

LAND CONSERVATION COUNCIL

ALPINE AREA SPECIAL INVESTIGATION

FINAL RECOMMENDATIONS

November 1983

This text is a facsimile of the former Land Conservation Council's Alpine Area Special Investigation Final Recommendations. It has been edited to incorporate Government decisions on the recommendations made by Order in Council dated 8 January 1985 or earlier, and subsequent formal amendments.

Where the Special Investigation report refers back to the June 1979 Alpine Area Final Recommendations, for completeness recommendation wording and Crown descriptions have been reproduced.

Added text is shown underlined; deleted text is shown ~~struck through~~.

Annotations [in brackets] explain the origin of changes.

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INTRODUCTION

In May 1982, the Council was directed to make an investigation of public land in the Alpine study area according to the following Order in Council:

‘Whereas it is provided in Section 8 of the *Land Conservation Act 1970*, that where the Governor in Council is of the opinion that an investigation and recommendation of the Land Conservation Council in relation to any particular district or area of Victoria is necessary or expedient, the said Council may be required to make such investigation and recommendation within such time as is fixed by the Governor in Council.

Now therefore, His Excellency, the Governor of the State of Victoria by and with the advice of the Executive Council thereof, hereby requires the Land Conservation Council to carry out an investigation of public land within the area delineated on the plan hereunder and bearing in mind the Government’s conservation policy for the Alpine region, to make recommendations by the 1st day of December 1983, on those areas that might be added to the Alpine park system.’

Procedure

These final recommendations form part of a five-stage process. The first stage - a factual resource report - was published in October 1982. In the following 60 days the Council received 1090 written submissions from the general public and interested bodies on the way in which public land in the Alpine area should be used.

After considering the submissions and having visited the study area, the Council prepared its proposed recommendations, which were published on 27 May, 1983. The Council subsequently received 4152 submissions commenting on these proposals. After due consideration the Council now presents its final recommendations.

Submissions received by the Council are available for inspection at the Council’s office.

The recommendations in the text are grouped under major headings, such as The Alpine Park System, Reference Areas, and so on. The text is accompanied [Note: not in this version] by a map at the scale of 1 :250 000, which shows the recommended additions to the park system and other land use changes proposed by Council. The various reserves are numbered according to the same system used in the final recommendations for the Alpine area published in 1979. Reference to those recommendations is also made throughout the report.

Proposals

In the following section of this report the Council has proposed that additional areas be added to the alpine parks currently listed in the schedule to the *National Parks Act 1975*. Within the Alpine area these additions total about 275 000 ha, and if added to the existing parks here (approximately 323 900 ha), would increase the area of park to about 598 900 ha. These additions create a continuous alpine park stretching from The Governors in the west to the Victorian border in the east.

New historic areas centred on Glen Wills and Mount Murphy have also been recommended. In addition, a new concept combining uncommitted land and hardwood production areas is proposed.

The following proposals make certain changes to the current land use in the Alpine area and

these are summarised in the table.

Table 1: Public Land Use

Land use categories		Current land use	Recommended land use	Percentage of all public land covered by these recommendations
Alpine parks		323 900	598 900	44
Wilderness		29 600	27 000	2
Reference Areas		9 900	9 900	< 1
Natural Features and Scenic Reserves		68 800	14 500	1
Hardwood Production	State Forest	436 100		
Uncommitted Land		459 200	668 600	49
Water Production		8 000	8 000	< 1
Hydro-electricity Production		4 200	2 700	< 1
Historic Areas		13 400	23 100	2
Agriculture		1 300	1 300	< 1
Alpine Resorts		9 700	9 800	< 1
Other Reserves		3 500	3 700	< 1

Notes: Figures are rounded off, but use of recent computer technology makes them more accurate than those used previously. [Areas have not been adjusted for subsequent changes]

These recommendations also include additions to the park system of portion of a Natural Features and Scenic Reserve in the North-eastern area, District 1 (200 ha), uncommitted land in the North-eastern area, Districts 3, 4 and 5 (1600 ha), and land recommended as uncommitted land in the Gippsland Lakes Hinterland area (400 ha).

Where demands from competing uses vie for a given area of land, it is not possible to satisfy them all. However, these recommendations attempt to achieve balance in providing for the present needs of most forms of use while retaining flexibility and the opportunity to adjust to future changes in such demands. They do so by placing as much of the public land as possible under forms of use that do not have a major impact on the natural ecosystem. Flexibility in planning is essential. Our knowledge of many resources (for example, minerals) and of the distribution and ecology of plants is very imperfect. There must be many places in Victoria where special values still remain unrecognised and for which no special provision can be made in present planning. Furthermore, future demands for resources on public land may require alteration or modification of these recommendations, which are based on the best information presently available. The Council is aware that review will be necessary to ensure that future land use is in the best long-term interests of the community.

Public Land and the Aboriginal People

Aboriginal association with the alpine area can be traced back for many thousands of years. The main tribe occupying territory within the area - using the boundaries given in Tindale (1974) - was the Jaitmathang. Other neighbouring tribes with territories overlapping the area were the Djilamatang, Ngarigo, and Duduroa in the north-east, and the Krauatungalung, Brabiralung, and Braiakaulung tribes of Gippsland.

The Aborigines ranged over their tribal territories to maximise their chances in the quest for food. They held tribal and intertribal meetings for a number of reasons: they conducted initiation and other ceremonies, contracted marriages, settled disputes, traded goods, and usually held feasts and dancing. The time of the meeting was often connected with a seasonal abundance of food in a particular place. In late spring, for instance, the Jaitmathang and associated tribes would feast off aestivating Bogong moths, which gathered by the thousands in rock crevices on

the Bogong High Plains.

Of the sites showing evidence of Aboriginal activity that have been identified to date, two have major archaeological significance: the Howqua area was an important source of stone used for making the stone artifacts found in the Gippsland region, and caves in the New Guinea area of the Snowy River National Park contain engravings that are unique in Victoria but resemble those found in Kuenalda Cave in the Nullabor plain. The majority of the known sites on public land are within parks.

No major systematic archaeological site surveys have yet been undertaken in the Alpine area. Sufficient material has been found, however, to indicate that additional sites will be identified when more detailed surveys are carried out.

The Council believes that the Aboriginal people should be consulted on the management of those sites on public land already identified and any further sites identified following future investigation.

General Recommendations

The following recommendations qualify those in the body of the text.

The Council wishes to stress the need for adequate management and protection of public land, as it has made its recommendations on the assumption that sufficient manpower and finance will be provided for the appropriate managing authority. Unless these resources are provided, the Council's recommendations cannot be effectively implemented. Council emphasises that introduced weeds such as blackberry, St John's wort, sweet briar, and tutsan pose major problems in the management of public land in the Alpine area. Finance and staff are required to research and implement methods for control of these and other pest species. Council therefore recommends:

- I That the authorities responsible for managing and protecting the public land be given the resources necessary for the task.

The Council has previously proposed certain additional arrangements for protecting public land from fire. These arrangements have now been incorporated into an amendment to the *Forests Act 1958*. The amendment creates the designation 'protected public land', which may include public land that is not State forest or national park. The Forests Commission is now required to protect all three of these from fire. The following statement outlines the responsibilities for fire protection on public land:

- (a) Under the provisions of the *Forests Act 1958* and notwithstanding anything to the contrary in any other Act, it is the duty of the Forests Commission to suppress fires in every State forest and national park, and on all protected public land. This includes, for example, all land under the management and control of the National Parks Service.
- (b) In the event of fire in any area for which the Forests Commission has fire-suppression responsibility, the Forests Commission has powers of entry under both the *Forests Act 1958* and the *Country Fire Authority Act 1958*. Decisions as to the most appropriate course of action required to suppress the fire and as to the most appropriate equipment to be used, are the responsibility of the Forests Commission alone.
- (c) The Forests Commission provides the State with an efficient fire-prevention and suppression organisation. The fire-fighting resources of the National Parks Service are available to the Commission for fire suppression operations, and are used as such under the

direction of the Forests Commission. They are used in conjunction with, and not as a replacement for, the resources of the Commission.

- (d) Fire-prevention works in State forests are the sole responsibility of the Forests Commission. In parks, on land reserved under section 4 of the *Crown Land (Reserves) Act 1978*, and on protected public land, however, fire-prevention works are undertaken only with the agreement of the person or body managing the land.
- (e) To facilitate co-operative arrangements for fire-prevention in areas under the management and control of the National Parks Service, the Service and the Forests Commission have established a joint fire-protection committee.
- (f) In addition, under the *National Parks Act 1975*, the Director of National Parks shall ensure that proper and sufficient measures are taken to protect each national park, and other parks managed by the National Parks Service, from injury by fire.
- (g) The two organisations that share the duty of fire-prevention and suppression in rural Victoria, namely, the Forests Commission and the Country Fire Authority, have excellent arrangements for mutual co-operation, which have operated successfully for many years.

Accordingly, the Council recommends:

- II** That, for fire-protection purposes, public land that is not State forest or national park be examined, and appropriate areas be declared protected public land under the *Forests Act 1958*.

The Council expects that, as a result of further study and investigation, many more areas with special values will be identified. Present planning cannot specifically provide for the conservation or utilisation of these values. The Council therefore recommends:

- III** That mineral exploration licences held over the area continue except in so far as they affect reference areas.
- IV** That, when significant new discoveries are made on land within their administration, government agencies enlist the best advice available on the importance of such discoveries and how they should be managed. Advice from organisations other than government authorities and academic institutions should be sought whenever appropriate.

The Council also recognises that in some cases, existing legislation will have to be amended in order to effectively implement the recommendations in this report. It is aware that this may result in a delay, in some cases of several years, before some of its recommendations can be implemented. It is concerned that, where implementation of the recommendations would involve a change of management authority, management efficiency could be reduced during the delay period. The Council believes that the government should direct departments that their responsibilities for management must continue in all areas presently under their control until such time as the recommendations are implemented. It therefore recommends:

- V** That the present legal status and management of public land in each case be retained until the recommended authorities have the capacity to manage each area.
- VI** That, as the boundaries of many areas have not been precisely surveyed, they be subject to minor modification, road excisions, easements, and other adjustments that may be necessary.

- VII** That in cases where occupation does not agree with title, the Department of Crown Lands and Survey may at its discretion make adjustments to boundaries of public land, when implementing these recommendations.
- VIII** That the recommendations in this publication do not change the status of roads passing through or abutting public land that are at present declared roads under the *Country Roads Act 1958*.
- IX** That, where no changes to existing land use are proposed, public land continue to be used in accordance with the uses approved by the government following publication of the Council's final recommendations for the area in June 1979.

A. THE ALPINE PARK SYSTEM

The Council proposes the establishment of a large alpine park that will encompass most of Victoria's alpine and sub-alpine environments. Including the portions of the existing alpine parks located in adjacent study areas, it will cover about 664 000 ha. Contiguous to the 690 000 ha Kosciusko National Park in New South Wales, the continuous land area to be managed by the Victorian National Parks Service - taking into account the wilderness, alpine park, and historic areas - would be more than 720 000 ha. This is shown on Map B. [Note: not in this version]

Those people in favour of an alpine park have expressed overwhelming support for a single, continuous park. The Council is of the view that the entire linked park should be managed in a consistent and unified fashion. To assist in achieving cohesion and co-ordination, of both management philosophy and practice, it should be known and reserved as a single entity. It should not be fragmented, with some areas reserved as State or regional parks or some other form of reservation.

Inclusion of this extensive area within a single park must not, however, mean that it would only be used for certain limited purposes. The Council has always stressed that an essential aim in the reservation of parks is to provide for the enjoyment of the public. This philosophy is particularly relevant to this very large alpine park, with its diversity of complex environments and the numerous and varied public uses it supports.

Considerable community concern has been expressed that many popular activities will be unduly constrained in an alpine park. The Council has made its recommendations on the understanding that management plans will provide the opportunity for the continued enjoyment of a wide range of recreational activities, and wishes to emphasise the necessity to involve user groups during the preparation of such plans.

Council believes firmly that the alpine park should not become the exclusive preserve of the young and fit, the bushwalker, and the naturalist, but that all sections of the community should have the opportunity to enjoy the unique features that it offers.

The Victorian National Parks Association, which over many years has been the principal proponent of an alpine park, has publicly expressed the view, with which the Council generally agrees, that 'the whole concept of such a huge park is to offer a wide range of recreations . . . '.

With sensitive and responsive planning and management, the Council believes, the park should be able to cater for a broad spectrum of public recreation activities without prejudicing its other major functions - namely, long-term conservation and protection of the area's special natural features.

On its north-eastern boundary, the proposed alpine park adjoins the Kosciusko National Park in New South Wales. The Council believes that there is a need for close co-operation between the managing authority and the New South Wales National Parks and Wildlife Service in managing areas of park adjacent to the State border.

Public access

An essential aim in the reservation of an alpine park is to provide for the enjoyment of the public, and therefore public access will be maintained. Indeed, additional access may be provided to interesting areas by way of nature trails and walking tracks.

Motorised recreation

The Council believes that the alpine park system should offer a wide range of recreational uses. There is a place not only for photography, bird-watching, nature study, etc., but also for activities such as scenic driving, and for touring using the tracks through steep terrain and into isolated areas as well as the system of formed roads.

Because of its extensive network of roads, the region has particular value for motorised recreation. The Council considers that the park system should continue to contain a series of linked roads, mainly of four-wheel-drive standard, available for use by licensed vehicles in order that extended touring throughout the Alps is possible. However, as well as this system of linked roads, other subsidiary tracks should be maintained for community use.

The Council points out, however, that the existing system of seasonal road closures, for reasons such as safety and erosion hazard, should continue, after consultation between the managing authorities and user groups.

Camping

Dispersed camping occurs throughout the alpine region in association with many outdoor recreational activities. The Council considers that large areas should remain available for dispersed or bush camping within the park system. That is, in these areas, users should be allowed to camp where they choose rather than be restricted to camping sites delineated by the managing authority.

A number of schools and community groups currently use the alpine region for camping and other activities. Areas within the park system should continue to be available for these uses. Consideration will need to be given to the type of camping facilities that may be developed.

Horse-riding

Horse-riding is becoming an increasingly popular recreation activity here with trail-riding clubs, commercial horse-safari groups, and individual riders regularly visiting the area. In general, Council believes that the use of horses should be permitted within the park system. It may be necessary, however, to place conditions on the time, location, and manner in which horses can be used in order to minimise conflicts with other park users and to protect less stable or more fragile areas from damage.

Logging roads

In a number of places it will be necessary to transport timber through the park due to the fact that the park lies between areas of commercial forest and the sawmills. Council believes that the use of any roads designed and built primarily for the purpose of transporting timber should not be restricted. Every effort, however, should be made to reduce the impact of logging roads on important park features, and, to this end, the National Parks Service should be fully consulted in the planning of new roadworks.

Deer-hunting and public safety

The following recommendations permit the hunting of deer by stalking on a seasonal basis in substantial areas of the alpine park system. Legitimate deer-stalking occurs at times and places that prevent conflict with other users of public land becoming a serious problem. The planning

and management of those parts of the park where deer-stalking is permitted should be such as to ensure - as far as is possible - that public safety is maintained.

Honey production

Public land in this study area includes several areas of regional importance for the production of honey. Where these areas are recommended as part of parks, honey production should be permitted and the number of apiary sites maintained.

Prevention and suppression of wildfires

Council recognises that wildfire, however caused, must be prevented from threatening life, property, and natural resources in the State. The measures necessary to control wildfires must be taken in parks as in other areas.

In the event of fire in any park, decisions as to the most appropriate course of action required to suppress the fire, and the most appropriate equipment to be used, are the responsibility of the Forests Commission alone. The fire-fighting resources of the park managing authority are available to the Commission for fire-suppression operations, and are used under the direction of the Forests Commission in conjunction with, and not as a replacement for, the resources of the Commission.

The classification of land as a park does not restrict the use of any necessary fire-suppression measures.

Fire-prevention measures such as maintenance of fire-access tracks and protective burning will also be required in those areas of parks that have strategic importance for fire control.

The particular measures to be taken in individual parks will be incorporated in the protection plans prepared by the Forests Commission in consultation with the park managing authority. When formulating these plans, they should draw upon the views and experience of park users - particularly those with local knowledge.

In all parks the suppression of fires remains the responsibility of the Forests Commission, even in those parks where the Commission is not the managing authority.

The two organisations that share the duty of fire prevention and suppression in rural Victoria - namely, the Forests Commission and the Country Fire Authority - have excellent arrangements for mutual co-operation that have operated successfully for many years.

Control of vermin and noxious weeds

Within the alpine park the control of vermin and noxious weeds will remain the responsibility of the Department of Crown Lands and Survey. Under the terms of an agreement ratified by both the Department and the National Parks Service, control measures will be taken by both the park managers and the Department, using methods decided upon jointly by the two parties.

Legal access

Current legal access will continue to be available to freehold land enclosed by the park.

Grazing in Parks and other Reserves

The following refers to grazing in the existing parks and other reserves and in the park additions now approved for which the recommendations for grazing have not been accepted:

The areas currently excluded from grazing will remain so and decisions of the previous government to phase out grazing from certain areas by 1991 will not be altered. One further area will be added to those from which grazing will be excluded by 1991 (see Chapter Q – Agriculture) and grazing remaining within the National Park will be reviewed.

Future decisions about grazing will be made in the light of government policies, taking into account its economic significance for individual graziers, information arising from research, environmental and recreational factors, and the traditional associations of families with the high country.

Recommendations

A1—A5 That the areas indicated on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

Wonnangatta—Moroka National Park

Located in the headwaters of the Howqua, King, Catherine, Wonnangatta, Moroka, Caledonia, and Macalister Rivers, this park contains the alpine summit of Mount Howitt and the distinctive peaks of Mount Cobbler, Speculation, and Kent.

Other outstanding features include rocky cliffs and escarpments on the Viking, the Razor and the Crosscut Saw at Bryces Gorge, and around Snowy bluff and Mount Reynard. Nature conservation values are very high. Vegetation communities range from alpine herbfields on Mount Howitt to snow gum woodlands and grasslands on the Howitt and Bennison plains to alpine ash and riverine forests. Rare plant species include the willow-herb and alpine finger-fern at Conglomerate Creek Falls and the maidenhair spleenwort at Bryces Gorge.

Forest roads from north-eastern Victoria, from the Latrobe Valley, and from Mansfield provide access to parts of the proposed park. There is no through access for conventional vehicles, however, and in winter, when snowfalls close many roads, the area becomes virtually inaccessible except to those on foot.

Recreational pursuits include bushwalking and wilderness recreation - spectacular scenic views are obtained from the Alpine Walking Track, and the Catherine River—Viking and the Mount Darling—Snowy Bluff areas contain large unroaded tracts. Other outdoor activities include cross-country skiing on the Howitt and Bennison plains, four-wheel-drive touring, deer-hunting, horse-riding, and camping.

A1 Wonnangatta—Moroka National Park

That the area of 104 000 ha indicated on Map A be used to:

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments
- (b) conserve and protect natural ecosystems
- (c) supply water and protect catchments and streams
- (d) the Fisheries and Wildlife Division prepare plans for the conservation of wildlife in

consultation with the management authority and that, after agreement, these be incorporated into the management plan

- (e) grazing be permitted subject to the policies and conditions specified in chapter Q, Agriculture, except in areas shown by horizontal stripes on the map, where grazing is to be phased out by 19 May 1991 (Ministerial letter 8/2/1982)
- (f) logging not be permitted - except for once-only logging in areas indicated on Maps A and D (these areas, after logging in accordance with the principles set down in chapter I, Hardwood Timber Production, to be regenerated and rehabilitated; the road and other earthworks west from Shanty Hollow to be revegetated at the completion of logging; logging operations to be controlled by the Forests Commission, in consultation with the National Parks Service; and all logging to cease by 1988)

Additional once only logging approved for Mt Reynard and Dry River. (Ministerial letter 2/5/1980)

- (g) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted

- (h) the airstrip and associated fire-protection installations on the Snowy Range continue to be operated and maintained by the Forests Commission

and that it be reserved under section 4 of the *Crown Land (Reserves) Act 1978* pending reservation under the *National Parks Act 1975*.

Note: Access should continue to be provided through the park to private property at Wonnangatta Station, Bryce Plain, and Eaglevale.

(See Wilderness SI 48, 49, B12 and Rivers and Streams SI 412) (See also Ministerial Letter 8/2/1982 and recommendation Q19)

Bogong National Park

This area contains nine of Victoria's ten highest peaks, the Bogong High Plains, the most extensive and spectacular alpine scenery in the State, and large areas of mature and fire-regrowth alpine ash forest.

It provides outstanding opportunities for many forms of outdoor recreation, particularly cross-country skiing, bushwalking and motor touring. Nature conservation values are very high. The various alpine plant communities, including short herbfield ('snow patch' vegetation), tall herbfield, heathland, and mossland are well represented here. The High Plains support many botanically significant and showy plant, including the Bogong daisy-bush and silky daisy-bush - both endemic to the study area.

Fauna vary from the numerous and varied invertebrate species characteristic of alpine vegetation to the birds and arboreal mammals of the mountain and foothill forests. The rare mountain pigmy possum inhabits heathy snow gum woodland south-east of Mount McKay. Contrasting geomorphic features show remnants of old erosion surface (high tablelands) abutting ruggedly dissected terrain. Geological features are varied in age and type, and include intensely metamorphosed (altered) rock, massive fault zones, basalt capping, showing columnar jointing, and periglacial rock rivers.

A2 Bogong National Park

That the area of 79 000 ha as indicated on Map A be used to:

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments
- (b) conserve and protect natural ecosystems
- (c) supply water and protect catchments and streams
- (d) the Fisheries and Wildlife Division prepare plans for the conservation of wildlife in consultation with the management authority and that, after agreement, these be incorporated into the management plan (particular attention should be given to the protection of the mountain pigmy possum)
- (e) grazing be permitted subject to the policies and conditions specified in chapter Q, Agriculture, except in the areas indicated on Map B, where grazing is to be phased out by 19 May 1991 (areas currently excluded from grazing should remain so and are also indicated on Map B) (Ministerial letter 8/2/1982)
- (f) apiculture not be permitted
- (g) mining operations at the Red Robin mine be permitted subject to strict control of placement of mine tailings and use of access; the existing quarry at Basalt Hill and gravel pit at Pretty Valley continue to be used for the production of stone and gravel respectively as required by the State Electricity Commission and other Government authorities
- (h) logging not be permitted - except for once-only logging in areas indicated on the maps (these areas, after logging in accordance with the principles set down in chapter I, Hardwood Timber Production, to be regenerated and rehabilitated; logging operations to be controlled by the Forests Commission, in consultation with the National Parks Service; and to cease in the West Kiewa and Middle Creek—Bundara River areas by 1988; the State Electricity Commission to be consulted also about logging within the area shown by the diagonal stripes on Map B)

That logging on a once-only basis be permitted in the three alpine ash stands near Kelly Track - in the eastern portion of the proposed Mt Bogong National Park (shown on the attached map) - to which access was constructed and which were partially logged prior to the publication of the Land Conservation Council recommendations. (LCC amendment 9/10/79)

Additional once-only logging may take place in Diamantina River Catchment and Shannonvale area. (Ministerial Letter 2/5/1980)

Although it is not practical for logging to be completed in U2 and Little Arthur Creek areas by 1988, every effort should be made to complete once-only logging at Little Arthur Creek as soon as possible. (Ministerial Letter 21/1/1980)

- (i) hunting and use of firearms not be permitted

that

- (j) within the area delineated by diagonal stripes on Map B;
 - (i) management be such that the Kiewa hydroelectric scheme is adequately protected under the State Electricity Commission Acts and Regulations and the quality, quantity, and timing of water produced meets the requirements of the State Electricity Commission
 - (ii) fire-prevention works (including construction of vehicular tracks) to protect the State Electricity Commission's assets be planned by the State Electricity Commission in consultation with the Forests Commission and National Parks Service
- (k) the Harrietville—Omeo road reserve via Hotham Heights be excluded from the park,

but that the National Parks Service be consulted regarding any proposals for upgrading or realigning the section of this road within the park

and that the Bogong National Park (which includes portion of the area delineated by diagonal stripes on Map B), be reserved under section 4 of the *Crown Land (Reserves) Act 1978* pending reservation under the *National Parks Act 1975*.

Note: The National Parks Service and the State Electricity Commission should consult regarding any proposals that affect the conservation, landscape, or recreation values of the adjacent Kiewa hydroelectric scheme and Falls Creek alpine resort area, and about any development within the park that may affect the operation and protection of the hydroelectric scheme.

(See Wilderness SI, B17, B18 and Rivers and Streams SI A1, A2, C1)

(See also Ministerial Letter 8/2/1982 and recommendation Q19)

Cobberas—Tingaringy National Park

This area adjoins one of 17 000 ha east of the Snowy River, which was recommended as a national park in the final recommendations for East Gippsland. It also adjoins the Kosciusko National Park (in New south Wales) along the Victoria—New South Wales border.

The park is important for nature conservation, as it contains a wide range of geological formations and vegetation types. Elevations range from 160 m to 1 838 m. Geological features include rocky escarpments composed of Snowy River volcanics, periglacial rock rivers, richly fossiliferous sedimentary rocks, limestone caves, and the Reedy Creek and Stradbroke chasms. Cypress pine and white box woodlands, which provide habitat for birds and reptiles typical of warm dry environments, contrast markedly with snow gum woodlands and stands of alpine ash forest at the higher elevations. Unusual vegetation patterns of heathland and mallee shrubland occur on Silurian sediments. Colonies of the rare brush-tailed rock wallaby and, on the Davies Plain ridge, the only recorded Victorian occurrence of the alpine water skink are of particular importance.

The park is also valuable for a number of forms of outdoor recreation, such as bushwalking, fishing, camping, and motor touring. Its most important recreational features include the Cobberas Range, Limestone Creek and Suggan Buggan valleys, Davies Plain Ridge, and Reedy Creek chasm.

A3 Cobberas—Tingaringy National Park

That the area of 94 700 ha as indicated on Map A be used to:

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments
 - (b) conserve and protect natural ecosystems
 - (c) supply water and protect catchments and streams
- that
- (d) the Fisheries and Wildlife Division prepare plans for the conservation of wildlife in consultation with the management authority and that, after agreement, these be incorporated into the management plan (particular attention should be given to the protection of the brush-tailed rock wallaby)
 - (e) grazing be permitted subject to the policies and conditions specified in chapter Q, Agriculture, and subject to adequate protection of the park and Kosciusko National Park in New South Wales
 - (f) logging not be permitted - except for once-only logging in areas indicated on Maps A and

D (these areas, after logging in accordance with the principles set down in chapter I, Hardwood Timber Production, to be regenerated and rehabilitated; logging operations to be controlled by the Forests Commission, in consultation with the National Parks Service; and all logging to cease by 1988)

(g) hunting and use of firearms not be permitted

and that it be reserved under section 4 of the *Crown Land (Reserves) Act 1978* pending reservation under the *National Parks Act 1975*.

Notes:

1. The Council notes the mineral potential of the Silurian volcanic and sedimentary deposits in the Cobberas—Tingaringy National Park and believes that exploration of these deposits should be permitted subject to guidelines outlined in the section on mineral and stone production.

Particular attention should be given to roading requirements, and new road access for exploration purposes should be kept to the absolute minimum.

In the event of a viable mineral discovery being made, a decision as to whether mining should take place should be based on whether the operation would be in the State interest including the environmental acceptability of the operation.

2. Council also notes the presence of limestone and marble deposits in the Limestone and Claire Creek valleys.

3. The Black Mountain—Benambra, Wulgulmerang—Jindabyne, and Wulgulmerang—Tubbut roads pass through or adjoin the proposed national park. These roads and their reserves should be excluded from the park. Minor changes to them may be necessary in the event of future upgrading and realignment requirements. Access should continue to be provided through the park to private property at Limestone Creek, Ingeegoodbee River, and Tom Groggin.

4. The area shown on Map A as U3 (see chapter U, Uncommitted Land) is enclosed by the proposed national park. Council will reconsider the use of this area when it next reviews land use in the alpine area.

(See Wilderness SI *A11, A12, A13, B20, B21* and Rivers and Streams SI *A9, A10, A11, C5*)

Snowy River National Park

An adjoining area of 25 000 ha east of the Snowy River was recommended as a national park in the final recommendations for East Gippsland.

The section within the alpine area, in common with the section in East Gippsland, comprises part of the Snowy River valley and has outstanding attributes of scenic grandeur. It provides opportunities for activities that include white-water canoeing, bushwalking, and rock-climbing.

Nature conservation values are high. The vegetation is mainly low open forest and woodland, but ranges from white box woodland to mountain ash open forest IV and lowland closed forest II.

Features include several colonies of the brush-tailed rock wallaby, occurrences of mountain ash, 'jungle' gullies, several rare or endemic plants, and also attractive limestone formations.

A4 Snowy River National Park

That the area of 15 700 ha as indicated on Map A be used to:

(a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments

(b) conserve and protect natural ecosystems

(c) supply water and protect catchments and streams

that

(d) the Fisheries and Wildlife Division prepare plans for the conservation of wildlife in consultation with the management authority and that, after agreement, these be incorporated into the management plan (particular attention should be given to the protection of the brush-tailed rock wallaby)

(e) grazing be phased out not later than 19 May 1991. (Ministerial letter 8/2/1982)

(f) logging not be permitted - except for once-only logging in areas indicated on the maps (these areas, after logging in accordance with the principles set down in chapter I, Hardwood Timber Production, to be regenerated and rehabilitated; logging operations should avoid disturbance to features of special significance to the park and be controlled by the Forests Commission, in consultation with the National Parks Service; and all logging to cease by 1983)

(g) hunting and use of firearms not be permitted

and that it be reserved under section 4 of the *Crown Land (Reserves) Act 1978* pending reservation under the *National Parks Act 1975*.

Notes:

1. The Wulgulmerang—Tubbut road reserve is excluded from the proposed park. Adjustments to the road reserve may be necessary if upgrading and realignment of this road is required in the future. Access should continue to be provided through the park to private property.

2. The area of approximately 20 ha south of McKillops Bridge, excluded from the park, is recommended to be temporarily reserved for possible development associated with this park and the Cobberas—Tingaringy National Park. Any such development would be undertaken only after prior approval of the National Parks Service (see Recommendation T5).

(See also Rivers and Streams SI 49)

Wabonga Plateau State Park

Final recommendations for the North-Eastern Area, Districts 3, 4, and 5 included a recommendation for a State park of 18 600 ha adjacent to the alpine area. At that time Council indicated that it would consider extending the park when making recommendations for the alpine area. The addition of 3100 ha to the State park as is here recommended will bring the total area to 22 100 ha.

The main feature of this section of the park is the dissected topography on Devonian—Carboniferous volcanic and sedimentary rocks. The extensive areas of rock outcrops are of particular geological interest.

The park supports a rich flora, in which open forest II and III of broad-leaf and narrow-leaf peppermint and their associated species predominate; small pockets of alpine ash forests add diversity.

A5 Wabonga Plateau State Park

That the area of 3100 ha as indicated on Map A be used to:

(a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments

(b) conserve and protect natural ecosystems

(c) supply water and protect catchments and streams

that

(d) emphasis be placed on conserving the park's rich flora

(e) grazing continue at a level that is compatible with (d) above, but be phased out by 19 May 1991. (Ministerial letter 8/2/1982)

(f) logging not be permitted - except for once-only logging in areas indicated on the maps (these areas, after logging in accordance with the principles set down in chapter I, Hardwood Timber Production, to be regenerated and rehabilitated; logging operations to be controlled by the Forests Commission, in consultation with the National Parks Service; and all logging to cease by 1988)

and that it be reserved under section 4 of the *Crown Land (Reserves) Act 1978* pending reservation under the *National Parks Act 1975*.

Additions to the alpine park system

A number of areas are proposed for addition to the existing alpine park system. These contain features and attributes that add to or enhance the values already found in the parks. The particular features and attributes of each area are described below. In addition to the recommendations below that apply to all proposed additions, recommendations are made that apply specifically to each of these areas.

Recommendations

A6—A27 That the areas indicated on map A and described below be used to:

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments
 - (b) conserve and protect natural ecosystems
 - (c) supply water and protect catchments and streams
- that
- (d) the Fisheries and Wildlife Division prepare plans for the conservation of wildlife in consultation with the management authority and that, after agreement, these be incorporated into the management plan

and that they be included in the schedule to the *National Parks Act 1975* and be managed by the National Parks Service.

Note: The proclamation of some areas proposed for addition to the parks system is to be deferred until the times specified in the recommendations (see recommendations A6, A7, A8, A13, A14, A17, A20, A21).

Note: The following refers to grazing in the existing parks and other reserves and in the park additions now approved for which the recommendations relating to grazing have not been accepted:

The areas currently excluded from grazing will remain so and decisions of the previous Government to phase out grazing from certain areas by 1991 will not be altered. One further area will be added to those from which grazing will be excluded by 1991 (see chapter Q - Agriculture)

and grazing remaining within the National Park will be reviewed.

Further decisions about grazing will be made in the light of Government policies, taking into account its economic significance for individual graziers, information arising from research, environmental and recreational factors, and the traditional associations of families with the high country.

Rose River (8 670 ha)

Incorporating the environs of the King River, and the higher reaches of the Rose and Dandongadale Rivers, this addition to the parks system forms the immediate foreground for the outlook north and west from Mount Cobbler.

It connects with both the Wabonga Plateau State Park and the Wonnangatta—Moroka National Park, and incorporates a walking route that links these two parks along the divide between the Rose and King Rivers. It includes the attractive environs of the King and Dandongadale Rivers - both of which are popular for fishing - as well as a number of camp sites such as those at Pineapple Flat and King River Hut. The camp sites are frequently used in conjunction with other areas in the Wonnangatta—Moroka National Park.

The area also includes hardwood timber resources that are important for the local sawmilling industry. Council considers that the mature sawlog resources here should continue to be available for harvesting until July 1988, after which the area is to be managed as part of the park system.

Recommendation

A6 Rose River

- (a) That the area of 8670 ha shown on map A be used in accordance with the principles set down in the chapter on State Forest, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority

that

- (b) logging be permitted until July 1988, after which the area is to be managed as part of the park system

and that, when managed as part of the park system

- (c) the area be used in accordance with the general recommendations outlined above
- (d) logging not be permitted
- ~~(e) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~
- (f) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted
- (g) access through the area be permitted for those wishing to transport firearms and dogs to hunting areas outside the parks
- (h) apiculture be permitted.

