

PROPOSED RECOMMENDATIONS

**ALPINE AREA
SPECIAL INVESTIGATION**

**LAND CONSERVATION COUNCIL, VICTORIA
MELBOURNE, MAY 1983**

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GOVERNMENT OF VICTORIA

LAND CONSERVATION COUNCIL

464 ST. KILDA ROAD, MELBOURNE, VICTORIA, 3004

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These Proposed Recommendations are published to allow all who are interested the opportunity to comment by making written submissions to the Land Conservation Council.

All such submissions received on or before Tuesday 26 July, 1983 will be considered by the Council before Final Recommendations are made on the use of public land in the Alpine area.

I. KUNARATNAM
Secretary

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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 proposed 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 1,090 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, the Council has prepared these proposed recommendations. They are available to the public and have been automatically distributed to those who made submissions following the publication of the resources report.

During the 60 days after the publication of these proposed recommendations, the Council invites further submissions. All these will be carefully considered and the Council will then make its final recommendations to the Minister for Conservation.

Submissions received by the Council will be available for inspection at the Council offices, 464 St. Kilda Road, Melbourne.

The recommendations in the text are grouped under major headings, such as The Alpine Park System, Hardwood Timber Production, and so on. The text is accompanied by a map at the scale of 1:250,000 which shows the current land use in the Alpine area as well as the 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 more than 235,000 ha, and if added to the existing parks here (approximately 330,000 ha), would increase the park system to about 565,000 ha.

New historic areas centred on Glen Wills and Mount Murphy have also been recommended.

The following proposals make certain changes to the current land use in the Alpine area and these are summarized 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	330,000	565,000	39
Wilderness.....	29,500	28,200	2
Reference Areas.....	9,860	9,860	<1
Natural Features and Scenic Reserves.....	71,300	21,400	1
Hardwood Production	455,300	423,000	30
Water Production.....	8,900	8,900	<1
Hydro-electricity Production.....	4,000	2,960	<1
Historic Areas	12,360	22,000	2
Agriculture.....	1,300	1,300	<1
Alpine Resorts.....	9,620	9,520	<1
Uncommitted Land.....	499,000	339,000	24
Other Reserves.....	2,270	2,270	<1

Notes:

Figures are rounded off.

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 (320 ha), uncommitted land in the North-eastern area, Districts 3, 4 and 5 (1,630 ha), and recommended uncommitted land in the Gippsland Lakes Hinterland area (400 ha). The use of public land in the North-eastern area, Districts 3, 4 and 5, and in the Melbourne area, for hardwood timber production (16,000 ha) — as approved by the government following publication of the final recommendation for the Alpine area — would continue.

In addition to the recommended extensions to the park system, the Council has identified further areas that have significance or that, together with the proposed additions, could link the existing parks. These areas are described, as the Council is aware that various community groups are seeking their inclusion in an alpine park. They have not, however, been included with the recommended additions, generally because of uncertainty regarding the longer-term significance of the timber resources contained within them.

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, and by placing areas into the 'uncommitted land' category. 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 unrecognized 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.

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 emphasizes 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 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 organization. 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 organizations 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 utilization 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 organizations other than government authorities and academic institutions should be sought whenever appropriate.

The Council also recognizes 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

Following the Council's final recommendations for the Alpine area published in June 1979, the government approved the establishment of five parks in the Victorian Alps. When recommending these parks, the Council made reference to several important aspects of management. As additions are proposed to the existing park system, it is appropriate to again make reference to certain uses and the provisions relating to the control of wildfires and noxious pests.

An essential aim in the reservation of these parks and the additions described below 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.

Council recognizes that wildfires, 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.

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 organizations 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.

Vermin and noxious weeds within parks will be controlled. This 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.

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.

Current legal access will continue to be available to freehold land enclosed by any of the recommended park additions.

Recommendations

A1--A5 That the areas indicated on the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979.

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.

Recommendations

A6--A20 That the areas indicated on the map 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.

Rose River (8,630 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, and recommends that the area should be added to the park system on completion of logging.

Recommendation

A6 Rose River

- (a) That the area of 8,630 ha shown on the map be used in accordance with the principles and guidelines set down in the hardwood timber production chapter, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service

that

- (b) logging be permitted until July 1988 with the area then being added to the park system and that, upon addition to the park system

- (c) the area be used in accordance with the general recommendations outlined at the start of this chapter
- (d) logging not be permitted
- (e) grazing be permitted subject to the policies and conditions applying in the existing parks
- (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 (1,630 ha) within the North-eastern area, Districts 3, 4 and 5.

Howqua River (23,500 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.

A band of Cambrian greenstones occurs here, adding an important geological feature to the alpine park system. 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 recommends that this portion of the proposed addition to the park system be added to the park on completion of logging.

Recommendation

A7 Howqua River

- (a) That the area of 19,500 ha shown on the map be used in accordance with the general recommendations outlined above

that

- (i) grazing be permitted subject to the policies and conditions applying in the existing parks — except for the area delineated on The Bluff where grazing is to be phased out by May 1991

- (ii) deer-hunting 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) logging not be permitted
 - (iv) apiculture be permitted
- (b) that the area of 4,000 ha shown separately on the map be used
- (i) in accordance with the principles and guidelines set down in the hardwood timber production chapter, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service
 - (ii) that logging be permitted until July 1988, with the area then being added to the park and managed accordingly

Macalister River (36,000 ha)

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

Mount McDonald, Mount Clear, and the King Billies in the north are traversed by the Alpine Walking Track, while another walking track follows the Long Hill over The Crinoline from the Macalister River to Mount Tamboritha. 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.

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.

The smoky mouse has been recorded at two sites in the higher reaches of this area, including in the headwaters of Grimme Creek where also is located the rare boronia *Boronia citriodora*. Other rare indigenous plants located in this proposed 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 recommends that these portions of the proposed addition to the park system be added to the park on completion of logging. Council also considers that the existing provisions for once-only logging in the Natural Features and Scenic Reserves incorporated in this addition should continue.

Recommendation

A8 Macalister River

- (a) That the area of 34,850 ha shown on the map be used in accordance with the general recommendations outlined above

that

- (i) grazing be permitted subject to the policies and conditions applying in the existing parks
 - (ii) logging not be permitted — except for once-only logging in the areas previously delineated and according to the existing principles and guidelines
 - (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 be permitted through the park to private property on the Bennison Plains
 - (v) apiculture be permitted
- (b) that the areas, totalling 1,150 ha, shown separately on the map be used
- (i) in accordance with the principles and guidelines set down in the hardwood timber production chapter, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service
 - (ii) that logging be permitted until July 1988, with the areas then being added to the park and managed accordingly.

