a range of priority partnership arrangements to achieve the objectives of this plan (see Table 1 below).
- Continue to promote and expand the membership of Friends of Mount Elephant.
- Continue to work in close partnership with Trust for Nature, the local Landcare group, Geological Society of Australia (Victoria) and other government and non government organisations responsible for natural resource management to plan and implement projects.
- Continue to work in close liaison with the local schools at Derrinallum and Lismore to involve students in learning about and developing the Mount.
- Develop partnership arrangements with other providers of environmental education and interpretation (see Table 1) to share and promote best practice and coordinate activities.
- Develop partnership arrangements with organisations across the tourism industry and across the western district of Victoria (see section 9).
- Continue to run a range of major and minor activities on the Mount to allow for community involvement that responds to the individual's motivation for all ages and abilities.
- Ensure the structure of MECM allows for a range of people to become involved and to use and develop their skills.
- Develop ongoing partnership funding arrangements with a variety of organisations (see section 11).

Table 1 Priority partnerships to be continued or established

Partnership objective	Priority partners
General / Community management	Community, Trust for Nature, Sponsors, Framlingham Aboriginal Trust
Interpretation / education / research	Derrinallum College, Lismore Primary School, Local Historical Society, Aboriginal Affairs Victoria, Framlingham Aboriginal Trust, Mt Leura/Mt Sugarloaf Development Committee, Universities of Melbourne, Ballarat and South Australia, Parks Victoria, Department of Employment, Education and Training, Sovereign Hill (Narmbool), Museum of Victoria, Melbourne Zoo, Werribee Zoo, Geological Society of Australia (Victoria), Field Naturalists Club of Victoria, Interpretation Association of Australia, Conservation Volunteers Australia, Greening Australia, Earthwatch Australia, Australian and New Zealand Scientific Exploration Society (ANZSES)
Tourism/marketing	Local and other business/corporate, Volcanoes Discovery Trail Committee, Corangamite Volcanic Trail and Centre Committee, Volcanic Hinterland Tourism Association, Mt Leura/Mt Sugarloaf Development Committee, Tourism Victoria, VicRoads, Corangamite Shire Council, other Tourism operators in the region
Land management / revegetation	Trust for Nature, Corangamite Catchment Management Authority, Department of Natural Resources and Environment, Landcare, Mt Leura/Mt Sugarloaf Development Committee, Geological Society of Australia (Victoria), Field Naturalists of Victoria, Conservation Volunteers Australia, Greening Australia (Victoria), Tree Project, Corangamite Shire Council, Adjacent landowners
Infrastructure development	Department of Innovation, Industry and Regional Development, Corangamite Shire Council, Business/Corporate, Philanthropic Trusts
Events / activities	Business/Corporate, Corangamite Shire Council, Tourism networks

3. INTERPRETATION AND EDUCATION

Mount Elephant's geology, landform and history provide a sound and exciting foundation for a range of community focused and academic interpretation and education programs. Currently there are no facilities at Mount Elephant to support such programs.

A number of individuals, organisations and educational institutions have been involved in undertaking research at the site or using it as a basis for education and excursions. These include schools and secondary colleges across the state, universities including the universities of South Australia, Ballarat and Melbourne and individual geologists. According to Tonge (1998) there are currently over 29 Australian tertiary institutions offering courses in Geology.



Plate 5. Scoria exposures on a quarry face

Community consultation indicated very strong support for using the site as a basis for interpretive and educational activities, including education/study tours, nature studies and interpretative activities. Of the survey respondents who supported commercial activities at the site, a majority felt that interpretation and education would be the most viable commercial activity. One respondent to the survey suggested that the Mount be developed as a flagship in the western district of how this threatened landscape can be restored.

Both of the local schools at Derrinallum and Lismore have expressed a strong interest in involving their students in the development of Mount Elephant and using it as a basis for educational programs. The schools supported the provision of basic facilities for use by their students on site visits – shelter, interpretive materials, toilets and potentially a barbecue. Lismore Primary School has a greenhouse and the students have been involved in propagating plants for Landcare activities. They would like to establish a similar arrangement for the Mount.

The Department of Employment, Education and Training (DEET) has recently funded a project position at Ballarat University School of Science and Engineering to work with schools to develop geological excursions and educational materials.

There may be opportunities for MECM to similarly work with DEET to develop a schools education package focused on the Mount.

There are a number of organisations that organise volunteers to partake in scientific research in wilderness areas or areas of scientific interest in Australia, in particular Earthwatch Australia and the Australian and New Zealand Scientific Exploration Society (ANZSES). Volunteers generally pay to participate in the program, and expeditions can be targeted at people of all ages, and may have opportunities to link to curriculum for VCE students. Additionally, organisations such as Conservation Volunteers Australia and Greening Australia (Victoria) involve their volunteers in land management activities. The potential for further expeditions to Mount Elephant to contribute to research and environmental activities should be explored.

Interpretation is a method of education that is commonly used for communicating natural and cultural concepts. It is based on a range of methods which aim to stimulate interest and convey complex messages in a simple and easy to understand manner. The preparation of an interpretation strategy, identifying target audience/s, developing messages and themes and selecting the tools or mechanisms that will be used would be valuable for Mount Elephant. An integrated program can then be developed that meets the needs of visitors to the site and achieves educational objectives. The use of a strong and consistent image or branding will be useful for developing a professional and effective interpretive program. Involving an artist in the design and implementation may help to achieve this unique image.

Mount Elephant will have a range of target audiences, in particular casual, short stay visitors touring the region, volcanic landscape enthusiasts, naturalists, history buffs and people undertaking formal education. The level of knowledge, interest, physical ability and age range of visitors to Mount Elephant will vary widely. This will require a flexible and layered approach to the design and implementation of interpretation.

There are a number of interpretive tools and techniques available, such as information boards and displays, signage, face to face presentations, brochures, self guided walks and exhibitions. The mechanisms chosen for Mount Elephant should enhance visitor experience and complement the visual quality of the site. It has been said that a well designed and well placed seat can be the best interpretive device. As a starting point it will be important to develop a brochure, information board and signage that can be used to encourage people to access the Mount and orientate themselves as they explore the Mount.

The current Mount Elephant promotional brochure could be revised to include the vision and objectives presented in this plan. An additional brochure, similar to a Parks Victoria Park Note, could be developed to provide visitors with information about the site and activities, and to enable them to undertake self-guided exploration of the site. This may be developed further into a series of notes about the Mount as this is warranted by visitor numbers, interest and resources.

There are a number of educational themes and significant stories that can be used as the basis of interpretation at Mount Elephant. These include, but are not limited to the following list.

- Geology and volcanic history
 - national significance
 - history of quarrying
 - use of volcanic materials
 - western plains volcanic region
- Plants and animals
 - western plains ecology
 - biodiversity
 - threatened/extinct species
 - revegetation
 - pest plants and animals
- Cultural history
 - Aboriginal history
 - settlement stories
- Sustainable land use and management
 - history of land use change
 - landscape restoration
 - Landcare
 - sustainable agriculture
- Private land conservation
 - Trust for Nature role and initiatives
 - community initiatives in western Victoria
- Community management
 - capacity building
 - partnerships
 - viable community organizations
 - small rural communities.

3.1 Objectives

- Become one of the major centres on the volcanic plains for interpretation of the volcanic origins of the region and its ecology.
- Develop a range of interpretive and educational activities that allow visitors to undertake formal and informal learning and research about the natural and cultural history of Mount Elephant.
- Foster relationships with appropriate educational institutions to develop educational programs about the Mount.

3.1.1 Actions

- Foster a relationship with appropriate educational institutions, particularly schools and universities and those with an established interest in the Mount, to involve students in learning about the Mount.
- Continue to work in close association with the schools at Derrinallum and Lismore to involve them in learning about and contributing to future development of the Mount.
- Approach the Department of Employment, Education and Training to explore opportunities to provide funding to prepare a schools education package focused on Mount Elephant and the surrounding volcanic district.
- Liaise with teachers at Derrinallum College who have been using Mount Elephant as an educational resource to enhance and further develop educational material that has been prepared for the Mount.
- In consultation with universities and government agencies identify and pursue opportunities for geological, environmental and other relevant research that will further the conservation, education and recreation objectives of the Mount.
- Work with local schools, institutions and community groups to undertake environmental surveying and monitoring of the rehabilitation of the Mount.
- Undertake staged development of infrastructure required for education and interpretation (see section 10).
- Update the current Mount Elephant promotional brochure to include the vision and objectives included in this plan.
- Develop an information brochure that may at least initially also function as a tourist information brochure, to be available on site and in surrounding visitor and tourist centres.
- Engage a consultant and artist to develop an interpretation strategy for Mount Elephant that is based on unique and consistent branding which identifies the target audience/s, messages, educational themes and interpretive mechanisms and is focussed around volcanic and ecological themes.
- Implement the interpretation strategy as resources become available.
- Work with members of the Volcanic Trail Advisory Committee (see section 9) to ensure that design and content of programs and facilities is compatible with the greater vision for the western district Volcanic Region Trail and complements those at other sites in the region such as at Mount Leura and Mount Sugarloaf.
- Discuss opportunities for volunteer scientific expeditions and research activities with Earthwatch Australia and the Australian and New Zealand Scientific Exploration Society (ANZSES).
- Explore opportunities with Conservation Volunteers Australia and Greening Australia (Victoria) to conduct training at the Mount and involve their volunteers in land management activities.
- Investigate the opportunity for commercial/ecotourism operators to undertake activities or deliver programs on the site.

4. GEOLOGY, SOILS AND HYDROLOGY

Mount Elephant is a steep sided volcanic scoria cone. It is one of the highest volcanoes in Victoria, rising 240 metres above the surrounding plain, and one of the most obvious volcanoes in Australia (Rosengren 1994). It was formed approximately 20,000 years ago as one of over 350 volcanic eruption points in the Newer Volcanics Province of Victoria (see Map 1, page 3), which extends across south western Victoria from Melbourne and Seymour to Portland.

The plains of Victoria's Western District and those of south-eastern South Australia rank as Australia's most extensive volcanic province. In global terms it is included within the top six most significant volcanic provinces Ö. (Tonge 1998).

The landscape of the Newer Volcanics Province in the western plains is characterised by extensive basalt plains with numerous new hills and rises marking the eruption points and scoria cones providing the major relief elements. Many lakes and swamps have been formed from streams displaced by major changes to earlier drainage systems. Deep narrow valleys and some impressive gorges and waterfalls occur where lateral erosion has been restricted.

Mount Elephant is a site of National significance and listed on the Register of the National Estate (AHC Database 22 July 2002). Characteristics of the Mount mentioned in Rosengren's evaluation of eruption points of the Newer Volcanics Province include its conical form, steep sides, crater and access to sections of the ejecta in the quarries. It is the best example of a breached scoria cone in Victoria and possibly in Australia (Rosengren 1994).

The cone of Mount Elephant consists of scoria, blocks and bombs of solid lava with common megacrysts of granite and olivine. It is a major site of interest to tertiary institutions, schools and other geological specialists.

As the most colourful and noisy volcanoes Ö Ö great showers or fountains of red-hot, glowing lumps of frothed-up lava, sprayed from the vents by blasts of escaping gas (Birch 1994), scoria volcanoes like Mount Elephant offer considerable potential for active interpretive display. It should be recognised that the development of facilities and recreational infrastructure also has the potential to detract from the geological significance and interest in the cone.

The quarries provide very good exposures of sections of the ejecta. There is an expected ongoing demand by students and researchers to have access to the faces of the quarries (including desire to collect samples and bombs) and to the crater (P. Kinghorn, pers. comm., University of Ballarat, July 2002). These exposures offer potential for interpretation and education and may be seen as a potential marketing advantage to Mount Elephant. There is potential for long term damage and loss of geological features to occur as a result of collecting, sampling and investigation by geologists, that will require management. There is also a safety risk to visitors due to the steepness of the sides of the cone, the looseness of the scoria surface in many locations and also the steep and unstable faces of the quarries that will require restriction of access until stability and risk assessments are undertaken.

Scoria is used for a number of commercial purposes, including road surfacing and building materials. There are two quarry scars on Mount Elephant. One on the

northern flank has been a source of railway ballast in the past and has long been disused. The large quarry on the western flank is partially in adjacent freehold land and operated by the Corangamite Shire as a minor source of scoria and a waste transfer station (see section 8).



Plate 6. Quarry face on western perimeter

Rosengren (1994) describes the quarry on the western perimeter: 'This rivals the worst examples of disfigurement of a major and significant volcanic structure in the Newer Volcanics Province'. Joyce and King (1980) point out that quarrying has left steep sides that are susceptible to slumping. They recommend control of rabbits and grazing to ensure adequate groundcover. A landscape report on the quarries by Rayment and Associates (Rayment n.d.) proposed the establishment of screening vegetation around the quarries and along the Hamilton Highway and the reshaping of the western face of the Mount. A rehabilitation plan by the then Department of Manufacturing and Industry Development (Welsh 1991) recommended topsoiling and planting the quarries, including trees to screen the remaining escarpments. Both these reports suggested experimental programs to identify the most appropriate stabilisation methods. Advice from NRE (J. Midas, Chief Inspector of Quarries, pers. comm., 2002) suggested terracing or filling with material from above the quarry.