Note: This area includes some uncommitted land (1 625 ha) within the North-eastern area, Districts 3, 4 and 5.

Howqua River (23 810 ha)

This area contains a number of spectacular alpine peaks - including The Bluff, The Governor, Mount Darling, and Eagle Peaks - as well as portion of the Howqua River valley.

It has very great recreational attraction. Bushwalkers use it extensively, as do horse-riding safaris and four-wheel-drive tourers. The Howqua River flats provide numerous popular camping sites

and the river itself is used for fishing and canoeing.

The historic Mitchells homestead site located in the south-west is used extensively by deer-hunters and four-wheel-drive tourers. In addition, the area around The Bluff is becoming increasingly popular for ski-touring in winter.

The Cambrian-aged rocks occurring in a band here are rare in the Victorian Alps.

The area contains a number of rare plant species, including creeping coprosma (*Coprosma pumila*) and Omeo gum (*Eucalyptus neglecta*), and the smoky mouse has been recorded near the junction of Eight Mile Creek and the Howqua River.

Forests on the northern slopes of The Bluff—Mount Magdala range contain hardwood log resources that are important for the local sawmilling industry. Council considers that the mature sawlog resources here should continue to be available for harvesting until July 1988, and that on completion of logging the area should be managed as part of the park.

Recommendation

A7 Howqua River

- (a) That the area of 19 780 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously and that
 - ~~(i) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture — except for the area delineated on The Bluff, where grazing is to be phased out by May 1994 (Omitted from Order in Council 8/1/1985)~~
 - (ii) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted (Order in Council 8/1/85)
 - (iii) logging not be permitted
 - (iv) apiculture be permitted
- (b) that the area of 4030 ha shown separately on map A be used in accordance with the principles set down in the chapter on State Forest, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority

and that logging be permitted until July 1988, after which the area is to be managed as part of the park.

(See also Wilderness SI B11, Rivers and Streams SI A3)

Macalister River (43 600 ha)

Extending south from the spectacular high ridges of the Great Dividing Range to include The Crinoline (Mount Ligar), this broad basin-like valley incorporates a number of important and well-known scenic features.

The Alpine Walking Track traverses Mount McDonald, Mount Clear, and the King Billies in the north, another walking track follows the Long Hill over The Crinoline from the Macalister River to Mount Tamboritha, and a number of relatively short bushwalking routes are located in the Breakfast Creek basin. Vehicular access throughout much of this area is very limited, but includes four-wheel-drive tracks along the Butcher Country Spur and the Caledonia River.

The historic McMillan's Track, which linked the mining settlements of Walhalla and Omeo, passes through this area between Bruni Knob and Mount Tamboritha.

Much of the Macalister River catchment included here comprises dry foothill forest types on rugged spurs and valleys, and scenic cliffs and rock formations are found along a tributary - the Caledonia River. Manna gum woodlands along many of the main rivers provide scenically attractive environs. A small plateau is located at the headwaters of Pine Creek.

Bennison Plains in the east form the main entrance point to the Wonnangatta—Moroka National Park. In summer a number of popular camp-sites along Shaw Creek are used by bushwalkers and by tourists and fishermen using cars and four-wheel-drive vehicles. In winter the Plains are popular for ski-touring and snow-play activities.

Flats along the Wellington River provide a large number of camp-sites, which receive intensive use over summer. The campers engage in a number of activities, including adventure driving using four-wheel-drive vehicles and trail-bikes, hunting, fishing, swimming, and bushwalking. In winter, the camp-sites are used as overnight bases for day-trippers to the snowfields on the Bennison Plains.

Traralgon High School and Melbourne Church of England Grammar School have camps beside the Wellington River, north of Licola. A storage and sorting dump for pulp-wood used by Australian Paper Manufacturers Ltd is also located in this vicinity. The Council considers that these uses should be permitted to continue, as should the other traditional legal uses of the area.

The smoky mouse has been recorded at two sites in the higher reaches; one of these, in the headwaters of Grimme Creek, also contains the rare boronia *Boronia citriodora*. Other rare indigenous plants located in this extension include the grasses *Grammitis meridionalis* and *Koeleria australiensis*, a guinea flower (*Hibbertia* sp. aff. *calycina*), the dense midge-orchid (*Prasophyllum densum*), and silver carraway (*Oreomyrrhis argentea*).

Forests at the headwaters of the Macalister River and on Shaw Creek contain hardwood log resources that are important for the local sawmilling industry. Council considers that the mature sawlog resources here should continue to be available for harvesting until July 1988, and that on completion of logging the areas should be managed as part of the park.

Once-only logging is currently permitted in stands delineated within the Natural Features and Scenic Reserve near Mount Clear. Council considers that the existing provisions for once-only logging here should continue - these stands are located within an area that is to be managed as part of the park from 1988.

Recommendation

A8 Macalister River

- (a) That the area of 40 020 ha shown on map A be used in accordance with the general recommendations A6—A27 outlined previously and that
 - (i) traditional legal uses along the Wellington River be provided for in the management plan for the area
 - (ii) logging not be permitted
 - ~~(iii) grazing be permitted in accordance with the policies outlined in chapter Q (Agriculture) (Omitted from Order in Council 8/1/1985)~~

- (iv) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted
 - (v) access be permitted through the park to private property on the Bennison Plains
 - (vi) apiculture be permitted
 - (vii) Traralgon High School and Melbourne Church of England Grammar School continue to be permitted to occupy their existing sites subject to the existing occupation agreement/s. (Order in Council 8/1/85)
 - (viii) use of the dump site for the storage and sorting of pulpwood on the Wellington River continue to be permitted subject to the existing occupation agreement/s. (Order in Council 8/1/85)
- (b) that the areas, totalling 3580 ha, shown separately on map A be used in accordance with the principles set down in the chapter on State Forest, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority
- and that logging be permitted until July 1988, after which the areas are to be managed as part of the park.

Note: The Bluff—Mount Clear Natural Features and Scenic Reserve is now proposed for addition to the alpine park. Timber-harvesting in the previously delineated once-only logging areas located within this reserve should proceed, with the existing arrangements continuing to apply until July 1988, when these areas should be proclaimed as part of the park and managed accordingly.

(See also Wilderness SI B12, Rivers and Streams SI C4)

Tali Karng—Trapyard Hill (20 930 ha)

The major feature of this area is Lake Tali Karng - a small, deep, highland lake in the upper reaches of the Wellington River valley. Formed about 15,000 years ago, by a landslide damming the drainage system, it is the only lake of its type in the Eastern Highlands.

The general area has a long history of use by bushwalkers and the lake itself is one of the most popular bushwalking destinations in the Victorian Alps. Walkers most commonly use the route from McFarlanes Saddle via the Wellington Plains or the route via the Wellington River. Other areas that are heavily used by bushwalkers, often in conjunction with trips to Lake Tali Karng, include Mount Wellington, Spion Kopje range, and the Wellington Plains.

Recreational use also includes fishing and camping along the Wellington, Dolodrook, and Moroka Rivers and four-wheel-drive touring in the Mount Ronald—Dolodrook River vicinity. Moroka Hut, set amid attractive candlebark woodlands on Racecourse Plain, and Millers Hut, above Lake Tali Karng, are popular camp-sites for walkers, horse-riders, and motorised tourers.

The long, high ranges east of the Heyfield—Tamboritha Road form a picturesque backdrop to the pasturelands of Licola, and are the western buffer to the Avon Wilderness.

A number of features here have geological significance. The divide between the Dolodrook and Wellington Rivers contains one of the richest occurrences of Cambrian fossils in the State, and the best representation of graptolite fauna (late Ordovician) in Australasia. An old open-cut mine near the Dolodrook River is located on one of the rare occurrences of chromite in Victoria.

The Trapyard Hill—Mount Wellington region not only contains an unusual concentration of important plant species with a very limited distribution, it is the type locality for three species;

the upper reaches of the Moroka River valley contain the rare austral moonwort (*Botrychium australe*) and dense midge-orchid (*Prasophyllum densum*), and the Warrigal Creek catchment, to the south, contains a population of the extremely rare plant species *Zieria robusta*.

Recommendation

A9 Tali Karng—Trapyard Hill

That the area of 20 930 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

- (a) ~~grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~
- (b) logging not be permitted except for once-only logging in the area previously delineated and according to the existing principles and guidelines
- (c) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted (Order in Council 8/1/1985)
- (d) apiculture be permitted.

(See also Rivers and Streams SI B3)

Horseyard Flat (150 ha)

This small area includes a popular camping area on open grassy woodlands beside the Moroka River. It is accessed from the Moroka Road and is used by bushwalkers visiting the Moroka Gorge in the Wonnangatta—Moroka National Park as well as fishermen and other tourists.

Recommendation

A10 Horseyard Flat

That the area of 150 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

- (a) ~~grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~
- (b) logging not be permitted
- (c) apiculture be permitted
- (d) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service and Fisheries and Wildlife Division, and hunting with hounds not be permitted (Order in Council 8/1/85)

The Pinnacles—Castle Hill (13 690 ha)

The prominent peak of The Pinnacles (site of a fire look-out) rises more than 1 000 metres above the Wonnangatta River and is an outstanding landscape feature. The Pinnacles, Castle Hill (a small plateau cliffed on three sides), and the ridge between these prominences offer extensive views of the Wonnangatta River valley and nearby peaks. Campers and bird-observers use the attractive manna gum woodlands along the Castleburn Creek.

Three very localised plant species have been recorded here: large-leaf ray flower (*Anthocercis frondosa*), eyebright (*Euphrasia gibbsiae*), and the everlasting (*Helichrysum rogersianum*).

Recommendation

A11 The Pinnacles—Castle Hill

That the area of 13 690 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

- (a) ~~grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~
- (b) logging not be permitted
- (c) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted
- (d) apiculture be permitted.

Note: This area includes some uncommitted land (410 ha) within the Gippsland Lakes Hinterland area.

(See also Rivers and Streams SI A12, B24)

Wombat Spur (7 980 ha)

This area abuts the eastern boundary of the existing Wonnangatta—Moroka National Park. It contains primarily the eastern fall from Wombat Spur.

Vegetation communities are predominantly of the foothill type, the most common being open peppermint forests with drier stringybark-box forests on the steeper, more exposed aspects. The attractive riparian communities along the major streams contrast markedly with the surrounding drier forests. Of particular interest are the mountain swamp gum woodlands in the broad valley of Riley Creek.

The Wongungarra River has formed a series of flood-plains from the base of the Tea Tree Spur to below its junction with Crooked River. These flood-plains, once the scene of intensive goldmining activities, now provide pleasant camping areas along the edge of the river. They include the site of the old Pioneer Racecourse.

The high ridgeline of Wombat Spur extends south from Mount Cynthia and forms the backdrop to the Wongungarra River. The four-wheel-drive track that follows the Spur provides one of the most heavily used access routes to the Wonnangatta Station within the Wonnangatta—Moroka National Park. The track that follows Riley Creek and the Humffray River is also popular with four-wheel-drive tourers, as well as providing a pleasant and easy walking route.

Recommendation

A12 Wombat Spur

That the area of 7980 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

- ~~(a) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~
- (b) logging not be permitted
- (c) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted
- (d) legal access to private property enclosed within the park be permitted
- (e) apiculture be permitted.

Barry Mountains (22 090 ha)

Straddling the Barry Mountains between the Barry Saddle in the west and The Twins and Mount Sugarloaf in the east, the area includes Mount Murray and the Catherine River valley.

The Barry Mountains section of the Great Dividing Range constitutes the only continuous mountain range or ridge between the Wonnangatta—Moroka and Bogong National Parks and as such, forms the only route between the two parks that does not involve large elevation changes. All other connecting routes include long and difficult climbs in and out of deep river valleys.

The Alpine Walking Track follows this high-elevation route along the Barry Mountains. The 'Barry's' have a long association with bushwalking and are renowned for providing some of the most rugged and challenging walking conditions to be found anywhere along the Track. Spectacular views of the Alps can be gained from a number of locations, particularly from the higher points at and east of Mount Selwyn. The most impressive lookouts give views to Mount Feathertop and the Bogong High Plains in the east, into the Ovens Valley to the north, over the rugged peaks of The Viking and The Razor to the west, and down the valleys of the Wonnangatta and Wongungarra Rivers to the escarpments of the Snowy Bluff in the southern distance.

An additional part of the Catherine River valley, in the west, supplements the upper reaches of this valley, which forms a remote and rugged basin underneath Mount Despair and The Razor. The broad, gravelly flats and fringing manna gum woodlands here offer attractive bushwalking in an area free of vehicular tracks.

A wide range of vegetation types grow here. Of particular note are the subalpine snow gum woodlands between Mount Murray and Mount Selwyn, and on Mount Sugarloaf, and the interesting riparian woodlands of mountain swamp gum along the western branch of the Buffalo River. A stand of the uncommon Omeo gum (*E. neglecta*) occurs in the upper reaches of the Buckland River.

Also included are portions of the scenically impressive basins that form the headwaters of the Wongungarra and Buckland Rivers.

Mature timber resources here are important for the viability of sawmilling centres currently drawing supplies from this region. Council considers that the mature sawlogs within the areas designated should continue to be available - in the case of the area in the extreme west until July 1988, and for the other two areas until July 1991 - and that on completion of logging the areas should be managed as part of the park.

Recommendation

A13 Barry Mountains

- (a) That the area of 16 500 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously
- and that
- ~~(i) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~
 - (ii) logging not be permitted
 - (iii) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted
 - (iv) apiculture be permitted
- (b) that the areas totalling 5730 ha shown separately on the varied map be used in accordance with the principles set down in the chapter on State Forest, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority
- and that logging be completed by no later than July 1993 - except for the area delineated in the Catherine River headwaters, where logging should be completed no later than July 1988 - after which the areas are to be managed as part of the park. (Revised wording, Order in Council 8/1/85)

Notes:

1. The commercial stands of timber in this area are, in the main, already roaded.
2. Council recognises the long-term need to transport timber through this area (from harvesting operations to the south) using roads designed and built primarily for this purpose.
3. The Council will consider extending the park to include more of the Catherine River catchment when it reviews the use of land in the adjoining area.

(See also Wilderness SI B13, Rivers and Streams SI B22)

Dargo River (18 570 ha)

This rugged landscape comprises the deeply dissected upper reaches of Dargo River and its tributaries. It includes remnants of an ancient land surface (Dargo High Plains) surrounded by basalt cliffs. The high ridges extending to Mount Blue Rag, Mount Freezeout, and towards Mount Hotham surround the scenic rugged headwaters of the Dargo River.

From the Dargo High Plains road, which traverses the western rim of the upper Dargo River catchment, several points offer grand views of this scenic basin and the surrounding mountains. The area is currently used for both two- and four-wheel-drive touring and offers many opportunities for bushwalking. A large proportion of the middle reaches of the Dargo River valley is relatively untracked.

Two rare and endangered plant species - a willow-herb (*Epilobium willisii*) and fairy bluebell (*Wahlenbergia densifolia*) - have been recorded near the head of Bar One Spur.

Two areas within this proposed addition contain mature alpine ash log resources that are important for the local sawmilling industry. Council considers that the mature sawlog resource here should continue to be available for harvesting until July 1991, and that on completion of logging the areas should be managed as part of the park.

Recommendation

A14 Dargo River

- (a) That the area of 16 410 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously
- and that
- ~~(i) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/5/1985)~~
 - (ii) logging not be permitted
 - (iii) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted
 - (iv) access through the park to private property be permitted
 - (v) apiculture be permitted
- (b) that the areas totalling 2160 ha shown separately on map A be used in accordance with the principles set down in the chapter on State Forest, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority

and that logging be permitted until July 1991, after which the areas are to be managed as part of the park.

(See also Wilderness SI B13, Rivers and Streams B23, C3)

Mount Higginbotham (180 ha)

The highest recorded population levels of mountain pygmy possum (*Burramys parvus*), occur here. The species is regarded as vulnerable because of its specific habitat requirements and the restricted occurrence of viable populations. Its known habitat is limited to boulder-strewn slopes covered with mountain plum-pine and other alpine shrubs.

Conservation of sufficient areas of suitable habitat is the only method of ensuring its survival in the wild, and the Fisheries and Wildlife Division will need to prepare management plans for the conservation of the mountain pygmy possum in consultation with the managing authority.

Recommendation

A15 Mount Higginbotham

- That the area of 180 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously
- and that
- (a) the Fisheries and Wildlife Division prepare a management plan for the conservation of the mountain pygmy possum and its habitat in consultation with the managing authority
 - ~~(b) grazing not be permitted, in accordance with previous decisions made by the government (Omitted from Order in Council 8/1/1985)~~
 - (c) hunting and use of fire-arms not be permitted
 - (d) apiculture not be permitted.

Note: It will be necessary to excise this area from the existing Mount Hotham Alpine Resort.

West Kiewa (810 ha)

Comprising the upper reaches of the West Kiewa River valley, this area is surrounded on three sides by the Bogong National Park. It adjoins one of the most popular sections of the Alpine Walking Track and is directly overlooked by perhaps Victoria's best-known bushwalking destination, Mount Feathertop. It also constitutes a very significant element in the landscape as viewed from numerous other popular lookout points and walking tracks, such as the Niggerheads, Basalt Temple, Machinery Spur, Dibbins Divide, and the rim of the Bogong High Plains.

Bushwalkers use it heavily. In particular, the area takes in the main through route from Mount Feathertop (via Diamantina Spur) to the Bogong High Plains, and the route along the Red Robin Mine Track between Mount Hotham and the High Plains. Blairs Hut, situated on the banks of the West Kiewa River, is an ideal camp-site and is widely used by the many walkers who use these routes.

The West Kiewa River is itself a significant feature forming a substantial, fast-flowing mountain stream with very attractive riparian vegetation. It is a popular fishing stream and a number of places along its length offer excellent opportunities for camping and picnic sites. Indeed, the opening of the West Kiewa logging road for public vehicular use (to as far as the Diamantina River) would increase the use of this area for camping with associated day walks or overnight hikes to places such as the Bogong High Plains, Mount Loch, the Cobungra River, and Westons Hut.

Both recreationally and scenically, the area is inextricably linked with the surrounding park land. In fact, it is an integral part of the land formation that comprises the Mount Feathertop—Razorback ridge to the west and the Bogong High Plains to the east. It will form an extremely valuable addition to the alpine park system.

It is also important for the production of alpine ash timber. Its importance, however, does not lie in the short term, as it contains only a relatively small mature resource of around 1 000 m³ of sawlogs. Rather, because the area contains stands of regrowth ash totalling approximately 660 ha, its significance lies primarily in its potential to make a contribution to any future timber industry, 30–50 years hence.

While the timber volumes and areas quoted above are estimates only (as provided to Council by the Forests Commission), they represent the best information currently available.

Recommendation

A16 West Kiewa

That the area of 810 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

~~(a) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture~~
(Omitted from Order in Council 8/1/1985)

(b) logging not be permitted

(c) hunting and use of firearms not be permitted

(d) apiculture not be permitted

- (e) public vehicular access along the West Kiewa logging road-up to the Diamantina River - should be permitted for at least portion of the year (special measures, including cautionary signposting, may need to be taken to ensure the safety of road users; especially during the logging season when trucks and heavy machinery will be in the area)
- (f) the operators of the Red Robin Mine be permitted to use the area currently occupied by a stamping battery and associated facilities for the purpose of crushing and treating ore, subject to the existing occupation agreement. (Order in Council 8/1/85)

Note: Council is aware that the State Electricity Commission has investigated the possible future construction of a water storage at the confluence of the Diamantina and West Kiewa Rivers (see the chapter on Hydroelectricity Production).

East Kiewa (1 800 ha)

The land in the East Kiewa valley indicated on the map supports a range of forest types, including an open forest of mountain gum, narrow-leaf peppermint, and candlebark that rapidly changes with increasing elevation to an open forest of mature alpine ash. Small subalpine woodlands of snow gum occur at the higher elevations near Bald Hill.

This area has very high scenic values. It is directly visible from the Falls Creek road, which attracts large numbers of tourists throughout the year, and also from many high points in the Bogong National Park.

At present its use for outdoor recreation is generally confined to the walking track that leads to the Mount Fainter area of the Bogong National Park. It does, however, have considerable potential for development for outdoor recreation, as it is well served by existing tracks and roads. In particular, the mature alpine ash stands are among the few in the Alpine area that are readily accessible and could be developed as an outstanding feature of the Bogong National Park.

Water from the East Kiewa River is used by the State Electricity Commission for hydroelectricity generation. The streams from this area feed directly into Lake Guy and Clover Dam. Any use or development here must be carefully planned so that it will not interfere with the area's function of supplying water for hydroelectric power generation.

Recommendation

A17 East Kiewa

That in the area of 1800 ha shown on map A

- (a) the hydrological research to determine the effects of logging on sediment bed-loads and turbidity in the Slippery Rock Creek and Springs Creek catchments (which includes experimental logging in the Springs Creek catchment) be permitted to continue

that

- (b) the area be managed as part of the park system, either
 - (i) following termination of the research project in about 1987
 - or
 - (ii) following the completion of logging, should this be approved after assessment of the results of hydrological research (any logging operation approved should be in accordance with the land use determination and associated logging prescriptions)

and that, when managed as part of the park system, the area be used in accordance with the general recommendations for A6—A27 outlined previously

that

- ~~(c) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~
- (d) the management authority prepare a management plan for the area, to be implemented only following approval by the State Electricity Commission
- (e) the State Electricity Commission continue to occupy and utilise facilities required for the operation and maintenance of the works associated with the Kiewa Hydroelectric Scheme
- (f) logging not be permitted
- (g) apiculture not be permitted
- (h) hunting and the use of firearms not be permitted.

Rocky Valley—Pretty Valley (1 190 ha)

The addition includes portions of the Bogong High Plains, which are renowned for their many botanically significant and showy plants. The vegetation consists of a heathland dominated by shrubs such as alpine mint-bush and leafy bossiaea, snow grass communities, and sphagnum bogs.

Recreational use is very high, as this area provides the major entry point from north-eastern Victoria to the High Plains section of the Bogong National Park. In winter, the road across Rocky Valley Dam and the adjoining land is heavily used by cross-country skiers engaged in day trips from Falls Creek, extended tours of the Bogong High Plains, or races. In summer the viewing points and picnic areas around the Rocky Valley Dam and Pretty Valley Pondage attract many visitors. Fishing is a popular activity, and members of the Rocky Valley Sailing Club sail on the Dam. Bushwalkers also use the area, often in conjunction with other parts of the Bogong National Park.

The primary use of both the Rocky Valley Dam and the Pretty Valley Pondage is to supply water to the Kiewa Hydroelectric Scheme, and this use would necessarily continue.

The Council has not proposed that land encompassing the major access to the Bogong National Park be added to the park.

This land lies within the East Kiewa hydroelectricity production area and the Council believes that the State Electricity Commission should collaborate with the land managers responsible for the public land adjoining that area in the development and presentation of information and educational programs.

Recommendation

A18 Rocky Valley—Pretty Valley

That the area of 1 190 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

- ~~(a) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~
- (b) the Kiewa Hydroelectric Scheme be adequately protected to comply with the provisions

of the *State Electricity Commission Act 1958* and regulations and ensure that the quality, quantity, and timing of water produced meets the requirements of the State Electricity Commission

- (c) fire-prevention works (including construction of vehicular tracks) to protect the State Electricity Commission's assets be planned by that Commission in consultation with the Forests Commission, National Parks Service, and Soil Conservation Authority
- (d) the management authority prepare a management plan for the area, in consultation with the Soil Conservation Authority, to be implemented only following approval by the State Electricity Commission
- (e) the State Electricity Commission continue to occupy and utilise facilities required for the operation and maintenance of works associated with the Kiewa Hydroelectric Scheme
- (f) the Antarctic Division be permitted to continue to occupy and utilise its facilities in the area subject to the existing occupation agreement (Order in Council 8/1/1985)
- (g) apiculture not be permitted
- (h) hunting and the use of firearms not be permitted.

Notes:

1. The Sun Valley Road passing between the Rocky Valley Dam and the Falls Creek alpine resort is currently used to provide access for the construction and maintenance of facilities by the State Electricity Commission, the Falls Creek Tourist Area Management Committee, and the ski lift company. This use should continue.
2. Council recognises that the State Electricity Commission has ultimate responsibility for the quality of water, and agreement must be reached between the Commission, the National Parks Service, and the Soil Conservation Authority regarding the management policies for the land adjacent to Rocky Valley Storage. These policies should be implemented by the National Parks Service under an agreement between the agencies that allows the Service to manage land within the buffer area, as mutually agreed, with the object of regulating recreational use to protect the water quality. Areas within the buffer that contain or lie adjacent to Commission structures would be excluded from the agreement and would be managed by the Commission.

Anglers Rest (20 680 ha)

This addition extends eastwards from the Bogong National Park to form a link with the Dartmouth addition. It takes in the Omeo Highway and the tourist road from Shannonvale to Falls Creek, and encloses the Burnside and Porphyry Hill reference areas. The addition includes segments of the Mitta Mitta River, and its major tributary the Big River, which are two of Victoria's major canoeing streams, and are also popular for fishing and camping, particularly at Anglers Rest. The Omeo Highway offers outstanding views of the Big River and has numerous points of access to the river.

Vegetation here ranges from dry open forests of red stringybark, broad-leaf peppermint, candlebark, and brittle gum, through moister forest dominated by narrow-leaf peppermint, to stands of snow gum, alpine ash, mountain gum, and candlebark at higher elevations (in the vicinity of Trapyard Gap and The Knocker). Two rare Victorian species, *Discaria nitida* and *Grevillea willisii*, occur near Anglers Rest, as do several plants not commonly found in the Alpine area; these are box-leaf wattle (*Acacia buxifolia*), *Bursaria lasiophylla*, mountain beauty (*Hovea rosmarinifolia*), Mitchell bertya (*Bertya mitchellii*), honey caladenia (*Caladenia testacea*), daddy long-legs (*Caladenia filamentosa*), and slender greenhood (*Pterostylis foliata*).

A number of sites of historical interest - including the former township of Staleyville on the old mining track over The Knocker, and a number of water races associated with gold-mining on the

Big River - occur in this area.

Recommendation

A19 Anglers Rest

That the area of 20 680 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

~~(a) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~

(b) logging not be permitted

(c) legal access to private property enclosed within public land continue to be provided

(d) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted

(e) apiculture be permitted.

(See also Rivers and Streams SI 41)

Dartmouth (67 600 ha)

As well as the immediate catchment to Dartmouth Lake, this area includes extensive tracts of deeply dissected foothill country and is representative of this land type in and around the Alpine area.

Flora and faunal habitats over most of it are typical of the drier valleys with open peppermint forest predominating. It also contains examples of subalpine woodlands and tall open montane forests. It thus exhibits a vegetation sequence characteristic of the Alpine area, running from snow gum woodlands at higher elevations, through tall alpine ash forests, to narrow-leaf peppermint forests, and ultimately to the low broad-leaf peppermint forests at the lower altitudes. The stands of messmate stringybark at Granite Peak represent the northern edge of that species' distribution in Victoria. Wildflower displays are a feature of the drier peppermint forests' understorey.

Geological features include Devonian and Silurian acid volcanics, Silurian fossiliferous limestone containing caves, newer basalts, Triassic syenites, and quartz porphyrys. Land types on the last two parent materials are not represented elsewhere in the Victorian park system. Benambra Creek forms attractive cascades where it crosses resistant Ordovician bedrock west of Pendergast Lookout. Morass Creek has formed a gorge in the newer basalts with cliffs reaching 100 metres in height. These cliff faces expose a number of basalt flows, some of which display prominent columnar jointing

For many people the waters of Dartmouth Lake will provide the recreational focus, and a number of recreational features complement water-based recreation here. Examples include the picnic and boat-launching facilities at the Six Mile Creek recreation area and the Eustace Creek camp site on the eastern shores of the lake. The lake is a significant scenic element that can be seen from many elevated vantage points, most notably Mount Benambra and Mount Cooper, which provide panoramic views.

The Alpine Walking Track passes through the southern portion of this area. From Sassafras Gap

it runs south through attractive open forests of mountain gum and snow gum to the rugged Toke—Gibbo region above the upper reaches of Dartmouth Lake. Windfall Hut is on this section of the track. After crossing the Gibbo and Mitta Mitta Rivers it continues along the ridge top that divides Four Mile and Eight Mile Creeks.

Features of historic interest - primarily associated with the early gold-mining era - include the Wombat 'Post Office', Quartz Pot mining area, Greens Creek battery, and the former mining settlement of Glendart.

Recent mineral exploration has indicated highly prospective areas for the discovery of base metal mineralisation in Ordovician sediments and Silurian volcanics and sediments, both south and east of Dartmouth Lake. While exploratory work is still at a relatively early stage, the companies involved have expressed optimism about the economic potential. Council believes that exploration should be permitted to continue and that there should not be lengthy delays in granting or renewing exploration licences. This would enable exploration programs to be completed as soon as possible.

If economic reserves are ultimately established, a decision on whether mining would proceed should be based on whether the operation would be in the State interest. Furthermore, Council believes that any mine in the park should have minimal impact during and after its operation. Depending on the nature and extent of mining operations, there is evidence that this can be achieved using modern methods of mining. In addition to the principles and guidelines for mining on public land listed in the chapter on mineral and stone production, the following conditions should be demonstrated before mining is allowed to proceed.

- 1 Any extraction site and adjacent disturbed areas can be satisfactorily rehabilitated and do not affect any areas with significant aesthetic or environmental values. This includes any:
 - (a) planned open pit
 - (b) mine-waste rock
 - (c) mill tailings dump

If this cannot be achieved, open-pit mining would not be allowed, and mine-waste rock or tailings must be disposed of outside the park.
2. Roads and material transport routes can be sited to preserve any areas of significant aesthetic or nature conservation values.
3. Underground mine openings, surface works, and ore-treatment facilities can be sited to minimise any noise, dust, visual pollution, or contamination of surface and ground waters, avoid erosion, and preserve all significant aesthetic or nature conservation values.
4. Mining would be in the State interest

Recommendation

A20 Dartmouth

- (a) That the areas of 27 300 ha shown on the varied map be used in accordance with the general recommendations for A6—A27 outlined previously
and that
 - (i) logging not be permitted
 - (ii) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted
 - (iii) apiculture be permitted

(b) that the areas totalling 33 800 ha and shown stippled on the map be available for mineral exploration until 31 December 1989

and that

- (i) the companies be required to identify, by the end of 1989, those sites where mining is considered to be economically feasible and at which they wish to conduct mining operations, while the remaining areas be proclaimed as part of the park
- (ii) mining be permitted only at those sites delineated as being economically feasible and then only if approved by the Government in accordance with its guidelines on mining
- (iii) on completion of mining and full rehabilitation the mined areas be proclaimed as part of the park

(c) that, within the area described in (b) above, 980 ha, incorporating portions of the Brown Creek and Sheehan Creek catchments shown by cross-hatching on the map, be used as indicated in (b) above and in accordance with the principles set down in the chapter on State Forest, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority

and that logging be permitted until 31 December 1989, after which, and subject to (b)(ii) and (b)(iii) above, the areas be managed as part of the park

(d) that, within the area described in (b) above, 1910 ha, incorporating portions of the Stony Creek, Gardens Creek, Japan Creek, and Turnback Creek catchments shown by cross hatching on the map, be used as indicated in (b) above and in accordance with the principles set down in the chapter on State forest, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority

and that logging be permitted until July 1996 after which, and subject to (b)(ii) and (b)(iii) above, the area be managed as part of the park

(e) that the area of 6500 ha to the east of Granite Peak shown separately on the map be used in accordance with the principles set down in the chapter on State forest, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority

and that logging be permitted until July 1991, after which the area be managed as part of the park.

(Revised wording, Order in Council 8/1/1985)

Notes:

1. Council has recommended this area as a park recognising that consideration may need to be given to permitting mining.
2. Council recognises that, under the *River Murray Waters Act*, the State Rivers and Water Supply Commission, on behalf of the State of Victoria, is the agency responsible for control and management of the land adjacent to Dartmouth Lake comprising a buffer between water level and E1. 536 m. Land within this buffer zone should be managed in accordance with the policies of the River Murray Commission under an agreement between the State Rivers and Water Supply Commission and the National Parks Service. Areas within the buffer that lie adjacent to Commission structures would be excluded from the agreement and be managed by the Commission.
3. It is proposed that the Dartmouth township will be used for development as a tourist resort, which will be linked to additional lakeside facilities at Six Mile Creek. Although outside the

proposed park addition, the Council believes that such a development would greatly enhance the recreational use of this part of the alpine park system.

4. The Council is aware of a proposal by the Shire of Omeo to complete the construction of an access road from north of Benambra to Toke Creek on Dartmouth Lake. Construction of the last four kilometres of road will require the approval of the relevant managing authorities and the Soil Conservation Authority.

5. The Council has no objection to the establishment of a radio station near the summit of Mount Benambra, provided the impact on the environment is minimised and consideration is given to incorporating a public viewing platform and a fire-watching facility into the design.

6. The area in which logging is to be permitted until July 1991 (Recommendation (c) above) surrounds the Granite Peak natural features and scenic reserve approved by the Government following the 1979 recommendations. Logging is not permitted within this reserve.

(See also Rivers and Streams SI A1, B6, B7)

Buenba (8 840 ha)

Extending west from Mount Murphy Creek to the headwaters of the Gibbo River, this area lies between the Cobberas—Tingaringy National Park and the recommended Dartmouth addition. It encloses the Buenba Reference Area.

While open peppermint forests predominate, vegetation forms show considerable diversity. The Beloka Range features snow gum woodlands with fringing stands of alpine ash. The Tom Groggin Track passes through attractive mountain gum-snow gum woodlands and leads into a subalpine open grassland at the site of the now-demolished Buenba Hut. An interesting woodland of mountain swamp gum and black sallee adjoins that grassland.