Tali Karng--Trapyard Hill (13,000 ha)

One of the major features of this area is Lake Tali Karng — a small, deep, highland lake in the upper reaches of the Wellington River valley.

Its vicinity has a long history of use by bushwalkers and is one of the most popular bushwalking destinations in the Victorian Alps. These 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, the 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, is a popular camp site for walkers, horse-riders, and motorized tourers.

A number of features here have geological significance. The divide between the Dolodrook and Wellington Rivers contains one of the richest occurrences of Cambrian and Ordovician fossils in the State, and 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; and the upper reaches of the Moroka River valley contain the rare austral moonwort (*Botrychium australe*) and dense midge-orchid (*Prasophyllum densum*). Attractive and distinctive manna gum open woodlands grow in the Dolodrook River valley.

Recommendation

A9 Tali Karng--Trapyard Hill

That the area of 13,000 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (a) grazing be permitted subject to the policies and conditions applying in the existing parks
- (b) logging not be permitted
- (c) deer-hunting 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

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 Park as well as fishermen and other tourists.

Recommendation

A10 Horseyard Flat

That the area of 150 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (a) grazing be permitted subject to the policies and conditions applying in the existing parks
- (b) logging not be permitted
- (c) apiculture be permitted

The Pinnacles--Castle Hill (12,900 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 localized 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 12,900 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (a) grazing be permitted subject to the policies and conditions applying in the existing parks
- (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 (400 ha) within the Gippsland Lakes Hinterland area.

Wombat Spur (4,000 ha)

The Wongungarra River has formed a series of flood-plains from the base of the Tea Tree Spur to below its junction with the Crooked River. These flood-plains, once the scene of intensive gold-mining 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 the 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.

Recommendation

A12 Wombat Spur

That the area of 4,000 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (a) grazing be permitted subject to the policies and conditions applying in the existing parks
- (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

Dargo River (28,500 ha)

This area contains the deep, heavily dissected upper reaches of the Dargo River valley. It also includes the spectacular high ridgeline of the Great Dividing Range, from the The Twins to Mount Murray, which is traversed by the Alpine Walking Track. Basalt cliffs form the escarpment below the Dargo High Plains, and the high ridges extending to Munt Blue Rag, Mount Freezeout, and towards Mount Hotham surround the scenic rugged headwater 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.

Three 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 1988, and recommends that these portions of the proposed addition to the park system should be added to the park on completion of logging.

Recommendation

A13 Dargo River

- (a) That the area of 25,500 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (i) grazing be permitted subject to the policies and conditions applying in the existing parks
 - (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 3,000 ha shown separately on the map be used
- (i) in accordance with the principles and guidelines set down in the hardwood timber production chapter, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service
 - (ii) that logging be permitted until July 1988, with the areas then being added to the park and managed accordingly

Rocky Valley--Pretty Valley (1,150 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 is not proposing to add further land within the East Kiewa hydroelectricity production area to the alpine park system. It recognizes, however, that this area encompasses the major access road to the Bogong National Park. The Council therefore believes that the State Electricity Commission should collaborate with the land managers responsible for the public land adjoining the hydroelectricity production area in the development and presentation of information and educational programs. (See Recommendation F3).

Recommendation

A14 Rocky Valley--Pretty Valley

That the area of 1,150 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (a) grazing be permitted subject to the policies and conditions applying in the existing parks
- (b) the Kiewa Hydroelectric Scheme be adequately protected to comply with the provision of the *State Electricity Commission Act 1958* and regulations and ensure that the quality, quantity, and timing of the water produced meet 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 the State Electricity Commission in consultation with the Forests Commission and the National Parks Service
- (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 utilize facilities required for the operation and maintenance of the works associated with the Kiewa Hydro Electric Scheme
- (f) the Antarctic Division be permitted to continue to occupy and utilize its facilities in the area
- (g) apiculture not be permitted
- (h) hunting and the use of firearms not be permitted

East Kiewa (1,800 ha)

The land in the East Kiewa valley indicated on the maps 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

A15 East Kiewa

In the area of 1,800 ha shown on the map, that

- (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 Slippery Rock Creek catchment) be permitted to continue

and that

- (b) the area be added to 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

Anglers Rest (17,000 ha)

This addition extends eastwards from the Bogong National Park and takes in the Omeo Highway and the tourist road from Shannonvale to Falls Creek. It is currently uncommitted land and includes the environs of the Mitta Mitta River between Shannonvale and the Omeo farmlands. The Mitta Mitta River is still one of Victoria's major canoeing streams, despite the construction of the Dartmouth Dam, and is also popular for fishing and camping, particularly at Anglers Rest. The Omeo Highway offers outstanding views of the Mitta Mitta 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, mountain gum, and candlebark at higher elevations (in the vicinity of Trapyard Gap). 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*), and honey caladenia (*Caladenia testacea*).

A number of sites of historic 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 Mitta Mitta River — occur in this area.

Recommendation

A16 Anglers Rest

That the area of 17,000 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (a) grazing be permitted subject to the policies and conditions applying in the existing parks
- (b) logging not be permitted
- (c) legal access to private property enclosed within the park 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

Dartmouth (69,000 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 historical 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 mineralization 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, and that with modern methods of mining this can be achieved. 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 fulfilled before mining is allowed to proceed.

1. It should be demonstrated that any extraction site and adjacent disturbed areas can be satisfactorily rehabilitated. This includes any:
 - (a) planned open pit
 - (b) mine-waste rock
 - (c) mill tailings dump
2. Roads or material-transport routes should be minimized, and should be routed to preserve any areas of significant aesthetic or nature conservation value.
3. Underground mine openings and surface works, and ore-treatment facilities, should be sited and designed to minimize any noise, dust, or visual pollution, avoid erosion, and preserve all significant aesthetic or nature conservation values.
4. It should be demonstrated that mining would be in the State interest.