The profile of the mountain was identified as a major element of community interest in the community consultation undertaken in the preparation of this plan, as was its geological significance. The need for rehabilitation of the quarries was the second most important issue identified. It is understood that many sponsors who donated to support the acquisition of the Mount were motivated by concerns about the visual impacts of the quarries.

Very shallow soils and free draining scoria on the upper slopes of the cone and crater may limit vegetation growth but provide good surfaces for pedestrian access on moderate slopes. Dark loam soils on the lower slopes provide opportunity for vegetation establishment. The loams on the lower slopes can also be prone to slumping, which needs to be considered in planning rabbit burrow ripping projects. Loose scoria surfaces on the higher slopes make access difficult and preclude visitor access to some areas unless appropriate track works are undertaken.

Scoria cones are often a local area of groundwater recharge and provide good groundwater quality to local areas. In some areas springs on the flanks of cones have been utilized for irrigation and commercial spring water. There is the possibility that vegetation establishment can have an impact on local spring quantity and quality although this is little researched (Dahlhaus et al. 2002). No

apparent impact has been made on groundwater by the recent revegetation works in a similar system at Mount Leura (T. Corlett, CCMA, pers. comm., August, 2002). There are no major springs at the base of Mount Elephant.

4.1 Objectives

- Review and address visual impacts, soil stability and public safety risks associated with the quarries.
- Support geological research and education programs, in liaison with the geological research and education communities.
- Interpret geological values.

4.1.1 Actions

- Exclude visitor access to the quarries and erect appropriate barriers and signage, pending risk assessment.
- Undertake geotechnical assessment of all quarries to assess stability, risks and stabilisation options, in association with the Corangamite Shire and NRE.
- Develop a quarry stabilisation and rehabilitation plan, providing for stabilisation of faces, minimising visual impacts, monitoring and rehabilitation, and which allows for continued safe access for interpretation and education purposes, in association with the Corangamite Shire and NRE. Professional landscape architect and geotechnical services should be engaged.
- In association with the Corangamite Shire and NRE, and as part of development of information and interpretation plans and programs (see section 3), undertake a detailed assessment of the quarry faces to identify the potential for public and specialist geological access and display.
- Develop a quarry face interpretation plan, providing for safe access and maintaining selected faces free of vegetation.
- Develop a protocol for geological investigations, in association with the Geological Society of Australia (Vic) and interested schools and universities, that will address issues such as control of sampling, collecting and removal of specimens, and establish an appropriate permit system.
- Seek assistance from the Geological Society of Australia (Vic) to review and expand the information about Mount Elephant in the Australian Heritage Commission Register.
- Monitor the flows from groundwater bores in the vicinity of the cone.

5. PLANTS AND ANIMALS

5.1 Plants

Mount Elephant today is effectively cleared of native vegetation and supports little habitat for native fauna. A major objective and challenge for the managers of Mount Elephant is to restore native vegetation, whilst achieving a balance with preserving the image and geological features of the Mount.



Plate 7. View over the crater around 1911

Photograph by Gabriel Knight, La Trobe Picture Collection, reproduced with permission from the State Library of Victoria

It is likely that since its eruption approximately 20,000 years ago, Mount Elephant has supported an open woodland with a grassy understorey. Pollen sequences obtained from various lakes on the western plains (including Tower Hill, Lake Terang, Lake Keilambete and Lake Bullenmerri) show that grassland expanded at the expense of forest as the climate became colder and drier between 25,000 and 18,000 years ago and then contracted between 18,000 and 10,000 years ago as the climate trend was reversed (DiCosta et al. 1989; DiCosta and Kershaw 1995; Dodson 1974, 1979; Jones 1993.). During the glacial maximum (around 18,000 years ago), grasslands were rich in daisies and saltbushes. Casuarina and Bracken became more common as rainfall and temperatures rose around 11,000 years ago. Since the beginning of the Holocene (10,500 years ago) the regional vegetation appears to have remained reasonably constant (Jones 1993).

Pictorial and written accounts of the vegetation from the early period of pastoral settlement are limited. Perhaps the most informative are the works of Eugene von Guerard in 1857 of the property *Larra*, which show scattered trees on the slopes of Mount Elephant, with apparently denser concentrations within the crater and around the base. Von Guerard's drawing of Mount Elephant also shows belts of stunted trees (probably Sheoaks, Honeysuckles (*Banksia marginata*) and Blackwoods) on the Stony Rises near the mountain.

Some years later in 1886 the naturalist Taylor commented enthusiastically on the
Ö . Banksias, casuarinas, gum-trees, melanoxylons [Blackwoods], Ö . all gathered together by nature to form a botanic garden within the interior of a disused volcano Ö (Taylor 1886).

Through analysis of historical and environmental information it can be surmised that immediately prior to pastoral settlement, Mount Elephant was covered by Scoria Cone Woodland (Commonwealth and Victorian RFA Steering Committee 2000). This vegetation type was dominated by Manna Gum, Honeysuckle, Drooping Sheoak, Blackwood, Sweet Bursaria and Tree Violet. The understorey consisted largely of native grasses (especially Common Tussock Grass and Wallaby Grass), Bracken, and a conspicuous herb layer including native peas and daisies.

The structure of vegetation on the Mount would have reflected local site conditions. Grassy Woodland occurred on well-drained fertile soils at the base of the mountain changing into Open Grassy Woodland on the slopes of the mountain and on the rim. Trees and larger shrubs became more stunted by exposure and water stress on exposed areas such as the rim, on the upper slopes and on northern and western slopes. Tree cover also decreased with increased exposure; Manna Gum dominance decreased and Drooping Sheoak and Blackwood became more prominent.

The walls within the crater would have supported similar vegetation to the external slopes, with the degree of exposure and aspect again being the main determinants of structure and composition. On the south facing slopes of the crater, especially towards the base where soil development was greatest, the woodland may have become quite tall and dense with Manna Gum and Blackwood dominating. On the floor of the crater the jumbled rocky substrate would have supported a dense shrubland of Tree Violet and Sweet Bursaria with a relatively open overstorey of Manna Gum and Blackwoods. Bracken would have been prominent in the understorey. Map 2 and Appendix 2 provide a partial description of species and vegetation groups likely to have occurred on the Mount.

Despite some suggestions that the crater of Mount Elephant may have been occupied by rainforest vegetation at some time in the past, there is no evidence either historically or from regional pollen records to support this (Dr. John Grindrod, pers. comm., Monash University, July, 2002.). Undoubtedly the comparatively moist and sheltered environment within the crater would have supported dense vegetation that was both rich in Bracken and other ferns such as Maidenhair.

The Stony Rises that cover much of the surrounding landscape would have supported Stony Rises Woodland dominated by Manna Gum and Blackwood with an understorey that included Bracken, Sword Tussock Grass, Shiny Cassinia and various daisies. On the edges of these flows Plains Sedgy Wetlands occurred in seasonally wet shallow depressions created as a result of the lava impeding overland drainage.

Within a few decades of pastoral settlement the structure and composition of the vegetation of Mount Elephant had changed dramatically. While it is likely that aboriginal people had used systematic mosaic burning across the grasslands of the region, this practice would have stopped with the arrival of the graziers. The

rapid change from native marsupial grazing to more intensive grazing by hard-footed sheep and cattle, along with removal of timber for yards, huts and firewood would have favoured grasses (especially the newly introduced annual grasses) over the native herb flora. Vegetation diversity was quickly diminished across the plains.

The arrival of rabbits into the district in the 1870s caused a further decline in native vegetation both through direct consumption and also through regeneration failure, especially of woody species. The general introduction of new pasture plant species across the region and the consequent increase in stocking rates would also have hastened the decline of native understorey plants unable to compete with the new arrivals. The occasional wildfires would have killed many trees, especially Honeysuckle and Drooping Sheoak, with added pressure from grazing and lack of viable seed, due to stress, preventing natural regeneration.

These impacts on the native vegetation resulted in conditions which favoured the establishment of a suite of opportunistic weeds that were able to colonise bare soil.

A photograph taken around 1911 by Gabriel Knight gives an indication of the former extent of tree cover on the top of Mount Elephant and also the extent of vegetation decline within a lifetime of pastoral occupation (Plate 7). Weeds are widespread, tree stumps and dying trees can be seen, bare ground is apparent on the steeper slopes and there are no young trees to be seen.

Today the only remnants of the pre-pastoral settlement vegetation that can be found on the mountain are small patches of Tree Violet on the southern slopes of the crater and some stumps and logs of Drooping Sheoak on the upper slopes of the crater.

Scoria Cone Woodland was previously rare across the Victorian Volcanic Plain and restricted to the relatively small area of scoria cones in this region: It is estimated that this vegetation type once covered just over 12,000 ha. There are probably less than 1,000 ha remaining (although much of this is highly degraded) with roughly half this area in private ownership and this vegetation type is considered to be a priority for protection within the CCMA region (CCMA 2000). Restoration of this community at Mount Elephant would, therefore, be of considerable value for education and conservation within the region.

One threatened plant species has been observed at Mount Elephant: Basalt Peppercreep, (*Lepidium hyssopifolium*) recorded in 1874 by no less than Ferdinand Mueller (Victoria's first Government Botanist)*. It is highly unlikely that this nationally endangered species still occurs around Mount Elephant as there is no suitable habitat remaining.

5.2 Animals

Dingoes, kangaroos, bandicoots and native cats once thrived at Mount Elephant and on the surrounding country, native cats in the hundreds and a lesser number of tiger cats (McGregor and Oaten 1985). To this list one can almost certainly add bats, a number of smaller animals such as Dunnarts and

* Dr. J.H. Willis, former Victorian Assistant Government Botanist, also visited Mount Elephant and recorded a number of moss specimens in 1972.

possibly also wombats, that were known to occupy areas of scoria on the Volcanic Plains (Meckhorst 1995). Most of these species have long disappeared from both the local area and from the Victorian Volcanic Plains in general (Seebeck 1984).

While much of the birdlife of the region would have been concentrated around the lakes and swamps, it is likely that Mount Elephant would have supported a rich array of honeyeaters, parrots and raptors in a range of habitats both on the Mount and in the surrounding country. Larger birds such as Australian Bustards and Emus may also have been present. Today, the most conspicuous birds are Wedge-tailed Eagles, Black-shouldered Kites, Peregrine Falcons and Brown Falcons.

There is little known of the ground-dwelling fauna that currently occurs on Mount Elephant as no targeted surveys have been conducted. While it is unlikely that many native species persist, a number of reptiles and possibly Fat-tailed Dunnarts may still be present.

Appendix 3 provides a guide to those species that are believed to use or have used habitats similar to those that would have occurred at Mount.

Revegetation will provide opportunities for a number of species to utilise the site as feeding, roosting and breeding habitat. However, the restoration of fauna to Mount Elephant will require not only that a range of suitable habitat is restored but also that the distance between the Mount and existing populations of native fauna are themselves not barriers. To this end, regional programs to manage, enhance and restore habitat for fauna will be of importance in enabling a range of fauna species to re-populate the Mount (Ross et al. 2002). In the longer term and following the development of suitable habitat, Mount Elephant could be incorporated into recovery programs for threatened species such as Eastern Barred Bandicoot and quolls.



Plate 8. Exposed scoria of upper cone

5.3 Restoration

Restoration of a range of plants that represent the components of flora that formerly occurred on the site is achievable, although it can be expected that it will take many years to revegetate the site as a whole.

All restoration work will be constrained by a number of factors outlined below.

- Soils are generally shallow and many parts of the mountain now lack soil due to erosion. The scoria substrate provides a good medium for plant

growth however it has very low water retention properties and water-stress is a major constraint for plant growth. As a result, planting will be most successfully conducted following the autumn break.

- The existing site conditions include large populations of pest plant and animals that must be controlled prior to extensive restoration.
- New plantings will be subject to considerable exposure due to the lack of existing sheltering vegetation. Tree guards will be required for all trees and shrubs.
- There are physical, economic and practical limits to the number of plants that can be obtained, established and maintained. While tube-stock is desirable for all tree and shrub species, direct seeding should be utilised for grasses and some understorey species in combination with cell-stock.
- There is a general wish in the community that the profile of the mountain remain unchanged and that revegetation should not affect this.
- Revegetation should not conflict with other uses of the site, including geological interpretation, walking, performances and landscape views.

These challenges strongly suggest that planting should take on a staged approach to allow resources and expertise to be gained and developed. Working in smaller, constrained areas also would allow pest plants and animals to be eradicated from these areas first and for fences to be erected if necessary.



Plate 9. Looking east into the crater from the western rim

Current stock grazing is incompatible with the long-term restoration goal but can be usefully employed as holding management especially on more fertile areas of the site (i.e. to the south of the Mount). Any perennial vegetation cover (even introduced species) should be seen as desirable in preference to annuals that will leave the soil bare over summer. Grazing management should therefore be conservative to encourage perennial grasses.