Although currently not heavily used by bushwalkers, the area does have recreational potential, particularly along the Beloka Range, the summit of which - Johnnies Top - provides good views into mountainous terrain to the north and over farmland to the south. The open grassy plain on the Buenba Creek offers ideal camp-sites, and the pleasant riverine environment of the Gibbo River is popular for camping as well as fishing.

Recommendation

A21 Buenba

- (a) That the area of 8300 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

~~(i) grazing be permitted in accordance with the policies outlined in chapter Q;~~
Agriculture (Omitted from Order in Council 8/1/1985)

(ii) logging not be permitted

(iii) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the National Parks Service in consultation with the Fisheries and Wildlife Division, and hunting with hounds not be permitted

(iv) apiculture be permitted

- (b) that the area of 540 ha shown separately on the map be used in accordance with the principles set down in the chapter on State Forest, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority

and that logging be permitted until July 1991, after which the area is to be managed as part of

the park.

Note: Council recognises the long-term need to transport timber through this area (from harvesting operations to the north) using roads designed and built primarily for this purpose.

Mount Barlow (1 280 ha)

The rugged topography here is a significant scenic element of the Murray River headwaters: very steep slopes fall directly into the Murray River, and are covered with predominantly dry forest types. The summit of Mount Barlow forms the westernmost section of this addition and the eastern boundary adjoins the Kosciuszko National Park.

Recommendation

A22 Mount Barlow

That the area of 1280 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

~~(a) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture, and subject to adequate protection of the Kosciuszko National Park in New South (Omitted from Order in Council 8/1/1985)~~

(b) logging not be permitted

(c) hunting and use of firearms not be permitted

(d) apiculture be permitted.

Note: This area includes portion of a Natural Features and Scenic Reserve (200 ha) within the North-eastern area, District 1.

Pinnibar (1 110 ha)

Mount Pinnibar is located on an elevated ridge covered by attractive snow gum woodlands, with smaller areas of alpine grasslands on and around the summit. It has magnificent views in all directions, including west to the Bogong High Plains, north to farmland in north-eastern Victoria, and, most spectacularly, east to the Kosciuszko snowfields. Although isolated, the long Pinnibar ridge has potential for ski-touring. An additional feature is the open stand of alpine ash with grassy understorey in the headwaters of the Thowgla Creek.

Recommendation

A23 Pinnibar

That the area of 1110 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

~~(a) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~

(b) logging not be permitted

(c) hunting and use of firearms not be permitted

(d) apiculture be permitted.

Elkins Creek (1 530 ha)

This area contains the lower section of the Elkins Creek catchment and is essentially unroaded and untouched. Because of its relatively pristine condition and remoteness, it complements the adjoining area of the Cobberas—Tingaringy National Park and the nearby Pilot Wilderness area in the Kosciusko National Park.

Recommendation

A24 Elkins Creek

That the area of 1530 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

- ~~(a) grazing be permitted in accordance with the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~
- (b) logging not be permitted
- (c) hunting and use of firearms not be permitted
- (d) apiculture be permitted.

Davies Plain (7 120 ha)

Set in the remote Murray River headwaters, Davies Plain forms an enclave surrounded by national parks. It remains in a relatively pristine condition and is penetrated by only one very rough four-wheel-drive track. It offers opportunities for remote, wilderness-style recreation, and complements the adjoining Pilot Wilderness Area within the Kosciusko National Park.

Its steep eastward-facing slopes form part of the scenic landscape from the Cobberas, and from the popular Tin Mine Walking Track and the Pilot, both of which are within the adjoining Kosciusko National Park.

The Davies Plain Ridge provides excellent opportunities for isolated cross-country skiing and bushwalking.

Davies Plain has extensive areas of snow gum woodlands and scattered representations of subalpine grassland, wet heathlands, and mosslands. The rare and restricted alpine water skink is found in the heathlands and mosslands along the Davies Plain Ridge.

Recommendation

A25 Davies Plain

That the area of 7120 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

- ~~(a) grazing be permitted in accordance with policies outlined in chapter Q, Agriculture, and subject to adequate protection of the Kosciusko National Park in New South Wales (Omitted from Order in Council 8/1/1985)~~

- (b) logging not be permitted
- (c) hunting and use of fire-arms not be permitted
- (d) apiculture be permitted.

Notes:

1. Further studies are required, to determine whether restricting the grazing of cattle is necessary in order to protect the habitat of the rare alpine water skink. If they show such a need, these studies should also investigate over which areas and by which method grazing is to be controlled.
2. ~~The Council notes the mineral potential of a narrow belt of Silurian volcanic and sedimentary rocks along the eastern margin of the area. Council believes that continuing exploration of these rocks should be permitted subject to the principles and guidelines outlined in the Mineral and Stone Production chapter. (Omitted from Order in Council 8/1/85)~~

(See also Wilderness SI A11, B20)

Little River (2 150 ha)

A number of significant plant species have been recorded in this portion of the Little River and Omeo Creek catchments. Several colonies of the rare Australian anchor plant (*Discaria pubescens*) occur along the Omeo Creek in association with dwarf milkwort (*Polygala japonica*) and lanky button (*Leptorhynchos elongatus*), the last of which is now a very rare plant in Victoria, although formerly widespread throughout the State.

A colony of the endangered austral toad-flax (*Thesium australe*) and occurrences of other rare plants such as bent grass (*Deyeuxia gunniana*) and slender parrot pea (*Dillwynia capitata*) are known at First Emu Flat. This particular locality has a high species diversity-some 52 plants having been recorded.

It is not clear whether the current level of grazing is having an effect on the viability of the plants listed above. As the significance of this area results from the occurrence of these rare plants, it is suggested that grazing be closely monitored in order that its impact, if any, can be determined.

The environs of the Little River and Omeo Creek contain attractive woodlands of snow gum, candlebark, mountain swamp gum, and black sallee with a grassy understorey dominated by kangaroo grass. This plant association was formerly widespread across the Wulgulmerang Tablelands prior to clearing for agriculture.

A series of cascades and waterfalls on the Omeo Creek are easily accessible from the Black Mountain Road, which passes through the area.

Recommendation

A26 Little River

That the area of 2150 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

~~(a) grazing be permitted subject to close monitoring and to the policies outlined in chapter Q, Agriculture (Omitted from Order in Council 8/1/1985)~~

- (b) logging not be permitted
- (c) hunting and use of firearms not be permitted

- (d) apiculture be permitted.

Seldom Seen (3 420 ha)

This addition includes portion of the mountainous and deeply dissected Buchan River catchment. Steep cliffs and rocky escarpments are a feature of the area, particularly around Mount Seldom Seen and in the upper reaches of Old Place Creek.

Outstanding views of the Buchan Valley are obtained from Mount Seldom Seen, the Seldom Seen Track, and the Bald Hills Road. The river is bordered by attractive stands of manna gum, while on the higher slopes peppermint and stringybark forests predominate. Kybean mallee-ash (*Eucalyptus kybeanensis*) also occurs at Mount Seldom Seen and along the Seldom Seen Track. The rare matted parrot pea (*Dilwynia prostrata*) is also found in the area.

Recommendation

A27 Seldom Seen

That the area of 3420 ha shown on map A be used in accordance with the general recommendations for A6—A27 outlined previously

and that

~~(a) grazing be permitted subject to the policies outlined in chapter Q, Agriculture (Not accepted, Order in Council 8/1/1985)~~

(b) logging not be permitted

(c) hunting and use of firearms not be permitted

(d) apiculture be permitted

(e) access through the park to private property be permitted.

(See also Rivers and Streams SI 411, C5)

B. WILDERNESS

The concept of wilderness ('an uncultivated and uninhabited tract' - *Oxford English Dictionary*) has received attention in Australia for many years, particularly since the early 1960s. The need to set aside areas because of their value as wilderness has been recognised by some Australian States.

The wilderness experience involves the perception of being part of nature, of an environment unaltered by human intervention, of isolation, and of being exposed to the challenge of the elements.

The main elements of the appeal of wilderness are:

- * spiritual refreshment and an awareness of solitude arising from close contact with the uninhabited, substantially undisturbed, natural environment
- * the knowledge that there still exists a large natural area in which plants, animals, and soils can survive and interact with minimal interference by man
- * refuge from the pressures, sights, and sounds of modern urban life
- * the adventure and challenge of putting one's powers of endurance and self-reliance to the test in substantially undisturbed natural environments

Council recognises that the perception of wilderness areas and the requirements necessary to provide wilderness experience vary throughout the community. For some people, a short walk in part of a State park (or even a regional park) may provide it. Others seek areas of scenic grandeur providing extensive views and, to some, man-modified components in what is an essentially natural landscape do not appear to detract significantly from the wilderness experience.

Many of the areas with high scenic quality included in the park system are popular for bushwalking and Council believes that this will provide for a greater range and number of visitors than future management of these areas for wilderness would permit. The combination of relative isolation and panoramic views in a mountainous environment will satisfy the wilderness needs of many people. For example, the Wonnangatta—Moroka National Park contains extensive areas of rugged topography with few vehicular tracks and if considered together with the park addition A9, is contiguous to the Avon Wilderness. It is Council's view that, when these areas are considered together, as well as the other parks, the wilderness requirement of most people has been substantially provided for.

Avon Wilderness

This area includes parts of the catchments of the Avon, Dolodrook, and Turton Rivers. A large roadless 'core' area is situated in the headwaters of Mount Hump Creek, where more than 4000 ha has no vehicular track within 3 km. Environments range from subalpine woodlands and open areas, through dense tall regrowth forests of mountain ash and shining gum, to stunted dry foothill forests. Climatic conditions vary from hot and dry in summer, particularly at the lower elevations, to very cold with regular snowfalls at the higher elevations during winter.

The area is substantially unaltered, has a relatively high carrying capacity, and offers opportunities for solitude and for a range of challenging activities. For example, cliffs and rocky escarpments, particularly around Gable End and Mount Wellington, provide opportunities for rock-climbing. Obvious bushwalking routes are located along the Avon and Turton Rivers and the main ridges separating them, for example the Razorback and Purgatory Spurs. Because it will probably attract only the more hardy wilderness-user, the main elements of the appeal of wilderness are likely to be maintained.

The Council in its final recommendations for the Gippsland Lakes Hinterland area, published in February 1983, recommended that a further 12 200 ha be added to the existing Avon Wilderness.

Uses and management

Recreation activities such as hiking, rock-climbing, bow hunting, fishing, cross-country skiing, and nature observation are permitted within this area. Timber production, grazing, and mining are excluded, as is the use of firearms. Motorised vehicles, other than those essential for management, are also excluded.

In order to maintain the value of the wilderness for solitude and unconfined types of recreation it may ultimately be necessary to control the number of people using the area at any one time. Experience in the United States has shown that tourism and the more conventional forms of outdoor activity commonly associated with parks are among the greatest threats to wilderness, and should not be accommodated in such an area. It may also be necessary to place restrictions on some activities so that conflict between wilderness-users is minimised.

Wildfires, however caused, must be prevented from threatening life, property, and natural resources in the State, and the measures necessary to control them must be taken in a wilderness area as in any other. Some pre-suppression measures, such as maintenance of fire-access tracks and protective burning, will be required, at least in areas of strategic importance for fire control. A carefully designed and managed fire-prevention program in the adjacent areas may reduce the requirement for such activities in some of the wilderness. Suppression of fires will remain the responsibility of the Forests Commission.

When tracks are maintained for essential management operations, their use other than for these specific purposes will not be permitted. By careful maintenance, many tracks can continue to be passable for fire-fighting, rescue, and management vehicles, without clearing all vegetation. Construction of helipads may be an alternative to maintaining all of an extensive track system.

It will be necessary to control vermin and noxious weeds within the wilderness area, and particularly in the land immediately surrounding it, to ensure that the area itself is protected and that adjoining land is not threatened by pest species from within it.

Users of wilderness must be prepared to face difficult and challenging conditions, and Council stresses the need to bring to the attention of the public the potential hazards associated with the use of these areas. In general, it is expected that the lack of vehicle access, the topography, and the location of this wilderness area will tend to discourage the inexperienced.

Recommendations

Avon Wilderness

B1 That the area indicated on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

that the area (29 500 ha) be used to:

(a) provide opportunities for solitude and unconfined forms of recreation in substantially unmodified natural environments

that

- (b) its value for providing solitude be maintained by controlling the numbers of people using the wilderness at any one time
 - (c) construction of roads or tracks and the entry of vehicles not be permitted, other than for the management purposes
 - (d) grazing within it be phased out by 19 May 1991 (Ministerial letter 8/2/1982)
- and that it be permanently reserved under [section 4 of the *Crown Land (Reserves) Act 1978*].

Note:

Council is aware of the history of fire in this general area; it therefore believes that, within the wide belt of public land adjoining the proposed wilderness on its eastern, southern, and western borders, and in the wilderness zone itself, all measures necessary for fire protection and control should be taken. Adequate control of pest plants and animals is also essential.

(See also Wilderness SI A7, Rivers and Streams SI B3)

B2 That the wilderness area, including that portion in the adjoining Gippsland Lakes Hinterland area, be managed by the National Parks Service.

Note: Some 2500 ha of the Avon Wilderness, incorporating the headwaters of Thiele Creek and Nigothoruk Creek, is proposed for inclusion in the park system (see Recommendation A9).

C.REFERENCE AREAS

Reference areas are tracts of public land containing viable samples of one or more land types that are relatively undisturbed and that are reserved in perpetuity. Those concerned with studying land for particular comparative purposes may then refer to such areas, especially when attempting to solve problems arising from the use of land. Reference areas include typical examples of land types that have been modified elsewhere for productive uses such as agriculture, mining, or intensive timber production. The course and effects of human alteration and utilisation can be measured against these relatively stable natural areas.

In common with references and standards used in other fields, these areas must not be tampered with, and natural processes should be allowed to continue undisturbed. Reference areas should be sufficiently large to be viable and should be surrounded by a buffer, the width of which would vary according to the activity occurring on the adjacent land. The role of the buffer is to protect the area from damaging or potentially damaging activities nearby. It will also protect important values in the surrounding land from potentially damaging natural processes occurring within the reference area.

Access should be restricted, and experimental manipulation should not be permitted. Setting aside such areas will enable continued study of natural features and processes: for example, fauna, hydrology, and nutrient cycling. These studies are important in increasing our knowledge of the ecological laws and processes on which man's survival may ultimately depend.

The preservation of some species in the long term requires the setting aside of areas free from human interference (in the form of productive or recreational use of the land). These areas preserve a valuable pool of genetic material. Man often uses wild species to genetically strengthen inbred races of domestic plants and animals - and the future use of gene pools will probably expand far beyond this.

The *Reference Areas Act 1978* provides for reference areas to be proclaimed by the Governor-in-Council, and for the Minister to issue directives for their protection, control, and management. An advisory committee, established under the *Act*, will assist the Minister.

The selection of the reference areas listed here is based on current knowledge of the land types in the study area, and additional areas may be needed as better information on ecology and land use problems becomes available.

The Council is aware that several proposed additions to the alpine park system enclose reference areas that were recommended to be managed by either the Forests Commission or the Department of Crown Lands and Survey in the final recommendations for the Alpine area published in June 1979. The Council believes that reference areas should be managed by the authority responsible for the management of adjoining public land, and in the light of this policy it is proposed that the management of several reference areas be transferred to the National Parks Service.

Recommendations

C1—C18 That the areas shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

That the areas listed below:

(a) be used to maintain natural ecosystems as a reference to which those concerned with studying land for particular comparative purposes may be permitted to refer, especially when attempting to solve problems arising from the use of land

(b) be surrounded by a buffer, and that delineation of the buffer be by joint agreement between the managing authorities of the area itself and of the land adjacent to the area and the advisory committee

that

(c) activities - such as grazing, mineral exploration, mining, and logging - that conflict with the purposes of a reference area not be permitted, and any such activities in the reference areas listed below cease when these recommendations are adopted

and that the areas be permanently reserved under the *Reference Areas Act 1978*.

Note:

Grazing should be phased out in the two reference areas on the Bogong High Plains in conjunction with the phasing out of grazing on the surrounding land—see Recommendation A2 (e).

C1 East Caledonia (500 ha)

(See also Wilderness SI B12)

C2 Wonnangatta River (500 ha)

C3 Mount McAdam (200 ha)

(See also Rivers and Streams SI A12)

C4 Thirteen Mile Spur (300 ha)

C5 Blue Rag (680 ha)

(See also Wilderness SI B13, Rivers and Streams SI B23))

C6 Boiler Plain (850 ha)

(See also Rivers and Streams SI C3)

C7 Lagoon Plateau (970 ha)

(See also Rivers and Streams SI C3)

C8 Shepherds Creek (710 ha)

C9 Spring Creek (650 ha)

C10 Hollands Knob (320 ha)

(See also Wilderness SI B18)

C11 Whiterock Creek (250 ha)

C12 Burnside (1 190 ha)

C13 Porphyry Hill (240 ha)

(See also Rivers and Streams SI A1)

C14 Wombat Creek (320 ha)

C15 Lightwood (550 ha)

C16 Buenba (330 ha)

C17 Tom Groggin (940 ha)

(See also Wilderness SI A11)

C18 Forest Hill (360 ha)

(See also Wilderness SI A12)

C19 That reference areas C5, C7, C8, C12, C13, C14, and C16 shown on map A be managed by the National Parks Service.

D. NATURAL FEATURES AND SCENIC RESERVES

These reserves set aside land containing outstanding landscapes, geological formations, significant plant communities, or other natural features that warrant special protection. The maintenance of these features is the main aim of management. Levels of permitted activities such as recreation and grazing may need close control in some areas where protection of features such as significant plants may require special measures. Any road construction would be minimal and carefully planned in each reserve. Logging is not permitted.

The Council recommends that the existing Mount Skene Natural Features and Scenic Reserve be extended along the high ridgeline of the Great Dividing Range to include Mount Sunday and the rugged cliffs of Peters Gorge. The portion of the Alpine Walking Track that traverses this area passes through subalpine woodlands of snow gum and mountain gum and is popular as a relatively easy and scenic walking route.

Recommendations

D1, D2, D9, D14, D18, D22, D23, D25—D30 That the areas shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

That the areas listed below and shown on the map be used to:

- (a) maintain natural landscapes and features
- (b) provide opportunities for recreation and education
- (c) supply water and protect catchments and streams
- (d) conserve native plants and animals

that

(e) the Fisheries and Wildlife Division prepare plans for the conservation of wildlife in consultation with the management authority and that, after mutual agreement, these be incorporated into the management plan

(f) grazing be permitted in these reserves subject to the policies and conditions specified in Chapter Q, Agriculture, except for the Bluff area (D4) as indicated on Map A

(g) apiculture be permitted

(h) any new roading be constructed only where essential for management and protection purposes and be designed to minimise effects on scenic and nature conservation values

and that the areas be permanently reserved under [section 4 of the *Crown Land (Reserves) Act 1978*]

Note: Many of these areas are high ridges of snow gum woodland flanked by forests of alpine ash. On such ridges the natural features zone is intended to include a strip of alpine ash, with a minimum width of 40m where possible. The small quantities of timber these areas include would not be harvested.

Note: In certain cases, some Natural Features and Scenic Reserves previously recommended (D3—D8, D10—D13, D15—D17, D19—D21, D24) are proposed for inclusion in the Alpine park system or an historic area.

D1 Mount Useful (500 ha)

The rounded summit of the mountain supports sub-alpine heathlands and herbfields, surrounded by woodlands and thickets of snow gum and ash-mallee. The old mining track known as McEvoys Track passes through the area. A fire look-out tower is situated at the summit.

D2 Mount Skene (1 650 ha)

The Jamieson—Licola tourist road traverses this high ridge of sub-alpine woodland, which contains the most westerly occurrence of ash-mallee. A fire look-out is situated on the main ridge south of Mount Skene. (see also D31)

D9 Mount Sarah (840 ha)

The high point is viewed from various surrounding areas; the spring near Guys Hut, which is surrounded by grassy snow gum woodland, is strategically placed for visitors travelling along the Tea Tree Range.

D14 Livingstone Creek (490 ha)

Woodlands of Omeo gum, black sallee, and mountain swamp gum, together with associated grasslands and heathlands, grow along the environs of Livingstone Creek.

D18 Mount Cravensville (550 ha)

Like nearby Mount Benambra, this mountain is composed of Silurian volcanic rocks. The summit area forms a small basin rimmed by snow gum woodlands

D22 Wild Boar Range (530 ha)

This range includes Mount Sassafras, which overlooks the valleys of the Gibbo River and Zulu and Wheeler Creeks. The snow gum covered ridge lies on the Alpine Walking Track and is viewed from Mounts Pinnibar and Gibbo.

D23 Mount Gibbo (1 430 ha)

This high mountain ridge covered by snow gum woodland lies along the Alpine Walking Track. Like Mount Pinnibar, it affords extensive views of the Kosciusko National Park

D25 Macfarlane Lookout (300 ha)

The rocky scarps and cliffs of this distinctive mountain are formed from Triassic igneous rocks.

D26 Mount Tambo (2 740 ha)

The Rocky mountain range, composed largely of red to purple conglomerates of Upper Devonian age, forms a spectacular landscape feature visible from both the Benambra and Bindi districts. The vegetation varies from dry foothill forests of red stringybark and brittle gum, through moist foothill forests of messmate stringybark and narrow-leaf peppermint, to pockets of alpine ash forests and summit areas of snow gum woodland.

D27 Nunniong Plain (2 600 ha)

The Nunniong tablelands are characterised by a series of open plains interspersed with snow gum woodlands and stands of alpine ash. This area includes many of their notable

scenic features, such as Big Nunniong Plain, Lowe Plain, and Lake Hill (which is a basaltic plateau carrying a shallow sub-alpine lake). The highly significant plant species *Oreomyrrhis argentea*, *Wahlenbergia densifolia*, and *Hydrocotyle* sp. aff. *sibthorpioides* are found in this area

D28 Nunnett Plain (900 ha)

The central feature of this area is Nunnett Plain - a sub-alpine grassland plain surrounded by snow gum woodlands on topography developed from Tertiary-age basalt.

D29 Bentley Plain (150 ha)

Sub-alpine grasslands and heathlands are surrounded by attractive snow gum—mountain gum forest. ‘Moscow Villa’, a picturesque hut located beside Bentley Plain, also attracts visitors.

D30 Mount Stewart (340 ha)

Mount Stewart, a granite hill overlooking the clearing at Glenmore in the Buchan River valley, carries heathlands growing on shallow rocky soils. Showy plants include an undescribed *Eriostemon* species considered to be of high botanical interest. The nearby waterfalls on an attractive section of Mellick Munjie Creek are also included in the area.

D31 That the area of 660 ha shown on map A be added to the Mount Skene Natural Features and Scenic Reserve (D2)

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act, 1978* and managed accordingly.

Macalister Gorge (1 260 ha)

The Macalister River has cut a gorge through a series of siltstones, mudstones, slates and sandstones of Silurian age, resulting in the development of precipitous cliffs and rock walls. Bands of resistant strata strike across the river to form numerous waterfalls and rapids which make the gorge popular for white-water canoeing.

Recommendation

D32 That the area described above and shown on map A be used to:

- (a) maintain natural landscapes and features
- (b) provide opportunities for recreation and education
- (c) supply water and protect catchments and streams
- (d) conserve native plants and animals

that

- (e) the Fisheries and Wildlife Division prepare plans for the conservation of wildlife in consultation with the management authority and that, after mutual agreement, these be incorporated into the management plan
- (f) grazing be permitted in accordance with the policies outlined in Chapter Q, Agriculture
- (g) apiculture be permitted
- (h) any new roading be constructed only where essential for management and protection purposes and be designed to minimise effects on scenic and nature conservation values

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978*.

E. WATER PRODUCTION

The catchments of the study area are extremely important for water production. Much of the area receives high rainfalls, particularly at the higher elevations, where winter precipitation is stored in the form of snow. Snow melt in spring and early summer helps maintain summer stream flow. The highest elevations produce more water per unit area than any other part of the State, and the quality in most streams is high.

Catchment management and use

The Alpine area contributes about one-quarter of the State's water, part of which Victoria shares with New South Wales and South Australia through the River Murray Commission. The area supplies water to major storages including Lakes Hume, Eildon, and Glenmaggie and the smaller Lake William Hovell and Lake Buffalo, all of which lie outside its boundary, and Dartmouth Lake, which lies within it. Large irrigation districts in northern Victoria and in Gippsland draw water from these storages. Storages and streams in this area also provide water for hydroelectric power, for domestic consumption in large centres such as Albury—Wodonga, Wangaratta, and Bairnsdale, and in numerous smaller towns and individual houses, for privately operated irrigation of crops and pastures, and for stock water.

Land use planning

The Council notes that the degree of land use planning varies between catchments. Seven catchments that lie partly within the study area (those of Lakes Hume, Eildon, Glenmaggie, and William Hovell, and the Nicholson, Buckland, and Mitchell Rivers), and one (the Upper Kiewa catchment) completely within it, are Proclaimed Water Supply Catchments. The Soil Conservation Authority has already been given a specific responsibility by the State government to exercise supervisory control over all the grazing and earthworks on land above 1 220 m elevation. In addition, the use of all land in proclaimed catchments may be subject to specification by notice issued by that Authority, or by determination made by the Authority after consultation with the Land Conservation Council. Investigations for land use determinations are in progress for the following:

- * Nicholson River proclaimed water supply catchment

- * Delatite River catchment (part of the Eildon proclaimed water supply catchment).

A land use determination has recently been completed for an area of uncommitted land (now included in recommendation A17) in the East Kiewa River catchment (part of the Upper Kiewa proclaimed water supply catchment).

Land above 1 200 m has the highest water yield in Victoria and is very sensitive to disturbance of soils and vegetation. Most of it is already included in proclaimed catchments. To protect the rest and ensure common standards of land use, the remaining catchments with land above 1 200 m will need to be proclaimed, as will other catchments supplying water for domestic use.

No catchment in the area is closed to the public and used solely for water production, although the State Electricity Commission exercises restrictions on vehicular use, camping, and lighting of fires in the upper Kiewa catchment.

A. Catchment land

Recognising that the prime water-producing areas of the State coincide with the principal mountain and forested areas, and that these areas together with inland water bodies form major

attractions for recreation, the Council believes that, in many areas, catchments can be managed for a range of uses consistent with the provision of adequate protection of the water resources. Recreational use of storages, where it is permitted, must be carefully controlled to ensure adequate protection of water quality, and responsibility for this must remain with the water supply authority.

The Council realises that the optimum combination of land uses for catchments will vary from one land type to another; a particular use that may not impair the quantity, distribution, or quality of water yield in one instance may have a profound effect in another. Changes in land use, which could detrimentally affect the quality, quantity, or distribution of water supplied from a catchment, should only be made following full consideration of the benefits and disadvantages associated with the various land use options. These considerations should take account of the interests of the groups likely to be affected by any changes as well as broader regional and State-wide issues.

Where there is a multiplicity of uses in a catchment supplying water used for power generation or for domestic, industrial, or irrigation purposes, the catchment should be proclaimed under section 5(1) of the *Land Conservation Act 1970* and section 22(1) of the *Soil Conservation and Land Utilisation Act 1958*.

After proclamation, and following consultation with the Land Conservation Council, the Soil Conservation Authority may make a land use determination for a catchment. This specifies the most suitable uses of all land in the catchment, and includes delineation of protective strips around storages and along major watercourses.

Council believes that in most situations it is not necessary for a water supply authority to control and manage all land in its water catchment. Public authorities managing land within a proclaimed catchment should be conscious of the implications of management decisions on water production and should consult, co-operate, and reach agreement with the water supply authority and the Soil Conservation Authority regarding the type, location, and timing of management activities.

B. Buffer zone

The water supply authority should control and manage a buffer zone (defined in the land use determination) around storages and diversion works. This buffer zone is separate from the protective strips along watercourses, which, although important for water supply protection, would not by themselves form a manageable unit.

In addition, the water supply authority should control and manage the storages and the areas on which capital works are situated, together with any other areas that may be needed for efficient management.

Each catchment and water supply system has individual characteristics and the determination of the buffer zone will need to take account of these differences. In determining the extent of the buffer zone, consideration should be given to factors such as ground slope, soil type, vegetative cover, adjoining land use, type of facilities available for treating the water, end-use of water, detention time in the storage, and the need to control public use of the storage and its immediate surrounds. The buffer zone should be large enough to reduce entry of most pollutants into the storage by way of filtration of overland flow, absorption through the soil, and assimilation in watercourses. The desirability of the buffer zone being a practical management unit should also be taken into account.

In some instances it may not be practical for the water supply authority to manage all, or part, of the buffer zone. In such cases agreement should be reached between the adjacent land management authority and the water supply authority at the time of a land use determination. The agreement may include leaving the management of the buffer zone with the adjacent land management authority, on the basis that it would be managed with the prime object of protecting the water quality.

Water quality, yield, and regulation

It is possible to improve the quality of water by partial or complete treatment - at a cost. It must, however, be recognised that the higher the original quality of the water, the cheaper and more efficient is the treatment and, in most cases, the more acceptable the end product.

In many catchments it is already difficult to maintain existing water quality. This problem is likely to become even greater as pressures to allow various forms of land development and use of natural resources increase. Even with properly planned and controlled land use in catchments it is probable that many water supply authorities will consider it necessary to at least disinfect water supplied from their storages. Indeed, many authorities already employ such treatment. Council recognises that a number of water supply systems need some form of treatment now and that the others will need to consider some form of treatment in the future. In order to provide for this requirement, Council believes it is important for the government to establish long term policies to maintain water supply of a satisfactory quality.

It is also vital to safeguard the quantity and timing of yield. Catchments must be protected from loss of infiltration capacity, damage to other hydrologic properties, soil erosion, and contamination from chemical or biological sources.

Proper management of land uses within catchments is extremely important and recognition must be given to the need for high levels of protection, particularly in the ecologically sensitive areas. Values such as water yield, quality, and flow regime must be of major concern when implementing recommendations for public land within catchments. The Council recognises the need for research to provide additional information that can be used in formulating management guidelines.

Additional water needs

Future water needs for domestic, stock, and irrigation purposes, and for the production of electricity, may require the construction of additional water storages. In the planning for these, the possible effects of the storages and their water releases on the ecosystems in the vicinity (in particular the effects on fish and wildlife habitat downstream) should be determined and taken into account.

The Council appreciates that it will probably be necessary to develop additional facilities associated with such schemes, but cannot make specific provision for those developments until definite proposals are made. Their environmental effects should be assessed before proceeding. In most cases an Environmental Effects Statement is now required as part of the planning of any new major storage.

Recommendations

E1—E5 That the water production areas shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations

for the Alpine area in June 1979 (as follows)

That in the case of the locations listed below and shown on the map (all these locations being within catchments for which no land use determinations have been made), the present tenure and management of public land continue for the time being

that, once a land use determination has been made, the following areas:

- * the storage areas
- * diversion works
- * aqueducts
- * associated facilities
- * the buffer strips around diversion works and storages, as defined in the land use determination

be used for

- * water supply purposes
- * other activities permitted by the water supply authority after consultation with the Soil Conservation Authority and the Environment Protection Authority

and that these areas be permanently reserved under [section 4 of the *Crown Land (Reserves) Act 1978*] for water supply purposes, and be managed by the water supply authority named.

Notes:

1. The buffer should be wide enough to prevent direct pollution, to filter overland flow of water, and to control access. Its width will vary to suit differences in ground slope, soil type, vegetative cover, adjoining land use, and type of facilities available for treating the water. This will be established by the Soil Conservation Authority when the land use determinations for the catchments are made.
2. The primary object of management of the buffer must be to protect water quality. Subject to this principle, the water supply authority may permit other secondary, uses on the buffer. In such cases, the principles of management must be agreed upon by that authority and any other authorities concerned.
3. In some instances it may not be practical for the water authority to manage all or part of the buffer. In such cases agreement should be reached between the adjacent land management authority and the water supply authority at the time of a land use determination. The agreement may include leaving the management of the buffer with the adjacent land management authority on the basis that it would be managed with the prime object of protecting the water quality.

E1 Mount Tabor Creek storage: State Rivers and Water Supply Commission

(See also Rivers and Streams SI B6)

E2 Dartmouth Reservoir: State Rivers and Water Supply Commission

(See also Rivers and Streams SI A1)

E3 West Kiewa and Simmonds Creek diversions: Mount Beauty Waterworks Trust

Simmonds Creek diversion and Mount Beauty pumping station, to be managed by Mount Beauty Waterworks Trust; Tawonga/Mount Beauty diversion (E3A on the LCC amendment 12/12/1980 attached map), to be managed by the State Electricity Commission of Victoria. (LCC amendment 12/12/80)

E4 Livingstone Creek diversion: Omeo Waterworks Trust

E5 Tambo River diversion: Swifts Creek Waterworks Trust

F. HYDROELECTRICITY PRODUCTION

The Alpine area contains two hydroelectric schemes, one situated on the Kiewa River and the other on the Mitta Mitta River below the Dartmouth Dam.

The Kiewa hydroelectric scheme receives water from the proclaimed Upper Kiewa catchment, which extends south from Tawonga to Mounts Jim, Bundara, and Cope on the Bogong Tablelands, and to Mount Hotham.

The catchment of the Mitta Mitta River, supplying the Dartmouth project, is within the Lake Hume catchment, which was proclaimed in 1950.

Council's policy on the control and management of water supply catchments where multiple use is recommended is set out in Chapter E, Water Production. The recommendations for the public land within the two catchments referred to above conform with this policy.

Additional electricity needs

The State Electricity Commission has investigated a number of areas with regard to possible future development. These include:

- * an expansion of the Kiewa hydroelectric scheme by utilisation of the 400m head difference between McKay Creek power station and Junction Dam (Lake Guy). (This proposal would require a new power station, conduits, and aqueducts, and storage and diversion dams in both the Kiewa catchment and the headwaters of the Mitta Mitta and Cobungra Rivers. A possible site for a diversion dam has been identified at the confluence of the Diamantina and West Kiewa Rivers.)
- * a pumped-storage development located on the western escarpment of the Bogong High Plains between Pretty Valley and the West Kiewa River. (The lower-level storage would be located at the confluence of the Diamantina and West Kiewa Rivers and the upper-level storage in the headwaters of the Tawonga Hut Creek. The transmission line would be located along the West Kiewa River.)
- * a pumped-storage development located on Cullen Creek, north of Licola. (The upper storage would be situated in the headwaters of Cullen Creek and the lower one at the junction of Cullen and Mount Skene Creeks. The transmission line from the scheme would probably follow the Barkly River to Licola and then to the Latrobe Valley.)