Recommendation

A17 Dartmouth

- (a) That the area of 67,500 ha shown on the map be used in accordance with the general recommendations outlined above and that
 - (i) grazing be permitted subject to the policies and conditions applying in the existing parks
 - (ii) logging not be permitted — except for once-only logging in areas indicated on the map (these areas, after logging in accordance with the principles set down in the hardwood timber production chapter, to be regenerated and rehabilitated; logging operations, regeneration, and rehabilitation to be controlled by the Forests Commission in consultation with the National Parks Service; and all logging to cease by July 1991)
 - (iii) mineral exploration be permitted in accordance with the principles and guidelines outlined in the chapter on mineral and stone production
 - (iv) mining be permitted in accordance with the principles and guidelines outlined in the chapter on mineral and stone production, and provided the above conditions can be fulfilled

- (v) 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
 - (vi) legal access to any freehold land enclosed within the park continue to be available
 - (vii) apiculture be permitted
- (b) that the area of 1,500 ha, shown separately on the map, be used
- (i) in accordance with the principles and guidelines set down in the hardwood timber production chapter, with logging operations, regeneration, and rehabilitation being controlled by the Forests Commission in consultation with the National Parks Service
- and that
- (ii) logging be permitted until July 1993, with the area then being added to the park and managed accordingly

Notes:

1. Council has recommended this area as a park recognizing that mining could well take place within it.
2. Council recognizes that the State Rivers and Water Supply 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 Dartmouth Lake. These policies should be implemented by the National Parks Service under an agreement between the agencies that allows the Service to manage land between water level and E.L. 536 m, 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.
3. Two stands in the vicinity of Soldiers Creek have been partially logged in the 1982/83 season and logging is expected to be completed at the end of the 1983/84 season. These stands have not been shown on the map.
4. The State Electricity Commission is proposing to erect a radio facility on Mount Benambra. This proposal is currently being investigated in accordance with the procedures under the *Environment Protection Act 1970*.

Elkins Creek (2,500 ha)

This area contains the entire catchment to Elkins Creek and is essentially unroaded and untouched. Its relatively pristine condition and remoteness suit it for wilderness-style recreation. Vegetation types vary from snow gum woodland, through tall alpine ash forests, to drier peppermint forests. Good views into the Kosciusko National Park can be gained from Grassy Knob and the ridge that forms the western boundary.

Recommendation

A18 Elkins Creek

That the area of 2,500 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (a) grazing be permitted subject to the policies and conditions applying in the existing parks
- (b) logging not be permitted
- (c) hunting and use of firearms not be permitted
- (d) apiculture be permitted

Pinnibar (1,000 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 Kosciusko 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

A19 Pinnibar

That the area of 1,000 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (a) grazing be permitted subject to the policies and conditions applying in the existing parks
- (b) logging not be permitted
- (c) hunting and use of firearms not be permitted
- (d) apiculture be permitted

Mount Barlow (1,320 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 Kosciusko National Park.

Recommendation

A20 Mount Barlow

That the area of 1,320 ha shown on the map be used in accordance with the general recommendations outlined above

and that

- (a) grazing be permitted subject to the policies and conditions applying in the existing parks, and subject to adequate protection of the Kosciusko National Park in New South Wales

- (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 (320 ha) within the North-eastern area, District 1.

Other areas of significance

In the Council's opinion, the following areas include features that would warrant their addition to the alpine park system.

They do, however, contain a mature sawlog resource and the mills currently using this resource have based their plans for future operation on its continued availability. Moreover, they also include substantial areas of both fire and logging regrowth and, although none of this has yet been allocated to any sawmilling company, at least a substantial portion of it will probably be important as a source of supply in both the medium- and longer-term future.

The use of the regrowth ash resource in the Alps is closely linked with use of the mountain ash resource of the Central Highlands. In the next 10 to 20 years the forests of the Central Highlands will provide increasing volumes of sawlogs and will be the major source of select-grade hardwood timber for a number of years thereafter. As yet, however, no specific arrangements for the use of this resource have been determined by the government or the resource managers. The Council is therefore unable to forecast the extent to which the alpine regrowth resource will be required or predict when it will be needed.

In view of the situation facing a number of mills and sawmilling centres, the need to make decisions about future availability of resources is becoming increasingly urgent.

Until the decisions are made, the Council is unable to make firm recommendations concerning the areas described below. The possibility of adding these areas to the park system should, however, be re-evaluated when it is decided how the resource in the Alps and the Central Highlands is to be used.

Estimates of forest areas and sawlog volumes used in this section are indicative only. They may need to be adjusted as a result of further assessments being carried out by the Forests Commission.

A21 North Jamieson River (8,600 ha)

This part of the North Jamieson River catchment includes uncommitted land and a hardwood timber production area. It is encompassed by The Governor and The Bluff-Mount Clear Natural Features and Scenic Reserves, which are proposed for addition to the park system (see A7 and A8).

Values and uses

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. The series of prominent peaks includes 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.

Timber

Timber harvesting is progressing through this area, and approximately 38,000 m³ of mature alpine ash remains at present. The timber is being sawn at Mansfield prior to further processing in Melbourne.

The area also includes 680 ha of regrowth alpine ash from the 1939 fires and 720 ha of logging regrowth. In all, the total productive alpine ash forest here exceeds 2,000 ha, which, over a single 80-year rotation, could yield an estimated 302,000 m³ of ash timber. This represents 22% of the estimated productivity of the ash sites in the Mansfield portion and 2% of the total potential productivity of the Alpine area.

Approximately 8,000 m³ of mixed-species timber is also located here. It is expected that this, too, will be harvested in the near future and sawn at Mansfield.

Altogether, mixed species forests in the North Jamieson River basin (750 ha) could yield almost 90,000 m³ of logs over one rotation. This represents 11% of the total potential productivity of the mixed-species stands within the Alpine area portion of the Mansfield mixed-species forests.

Hunting

Relatively large populations of deer are found in this area. Because of its location, however, it receives only moderate use.

A22 Doolans Plain (4,000 ha)

This area includes land currently set aside for hardwood timber production between the Wonnangatta--Moroka National Park and the Moroka road.

Values and uses

Doolans Plain forms part of a broad plateau with steep escarpments falling towards the Moroka River and facing Snowy Bluff. Many bushwalkers regard the 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 near 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.

The addition would provide an easily recognized boundary to this section of the Wonnangatta--Moroka National Park.

Timber

Some 260 ha of 1939 alpine ash fire regrowth, and almost 1,400 ha of logging regrowth, make the area one of high potential timber productivity. It is likely to be important for timber production in the future.

All the land here that could support productive alpine ash forests (almost 1,720 ha) could, it is estimated, yield approximately 258,000 m³ of timber over a single rotation of 80 years.

This volume represents almost 11% of the ash logs that, it is estimated, the Heyfield portion of the Alpine area could yield over an 80-year rotation. It also represents almost 2% of the total potential production of ash logs from the Alpine area as a whole over a single 80-year rotation.

A23 Moroka River headwaters (4,700 ha)

This area of uncommitted land lies between the southern boundary of the Wonnangatta--Moroka National Park and the Pinnacles--Castle Hill Natural Features and Scenic Reserve.

Values and uses

It 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.

Such an addition to the park would consolidate the park boundaries.

Timber

The area lies within the zone of supply to the Heyfield group of sawmillers, and will supply a harvest of some 10,000 m³ of mature alpine ash over the next few years. It is likely to be important for timber production in the future as it contains over 70 ha of 1939 alpine ash regrowth and almost 1,000 ha of logging regrowth. Altogether, the alpine ash sites here (almost 1,200 ha) could yield an estimated 177,000 m³ of timber over an 80-year rotation.