Opportunities for using fire as a restoration tool appear to be limited as there is unlikely to be a viable native seedbank. However, some limited trials could be conducted especially in the vicinity of the stumps and logs within the crater. Burning may also provide a useful adjunct for weed control, either through favouring perennial species or by stimulating weed growth to allow for more effective spraying. Areas should be sprayed with glyphosate prior to spring burning and must be protected from cattle and rabbit grazing.

5.4 Objectives

- Protect native vegetation.
- Restore native vegetation to reflect pre-European vegetation.
- Encourage the return of native fauna through recreation of habitat and coordination with regional landscape conservation programs.
- Preserve the mountain's distinctive and characteristic shape.

5.4.1 Actions

- Revegetate Mount Elephant to reflect the pre-pastoral settlement vegetation through a staged planting program (see Table 2 and Appendix 2) concentrating firstly on areas around the base of the mountain, within the crater, in high-use areas and in areas that will screen and stabilize quarry faces.
- Utilise a range of species for each vegetation zone (see Map 2 and Appendix 2) reflecting all components of the indigenous flora, being mindful of the availability of plant material, using species that will establish readily and noting that such zones would not have clear boundaries but would gradually merge one into another.
- Identify and where necessary fence remnant Tree Violet, stumps and logs.
- Implement a program to eradicate and exclude rabbits and invasive weeds from proposed restoration areas as they are identified in annual works programs and on the Mount generally (see section 6).
- Exclude stock grazing from restoration areas. Continue stock grazing in other areas consistent with maintaining vegetation cover while allowing for efficient weed and vermin control.
- Conduct small ecological burns around logs and stumps within the crater to stimulate native species regeneration and assist with weed control.
- Monitor restoration success through measuring plant survival, weed cover, growth rates and percentage of plants that set seed. Replant areas with low survival rates as soon as practical.
- Use relatively dense planting of fast growing indigenous species to screen and stabilise quarry areas consistent with the objectives for geological interpretation (see section 4).
- Conduct baseline fauna surveys of the Mount with the assistance of the Trust for Nature Flora and Fauna Survey Group, the Field Naturalists Club of Victoria and other appropriate volunteer organisations (see section 3).
- In association with local Landcare and other interest groups, develop vegetation corridors and habitat nodes that will link Mount Elephant to other local and regional habitat areas.
- Encourage and assist the local Landcare group and local schools to collect seed and propagate plants for the revegetation of the Mount.
- Consult with NRE Flora and Fauna Staff to identify potential targets for species recovery programs that may include Mount Elephant in the future.

Table 2 Priority areas for revegetation

Priority	Area	Vegetation
1	Slopes below vehicle track	Lower Slopes Grassy Woodland Exposed Slopes Grassy Woodland
1	Floor and lower slopes of crater	Crater Shrubland/Woodland Crater Woodland Crater Grassy Woodland
1	Areas adjoining entrance drive, carpark and proposed visitor node	Lower Slopes Grassy Woodland Plains Grassy Woodland
*1	Quarries and adjoining areas	Lower Slopes Grassy Woodland Quarry Protection Planting
2	Crater slopes	Crater Grassy Woodland Exposed Slopes Grassy Woodland
2	Base of Mountain and surrounds	Plains Grassy Woodland Lower Slopes Grassy Woodland
3	Upper slopes of Mountain.	Exposed Slopes Grassy Woodland
3	Rim and summit	Exposed Slopes Grassy Woodland

*Pending risk assessment and any landscape modification.

6. PEST PLANTS AND ANIMALS

By 1876 the property *Larra* had twenty two men employed to control rabbits (McGregor and Oaten 1985).

By 1886,

Along the outer slopes we have immense patches of the large and beautiful milk-thistles [Silybum marianum] Ö., sow-thistles, clover, trefoil, chickweed, storksí-bill, nettles, goatsí-beard, mallow, and other common British plants, occupying the ground almost to the exclusion of everything else. (Taylor 1886)

The impacts of pest plants and animals on the vegetation of Mount Elephant have been both long-standing and disastrous and this threat to the restoration of native flora and fauna remains.

Rabbits occur in very high numbers over much of the Mount. Warrens are widespread but are most common within the crater and on the lower outer slopes. The quarries are, at present, significant areas of rabbit activity. They make a major contribution to soil erosion and weed invasion, destroy and prevent regeneration of native plants and compete with native fauna. The presence of rabbits greatly increases the cost of restoration plantings and decreases the likelihood of success.



Plate 10. Warren ripping in the crater

Some warrens are on very steep slopes both inside the crater and on the sides of the Mount. Ripping of such warrens would require considerable expertise on the part of the operator. Rabbit sampling would ascertain activity of both Rabbit Calicivirus Disease (RCD) and myxomatosis at Mount Elephant.

Control of rabbits is a necessary step before vegetation restoration can begin. Low numbers can be maintained over relatively small areas by using rabbit proof fencing following intensive control works. This approach may allow for some vegetation restoration work to commence while rabbits are controlled across the site as a whole. In the longer term, the goal of eliminating rabbits from the site is possible as they are generally not present in high numbers on the heavier clay soils surrounding the Mount. Once numbers have been significantly reduced, rabbit-proof fencing erected on all boundary fences will assist in elimination of

rabbits on the property, although the cost of erecting and particularly maintaining such a fence needs to be considered.

Red Fox are present on the mountain and clearly benefit from high rabbit numbers. Control of foxes should be conducted simultaneously with rabbit control to guard against prey-switching.

Significant weeds that occur on Mount Elephant include Paterson's Curse, Cape Weed, Horehound and Variegated Thistle. Phalaris occurs in patches on the southern slopes of the Mount. All of these species have the potential to hamper the work of restoring native vegetation to the Mount. The presence of such species high on the Mount also presents a weed hazard in the surrounding landscape.

Paterson's Curse is a Regionally Controlled Weed within the Corangamite Catchment and it is the responsibility of landowners to prevent the growth and spread of this weed on their parcel of land. Paterson's Curse and Cape Weed are rosette-forming annuals. They may cover large areas and die back in summer leaving bare ground. Paterson's Curse is a prolific seeder and the seed may remain dormant for up to five years. Extensive control programs for these species will be required for several years and should be conducted in association with land management practices that limit opportunities for weed invasion. Monitoring of all programs will enable management to determine whether control is being successful or whether other techniques should be investigated.

In the future other weed species may be identified on the Mount. Of particular concern are the invasive grasses Serrated Tussock and Chilean Needle-grass. Such weeds could be introduced through seed carried on vehicles, machinery, in gravel, on stock, in stock feed or attached to humans.

6.1 Objectives

- Control and where possible eliminate invasive weeds and pest animals.

6.1.1 Actions

- Control and eliminate rabbits through an integrated program of ripping warrens, aerial baiting, shooting and the effects of RCD (Table 3).
- Aim to systematically eliminate rabbits from the crater, the quarries and around the base of Mount and then work outwards from these areas.
- Prevent re-invasion of rabbits by on-going destruction of warrens, cooperation with adjoining landowners including the Corangamite Shire, and by erecting rabbit-proof fencing on all boundary fences. Establish a fence inspection and maintenance program.
- Monitor rabbit numbers through spotlight transect counts.
- Control foxes through targeted bait programs in cooperation with neighbouring landowners (Table 3).
- Control invasive weeds prior to vegetation restoration.
- Control Paterson's Curse and Cape Weed through broad-acre spray programs in autumn and spring (Table 3).

- Control other weeds, including Horehound, through targeted spray programs (Table 3).
- Implement appropriate visitor warning and management programs, and exclude grazing stock, where necessary, when pest plant and animal control programs are undertaken.
- Map weed distribution and monitor the success of control programs.
- Maintain perennial vegetation cover as far as possible to compete with annual weeds and prevent further weed invasion.
- Practice good weed hygiene to prevent the introduction of new weeds by inspecting and cleaning all machinery prior to entry to the site, ensuring that stock (where permitted in accordance with sections 5 & 8) are clean and are from known areas and prohibiting supplementary feeding of stock with hay.

Table 3 Timing of pest plant and animal programs

Months	Pest animal control activity	Pest plant control activity
January		
February	Fox baiting coordinated with community	
March	Fox baiting coordinated with community	
April	Fox baiting coordinated with community Rabbit warren ripping Rabbit Monitoring	Weed spraying targeting Paterson's Curse, Capeweed & thistle
May	Rabbit baiting (ongoing), fumigation & warren ripping	Weed spraying targeting Paterson's Curse, Capeweed & thistle Weed Monitoring
June	Rabbit baiting (ongoing), fumigation & warren ripping Rabbit Monitoring	
July	Rabbit baiting (ongoing), fumigation & warren ripping	
August	Rabbit fumigation & warren ripping Fox baiting coordinated with community	
September	Rabbit fumigation & warren ripping Fox baiting coordinated with community Rabbit Monitoring	Weed spraying incl. Horehound, Paterson's Curse & Capeweed
October	Rabbit fumigation & ripping	Weed spraying incl. Horehound, Paterson's Curse & Capeweed
November	Rabbit baiting (initial treatment)	Weed spraying incl. Horehound, Paterson's Curse & Capeweed Weed Monitoring
December	Rabbit baiting (initial treatment) Rabbit Monitoring	

7. CULTURAL HERITAGE

7.1 Aboriginal history

Djerrinallum is one of the Aboriginal names recorded for the mountain now known as Mt Elephant. Djerrinallum fell within the northern portion of the Djargurdwurrung language area, and adjoined Wathawurrung speaking clans (Clark 1990). Djerrinallum formed the core of the estate of the Djerrinallum-gundidj clan, one of at least 12 Djargurdwurrung clans. Djerrinallum-gundidj means belonging to Djerrinallum, and Djerrinallum is comprised two words djerrini which Dawson (1881) translates to mean sea swallow or tern, from flocks of these birds frequenting the marshes in the neighbourhood and yellami meaning nest, camp, home, hence the word means nest or home of sea terns (Clark 1990).

Little is known of the Djerrinallum-gundidj. The clan may have become extinct in the 1840s although individuals were identifying with the clan as late as 1866 (I. Clark, pers. comm., August, 2002)

There is a legend about the formation of Mount Elephant that links its creation with that of Mount Buninyong. It is said that the two were formerly men, that they quarrelled and fought and the shapes of each crater are the result of the mortal blows that each received in the fight.

Djerrinallum (Mt Elephant) appears in the Aboriginal Affairs Victoria Site Register as a *Registered Aboriginal Post-Contact Place*. The Historical Place Report classifies Aboriginal occupation of the place as long term use and notes the details of the dates of occupation as pre-contact association which continued into the post contact period.

There are no significant Aboriginal sites recorded on the Mount although one was previously recorded (Mount Elephant 3f) in the Aboriginal Affairs Victoria Site Register and has recently been reclassified. This site was recorded in October 1993 by two archaeologists who apparently viewed the site from the roadside. The site was believed to be an Aboriginal stone configuration and it is possible to find references on the Internet that include photographs of the site attributing it as such. However, it was reclassified as a Non-site in April 2000 after later investigation revealed the site to be a recent construction.

There are numerous indigenous values associated with the Mount and as such it provides Aboriginal people today with an important link to their culture and their past. The place has significant Aboriginal values and these should be incorporated into site management and site interpretation (I. Clark, pers. comm., August, 2002).

There has been consultation with representatives of the Ballarat Aboriginal Cooperative and Framlingham Aboriginal Trust regarding management of the Mount. The Framlingham Aboriginal Trust has informally expressed interest in being consulted and possibly involved in management of the Mount.

7.2 European history

There were several early recordings of Mount Elephant by European explorers of the western district of Victoria. Captain Fyans was the first to mention the Mount in his notes in 1829. Major T.L. Mitchell named it Mt Clarke, after Major Shadwell Clarke, in 1836 followed by George Mercer (a member of the Derwent Company) who named it Mount Elephant Hill in 1837. Surveyor CJ Tyers was the first to identify Mount Elephant as a volcano in 1840 (McGregor and Oaten 1985).

Due to its prominence in the landscape many of the early travellers and explorers knew Mount Elephant as the Swagman's Lighthouse (McGregor and Oaten 1985).



Plate 11. Mount Elephant from the south

The Mount Elephant district has a rich pastoral settlement history. The land was first settled in the 1840s predominantly by Scottish immigrants and has since been used for broad acre farming. The station boundaries on and around Mount Elephant have changed several times with some past remnants of fence boundaries surviving around the Mount. For many years the Mount was a part of Poligolet, Larra and Mount Elephant Stations.

Scoria quarrying has been undertaken at the Mount initially by the Victorian Railways Department who used scoria as the substrate for line construction and subsequently by the Hampden Shire (now Corangamite Shire Council) and the Eldridge family for a range of commercial and construction activities. Corangamite Shire Council continues to operate its quarry site today. The railway line embankment into the northern quarry is still intact.