The Council appreciates that it may be necessary to develop additional facilities associated with such schemes, but cannot give consideration to providing for further developments until definite proposals are made. Their environmental effects should be assessed before proceeding.

Kiewa Hydroelectric Scheme

The Kiewa Hydroelectric Scheme at present consists of three power stations, located in the East and West Kiewa River valleys, which generate electricity from water derived from the upper Kiewa and upper Mitta Mitta catchments.

The scheme supplies about 2.7% of the State's total electricity output. It is valuable for meeting peak-load requirements and will assume increasing importance until the expected shortfall in generating capacity is overcome some time in the late 1980s.

The hydroelectricity production area, in which facilities associated with the Kiewa scheme are located, encompasses the major access road to the Bogong National Park as well as the Falls Creek Alpine Resort, and visitor use of this road will undoubtedly increase in the future. The Council therefore believes that the State Electricity Commission, together with the managers of the adjacent public land, should together develop and present information and educational programs that will introduce visitors to the way in which the balanced development and use of the natural environment can be achieved.

Dartmouth Hydroelectric Scheme

The Dartmouth Dam project began impounding water in November 1977, and will hold 3.77 million ML at full supply level. The storage is operated by the State Rivers and Water Supply Commission on behalf of the River Murray Commission and the water used primarily for irrigation. It also generates hydroelectricity. The power station has a generating capacity of 150 MW and is just below the dam and upstream of a regulating dam and pondage. The regulating dam is sited 9 km downstream and impounds some 5 000 ML.

Electricity generated by the scheme is transmitted by a 220-kV transmission line, which is linked to the Mount Beauty terminal station. The transmission line passes through Granite Flat and along Rodda Creek, crosses the Eskdale Spur east of Mount Emu, and descends to Mountain Creek and Mount Beauty.

Recommendations

F1—F2 That the hydroelectricity production areas shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

Kiewa Hydroelectric Scheme

F1 That the area - which includes the Kiewa hydroelectric scheme - shown on Maps A and B be used to:

- (i) transport, store, and regulate water for the generation of electricity
- (ii) operate, maintain, and protect hydroelectric installations
- (iii) provide low-intensity recreation and protect nature conservation values in parts of the area, consistent with State Electricity Commission requirements

that

- (iv) areas adjacent to the Falls Creek alpine resort may be used for activities associated with the resort, but only after agreement is reached between the State Electricity Commission, the Soil Conservation Authority, and the Falls Creek Tourist Area Management Committee
- (v) if, in the future, part or whole of the area is no longer required by the State Electricity Commission, consideration be given to adding the area to the Bogong National Park (Recommendation A2)

and that the area remain under Crown grant and be managed by the State Electricity Commission of Victoria.

Notes:

1. The National Parks Service should be consulted regarding any proposals that would affect the management of the adjacent park or the nature conservation, landscape, or recreation values of the area covered by Recommendation F1.

2. An area of importance to the operation, maintenance, and protection of the Kiewa hydroelectric scheme (shown by diagonal stripes on Map B) lies outside the area covered by Recommendation F1. Principles for the management of this area are set out in Recommendation A2 (j).

3. The acceptance of these recommendations would require a reduction in the amount of land currently held by the State Electricity Commission under a Crown grant.

Notes:

1. Portion of the Kiewa Hydroelectricity Production area is proposed for inclusion in the Alpine park system (Recommendation A18) and the Falls Creek Alpine Resort (Recommendation O11).

2. An area of importance to the operation, maintenance and protection of the Kiewa hydroelectric scheme (shown by diagonal stripes on Map A) lies outside the area to be managed by the State Electricity Commission (Recommendation F1), and includes land proposed for addition to the park system (see Recommendations A16, A17 and A18) and the recommended additions to the Falls Creek Alpine Resort (O11). Principles for the management of this area are outlined in Recommendation A18(b) and (c).

Dartmouth hydroelectric scheme

F2 That the area indicated on Map A occupied by the works and facilities associated with the operation of the Dartmouth hydroelectric scheme be used to:

(i) provide for the generation of electricity and its transmission to Mount Beauty terminal station

(ii) regulate water used in the generation of electricity

and be managed by the State Electricity Commission of Victoria and the State Rivers and Water Supply Commission.

F3 That the State Electricity Commission collaborate with the land managers responsible for public land adjoining the Kiewa Hydroelectricity Production area, and the Soil Conservation Authority, in the development and presentation of information introducing visitors to the balanced development and use of natural environments.

G. HISTORIC AREAS

Sites of historical importance associated with exploration, pastoral and timber activities, and the exploitation of gold and other minerals are found throughout the alpine region.

Recommendations made by Council in 1979 and subsequently accepted by the government provided for the reservation of five historic areas - Howqua Hills, Grant, Victoria Falls, Oriental Claims, and Cassilis. Four are associated with historical goldfields, and the fifth contains the remnants of a hydroelectric power station that supplied power for mining and processing gold-bearing ores. With the exception of 100 ha in the Grant Historic Area (G2) west of the Wongungarra River, which has been recommended as part of an extended alpine park (see A12), Council proposes no change to these historic areas. It does, however, recommend two additional ones, described below. All seven areas contain features that illustrate the different forms of mining and processing, and provide an insight into the life styles, customs, and aspirations of the early prospectors. They include the sites of former townships, mine buildings, and dwellings, as well as the remnants of mining equipment, shafts, tunnels, and water races.

Council believes that historic areas should be managed to promote public awareness of the history of gold-mining and settlement of the land. Many other sites containing historical features occur throughout the alpine area, but are widely dispersed and relatively isolated, so it is not proposed that they be specifically reserved. They should, however, be catalogued and investigated and those having historical significance should be protected.

Recommendations

G1—G5 That the historic areas shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

That the areas listed below be used to:

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of their history
- (b) protect the sites and the remnants of buildings, equipment, construction works, and artifacts associated with the history of the locality
- that
- (c) mineral exploration and mining be permitted in accordance with the policy set out in chapter R, Mineral and Stone Production where it does not conflict with (a) above
- (d) fossicking be permitted using methods approved by the managing authority where this does not conflict with (a) above
- (e) harvesting of timber not be permitted except in G2 (see note 3 below)
- (f) apiculture and grazing be permitted

and that the areas be permanently reserved under [section 4 of the *Crown Land (Reserves) Act 1978*]

Notes:

1. Management should be in consultation with the Department of Minerals and Energy.
2. Management of G4 should be in consultation with the Shire of Omeo.
3. Subject to thorough investigation and establishment of the location of historic features within G2, timber harvesting and subsequent regeneration could be permitted where this does not conflict with the object of preservation and management of the area as an historic area.

Note: Other than a slight amendment to the boundary of G2, historic areas G1–G5 are the same as previously recommended.

G1 Howqua Hills (1 300 ha)

This historic area covers part of the former ‘Howqua’ grazing run, which was taken up in 1845 and later subdivided into ‘Goulbourn Downs’ and ‘Howqua Hills’. Pastoral activities in the valley of the Howqua River were followed by alluvial gold-mining in the mid to late 1860s. with the later discovery of auriferous reefs and the subsequent workings by companies such as the Mountain Chief, Howqua United and Great Rand, a small mining centre developed. The township of Howqua, situated on the banks of the Howqua River adjacent to the mining areas, was proclaimed in 1888.

Predictions of a prosperous future were never fully realised. Difficulties of processing the highly mineralised ore, coupled with low yields of gold, led to the cessation of mining and the decline of the population. Little or nothing remains today of the crushing batteries, water wheels, and smelting furnace that once operated. Still evident, however, is a tunnel cut through the spur at Tunnel Bend and a race that once diverted water from the Howqua River to operate one of the water wheels. The tall brick chimney of the smelting furnace remains. Frys Hut, although of more recent origin, is a popular attraction.

(See also Wilderness SI B11, Rivers and Streams SI A3)

G2 Grant (7 300 ha)

Gold was first discovered at Crooked River in 1860 by Alfred Howitt and his party of Government prospectors. Resulting from these alluvial discoveries, the area was rushed and by the early 1860s the townships of Bulltown and Hogtown had developed and most creeks in the area were being prospected. By 1864 the Crooked River field was languishing ; but the discovery of a large number of exceedingly rich quartz reefs - the first discovery is accorded to Angus Macmillan - caused renewed interest, and the establishment of the townships of Grant, Talbotville, and Howittville followed.

Exploitation of the Grant and Crooked River reefs was initially rapid and gold yields were high, but after 1859 returns were small and the townships slowly declined. Grant, a typical ‘boom and bust’ township with a population large enough to support 18 hotels, had only 2 hotels in 1890 and by 1914 had ceased to exist.

G3 Victoria Falls (100 ha)

The Cassilis Company’s hydroelectric power scheme was located on the Victoria and Cobungra Rivers for the purpose of providing electricity to the mine and treatment works in Powers Gully near Cassilis (G5). A dam constructed on the Victoria River supplied water by race to a pressure dam located on a spur immediately above the power station on the Cobungra River. From the power station, the transmission line extended 27 km to the mine and works. Groundwork for the scheme commenced late in 1906, and it was operational in 1909 - the first such scheme in Victoria.

G4 Oriental Claims (40 ha)

The Oriental claims, approximately 2 km south of Omeo, is the site of large deposits of gold-bearing alluvium worked by a series of prospectors and companies between 1856 and 1904. The deposits, about 30 m deep, are thought to occupy the bed of an ancient mountain lake and are

auriferous for almost the complete depth.

At first, sluicing operations at the Oriental claims and nearby Bloomfields Gully were carried out by cradle. By 1873, mines were using hydraulic hoses to break down the wash-dirt, with a head of water brought by race down the valley of Livingstone Creek. This practice virtually ceased in 1904, when the Sludge Abatement Board prevented the discharge of tailings and sludge into Livingstone Creek.

Exposed cliff faces up to 30 m high, showing deposition strata, and a pondage area are all that remain of these early gold-mining ventures.

G5 Cassilis (3 620 ha)

This area adjoins the existing townships of Cassilis and Tongio West and includes the site of the first quartz reef discovered in Gippsland. The gold-bearing ore was found to be highly mineralised and required a series of treatments including crushing, reduction, and roasting to ensure high yields.

The Cassilis company carted ore along a gravity-operated tramway from mines on top of the range to a battery and treatment plant situated in Powers Gully. The plant, fuelled initially by timber and then by oil, was converted to electricity in 1909. Power was supplied by the hydroelectric generating plant constructed at Victoria Falls, with substantial savings due to the more efficient use of machinery, increased output, and reduced fuel costs.

A gold-sluicing company built the Jirnkee water race, which brought water 90 km from the head of the Wentworth River to the sluicing works at Tongio West.

Two of the richest mines, the Cassilis and King Cassilis, are covered by current mining leases and are worked intermittently.

Mount Wills (9 190 ha)

Gold was discovered in the Mount Wills area in the 1850s, and by the late 1860s the narrow alluvial flats and terraces along the Lightning, Merrimac, Wombat, Christmas, and Gills Creeks had been worked for gold. Alluvial tin was frequently associated with it, but not until 1888 was a systematic attempt made to trace the source of these minerals. Several rich outcrops of tin ore were subsequently located around Mount Wills, and this initiated a period of intensive activity and frenzied speculation. By 1891, some 300 exploration leases totalling more than 5000 ha had been pegged out in the area. This represented about 50% of the State's mineral leases granted at the time. By 1893, however, the tin field had proved to be a failure - mainly because the lodes had not lived up to their earlier promise, and transport charges to and from this isolated part of the State were prohibitive. Mining for gold, on the other hand, continued to expand between 1890 and 1924. Many small workings dominated the Sunnyside field; in contrast, the Glen Wills field was worked by larger companies. The last mine closed down in the 1950s.

Mining sites and relics around Mount Wills therefore exhibit a wide range of mining activities, from individual workings to quite large undertakings. Mining techniques used there were also varied and included sluicing, open-cut, and underground workings. This variety is reflected in the range of machinery and other historic features such as tramway routes, shafts, and water races. The proposed historic area includes 73 known sites of historic interest, of which 14 still contain mining machinery. Some of the machinery, which is representative of the late 19th Century and early 20th Century, is considered to be either rare or unique.

The historic area also includes the sites of three sawmills, which operated during the 1930s and '40s at locations along the Omeo Highway north of Sunnyside. These were some of the earliest

sawmills to operate in the Alpine area.

Other features here include the rugged cliffs and summit of Mount Wills, which afford excellent views of the surrounding historic area and the Bogong High Plains. The environs of the Big River provide opportunities for fishing, canoeing, bushwalking, and camping.

Portion of the Alpine Walking Track passes through here and the proximity of historic sites provides walkers with additional recreational opportunities.

The historic area is estimated to contain 1060 ha of alpine ash regrowth and approximately 20 000 m³ of mature alpine ash. The Council believes that timber-harvesting and subsequent regeneration could be permitted where this does not conflict with the object of preservation and management of the features within the historic area.

Recommendation

G6 That the area of 9190 ha shown on map A be used to

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of their history
- (b) protect the historic integrity of the locality, and, in particular, specific sites that contain relics of equipment, construction works, and artefacts associated with gold and tin-mining and early settlement

that

- (c) the environs of the Alpine Walking Track be protected
- (d) the Fisheries and Wildlife Division prepare plans for the conservation of wildlife in consultation with the managing authority and that after agreement these be incorporated into the management plan for the area (particular attention should be given to the protection of spotted tree frog as well as the habitat required by Leadbeaters possum)
- (e) exploration for and extraction of 'gold', 'minerals', and 'petroleum' - including fossicking and prospecting under a Miner's Right - be permitted in accordance with the policy set out in the chapter on mineral and stone production and where it does not conflict with (a) and (b) above
- (f) except for that land designated by red striping on the map, timber-harvesting and regeneration be permitted in accordance with the principles set down in the State Forest chapter, where this does not conflict with (a) and (b) above, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service and the Soil Conservation Authority
- (g) deer-hunting be permitted seasonally, the timing and length of season to be determined by the managing authority in consultation with the Fisheries and Wildlife Division
- (h) grazing and honey production be permitted
- (i) the Tallangatta Ski Club be permitted to use existing facilities on the north-eastern slopes of Mount Wills
- (j) use of the area be such as to ensure the safety of visitors
- (k) the advice of organisations with expertise in industrial history, such as the National Trust, the Science Museum of Victoria, and the Department of Minerals and Energy, should be sought when preparing the management plan for the area

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and

managed by the National Parks Service.

Notes:

1. A number of historic features associated with early mining activity adjoin the historic area in the vicinity of The Knocker and the Lightning Ridges. In The Knocker area these include:

- * mining and machinery sites at the heads of Gills and Hewars Creeks
- * the route of the old Omeo—Glen Willis coach road

Those in the Lightning Ridges area include:

- * the site of the Merry Mack township
- * the sites of the Gwendoline and Hopeful tin-mines and batteries
- * several other battery sites, including at least one tree stump battery site

These historic sites should be protected by special prescriptions and their management co-ordinated with the management of the historic area.

2. The Council is aware of a proposal by the Road Construction Authority to construct the Mount Wills deviation, which would pass along the western side of Mount Wills to Big River Saddle. The area is important because of its relative remoteness and its visibility from many areas of the Bogong High Plains. These important factors should be taken into account in planning the route of the road if it is decided to proceed with the deviation proposal.

3. The boundaries of the no-logging zone within the historic area are approximate only. Council believes that final determination of the boundaries should be established by the National Parks Service in consultation with the Forests Commission.

(See also Rivers and Streams SI A1)

Mount Murphy (660 ha)

Wolfram (tungsten-bearing ore) was discovered at Mount Murphy in 1890. Mining of this ore began in the early years of this century and continued until December 1920, when the falling price of tungsten caused the Mt Murphy Wolfram Company to cease mining operations. No further ore was extracted from the site until the middle of 1942, when the mine was re-opened by the Controller of Mineral Production to meet the war-time demand for tungsten. Production ceased for the last time at the end of 1943. There has been more recent exploratory work in the area.

On its western slopes, Mount Murphy carries a number of relics associated with the mining and exploration activity. Relics include the remains of huts, building foundations, addits, heaps of ore, metal tram tracks, and the remains of a stamping battery.

The area is estimated to contain 6 000 m³ of mature alpine ash. The Council believes that timber-harvesting and subsequent regeneration could be permitted where this does not conflict with the object of preservation and management of the features within the historic area.

Recommendation

G7 That the area of 660 ha shown on map A be used to

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of their history.
- (b) protect the historic integrity of the locality, and, in particular, specific sites that contain relics of mining and exploration activity

that

- (c) exploration for and extraction of 'gold', 'minerals', and 'petroleum' - including fossicking and prospecting under a Miner's Right - be permitted in accordance with the policy set

out in the chapter on mineral and stone production and where it does not conflict with (a) and (b) above

- (d) timber-harvesting and subsequent regeneration be permitted where this does not conflict with (a) and (b) above
- (e) deer-hunting by stalking be permitted seasonally, the timing and length of season to be determined by the managing authority in consultation with the Fisheries and Wildlife Division
- (f) grazing and honey production be permitted
- (g) use of the area be such as to ensure the safety of visitors

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and managed by the National Parks Service.

H. EDUCATION AREAS

Environmental education is a fundamental step in the conservation of natural resources; it has become an important part of school curricula, and forms the basis of courses for tertiary and adult students.

Environmental education is indispensably linked with field studies. It is concerned with studying and appreciating all sorts of environments - natural ones undisturbed by man's activities, natural ones manipulated to produce particular products such as hardwood timber, or drastically altered ones such as are found in urban and agricultural areas. One of its basic requirements is access to land.

Council, realising that public land provides excellent opportunities for studies of a wide range of environments, has recommended that almost all public land (including parks, wildlife reserves, and State forest) be available for educational uses. Council believes that in most situations educational studies can take place without conflicting with the primary use for which an area is set aside. Indeed in some cases it is the manipulation of the land for the primary use that makes the area of value for environmental education. Council believes, however, that it is necessary for some relatively undisturbed land to be set aside specifically for educational uses, as, unless this is consciously done, such environments will tend to be changed by other uses. In these areas education would be the primary use and other uses would only be permitted when not in conflict with the educational use. Activities permitted in education areas that may not be appropriate elsewhere would include long-term studies, collection of biological material, biomass studies, and the establishment of growth plots. They may also provide opportunities to demonstrate techniques of erosion control and the restoration of native vegetation and stream conditions to a more natural state.

In selecting land for education areas, the Council has sought to provide areas:

- * giving examples of major land types
- * with maximum diversity of vegetation types, soils, etc., and with natural boundaries
- * located with consideration of ready access by users
- * located so as to minimise the danger that wildfires present to users
- * located in proximity to other land types and to a variety of other land uses
- * large enough to prevent over-use and to allow for zoning to protect areas of special value
- * selected so as to minimise erosion and pollution hazard

No one organisation should have the exclusive right to use a particular education area, as it is important that students have the opportunity to visit a number of education areas in various land types throughout the State rather than visiting the one site several times. Minimum facilities such as toilets and shelters would be required at each education area, and it would be desirable to have accommodation either on the area or at some nearby locality. Whether or not accommodation facilities are located on the education area will depend on its proximity to other areas of educational value in the region and also on the availability and location of existing accommodation. In forested areas accommodation and other permanent facilities should only be provided where adequate safeguards against fire can be made.

Council believes that the land management of education areas should be the responsibility of the authority managing the adjacent or surrounding public land, while a committee, which includes representatives of the Education Department and other user organisations as well as the land managers, should co-ordinate educational aspects and use of the areas.

The Council recommends that a further area be added to the Sunnyside Education Area. This contains *Sphagnum*–*Richea continentis* communities with associated peat soils, and thus increases the diversity of vegetation types and soils present.

The Sunnyside Education Area contains evidence of early mining occupations, and this should be taken into account in its management for educational purposes.

Council is aware that the recommended Mount Wills Historic Area encloses the Sunnyside Education Area that was previously recommended to be managed by the Forests Commission. The Council believes that education areas should be managed by the authority responsible for the management of adjoining public land and in the light of this policy it is recommended that the Sunnyside Education Area be managed by the National Parks Service.

Recommendations

H1—H4 That the education areas shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

That the areas of public land listed below and shown on the map be used to provide opportunities for students of all ages to:

- (a) study the nature and functioning of reasonably natural ecosystems in a manner such that the integrity of these ecosystems is maintained as far as is practicable
- (b) compare the ecosystems within the education area with other nearby natural and modified systems
- (c) observe and practise methods of environmental analysis, and the field techniques of the natural sciences
- (d) conduct simple long term experiments aimed at giving an understanding of the changes occurring in an area with time

and that they be permanently reserved under [section 4 of the *Crown Land (Reserves) Act 1978*]

H1 Delatite (450 ha)

Middle to Upper Devonian hornblende granodiorite and metamorphics, Upper Devonian conglomerate and rhyolite; hilly; elevation 510–1 000 m ; average annual rainfall 1 000–1 400 mm; open forest II broad-leaf peppermint, open forest III narrow- leaf peppermint, open forest IV alpine ash.

H2 Mount Russell (220 ha)

Middle to Upper Devonian hornblende granodiorite, mountainous; elevation 600–1 200 m; average annual rainfall 1 200–1 400 mm; open forest IV alpine ash, open forest III messmate stringybark and narrow-leaf peppermint.

H3 Mount Tamboritha (320 ha)

Upper Devonian—Lower Carboniferous sediments, Upper Devonian rhyolite; mountainous, moderate slopes; elevation 1 000–1 500m; approximate annual rainfall 1 000–1 200 mm; sub-alpine woodland snow gum, open forest IV alpine ash, open forest III messmate stringybark.

H4 Sunnyside (310 ha)

Ordovician—Devonian granite, Ordovician schist; mountainous, steep to moderate slopes; elevation 1 000–1 720 m; approximate annual rainfall 1 400 mm; sub-alpine woodland snow gum, open forest IV alpine ash.

H5 Sunnyside addition (230 ha)

That the area shown on map A be added to the Sunnyside Education Area (H4)
and that it be permanently reserved under section 4 of the *Crown Lands (Reserves) Act 1978*.

H6 That the Sunnyside Education Area (H4 and H5) be managed by the National Parks Service.

Note: This area is currently used by a number of school groups, including Tallangatta High School, and the management authority should consider providing facilities that would enhance its educational use.

TIMBER PRODUCTION

The forests of the Alpine area are the source of over one-third of Victoria's hardwood sawlogs and produce about 85% of the State's high-quality seasoning timbers. Some 34 sawmills depend directly on the Alpine area for timber supplies. They provide employment at the peak of the logging season for about 1 150 people in production and associated processing operations at centres located in or adjacent to the area. Further processing and marketing operations outside the area as well as firms servicing the timber industry provide additional employment.

High-grade logs are supplied to two specialised mills that produce wood veneers, and hardwood pulpwood is supplied to the Australian Paper Manufacturers Ltd pulp and paper mill at Maryvale under a long-term agreement. Sawn timber production from the Alpine area has an annual value of about \$36 million, and further sawmill-related processing lifts the total value to more than \$50 million. This makes the alpine timber industry equivalent to other major resource-based industries in the State.

Hardwood sawmills drawing all or part of their intake from the area and secondary timber processing centres form a substantial part of regional economies and constitute a major source of employment for the communities in their vicinity. In framing these recommendations, Council has paid particular attention to their potential impact on the sawmilling industry and the consequent effects on employment.

During this investigation Council has been assisted by information on the type, location, and quantity of commercial timber resources throughout the Alpine area. The principal source of this information - a detailed statement prepared by the Forests Commission - has been supplemented by further useful information provided in submissions. While the information is the best currently available, it is nevertheless compiled from base data that vary greatly in precision with some being derived from extrapolation. Consequently, the following quantitative timber estimates are indicative only.

The alpine timber resource

The Alpine area contains two broad classes of productive forest: ash species forests of principally alpine ash, with some mountain ash, produce seasoning-quality timber; and mixed-species forests produce sawn timber best suited for construction purposes. Both classes produce pulpwood.

Commercial forests of ash and mixed species grow on about 240 000 ha of the Alpine area, but environmental considerations (topography and stream buffers etc.) reduce the productive area from which timber could be harvested to about 185 000 ha net.

In 1980 the government adopted the 1979 recommendations of the Council that provided for about 80% of this net productive area to be available for timber production. The timber resource on the remaining 20% is included in the various reserves approved by the government and is not available for harvesting.

Mature sawlogs. Estimates for the areas available for harvesting prior to these recommendations, put the available mature resource within the study area at about 2 470 000 m³ of ash, predominantly alpine ash (covering 28 900 ha), and 1 266 000 m³ of mixed species (covering 31 600 ha). An estimated 710 500 m³ mature ash sawlogs are located in conservation reserves approved by the government following consideration of the final recommendations published in 1979. The volume estimates of timber currently available for harvesting include the

sawlog resource within the once-only logging areas of approved parks and conservation reserves as well as that within hardwood production areas, Grant Historic Area, and uncommitted land. (Hardwood production areas and uncommitted land are now referred to as State forest - see Chapter I.) They do not, however, include ash log resources at Mount Little Arthur within the Bogong National Park and part of the East Kiewa catchment (102 900 m³), where logging is subject to the results of hydrological experiments, nor some 53 500 m³ of mature ash logs in the Murray River headwaters (Davies Plain), which were not available for logging pending review by the Council.

Pulpwood. Availability of pulpwood from the mature ash forests is almost double that of the sawlog resource. The proportional availability of mixed-species pulp varies with the species groups.

Regrowth. The regrowth resource on areas available for harvesting in the study area prior to these recommendations covered about 86 700 ha (68 400 ha of ash and 18 300 ha of mixed species). This represented some 81% of the total regrowth for the Alpine area.

Of the ash regrowth, some 800 ha net resulted from the 1926 fires, 27 200 ha net from the 1939 fires, and approximately 40 500 ha net from logging operations since World War II.

Current levels of timber utilisation

Sawlogs. In recent years, the annual harvest of sawlogs from the Alpine area has been about 345 000 m³, which is a little over one-third of the total hardwood sawlog output from Victorian State forests.

About 244 000 m³ of this volume is alpine ash, representing some 65% of 'ash-type' logs sawn in the State, and producing about 85% of the State's high-quality seasoning timbers. The strategy underlying the present pattern of harvesting of the ash forests is primarily a consequence of the effects of bushfires. The 1917, 1926, and 1939 fires destroyed most of the mountain ash forests of the State and, since then, the alpine ash forests have been required to supply most of the high-quality seasoning timber on the domestic market.

Faced with dwindling supplies of mature resource, the sawmilling industry at some centres (Mansfield and Heyfield) has over the years agreed to reduce the sawlog volumes taken under licence. These reductions were made in an attempt to continue operations for as long as possible - reducing the interval between the time when the mature resource is cut out and the availability of regrowth in the area. Despite this, it is unlikely that a supply of mature ash sawlogs can be maintained at the same levels up to the year 2000.

Other sawmills would seem to be in a somewhat more fortunate position in that they could have access to a mature resource sufficient to provide sawlogs until fire regrowth in the region of their operations is capable of supplying seasoning-quality timber.

Veneer logs. Two specialised mills seek defect-free mature logs from the ash forests of the State to produce wood veneers - one mill uses a slicing technique and the other the rotary method. Although their volume requirements are not large, the decorative face veneers they produce fulfil a specific market demand for which no substitute is readily available.

Pulpwood. At present, only parts of the Alpine area are used to provide pulpwood to the Australian Paper Manufacturers Ltd pulp and paper mill at Maryvale. The importance of the area to the company lies in its ash forests, as the higher quality ash pulpwood enables the use of mixed-species pulpwood and recycled waste paper in pulp manufacturing. Most of the

company's hardwood pulpwood resource is drawn from forests to the west and south of the Alpine area.

Wood supply to A.P.M. is made under the *Forests (Wood Pulp Agreement) Act 1974* and in 1981/82 integrated logging operations in the Alpine area produced approximately 45 000 m³ of round wood that was converted to pulp. This represented some 16% of the round-wood intake from State forest for the period and 30% of the ash intake. In addition, in 1981/82 the company took approximately 53 000 m³ of chip residues from Alpine area sawmills. Currently the company does not take its full entitlement under the *Act*.

Future hardwood timber supplies

Sawlogs. Up to about the year 2000, most sawlogs will be drawn from mature resources. After this time the utilisation of advanced fire-regrowth resources will become increasingly viable. It will be another 30–50 years, however, before appreciable quantities of the logging regrowth can be harvested.

Inevitably, at present harvesting rates, some sawmilling centres will be without ash sawlogs from the Alpine area within a decade or so. The available mature resource is therefore very important, not only for stability of employment and continuity of operations but also to offset pressure for the premature cutting of regrowth resources. The continued availability of the mature resource together with a reduced cutting rate could provide a little more time for a number of mills to make the inevitable adjustment.

In other instances the Council believes that timber obtained before areas are added to the park system will permit sawmills to continue their expected operations until decisions are made on the way in which the regrowth ash resource is to be used.

The Council recognises that in a few instances there may be a need for some sawmills to adjust their program of operations, and Council has endeavoured to take this into consideration when preparing the recommendations.

Provided the mountain ash regrowth forests of the Central Highlands can be protected from fire, it is expected that the areas approved by the government for timber production will eventually supply seasoning-quality hardwood timber. These forests are already capable of yielding small sawlogs, but their premature utilisation could be wasteful and ecologically undesirable. Furthermore, they have not yet reached an age when a substantial proportion of their sawn output is of seasoning quality. The wide boards and long lengths that command a premium in the market will not be available for a further 10 to 20 years. Some of the alpine ash fire regrowth in the Alpine area should also be available for utilisation at about this time.

Currently no licences have been issued for the harvesting of the regrowth ash resource. Decisions must be made in the near future on the manner in which this resource is to be made available, in order that forward planning concerning the structure and location of the sawmilling industry can proceed.

Pulpwood. Under the *Forests (Wood Pulp Agreements) Act 1974*, not less than 45% of the minimum annual supply must be derived from mountain forests. Substantially larger supplies of pulpwood will be needed in the future from forests south of the Great Dividing Range, including the Strzeleckis, to fulfill supply commitments under the *Act*.

Council considers that production of hardwood sawlogs should continue to be the primary goal in harvesting operations and that pulpwood should be obtained only as a by-product from

sawlog operations, except for pulpwood cut in the course of salvage operations or silvicultural treatments such as thinning.

This means that, in most cases, pulpwood would be obtained from the same site as sawlogs. As forest operations such as roading, felling, snagging, and regeneration treatment are common to both sawlog and pulpwood procurement, the main difference between sawlog and integrated harvesting is the removal from the site of sawlog residues (which otherwise would have been burnt or left to decay) and some additional trees unsuitable for sawlogs. The Council considers that the principles for forest operations, outlined in the section on State Forest, should apply to integrated operations as well as to areas from which sawlogs only are harvested.

Impact of proposed recommendations

Mature sawlogs. Many of the proposed additions to the alpine park system contain a mature timber resource. In a number of them the Council has recommended that logging take place before they are proclaimed as part of the park system. Of the total volume of approximately 195 000 m³ of mature ash sawlogs contained in the proposed additions, about 110 000 m³ would be available for harvesting under these provisions. Most of the mature resource not available for harvesting is located on Davies Plain, which the Council now recommends for addition to the park system. The remaining 31 500 m³ of unavailable resource occupies several widely separated areas and some stands would probably not be economic to harvest.

Of the 107 000 m³ of mixed species included in the various proposals, some 88 000 m³ would be similarly available.

Decisions regarding the availability of a further 102 900 m³ of mature ash in Little Arthur Creek and in part of East Kiewa (A17) will be made in the future, following assessment of the results of hydrological research in the area.

Regrowth. As well as the mature resource, the proposed park additions include about 5350 ha of regrowth alpine ash - some resulting from wildfires and some being regeneration following earlier harvesting. In the absence of firm allocations of the ash regrowth resource, it is difficult for Council to assess the specific impact of its recommendations. About 1500 ha net of mixed-species regrowth is also included in the proposed park additions.

The first of the accompanying tables shows a comparison of the currently available timber resource with the resource that would be available if the Council's recommendations were implemented.

Impact of proposals on the alpine area timber resource

	Currently available ha (sawlog volumes m ³)	Available under these recommendations - ha (m ³)
Ash species		
- mature	28 900 (2 470 000)	28 400 (2 439 000)
- regrowth	68 400	63 400
Mixed species		
- mature	31 600 (1 266 000)	31 000 (1 247 000)
- regrowth	18 300	16 700

Notes:

1. Figures are rounded and exclude resources in the East Kiewa River catchment and at Davies

Plain.

2. Resources within once-only logging areas and those areas to be proclaimed as part of the park system after completion of logging are included.

The long term effect of the proposed additions to the alpine park system are shown in the second table.

Areas available for long-term timber production

	Currently available (ha)	Available in the future (ha)
Ash species	97 300	90 600
Mixed species	49 900	45 600

Notes:

1. Figures are rounded and exclude resources in the East Kiewa River catchment and at Davies Plain - totalling 2500 ha of ash forest.
2. The first column excludes all currently approved once-only logging areas.
4. The second column excludes those resources within areas to be proclaimed as part of the park system after completion of logging as well as all currently approved once-only logging areas.

I. STATE FOREST

At present the larger areas of forested public land that have not been incorporated into national parks or set aside in various reserves are designated by the Council either as areas for timber production (hardwood and softwood) or as uncommitted land. Timber production areas are or become reserved forest, while uncommitted land is termed 'unoccupied' or 'unreserved' Crown land. About 4.5 million ha or two-thirds of the public land so far investigated has been recommended for timber production or as uncommitted land. These two classes of land constitute State forest as currently defined under the *Forests Act 1958*.

A New Concept

Council has had great difficulty in finding an appropriate descriptive term for land in these two categories that is not defined in existing legislation. Following considerable deliberation the Council has decided to refer to this land as 'State forest', as it believes this term best describes public land in timber production areas and uncommitted land, even though it contains a range of vegetation types from tall mountain forests through to woodlands, mallee scrub, heathlands, and swamplands. However, in the section below entitled 'an alternative concept for State forest', the name is used only in a descriptive sense rather than as a term defined in the *Forests Act*.