This volume represents more than 7% of the potential from ash forests within the Heyfield portion and more than 1% of the total of the ash sites in the Alpine area.

A24 Wongungarra River headwaters (2,400 ha)

This area of uncommitted land lies west of the Dargo High Plains road between the Barry Mountains and Blue Rag Range Natural Features and Scenic Reserves.

Values and uses

The headwaters of the Wongungarra River form a deep, heavily 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 a proposed addition to the park system — see A13), as well as from the Dargo High Plains road where it traverses the narrow watershed between the Dargo and Wongungarra Rivers.

Timber

Mature stands of alpine ash here contain an estimated 21,000 m³ of timber and include portion of an allocated logging area. Some 900 ha of 1939 regrowth is also located in this area and the total productivity of the 1,200 ha of productive ash sites is estimated to be 192,000 m³ over a rotation of 80 years.

This volume represents more than 1% of the total potential yield, over an 80-year rotation, of ash timbers from the Alpine area.

A25 Big River (8,570 ha)

This narrow strip of uncommitted land in the headwaters of the Big River lies between the eastern boundary of the Bogong National Park and the Snowy Creek--Knocker hardwood production area.

Values and uses

The Big River forms the eastern boundary of the 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 uncommitted land 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.

Timber

The area is an important source of alpine ash and mixed-species sawlogs. It contains some 24,000 m³ of mature alpine ash, which represents about 4 years supply of timber to the sawmill at Mitta Mitta. (The company operating the mill estimates the mature resource would yield about 30,000 m³.) This is about half the mature ash resource currently available to the mill.

In addition, stands of 1926 and 1939 alpine ash regrowth occur in the area and will probably be important to the sawmills in the Mitta Mitta Valley when supplies of mature alpine ash and mixed species are depleted. In the future this regrowth resource, with a productive area of 330 ha, should supply an estimated 49,500 m³ over an 80-year rotation. Logging regrowth adds a further 460 ha and the total productive area of 790 ha could, it is estimated, produce some 118,500 m³ of ash over an 80-year rotation. This would represent 10% of the estimated yield of alpine ash for the Tallangatta district and a little less than 1% of that for the whole of the Alps.

Some 2,000 m³ of mature mixed-species sawlogs are also located here, and the estimated yield from a productive area of 100 ha is about 12,000 m³ over an 80-year rotation.

A26 Mount Misery (3,800 ha)

This area, located north-east of Benambra, is currently reserved for hardwood production.

Values and uses

It includes the western extremity of the Davies Plain Ridge, which extends into the Cobberas--Tingaringy National Park and the Murray River headwaters uncommitted land (U3). 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 snow-fields.

The eastern section of this area lies within the Limestone Creek goldfield, and alluvial gold has been found in Dead Horse Creek.

Timber

The Benambra sawmill's allocated logging area overlaps the region and contains a total mature alpine ash resource of at least 360,000 m³; which, at the current annual allocation, represents 20 years' supply to the mill. Approximately 40,000 m³ of this mature resource (over 2 years' supply) lies within the Mount Misery area. Approximately 420 ha of regrowth alpine ash also occurs here and, over an 80-year rotation, has the potential to produce an estimated sawlog volume of 84,000 m³.

Altogether some 890 ha of alpine ash here could produce 178,000 m³ of sawlogs over an 80-year rotation, indicating the area's long-term significance to the timber industry. This represents 5.3% of the potential ash sawlog volume in the Swifts Creek district and 1.3% of the total in the Alps.

Park Links

The Council is aware that some community groups have long been seeking the creation of a single alpine park contiguous with the Kosciusko National Park. To achieve this, the existing parks would need to be linked. The Council has examined a number of options and four are outlined below. Two are based on the Alpine Walking Track, while the other two establish links essentially through uncommitted land. These areas would only complete links between the parks if some of the areas referred to previously are added to the existing alpine parks.

Three of the link options include substantial volumes of timber: an extensive mature ash resource in the Gibbo--Sassafras link; mainly regrowth in the Basalt Spur link; and both mature and regrowth ash along the Barry Mountains. For the reasons outlined in the previous section, the longer-term significance of these timber resources remains unclear, and at this stage the Council is not proposing that the links become part of the park system. Council believes, however, that these linking areas should be managed in such a way as to maintain their natural values.

Should the government wish to establish a link between the Wonnangatta--Moroka and Bogong National Parks, the Basalt Spur proposal is likely to have a lesser impact on a future timber industry than the link through the Barry Mountains, but would not include comparable features. To the east of the alps, the proposed Dartmouth addition can be linked to the Cobberas-Tingaringy Park by the Buenba proposal and this is recommended by the Council. Although this link does not include the Alpine Walking Track, a trail could be constructed eastwards through the link and then north through the Cobberas-Tingaringy Park to join the Alpine Walking Track at Tom Groggin.

During the period between proposed and final recommendations, Council will consider any further proposals put forward concerning other possible alternatives for linking the two parks.

A27 Buenba (17,000 ha)

This area, extending from the headwaters of the Buckwong Creek in the east to the Gibbo River in the west, between Buenba Creek and the Beloka Range, lies between the Cobberas--Tingaringy National Park and the recommended Dartmouth addition. It encloses the Buenba Reference Area.

While open peppermint forests predominate, there is considerable diversity of vegetation forms. 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 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.

The western part of this area lies within the zone of base metal mineralization that occurs in the proposed Dartmouth addition to the park system. Mineral exploration activity is current, and a prospective area has been identified in the lower reaches of Turnback Creek. Council considers that provisions relating to mineral exploration and mining should be the same as those proposed for the Dartmouth area. It is the Council's view 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 primarily 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, and that with modern methods of mining this can be achieved. In addition to the principles and guidelines for mining on public land listed in the chapter on minerals and stone production, the following conditions should also be fulfilled before mining is allowed to proceed.

1. It should be demonstrated that any extraction site and adjacent disturbed areas can be satisfactorily rehabilitated. This includes any:
 - (a) planned open pit
 - (b) mine waste rock
 - (c) mill tailings dump
2. Construction of roads or material transport routes should be minimized, and their locations chosen to preserve any areas of significant aesthetic or nature conservation value.
3. Underground mine openings and surface works, and ore-treatment facilities, should be sited and designed to minimize any noise, dust, or visual pollution, avoid erosion, and preserve all significant aesthetic or nature conservation values.
4. It should be demonstrated that mining would be in the State interest.