Adjacent to the ballast pit is the remains of a rifle range and the concrete target pits are still visible. There are no other significant sites or features apparent on the Mount and there are no known listings on heritage registers.

The area has seen two major bush fires since European settlement - 1944 and 1977. The first of these destroyed most of the buildings in the township of Derrinallum and most of the remaining trees on the Mount were also burnt out.

Several momentous events have been held at Mount Elephant, including:

- a bonfire to herald the visit of the Duke of Edinburgh in 1867;
- a victory bonfire to celebrate the end of World War 1;
- the annual Volcanic Bonfires event held in October across the region; and
- the Music on the Mount that has been held in 2000 and 2001.

Mount Elephant has also been a source of inspiration for many artists with the most famous illustrations/paintings being done by von Guerard in 1857 and Baucer in 1868.

7.3 Objectives

- Protect Aboriginal values and undertake management in consultation with Aboriginal Affairs Victoria and the Framlingham Aboriginal Trust and community.
- Interpret aboriginal values in liaison with Aboriginal Affairs Victoria and the Framlingham Aboriginal Trust.
- Protect and interpret the European cultural settlement stories of Mount Elephant and sites of cultural value.

7.3.1 Actions

- Develop interpretation material and programs in liaison with Aboriginal Affairs Victoria and the Framlingham Aboriginal Trust.
- Seek to involve the Framlingham Aboriginal community in implementation of management programs.
- Protect and interpret any other significant features or remnants of past land use activity for interest and educational purposes, including the railway line embankment and remains of the rifle range.
- Include the history of the quarries in interpretation programs and conserve elements of the quarries where practical and consistent with geological interpretation objectives (see sections 3 & 4).
- Work with the local community to collect written and visual materials associated with the Mount.
- Undertake an oral history project collecting the stories of the older residents of the district relating to Mount Elephant.
- Continue to develop the social history significance of the Mount through community events and partnerships.

8. LAND USE AND DEVELOPMENT

Mount Elephant and the surrounding landscape have been managed for agriculture since the 1840s. The original vegetation has been largely cleared and rich pastures have been sown in its place to support dairy cattle, beef cattle and sheep grazing. The surrounding land drains to Lake Corangamite to the east and to Mount Emu Creek to the west.

These changes to the landscape have come at some cost to both biodiversity and to ecosystem health. The Corangamite CMA recognises a number of landscape issues as being of high significance in the region: pest plants and animals, biodiversity decline, groundwater quality, intensification of landuse, water erosion, eutrophication of waterways and wildfire (CCLPB 1997).

The management and restoration of Mount Elephant reflects the growing importance of and interest in sustainable land management, landscape restoration and conservation throughout the region. As an icon of the plains, Mount Elephant can play an important educational and catalytic role in promoting and furthering this process. Techniques developed in the control of pest plants and animals and restoration of native vegetation on the Mount will have obvious and ready application in the broader landscape, as will the results of monitoring and research.

Stewardship of volcanic and other natural features across the western plains can be encouraged and supported through improved management and restoration of Mount Elephant. Many areas of geological and conservation significance are on private land and their owners may benefit from the knowledge gained at the Mount. Such information could be disseminated through static displays, regular field days at the Mount, continued involvement of MECM in the Trust for Nature's 'Bushmonth' program and by direct communication from the Trust for Nature and the Corangamite Catchment Management Authority to private landholders. Private landholders may also be encouraged to develop covenants to protect specific features of their properties.

Management of the Mount will have direct effects on the regional environment. Pest plant and animal control programs will assist in limiting the spread of these organisms to the surrounding landscape, planting of native vegetation will reduce erosion and surface run-off and the restoration of native vegetation may facilitate the return of some native animals to the surrounding landscape by providing key habitat resources. The extent of these benefits can be greatly increased through the participation of adjoining and nearby land holders/managers in pest plant and animal control and revegetation programs.

The Mount has been subject to major fires in 1944 and 1977. Corangamite Municipal Fire Prevention Plan states that outbreaks of fire in the Mount Elephant and surrounding Stony Rises area 'are frequent' but that the 'CFA and landowner units make for a fair fire fighting force'. It provides for Shire slashing along Mount Elephant Road and sections of Heards Road. In the consultation undertaken in preparing this plan the CFA recommended fuel reduction slashing around the main visitor areas of the Mount and closure of the Mount on Total Fire Ban days.

A pine plantation on the northern boundary was planted by the Derrinallum School in 1979. The pines (*Pinus radiata*) are in poor condition and add little to the

landscape or biodiversity values of the area. They may also constitute a weed hazard. It is understood that the plantation is on land owned by the Education Department and also appears to be affected by a freehold carriageway easement (Corangamite Shire title to quarry and transfer station) at the southern end of the unused Crown road reservation which runs north to the Hamilton Highway. Legal advice will be required on the management responsibility and implications of the easement.

The Planning Area is currently leased to an adjoining landowner for grazing which provides a source of income for management. The terms of the lease include conditions prohibiting destruction of vegetation, removal of soil, cultivation and alterations without consent and conditions requiring weed control. In the longer term, grazing by domestic stock is inconsistent with the broad aims of revegetation of the Mount (see section 5). However, controlled grazing has some benefits as a tool to manage vegetation growth, reduce fire hazard and allow for effective and efficient control of introduced species (including rabbits). This management tool may be particularly important as rabbit grazing is controlled with a consequent recovery in vegetation growth. The continuing presence of cattle will require stronger fences and has some implications for visitor management.

Corangamite Shire freehold (10.5 ha) on the western boundary of the Mount is used as a Transfer Station for waste disposal and the Shire has a current quarry Works Authority (see section 4 and 7) under the *Extractive Industries Development Act 1995*. There is no time limit to this Works Authority however it requires rehabilitation when the quarry operation ceases (L. Broderick, Corangamite Shire, pers. comm., August, 2002). Both the transfer station and quarry affect the management of Mount Elephant, primarily through the impact on views from within the Planning Area and from surrounding locations.



Plate 12. Looking west from the rim over the quarry

A Corangamite Planning Scheme Significant Landscape Overlay (SLO1) encompasses the Planning Area and adjacent Corangamite Shire freehold on the western boundary. Views from the top of the Mount may be affected by developments in the vicinity of the Mount and outside the area controlled by the planning scheme overlay (see Figure 4). The Corangamite Planning Scheme does not specifically address protection of the heritage values of the site although it may meet the criteria for an Aboriginal Heritage Place and is included on the Register of the National Estate (see section 7 & DOI VPP Practice Notes).

8.1 Objectives

- Demonstrate and encourage sustainable land management, restoration and protection of biodiversity and volcanic features within the region.
- Protect the Mount and visitors from the adverse impacts of fire and of adjacent landuse.
- Ensure that development on and near the Mount is unobtrusive.
- Manage views to and from the Mount to protect landscape character.

8.1.1 Actions

- Promote the management and restoration of Mount Elephant as a model for sustainable land management, biodiversity and 'geodiversity' protection within the Victorian Volcanic Plains Bioregion.
- Trust for Nature, in liaison with MECM, to develop a regional network of landowners whose properties include volcanic features or important remnant vegetation to encourage conservation of these features and sharing of information and resources.
- Develop a 'Mount Elephant Environs' program with adjoining landowners, Corangamite Shire, Landcare and NRE to cooperate in pest plant and animal control and native vegetation links and restoration.
- In consultation with the CFA, the Corangamite Shire and neighbouring landowners, ensure that adequate fire precautions are taken to protect the site and adjoining land from wildfire through the provision of an adequate fire break around the boundary, carpark and entrance area and management of vegetation on the site.
- Seek the assistance of the Corangamite Shire to resolve uncertainties of responsibility for the Carriageway Easement and land, and ownership of the pines in the 'School Plantation' on the northern boundary.
- Subject to liaison with adjacent landholder and appropriate approvals, remove pines in the 'School Plantation' on the northern boundary as a high priority. Replace pines with indigenous species as per Plains Grassy Woodland planting zone.
- Review the current grazing lease to allow grazing to be used as a tool for management rather than an end in itself (see sections 5 & 6). Phase out stock grazing as restoration and revegetation proceeds.
- Negotiate with the Corangamite Shire to seek minimisation of impacts of the Transfer Station and quarry and eventual closure of both operations (see also section 4). Consider the transfer of ownership and management of this land to the Trust for Nature and MEMC.
- Liaise with the Corangamite Shire to seek amendments to the Corangamite Planning Scheme involving the future zoning of the Planning Area, extension of the area included in the Landscape Overlay to protect views from the Mount and addition of a Heritage Overlay to recognise its Aboriginal and geological values.

9. TOURISM AND MARKETING

Mount Elephant is within one hours drive from a number of key regional centres, including Ballarat, Geelong, Warrnambool and Hamilton, and two hours from Melbourne. The Victorian western district and south eastern district of South Australia form Australia's most extensive volcanic province and is one of the most significant volcanic regions in the world (Tonge 1998).

Corangamite Shire Council recently prepared a 10 year Strategic Development Plan for Derrinallum (2001). This plan recognises the significance of Mount Elephant in developing and promoting Derrinallum as a tourist attraction. The plan includes a number of relevant development objectives and strategies including strengthening the townships identity with Mount Elephant, providing additional recreation areas, providing facilities to encourage people to stop over, creating public access, developing more events at the Mount and using it as a marketing symbol.

Other potential tourist attractions in the immediate Derrinallum/Lismore vicinity include Deep Lake (which is popular for water sports and camping when there is sufficient water), Lake Tooliorook, the Picaninny (Little Elephant), dry stone walls and the Chatsworth Road remnant grassland (Corangamite Volcanic Trail and Centre Committee 1997 and Ochre Consulting 2001).



Plate 13. Mount Elephant from the south east

Whilst volcanic tourism is relatively undeveloped in Australia it is understood that similar volcanic features to Mount Elephant have shown strong capacity to attract large numbers of visitors in the USA and Europe (M. Bishop, University of South Australia, pers. comm., July, 2002). There is potential to grow this tourism market within Australia, both for national and international visitors.

The volcanic region currently has little tourism image and aside from a few locations such as Mount Eccles and Tower Hill there is little infrastructure or marketing. In 1998-99 recorded visitor numbers to Tower Hill were 198,882 (Tourism Victoria 2000). The majority of tourism in the western half of Victoria is currently focused around destinations such as the Great Ocean Road, Ballarat and the Grampians (Tourism Victoria 2002). Tourism Victoria's Great Ocean Road Regional Tourism Development Plan (2000) includes a strategy to develop themed touring routes that link appropriate product and support the Great Southern Touring Route such as the Volcanic Trail.

It is recognised in the Derrinallum Strategic Development Plan (Ochre Consultants 2001) that there is potential for further tourism growth, particularly as (1) a corridor connecting the Great Ocean Road to the Grampians and gold field regions, and (2) a gateway to the volcanic hinterland from Melbourne.

Corangamite Tourism Strategy (2001) also identifies potential development areas, including 'Enhancement of Natural Tourism Product' and 'Eco-nature based tourism', especially in association with volcanic features.

There are a number of business opportunities that may arise for the townships of Derrinallum and Lismore and the surrounding district as a result of development of the Mount. This could include an increase in the number of tourists stopping over and purchasing supplies, overnight visitors seeking accommodation, the sale of merchandise and tourist activities, such as guided tours.

The highly visible and unusually distinct 'volcanic' shape and presence of a crater are significant attractions for volcanic based tourism and the Mount has major marketing potential. Mount Elephant is easily accessible from current tourism nodes and according to the VicRoads road count figures, an approximate average of 1400 vehicles per day pass through Derrinallum on the Hamilton Highway (1999 count). This can be compared with an approximate average of 4000 vehicles per day on the Princes Highway at Camperdown in 2002 (C. Batson, VicRoads Traffic Engineer Geelong, pers. comm., September, 2002).

To date the marketing for Mount Elephant has been limited and its tourist appeal is not tested or understood. One of the keys to the successful development of the volcanic region as an alternative and complementary tourist destination is to develop appropriate infrastructure and attractions throughout the region and to promote these in a comprehensive and coordinated fashion.

The Volcanic Region Tourism Development Strategy (Tonge 1998) identifies a number of key strategies to develop the region as a viable tourism product including the designation of attraction nodes, the location and function of interpretive centres and major on-site interpretation, touring routes and signage. It recommends a regional marketing theme of 'Volcanic Discovery'.

This strategy includes the development of major visitor centres at Mount Gambier, Tower Hill, Camperdown and Hamilton. Since this strategy was completed the development of a volcanic tourism visitor centre has commenced at Penshurst. The proposal to develop a Volcanic Centre at Camperdown has not received the support of the Corangamite Shire Council and appears unlikely to proceed in the near future.

At the time this strategy was prepared Mount Elephant was still in private ownership. Consequently the role identified for the Mount was relatively minor with the only recommended infrastructure being directional signage. Due to the changes in ownership and management of Mount Elephant, and developments in the region, it seems necessary to review and update the role and tourism priority for Mount Elephant.