Council has examined the basis for the separation of public land into timber production areas and uncommitted land and is aware of administrative and management difficulties that arise as a result. The following proposal places emphasis on reserving and managing these two classes of land as a single unit.

Current management of State forest

The Forests Commission is responsible for vegetation management and the prevention and suppression of fire in State forest. It also has responsibility for the issue of licences to occupy reserved forest for activities such as grazing, stone extraction, and apiculture. In uncommitted land, the Department of Crown Lands and Survey deals with these matters.

This division of responsibilities has, in the past, led to differences in fees for essentially the same type of licence within State forest. In some cases considerable inconvenience to the public has resulted where two or even three licences have to be obtained to occupy an area simply because the land overlaps the boundary between reserved forest (occupations controlled by the Forests Commission) and uncommitted land (occupations controlled by the Department of Crown Lands and Survey).

The *Forests Act 1958* charges the Forests Commission with the responsibility of preparing and putting into operation working plans for areas of 'State forest' as defined in the Act. These plans set out the criteria for control, maintenance, improvement, protection from destruction or damage by fire or otherwise and removal of forest produce in and from 'State forest'. However, formal working plans for only relatively small areas have been submitted for approval over the years, although operational plans are prepared for the various forest districts.

While these plans cover the various uses associated with reserved forest, occupations in uncommitted land are handled by the Department of Crown Lands and Survey and are not included in plans prepared by the Forests Commission. Similarly, the *Land Act 1958* includes provisions requiring the preparation of management plans for uncommitted land, and the Department of Crown Lands and Survey has prepared and is preparing statements, including

management objectives, for uncommitted land subject to occupation of various kinds. However, no management plans currently exist for many areas of State forest.

As with all government departments, funding constraints have been imposed on the Forests Commission. As a result, uncommitted land has received lower priority for the expenditure of funds to provide for timber supplies in the long term than areas of similar productivity in reserved forest. There is also a reluctance to expend scarce resources on the management of land that is not specifically reserved for any purpose and thus is not as securely held as other areas within the public land estate.

Existing land use categories - timber production and uncommitted land

State forest comprises a mosaic of forests of varying productivity, and the separation of land into timber production areas and uncommitted land has tended to reinforce the belief that the State's commercially productive hardwood forest is entirely located within hardwood production areas and that timber production is the sole object of management. In fact, a significant volume of commercial timber is extracted, in conformity with Council's recommendations, from uncommitted land; at the same time, hardwood production areas are managed for a range of uses as well as for wood production. For example, in the Alpine area alone some 22% of the currently available mature ash resource and 22% of the regrowth resource is located on uncommitted land.

Although many of the outstanding natural features and values occurring on public land are included in parks and reserves, timber production areas and uncommitted land contain areas with significant water production, landscape, historical, or conservation values. Many rare plants are found in State forest and, considering it occupies about two-thirds of all public land, it is of the utmost significance as faunal habitat. The term 'hardwood production' implies quite erroneously that such areas have few values other than for timber production, while the term 'uncommitted land' belies the significance of this land for many different uses including timber production.

An alternative concept for State forest

The Council believes that, in the future, a unified and co-ordinated approach should be taken to the management of State forest and that it be set aside and managed as a unit rather than administered as two classes of land of different tenure - namely reserved forest and uncommitted land. However it will be necessary to recognise the different management requirements of areas with particular attributes within State forest.

Council has defined the areas of State forest in this study area and, in line with the concept of unified and co-ordinated management, believes it would be appropriate for all State forest to be administered under one Act and be securely reserved under a single land tenure incorporating provisions similar to those currently applying to reserved forest. The consolidation of responsibility for issuing all licensed occupations in State forest is an essential aspect of adopting a unified and integrated management approach. This would overcome the problems associated with the dual system of licensing that currently exists.

Following the delineation by Council of State forest and the designation of areas that have significance and need special protection or are required for particular purposes such as softwood production, management plans should be prepared by the managing authority. These plans should reflect the diverse values and differing capabilities of the land to support various community uses and needs. They would be developed in the light of a State-wide policy for the management of forested public land not included in parks or other specified reserves, and would take account of water production, recreation, timber production, floral, faunal, and fire

protection values.

Each management plan should also provide for the protection of significant areas designated by the Council as well as incorporating the Council's established principles relating to timber harvesting and the provision of other resources required by the community. It should also take account of existing statutory requirements such as land use determinations and specialist advice available from other agencies such as the Fisheries and Wildlife Division. Provision should be made for a regular review of management plans for State forest. Where appropriate, the Council would continue to recommend areas of special significance to be permanently reserved for a particular purpose.

Many areas of State forest have no particularly significant features; nevertheless, although they do not currently supply resources to meet known or predicted demands, they may well be required to meet as yet unspecified demands in the future. Much of this type of land has a relatively high erosion hazard and management will need to be directed towards the maintenance of the forest cover so that land use options for the future are preserved.

In summary then, the Council believes a broad management strategy for State forest must be developed to provide for the carefully planned utilisation of natural resources as well as the protection of other important values. Management carried out in accordance with formal plans and the secure reservation of these lands under one form of land tenure should also provide a sound basis for the commercial utilisation of resources and the long-term maintenance and, where possible, enhancement of the diverse natural values and attributes of the forest estate.

Land Use and Management Principles

State forest throughout the Alps has a multiplicity of uses. It is important for the protection of water supply catchments, the conservation of plants and animals, and timber production and provides many opportunities for outdoor recreation. The forests also provide honey, forage, road-making materials, and other forest produce to satisfy various community needs.

Management of State forest should take into account these various values and should ensure that these values can be maintained and that the range of forest products can continue to be supplied in the future. The Council believes that the broad management goals applying to State forest in the Alpine area should include the need to:

- * protect water catchments
- * protect forests and their associated vegetation and fauna from damage by wildfire and from injury by biological or other agents
- * conserve landscape values, wildlife habitats, and floral, historic, and other natural values
- * provide a continuing supply of hardwood timber on a sustained-yield basis
- * provide opportunities and facilities for public recreation and education
- * provide for apiculture, forest grazing, extraction of road-making materials, defence training, etc., where appropriate

In relation to these goals the Council has considered, in particular, the aspects discussed below and has referred to a number of principles that should be incorporated into management plans for State forest.

The Council realises that there has been no opportunity for public comment prior to the final recommendations concerning this new concept and that, if adopted, legislative changes will be required. Therefore, until decisions are made by the government and the necessary legislative changes are approved it would be appropriate to adopt the boundaries for timber production

and uncommitted land suggested in the Council's proposed recommendations, except for those areas that are proposed for inclusion in parks and other reserves.

Water

Catchments within the Alpine area are extremely important for water production, contributing about 25% of the State's water. The quality of the water is generally high, as most catchments are forested and in mountainous and relatively inaccessible terrain.

Much of the State forest is already included in the proclaimed catchments of Lakes Hume, Eildon, and Glenmaggie and of the upper Kiewa, Nicholson, King, Buckland, and Mitchell Rivers. The remaining catchments will be recommended for proclamation by the Council following investigation by the Soil Conservation Authority. Where appropriate, that Authority will then, after consultation with the Council and the land managing authorities, prepare land use determinations.

The land use determinations will have special regard for the high-altitude areas of the catchments. It is considered that these determinations - incorporating the principles set out below and the prescriptions covering forest operations agreed upon by the Soil Conservation Authority and the Forests Commission - should adequately protect soils, water catchments, and aquatic habitats.

Timber production

The forests of the Alpine area produce nearly one-third of Victoria's hardwood sawlogs and this provides direct employment at the peak of the logging season for approximately 1 150 people. The timber industry thus makes a substantial contribution to the regional economy. The value of annual sawn timber production from the Alpine area is about \$36 million, and further sawmill related processing lifts the total value to more than \$50 million.

Productive forests here consist of ash species, principally alpine ash with some mountain ash, and a range of mixed species. The ash timbers produce seasoning-quality material and supply some 85% of Victoria's select-grade timber, while the mixed species are best suited to general construction purposes. Both classes of forest produce pulpwood. Productive ash and mixed species forests cover about 240 000 ha of the Alpine area, but environmental considerations reduce the amount available for harvesting to about 185 000 ha net.

Estimates put the mature sawlog resource now available as a result of these recommendations at about 2 439 000 m³ of ash (covering 28 400 ha), predominantly alpine ash, and 1 247 000 m³ of mixed species (covering 31 000 ha). These volumes represent some 99% and 98% respectively of the previously available net mature sawlog volumes here.

The regrowth resource in State forest covers some 80 100 ha (63 400 of ash and 16 700 of mixed species), which represents about 92% of the net regrowth previously available in the Alpine area.

Timber production in State forest should be carried out in accordance with the recommendations set out below and with the principles for forest management outlined in the following section.

Nature conservation

The fact that State forest comprises about half the public land in the study area means that it is particularly important for the conservation of native plants and animals. The wide range of

vegetation types support a rich assemblage of flora and fauna. The Council is aware that a number of uncommon or rare plants and animals occur within State forest, which are specifically referred to in the recommendations below along with broad guidelines for management to protect these species. This may make it necessary to exclude grazing from some areas, at least temporarily, in order to protect particular species or habitats.

Riparian vegetation along streams is important for the protection of aquatic environments and provides a wildlife corridor linking suitable habitats. Quite often, the greatest diversity of flora, and therefore fauna, occurs in the zone where the riparian vegetation merges with the drier foothill forests.

Recreation

Outdoor recreation is an important use of much of the State forest throughout the area, which caters for a wide range of recreational pursuits. Their outstanding landscapes and scenic grandeur are major factors contributing to the Alps' significance and popularity for recreation. The area is one of the most popular in the State for bushwalking, and many established walking routes, including portions of the Alpine Walking Track, pass through State forest. The Council believes that it is necessary to pay particular attention to the environs of the Track in order to maintain its recreational amenity (see chapter O, Recreation).

The extensive road network throughout State forest is of particular value for motorised recreation, and many of the other outdoor activities depend on motor vehicles. Council maintains that a system of linked roads, mainly of four-wheel-drive standard, should continue to be available for public use.

Deer-hunting, using guns or bows and either with or without hounds, is a permitted use within State forest and interest in this activity is increasing. The wetter valleys and mountain forests of the Alps are important breeding areas for Sambar deer, and the adjoining open stringybark and gum forests provide hunting grounds.

Other popular recreational pursuits include horse-riding, nature study, and fossicking and prospecting, while cross-country skiing is a popular activity in winter. Many streams in the Alps provide a recreational focus, particularly for activities such as angling, canoeing, swimming, and picnicking.

Principles for Forest Management

The Council has formulated a number of principles to provide guidelines for the management of State forest, and these are listed below. These principles are based on harvesting prescriptions used by the Forests Commission.

Soil conservation and catchment protection

- * Adequate filter strips of at least 40 metres along major streams and 20 metres along minor streams should not be logged and where possible other operations that cause soil disturbance should not take place in the buffer strips. They should, as far as is practicable, be protected from fire.
- * All roads and snig tracks, log landings, and dumps should be designed and constructed to minimise potential erosion. These should be adequately drained, breached, and barred when not required, and revegetation should be encouraged.
- * Intensive utilisation operations on areas of high erosion hazard should be subject to specific

constraints or excluded, especially on slopes generally greater than 30°.

- * Except in some mixed-species forests at lower elevations, logging operations should be restricted during winter and periods of heavy rainfall; consideration should be given to closing unsurfaced logging roads during these periods. Seasonal closure of other roads will continue to be necessary because of excessive damage, erosion, or cost of maintenance, or because of extreme fire hazard.
- * Fuel dumps and logging camps should not be sited immediately adjacent to streams; adequate provision should be made for the disposal of wastes from these sites.
- * Plans for forest roading and harvesting operations should be discussed between the Forests Commission and the Soil Conservation Authority prior to implementation, so that the two organisations can achieve the aims outlined in the above principles.

Recreation and aesthetics

- * Special consideration should be given to road location, size and shape of logging coupes, and other activities carried out in the forest in areas of high landscape value.
- * Specific prescriptions should be applied to logging and other activities involving disturbance to the natural environment near major roads and walking tracks. The Council believes that special prescriptions should apply to the Alpine Walking Track (see chapter O, Recreation).
- * All refuse associated with logging, mining, or quarrying operations (such as tyres, drums, and disused huts) should be removed at the end of the operations.
- * Activities involving disturbance to the natural environment should not occur in buffer areas around popular recreation sites and beauty spots.
- * The managing authority should consult with those interested in deer-hunting and the Division of Fisheries and Wildlife in order to take into account the requirements of deer in State forest.

Nature conservation

- * Significant vegetation communities (such as heathlands and wetlands) and colonies of rare or endangered plants and animals should be protected. Management plans should include details as to how they might best be protected, following consultation with specialist groups such as the Division of Fisheries and Wildlife or the National Herbarium. Some species or communities may require long-term monitoring in order to assess their habitat requirements and the most appropriate methods of management to ensure their survival. The managing authority may, in some cases, need to:

- create and manage buffer zones of adequate size
- erect protective fencing
- provide additional weed and vermin control
- manipulate fire regimes to maintain or enhance the viability of certain species
- collect and store seed for use in planting and re-establishment programs

It may be appropriate for the management authority to involve local field naturalist groups or other interested parties in some of these management operations.

- * Protection strips along streams and watercourses in logging coupes should be linked to other areas in which timber harvesting does not occur, in order to provide wildlife corridors.
- * Some mature and veteran trees in logging areas should be retained for fauna habitat.
- * All logged areas should be regenerated with forest tree species native to the area.

- * Aerially applied pesticides and fertilisers should be used with caution; no compounds that may significantly affect native animals should be used; any compounds should be carefully applied so as to avoid damage to retained native vegetation.

Historic sites

- * Sites of historical significance or interest (such as cattlemen's huts and relics of mining, logging, or early settlement) should be identified, and the sites and their environs should be protected by special prescriptions.
- * When historical sites are identified, the desirability or otherwise of providing or upgrading vehicular access to each one should be considered when logging roads are being designed.

Recommendation

- II** That the areas shown on map A be used in accordance with the principles outlined above to:
- (a) supply water and protect catchments and streams
 - (b) produce hardwood timber
 - (c) conserve native plants and animals, and provide opportunities for the development of wildlife conservation techniques
 - (d) provide opportunities for open-space recreation (including hunting) and education
 - (e) produce honey, forage, gravel, sand, and other forest produce
 - (f) protect the values in the areas described in the following four sections (Recreation and landscape; Nature conservation; Historic sites; and Natural features and streams) by the implementation of management prescriptions
- and that they become State forest.

(See also Wilderness SI *A10, B13*, Rivers and Streams SI *A1, A3, A12, B6, B7, B21, B22, C1—5, C7*).

Recreation and landscape

The areas described below are considered by the Council to contain outstanding scenic qualities and recreational values that warrant protection. In accordance with (f) above, special consideration should therefore be given to road location, and size and shape of logging coupes, to protect sensitive landscape and recreational values. Other activities carried out in these areas will need to be carefully planned. Buffer zones around popular recreation sites and beauty spots should be excluded from activities involving disturbance to the natural environment.

- In the Thorn Range, Stanleys Name Spur forms the divide between the King and Howqua Rivers. It affords magnificent views of the surrounding peaks such as Mount Magdala, Mount Lovick, and The Bluff as well as the upper Howqua and King River catchments. Two-wheel drive roads to Stanleys Name Gap or along the Howqua River make the area popular as an access point for the northern end of the Wonnangatta—Moroka National Park and the Alpine Walking Track. Extensive views of the area are also obtained from Mount Buller and Mount Stirling to the west. An attractive waterfall occurs on Bindaree Creek.
- High ridges form a natural amphitheatre surrounding the upper reaches of the North Jamieson River and offer some of the most spectacular scenery in the western portion of the Alps. Prominent peaks, including The Governor, The Bluff, King Billies, Mount Clear, and Mount McDonald, all provide magnificent views of those upper reaches and of the surrounding Alps. They are very popular destinations for bushwalkers and the area around The Bluff is becoming increasingly popular for ski-touring during winter. The road that follows the river provides access to a number of bushwalking routes leading to the surrounding peaks as well as for activities such as fishing, canoeing, and camping along the river.

- Doolans Plain forms a part of the broad plateau with steep escarpments falling towards the Moroka River and facing Snowy Bluff. Many bushwalkers regard Snowy Bluff highly because of its remote and challenging conditions, and one popular walking route to The Bluff starts at Doolans Plain. A two-wheel-drive road across the Plain provides access to the area around one of the park's outstanding features - Neilson Crag. This and several other attractive subalpine plains surrounded by subalpine woodland on the plateau would provide opportunities for picnicking and car-based camping. They all have high potential for cross country skiing.
- Moroka River headwaters area forms a basin containing alpine ash and mixed-species forests and attractive candlebark woodlands, and is overlooked from high points in the Wonnangatta—Moroka National Park and from other areas that the Council has recommended be added to the park system (see A9 and A11). The main access road to the south-eastern section of the park passes through here. It provides access to camping areas along the Moroka River and to peaks such as The Pinnacles that offer spectacular views of the Wonnangatta River valley and of surrounding areas. A number of other roads also provide for both four- and two-wheel-drive touring.
- The headwaters of the Wongungarra River form a deeply dissected basin - complementing that in the Dargo River headwaters. The basin is overlooked from the Alpine Walking Track between Mount St Bernard, The Twins, and Mount Murray and from the popular four-wheel-drive track along the Blue Rag Range (both are included in proposed additions to the park system - see A13 and A14), as well as from the Dargo High Plains road where it traverses the narrow watershed between the Dargo and Wongungarra Rivers. The Council recognises the very special values associated with this area, including the timber located within it. In planning the utilisation of the resources available to the industry, consideration should be given to deferring, for as long as possible, the harvesting of this area.
- West Kiewa valley supplies the focus of outstanding views obtained from major vantage points both within and outside the Bogong National Park, including Mounts Feathertop, Fainter, and Niggerhead and The Razorback that forms the valley's western boundary. The Kiewa River and its environs provide excellent opportunities for fishing, camping, and other recreational activities.
- Mountain Creek catchment similarly offers excellent views from Mount Bogong and the northern edge of the Hooker Plateau. Similar views towards Mount Emu and the Eskdale Spur are gained from the Staircase and Eskdale Spur tracks, which are popular bushwalking routes to the summit of Mount Bogong. Attractive fern gullies occur along Mountain Creek and these should also be protected.
- The Big River forms the eastern boundary of the Bogong National Park, but the eastern portion of the catchment (which is outside the park) is currently being logged for alpine ash and mixed-species timber. The divide separating this valley from the Mount Wills Creek catchment to the north is the route of the Alpine Walking Track between the Bogong High Plains and Mount Wills. This section of the Track and the portion of it within the Bogong National Park between Falls Creek and Cleve Cole Memorial Hut are popular for bushwalking and cross-country skiing, and they afford extensive views of the catchment here. The area is also clearly visible from major vantage points within the Bogong National Park, such as Mount Nelse and Timmins Lookout. Other features include the closed forests of southern sassafras in some of the wetter gullies, woodlands of mountain swamp gum along the river flats, and the environs of the river and its tributaries, which are popular for fishing and camping.
- The Mount Misery area includes the western extremity of the Davies Plain Ridge, which extends into the Cobberas—Tingaringy National Park and the Murray River headwaters. It contains attractive snow gum woodlands along the main ridge, with frequent outcrops of

metamorphic bedrock south of Mount Misery. Open grassy flats along Dead Horse Creek provide an interesting contrast to surrounding forests. They contain the derelict Long Plain Hut and are covered with white-flowering heaths (*Epacris microphylla* and *Leucopogon suaveolens*). These flats have potential for development as a camping site. Davies Plain Ridge forms a bushwalking route leading into remote and relatively inaccessible country, and has potential for cross-country skiing. It affords views into the rugged Cobberas area and back to the Kosciusko snowfields. The eastern section of this area lies within the Limestone Creek goldfield, and alluvial gold has been found in Dead Horse Creek.

- Other scenic features requiring special protection include sensitive components of distinctive landscapes seen from important viewing points such as Mounts Sarah, Wills, Sassafras, Gibbo, and Pinnibar and Davies Plain Ridge.

Nature conservation

A number of rare or restricted plants and animals occur throughout State forest and these should be protected in accordance with recommendation (f) above and the principles previously outlined. In areas where protection of wildlife and wildlife habitat is a major consideration, management prescriptions should be prepared in consultation with the Fisheries and Wildlife Division.

- The smoky mouse (*Pseudomys fumeus*) is an uncommon species with a wide but disjunct distribution. It is endemic to Victoria and occurs in a number of localities in the Alpine area, several of which are in State forest, namely at Galbraith Saddle in the Tea Tree Range, the North Jamieson River area, the headwaters of the Barkly River, and around Mount Lookout near Aberfeldy. These localities are usually situated on dry slopes having stony skeletal soils and a sparse to mid-dense understorey of sclerophyllous shrubs capable of producing food throughout the year. The animal has adapted to this understorey vegetation and to a frequent fire regime. Management of these areas will therefore need to be directed towards maintaining this fire regime in suitable smoky mouse habitat.
- The spotted tree frog (*Litoria maculata*), possibly Victoria's rarest amphibian, has been recorded recently at the confluence of Lightning and Snowy Creeks, south of Mitta Mitta township. The biology of this animal is virtually unknown, particularly the extent to which it uses the forests surrounding its immediate aquatic habitat. Several other rare species of frogs are recorded around the Upper Goulburn River and its tributaries. Further research is necessary to determine suitable management practices for these species. However, for the present, disturbance of the area should be kept to a minimum.
- Populations of two rare species of anchor plants (*Discaria pubescens* and *D. nitida*), the rare dense leek orchid (*Prasophyllum morganii*), and stands of Omeo gum (*Eucalyptus neglecta*) occur along the banks of the Victoria River and Spring Creek near Cobungra. Very little is known about the biology of the two species of anchor plants in particular and, until further research is carried out, there should be no increase in the number of cattle grazing the adjoining public land. Streambank erosion is also resulting in the loss of valuable habitat for these rare plants and every effort should be made to maintain, and where possible enhance, a protective vegetation cover adjacent to these streams.
- The following vegetation communities and particular species should be protected at the localities mentioned: *Goodenia grandiflora* var. *macmillanii* and *G. heterophylla* at Macalister River south of Burgoyne's Gap; *Boronia citriodora* near S.O.B. spur; *Tetratheca* sp. aff. *procumbens* near Moroka Hut; *Astrotricha parvifolia*, *Hibbertia sericea*, and *Prostanthera rhombea* in the Valencia Creek catchment near 'The Crossover'; *Eucalyptus neglecta* in the headwaters of the Buckland River and near Mount Delusion; *Acacia dawsonii* and *Calochilus grandiflorus* at Mount Misery near Mitta Mitta township; *Caladenia caerulea*, *C. pattersonii*, *Calochilus imberbis*, and *C. paludosus*

at Mount Timbertop; fern gullies in the headwaters of Trappers Creek and Snowy Creek (West Branch); herbfield and adjacent alpine ash environs at Mount Delusion; *Thesium australe* at Gillingall; *Helichrysum adnatum* and *Pimelea dichotoma* at Marble Creek near Bindi; *Acacia dallachiana* at Dinner Creek and in the headwaters of Zulu Creek; *Deyeuxia microseta* at upper Frying Pan Creek, *D. parviseta* at upper Blue Shirt Creek, *Leucopogon pilifer* in the headwaters of the Timbarra River and Blue Shirt Creek, and *Pterostylis aestiva* near Ensay; *Sticherus flabellatus* in the headwaters of Pheasant Creek and *Bertya findlayi* at Surveyors Creek; gullies containing montane closed forest beside the main Bindi—Mount Nugong and Ensay North—Mount Nugong roads; and the vegetation associated with Mossbed Lake and numerous subalpine plains such as Joe, Mundy, Pig, Paddy, and Blue Shirt Plains.

Historic sites

The following sites of historic interest should be protected in accordance with recommendation (f) above and the principles previously outlined.

- Mining relics belonging to the Crown and sites associated with early mining in areas such as the environs of the Upper Goulburn, Howqua, and Crooked Rivers, the old township of Brookville, and the Haunted Stream, Mount Baldhead, Sunnyside, Lightning Creek and Nine Mile Creek, Saltpetre Creek, Pheasant Creek, Zulu Creek, and Surveyors Creek. Such relics include timber tramlines such as those at Baker Creek, Plain Creek, and Mount Baldhead; old sawmill sites at Mount Baldhead and in the vicinity of Mount Wills; the Cinnabar mine site; the environs of McMillans, McEvoys, Dungeys, Moroka Pack, Knocker, and Dargo—Omeo mining tracks; features including the Lightning Creek—Mitta Mitta, Trappers Creek, Wombat Creek, and Jirnkee Water Races; various cattlemen's huts and their environs; the early settlement site at Glenmore; and relics of early logging near Mount Nugong.
- Other features include mining and machinery sites at the heads of Gills Creek and Hewars Creek, the route of the old Omeo—Glen Wills coach road, the site of Merry Mack township, the sites of the Gwendoline and Hopeful tin mines and batteries; and several other battery sites, including at least one tree stump battery site.

Natural features along streams

The Council believes that all streams in State forest should be protected in accordance with (f) above and the principles previously outlined.

However, the Council has referred to a number of streams where particular values and attributes have been identified. These streams, which are shown on map A, have significant scenic, recreation, nature conservation, or historical values. Council believes that corridors along these streams should be specifically protected and that management should be directed towards the maintenance of their special natural features. Additional recommendations relating to these corridors are set out in chapter M, Rivers and Streams.

- One of the area's most scenic drives follows the Wonnangatta River between Waterford and Eaglevale. Numerous popular camping and picnic spots are located adjacent to streams in the area, particularly along the Jamieson, King, Wonnangatta, and Gibbo Rivers.
- A number of streams - such as the Barkly, Delatite, Wonnangatta, Crooked, and Dargo Rivers - are renowned for their white-water canoeing, while a number of others - including the Goulburn, Buffalo, King, Buckland, and Gibbo Rivers - provide opportunities for freshwater angling. Furthermore, some of the area's most important historical features are located around streams. For example, early gold-mining relics occur on the Lightning Creek, Haunted Stream, and Crooked River.

- Deep incision of many of the streams has resulted in the exposure and/or creation of interesting geological features. Deep gorges such as on the Timbarra River and Mitchell Creek and waterfalls on a number of streams associated with bands of resistant strata are examples.
- Often the river valleys contain some of the more significant and attractive vegetation. Examples include the stands of manna gum along Mount Selwyn Creek, and the colourful wildflower displays along Wheeler Creek and Dead Horse Creek.

J. WILDLIFE

Wildlife conservation - a land use in its own right - cannot always be separated from other land uses such as timber production, forest grazing, water production, and recreation. These types of uses often require large areas of land, much of which can be managed to retain its value as wildlife habitat. In the long term, wildlife conservation depends upon conservation of habitat covering areas that are sufficiently large and diverse to support genetically viable populations of species.

Animal habitats are generally described in terms of vegetation communities, although other characteristics - such as vegetation structure, ground cover, water depth, salinity, rock outcrops, and hollow trees - are also important. In the Alpine area, the vegetation communities adopted for habitat types range from alpine herbfields, grasslands, heathlands, and mosslands to snow gum woodlands and montane, foothill, and riverine forests. Aquatic habitats, particularly those associated with mountain streams and rivers, are a feature of the area; however, there are few lakes and swamplands. Rocky Valley Dam and the huge Dartmouth Lake are the only large artificial lakes in the area.

The vegetation map of the Alpine area illustrates the diversity of habitats and shows that no single community covers an extensive uninterrupted area, but rather that each community or habitat tends to be repeated over a wide area as parts of a complex mosaic. This pattern is largely determined by the diversity of climate, soils, physiography, and aspect.

The distribution of an animal species depends on its behavioural and physical requirements for food, shelter, and breeding sites. Many species can utilise a range of habitats and consequently are widely distributed throughout the area. Some occupy their environmental range as residents. Others, such as certain bird species, are not year-round residents but migrate in and out of the area at regular intervals. Other birds visit the area infrequently in nomadic movements, while yet other species move between high and low altitudes with the seasons. It is obvious therefore that the conservation of fauna presents many difficulties, even for those relatively few species whose life history and behaviour is understood.

Council considers that the Fisheries and Wildlife Division has an important role in the management of the entire area and, working in close co-operation with managing authorities in the formulation of management plans, the Division should ensure that provision is made for the conservation of wildlife. This is especially important for animals that are restricted to a particular habitat for feeding and breeding.

A number of species are rare or have a restricted distribution in the Alpine area. They include the mountain pygmy possum, smoky mouse, brush-tailed wallaby, and the spotted tree frog. These and other significant species have been referred to in more detail in the recommendations for additions to the park system and State Forest.

The activities of man in modifying the natural environment have resulted in changes in the distribution and abundance of many species and some species have become extinct. These effects have depended upon the nature and severity of the modification, the particular habitat requirements of the species, and its adaptability to change.

The precise effects on many species, however, are not well documented. The Council has recommended elsewhere in this report that principles relating to the conservation of fauna be adopted for land uses that could significantly affect wildlife values. The Council considers that further research into the ecological requirements of species is necessary to determine the effects

of various land management practices, particularly those where management is oriented towards more competitive uses such as timber production, forest grazing, and intensive recreation. The results of such research may mean the modification of management practices in some areas if wildlife values are to be adequately considered.

Recommendations

- J1** That the authorities managing public land co-operate with the Fisheries and Wildlife Division in the development of research and management policies for the conservation of wildlife values.
- J2** That the Fisheries and Wildlife Division prepare management plans in consultation with the managing authority to ensure that wildlife values are fully considered when management policies and prescriptions are formulated and implemented.

K.FLORA AND FAUNA RESERVE

The reserve indicated on map A is significant because it provides habitat for populations of native fauna and contains examples of native vegetation with considerable floristic value in a natural or relatively natural state.

Recommendation

K1 That the flora and fauna reserve shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

Morass Creek

That the area of 22 ha adjoining allotments 4C and 15 of section 11, Parish of Hinno—Munjie, indicated on the map be used to conserve native plants and animals.

and that it be permanently reserved under [section 4 of the *Crown Land (Reserves) Act 1978*].

L. BUSHLAND RESERVES

Throughout the predominantly agricultural regions of the study area, a number of blocks of public land carry remnants of native vegetation. The vegetation, particularly the ground flora, has often been modified from the original by grazing and invasion of weeds. The native tree species still remain, however, and these areas provide landscape diversity, particularly where more intensive agriculture is resulting in a gradual reduction in the number of trees on freehold land.

The Council recommended that many of these small remnants of the native vegetation should become bushland reserves. Their major uses are to maintain the character of the countryside and to provide diversity in the landscape. They may also provide some opportunities for passive recreation in relatively natural surroundings, but it is not intended that they be developed for recreation. In some instances the only access is via an unused road covered by an unused-road licence, which should continue subject to the approval of the Department of Crown Lands and Survey. These bushland reserves are generally too small to be of major significance for fauna conservation, although some may be important for migratory birds.

Management should aim at the maintenance of the native flora, particularly the tree species. Low-intensity grazing, limited gravel extraction, and the cutting of small amounts of firewood and an occasional post and pole are not necessarily incompatible with this primary aim, provided they are carefully planned and controlled and do not spoil the appearance of the reserves, particularly as viewed from roads and lookout points. These uses may not be appropriate to all reserves. In some instances, the management authority may have to exclude them, at least temporarily, in order to permit regeneration of tree species.

In all bushland reserves the suppression of fires remains the responsibility of the Forests Commission. Appropriate fire-prevention measures will be carried out where necessary.

Vermin and noxious weeds within bushland reserves will be controlled by and will remain the responsibility of the Department of Crown Lands and Survey.

Recommendation

L1—L8 That the bushland reserves shown on map A continue to be used for the purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

That the areas indicated on the maps and described below be used to:

(a) maintain the local character and quality of the landscape

(b) provide opportunities for passive recreation such as picnicking and walking

that

(c) expansion of any existing facilities or new development be permitted only where this does not conflict with the primary aim

and that they be permanently reserved under [section 4 of the *Crown Land (Reserves) Act 1978*].

L1 12 ha, Parish of Bundara—Munjie

L2 22.3 ha, Camping and watering reserve, Parish of Cobungra

L3 15 ha, Parish of Terllite—Munjie

L4 9.6 ha, Parish of Tongio—Munjie West

L5 9.7 ha, Parish of Chilpin

L6 40.4 Parish of Chilpin

L7 20 ha Parish of Gelantipy West

L8 12.1 ha Parish of Detarka

M. RIVERS AND STREAMS

PUBLIC LAND WATER FRONTAGES

Along a number of rivers and streams in the study area, a strip of public land has been reserved between the water and adjacent public land or alienated land. No public land strip adjoins land alienated before 1881, and some properties have titles that extend to the banks or even incorporate the bed and banks of a stream. Thus some streams and rivers have either no public land water frontage or a discontinuous one. The recommendations that follow do not apply to privately owned frontage.

The locations of public land water frontages are shown on parish plans, which are available to the public from the Central Plan Office in the Department of Crown Lands and Survey. These frontages may have a surveyed boundary of short irregular lines or be of specified width (varying in particular instances from 20 m to 60 m) along each bank. In some cases this land has been reserved for public purposes under the *Land Act 1958* and in others it is unreserved. The land usually comes under the control of the Department of Crown Lands and Survey, while in all cases the State Rivers and Water Supply Commission controls the water.

Each of these authorities may delegate some of its responsibility to local bodies. The Department of Crown Lands and Survey may form committees of management for public purposes, while river improvement or drainage trusts under the guidance of the State Rivers and Water Supply Commission may be formed in certain areas. The Forests Commission controls forest produce on public land water frontages, except where a committee of management has been formed. Public land frontages alongside artificial water storages and aqueducts are often controlled by the water supply authority that controls the water.

Adjoining occupiers often hold public land water frontages under licence for grazing purposes. Special conditions may apply to the licences - for example, to permit cultivation. The licence system has advantages in that licence-holders are required to control noxious weeds and vermin on the frontage. This control would be extremely difficult and expensive to achieve in any other way. When a frontage is held under licence, boundary fences are normally extended to the water's edge, and legal public use is limited to through travel. The licensee often discourages public access because of an understandable fear of damage, intentional or otherwise, to his property. Vandalism and littering are problems in many areas open to the public, and firm action by management authorities is often required. Control is obtained through the normal exercise of fire, litter, firearms, and other regulations, although it is evident that more effective policing is required, particularly at weekends. Education of the public to understand the rural environment is perhaps the best solution in the long run.