Recommendation

A27 Buenba

That the area of 17,000 ha shown on the map be used in accordance with the general recommendations outlined previously for the proposed park additions, and that

- (a) grazing be permitted subject to policies and conditions applying in the existing parks
- (b) logging not be permitted — except for once-only logging in areas indicated on the map (these areas, after logging in accordance with the principles set down in the hardwood timber production chapter, to be regenerated and rehabilitated, logging operations, regeneration, and rehabilitation to be controlled by the Forests Commission in consultation with the National Parks Service, and all logging to cease by July 1988
- (c) mineral exploration be permitted in accordance with the principles and guidelines outlined in the chapter on mineral and stone production
- (d) mining be permitted in accordance with the principles and guidelines outlined in the section on mineral and stone production, and provided the above conditions can be fulfilled

- (e) hunting and the use of firearms not be permitted
- (f) apiculture be permitted.

Note:

Council has recommended this area as a park link recognizing that mining could well take place within it.

A28 Barry Mountains (19,100 ha)

The area delineated on the map forms a link between the Wonnangatta--Moroka and Bogong National Parks and incorporates the Alpine Walking Track. The link includes uncommitted land, portion of the Selwyn--Tea Tree hardwood production area, and that part of the Barry Mountains Natural Features and Scenic Reserve not included in A13 above.

Values and uses

'The Barry's', which have a long association with bushwalking, are traversed by the Alpine Walking Track. The route passes mainly through snow gum woodlands and alpine ash forest, and provides spectacular views of the Alps, particularly from the higher elevations east of Mount Selwyn. A vehicular track also passes along 'The Barry's' and sections are used for four-wheel-drive touring. Other tracks here allow access for fishing or camping, for which the Buffalo and Buckland Rivers provide excellent opportunities.

A stand of the uncommon Omeo gum (*E. neglecta*) occurs in the headwaters of the Buckland River.

Timber

Some 120,000 m³ of mature alpine ash timber is currently available for harvesting. Two sawmills — one at Porepunkah and the other at Eurobin — draw on this resource. The effect of including such a substantial volume of mature resource would be reduced by logging on a once-only basis. A further 1,500 ha of regrowth alpine ash could produce an estimated 225,000 m³ of timber at maturity.

The link contains a total productive area of 2,500 ha of alpine ash forest, indicating its long-term significance to the timber industry. This represents some 24% of the productive ash area in the Bright and Myrtleford districts and about 2.5% of the total in the Alps.

A substantial volume of mature and regrowth mixed-species timber is also located in this link, although estimates of the resource vary considerably.

Hunting

Areas both north and south of the Divide here are frequently used for deer-hunting — both by stalking and with hounds.

A29 Basalt Spur (17,400 ha)

This area would link the Wonnangatta--Moroka and Bogong National Parks by connecting Areas A12 and A13 described in the preceding recommendations.

Values and uses

The narrow north-south trending Basalt Spur retains a relatively uniform altitude along its 20-kilometre length — from Blue Rag Range in the north to a small plateau (The Tablelands)

in the south. Watercourses draining from the Spur are generally deeply incised and rugged, feeding into the Wongungarra River to the west and into the Crooked River to the east. Forest types range from snow gum and dense stands of 1939 alpine ash fire regrowth in the north, to montane mixed species and alpine ash stands on The Tablelands, and low dry sclerophyll forests on the lower slopes.

A logging road extends for much of the length of the Spur, and runs east from Basalt Knob to the Dargo High Plains road. Jeep tracks connect the road with the Blue Rag Range in the north and with the track system in the Grant Historic Area in the south.

Timber

The link includes much of the allocated logging area of the sawmill at Dargo. It contains an estimated mature log resource of 45,500 m³ — sufficient to supply sawlogs to the mill for 3 to 4 years — together with approximately 850 ha of regrowth alpine ash from the 1939 fires and, at present, some 100 ha of logging regrowth. It also contains a mixed-species resource of about 2,000 m³.

All the land here that could support productive alpine ash forests (1,600 ha) could yield an estimated 240,000 m³ over an 80-year rotation. This represents almost 15% of the estimated total productivity of available alpine and mountain ash sites in the portion of the Maffra district lying within the Alpine area, and 2% of the total in the Alpine area. Approximately 100 ha of productive mixed-species sites here represent 18% of the total in the Maffra portion of the Alpine area and 0.2% of the total in the Alpine area.

Hunting

The area is used by deer-hunters, with stalking being more common than hunting with hounds.

A30 Sassafras--Gibbo (13,000 ha)

Should the government wish to link the alpine parks along the route of the Alpine Walking Track, the Sassafras--Gibbo link would achieve this. It lies between the Cobberas-Tingaringy Park to the east and the recommended Dartmouth addition in the west, and includes the Wild Boar Range and Mount Gibbo Natural Features and Scenic Reserves (530 ha and 1,430 ha respectively). The remainder is currently reserved for hardwood production.

Values and uses

Mounts Sassafras, Gibbo, and Anderson are all situated on ridges of more than 1,500 m elevation and carry subalpine snow gum woodlands. Shrubby understoreys in the woodlands contain colorful wildflower species, including royal grevillea, alpine phebalium, leafy bossiaea, subalpine beard heath, and oxylobium.

The Alpine Walking Track runs through the area, traversing the three peaks and continuing east to just below the summit of Mount Pinnibar. Extensive views into surrounding mountainous terrain can be gained from many points along the Track. At lower elevations, the pleasant riverine forests of Wheelers and Shady Creeks feature colourful floral displays of mountain hovea in the spring. The open, grassy area containing Wheelers Creek Hut is ideal for camping. Relics of gold-mining activity at Zulu Creek add historical interest.

This area would provide a northern entrance to what is currently a relatively inaccessible section of the Cobberas--Tingaringy National Park.

Mining

Portion of the area is within the Zulu Creek goldfield, and deposits of lead and copper have been located around Saltpetre Creek. There is no current mining activity.

Timber

The area contains approximately 210,000 m³ of mature alpine ash and approximately 200 ha of regrowth alpine ash, which, over an 80-year rotation, would have the potential to produce around 30,000 m³ of sawlogs. It also contains a much smaller volume of mixed-species sawlogs. Two sawmills, one at Wodonga and the other at Benambra, draw timber from it.

Within its licensed logging area, the Wodonga mill has an estimated available total mature alpine ash resource of about 145,000 m³, representing some 8 years' supply at the current annual allocation. The Sassafras--Gibbo area includes about 40,000 m³ of that (approximately 2 years' supply).

The Benambra mill has access to a mature alpine ash resource of at least 360,000 m³, representing 20 years supply, of which Sassafras--Gibbo area includes an estimated 110,000 m³ (approximately 6 years' supply).

In addition to these allocated resources, the area includes approximately 60,000 m³ of mature alpine ash not currently allocated to either mill. About 50,000 m³ of this is in the Wheelers Creek headwaters, while the remaining 10,000 m³ is in the headwaters of Saltpetre, Straight Running, and Pheasant Creeks.