It would be valuable to develop a distinct name for Mount Elephant, that can be used as a marketing tool, and which reflects the context and history of the Mount within the volcanic region and the experiences it offers for public enjoyment and learning. The community consultation process identified a number of options worthy of further consideration including 'Mount Elephant - Gateway to the Volcanoes Discovery Trail' and 'Lighthouse of the Plains'.

The Volcanoes Discovery Trail Committee is a cross regional committee that was established in 1998/99. Its membership includes representatives of the major

organisations and groups with interest and involvement in managing volcanic features on the western plains. The committee is supporting implementation of the Tonge tourism strategy. The committee has recently prepared a Volcanic Cross Regional Marketing Plan 2002 - 2008. This plan identifies priorities for development and marketing of the region as a tourist attraction but does not make recommendations in relation to specific sites.

MECM is represented on the Volcanic Hinterland Tourism Association which is an association of tourism operators representing seven smaller towns in the region. The association is represented on the Board of Shipwreck Coast Tourism. The Corangamite Volcanic Trail and Centre Committee, currently in recess, has also been working to further develop volcanic and related tourism in the Corangamite Shire. The committee has been operating since 1996 and has undertaken a range of activities to promote and develop volcanic tourism across the region. The existence of these organisations can provide considerable assistance to the MECM in marketing the Mount.

Generally the community consultation associated with the preparation of this management plan indicated support for the development of Mount Elephant as a tourist attraction, so long as any development and activities did not compromise the community's conservation, educational and passive recreational objectives at the Mount. The most popular activities identified included educational/study tours and cultural events/activities, such as Music on the Mount and other artistic pursuits. Whilst there was a difference in opinion about whether commercial activities would be appropriate or viable on the site there was a strong interest in using any funds generated to support management activities.

Many of the objectives for the future management of Mount Elephant are consistent with ecotourism principles and practices.

Ecotourism is nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable. (Commonwealth Department of Tourism 1994)

Best practice guidelines and a national accreditation program have been developed for ecotourism tours, attractions and accommodation. It would be valuable for MECM to liaise with the Ecotourism Association of Australia to benefit from the guidelines and standards developed by this Association.

9.1 Objectives

- Promote Mount Elephant as the gateway and an integral component of Victoria's western plains volcanic region and tourism activities.
- Develop and market Mount Elephant in cooperation with the managers of other features of the volcanic region, and through the Volcanoes Discovery Trail Committee.
- Maximise business opportunities for Derrinallum and Lismore in association with the development of the Mount.

9.1.1 Actions

- Develop a distinct name for the site that achieves the following objectives:

- Includes the marketing theme for the volcanic region - 'Volcanoes Discovery';
- Reflects the geological and historical context of the Mount; and
- Portrays the type of natural environment and recreational experience offered by the Mount to the public.
- Continue to use the MECM Mount Elephant logo as the key emblem for the site in conjunction with any promotional branding developed for the volcanic region.
- Become a formal member of the Volcanoes Discovery Trail Committee and work in close liaison with its members to contribute to the development and promotion of the western volcanic region as a tourist attraction.
- In association with Corangamite Shire Council, VicRoads and Tourism Victoria, create roadside viewing areas to the Mount at key locations on major roads and with appropriate signage.
- In consultation with the Volcanoes Discovery Trail Committee reassess the role and hierarchy of Mount Elephant within the region, develop a marketing plan and market Mount Elephant as an integral component of the volcanic tourist region.
- Undertake a staged program of infrastructure and facility development to support tourism activities (see section 10).
- Monitor and record visitor numbers to the site, including information about how they knew about the Mount and reflections on their experience.
- Once suitable infrastructure is in place the promotional brochure (see section 3) should be distributed to appropriate information and tourist centres across western Victoria.
- Work with Tourism Victoria and regional tourism bodies to ensure that Mount Elephant is recognised in state and regional tourism marketing.
- Investigate opportunities to include Mount Elephant on itineraries for programs and tours offered by commercial tourist operators and bus lines.
- Work in partnership with local businesses and Corangamite Shire Council to develop Derrinallum and Lismore as tourist destinations, with Mount Elephant promoted as a key asset, and maximise merchandising and service business opportunities.
- Liaise with the Ecotourism Association of Australia to benefit from the guidelines and standards developed by this association.

10. RECREATION AND FACILITIES

Currently there are very few facilities on or around Mount Elephant. There are a few vehicle tracks, which are also used as walking tracks for visitors. A new access/entrance road from the Hamilton Highway along the old railway line into the ballast pit area on the north of the Mount has recently been constructed in partnership with Corangamite Shire Council. This makes the site easily accessible from this major highway. There is also a disused shearing shed on the south western side of the Mount. This is one of the few flat areas of land around the Mount that is managed by MECM.



Plate 14. View from the rim walk

As the Planning Area has been in private ownership until recently, use has been primarily for grazing other than the occasional special events and organised group visits largely by schools. MECM currently runs open days on the first Sunday of every month, allowing visitors to access and explore the Mount and to participate in guided walks. The vehicle track to the crater is used to transport visitors who are not able to walk up the steep gradient. These open days have been very well attended with around 30 people visiting each month. Additionally, the Mount has been open for access by appointment and for community events and activities such as plantings and Music on the Mount.

Music on the Mount has been a very successful event held on two occasions. This event attracted interest from the broader community and funding support from the State government and Powercor. It has fantastic potential to be developed as a biennial event which raises the profile of Mount Elephant and generates income for the Mount and the township. It may be possible to achieve ongoing corporate sponsorship for this event. The location of the event at the crater's edge has been identified as extremely attractive for the audience and this site could be retained as an open grassed area for ongoing performance activities.

Council's Recreation Strategy Plan 2001 ñ 2005 identifies a need to develop new opportunities for passive recreation and cultural experiences (Stratcorp Consulting 2001). The municipality has an aging population and it recommends that an emphasis should be placed on walking facilities, open space development and arts and cultural activities. The strategy also supports the development of a linear trail between Lismore and Derrinallum and bicycle trails.



Plate 15. Music on the Mount from the air

Survey responses emphasised strong support for passive recreation at the Mount. The most requested facilities included paths/walking trails, interpretation, signage, barbecue, toilets, picnic information/education centre and viewing areas. Facilities and activities that were not considered appropriate at the Mount included motorised activities/sports, quarrying, shooting, kiosk/coffee shop, bicycling on the Mount, grazing, horse riding and large scale commercial facilities. Community consultation has also indicated a desire to conduct art and photographic competitions as a way of creatively involving the community and promoting the Mount.

The extent of demand for visitor facilities at the Mount is difficult to gauge and it has been suggested that a staged program of infrastructure development may be most appropriate with development responding to visitor numbers and needs. Such a program could commence with facilities that meet basic needs such as signs, paths, seating/picnic areas, shelter, toilets and carparking.

Development on the Mount will be highly visible and care and skill will be needed to ensure that all facilities are designed and sited to enhance the visual character of the site. Site planning is a critical aspect of this project to ensure the landscape integrity of the site is maintained and enhanced. Inappropriately sited paths, structures, land uses etc. could have a significant negative impact on views to the cone and to the overall visitor experience. Carefully sited vegetation to screen undesirable views (i.e. the quarries) will also be an important consideration.

There are a number of risks associated with the site including the steepness of some parts of the site and the quarries (see section 4). A risk assessment of existing and proposed walking trails is essential for effectively managing risk. The steepness of some parts of the Planning Area also means that there are challenges if people of all ages and abilities are enabled to use facilities and participate in recreation at the Mount.

There is very little directional signage on surrounding transport routes, or directional, regulatory, place name and interpretive signage on Mount Elephant. Well-designed and located signage will enhance the visitors' experience, allow people to learn about the Mount and explore the Mount safely (see section 3).

There has been a great deal of interest and support for the development of a Visitor Interpretation/ Education Centre for Mount Elephant. A submission from the Corangamite Volcanic Trail and Centre Advisory Committee, made as part of

the public consultation for this planning project, indicated support for the development of a Volcanic Interpretation Centre at Mount Elephant to act as an information, education, research and interpretation facility for the region's natural and social history and related cultural, recreational and economic activities (Josie Black, Chair, pers. comm., 2002). Trust for Nature has also indicated a strong interest in the potential for an interpretive centre promoting sustainable land management (M. Looker, Director, Trust for Nature, pers. comm., 24 July, 2002).

Debate around this facility has focused on its location (in the town or at the base of the Mount) and its scale (an unstaffed shelter with interpretive material or a building that is staffed full time). It has been identified that locating the facility in Derrinallum would be beneficial for the economic development of the town, yet this location does not allow easy access to the Mount. Equally, locating the facility at the Mount may mean that people have no reason to stop over in the town and will require significant resources for management and staffing (either volunteer or paid).

Discussions with Tourism Victoria indicate that in the short term a smaller scale facility at the Mount, such as quality display board and shelter that does not need to be staffed, would be most viable (M. Rogers, Tourism Infrastructure Manager, Tourism Victoria, pers. comm., 23 September, 2002.). This conclusion is drawn following consideration of the feasibility study prepared for the proposed Camperdown Volcanic Centre (which Council has not approved), low through traffic at Derrinallum, significant capital investment required for development and ongoing funding for staffing, management and maintenance costs.

There are arguments supporting the development of two separate centres with distinct purposes that achieve the desired objectives.

- A tourist information centre in the town, complementing the tourism shelter proposed in the Derrinallum Strategic Development Plan (2001) that is staffed and co-located with a business within the township of Derrinallum. Staff would add personal character to information, be able to respond to questions as well as selling goods and possibly hiring out audio equipment for self-guided walks if such aids are developed for visitors.
- An interpretation/education centre with external display board and shelter, staffed only for pre-booked activities, at the base of Mount Elephant that may be expanded to a similar scale to the centre at Organ Pipes National Park if demand warrants it. This centre has the potential to be multi-purpose with access provided for other community groups/activities, and may even provide office space for the local Landcare coordinator.

Co-location of the information centre with an existing business will reduce possible difficulties associated with staffing the facility and will attract visitors to stop over in the town. This centre could provide information about the Mount, local facilities and attractions and regional tourism opportunities, and sell maps and local produce.

There have also been a number of requests to the MECM for group camping at the site. The results of the community survey indicated a similar number of people supporting and objecting to the proposal.

If camping is considered a desirable activity by MECM, there are a couple of locations where it may be appropriate:

- adjacent to the proposed interpretation/education centre at the base of the Mount; and
- the existing shearing shed on the south western edge of the planning area that may be used for group accommodation, with tent camping on the surrounding flat area.

A benefit of allowing camping adjacent to the proposed interpretation/education centre is the ability to share facilities/infrastructure, and to manage people's access to the Mount through one main access road. This location is also located close enough to the town for people to walk in and buy provisions.

If the shearing shed were to be used for group accommodation/camping it would need to comply with the Health (Prescribed Accommodation) Regulations 2001. An engineering and architectural assessment would need to be undertaken of this building to determine these requirements. Additionally, a cost benefit analysis would be required to determine the viability of this concept. Whilst there is a bore close to this site, the development of this building for group accommodation will require a significant input of resources.

10.1 Objectives

- Improve physical access to Mount Elephant whilst ensuring the safety of visitors.
- Provide for a range of recreational and cultural activities and events consistent with the conservation, educational and community development objectives of the site.
- Design and construct built facilities to integrate harmoniously with the landscape.

10.1.1 Actions

- Implement a staged program of infrastructure development (as detailed in Appendices 4 & 5 and Map 3), initially focussing on facilities that meet basic visitor needs such as signs, paths, seating/picnic areas, shelter, toilets and carpark with formal entrance and driveway.
- Engage professional architect and landscape architectural services to develop detailed designs and construction documentation for the siting and construction of facilities, furniture and interpretive tools to ensure continuity of design themes and material types that enhance the visual character of the site and that meets iaccess for allf guidelines for recreational facilities. The designer should be encouraged to work in association with an artist to develop facilities that respect and embrace the uniqueness of the Mount. Designs should complement styles developed by the Volcanoes Discovery Trails Committee.
- Undertake a risk assessment of the walking tracks and other existing and proposed developments throughout the site to determine the most appropriate surfacing and level of infrastructure (i.e. steps, handrailing, cable barriers) required to manage any risks. At the same time and in liaison with the Corangamite Shire, engage a geo-technical engineer to assess the quarry faces from a public safety viewpoint (see section 4). Implement recommendations prior to the site being opened to the public or

commencement of development. A regular review process for risk assessment should be established.

- Investigate an alignment and the demand for a walking track around the base of the Mount.
- Adopt a management policy which encourages passive recreational activities and prohibits high impact activities and large scale, visually prominent and commercial facilities in accordance with Table 3.