These licensed river frontages are, however, public land; they are often valuable for low intensity forms of recreation such as walking, fishing, and observing nature, and provide access to extensive lengths of streams and lake shores. As mentioned above, members of the public are legally entitled to walk through a licensed frontage. Licences for previously unlicensed public water frontages, now being issued by the Department of Crown Lands and Survey, require the licensee to erect a stile or gate in any fence erected across the frontage, where appropriate to facilitate public access.

This condition has not been applied to the majority of existing licences and Council believes that in some situations, for example along popular fishing streams, the provision of stiles would facilitate pedestrian access along public land water frontages and would reduce damage to fences and avoid gates being left open.

Public land frontages that are unlicensed have no restriction on public access, although use of vehicles is controlled by the *Land Conservation (Vehicle Control) Act 1973*. They are, however, normally fenced off from adjacent freehold land. The landholder has no obligation to provide access through freehold land to the frontage, and nothing in these recommendations suggests that this situation should change.

The maintenance of a vegetation cover along stream banks is important in preventing soil erosion and in preserving the local landscape. Public land water frontages are sometimes valuable for nature conservation as well, as they may provide corridors for movement of nomadic and migratory species, or support native plants and animals that are no longer found in surrounding areas. In too many cases, however, the provisions of the relevant *Acts* have not been enforced effectively, and such public land water frontages have been progressively cleared of native vegetation.

Public land water frontage reserves

Water frontage reserves are defined for the purpose of these recommendations as being all existing water frontages and other reserves or unreserved public land adjoining streams except for those areas, not currently reserved as water frontage, that have been set aside elsewhere in these recommendations whether as part of a large reserve (such as portion of the park system or State forest) or for some special purpose (such as a flora, recreation or streamside reserve).

Recommendation

~~M1— That public land water frontage reserves continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979~~

[Note: Recommendations for public land water frontage reserves have been replaced by the 1991 Rivers & Streams Special Investigation recommendations, as follows]

M1A That public land water frontages

(a) be used to

- (i) conserve native flora and fauna as part of an integrated system of habitat networks across the State
- (ii) maintain or restore indigenous vegetation
- (iii) protect adjoining land from erosion, and provide for flood passage
- (iv) protect the character and scenic quality of the local landscape
- (v) provide protection for cultural heritage features and associations
- (vi) provide access for recreational activities and levels of use consistent with (i)–(v) above (see Note 1)
- (vii) where this does not conflict with (i)–(vi) above, allow access for water, and for grazing of stock by adjoining landholders under licence

that

- (b) where frontage reserves are currently licensed for grazing or other purposes, and where stream-bank or frontage vegetation is degraded, frontage vegetation is not regenerating, or stream banks are eroding, consultative groups be established by the public land managers, with waterway management, local government, and licensee representatives, as follows:

- (i) at a State level, to develop guidelines and programs for restoration of frontages, including re-establishing or regenerating indigenous vegetation

- (ii) at a regional level, to develop strategies for managing frontage reserves while vegetation is being restored
- (iii) at a local level, to set priorities and a time-table for frontage restoration and maintenance

and these guidelines, programs and strategies be implemented according to the priorities and time-table so determined (see Notes 2--6)

that

- (c) (i) where habitat and landscape are proposed to be restored, particularly in cleared or degraded areas, indigenous trees, shrubs, and ground species be planted
- (ii) if appropriate, suitable areas for more intensive recreational use be identified and facilities established
- (iii) where land exchanges are proposed that involve frontage land that is no longer adjacent to rivers, efforts be made to prevent loss of any nature conservation or other values of this land from the public land estate (see Note 5)
- (iv) a method be developed that will allow public land frontages to be readily identified, and such frontages be so marked where appropriate
- (d) (i) where a licence has been issued for a public land water frontage as in (a) (vii) above, recreation use by the public for activities such as walking, nature observation, or fishing be permitted while motorised forms of recreation not be permitted
- (ii) licensees be required to provide stiles in any fences erected across their licence area if requested to do so by the land manager (see Notes 7 and 8)
- (iii) no new cultivation for agriculture be permitted, and areas currently cultivated be reviewed by the land manager as part of a systematic assessment of river restoration priorities, with a view to phasing out inappropriate cultivation
- (iv) in particular cases, licensees be required to fence off and exclude stock temporarily from some parts of the licence area where, in the opinion of the land manager, special measures are necessary to protect water supplies, to rehabilitate areas that are eroding or salt-affected, to permit regeneration of native plants that have particular value for nature conservation, or to protect cultural, recreational, and scenic values that are sensitive to the impacts of grazing (see Note 8)
- (e) the Department of Conservation and Environment be consulted prior to the proclamation of roads, the construction of roadways, or the creation of buildings on public land water frontages

and that public land water frontages be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and managed by the Department of Conservation and Environment (or present manager), in consultation with the relevant waterway authority (see Note 9).

Stream Beds and Banks

M1B That stream beds and banks, subject to other recommendations and guidelines in this report and statutory requirements

- (a) be used to
 - (i) conserve or restore habitat for native flora and fauna
 - (ii) provide for appropriate recreational activities and levels of use
 - (iii) provide for flood passage and drainage requirements of adjacent land
 - (iv) where necessary, provide for the passage of artificial flows of water stored within the catchment or transferred from other catchments
- (b) be maintained in a stable condition using environmentally sound techniques

(c) where this does not conflict with (a) and (b) above, provide a source of sand and gravel and that stream beds and banks be securely reserved and managed by the relevant waterway authority or the Rural Water Commission (or present manager), in consultation with the Department of Conservation and Environment.

M1C That

- (a) the interrelated nature of the values and uses of river frontage, beds and banks be recognised in management planning and implementation
- (b) initiatives be developed and implemented to remove economic, social, administrative and technical factors that lead to losses of river bed, bank, and frontage values, or to difficulties in achieving effective and co-ordinated restoration and maintenance programs
- (c) programs for stream bed, bank and frontage stability be carried out in accordance with [Rivers & Streams] Recommendation F9.

Notes:

1. [Rivers & Streams] recommendation F1(h) provides that a code of behaviour for recreational users of river frontages be developed and promoted.
2. Council recognises that a number of bodies currently exist which undertake, or are capable of undertaking the functional requirements at State, regional or local levels. In this context 'regional' would cover a single river basin or a number of adjacent basins, and 'local' an area within a river basin, such as individual drainage catchments or a particular river reach.
3. It is envisaged that for community consultation, Catchment Co-ordination Groups where they exist, or similar groups where they do not, could carry out or facilitate stages M1A(b)(ii) and (b)(iii) above, and that the Standing Committee on Rivers and Catchments or equivalent organisation could carry out or facilitate M1A(b)(i). When determining priorities, restoration or maintenance programs which lead to direct site improvement are to be given precedence.
4. Vegetation re-establishment or regeneration may require the temporary or permanent removal of stock from some frontage areas.
5. These areas could include values such as remnant vegetation, wetland habitat, opportunities for recreational use or contain features of cultural significance, such as scarred trees.
6. Identification of priorities in M1A(b)(iii) should take into account the guidelines set out above.
7. The choice of a suitable design for stiles should involve representatives of the frontage user groups such as the Victorian Farmers Federation and peak recreation groups.
8. These are provisions in existing legislation, regulations, or licences.
9. It is Council's intention that these areas remain within the public land estate and be securely reserved. The *Crown Land (Reserves) Act 1978* requires that areas to be reserved be surveyed, a process which is expensive and protracted. If alternative methods become available which will achieve Council's intention of secure reservation, for example using a record plan, then these could be used, provided that the reservation is otherwise comparable to permanent reservation under the *Crown Land (Reserves) Act 1978*.

[Rivers & Streams recommendations approved by Order in Council 7/7/92]

RIVER IMPROVEMENT

River Improvement Trusts are constituted under the *River Improvement Act 1958* for sections of the Kiewa and Ovens Rivers. Improvement works in rivers are designed to maintain the carrying capacity (for water supply or drainage purposes), to protect adjoining land from flooding and erosion, to maintain the security of structures such as bridges on the flood plain, and to prevent siltation of the lower reaches by control of upstream erosion.

The works carried out include:

- * erosion-preventing works on the banks - for example, planting of trees, the use of various materials for bank protection and the felling of trees that may be undermined (to prevent loss of bank material)
- * clearance of waterways, by removal of snags within the bed of the channel, to maintain or improve discharge capacity.

Such work is often made necessary by the changes that man has made to land use in the river catchments and on the flood plain. The following changes have generally reduced the value of the rivers for nature conservation:

- * Clearing of vegetation has increased run-off and reduced time of concentration of storm flows. The situation is sometimes aggravated by overgrazing and unwise cultivation in the catchment and along the river banks, accelerating soil erosion and transport of sediment to the stream. Increases in urban development - with disposal of storm water directly to streams - have also altered flow regimes.
- * Regulation of stream flow by water storages and use of streams to transport water for irrigation and domestic use also change the natural flow regime.
- * The construction of barriers such as road embankments and bridges, through which the river must pass, has often resulted in substantial modification of the bed and banks. Present legislation requires that all proposed replacement or new structures across waterways, flood plains, and depressions are referred to the State Rivers and Water Supply Commission and to the River Improvement Trust, where one is involved, for approval.

River improvement authorities, in attempting to cope with the consequences of these changes, carry out works that sometimes adversely affect landscape and nature conservation values, but sometimes ultimately enhance these values.

Removal of snags from the centres of wide streams damages fish habitat, but the tethering of these snags against the banks may provide alternative fish habitat, as well as protecting the banks from erosion. Realigning and regrading of eroding beds and banks often removes holes and back waters of value as fish habitat and for angling and swimming in a particular location. On the other hand, these operations, in preventing erosion, reduce transportation of silt.

River improvement works are sometimes aesthetically displeasing, particularly during construction and in the early stages after completion, but their ultimate aim is to prevent erosion and to allow re-establishment of vegetative cover along the stream banks.

River improvement trusts are required to act within the District as defined under the *River Improvement Act 1958*. Where such Districts encompass only the stream environs, or part only of the stream, they may be able to treat only the symptoms of problems, as the causes may lie in the catchments beyond the area of their responsibility. Works that they carry out are often limited by lack of funds. There is thus little opportunity in the design and implementation of works for consideration of their likely impact on areas outside the Trust's districts. However, the Standing Consultative Committee on River Improvement, an advisory committee formed by the State Rivers and Water Supply Commission, in examining a Trust's works program, has regard for the effects of such works on the upstream and downstream regime.

The flow regimes of some rivers must of course be modified and flood plains used for agriculture, but it is appropriate to look at the principles of the natural system in seeking solutions to the problems that thus arise rather than to move further from those principles. The

Council believes that the following principles should apply in determining the need for and design of river improvement works.

- * Where problems in river management arise, the whole catchment should be considered in seeking a solution.
- * Where flood control in a catchment is necessary, planning strategies should include consideration of ways of reducing run-off from the catchment.
- * Total flood control is seldom practicable. In the case of minor flooding it may often be more appropriate to take action to minimise the consequences of flooding rather than attempt to prevent it.
- * An adequate vegetation cover should be maintained along stream frontages to stabilise the banks and to reduce the velocity of flood-waters as they leave and re-enter the stream course.
- * Structures such as road embankments and bridges on flood plains are a variation of the natural situation, and consideration should be given in their design to their effect on the flood pattern (see note 3).
- * Works carried out within the bed and banks of a stream to change the alignment, gradient, or cross-section should be kept to the minimum necessary.
- * Consideration should be given in the design of works to maintaining or enhancing landscape values and the value of the stream for recreation and as a habitat for wildlife.

Recommendation

[M2 superseded by Rivers and Streams SI E2, E3 (see M1B and M1C above), F9A and F9B.]

~~M2 That the assessment of the need for, and the planning and implementation of, any works involving changes to the beds and banks of streams be based on the principles set out above.~~

~~Notes:~~

~~1. The State Rivers and Water Supply Commission has formed a Standing Consultative Committee to advise the Commission on river works. This committee comprises representatives from the following:~~

State Rivers and Water Supply Commission	Fisheries and Wildlife Division
Ministry for Conservation	Forests Commission, Victoria
Conservation Council of Victoria	Department of Crown Lands and Survey
Soil Conservation Authority	Association of Victorian River Improvement Trusts

~~The Committee is convened by a representative of the State Rivers and Water Supply Commission.~~

~~2. The State Rivers and Water Supply Commission, with the assistance of the Standing Consultative Committee, has prepared a document, 'Guidelines for River Management, 1979', that expands on the principles set out above. These guidelines require plans for all works (other than those of a minor nature), together with an assessment of their environmental consequences, to be submitted to all relevant agencies for consideration prior to the commencement of works. The aim of the guidelines is to ensure that an optimum balance is achieved between structural improvements on the one hand, and the maintenance or enhancement of the stream's landscape values and its value as a habitat for wildlife and for recreation on the other.~~

~~3. Information relating to the works that may be undertaken on flood plains is included in the report 'Flood Plain Management in Victoria', produced by the Victorian Water Resources Council.~~

Streamside Reserves

Throughout the Alpine area, small blocks of public land adjoin streams but are not included in the public-land water frontage. Two of these blocks, one beside the Alpine Road adjacent to the Victoria River, the other adjacent to the Kiewa River north of Mount Beauty, have been designated as streamside reserves.

The management authority may provide facilities for activities such as camping on streamside reserves in areas where conflict with nature conservation values are minimal. Every effort should be made to encourage regeneration or restoration of the native vegetation.

Note: Streamside reserves are separate and distinct from the public-land water frontages described previously in this chapter.

Recommendation

M5—M6 That the streamside reserves shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

That the areas shown on the maps and described be used to:

- (a) provide passive recreation such as picnicking, walking, angling, and, where permitted by the managing authority, camping
- (b) conserve flora and fauna
- (c) provide grazing, at the discretion of the management authority, if this use does not conflict with the maintenance of the water quality of the adjacent streams or with (a) and (b)

and that they be reserved under [section 4 of the *Crown Land (Reserves) Act 1978*]

(See also Rivers and Streams SI *E1—3*)

M5 Victoria River

4.1 ha, Parish of Bundara—Munjie [Revoked, Order in Council 29/2/2000]

M6 Kiewa River

7.6 ha, bordering the Kiewa River and Mountain Creek, Parish of Wermatong

Natural Features Zone

Many rivers and streams and their environs in the Alpine area have particularly significant scenic, nature conservation, historical, and recreational features. A number of these outstanding features have already been included in the Wonnangatta—Moroka, Bogong, Snowy, and Cobberas—Tingaringy National Parks and other additions to the alpine park system. Others, however are located partly in land proposed as State forest. While it is not practical to create parks along each of the streams in the study area with significant values, Council considers the importance of these streamside areas warrants the protection of their special natural features. Council also believes there is further scope for the sympathetic development of recreational facilities and interpretative aids that would increase people's enjoyment and understanding of the river systems here. The areas requiring protection are shown on map A and are described in more detail in chapter I, State Forest.

The hatching on the map should not be taken as delineating the exact boundaries to these areas. It is intended that the zones should include both the visual corridor (comprising those parts of the valley that can be seen from the stream) and the environmental sequence from the relatively dry foothill country, through the species-rich intermediate zone, to the riverine section. In many areas the visual corridor will include this sequence and as such will determine the width of the area to be protected. In other places, however, not all of the environmental sequence will be visible from the stream and in these cases the area will extend beyond the visual corridor. While these corridors will vary in width according to local circumstances and may not necessarily extend from ridge to ridge, it is expected that in most cases the boundary will be not less than 100 metres and not greater than 300 metres from the bank on either side of the stream. These zones should be delineated on the appropriate management plans.

(New text from Order in Council 8/1/1985 follows)

In the lower reaches of some of the rivers where generally low stream-bed gradients have permitted the development of broad flood plains, the zones would be relatively wide. this is the case with most of the natural features zones recommended in the Gippsland Lakes Hinterland Area, and for streams with their lower reaches in the Alpine area. In the mountainous stream segments towards the upper levels of their catchments, as is common in the Alpine area, the width of the natural features zone would be limited by rapid transition through the environmental sequence, a less obvious visual corridor and impedance of visibility owing to dense vegetation. The narrower zones should extend to include areas of importance for the conservation of significant plant species and the animal habitats that are associated with the streams, strong elements of the visual corridor (such as the short, steep ends of spurs and rocky outcrops), alluvial plains, areas of historical importance, and sites either used for or with potential for recreational activities.

The topography through which a stream passes generally gives a good guide to which a stream passes generally gives a good guide to the width of the natural features zone. Streams have been divided into five segments, based, in general, on the gradient of the stream bed. These are the steep headwaters, the mountainous, the steeply-dissected hills, the foothills and the lower valley segments. The zone indicated on the Wongungarra River for instance, incorporates all five segments.

The lowest stream segment found in the Alpine area has a broad alluvial plain with a winding stream course having a bed gradient less than 0.5%. Density of overstorey vegetation commonly restricts the view from the stream to less than the full width of the alluvial plain. The natural features zone here would have a width of 100 metres from each side of the stream.

The width of the zone would increase where necessary, up to 300 metres to incorporate the visual corridor and the environmental sequence. The visual corridor comprises the adjacent slopes - where these are short - up to the ridge line, and the steeper foot slopes up to the point of inflexion, for the longer side slopes. The zone is also wider where site-specific natural or historical features such as those mentioned above occur, and adjacent to road crossings where camping is a present or potential use. As an example, the Wongungarra River below the base of Wombat Spur is in this river segment.

The foothills stream segment has a continuous alluvial plain with broad sections, particularly at major tributaries. The stream gradient is gentle, ranging from 0.5% to 1%. The visual corridor is strongly expressed on the outside of river bends, as for the lower segment. The natural features zone includes these elements of the visual corridor and a strip on the alluvial plain, incorporating the environmental sequence. The zone has a minimum width of 80 metres and increases up to about 200 metres where necessary to include site specific natural and historical features or

recreation sites. The Dargo River from the Eighteen Mile Creek to Mathesons Flat, for instance, represents this segment.

In the steeply-dissected hill segment, the valleys may comprise a number of small alluvial plains or a continuous plain, flanked by long side slopes or by the short, steep, foot slopes of spurs. The gradient of the stream bed is expected to be between 1% and 2%. To incorporate the environmental sequence extending from the riparian vegetation onto the floodplain, the zone has a minimum width of 60 m from each bank. This width would increase up to some 100 m to include obvious expressions of the visual corridor such as steep foot slopes, which would also incorporate the environmental sequence to the drier slopes, or rock faces adjacent to the stream banks. The zone would also include the other features mentioned above such as recreation areas. The east branch of the King River, for example, has a relatively continuous alluvial plain. In the upper reaches, this would have a minimum natural features zone of 60 m from each bank which would extend to about 100 m where necessary to include adjacent steep slopes and to incorporate areas frequently used for camping.

In the mountainous segment, the alluvial plains are small and discrete, occurring in the wider bends or at major tributaries. The short, steep foot slopes of spurs flank much of this tract and where side slopes fall directly to the stream there is generally a narrow colluvial strip. The gradient of the stream bed is expected to be between 2% and 5%. The natural features zone in this segment generally extends 40 m from each bank to incorporate the environmental sequence on the floodplains or colluvial slopes. The zone would be broader where necessary to include steep, rocky slopes adjacent to the stream and other special features as mentioned above. Both branches of the Humffray River for instance, would have a zone extending 40 m from each bank, but this would be wider to include the flood plain at the confluence of the two branches where some recreational development is possible.

The streams in the headwaters segment usually have no alluvial plains and the beds are rocky and steep - the gradient being generally greater than 5%. Stream flow may be intermittent. Side slopes fall directly to the stream and vegetation may completely enclose the watercourse. The narrow environmental sequence here is incorporated in a zone about 20 m from each side of the watercourse. For the headwaters of the Wongungarra River, for example, this zone width extends down a tributary to its junction with the main stream.

It is not intended that the width of natural features zones delineated under these guidelines would be less than the buffer strips along streams required by forest management prescriptions or delineated by Land Use Determinations for a water supply catchment.

Recommendation

M7 That, for those areas indicated on map A by cross-hatching, primary aims of management be:

- (a) the protection of natural and scenic values
- (b) the provision of recreational facilities and interpretative aids where this does not conflict with (a) above

that

- (c) timber-harvesting and gravel extraction not be permitted
- (d) any new roading be constructed only where essential for the purposes of management, protection, and transport of timber and be designed to minimise effects on scenic and nature conservation values

and that management be the responsibility of the authority managing the adjacent public

land.

N. LAKE RESERVE

Lake Omeo lies in an internal drainage basin apparently formed by block-faulting, the movements damming back a tributary of Morass Creek.

The lake is filled by a few small streams - the main one being Minute Creek - in times of peak rainfall, and in 1975 was filled for the first time in 15 years. Water is lost primarily by evaporation, causing the lake to dry out within a few years unless sufficient rain falls. Proposals to keep the lake filled by diverting water from Morass Creek have never been pursued.

When water levels are suitable, the lake is frequented by waterfowl and is used for aquatic sports such as sailing and speed-boating.

The frontage to the lake, and the lake-bed itself when suitable, is used as a common for grazing stock. The south-eastern perimeter of the reserve is used as an airstrip.

Recommendation

N1 That the lake reserve shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

Lake Omeo

That the area of 758 ha continue to be used according to its capabilities for a waterfowl feeding and resting area, low-intensity grazing, and water-based recreation

that

the south-eastern perimeter of the reserve be available for use as an airstrip

and that it be reserved under [section 4 of the *Crown Land (Reserves) Act 1978*]

and that the grasslands of *Themeda australis* (kangaroo grass) containing two other species of rare plant, namely *Discaria pubescens* and *Polygala japonica*, and occurrences of *Swainsona oroboides*, *Lepidium aschersonii*, and *Vittadinia muelleri* be protected.

O. RECREATION

The term recreation includes the multitude of different activities that people undertake during their leisure time. In fact, the distinguishing characteristic of recreation is not the activity itself so much as the attitude with which it is undertaken - activities undertaken with little or no feeling of compulsion are almost certainly recreation.

Outdoor recreation is of particular interest to Council, as the public land of the study area provides important opportunities for it. Throughout, these recommendations refer to the countless forms of outdoor recreation in a number of ways.

- * Formal recreational activities include all organised sports and other group activities, while activities such as picnicking, fishing, and hiking are grouped as informal.
- * Passive recreation covers situations where the individual obtains recreation through enjoying the sights, sounds, and atmosphere of the surrounding environment while expending little physical effort. Examples are picnicking, nature observation, and strolling.
- * Active recreation covers situations where the individual must expend considerable physical effort to obtain some mastery of physical forces in order to satisfy particular recreational needs. Examples are playing organised sport, bushwalking, and water-skiing.
- * Open-space recreation includes all recreational activities that require spacious outdoor surroundings, whether the activities be active or passive, formal or informal.
- * Intensive recreation involves large numbers of people per unit area.

In view of the predicted increase in demand for outdoor recreation and the high capability of some public land to meet this demand, the Council, in making its recommendations in 1979, suggested that the majority of public land should be available for recreational uses of some sort. Accordingly, it set aside a variety of reserves that provide for a wide range of opportunities. Council could not, however, make recommendations covering in detail all the forms of recreation currently pursued on public land. These include activities such as swimming, bushwalking, rock-climbing, orienteering, canoeing, fishing, hunting, fossicking, picnicking, horse-riding, boating, trail-bike-riding, and pleasure driving. Council believes that activities such as these can be accommodated, without detriment to other values, somewhere on public land. Consequently, Council points out that outdoor recreation in general is an acceptable primary or secondary use of much public land (except reference areas and some water storages and their buffers) and has left details of recreational use to the land managers.

The various recreation activities differ in their requirements for types of land, size of area, and site location. They also differ in their impact on the land or on other activities (including other forms of recreation). Generally, any one activity pursued at a low level of intensity poses little threat to the environment and seldom conflicts with other activities. With increasing intensity, conflicts and problems can arise. There is always the problem of recreation damaging the environment it seeks to use.

Council therefore believes that the land managers should aim at controlling the levels and patterns of recreational use according to the capability of the area to sustain such use without irreversible damage or significant conflict with the primary purposes of the area, while at the same time avoiding unnecessary restrictions on usage. Special care will be required in the location and management of areas zoned for intensive recreation, to prevent environmental damage. Thus, more stringent restrictions can be expected in areas where the vegetation and soils are sensitive to damage (such as those occurring on sandy soils), and where the natural environment or special natural features are being preserved.

Some recreational activities, including camping, bushwalking, and ski-touring, are currently dispersed throughout the Alpine area and are undertaken without extensive development of facilities. Council believes, however, that where intensive recreational use occurs it may be necessary to provide special facilities to cope with larger numbers of people. For example, it will probably be necessary to provide camping facilities in designated areas such as Sheeppark Flat, Wrens Flat, Wellington River, Eaglevale, Harrierville, Anglers Rest, Staleyville, Gibbo River, and Nariel. Picnicking facilities in some of the major tourist areas should also be provided.

Although suggesting that some areas be developed as camp-sites, the Council considers that large areas should remain available for dispersed or bush camping. That is, in these areas users should be allowed to camp where they choose rather than be restricted to camping areas designated by the managing authority.

Recreational fishing is undertaken in many of the waters included in the alpine park system and some have been stocked by the Fisheries and Wildlife Division specifically for this purpose. Council supports the continued use of these waters for angling.

Five particular forms of recreation that may require consideration by the land managers, whether now or in the future, are further discussed below.

Bushwalking

The Alpine area, long recognised as an area of outstanding natural beauty, is one of the most popular destinations in Victoria for bushwalkers - particularly those planning trips of three or more days' duration. Bushwalkers who visit the area for shorter periods may plan an overnight camp or take one-day hikes and shorter walks. Many others, such as photographers, naturalists, fishermen, etc., pursue activities that include walking, but would not regard themselves as bushwalkers.

To make the best use of limited leisure time many walkers use conventional or four-wheel-drive vehicles to place themselves within reasonable walking distance of their goal.

The Alpine area provides many opportunities for bushwalking as it contains an extensive network of walking routes, many sections of which offer a series of panoramic views of essentially natural landscapes. These sections are popular and valued highly, particularly those where no vehicular access has been constructed.

The Council believes that the value of certain areas for walking can be enhanced by the provision of more walking tracks and marked routes and that the necessary funds should be made available. Such walking tracks and routes should provide access to and link sites of interest and scenic beauty and should be located away from roads used for motorised recreation. On the other hand some areas should be left undeveloped to provide for those bushwalkers who do not require defined walking tracks.

The Alpine Walking Track

The concept of an Alpine Walking Track (AWT) originated when the Alpine Resorts Development Advisory Committee of the Tourist Development Authority (now the Victorian Tourism Commission) sought the advice of the Federation of Victorian Walking Clubs about the provision of walking tracks in the alpine regions of Victoria. Following discussions between the Federation, tourism authorities, and the Forests Commission a proposal was adopted for a

through track running from western Gippsland to the New South Wales border.

The Forests Commission began construction and marking of the Track in 1970, when a series of grants from the Ministry for Tourism launched the project. Through the early 1970s work continued on the AWT with the voluntary assistance of bushwalking clubs. Since 1975, the Department of Youth, Sport and Recreation has provided funds annually for the development of the AWT, and for the upgrading and maintenance of Track signs. The Forests Commission has had a continuing role in the development of the Track, providing funds, planning, and other resources.

The AWT is now marked for its entire 400 km length, from the historical gold-mining township of Walhalla to the New South Wales border near Tom Groggin. Walkers rarely attempt the journey from one end to the other. The Track is usually walked in short sections, which incorporate feeder tracks from accessible locations or leading to points of particular interest. For instance, one of the feeder tracks follows the historical mining route up the valley of the Howqua River, joining the AWT at Mount Howitt.

Most of the AWT is designed for the experienced and well-equipped bushwalker-crossing, as it does, some of Victoria's most rugged and exposed country and, in general, being comparatively far from main roads and habitation.

Substantial portions of the Track follow fire access tracks, which should continue to be available for use by management vehicles.

The Track traverses much of Victoria's high country, beginning at Walhalla, outside the study area, and first crossing the Baw Baw Plateau before entering the Alpine area at Mount Selma. It then mostly follows the Great Dividing Range to Mount Hotham, from where it crosses the Bogong High Plains before dropping into foothill country south of Dartmouth Lake, climbing again to the Mount Pinnibar area and thence to the headwaters of the Murray River. Its route is shown on Map A.

Under the currently accepted forms of land tenure (both in the Alpine and Melbourne study areas), the AWT for approximately half its length passes through either national parks or natural features and scenic reserves. With the exception of relatively short sections through the Walhalla Historic Area and the Mount Hotham Alpine Resort, the remainder of the Track is in either reserved forest or unreserved Crown land (both of which are herein recommended by the Council to become State forest).

With these recommendations, about two-thirds of the length of the AWT should be included in either the alpine park or natural features and scenic reserves.

Protection of the AWT

Because of its national significance as a bushwalking route, the AWT and its immediate environs should be managed in a way that affords the greatest protection to the natural environment.

Council considers that on and adjacent to the AWT a principal management aim should be to preserve the immediate foreground views as seen from the Track. For this reason, it believes a visual corridor should be preserved along the Track wherein changes to the natural systems are kept to a minimum. The width of this corridor will vary from place to place according to local circumstances such as topography and vegetation type. For instance, in steep terrain supporting dense forests, the visual corridor will be narrower than in relatively flat, open country. Council believes that, in general, the visual corridor would rarely exceed 50 m from either side of the

Track.

Within the visual corridor Council considers that:

- * logging should not be permitted
- * log or fuel dumps should not be permitted
- * new roads and earthworks should not be permitted where a viable alternative exists
- * erection of structures not used in conjunction with the Track, such as sheds, transmission poles, ski-tows, and the like, should not be permitted (this provision is not meant to inhibit the maintenance of existing huts nor the construction of new huts or shelters for the use of walkers)

Furthermore, management authorities should consult relevant user groups, especially bushwalking organisations, on any proposals that could have an impact on the AWT and its immediate environs.

As well as protection of the immediate environs of the AWT, Council is also aware of the concern of bushwalkers for the maintenance of the magnificent vistas as seen from many parts of the Track. It is this scenic quality that adds greatly to the experience of walking the AWT.

Council believes it is impracticable to prohibit all activities that alter the natural landscape within the extensive areas that can be seen from the AWT. Management techniques can be employed to greatly minimise the visual impact of such activities, however. In particular, the Forests Commission has established a Visual Management System, which can assist in reducing the visual impact of timber-harvesting and other operations. A summary of this system is contained in Appendix I.

The broad-scale planning level of the Visual Management System has been applied to all State forests adjacent to the AWT. Council believes that this system should now be integrated into the forest management operations in these areas.

Huts

Huts have been constructed on public land at a number of locations throughout the Alpine area. Many were originally constructed and are still used by cattlemen as a base for the annual cattle musters and the supervision of stock grazing on public land. Others are associated with mining activities, logging, skiing, fishing, and other outdoor recreational activities. A number have also been constructed by the land managing authorities to assist in the management of the area, some of which are open to the public.

The standard of accommodation ranges from substantial buildings complete with bunks, stoves, and other facilities to huts of very basic construction with no facilities. In some cases huts have become derelict and now serve no practical function.

As the weather in the Alps can change very rapidly, huts can have an important role as a short term shelter or refuge and have been of great assistance on many occasions to people caught by sudden changes in the weather. A number of huts have been constructed on pole lines, on walking routes, and at the treeline to improve the safety of people using the area.

Many people believe, however, that huts can pose a hazard to the safety of visitors, as they encourage people that are inexperienced and inadequately equipped into remote areas on the basis that a hut will be found and will be available for refuge and accommodation. This should

be taken into account by the land managers when making decision on the retention of existing huts and the location of any new huts.

Several huts and remains of huts in the Alps have considerable historical or cultural significance, either because of their age or method of construction or because of their association with people or events. For example, Wallaces Hut is an old cattlemen's hut classified by the National Trust and is one of the few existing huts to have been built prior to the 1939 fires. These huts are an important part of our heritage and should be protected.

A number of alpine huts are heavily used throughout the year while others only receive occasional use. Some are already being used to such an extent that the environment around them is being damaged, and in a few cases visitor usage may pose a hazard to the quality of water supplies. With the increase in visitor usage the risk of environmental damage will increase and it may be necessary to remove or relocate some huts unless alternative measures can be taken to prevent unacceptable damage to the environment.

The Council believes that the approval of the land management authority should be obtained prior to the erection, replacement, or maintenance of huts. The siting and design of huts should meet the management goals of the area and be in accordance with the environmental and aesthetic values.

Huts are used on an informal basis for accommodation by many bushwalkers, ski-tourers, horse riders, ice-climbers, fishermen, and other people engaged in outdoor recreation. Currently the majority of huts on public land in the Alps can be used by the public on a 'first come, first served' basis. The Council believes that, as a general principle, huts should continue to be available for public use, but the details of this use will need to be worked out by the land managers.

A small number of huts on public land in the Alps are currently held under permissive occupancies for private use. The government has a policy that these permissive occupancies will be phased out by 1990.

Recently, the use of the Alpine area by commercial tour operators - engaged in horse-riding safaris, ski-touring expeditions, and four-wheel-drive touring - has increased. It is expected that the increasing use of the area both in winter and in summer will give rise to conflicts between commercial tour groups and other recreationists. Already there is evidence of conflicts over the use of some huts, and these conflicts will need to be resolved by consultation between the land managers and the various user groups.

Motorised Recreation

Much outdoor recreation depends on motor vehicles. These may be conventional cars, four-wheel-drive vehicles, or motor-cycles.

They may be used for touring and sightseeing, as a means of obtaining access to a particular area where other forms of recreation will be undertaken, or - when they are driven in competitive rallies or in adverse but challenging road conditions - as a source of recreation in themselves.

Most visitors to the Alps use conventional two-wheel-drive vehicles and keep to the major through routes that in many cases have been upgraded for tourist purposes. Others use four-wheel-drive vehicles or motor-cycles to gain access to the more isolated areas via the secondary system of roads that supplement the major ones. This system was constructed mainly for timber

harvesting, forest management, and fire protection (although some roads were constructed in conjunction with the Kiewa hydroelectric scheme), and to provide access for mining and grazing. The roads are frequently rough and steep and have not been designed to cope with increasing use by recreation vehicles.