Approximately 2,000 ha of alpine ash forest here could, over an 80-year rotation, produce an estimated 300,000 m³ of sawlogs, indicating the area's long-term significance to the timber industry. This represents 18% of the potential ash sawlog volume in the Corryong district and 2.1% of the total in the Alps.

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 recognized 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 recognizes 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 national parks 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 is separated from the Avon Wilderness by a strip of land containing one road. It is Council's view that, when the two 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 4,000 ha has no vehicular track within 3 km. Environments range from sub-alpine woodlands and open areas, to 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 the Wellington Plateau, provide opportunities for rock-climbing. Obvious bushwalking routes are located along the Avon, Turton, and Dolodrook 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. Motorized 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 recreation 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 minimized.

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 programme in the adjacent areas may reduce the requirement for such activities in some areas of the wilderness. Prevention and 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.

Recommendation

B. Avon Wilderness

That the area indicated on the map 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:

Some 1300 ha of the Avon Wilderness, incorporating the headwaters of Thiele 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 utilization 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 the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979
- C19** That reference areas C7, C8, C12, C14, and C16 shown on the map 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 management authority for each reserve has been designated with the aim of facilitating the management of both the reserve itself and the adjacent land.

The Council recommends that an additional area be added to the Mount Margaret Natural Features and Scenic Reserve (D6). The area contains a population of the extremely rare plant species *Zieria robusta*.

Recommendations

D1, D2, D4, D6, D8--D10, D14, D22, D23, D25--D30

That the areas shown on the map 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:

In certain cases, portion or the whole of some Natural Features and Scenic Reserves previously recommended are proposed for inclusion in the Alpine park system or an historic area.

D31 Warrigal Creek (1,600 ha)

That the area shown on the map be added to the Mount Margaret Natural Features and Scenic Reserve (D6)
and that it be permanently reserved under section 4 of the *Crown Land Reserves Act* 1978 and managed by the Forests Commission

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 1,219 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:

- * Mitchell River proclaimed water supply catchment
- * Delatite River catchment (part of the Eildon proclaimed water supply catchment)
- * An area of uncommitted land (now recommendation A15) 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

Recognizing 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 realizes 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 Utilization 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 recognized 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 recognizes 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 recognizes 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.

Recommendation

E1--E5 That the water production areas shown on the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979.

F. HYDROELECTRICITY PRODUCTION

Within the Alpine area there are 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 utilization of the 400 m 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 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 per cent 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 sometime 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 the map 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:

Portion of the Kiewa Hydroelectricity Production area is proposed for inclusion in the Alpine park system (Recommendation A14).

F3 That the State Electricity Commission collaborate with the land managers responsible for public land adjoining the Kiewa Hydroelectricity Production area, 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 the map 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:

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

Mount Wills (9,100 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 intense activity and frenzied speculation. By 1891, some 300 exploration leases totalling more than 5,000 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 72 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.

Others 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 142,000 m³ 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 9,100 ha shown on the map 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 currently within the Mount Wills Natural Features and Scenic Reserve, timber-harvesting and subsequent regeneration be permitted where this does not conflict with (a) and (b) above
- (g) 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, and hunting with hounds not be permitted
- (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

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

Note:

The Council is aware of a proposal by the Country Roads Board to construct the Mount Wills deviation, which would pass along the western side of Mount Wills to Big River Saddle.

Mount Murphy (650 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 with the historic area.

Recommendation

G7 That the area of 650 ha shown on the map 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 & Wildlife Division, and hunting with hounds not be permitted
- (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, realizing 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 hardwood production areas) 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 minimize 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 minimize erosion and pollution hazard

No one organization 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 the Ministry for Conservation (in consultation with representatives of the Education Department, other user organizations, and the land manager) should be responsible for implementing educational aspects, and for co-ordinating usage of the areas.

The Council is aware that the proposed 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 proposed that the Sunnyside Education Area be managed by the National Parks Service.

Recommendations

- H1--H4** That the education areas shown on the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979
- H5** That the Sunnyside Education Area (H4) be managed by the National Parks Service

I. HARDWOOD TIMBER PRODUCTION

The forests of the Alpine area are the source of nearly one-third of Victoria's hardwood sawlogs, providing direct 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. In addition, hardwood pulpwood is supplied to the Australian Paper Manufacturers Ltd pulp and paper mill at Maryvale under long-term agreement.

Hardwood sawmills drawing all or part of their intake from the Alpine area form a significant part of regional economies and constitute an important 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 greatly 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 of forest resources 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. Consequently, the following quantitative timber estimates are indicative only. Further assessments by the Forests Commission are currently in progress.

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, which produce seasoning-quality timber; and mixed-species forests which produce sawn timber best suited for construction purposes. Both classes of forest 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 182,000 ha net.

In 1980 the government adopted recommendations of the Council for the Alpine area and these provided for about 80% of the 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. The mature resource presently available for harvesting within the study area is estimated to comprise about 2,500,000 m³ of ash (covering 27,500 ha), predominantly alpine ash, and 1,265,000 m³ of mixed species (covering 31,000 ha). These volumes represent about 75% and 93% respectively of the present estimated net mature sawlog volumes in the forested public land of the study area. It is estimated that almost 700,000 m³ of mature ash sawlogs are located in approved conservation reserves. The volume estimates of timber available for harvesting include the sawlog resource located 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. They do not, however, include 150,000 m³ of ash within areas where decisions regarding logging have yet to be made (at Mount Little Arthur within the Bogong National Park, A15 in the East Kiewa catchment, and the Murray River headwaters, U3).

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 public land where timber-harvesting is a permitted use in the long term covers about 86,400 ha (67,800 ha of ash and 18,600 of mixed species). This represents some 81% of the total net area of regrowth for the whole of the Alpine area.

Of the ash regrowth some 800 ha net resulted from the 1926 fires, 30,000 ha net from the 1939 fires, and approximately 37,000 ha net from logging operations since World War II.

Current levels of timber utilization

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 forest 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.

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 utilization of advanced fire-regrowth resources will become an increasingly viable proposition. It will be another 30-50 years before appreciable quantities of the logging regrowth can be harvested.

Inevitably some sawmilling centres will, at present harvesting rates, be without ash sawlogs from the Alpine area within a decade or so. The present mature resources are, therefore, very important not only for stability of employment and continuity of operations but also to offset pressure for the premature cutting of the regrowth resources.

In some instances the availability of a mature resource will continue to provide timber to centres where the current entitlement can be sustained only in the short term. This, together with reductions in the cutting rate, could provide a little more time for the industry to make the inevitable adjustments. In other instances the Council believes that the timber obtained from

once-only logging operations, proposed in these recommendations, will permit some sawmills to continue their expected operations until decisions are made on the way in which the regrowth ash resource is to be used.