Table 4 Activity and development management

Permitted activities	Prohibited activities	Prohibited developments
Walking	Motorised activities/sports beyond access road & carpark	Electronic communication facilities
Picnicing	Quarrying	Observation towers
Interpretation/education	Shooting/hunting	
Managed events	Hang gliding	
Geological/environmental research in accordance with MECM protocol	Bicycling beyond access road & carpark	
	Grazing (except in accordance with the management plan)	
	Horse riding	
	Camping (except with MECM permission)	
	Dogs/cats	
	Open fires	

- Provide additional support services for events and activities to enable people of all abilities to participate, for example using maintenance tracks to drive people with limited mobility to the saddle.
- Adopt a policy that the Mount is open to the public at all times subject to closure at the direction of the Derrinallum CFA during high fire danger periods or as the MECM may decide from time to time where necessary for the protection of the Mount or visitors.
- Develop an interpretation/education centre to be located at the base of Mount Elephant that can be built in stages, subject to demand.
 - Stage 1 ñ Shelter (approx. 6m x 6m) with interpretive display / information board accessible at all times, small composting toilet (2 x 2), surfaced carpark, a gas fired barbecue, picnic table and bench seating in a small picnic area.
 - Stage 2 ñ Building (integrated with expanded toilet facilities) with one large (55 people) and one small (12 people) meeting room, tea station and audiovisual equipment, works and maintenance equipment store at a time determined by visitor demand/feasibility study.

- Stage 3 ñ Future development/expansion to be determined by visitor demand/feasibility study.
- Adopt a policy supporting the use of environmentally responsible resources for developments on the Mount, such as renewable energy, composting toilets, water reduction and waste minimisation.
- Design and install the following signs:
 - place name at the entrance and at interpretive centre;
 - regulatory sign at the carpark and at interpretive centre;
 - directional and interpretive sign at interpretive centre;
 - interpretive signs on the walk to the rim, at the trig point on the rim and in the crater (Map 3); and
 - compass marker near existing trig marker, which shows people the direction of surrounding landscape features.

Note that wherever possible regulatory, directional and interpretive signs should be combined in the one display. Use international symbols wherever practical. The initial signboard in the area of the Visitor Centre should be the major source of information introducing visitors to the Mount. It should be a simple unroofed sign on two supports (see Appendix 5).

- Work with Vic Roads, Tourism Victoria and Corangamite Shire Council to develop off-site directional signage to Mount Elephant (see section 9).
- Encourage the development of an information centre in the town, that is co-located with an interested business within the township of Derrinallum, and that provides tourist advice, distribution of brochures, sales and hire service.
- Establish a biennial 'Music on the Mount' event and seek an ongoing corporate sponsor to support its management/administration and promotion.
- In association with Corangamite Shire Council, conduct an art/photographic competition that encourages exploration and promotion of the Mount and surrounding volcanic district.
- Continue to run monthly open days on the Mount to provide visitors with the opportunity to undertake a guided tour of the Mount and meet members of the committee and community.
- Seek assistance from Corangamite Shire Council to undertake an engineering and architectural assessment of the shearing shed to determine its potential to comply with the Health (Prescribed Accommodation) Regulations 2001.
- Undertake a cost benefit analysis to determine the viability of group accommodation in the shearing shed.
- Work in partnership with Corangamite Shire Council to develop bicycle trail and walking links to Mount Elephant, especially a trail between Lismore and Derrinallum, and from the Derrinallum township to the Mount. Investigate use of the unused railway line as a cycle and walking path.

11. IMPLEMENTATION

This plan aims to establish the mountain as a centre for community use, recreation, enjoyment and education. It focuses on the establishment of basic facilities, consolidating and improving site access, preserving and interpreting the geology, removing threats and pests from the site, commencing vegetation restoration and ensuring public safety. The emphasis is on building community recognition of the potential of Mount Elephant and responding as use and demand develops.

The extent of development will be constrained by the resources available to the community, the capacity to undertake large scale work, the time that will be needed to complete preliminary investigations, planning and design work and recognition that the potential demand for facilities at the Mount is poorly understood at present. As an example, the capacity of the community to revegetate large areas of the Mount is constrained by factors such as pest plants, rabbits, seed availability and labour.

It is recognised that circumstances may change, new funding opportunities may arise from time to time, and the implementation of the management plan will need to allow for priorities and programs to change to suit such circumstances.

Funding the implementation of this management plan is clearly a significant issue, and both MECM and Trust for Nature have commenced fundraising initiatives. Funding will need to be sought that meets the need for development and ongoing maintenance. A balance will be needed between the availability of development funding and the capacity of MECM to maintain and operate facilities and infrastructure. Table 4 identifies some potential funding opportunities.

In the initial stages of development the role of the community is critical. In the life of this plan it is expected that volunteers will be primarily responsible for such things as developing grant applications, seeking sponsorship, taking bookings and much of the ongoing management of the site. Even at popular European geological sites that appear to have considerable revenue earning capacity, it is understood that volunteers play a major role in site management (M. Bishop, University of South Australia, pers. comm., September, 2002).

Funding will be needed however to support assessment and planning projects (risk assessment, architects etc.) as well as the ongoing role of supervising contractors. Funding sources will need to be identified initially to pay professional consultants and eventually to possibly support a part time paid site manager, as funds permit. Increasingly, expertise and equipment is likely to be sourced through contractors.

There may be opportunities to share the facilities and staff in association with Trust for Nature activities in western Victoria, the establishment of a Landcare Centre supporting conservation activity on private land and an operational base for Landcare Coordinators supporting groups in the region. Such partnerships could contribute significantly to the viability of a major visitor centre and operational base at the Mount (see section 10).

Corangamite Shire policies support the development of the Mount for public enjoyment and conservation and the Shire has assisted the MECM with

development of access and carparking. The Shire's Tourism Strategy (2001) includes 'support for environmental destinations' including Mount Elephant and 'funding for Environmental Projects' among a number of relevant initiatives. The Shire is likely to be willing to continue to assist in some degree with development and management of the Mount, and may be amenable to committing to support road and facility maintenance in association with its broader Shire role.

11.1 Objectives

- Implement the management plan in stages appropriate to the capacity and resources of the community and to demand.
- Seek funding support from appropriate sponsors and partners that will provide the basis for long-term development and management.

11.1.1 Actions

- Undertake actions identified in this management plan and where relevant, in accordance with stages identified in Table 5 (note that Table 5 identifies only those actions and programs where prioritisation and costings are appropriate and is not a comprehensive summary of the actions of the plan).
- Prepare annual implementation/works plans and undertake a regular monitoring and review of the implementation of this management plan. Undertaking a program of regular photographic recording of the Mount from a number of fixed points should be part of this monitoring.
- MECM to seek continued support from local volunteers, including Friends of Mount Elephant, Landcare groups and Landcare Coordinator and assistance from NRE and the CCMA in implementing projects.
- MECM to continue to work with and support the Friends of Mount Elephant in raising revenue from saleables.
- Develop Sponsorship Proposals for specific projects for potential sponsors, in liaison with Trust for Nature and Alcoa World Alumina, and seek funding opportunities for projects as identified in Tables 4 & 5.
- MECM to continue to publicise its activities and encourage the local and regional community to make financial contributions.
- MECM to liaise with Trust for Nature, NRE and Landcare Australia to seek support for the establishment of a Landcare Centre and Landcare operational base at the Mount.
- Review the feasibility of the employment of a site manager in the longer term, possibly shared with other roles at a jointly funded Landcare Centre.
- Liaise with the Mount Leura/Mount Sugarloaf Development Committee to explore opportunities for exchange of information and the development of mutually beneficial programs and initiatives.
- Develop a corporate 'Friends Program' and seek out and invite private companies to make a generous and long term commitment to the development of the Mount.
- Liaise with the Corangamite Shire regarding a commitment to financially support the implementation of the plan, particularly risk assessment and ongoing infrastructure maintenance.

- In consultation with the Corangamite Shire investigate options for the collection of donations on site (e.g. donations box at the carpark) to assist with management costs.
- MECM to develop a protocol to address the process of regulation and control of visitor activity, in liaison with Trust for Nature.

Table 5 Funding Opportunities

Management action	Potential funding source
Planning/Project design	
Professional services (risk assessment, L/S & building design)	Corangamite Shire, TfN, Alcoa World Alumina
Educational programs	State/commonwealth government (DEET, Environment Australia), CCMA
Infrastructure development	
Interpretation Centre	Business/corporate sponsorship, philanthropic trusts, State/commonwealth government (Dept. Communications, Information Technology and the Arts, DIIRD, Arts Victoria)
Recreational/tourism facilities, signage etc	State/commonwealth Government (SRV, PV, Tourism Victoria Heritage Vic.), Corangamite Shire
Natural Resource Management	
Revegetation, pest plant & animal control and fencing	NHT, CCMA, NAP, PV, NRE, philanthropic trusts, Business/corporate sponsorship
Community Events	
Music on the Mount	Business/corporate sponsorship, Corangamite Shire, Arts Victoria
Ongoing	
Staffing	TfN, philanthropic trusts, Business/corporate sponsorship
Facility and road maintenance	Corangamite Shire

Table 6 Selected works staging

Timeframe	Cost Estimate*
Immediate Action	
Barriers and signage to prevent access to potentially unstable areas.	\$5K
Undertake risk assessment of the site and proposed use, management and development.	\$5K
Undertake geotechnical stability assessment of quarries and prepare stabilisation and rehabilitation plan.	\$10K
Commence implementation of stabilisation and rehabilitation plan.	\$subject to plan
Develop entrance, complete access road and carpark.	\$3K
Erect sign at the entrance gate and single information/regulatory sign at the carpark.	\$1K
Review existing brochure, develop and print simple visitor information brochure for distribution at the site and in Derrinallum.	\$3K
Commission site development master plan and design and documentation of Stage 1 information facility and toilets, site infrastructure and furniture.	\$25K
Within 5 years	
Develop an interpretation strategy, incl. research, materials, text etc.	\$5K
Infrastructure development ñ construct signs, paths, seating, carpark.	\$30K
Stage 1 information display, design and construction in shelter.	\$5K
Off-site directional signage to Mount Elephant.	\$5K
Commence boundary fencing.	\$7K / km
Implement the first stage interpretation strategy.	\$10K
Develop an information centre in the town that is co-located with an interested business within the township of Derrinallum.	\$2K
Undertake an assessment of the shearing shed to determine its potential to comply with the Health (Prescribed Accommodation) Regulations 2001.	\$1K
Undertake a cost benefit analysis to determine the viability of group accommodation in the shearing shed.	\$2K
Construct Stage 1 information facility and toilets.	\$75K
Ongoing	
Continue pest plant and animal program.	\$20K / pa
Revegetation program.	\$20K / pa
Annual event to celebrate community purchase.	\$-
Music on the Mount.	\$-
Long Term (greater than 5 years)	
Design and document Stage 2 information facility and toilets.	\$20K
Construct and equip Stage 2 information facility and toilets.	\$200K
Design and construct Stage 2 information display.	\$50K

* Cost estimates are indicative only and costing should be reviewed at project planning and design stage.

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ACRONYMS USED IN THE TEXT

AAV ñ Aboriginal Affairs Victoria

AHC ñ Australian Heritage Commission

CCLPB ñ Corangamite Catchment and Land Protection Board

CCMA ñ Corangamite Catchment Management Authority

CFA ñ Country Fire Authority

DEET ñ Department of Employment, Education and Training

DIIRD - Department of Innovation, Industry and Regional Development

GSA (Vic) ñ Geological Society of Australia (Victorian Division)

LCC ñ Land Conservation Council

MECM ñ Mount Elephant Community Management Incorporated

NAP ñ National Action Plan

NHT ñ Natural Heritage Trust

NRE ñ Natural Resources and Environment

PV ñ Parks Victoria

RCD ñ Rabbit Calicivirus Disease

RUZ ñ Rural Use Zone

SRV ñ Sport and Recreation Victoria

TfN ñ Trust for Nature

APPENDIX 1. TRUST FOR NATURE

Established as a body corporate (by the Victorian Conservation Trust Act in 1972), for the first few years the Trust carried out its mission by enabling people to bequeath land or money for conservation and for the purchase of Victoria's threatened, privately owned bush. In 1978 the act was amended to allow land owners to voluntarily place conservation covenants on their land, permanently protecting significant areas of natural bushland. In 1989 the Revolving Fund was added, which allows the Trust to acquire noteworthy bush and sell it again in covenanted form. Most recently, changes in tax laws now support covenantors.

Mission Statement: The Trust will strive to ensure that all significant natural areas in private ownership in Victoria are conserved.

Goals:

- Secure the protection of priority habitats, remaining on private land, through voluntary covenants, land purchase and other appropriate mechanisms.
- Monitor the outcomes of research on biodiversity protection to assess the appropriateness of current conservation mechanisms and to update these and introduce new mechanisms accordingly.
- Ensure that land covenanted or protected by voluntary agreements by the Trust is managed in accordance with best nature conservation practices.
- Ensure that all land owned by the Trust is managed in accordance with best nature conservation practices.
- Purchase and sell properties suitable for the Revolving Fund or any other property for conservation purposes as requested.
- Develop and manage programs which will promote community involvement and support, fundraising and sponsorship for the Trust.
- Develop an organisational structure and procedures which will enable the Trust to meet its objectives in a cost effective manner.