Consequently, even legal use of roads can pose maintenance problems for the land managers. Authorities responsible for their construction and maintenance on public land may close roads temporarily or permanently when traffic exceeds their physical capacity, for safety reasons, or when use by vehicles is in unacceptable conflict with the area's primary uses. Erosion hazard areas may be proclaimed according to the provisions of the *Land Conservation (Vehicle Control) Act 1972* and regulations, enabling strict control to be enforced.

If the increased recreational use of roads is to be catered for, adequate funding should be provided for road maintenance, otherwise deterioration leading to erosion is inevitable.

A number of four-wheel-drive clubs have acknowledged the need for restrictions on motorised recreation in certain areas and during some periods of the year, and generally support the use of existing legislation to control undesirable activities. Clubs also recognise the need to inform and educate participants in motorised recreation of the environmental consequences of improper use of four-wheel-drive vehicles. The management authorities should continue to promote responsible attitudes to the use of four-wheel-drive vehicles and trail-bikes.

A significant and growing proportion of the population is becoming involved in recreational touring, which depends on the use of roads on public land. Drivers of motor vehicles, including motor-cycles, who leave the roads on public land contravene the provisions of the above *Act*. (Limited exceptions are given in the *Act*.)

The demand exists for the provision of some areas of public land to accommodate and relocate the off-road activities of motor vehicles, particularly trail-bikes. Such areas could, for example, take the form of defined trails in some hardwood forests or could include disused quarries or parts of some recreation reserves close to urban centres. Where possible, the alternative use of suitable private land should be considered. Areas chosen, whether public land or freehold, would have to be in situations where damage to soil and vegetation would be minimal, and where noise would not cause undue disturbance to other people using, or living in, nearby areas. Council points out that there is a serious and growing problem of damage to soils and vegetation by spectators attracted to these activities.

Because of its extensive network of roads, the Alpine area is of particular value for motorised recreation, especially for touring by four-wheel-drive vehicles. The Council considers that there should continue to be a system of linked roads, mainly of four-wheel-drive standard, available for users of recreation vehicles so that trips from one part of the Alps to another continue to be possible. In addition, consultation between management authorities and user groups should be maintained regarding the period of the year that roads can be used.

Deer-hunting

Populations of Sambar deer are found throughout the Alpine area, although at the moment the populations are higher in the western and south-western parts than in the east. The two methods of hunting Sambar deer are stalking using either guns or bows, and trailing using hounds. Under the *Wildlife (Game) Regulations 1976*, hunting of Sambar is permitted year-round.

For hardwood timber production areas and uncommitted land (now proposed to become State

forest) and historic areas with the exception of Mt Murphy, no restrictions on deer-hunting other than existing legal requirements are proposed by the Council. Furthermore, in many of the areas recommended for addition to the park system, hunting by stalking has been proposed.

(Paragraph replaced by Order in Council 8/1/1985)

The wetter gullies and the mountain forests are important breeding areas while deer are hunted mainly in the open forests of stringybark, peppermint, and gum.

Youth Camps

Some permanent camp-sites used by scouts, schools, church groups, and the like occupy public land in the study area, and demand for new sites is continuing.

Users have generally preferred sites situated in pleasant bushland, close to a permanent stream, readily accessible by road, and in areas where the safety of the camp and its occupants can be ensured during periods of high fire danger. Such sites are relatively scarce and their use for youth camps is in direct competition with their use for less restrictive public activities, such as picnicking or general camping.

Camps on public land vary greatly - in the purpose for which they are constructed, in their standard of maintenance, and in the degree to which they are used. Some are designed to provide full accommodation, with campers living in huts that have electricity and hot water provided; others have only minimal facilities, with campers living in tents. Some have considerable amounts of money and volunteers' time and effort put into their construction and maintenance; others have been built and are maintained at very low standards. Some are used for much of the year, with the owner organisation allowing use by other groups. Others are used only occasionally, and exclusively by one group.

User groups have an increasing tendency to acquire freehold land for their actual camp-site, while using adjacent public land for their outdoor activities, and Council believes this trend should be encouraged. While recognising that a variety of types of camps may be needed, Council believes that any camps permitted on public land should be properly located, constructed, and maintained. For efficient management of camps, it may be necessary for a single organisation to be given tenure over a minimum area at any individual camp-site, under the control of the land management authority. Council believes, however, that these camps should still be used as fully as possible consistent with avoiding damage to the environment. The greater use of existing camps on public land is desirable in order to avoid proliferation of camp-sites, and there is a need for co-ordination of information regarding the availability of those camps that could be used by groups who do not have tenure of their own.

It is likely that, in some cases, the land management authority may need to phase out or relocate existing camps if these conflict with the primary use of the surrounding land, or if they are particularly hazardous areas from the point of view of pollution, erosion, or wildfire.

Skiing

The two main skiing activities, cross-country and downhill, vary in their potential impact on the environment and their requirement for the development of user facilities.

Cross-country skiing

Cross-country or nordic skiing, which involves few facilities, has little impact on the environment compared with that of downhill skiing. It embraces day trips from nearby holiday accommodation or from homes, overnight trips to huts or snow camping, langlauf racing, and ski orienteering. Large sections of the Alpine area presently support such activity, and most areas are capable of increased utilisation.

Cross-country skiing is growing at an annual rate of about 10%, although the number of people involved is still small relative to the number of downhill skiers. Its growth rate is likely to be sustained for some time because it costs relatively little and a number of suitable areas are reasonably accessible.

Downhill skiing

Downhill skiing is currently the most popular form of snow skiing. The resorts in the study area attract more than 70% of the separate visits by down hill skiers to snow resorts in Victoria. Visitor use of Victoria's ski resorts increased at an annual rate of 12% between the 1978 and 1981 snow seasons.

This sport is now a major recreation business and has a growing impact on the economy of the surrounding region. Traditionally, accommodation facilities for downhill skiers have been located 'on-mountain' above the snowline. Acceptance of off-mountain accommodation in centres close to the snowfields will increase the impact on the local economy. Also, capital expenditure will shift towards the provision of better road access to the snowfields and day visitor facilities at resorts.

The development of ski resorts and facilities for downhill skiing can have a substantial impact on sensitive alpine environments, particularly where major developments are undertaken above the snow-line. Future developments will require careful planning and investment of large amounts of capital to satisfy both environment protection and recreation facility requirements.

Existing ski resorts

Existing ski resorts vary in their capabilities to cater for the increasing demand. The location of the user population and the future mix of skier categories are two main market components that influence the development of facilities. The main user market in Victoria is likely to continue to come from Melbourne, Albury—Wodonga, and the Latrobe Valley.

Mount Buller at present has a full range of slopes from beginner to advanced. Its total existing capacity of lift-serviced slopes is calculated to be approximately 5000 to 5500 skiers at any one time. This is fully utilised during peak periods. The existing accommodation facilities provide 5560 visitor beds.

Falls Creek has extensive novice and intermediate slopes and, at present, a limited number of beginner and advanced slopes. The present capacity of lift-serviced slopes has probably reached some 2800 skiers, and accommodation facilities provide 3500 visitor beds.

Mount Hotham has further potential for development of slopes of all categories, particularly in the intermediate and advanced classes. Its estimated existing capacity of lift-serviced slopes is almost 2700 and it contains 2400 visitor beds.

Mount Buller, the largest ski resort in Victoria, caters mainly for Melbourne visitors, a high proportion of whom visit the area on weekends, particularly as day visitors. Falls Creek and Mount Hotham, being further from the State capital, cater for weekend and longer-stay visitors from Melbourne, and day visitors from other centres, mainly in the north-east and Gippsland.

Resort development

Of a number of new areas with potential for development, some could be developed in conjunction with existing resorts. A major criterion in evaluating areas for possible development

is the need to provide sheltered slopes with a variety of aspects, to provide good snow conditions under various climatic conditions, and in particular slopes that cater for beginner and intermediate skiers. Other major considerations include location relative to the main population centres, access, parking facilities, environmental effects, and potential conflicts with other uses and values.

Prior to the publication of its recommendations in 1979, the Council investigated the potential for additional downhill skiing facilities in a number of areas, including existing resorts as well as many presently undeveloped locations. It concluded that the first priority should be the development of existing resorts at Mount Buller, Falls Creek, and Mount Hotham to their optimum capacity, taking into account their inherent capacities for snow sports, environmental considerations, and potential land use conflicts.

In addition to the above developments, Council considered that resort facilities at Mount Stirling and the expansion of facilities at Lake Mountain (see final recommendations for the Melbourne area) should be given a high priority.

The resorts proposed by Council in 1979 provide for a balanced development catering for the main skier market centres and the main skier categories. It is envisaged that a mix of accommodation at high and low levels would be provided, low-level development of year-round facilities being based in the vicinity of the townships of Mirimbah, Mount Beauty—Tawonga, Bright, Harrietville, and Omeo. Dispersed development of low-density accommodation facilities should be avoided to minimise the cost of providing essential services, the environmental effects, and the visual impact, particularly in the non-snow season. All accommodation facilities within alpine resorts should be limited to declared areas that can be adequately serviced and can satisfy requirements for catchment protection.

The detailed investigation undertaken by Council prior to preparing recommendations in 1979 indicated that the developments referred to above would cater for the immediate needs for additional resort facilities.

However, the Council is proposing that some additional areas be now added to the Falls Creek Alpine Resort. These include the slopes of Mount McKay. In its previous recommendations the Council indicated that this area could be considered as an extension to the existing resort in order to provide for increased skiing capacity.

The Council is also proposing that an area on the western slopes of Mount Higginbotham be excised from the existing Mount Hotham Alpine Resort and included in the alpine park system (see recommendation A15). This area is of prime importance for the protection of the mountain pygmy possum (*Burramys parvus*) and its habitat.

Because of their environmental sensitivity, Council does not recommend development of Mount Bogong, Bakers Spur, or the Mount Feathertop—Bungalow Spur area for downhill skiing. Council expresses concern at the possible environmental consequences resulting from development of some other potential ski areas, such as Cobungra Gap and Mount Fainter, and believes it will be necessary to make detailed studies of the likely effects any such development may have on the environment and on other land uses before these areas are further considered.

Conflicts between cross-country skiing and other uses are relatively few and no specific areas need be set aside for the pursuit of this activity, except adjacent to or within areas used for downhill skiing. The committees of management are responsible for the delineation of cross-country ski trails within resort area boundaries, and should co-operate with the authorities managing adjacent land in the provision of trails and snow-pole lines that extend beyond those

boundaries. Information centres and base stations for cross-country skiers should also be established as part of the facilities in each alpine resort. These centres should provide details of the various trails in the area, location of refuge huts, and weather information, and act as a route-registration base for skiers. The management authorities of both the resort and adjacent land should co-operate in the provision of the base stations and in the provision and maintenance of refuge huts (within the resort).

Subsequent to its acceptance of the Alpine area final recommendations, the government set up a Ski Industry of Victoria Working Party to prepare a plan for the short-, middle-, and long-term development of Victoria's ski industry - within the general guidelines of the Land Conservation Council's recommendations for the Melbourne and Alpine areas. The Working Party's report and recommendations were published in 1980. These included the statement that the existing resorts would reach optimum capacity by 1985.

Following government acceptance of the Working Party report in 1981, planning of the new resort for downhill and cross-country skiing at Mount Stirling commenced, with the Forests Commission as the lead agency.

During 1982, draft working papers were published and public submissions received on a number of possible development options for the area. Subsequently a development proposal and environmental effects statement were published in August 1983. These are currently the subject of an environmental assessment being prepared by the Ministry for Planning and Environment which will be considered before the final development plan is published.

During 1982 the government continued to examine proposals for the operation of Victoria's ski resorts, and legislation currently before Parliament provides for the establishment of an Alpine Resorts Commission. The Commission would be responsible for the control, management, and development of alpine resorts.

The Council is aware that participation in a variety of snow sports is increasing, and has suggested that when the optimum capacity of existing resorts, including Mount Stirling, is achieved, consideration could be given to the development of other areas. Due to the limited time available to complete the Alpine area Special Investigation, however, the Council has made no assessment of the need to establish further areas and if so, where these might best be located. Because of the lead time required in the development of new areas, the Council proposes to investigate this matter before the capacity of existing resorts is reached.

Recommendations

O1, O3, and O10 That these recommendations, approved by the government following publication of the final recommendations for the Alpine area in June 1979, continue to apply (as follows)

O1 Recreation

That public land continue to be available for a wide range of recreation uses where these can be accommodated without detriment to other values. Land management authorities should aim at controlling the types, levels, and patterns of recreational use according to the capability of particular areas to sustain such use without irreversible change or significant conflict with the primary purpose of the area.

Note: A road from Dartmouth village to the north-western section of the Dartmouth Reservoir, which will provide access for day picnicking and various water sports, is currently under

construction following Government approval. Provision of additional access and facilities for recreation associated with the Dartmouth Reservoir is under consideration by the State Rivers and Water Supply Commission. It is expected, however, that no detailed investigations will be undertaken until facilities for recreation in the north-western part of the Reservoir are well established, management arrangements for recreational use of the storages are formulated, and the rise and fall of the lake is known.

O3 Motorised Recreation

That vehicular use of roads (within the meaning of the *Land Conservation (Vehicle Control) Regulations*) continue to be permitted on public land except where closure is necessary because of erosion hazard, seasonal conditions, excessive maintenance costs, public safety, or conflict with the primary use of the area.

O10 Huts

That prior to the erection, replacement or maintenance of refuge or other huts the approval of the land management authority be obtained. The siting and design of such huts should be in accordance with environmental and aesthetic values.

Over-snow vehicles

Such vehicles can damage fragile environments where snow cover is patchy and thin and their presence is a major source of conflict with non-motorised snow activities such as cross-country skiing.

O4 That the use of over-snow vehicles be confined:

- (a) within alpine resorts, to providing transport and services associated with the operation of the resorts and for search and rescue work
- (b) outside resort areas, to search and rescue and essential management operations.

Note: It may be necessary for the managing authority to close some sections of roads in snow-covered areas during the winter period.

O2 That the areas shown on map A continue to be used for the purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

New recreation reserve

That the area of 21 ha at Harrierville, be used for informal recreation (picnicking, camping, etc) as permitted by the managing authority.
and that it be permanently reserved under [section 4 of the *Crown Land (Reserves) Act 1978*].

O6—O9 That the areas shown on map A continue to be used for the purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

Alpine resorts

That the areas listed below:

- (a) be reserved as alpine resorts (the boundary of each resort area may require minor adjustments in the future and these should be decided upon after consultation between

the committee of management of the resort and the managing authority of the adjacent land)

that

(b) development planning and implementation in each one minimise the environmental and visual impact of facilities, consistent with the efficient planning and management of a ski resort

(c) grazing be permitted to continue subject to the policies and conditions specified in Chapter Q, Agriculture, except in areas defined by the committee of management around structures and other facilities and in areas where grazing is currently excluded

(d) accommodation facilities within them be limited to areas that can be adequately serviced and can satisfy requirements for catchment and environment protection

and that each resort be managed under the relevant legislation by a committee appointed by the appropriate Minister, which should include representatives of Government departments, commercial interests, and user groups as suggested in the section on reservation and management above.

O6 Mount Buller alpine resort (1 780 ha)

(a) that it be developed to optimum capacity for downhill skiing

O7 Mount Stirling alpine resort (2 030 ha)

(a) that it be developed for downhill and cross-country skiing

(b) that the extent and location of any accommodation facilities be determined only after detailed study of the available options

(c) that its development be phased in to follow the achievement of optimum capacity at Mount Buller

(d) that its development not prejudice progressive development of other resorts

and that it be managed in conjunction with the Mount Buller alpine resort

Note: Logging on a once-only basis should be permitted in limited areas and should be completed by 1988, but every effort should be made by the Forests Commission to ensure that timber production from these areas is completed before this date.

O8 Mount Hotham alpine resort (2 530 ha)

(a) that it be developed to optimum capacity for downhill skiing consistent with the requirements of cross-country skiers, particularly in the Mount Loch and Swindlers Spur (Spargos Hut) areas

(b) that wildlife habitats, particularly those of the mountain pygmy possum, be protected by management prescriptions prepared by the Fisheries and Wildlife Division

(c) that significant plant species be protected

(d) that ski lift development not take place in areas adjacent to the Alpine Walking Track

(See also Rivers and Streams SI B22, C3)

O9 Falls Creek alpine resort (1 360 ha)

(a) that it be developed to optimum capacity for downhill skiing consistent with the requirements of cross-country skiers

(b) that the decision regarding provision of car parking facilities in the Rocky Valley area be subject to environmental evaluation

(c) that areas adjacent to the Falls Creek alpine resort may be used for activities associated with the resort, but only after agreement is reached between the State Electricity Commission, the Soil Conservation Authority, and the Falls Creek Tourist Area Management Committee

and that a representative of the State Electricity Commission be chairman of the committee of management.

Notes:

1. The location of this area within a proclaimed water supply catchment should be recognised in the development plans for the area.
2. The rare mountain pygmy possum has been recorded in the Mount McKay area adjacent to the Falls Creek resort. Should fauna surveys show that the mountain pygmy possum occurs within the resort area, then its habitat should be protected by management prescriptions prepared by the Fisheries and Wildlife Division.

O11 That the areas totalling 315 ha shown on map A be added to the Falls Creek Alpine Resort.

O12 That the area of 180 ha shown on map A and comprising the western slopes of Mount Higginbotham be excised from the Mount Hotham Alpine Resort and added to the alpine park system in accordance with recommendation A15.

P. ROADSIDE CONSERVATION

The primary purpose of road reserves is to provide for communication, transport, and access. Vegetation along the road verges can also have particularly high conservation, recreation, and landscape values, especially in the agricultural districts where most of the native vegetation has been cleared. Generally this vegetation, although it affects landscape values, is somewhat less important for conservation in the Alpine area. The roadside environment does, however, depend largely on management of the road reserve. It is important that the managers concerned (usually the Road Construction Authority and shire councils), and the managers of adjacent public land, consider these landscape values, and that this vegetation be disturbed to the minimum extent consistent with the safe and efficient design and use of the road.

Unused roads

When Victoria was being settled, surveyors provided access to every block by means of a surveyed Crown road. Many of these have never been used as roads, and they are usually held by the occupiers of the adjoining land under an unused-road licence. The Forests Commission controls the vegetation on unused roads that have been formally declared as such.

Roadside picnic areas

In attractive locations, small areas should be developed to provide for travellers who wish to relax and picnic away from the road reserve. It is not intended that these areas would cater for large numbers of people, but limited picnicking facilities should be provided.

Recommendation

P1 That the recommendations as approved by the government following publication of the final recommendations for the Alpine area in June 1979 continue to apply (as follows)

That road reserves throughout the study area continue to be used for communication, transport, access, surveys, and utilities.

Landscape, recreation, and nature conservation values can best be protected by observing the following guidelines. The Council recognises that many of these are already being implemented by the bodies responsible for the construction and maintenance of roads.

- When improvements to a road are being carried out, trees and shrubs on the road reserve should be disturbed to the minimum extent consistent with the safe and efficient design and use of the road.
- Major works to re-align minor roads carrying tree and shrubs should not be undertaken unless clearly warranted by the nature and volume of the traffic carried, and the managers of adjacent public land should be consulted regarding such works.
- When widening or re-alignment of roads is proposed, geological and historical features that may be affected should be investigated and every effort made to retain or preserve those that are designated significant.
- Where re-alignment of a road results in a section of the old road being cut off, wherever possible that section should not be sold but used as a recreation and rest area or incorporated into an adjacent appropriate reserve.

- Where a pipeline or overhead wires are to follow a road carrying trees and shrubs in a rural district, every effort should be made to locate the easements on private land alongside the road if this is already cleared, rather than clearing roadside vegetation to accommodate them.
- While recognising the need for clearing or pruning of vegetation close to power lines to reduce the associated fire risk, the State Electricity Commission should consult with the Forests Commission regarding the manner in which the risk posed by vegetation can be reduced, while at the same time reducing the environmental impact to a minimum.
- Road-making materials should not be taken from road reserves unless no suitable alternative sources are available. Any such removal should be done so as to ensure a minimum disturbance of the native vegetation, and the disturbed area should be rehabilitated, where possible, with vegetation native to the area.
- Burning-off, slashing, or clearing roadside vegetation should be kept to a minimum consistent with providing adequate fire protection.
- Weeds and vermin on roads should be controlled by means that do not conflict with the uses given above.
- The various road management authorities, when planning to upgrade roads that have heavy recreational use, should give due consideration to recreational requirements, and give priority along such roads (when funds are available) to the development of roadside recreation facilities.

P2 That the following guidelines be applied to unused roads.

- The clearing of native trees and shrubs other than noxious weeds should continue to be clearly prohibited in the conditions of unused-road licences.
- A condition permitting public use of licensed unused roads should be written into unused-road licences where necessary to provide practical access to public land.
- Unused roads or easements should not be alienated if there is any likelihood that they will have value for future traffic, nature conservation, recreation, or other public use.

P3 That the land management authorities establish picnic areas in suitable locations adjacent to road reserves.

Q. AGRICULTURE

In preparing its proposed recommendations Council has considered a number of requests for alienation of public land. Council believes however, that at this stage no further public land should be alienated for agriculture.

Grazing on public land

In its previous recommendations for the study area the Council recommended that grazing continue to be excluded from areas previously withdrawn from grazing - such as Mount Buller alpine resort, The Mount Hotham—Razorback area, Mounts Feathertop and Bogong, and around Falls Creek - and the government subsequently approved.

The Council also recommended that grazing be phased out of the Avon Wilderness, reference areas, parts of the Wonnangatta—Moroka and Bogong National Parks and the Bluff—Mount Clear Natural Features and Scenic Reserve. The government subsequently adopted the Council's recommendations, but varied them to the extent that a phase-out period of 10 years (to 1991) was approved for the above areas, including the two reference areas within the northern part of the Bogong Park. In other reference areas removal of grazing is being investigated as the first step in the implementation of the Council's 1979 recommendations.

The Council reaffirms that grazing should cease in, or be phased out of, the areas specified above in accordance with the decisions taken by government in 1980.

In addition, the Council is aware of the developing conflict between grazing and recreation on the Howitt Plains, which is a very popular access point for touring, bushwalking, and camping. The provision of potable drinking water on the plains and along some walking tracks is becoming increasingly difficult, and there is evidence that cattle have damaged a number of walking tracks on steep side slopes. The Council therefore believes that grazing, while it should continue to be permitted in the remainder of the park, should be phased out from the Howitt Plains (indicated on Map A) by 1991.

With regard to grazing in the Cobberas—Tingaringy National Park, the Council recommended that grazing be permitted in accordance with the policies and conditions specified in the recommendations and subject to adequate protection of the park and the Kosciusko National Park in New South Wales. Where a licensee is unable to prevent his stock from repeatedly straying into the Kosciusko National Park, the Council recommends that the grazing licence be cancelled.

In some areas where grazing is a permitted use, a licence-holder may voluntarily decide not to renew his grazing licence. Where this occurs in areas of high conservation and recreation significance such as those high-altitude areas containing alpine and subalpine grasslands and herbfields, Council believes a new grazing licence should not be issued.

The Council is aware that a number of studies have commenced which are examining various aspects of grazing in relation to the alpine environment. This use would be reviewed as and when new information becomes available. (Additional wording by LCC, Order in Council 8/1/1985)

Forms of land tenure

Grazing rights in the area are currently granted by the National Parks Service, Department of

Crown Lands and Survey, and the Forests Commission. These are presently in the form of annual licences or short-term agistment rights. The Council believes that grazing on public land should be controlled by issuing agistment rights, annual licences, or longer-term licences, depending on the circumstances as outlined below. In all cases the management authority must be able to exercise general supervision of grazing management, control stocking rates, and exclude stock from parts of the licence area.

The issue of agistment rights, or annual licences with stock limits, is suited to situations where:

- * the areas are in the alpine and subalpine grasslands and herbfields (above 1 219 m)
- * the area is included in a park
- * it may be necessary to limit grazing in the future because of flora and fauna values, the need to protect water supply, or erosion hazard
- * the use for grazing is clearly subordinate to other uses
- * grazing is used occasionally as a management tool
- * the demand for grazing is intermittent

In some situations at low elevation, the land managing authority may issue longer-term licences that - while preserving its supervisory control - would give the licensee greater security of tenure and thus encourage him to make the best use of the forage resource. They would not lead to freehold tenure. In proclaimed water supply catchments or in catchments that may be proclaimed in the future, conditions may apply precluding the granting of longer-term licences or affecting those already granted. Some suggested terms and conditions for grazing licences are set out below.

- * Provision should be made to allow the land managing authority to exercise general supervision of grazing management, especially with respect to times of grazing and stocking rates.
- * When three-quarters of the licence period has expired, the licence should be reviewed and a decision made on renewal (longer-term licences only).
- * Grazing may be excluded from parts of the licence area, as determined by the managing authority.
- * No sub-leasing or assignment of grazing rights by a licensee should be permitted without the approval of the management authority.
- * Cultivation should not be permitted.
- * Vermin and noxious weed control should continue to be the responsibility of the licence holder under the supervision of the managing authority.
- * Sheep should be permitted to graze on licensed areas only with the approval of management authority and should not be allowed to graze areas above 1 200 m.
- * The lighting of fires for burning-off by the licensee should continue to be prohibited.
- * Grazing licences would not imply any form of exclusive use or control over the area by the licensee.
- * Licences should be subject to any other terms and conditions that the managing authority considers necessary.
- * Licences should be liable to cancellation for non-compliance with the conditions.

Council believes that there should be a greater degree of co-ordination between authorities and the formulation of a common policy in the selection and management of areas on which grazing will be permitted. Land management agencies, the Department of Agriculture, and the Soil Conservation Authority should consult to co-ordinate policies with respect to:

- * delineation of grazing areas, and the allocation and terms of grazing rights (some re-allocation of grazing areas may result from Council's previous recommendations)
- * grazing charges
- * exclusion of stock when and where necessary to provide for conservation of flora and fauna, protection of water catchment values, protection of forest regeneration works, or the reclamation of eroded areas
- * additional research necessary to monitor the effects of grazing on catchment hydrology and nature conservation values.

An Alpine District Advisory Committee consisting of representatives of the management authority, Soil Conservation Authority, and graziers has been formed to advise the management authority on:

- * type of livestock, stocking rates, and dates of entry and removal
- * fencing and water supply

Recommendations

Land recommended for agriculture

Q1—Q15 That the areas shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

That the land described below be used for agriculture (it is intended that this land should form additions to present farms)

and that

with reference to section 5 (3) of the *Land Conservation Act 1970*, this land be made available for agriculture in accordance with the provisions of the *Land Act 1958*.

Q1 8 ha, Parish of Wonnangatta

Q2 6 ha, Parish of Wonnangatta

Q3 4 ha, Parish of Wonnangatta

Q4 8 ha, Parish of Budgee Budgee

Q5 141 ha, Parish of Bingo-Munjie

Q6 8 ha, Parish of Wollonaby

Q7 61 ha, Parish of Wollonaby

Q8 100 ha, Parish of Mowamba

Q9 20 ha, Parish of Kancobin

Q10 64 ha, Parish of Jinderboine

Q11 48 ha, Parish of Jinderboine

Q12 31 ha, Parish of Hinno-Munjie

Q13 17 ha, Parish of Cobungra

Q14 60 ha, Parish of Moonip, subject to an erosion-prevention clause being inserted in any alienation agreement.

Q15 4 ha, Parish of Gelantipy East

Q16—Q17 That the land described below is suitable to be developed for agricultural production, but the timing of release for this purpose be subject to review by Council.

Q16 456 ha, being Crown land in the Parishes of Mowamba and Beloka.

Q17 250 ha Parish of Beloka.

Grazing on public land

Q18—Q20 These recommendations comply with the Government decisions concerning grazing in the Alpine National Park and can be implemented. (See earlier reference in Parks chapter to the review of grazing in the Alpine National Park.)

Q18 That grazing continue to be excluded from areas currently withdrawn from grazing as indicated on the map (that is, Mount Buller alpine resort; Mount Hotham—Razorback area; Mounts Feathertop and Bogong, and around Falls Creek).

Q19 That grazing be phased out of those areas as approved by the government following publication of final recommendations for the Alpine area in June 1979 (as follows)

That grazing cease in all reference areas except C10 (Hollands Knob) and C11 (Whiterock Creek) immediately and be phased out by 19 May 1991 in reference areas C10 and C11, the wilderness, parts of the Wonnangatta—Moroka and Bogong National Parks, and the Bluff Mount Clear Natural Features and Scenic Reserve. (Ministerial letter 8/2/1982)

Q20 That grazing be phased out of the Howitt Plains area by 1991 (see Map A).

Q21 That, in other areas of public land, grazing be subject to the policies outlined in this section and meet the major goals set by Council for particular areas.

Q22 That the form of tenure for grazing on public land be that considered most appropriate by the management authority—agistment, annual licence, or longer-term licence.

Q23 That a committee, as described above, advise the management authorities on matters relating to the grazing on public land.

Q24 That the fees charged for grazing on public land reflect the grazing value of the land.

Q25 That, where a licensee is unable to prevent stock from repeatedly straying into the Kosciusko National Park, the grazing licence be cancelled.

R. MINERAL AND STONE PRODUCTION

The continued existence of our technological society will depend on the availability of minerals. The study area contains known deposits of 'gold' and 'minerals' as defined in the *Mines Act 1958* and as subsequently gazetted (metallic minerals, coal, etc.). Nevertheless, knowledge of the location of our mineral resources is far from complete and new deposits of commercial significance will undoubtedly be found. Furthermore, currently uneconomic deposits of important minerals may become economically exploitable, and other minerals that are not used at present may become important.

Exploration for gold and minerals

The government has the responsibility to establish the existence and extent of the State's mineral resources. The government, in the main, meets this responsibility through the provisions in the *Mines Act 1958* that provide the tenure under which private enterprise is encouraged at its own cost to locate new deposits of gold or minerals. When a new deposit is discovered in an area where mining is not a currently approved land use, it may be of such importance that a change of the land use is required in the State interest. The decision on whether such a change is in fact necessary can only be made against a background of the best available knowledge of the location and extent of the particular mineral deposit. It is important therefore that the reservation of conservation areas should not automatically exclude exploration for mineral or fossil fuel resources. Attention should be directed towards ensuring that other values and interests are protected, rather than preventing exploration activities.

The protection of other values - particularly those historical values around old mine sites - should never be enforced to the point that it places human life at risk. In relation to public safety, nothing in the recommendations affects the powers of Inspectors under the *Mines Act 1958* and the *Extractive Industries Act 1966*.

Fossicking and prospecting

Fossicking and prospecting are often taken to mean one and the same thing. In mining terms a fossicker is a person who casually works over old mine workings and waste rock heaps in the hope of finding small amounts of gold and minerals. Unlike prospecting, the term fossicking has no basis in legislation under the *Mines Act 1958*. Fossicking is also accepted as a wider term that embraces the search not only for gold and minerals, but also for other items such as bottles or coins.

Prospecting is a systematic activity, defined in the *Mines Act 1958* as 'all operations conducted in the course of exploring for gold and minerals' (including gemstones). It is necessary to hold either an exploration or search licence, or a Miner's Right, before prospecting may be undertaken. Most individual miners and prospectors operate under a Miner's Right, which does not permit prospecting on private land.

Under current legislation there is a small percentage of public land in the State where prospecting under a Miner's Right is not permitted. This includes areas used for various community purposes such as golf courses, cemeteries, flora reserves, and reference areas.

Council considers fossicking and prospecting to be legitimate uses of public land and as such should not be unduly restricted or regulated. There are some areas, however, where these

activities may not be permitted or may require limitation and these have been specifically nominated in the Council's previous recommendations for the Alpine area (reference areas and water production areas).

In addition to these, there may be other areas of land surface that, because of their special public importance or inherent instability, warrant either permanent or temporary exclusion from fossicking and prospecting. These areas may include, for example:

- * land that, if disturbed, may detrimentally affect water quality, especially where the water is used for domestic consumption
- * important habitats for plant species or fauna
- * important historical relics that could be damaged
- * sites of high erosion hazard
- * community assets such as recreation areas and water or sewerage installations
- * important geological formations

These areas of land surface have not been specified in the recommendations, but should be determined by the management authority and the Department of Minerals and Energy together. Fossicking and prospecting, where they involve minimal disturbance to soil or vegetation, should be permitted on public land other than these areas and those specifically nominated in the recommendations. Areas currently exempted or excepted under existing legislation should remain so, unless otherwise specified in these recommendations or unless the land manager and the Department of Minerals and Energy together determine that such exemptions or exceptions should no longer apply.

Stone

Materials covered by the definition of 'stone' in the *Extractive Industries Act 1966* (including rock, gravel, clay, sand, and soil) are widespread in the area. There is a strong community demand for new and better roads, and so for the materials necessary for their construction. Public land is an important source of these materials although the resources close to freehold land are not unlimited. Council believes that shires should investigate rationalising the use of these resources.

The Council is concerned by the complexity of legislation and procedures governing extraction of 'stone'. (For example, the Road Construction Authority and municipal councils are not bound by many provisions of the *Extractive Industries Act 1966*.)

A substantial number of unwise excavations have been made upon public land throughout the State, and in many instances, particularly with older excavation sites, the rehabilitation of excavated land is lagging.

There is a need for:

- * review of existing legislation and procedures to enable more rational use of the 'stone' resource of the State
- * provision of adequate resources for the reclamation of old extraction sites on public land

Poorly planned and located excavations can affect surrounding lands through noise, dust, unsightliness, and erosion and can diminish the value of the land. With care, however, these effects can be avoided or minimised.

Principles and guidelines

The terms ‘exploration and extraction’, referred to below, do not relate to the forms of these activities described above under fossicking and prospecting.