Provided that 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 utilization 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. The alpine ash fire regrowth in the Alpine area should also be available for utilization 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 fulfil 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 below should apply to integrated operations as well as to areas from which sawlogs only are harvested.

Impact of proposed recommendations

Mature. 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 be permitted on a once-only basis or that logging takes place before the area becomes part of the park system. Of the total volume of approximately 270,000 m³ of mature ash sawlogs contained in the proposed additions, about 250,000 m³ would be available for harvesting under these provisions. Of the 42,500 m³ of mixed species included in the various proposals, some 35,200 m³ is available for once-only logging.

Regrowth. As well as the mature resource, the proposed park additions include about 3,200 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 760 ha net of mixed species regrowth is included in the proposed park additions.

The following table facilitates the comparison of the currently available timber resource and 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 (m ³)	Available under these recommendations ha (m ³)
Ash species		
— mature	27,500 (2,500,000)	27,100 (2,480,000)
— regrowth	68,000	64,800
Mixed species		
— mature	31,000 (1,265,000)	30,700 (1,257,000)
— regrowth	18,600	17,800

Figures are rounded.

Decisions regarding the availability of 1,200 ha net of mature ash in Little Arthur Creek and in part of East Kiewa (A15) as well as 480 ha net of mature ash in Davies Plain (U3) area will be made in the future.

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

Areas Available for Long-term Timber Production

	Currently available (ha)	Proposed available (ha)
Ash species	94,000	88,000
Mixed species	49,000	47,000

Figures are rounded.

Both sets of figures exclude the once-only logging areas.

Principles for forest operations

For any forest operations in the Alpine area, whether in a hardwood production area, in uncommitted land, in stands designated for once-only logging, or in other areas where logging is a permitted use, a set of principles has been formulated to provide guidelines. The principles are based on logging prescriptions used by the Forests Commission.

Most public land in the Alpine area is already included in the proclaimed catchments of Lakes Hume, Eildon, and Glenmaggie and of the upper Kiewa, Nicholson, King, Buckland, and Mitchell Rivers. Council intends to proclaim the remaining catchments in order to protect them. The Soil Conservation Authority will then, after consultation with the Council, prepare land use determinations for implementation.

The land use determination will have special regard for high-altitude catchments. It is considered that these determinations — in combination with the prescriptions agreed upon by the Soil Conservation Authority and the Forests Commission, and the principles set out below — should adequately protect soils and water catchments as well as specific scenic, recreation, and nature conservation values.

1. Soil conservation and catchment protection

- * Adequate filter strips along major and minor streams should be reserved from logging and other operations involving soil disturbance, where appropriate, and should, as far as practicable, be protected from fire.

- * Spur roads and snig tracks, log landings, and dumps should be designed and constructed to minimize potential erosion. These should be drained, breached, and barred when not required, and revegetation should be encouraged.
- * Intensive utilization operations should be subject to specific constraints, or excluded, on areas of high erosion hazard, especially on slopes generally greater than 30°.
- * Logging roads should be designed, constructed, and maintained so as to minimize erosion potential; there should be an adequate number of culverts, and drainage water should be dispersed; batters should be sloped so as to prevent land slips.
- * 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.
- * 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 organizations can achieve the aims outlined in the first four principles above.
- * 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.

2. Recreation and aesthetics

- * Special consideration should be given to road location, size and shape of logging coupes, and other forest operations in areas of high landscape value.
- * Specific prescriptions should be applied to logging near major tourist roads and walking tracks.
- * All refuse associated with logging operations (such as tyres, drums, and disused huts) should be removed at the end of the operations.
- * Logging roads, if not required for management, protection, recreation, or other use, should be encouraged to revegetate after utilization ceases.
- * Buffer areas around popular recreation sites and beauty spots should be reserved from logging.

3. Nature conservation

- * Prescriptions for logging (including size and scheduling of coupes) should provide for the protection of plant or animal species that have special scientific values.
- * All logged areas should be regenerated with forest tree species native to the area.
- * Some mature and veteran trees in logging areas should be retained for fauna habitat.
- * Aerially applied pesticides and fertilizers 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 vegetation.

4. Historic sites

- * Sites of historical significance or interest (such as cattlemen's huts or relics of mining 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.

Other uses and values

As well as providing sawlogs for the timber industry, the hardwood forests of the Alpine area have a wide variety of other uses. They are important for the conservation of plants and animals and for the protection of water supply catchments, and they provide many opportunities for outdoor recreation. The forests also provide honey, forage, road-making materials, and other forest produce.

Much outdoor recreation in the forests depends on the use of motor vehicles, and the extensive network of roads in the Alps is of particular value for four-wheel-drive touring. Council maintains that there should continue to be a system of linked roads, mainly of four-wheel-drive standard, available for public use.

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. Council believes that management of the forests should take into account the requirements of deer. This will require consultation with those interested in this sport and the Division of Fisheries and Wildlife.

Recommendations

I1--I12 That the hardwood timber production areas shown on the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979, and that, in addition to the particular values listed in those recommendations the following values be protected by management prescriptions

- * stands of *Acacia dallachiana* in the headwaters of Zulu Creek
- * stands of *Eucalyptus neglecta* (which is endemic to the Alpine area) near Mount Delusion

Note:

Areas for hardwood timber production are the same as previously recommended, with the exception of the areas proposed for inclusion in the park system.

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 utilize 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, by working in close co-operation with the managing authority in the formulation of management plans, should ensure that provision is made for the conservation of wildlife. This is especially important for animals that are closely restricted to a particular habitat for feeding and breeding. The mountain pygmy possum, found in alpine heathlands and sub-alpine woodlands, and the brush-tailed rock wallaby found among rocky outcrops in dry open forest are two such examples. They have been mentioned specifically in the recommendations relating to the areas in which they are known to occur.

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.

Note:

The Alpine area, including portion of the Mount Hotham Alpine Resort (Recommendation 08), contains populations of the rare mountain pygmy possum (*Burramys parvus*). The Council will consider the possibility of further provision for protection of this species in the final recommendations.

K. FLORA AND FAUNA RESERVE

The reserve indicated on the map 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 the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979

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 the map continue to be used for the purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979

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 a State park or reserved 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

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 minimize the consequences of flooding rather than attempt to prevent it.
- * An adequate vegetation cover should be maintained along stream frontages to stabilize 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** 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
 Ministry for Conservation
 Conservation Council of Victoria
 Soil Conservation Authority
 Fisheries and Wildlife Division
 Forests Commission, Victoria
 Department of Crown Lands and Survey
 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 the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979

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 the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979.