Operation: The Trust makes use of a set of highly successful mechanisms to achieve its aims - perhaps its most powerful being the voluntary covenant. With help from the Trust, land owners place covenants on their land to permanently protect it from subdivision, clearing or other threatening activities, even after a property has been sold on. This protection also extends, via the Stewardship and Land Management programs, to supporting the owners' efforts to best manage the land - through land care works, fencing, rates and tax rebates and opportunities to learn more about ecological communities.

Trust for Nature also makes use of its Revolving Fund, which is based on bequests and donations, to buy and protect land parcels. These parcels are then covenanted and sold again, to replenish the revolving fund and allow future purchases. Properties of national significance have been, and continue to be purchased through the Revolving Fund, then retained and managed by the Trust or transferred to the National Parks system. The Trust also offers support and advice to local communities wishing to conserve important areas.

APPENDIX 2. PLANTING LIST

This planting list is indicative only and is designed to represent major vegetation groups. Numerous other species may have occurred within the site and could be considered for planting. See Map 2 for planting zones.

Species Name	Common Name	Plains Grassy Woodland	Lower Slopes Grassy Woodland	Exposed Slopes Grassy Woodland	Crater Shrubland Woodland	Crater Woodland	Crater Grassy Woodland	Quarry Protection Planting	Performance Area
Approximate Area of Vegetation Type (ha)		30	30	50	5	2	13	3	2
Projective Foliage Cover (%) after thirty years		20-40	20-30	10-20	20-40	30-60	20-40	20-40	0
Average Planting Density of Trees/ha (assumes 50% survival)		240	200	120	240	360	240	240	0
Number of Trees to be planted. (=24,960)		7200	6000	6000	1200	720	3120	720	0
Trees									
<i>Acacia melanoxylon</i>	Blackwood	D	D	S	C	D	C	D	
<i>Allocasuarina verticillata</i>	Drooping Sheoak	D	D	D			D	D	
<i>Banksia marginata</i>	Honeysuckle	C	D	S			D	S	
<i>Eucalyptus ovata</i>	Swamp Gum				R	R			
<i>Eucalyptus viminalis</i> ssp. <i>viminalis</i>	Manna Gum	D	D	S	C	D	D	S	
<i>Exocarpus cupressiformis</i>	Cherry Ballart	S	S		S	S	S		
Large Shrubs									
<i>Acacia paradoxa</i>	Hedge Wattle		S		S		S	S	
<i>Acacia pycnantha</i>	Golden Wattle	R	R				R	R	
<i>Acacia verticillata</i>	Prickly Moses	S	S		C	C	S	C	
<i>Bursaria spinosa</i>	Sweet Bursaria	S	S	S	D	C	S	C	
<i>Cassinia longifolia</i>	Shiny Cassinia				C	R			
<i>Hymenanthera dentata</i>	Tree Violet		R	R	D	R	C	C	
<i>Ozothamnus ferruginous</i>	Tree Everlasting				S	S	S		
<i>Solanum laciniatum</i>	Kangaroo Apple	R			S	S			
Small Shrubs & Herbs									
<i>Acaena</i> spp.	Sheep's Burr	S	S		C	S	S		
<i>Arthropodium strictum</i>	Chocolate-lily	S	S				S		
<i>Atriplex semibaccata</i>	Berry Saltbush	S	S	S			S	C	C
<i>Chrysocephalum apiculatum</i>	Common Everlasting	R	S	S			S		C
<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	S	S				S		S
<i>Clematis microphylla</i>	Small-leaved Clematis	S	S		S		S		
<i>Cullen microcephalum</i>	Mountain Scurf-pea	R	R				R		
<i>Dichondra repens</i>	Kidneyweed	R			S	S			
<i>Dillwynia sericea</i>	Showy Parrot-pea	R	R	R			R	R	
<i>Einadia nutans</i>	Nodding Saltbush		S	S			S	S	S

Species Name	Common Name	Plains Grassy Woodland	Lower Slopes Grassy Woodland	Exposed Slopes Grassy Woodland	Crater Shrubland Woodland	Crater Woodland	Crater Grassy Woodland	Quarry Protection Planting	Performance Area
<i>Enchylaena tomentosa</i>	Ruby Saltbush		S	S			S	S	S
<i>Epilobium billardierianum</i>	Variable Willow-herb	R	R		R	R	R		
<i>Kennedia prostrata</i>	Running Postman		R	R		R	R		S
<i>Senecio lautus</i>	Variable Groundsel	R			S	S	R		R
<i>Senecio quadridentatus</i>	Cotton Fireweed	S	S	S			S		S
<i>Senecio squarrosus</i>	Leafy Groundsel		R				R		R
<i>Viola hederacea</i>	Ivy-leaf Violet				S	S			
<i>Wahlenbergia spp.</i>	Bluebell	S	S	S			S		S
Ferns									
<i>Adiantum aethiopicum</i>	Common Maidenhair				S	S			
<i>Cheilanthes austrotenuifolia</i>	Rock Fern				S	S			
<i>Pteridium esculentum</i>	Bracken				C	C			
Grasses etc									
<i>Austrodanthonia eriantha</i>	Hill Wallaby-grass	S	S	C			C	S	C
<i>Austrodanthonia spp.</i>	Wallaby Grass	C	C	C			C	C	C
<i>Austrostipa spp.</i>	Spear-grass			S			S		
<i>Chloris truncata</i>	Windmill Grass			S			S	S	S
<i>Dichelachne crinita</i>	Long-hair Plume-grass	S	S	S			S	S	S
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	S	S		S				
<i>Microaena stipoides</i>	Weeping-grass	C	S			C	C	S	C
<i>Poa ensiformis</i>	Sword Tussock-grass	C			C	C	S		
<i>Poa labillardierei</i>	Common Tussock-grass	C	C	S	C	C	C	C	C
<i>Poa sieberiana</i>	Grey Tussock-grass		C	S			C	C	C
<i>Themeda triandra</i>	Kangaroo Grass			C			S	C	C

D = Dominant or Co-dominant; C = Common; S = Scattered; R = Rare.

APPENDIX 3. PAST AND PRESENT ANIMALS OF MOUNT ELEPHANT

This list is intended as a guide to those species that are believed to use or have used habitats similar to those that would have occurred at Mount Elephant. It is not intended as a definitive statement on the fauna of the Mount.

Mammals

	NAME	COMMON NAME	VROTS	AROTS	FFG	EPBC	Source
	<i>Canis familiaris</i>	Dingo					ω
*	<i>Canis vulpes</i>	Red Fox			T		•
	<i>Conilurus albipes</i>	White-footed Rabbit-rat	x	X	R	Ext	♣
	<i>Dasyurus maculatus</i>	Spot-tailed Quoll	e		L		ω
	<i>Dasyurus viverrinus</i>	Eastern Quoll	x		L		♣
*	<i>Felis catus</i>	Cat (feral)					† •
*	<i>Lepus capensis</i>	Brown Hare					
	<i>Macropus giganteus</i>	Eastern Grey Kangaroo					♣
	<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat					†
*	<i>Oryctolagus cuniculus</i>	European Rabbit					† •
	<i>Perameles gunnii</i>	Eastern Barred Bandicoot	c	E	L	End	♣
	<i>Petaurus berriceps</i>	Sugar Glider					α
	<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	v		L		α
	<i>Phascolarctos cinereus</i>	Koala					α
	<i>Pseudocheirus peregrinus</i>	Ringtail Possum					O
	<i>Pseudomys australis</i>	Plains Mouse	x				♣
*	<i>Rattus norvegicus</i>	Brown Rat					•
	<i>Sminthopsis crassicaudata</i>	Fat-tailed Dunnart	dd				
	<i>Sminthopsis murina</i>	Common Dunnart	dd				α
	<i>Tadarida australis</i>	White-striped Freetail Bat					•
	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna					O
	<i>Trichosurus vulpecula</i>	Common Brushtail Possum					† ♣ •
	<i>Vombatus ursinus</i>	Common Wombat					♣
	<i>Wallabia bicolor</i>	Black Wallaby					†

* Indicates introduced species

Birds

	NAME	COMMON NAME	VROTS	AROTS	FFG	EPBC	Source
	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill					•
	<i>Accipiter fasciatus</i>	Brown Goshawk					♣
	<i>Accipiter novaehollandiae</i>	Grey Goshawk	l				♣
*	<i>Alauda arvensis</i>	Skylark					•♣
	<i>Anthochaera carunculata</i>	Red Wattlebird					•
	<i>Anthus novaeseelandiae</i>	Richard's Pipit					†
	<i>Aquila audax</i>	Wedge-tailed Eagle					♣
	<i>Ardeotis australis</i>	Australian Bustard	c		L		♣
	<i>Aythya australis</i>	Hardhead	v				†
	<i>Burhinus grallarius</i>	Bush Stone-curlew	e		L		♣
	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo					•
	<i>Cacatua roseicapilla</i>	Galah					•♣
	<i>Cacatua tenuirostris</i>	Long-billed Corella					† •♣
	<i>Calyptorhynchus funereus</i>	Yellow-tailed Black-Cockatoo					•♣
*	<i>Carduelis carduelis</i>	European Goldfinch					† ♣
	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo					♣
	<i>Colluricincla harmonica</i>	Grey Shrike-thrush					•
	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike					•♣
	<i>Corvus coronoides</i>	Australian Raven					•
	<i>Corvus mellori</i>	Little Raven					•
	<i>Coturnix pectoralis</i>	Stubble Quail					•♣
	<i>Cygnus atratus</i>	Black Swan					† •
	<i>Dendrocygna eytoni</i>	Plumed Whistling-Duck					†
	<i>Dromaius novaehollandiae</i>	Emu					♣
	<i>Egretta novaehollandiae</i>	White-faced Heron					† •
	<i>Elanus axillaris</i>	Black-shouldered Kite					•♣
	<i>Elanus scriptus</i>	Letter-winged Kite					♣
	<i>Falco berigora</i>	Brown Falcon					•♣
	<i>Falco cenchroides</i>	Nankeen Kestrel					•
	<i>Falco peregrinus</i>	Peregrine Falcon					α
	<i>Gallinula ventralis</i>	Black-tailed Native-hen					†
	<i>Grallina cyanoleuca</i>	Magpie-lark					•
	<i>Grus rubicunda</i>	Brolga	v		L		† ♣
	<i>Gymnorhina tibicen</i>	Australian Magpie					•♣
	<i>Haliastur sphenurus</i>	Whistling Kite					♣
	<i>Hirundo neoxena</i>	Welcome Swallow					•
	<i>Larus novaehollandiae</i>	Silver Gull					†
	<i>Lichenostomus chrysops</i>	Yellow-faced Honeyeater					•
	<i>Lichenostomus penicillatus</i>	White-plumed Honeyeater					•

	NAME	COMMON NAME	VROTS	AROTS	FFG	EPBC	Source
	<i>Malurus cyaneus</i>	Superb Fairy-wren					•
	<i>Manorina melanocephala</i>	Noisy Miner					•
	<i>Neophema chrysogaster</i>	Orange-bellied Parrot	c	E	L	End	♣
	<i>Neophema chrysostoma</i>	Blue-winged Parrot					♣
*	<i>Passer domesticus</i>	House Sparrow					† ♣
	<i>Pedionomus torquatus</i>	Plains-wanderer	e	V	L	Vul	♣
	<i>Phalacrocorax carbo</i>	Great Cormorant					•
	<i>Phalacrocorax melanoleucos</i>	Little Pied Cormorant					•
	<i>Platycercus elegans</i>	Crimson Rosella					•♣
	<i>Platycercus eximius</i>	Eastern Rosella					•
	<i>Pomatostomus temporalis</i>	Grey-crowned Babbler	e		L		♣
	<i>Psephotus haematonotus</i>	Red-rumped Parrot					† ♣
	<i>Rhipidura leucophrys</i>	Willie Wagtail					•
*	<i>Sturnus vulgaris</i>	Common Starling					•♣
	<i>Tadorna tadornoides</i>	Australian Shelduck					•
	<i>Threskiornis spinicollis</i>	Straw-necked Ibis					•
*	<i>Turdus merula</i>	Common Blackbird					•♣
	<i>Vanellus miles</i>	Masked Lapwing					†

* Indicates introduced species

Reptiles

	NAME	COMMON NAME	VROTS	AROTS	FFG	EPBC	Source
	<i>Pseudemoia entrecasteauxii</i>	Southern Grass Skink					•
	<i>Tiliqua scincoides</i>	Common Blue-tongued Lizard					•

* Indicates introduced species

Amphibians

	NAME	COMMON NAME	VROTS	AROTS	FFG	EPBC	Source
	<i>Crinia signifera</i>	Common Froglet					•
	<i>Limnodynastes peronii</i>	Striped Marsh Frog					•
	<i>Limnodynastes tasmaniensis</i>	Spotted Marsh Frog					•
	<i>Litoria ewingii</i>	Southern Brown Tree Frog					•

* Indicates introduced species

Source:

† Atlas of Victorian Wildlife, 2001 (5km search area)

♣ D. Conley and C. Dennis (1983) *The Western Plains ñ A Natural and Social History*, The Australian Institute of Agricultural Science, Parkville

• Conole L. E. (1993). Notes on the Fauna of a Small Western Plains Woodland Remnant near Winchelsea, Victoria. *The Victorian Naturalist* 110: 125-126

Ω McGregor, P. & Oaten, L. (1985). Mount Elephant: a history of the Derrinallum and Darlington district. P. McGregor & L. Oaten, Derrinallum.