The Council believes that the following principles should apply:

1. Some areas of land surface - because of their inherently fragile or sensitive nature or special public significance (for example, community assets, or areas where the importance of scenic, archaeological, historical, recreational, or nature conservation values is recognised) - warrant permanent or temporary exclusion from exploration and extraction of ‘gold’ and ‘minerals’. The Department of Minerals and Energy and the managing authority should together determine these areas.
2. When tenure is issued for operations under the *Mines Act 1958* on public land, the managing authority should be consulted regarding the conditions to apply and the supervision should be in accordance with the agreed conditions as specified in the claim, licence, or lease and with the requirements of the *Act*.
3. Consultation should continue between the land managing authorities, the Department of Minerals and Energy, the Soil Conservation Authority, and the other relevant authorities with respect to the procedures to be adopted for the exploration and extraction of ‘stone’ on public land. Any operations on public land should continue to be subject to the approval of the appropriate managing authority.

In all cases, the procedures that are established should apply to municipal councils, the Road Construction Authority, and other public authorities as well as to commercial operators. To ensure this, the relevant *Acts* may have to be amended.

4. A system should be established that would ensure, before work commences, the availability of funds for progressive and final reclamation of any excavation or operation. Provision should also be made to enable the acceleration of the rehabilitation of all existing extraction areas on public land.
5. Royalties for materials extracted from public land, including the site rental when appropriate, should be more closely related to the market value of the material. This would eliminate the temptation to use public land purely on the grounds of the nominal royalties often levied in the past.
6. The following guidelines should apply to all extraction from public land:
 - * The Department of Minerals and Energy should not issue leases for mining of ‘gold’, ‘minerals’, or ‘petroleum’ unless satisfied with the program submitted by the applicant. In the case of Miner’s Right claims, prior assessment is not practical and the Department should require the lodgement of a bond as surety for adequate rehabilitation. Whenever practical, the Department should seek the lodgement of mining plans that show the expected post mining state of the land and should state operating conditions to achieve an appropriate standard of rehabilitation acceptable to the land manager.
 - * No sites for the extraction of ‘stone’ should be opened in areas that the managing authority, in consultation with the Department of Minerals and Energy, considers to be of greater value for other uses, including aesthetic or nature conservation values. The advice of the Department of Minerals and Energy should also be sought as to the desirability of proposed excavations, having regard to alternative sources of ‘stone’.
 - * Extraction of ‘stone’ should generally be concentrated on the fewest possible sites in an area, and any one site should be substantially worked out and where possible reclamation

ensured before a new site is exploited. The type of excavation to be carried out should be that with the lowest environmental impact consistent with the effective use of the resource. In general, and where the nature of the resource permits, excavations for 'stone' should be deep and limited in area in preference to shallow excavations over a wide area. The extraction of granite sand occurring as shallow deposits in the weathered profile should be discouraged unless it has been established that no suitable alternatives are available. In the special circumstances where approval is given for this form of extraction, particular attention should be given to the prevention of soil erosion.

- * Where an application for the removal of 'stone' from a stream-bed is considered, the land management authority should take particular care to ensure that the operations will not directly or indirectly cause erosion of the bed or banks, or undue pollution to the stream. In addition to the arrangements outlined above for 'stone', the land management authority should also consult the relevant water supply and conservation authorities, and should consider the scenic and recreation values of the area. Alternative sources with a lower environmental impact should be used where they are available. The environmental effect of extraction may be reduced if alluvial stone is obtained from properly managed quarries on the river terraces, rather than from the present stream-bed.
- * All extraction sites should be fully reclaimed where possible. Reclamation should follow extraction progressively when possible, but otherwise should begin immediately extraction is completed. The requirements for reclamation should be included in the conditions of the lease or licence before any approval to extract is granted. The reclamation may include, for example, replacing topsoil, revegetating the site with plantation forest, allowing a quarry to fill with water and developing the site as a park, using a gravel pit for off-road vehicles, using a quarry for garbage disposal prior to reclamation, or restoring the site as closely as possible to its original topography and revegetating it with species native to the site.

In addition to the above, the approval of the Soil Conservation Authority should continue to be sought for the exploration and extraction operations for 'gold', 'minerals', 'petroleum', or 'stone', where the subject land is within a proclaimed water supply catchment or at an elevation exceeding 1 219 m.

Recommendations

R1 That fossicking and prospecting under Miner's Right, involving minimal disturbance of soil or vegetation, be permitted on public land other than:

- (i) those areas specifically excluded following adoption by the government of previous recommendations (reference areas and water production areas)
- (ii) those areas that the management authority and the Department of Minerals and Energy together may determine (see the guidelines in the section on fossicking and prospecting)
- (iii) the areas referred to in R2 below.

Note: The Council is aware that some changes to existing legislation will probably be necessary to give effect to this and the following recommendation.

R2 That those areas of public land currently exempted or excepted from occupation for mining purposes under a Miner's Right or from being leased under a mining lease, remain so exempted or excepted unless the land manager and the Department of Minerals and Energy together determine that such exemptions or exceptions should no longer apply.

R3 That public land in the area (other than reference areas and other areas as determined by the government) continue to be available for exploration under licence and for extraction of 'gold', 'minerals' and 'petroleum', subject to Recommendation R2 and the principles and guidelines set out above. (Order in Council 8/1/1985, government variation)

Note: This recommendation does not refer to exploration under a Miner's Right, which is covered by Recommendation R1.

R4 That public land in the area (other than reference areas and other areas as determined by the government) continue to be available for exploration for 'stone' subject to the principles and guidelines set out above. (Order in Council 8/1/1985, government variation)

R5 That the areas for the extraction of 'stone' shown on map A continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

That the areas described below be used for the extraction of 'stone', subject to the principles and guidelines set out above.

R3 Warrambat Slate Quarry - 9 ha, Parish of Warrambat

R4 Wermatong Gravel Reserve - 5.4 ha, Parish of Wermatong

Note: Gravel extraction should commence at the furthest point from the streamside reserve, and be worked and reclaimed in stages. Consideration should be given to relocating the access track and ensuring adequate screening of the workings from the streamside reserve. Care should be taken that vegetation on the adjoining streamside reserve is not damaged.

S. UTILITIES AND SURVEY

Many utilities occupy public land. They include roads, pipelines, power lines, power stations, hospitals, cemeteries, public halls, shire offices and depots, garbage depots, sanitary depots, and sewage-treatment works. These recommendations do not specifically refer to many of the small areas used for the purposes listed above, and no change of use is proposed. It is intended that for such areas existing legal uses and tenure should continue.

In the absence of firm planning proposals, accompanied by the necessary detailed information, it is not possible for the Council to provide for future requirements of land for survey and utilities. The use of land for these purposes will be considered when the need arises.

Government agencies concerned with provision and installation of communications equipment, transmission lines, pumped storage sites, power stations, port facilities, pipelines, roads, etc. are requested to submit proposals involving occupation agreements or the setting aside of sites on public land to the appropriate land managers at an early planning stage. This would assist in achieving co-ordinated planning, and perhaps avoid the necessity for costly resurveys.

Recommendation

S1—S8 That the recommendations for Utilities and Survey as approved by the government following publication of the final recommendations for the Alpine area in June 1979 continue to apply (as follows)

General utilities

S1 That existing or approved easements be used to provide access and services.

S2 That new power lines, pipelines, communications equipment, and other utilities be planned to minimise disturbance to public land and protect the values associated with this land, that they not be sited on public land without the agreement of the managing authority and where appropriate the Soil Conservation Authority, that new pipelines and power-lines follow existing easements if possible (this may require widening some easements), and that authorities have the right to occupy a minimum area for access and maintenance around their installations.

Note: The State Electricity Commission of Victoria has commenced construction of a 220 kV power-line that will link the Dartmouth power station and the Mount Beauty terminal station. The route for this transmission line (shown on the maps) has been authorised by the Government on the recommendation of a Parliamentary Public Works Committee. It passes through Granite Flat and along Rodda Creek, crosses the Eskdale Spur east of Mount Emu, and descends to Mountain Creek and Mount Beauty.

Garbage and sanitary depots

Council believes that sites on public land used for the disposal of garbage and sanitary material should be located to cause minimal conflict with nature conservation values, having regard to the cost of alternatives. Sites should be provided in reasonable proximity to users, to minimise transport costs and illegal dumping of rubbish.

S3 That the areas used on a temporary basis (such as garbage depots and sanitary depots) be fully rehabilitated when no longer required. (This should apply to sites used illegally as well as

those used legally. Where the user or users are known, rehabilitation should be at their expense.)

Fire look-outs

- S4** That the Forests Commission have the right to occupy a minimum area around each of the fire look-out installations.

Trigonometrical stations and border markers

Numerous surveying stations are located in the Alpine area. Of historical interest are the survey markers and accompanying stone cairns that define the Victoria—New South Wales border between the headwaters of the Murray River and Cape Howe. The geodetic survey of this 176 km line along the border was carried out by Victorian Government Surveyors, Black and Allen, in the years 1869–1872. If a stone cairn must be dismantled to allow access to the marker for survey purposes, it should be rebuilt upon completion of the survey. It is suggested that a new reference point be located adjacent to the original marker to avoid future dismantling of the cairn.

Responsibility for maintenance and protection of the markers rests jointly with the governments of the two States.

- S5** That the minimum area necessary for survey purposes be temporarily reserved around trigonometrical stations on public land where it would otherwise remain as unreserved Crown land and, where other forms of public land tenure apply, that the Department of Crown Lands and Survey have the right to occupy a minimum area around the station or border marker and provide lines of sight.

Navigation aids

- S6** That the Department of Transport have the right to occupy a minimum area for access and maintenance around the navigation aids on Mount Livingstone.

Roads

Roads and tracks serve a number of needs - for example, access for landholders, tourism and recreation, fire protection, timber production, and mining - but may conflict with other primary uses (water supply, some forms of recreation, or nature conservation), particularly in areas of high erosion hazard above 1 200 m.

- S7** That within the Alpine area, and particularly in erosion-prone locations, the management authorities in consultation with the Soil Conservation Authority coordinate the planning of essential road development, determine the standards of roading, and classify existing roads according to the uses required of them and the associated hazards.

Note: This classification should be considered by managing authorities in deciding whether tracks or roads should be temporarily or permanently closed, the need for revegetation, and whether use of a particular road or track should be confined to management vehicles only.

Other utility areas

- S8** That existing legal uses and tenure continue for areas that are at present reserved and used for utility purposes such as public buildings, municipal depots, cemeteries, schools, etc.

but in relation to land that is apparently surplus to requirements, an assessment of public land values be undertaken and, following appropriate consultation, these areas be considered for recategorisation by Environment Conservation Council, land exchange or disposal [added by Order in Council 10/3/1999]

Low-level road

The Premier has referred the question of a low-level road between Mitta Mitta and Omeo to the State Co-ordination Council for discussion and recommendation.

T. TOWNSHIP LAND

Public land in townships is currently used for a wide range of purposes. The Council has not proposed any change of use for such public land where the present use is for schools, public halls, sports grounds, and the like. In general, public land in townships, other than those areas that have been specifically reserved and except where otherwise indicated below, should remain as unreserved Crown land to meet future requirements.

A number of deserted or near-deserted townships first proclaimed during the gold-mining boom of the late 1800s and early 1900s occur within the area, often in isolated localities. In 1979 the Council proposed that a certain number of these townships be rescinded and portions of others be rescinded where they contain public land. Many of these contain the remains of cottages and mining machinery, evidence of reef-mining, and pioneer cemeteries. These relics of Victoria's mining past should be catalogued and investigated by the authority managing the surrounding land, and those having historical significance should be protected. Council has received a number of applications for alienation of public land in the formerly deserted township of Glen Wills - a small isolated locality which is completely surrounded by the Mount Wills historic area - but is not proposing any change to its previous recommendation for this area, approved by the government in 1980.

Development areas

The Alpine area is already one of Victoria's more popular tourist destinations and has the potential for a considerable expansion of tourism. Skiing in the area's snowfields (both downhill and cross-country) has enjoyed a substantial rate of growth over recent years, adventure holidays such as horse safaris are also gaining in popularity, and increasing numbers of people are becoming involved in activities such as bushwalking and four-wheel-drive touring.

It could be expected that, as the outstanding natural attractions of the area become more widely known, the numbers of people visiting the Alps will increase. The creation of an alpine park with attendant continuing publicity would undoubtedly foster an increased interest in the area and lead to more people visiting it, especially during the spring and summer months. Many of these visitors will be coming to the Alps to enjoy the physical and more remote forms of recreation and will have little or no requirement for developed facilities. Probably, however, a significant proportion of potential visitors to the area would prefer to use more elaborate facilities associated with a higher degree of personal comfort.

Such tourist facilities and associated infrastructures are located within the alpine ski resorts and nearby townships. Being in the heart of the Alps, the ski resorts are especially well placed to cater for increased tourist use outside the snow season. The Mount Buller and Mount Stirling resorts are well located to cater for the north-western section of the alpine park, and the Falls Creek and Mount Hotham resorts and the proposed Dinner Plain development could cater for the central Bogong High Plains section of the park. Close to the north-eastern section is the Dartmouth township - originally constructed to accommodate workers on the Dartmouth Dam project, but now nearly deserted - which has a high potential for tourist development.

Further to the east Council has made provision for commercial development, as needed, in the townships of Suggan Buggan and McKillops Bridge (Recommendations T4 and T5).

It is in the south-western section of the proposed alpine park that tourist facilities are at a minimum and provision of additional facilities, including accommodation, is needed. The nearby townships would seem to have potential for development, as does private land in the valleys of

the Macalister and lower Wonnangatta Rivers. Council believes that the suitability of areas for development should be investigated, including the need to set aside an area of public land either within this section of the alpine park or near its boundary.

Recommendation

T1—T5 That the recommendations for township land as approved by the government following publication of the final recommendations for the Alpine area in June 1979 continue to apply (as follows)

T1 That the following proclaimed townships be rescinded in accordance with the provisions of the *Land Act 1958*:

Brookville

Glendart

and that portions of the following townships be rescinded and added to the adjacent public land:

Glen Wills

Nariel

Sunnyside

Note: The boundaries of these townships would be defined by the Department of Crown Lands and Survey following the acceptance of these recommendations by the government.

Note: The public land in the Townships of Sunnyside and Glen Wills, referred to in the above recommendation, should be added to the Mount Wills historic area proposed in these recommendations.

Mount Beauty

Mount Beauty, which formed part of the Kiewa works area, was established by the State Electricity Commission to house workers on the Kiewa project. In 1957, parts of Mount Beauty were excised from the Kiewa works area and municipal administration was transferred to the Shire of Bright. Council believes that Mount Beauty should be proclaimed as a township.

T2 That the area known as Mount Beauty be proclaimed as a township under the provisions of the *Land Act 1958*, and that the public land within the township continue under the ownership and control of the State Electricity Commission and be made available for other purposes if required.

Dartmouth

The Dartmouth village was established to house construction workers and their families during construction of the Dartmouth Reservoir by the State Rivers and Water Supply Commission, as the constructing authority for the River Murray Commission. After completion of this project, and following the expected development of recreational facilities associated with the reservoir, the village could have importance as a tourist centre.

T3 That on completion of the Dartmouth project, and when no longer required by the State Rivers and Water Supply Commission, the Dartmouth village be proclaimed as a township under the provisions of the *Land Act 1958*.

Suggan Buggan

T4 That, if required, land within the township of Suggan Buggan be made available for commercial development of overnight accommodation facilities. (See also Rivers and Streams SI *A10*)

McKillops Bridge

T5 That an area of approximately 20 ha south of McKillops Bridge be temporarily reserved for possible commercial development associated with the Snowy River and Cobberas—Tingaringy National Parks.

Note: Any such development should be undertaken only with the approval of the National Parks Service (see also Recommendation A4).

U. DEFENCE FORCES TRAINING

The Australian Army and the Royal Australian Air Force use the Alpine area and the air space above it for training purposes.

The Army uses the public land for unit deployment exercises, communication and patrolling exercises, driver and recovery training exercises, and survival and adventure training. Two low level jet routes traversing parts of the Alpine area are used by RAAF jet aircraft on operational training. Military aircraft operating from East Sale use air space with a lower limit of 1 200 m over portions of the south-west.

Council believes that military training is a legitimate use of public land, but is aware of the possibility of conflicts arising with some forms of recreation, in particular wilderness recreation. It is Council's view that military training should not occur in reference areas, wilderness areas, and only under special circumstances in parks and other areas of recreation and conservation significance.

Recommendation

U1 That defence forces training continue to be permitted on public land as approved by the government following publication of the final recommendations for the Alpine area in June 1979 (as follows)

U1A That where military training is conducted on public land:

- (a) the types of activities, and their timing and location, be subject to agreement between the appropriate defence department, the managing authority, and other relevant bodies such as the Soil Conservation Authority
- (b) the training activities be carried out under conditions specified by the managing and relevant authorities, to minimise any detrimental effects
- (c) the Forests Commission be consulted (for fire-protection purposes) with respect to training activities in protected forest and protected public land
- (d) it be excluded from reference areas, from wilderness areas, and, except under special circumstances, from parks and other areas of special conservation significance

U1B That the area proclaimed under the *Defence Act* section 69 and known as the Big River Training Area, to the south - west of Mount Terrible, continue to be available for military training purposes.

V. OTHER PUBLIC LAND

V1 For that public land not referred to elsewhere in these recommendations, Council does not propose any alterations to the current land use as approved by the government following the publication of the recommendations for the Alpine area in June 1979 (as follows)

That for small areas of public land not specifically mentioned in these recommendations, existing legal uses and tenure continue

and that

where the land is not used for a specific purpose at present, such areas be used in a way that will not preclude their reservation in the future for as-yet-unknown public purposes and managed as if they were uncommitted land

but in relation to land that is apparently surplus to requirements, an assessment of public land values be undertaken and, following appropriate consultation, these areas be considered for recategorisation by Environment Conservation Council, land exchange or disposal [added by Order in Council 10/3/1999]

APPENDIX I

VISUAL MANAGEMENT SYSTEM

In 1977 the Forests Commission established a Landscape Management Section with the primary goal of developing a system of management for the visual resources of Victoria's State forests. The visual management system (VMS) that the Commission has developed is adapted from a system originally developed in the United States by the U.S. Forest Service.

The VMS has been applied to more than 5.5 million hectares of forest land, or nearly 25% of Victoria's total land area. It is used as input to all management planning, while particularly sensitive areas such as those around the Baw Baw plateau are subjected to detailed analysis.

This appendix provides a brief summary of the VMS, which is applied at two distinct levels:

- * broad-scale planning level
- * project application level

The Broad-scale Planning Level

To facilitate policy decisions on the management of public land, general visual quality goals are necessary at a broad-scale planning level. These are arrived at through a process that first establishes a regional assessment perspective by delineating landscape character types and then generates smaller-scale landscape management zones with the evaluation of scenic quality, public sensitivity, and seen areas. These components are discussed here in relation to their hierarchy in the VMS.

Landscape character type and scenic quality classification

The system identifies nine landscape character types within Victoria. Character types are areas of land that have common distinguishing visual characteristics, predominantly based upon land form and major land cover patterns influenced by vegetation, water forms, and land use.

Within each landscape character type, specific criteria determine mapping into high, moderate, and low scenic quality classes. For initial application, the scenic quality descriptions are written in terms of variety in land form, vegetation, and water form. For instance, areas exhibiting the features and variety normally present in the character type are usually assessed as of moderate scenic quality class; those areas with more outstanding, unusual, or diverse features are classified as of high scenic quality; and those areas lacking in features and variety are assigned to a low scenic quality class.

Public sensitivity levels

The VMS also assesses the degree of public concern for scenic values based upon observer volumes and perceptions. Public sensitivity levels (high, moderate, low, or very low) are assigned to all observer routes and use areas.

Observer volume estimates are made for public travel routes (for example, roads, walking tracks, railways, and rivers) and use areas (such as picnic grounds, camp-sites, and lookouts). In addition, estimates of relative scenic concerns by different observer types are made. The combination of observer volumes and observer concerns are assessed in assigning public sensitivity levels.

Seen-area inventory

Landscapes visible from specific travel routes or use areas are mapped using manual techniques or the VIEWIT computer program. The mapped seen-area is broken down into three distance zones (foreground, middle ground, and background) for observation points of high or moderate public sensitivity. Only in the foreground distance zone are low public sensitivity areas mapped. No seen-area mapping is done for very low public sensitivity observation points.

The seen-area distance zones may vary somewhat depending on particular viewing conditions; however, as a general rule the following distances apply:

foreground	0.0–0.5 km
middleground	0.5–6.5 km
background	6.5–16 km

Landscape management zone

The VMS recognises four separate landscape management zones. The first - a Reserve Landscape Management Zone - applies within all parks and reserves, regardless of the various visual resource factors. The other three apply to areas of State forest and are composite landscape units based upon distinct combinations of specific scenic quality classes, public sensitivity levels, and seen-area distance zones.

In general terms, landscape Management Zone A is recommended where the combination of scenic quality, distance zone, and public sensitivity level reflects critical visual circumstances. Where such combinations are not critical but still highly important, the recommendation is for Landscape Management Zone B. Finally, Landscape Management Zone C is recommended where such inventory factors are of lesser relative importance.

The accompanying matrix shows the specific combinations of visual resource factors that lead to the landscape management zone recommendations for public land in State forest.

MATRIX	(2) Distance zone - sensitivity level								
		fg- 1	mg- 1	bg- 1	fg-2	mg-2	bg-2	fg-3	U
(1)	H	A	A	A	A	B	B	B	B
Scenic	M	A	B	B	B	B	C	C	C
quality									
class	L	B	B	B	B	C	C	C	C
(3) Landscape management zone									

Matrix key:

(1) Scenic quality classes

- H high
- M moderate
- L low

(2) Distance zones

- fg foreground
- mg middleground
- bg background
- U uninventoried levels 3 or 4, and unseen levels 1, 2, or 3

(2) Sensitivity levels

- 1 high
- 2 moderate
- 3 low
- 4 very low

(3) Landscape management zone	Visual Quality Objective
A	= IA - Inevident Alterations
B	= AA - Apparent Alterations
C	= DA - Dominant Alterations

Visual quality objectives

The final step of the broad-scale planning level entails the recommendation of visual quality objectives (VQO) for the different landscape management zones. VQOs indicate the maximum degree to which landscape alterations may visually affect the characteristic landscape. They provide measurable standards for the visual appearance of any potential landscape alterations. Guidelines for achieving the objectives are not specified at this stage, but are prescribed for particular situations at the project application level of the VMS.

The VQOs for each landscape management zone follow.

Reserve zone - Reserve VQO: alterations in parks and conservation reserves should appear as very low-impact or near-natural changes, carefully planned to accommodate and/or enhance the special qualities of these areas.

Zone A - Inevident Alteration VQO: management alterations should not be visually evident to the observer by 1 year after an initial change. During the first year the alteration may be temporarily apparent, but not dominant in its visual impact.

Zone B - Apparent Alteration VQO: management alterations may be, at most, visually apparent but not dominant by 2 years after the initial change. During the first 2 years the alteration may be visually dominant; however, this should be avoided if possible.

Zone C - Dominant Alteration VQO: management alterations may be visually dominant; however, their design should borrow as much as possible from the surrounding natural characteristics of the landscape to reduce and soften dominant impacts.

Rehabilitation VQO: this special objective applies wherever past alterations do not achieve VQOs assigned to the landscape management zone. Short-term management activities should attempt to upgrade visual quality to the desired level. Long-term visual management may require development and/or rehabilitation plans.

The Project Application Level

After visual quality objectives are recommended at the broad-scale planning level, they are then considered along with other forest resources in the forest management planning process. This process may show that the recommended VQOs are either compatible or in conflict with management recommendations for other forest resources.

If the recommended VQOs are in conflict, decisions will be made as to which resource has the highest priority in a given situation and what compromises or trade-offs must be made in managing the various forest resources. Thus, in the context of other forest resources, a practical or attainable VQO is selected in the area management plan. This attainable VQO may be of a higher, lower, or equivalent standard to those objectives recommended at the broad-scale planning level. For example, a landscape management zone with a recommended Inevident Alteration VQO may be upgraded to a Reserve VQO if it is proposed as a special reserve due to the presence of unique vegetation and wildlife. In another case, a zone that has recommended Inevident Alteration VQO may be lowered to an Apparent Alteration VQO because of its

extreme suitability for construction of a needed road or electricity transmission line that could not possibly achieve an inevident state in the landscape.

Once an attainable VQO is determined, then specific guidelines can be prescribed to achieve that objective.

Project analysis and guidelines

Visual analysis of particular management activities takes place on a project-by-project basis, within the context of the broad-scale visual resource assessments. This allows specific guidelines to consider more detailed visual information specific to site conditions.

A visual absorption capability assessment procedure has been developed as an aid to visual resource specialists and foresters in generating project guidelines. The procedure determines the capability of the landscape to absorb various landscape alterations based on assessments of terrain slope, soil erosion potential, vegetation screening, and vegetation pattern. Based on such analysis, project guidelines are prescribed, reflecting management constraint levels necessary to meet the desired VQO.

Application to the Alpine Walking Track

The broad-scale planning level of the VMS has been applied to all public land adjacent to the Alpine Walking Track (AWT) in Victoria. The initial assessments provide base data on scenic quality, public sensitivity, seen areas, landscape management zones, and VQOs.

The AWT lies entirely within the Eastern Highlands landscape character type. The area is classified as predominantly of high or moderate scenic quality, with some small enclosures of low scenic quality. Although the Track has lower observer volumes than other major travel routes in Victoria, it is assessed as having a high public sensitivity level due to its national significance as a walking track and the known concern of track observers for scenic qualities. The full complement of landscape management zones have been delineated along the Track.

General design guidelines

Future proposals for alterations to the landscapes viewed from the AWT should employ additional visual analysis and apply appropriate design guidelines to ensure achievement of the recommended VQOs. Each proposed alteration should be assessed individually, up-dating existing inventories with site-specific information. Although many specific guidelines depend on site factors that can only be inventoried for each project, some general guidelines can be suggested.

Throughout, the landscape's visual absorption capability will be moderate to low. Depending on the specific type of alteration and the landscape management zone, project guidelines will vary. The following charts indicate suggested guidelines for specific conditions associated with four alteration types (they are additional to those outlined in the AWT section of the Recreation chapter). For example, if clear felling and selective harvests were to be considered within landscape management zone B, where the visual absorption capability is low, several project guidelines (2, 5, 6, 8, 10, 14, 15, and 16) would apply, as indicated by dots in the appropriate column.

Project Guidelines for Five Alteration Types

Project Guidelines	Management Constraint Level											
	Severe					Moderate				Low		
Landscape Management Zone	R	R	A	A	B	R	A	B	C	B	C	C
Visual absorption capability:	L	M	L	M	L	H	H	M	L	H	M	H
Specialist Assistance												
Landscape Management Section should be consulted on all projects affecting the Visual Resources	•	•	•	•		•						
Clear Fellings and Selective Harvests												
1 Harvest other than hazard removal and amenity cutting should be unacceptable.	•	•				•						
2 Clear fellings should borrow greatly from natural landscape patterns (form, line, colour and texture). Retain seed/habitat trees and use the smallest possible coupe size where practical			•	•	•							
3 Clearfelling coupes should borrow size and shape from natural elements, retain some residual vegetation and not exceed about 10 hectares.							•	•	•			
4 Small areas of selection harvest should present a visual appearance similar to the adjacent unharvested area - varying only slightly in density, spacing, age or species composition following harvest.			•	•								
5 Large areas of selection harvest may present a visual appearance dissimilar to and yet in harmony with adjacent unharvested areas by borrowing significantly from natural elements of form, line, colour and texture.					•		•	•	•	•		
6 Harvested areas should be replanted immediately.			•	•	•		•	•	•	•		
7 Slash resulting from harvest should be reduced by burning as soon as possible following harvest operations. Retained seed/habitat trees should be protected from regeneration burning.			•	•								
8 Slash resulting from harvest should be scattered or piled and burned. Maintenance of some residual vegetation is desirable.					•		•	•				
9 Minimum stump height should be strictly maintained.	•	•	•	•		•						
10 Landing sites would be best located in areas screened from view by vegetation and/or topography.	•	•	•	•	•	•	•					
11 Landing sites should be located in areas where relatively short negative impact duration is predicted. Scarification and revegetation should follow usage.								•	•	•		
12 Landing sites may be a dominant visual impact, but should be selected to minimise negative impacts and limit duration of dominance.											•	•
13 The verges of streams, roads, walking tracks and other viewpoints significant to recreation use should be undisturbed by harvest operations.	•	•	•	•		•						
14 The verges of recreational streams, roads, walking tracks and other viewpoints, if unavoidably disturbed should be rehabilitated as soon as possible.	•	•	•	•	•	•	•					
15 Special falling techniques and harvest equipment may be required to minimise damage to residual vegetation, stream zones or travel routes.	•	•	•	•	•	•						
16 Interpretive and explanatory signing should be utilised before, during and following the harvest operation.	•	•	•	•	•	•	•					
Roads												
1 Road construction should be avoided.	•		•									
2 Earthworks and other ground disturbances should be restored to a natural appearance immediately following completion of the operation.	•	•	•	•		•						
3 Road design and construction should be subordinate to landscape elements. This may require minimum clearing, limited cuts and fills, undulating edges, bench terraces, bin walls and/or immediate revegetation.	•	•	•	•	•	•	•	•	•	•		
4 Landscape design plans should be prepared for new road intersections with principal travel routes	•	•	•	•	•	•	•					

Project Guidelines	Management Constraint Level											
	Severe					Moderate				Low		
	R	R	A	A	B	R	A	B	C	B	C	C
Landscape Management Zone →	L	M	L	M	L	H	H	M	L	H	M	H
Visual absorption capability: →												
5 Construction staging areas, gravel pits and stockpile areas should be excluded or screened from view.	•	•	•	•	•	•	•	•	•			
6 Maintenance of roadside verges should be done with care. Remove or heap and burn vegetative slash and waste debris wherever possible following timber harvests or construction.	•	•	•	•	•	•						
Transmission Corridors												
1 Overhead transmission and underground lines requiring corridors should be avoided.	•	•	•	•	•	•						
2 Clearing for corridors should borrow heavily from natural elements as vegetative patterns and breaks in topography. Irregular clearing boundaries, and uncleared gullies should be utilised.	•	•	•	•	•	•	•	•	•	•		
3 Maintenance of corridors should avoid broadscale poisoning of vegetation and uniform clearing.	•	•	•	•	•	•	•	•	•	•	•	
4 Towers should be painted to harmonise with surrounding landscape elements.	•	•	•	•	•	•	•	•	•			
5 Junctions with principal travel routes should be at right angles.	•	•	•	•	•	•	•	•	•	•		
Spot Developments												
1 All structures and signs visible from significant recreational observation points should be finished with naturally harmonious materials and colours.	•	•	•	•	•	•	•	•	•	•		
2 A landscape development plan should accompany all new recreation areas, buildings, towers and other spot developments.	•	•	•	•	•	•	•	•	•	•		
3 Buildings and other structures should reflect the lowest practical density in their distribution on the landscape.	•	•	•	•	•	•	•					
4 Buildings and other structures should utilise low profile architecture, preferably with heights below or only slightly above the forest canopy.	•	•	•	•	•	•	•					
5 Where existing vegetative screening is low and vegetative pattern is uniformly open, trees and shrubs should be established to screen buildings and other structures.	•		•			•						

Project Guidelines extracted from Williamson, D., Murray, S., Moss, S., and Hammond, R., 1981. *Visual Absorption Capability in the Blue Range Study Area: An Assessment Procedure for Victoria's Forest Landscapes*. Landscape Management Section, Forests Commission Victoria, Melbourne, Australia.

The Mount Wills area

The following description suggests how the VMS might be applied to a specific 25-km stretch of the AWT in the Mount Wills area.

The Alpine Walking Track traverses 25 km of the Great Divide between Maddisons Hut in Bogong National Park and Gills Creek at the eastern boundary of the proposed Mount Wills Historic Area. High scenic quality extends from Maddisons Hut along the upper ridge-tops of Long Spur to the east. Side-slopes of the Big River and Mount Wills Creek drainages are classified as having moderate scenic quality. Open herbfields and snow gum stands afford extensive views down the Big River drainage near Maddisons Hut, but these soon become limited by denser forest cover. The area within Bogong National Park is designated as a Reserve Zone. The high scenic quality areas (which lie within the foreground seen-area) along Long Spur are designated as Zone A. Middle ground and background views into country of moderate scenic quality on both sides of Long Spur are mapped as Zone B. Unseen areas are designated as Zone C.

At Big River saddle, the Track enters the proposed Mount Wills Historic Area. Landscape management zones continue the pattern described above for another 4 km until the Track enters

the proposed Sunnyside Education Area. The Reserve Zone applies within this reserve and also within the existing Sunnyside Roadside Reserve. High scenic quality exists within the reserve and along the Track to its junction with the Omeo Highway. Those areas outside the reserve, viewed within the foreground and middleground seen-areas, are mapped as Zone A. Dropping away from the upper slopes of Mount Wills to the north and south, scenic quality becomes moderate. Middleground and background views to these areas of moderate scenic quality are recommended as Zone B. Unseen areas are mapped as Zone C.

As the Track proceeds through the areas of moderate scenic quality to Gills Creek, the foreground seen-area is mapped as Zone A. Middleground and background areas continue to fall within Zone B and unseen areas within Zone C.

In addition to the general project guidelines suggested previously, and those provisions outlined in the AWT section of the Recreation chapter, the following supplementary design guidelines and techniques could be used to reduce the visual impact of harvesting in the Mount Wills area.

1. No harvesting - either clearfelling or selective - should occur within the Sunnyside Education Area and the existing Sunnyside Roadside Reserve.
2. No visible clearfelling should take place within the fragmented seen-area of Landscape Management Zone A. Selective harvests are more likely to maintain the Inevitable Alteration VQO.
3. Clearfellings and selection harvests within Zone B and other parts of Zone A should be designed in consultation with a visual resource specialist. Such designs should carefully consider and provide guidelines for the location, shape, edge effects, and scheduling of harvest coupes. Computer simulation programs could be employed to predict the appearance of proposed designs.
4. New roads and earthworks associated with timber harvests should be kept to a minimum and planned with a visual resource specialist.
5. Vegetative screens should be maintained adjacent to any roads or log landings constructed.
6. Within the proposed Mount Wills Historic Area a comprehensive field survey should be conducted to locate sites of historical significance. The foreground seen-area of these sites should be treated as a Reserve Zone, as is (1) above.