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 organized 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 his 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 his particular recreational needs. Examples are playing organized 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 and 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 Sheeppyard Flat, Wrens Flat, Wellington River, Eaglevale, Harrietville, 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 in the Alpine area 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 recognized 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 objective.

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 creation of the Tri-State Trail, which is planned to extend through the Australian Alps from Walhalla in Victoria through to the Australian Capital Territory, has received much support from bushwalking groups. The Victorian sector, the Alpine Walking Track, is completed and provides an opportunity to view a variety of landscapes during a walking trip requiring some weeks to complete. As the track passes through areas recommended for a number of different uses, it will be necessary for land managers to give special attention to the protection of the environs of the Track.

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 motorized recreation. On the other hand some areas should be left undeveloped to provide for those bushwalkers who do not require defined walking tracks.

Motorized 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 motorized 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 recognize the need to inform and educate participants in motorized 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 motorized 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 no restrictions on deer hunting other than existing legal requirements are proposed by the Council. In many of the areas recommended for addition to the park system or as Historic Areas, hunting by stalking only has been proposed.

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' times 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 organization 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 recognizing 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 organization 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 utilization.

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 5,000 to 5,500 skiers at any one time. This is fully utilized during peak periods. The existing accommodation facilities provide 5,560 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 2,800 skiers, and accommodation facilities provide 3,500 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 2,700 and it contains 2,400 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 minimize 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 proposed above would cater for the immediate needs for additional resort facilities. When optimum capacity of these resorts is achieved, the development of slopes on Mount McKay could be considered (to extend the capacity of the Falls Creek alpine resort). 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.

At this stage, draft working papers have been published and public submissions received on a number of possible development options for the area. It is expected that the final development plan will be published in August 1983.

During 1982 the government continued to examine proposals for the operation of Victoria's ski resorts and earlier this year made available for public comment draft legislation providing for the establishment of an Alpine Resorts Commission. The Commission would be responsible for the control, management, and development of the alpine resorts.

Recommendations

- 01,03--04** That these recommendations, approved by the government following publication of the final recommendations for the Alpine area in June 1979, continue to apply
- 02,06--09** That the areas shown on the map continue to be used for the purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979

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 Country Roads Board 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.

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 Alpine 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.

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 varied the Council's recommendations to the extent that it adopted a single phase-out period of 10 years for those areas described above — other than reference areas.

The Council does not propose any changes to the existing arrangement for the phasing out of grazing from limited areas of the alps.

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. Concern has been expressed that the current measures being taken to prevent cattle entering the Kosciusko Park from Victorian grazing leases is inadequate. Where a licensee is unable to prevent his stock from straying into the Kosciusko National Park the Council recommends that the grazing licence be cancelled.

The Council is aware that a number of studies have commenced which are examining various aspects of grazing in relation to the alpine environment. Until information is available from these studies, the Council believes that it should not make any further recommendations regarding grazing in the Alpine area.

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 sub-alpine 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.

Local advisory committees consisting of representatives of the management authority, Soil Conservation Authority, and graziers should be formed to advise the management authority on:

- * type of livestock, stocking rates, and dates of entry and removal
- * fencing and water supply

The District Advisory Committee (or local committees of these) of the Soil Conservation Authority currently carrying out this function may form the basis of these local advisory committees.

Recommendations

Q1--Q17 That the areas shown on the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979

Q18--Q23 That these recommendations as approved by the government following publication of the final recommendations for the Alpine area in June 1979, continue to apply and that

Q24 Where a licensee is unable to prevent stock from 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 round 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 not only the search 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 historic 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 rationalizing the use of these resources.

The Council is concerned by the complexity of legislation and procedures governing extraction of 'stone'. (For example, the Country Roads Board 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 minimized.

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 inherent instability or special public significance (for example, community assets or areas with important scenic, archaeological, historical, recreation, or nature conservation values) — warrant permanent or temporary exclusion from exploration and/or 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 Country Roads Board, 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:
 - (a) 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 impractical and the Department should require the lodgement of a bond as surety for adequate rehabilitation. Wherever 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.
 - (b) 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'.
 - (c) 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 establish-

ed 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.

- (d) 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 of 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.

- (e) 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 or 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) 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

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) continue to be available for exploration for 'stone' subject to the principles and guidelines set out above
- R5** That the areas for the extraction of 'stone' shown on the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979

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

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 certain 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.

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

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.

U. UNCOMMITTED LAND

In planning for balanced land use, known resources are allocated to meet known or predicted demands. The Council is aware that many changes in demand cannot be foreseen, and that the value of resources to the community will inevitably change. Similarly, knowledge of resources will change as exploration, research, and technology progress. For these reasons, it is desirable that planning be reviewed periodically, and it must be expected that resources will be reallocated or adapted to meet changed demands.

In addition, to satisfy such future requirements, it is desirable that land not be committed unnecessarily to relatively inflexible forms of land use. The Council therefore considers it necessary to recommend that areas of public land remain uncommitted to any primary use at this stage.

Land classed as uncommitted includes:

- * areas that, although not needed to satisfy any known demand, are retained to meet future demands as yet undefined
- * land known to have a high capability to satisfy one or more particular demands, but not at present committed to any one use, as foreseeable requirements can readily be met from other areas
- * areas on which further study is required to determine the capability of the land to satisfy particular present or future demands

Uncommitted land is to be securely retained as public land, although changes in its status may be required if these are recommended following a review by this Council. It may be used to satisfy present needs, provided this does not cause changes that would be difficult to reverse.

An area in the headwaters region of the Murray River adjacent to Kosciusko National Park in New South Wales has high values for timber production and special values for recreation and nature conservation. This area has been recommended to be uncommitted land pending its review by Council.

Recommendation

U1 That the uncommitted land shown on the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June 1979, and that, in addition to the particular values listed in those recommendations the following special values be protected

- * occurrences of the rare *Prostanthera rhombea* and other uncommon plant species in the Valencia Creek catchment in the vicinity of "The Crossover"
- * occurrences of *Acacia dawsonii* and *Calochilus grandiflorus* at Mount Misery near Mitta Mitta township.

Note:

Land designated as U2 in the 1979 final recommendations is proposed for inclusion in the Alpine park system (see Recommendation A15).

U3 That the land shown on the map continue to be used for those purposes approved by the government following publication of the final recommendations for the Alpine area in June, 1979

- U4** That, within the area shown on the map and after consultation between the land managing authority and the National Parks Service, facilities be developed which will complement the recreational use of the adjoining areas in the Bogong National Park
- U5** That the possibility of allowing public vehicular access along the West Kiewa logging road be investigated with the view to permitting access for at least portion of the year. (This could involve some upgrading of sections of the road.)

V. 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 R.A.A.F. 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

- V1** 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