α NRE(1996). Mount Eccles National Park and Mount Napier State Park Management Plan. Department of Natural Resources and Environment, Melbourne.

O Parks Victoria (1998). Organ Pipes National Park Management Plan. Parks Victoria, Melbourne.

Abbreviations adopted for these environmental agreements, legislation, strategies, action plans and lists are outlined below.

Commonwealth:

EPBC Act *Environment Protection and Biodiversity Conservation Act 1999.*

End species listed as endangered under the EPBC Act.

Vul species listed as vulnerable under the EPBC Act.

Mi(C) migratory species listed under the EPBC Act and CAMBA.

T species considered a potentially threatening process under the EPBC Act.

A EPBC Act listed species with a threat abatement plan.

AROT Australian Rare or Threatened species (ANZECC 1999).

E species considered endangered within Australia.

V species considered vulnerable within Australia.

R species considered rare within Australia.

N weed of National significance listed under the National Weeds Strategy.

P weed of National significance listed under the National Weeds Strategy with a strategic plan.

State:

FFG Act *Flora and Fauna Guarantee Act 1988.*

L species rare or threatened in Victoria and listed as threatened under the FFG Act.

N species rare or threatened in Victoria and nominated for listing as threatened; awaiting final decision under the FFG Act.

I flora species rare or threatened in Victoria but rejected for listing as threatened; taxon invalid or ineligible under the FFG Act.

X fauna species rare or threatened in Victoria but rejected for listing as threatened; taxon invalid or ineligible under the FFG Act.

FFG Action Action Statement under the *Flora and Fauna Guarantee Act 1988.*

a FFG Act listed species with an action statement.

VROT Victorian Rare or Threatened species (NRE 2000c; NRE 2000e).

Flora:

e species considered endangered within Victoria.

v species considered vulnerable within Victoria.

r species considered rare within Victoria.

k species poorly known within Victoria.

Fauna:

ce species considered critically endangered within Victoria.

e species considered endangered within Victoria.

v species considered vulnerable within Victoria.

lr species considered at lower risk ñ near threatened within Victoria.

dd species data deficient within Victoria.

APPENDIX 4. DESIGN GUIDELINES

Refer to Map 3 (at back of plan) for further information regarding siting and location.

Proposed formal entry to Mt. Elephant from Hamilton Highway.

- Design of entrance / gateway to be considered in association with the design of proposed buildings on the site to ensure continuity of design themes and material types.
- Liaise with landowner to remove young pine trees on eastern side of entry road ñ replace with selected indigenous species at a density which will not dominate the view of Mount Elephant from the Hamilton Highway / reserve entrance.

Formal entrance driveway

- Proposed formal vehicle entry to site to generally follow alignment of former railway line.
- Retain railway embankments / cuttings to clearly define the former railway alignment.

Carpark

- Site the carpark on the eastern side of the former quarry site to minimise the distance between the carpark and the proposed visitor centre.
- Retain embankment on north side of carpark as a means of screening the carpark/cars from the Hamilton Highway.
- Utilise indigenous tree/shrub species established on the floor of the former quarry to screen the face of the quarry. The density of the planted embankment to be arranged to blend with woodland planting on adjoining areas - i.e. to not appear as a dominant planting block in isolation to other planting sites.
- Consider surfacing the carpark with a suitable gravel (i.e. scoria) which relates/complements the natural colours of the site (i.e. gravel of volcanic origin).
- Allow controlled vehicle access through the carpark to the existing maintenance track to the west. Install appropriate bollards vehicle barriers or earth berms to control access off the vehicle tracks.
- Control vehicle, stock (see section 8) and public access around the carpark and to the quarry face with a plain wire farm fence in the interim while interpretation plans and landscape designs are completed.

Visitor Centre

- Proposed visitor/tourist information centre and picnic ground to be sited to the east of the proposed carpark within the former quarry. This location provides some views to the north east, over Derrinallum, and better views of the Mt. Elephant cone than from the carpark/former quarry site. This site

provides a key location for the commencement of the walk to the crater using the proposed alternate route ñ rather than through the quarry and along the existing vehicle track (see ñExisting track to craterñ below).

- With appropriate planting, site planning and appropriate architectural design any built structures on the lower slopes of Mt. Elephant should not dominate the view of the cone from the Hamilton Highway from this location.
- Architectural design and siting of all buildings/structures on the site to be developed to enhance, but not dominate the significant visual character of the site. Services to be unobtrusively sited and underground wherever possible.
- The design of the visitor centre should be sufficiently flexible to allow future expansion of the centre as tourist numbers increase.
- Good access opportunities (including close access to Derrinallum) combined with the development of proposed facilities associated with the visitor information centre may make this a suitable site for camping. Clustering of built structures/site development activities within the one area may reduce the overall visual impacts on the site.

New walking track to crater

- In addition to walking access along the existing vehicle track up to the crater a new proposed walking track to the crater will be constructed directly from proposed Visitor Information Centre to crater rim.
- This track alignment apparently follows a route to the crater used by the local community in the past. It provides a shorter, more direct and more interesting walking route to the crater rim, while avoiding walking through the former quarry, past the existing pine plantation and farm buildings (to north) before actually commencing the ascent of the cone.
- The ascent of the cone is commenced directly from the visitor centre.
- Construct the track of a width suitable for pedestrian use only (i.e. 1,500mm wide) - not as a vehicle access track ñ use existing track for vehicle access to the crater.

Existing track to crater

- Retain existing track to the crater rim for both maintenance vehicle access and as a walking track to the crater ñ to allow a loop walk to be established between the carpark and the crater. Install drainage and upgrade surface of track where required parallel to the northern boundary.
- Batter existing embankment on upper side of track to reduce embankment gradients and allow revegetation opportunities with selected indigenous grasses and groundcovers. This treatment will minimise the visual impact of the straight path (as seen from the Hamilton Highway) and reduce the exposed soil extent on the slopes of the cone.
- Retain the low graded earthen ñipi on the low side of the track for vehicle safety.

Informal viewing point

- The low rise on the edge of the crater walk provides a (slightly) elevated viewing point. This point may provide a slightly enhanced visitor experience ñ especially for those visitors who cannot undertake the crater rim walk.
- It is recommended this is a casual viewing point only with no signage, furniture etc. The installation of an access track should be subject to visitor use.

Crater rim walk

- Location of the crater walk to trig point to generally follow the existing track alignment ñ i.e. off the ridgeline ñ this location eliminates the possibility of the track being seen from the Hamilton Highway.
- Crater rim walk to be defined by a clearing of the stones to create a nominal path width of 1,500mm. Cleared stones to be removed from the immediate area rather than forming a stone edge to the path. This technique will minimise the visual intrusion of built structures within the reserve and make pedestrian access safer throughout the defined walking tracks of the site.
- Path to remain as a grassed surface until traffic numbers create permanent wear tracks. At this point consider surfacing with selected gravel (e.g. scoria).
- The walking track south west of the proposed Rest Viewing Area and any track sited to the north of the trig point may require a hand-rail or post & cable fence due to the narrowness of the crater rim and steepness of the crater.
- Handrailing colours, structure details and final locations to be designed to ensure views to these structures are minimised from adjoining roads and to ensure appropriate materials are selected with regard to visual and ongoing maintenance considerations.

Rest/Viewing area

- The intersection between the crater rim walk and the proposed track to the cone is sited in a sheltered saddle. After walking along the very exposed crater rim, a respite from the wind at this point is timely.
- Seating in the saddle area is likely to be well used.

Internal crater walk

- Internal crater walks to generally follow the alignment of the existing graded tracks. The only exception to this being the track leading from the crater rim walk into the crater ñ the former alignment of this track provides a more gentle gradient into the crater. Therefore it is recommended that this alignment be re-established as the walk into the crater.
- Provide an additional walking track from the existing track to the highest elevated rise within the crater.
- Path to be defined by a clearing of the stones to create a nominal path width of 1,500mm. Cleared stones to be removed from the immediate area rather than forming a stone edge to the path. Surface to remain as a grassed

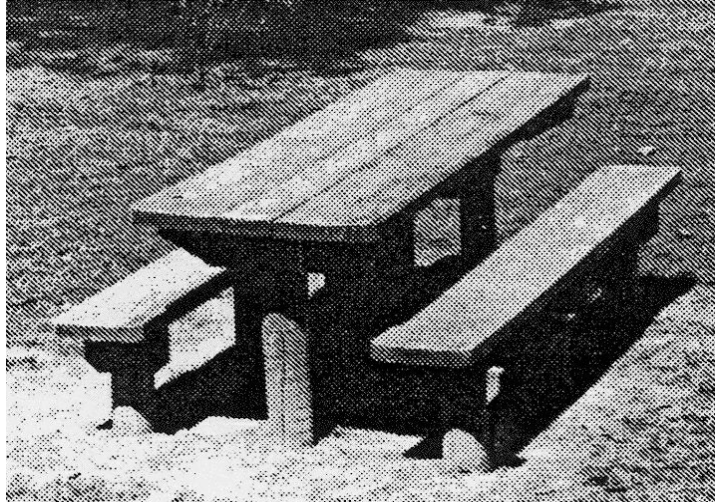
surface until traffic numbers create permanent wear tracks. At this point consider surfacing with selected gravel (e.g. scoria).

Infrastructure/site furniture/fittings

- All existing and proposed walking tracks throughout the site should comply with the relevant track classification identified within AS2156.1-2001 ~~Walking Tracks Part 1: Classification and Signage~~ and AS 2156.2-2001 ~~Walking Tracks Part 2: Infrastructure Design~~.
- All proposed furniture/fittings proposed for the site (including seating, handrailing, etc.) to be designed with a common theme to complement both the significant natural beauty of the Mount and any built structures sited within the site (i.e. the visitor centre, shelters, entries etc.). Styles should complement that adopted by the Volcanoes Discovery Trails Committee.
- Facilities and furniture, particularly signs, outside the Visitor Centre area defined in Map 3 should be kept to a minimum.
- All site furniture to be designed with a low profile to minimise visual impact. Signs (including information, direction and regulatory) to be low to the ground and seating to be low bench type.
- All structures to be designed with high durability ñ structures will need to withstand fire, wind exposure/weathering and be sufficiently robust to withstand vandal damage.
- All structures to be designed with careful consideration to finishing coats (ongoing maintenance requirements) and reflectiveness (visual aspects ñ viewed both from within the site and areas outside the reserve).
- If required, interim site furniture should be based on the illustrated standard designs from the Parks Victoria Visitor Facilities Manual (Appendix 5). Construction details are provided in the manual and may be available by agreement with Parks Victoria.
- New tracks to only be created based on an approved landscape development plan. Avoid duplicating tracks by grading new tracks near to, or adjoining existing tracks. Graded tracks significantly modify the physical and visual character of the site due to the modified density of the volcanic rock arrangement.
- Control vehicle and public access with plain wire farm fencing where landscape design has yet to be prepared.

APPENDIX 5. SITE FURNITURE

1. Picnic Table (Parks Victoria Visitor Facility Manual)



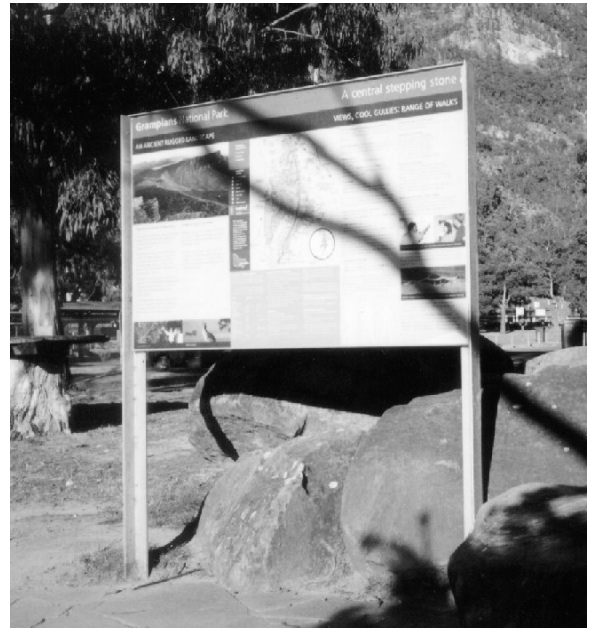
2. Seat (Parks Victoria Visitor Facility Manual)



3. Barbecue (Parks Victoria Visitor Facility Manual, use local stone facing to base)



4. Information Sign (Halls Gap)



5. Timber Platform (Parks Victoria Visitor Facility Manual)



6. Interpretive Sign (Example from Lake Leake, South Australia, model style promoted by Volcanoes Discovery Trail Committee)

