

PROPOSED RECOMMENDATIONS

**NORTH-EASTERN AREA
(BENALLA-UPPER MURRAY)
REVIEW**

**LAND CONSERVATION COUNCIL, VICTORIA
MELBOURNE, MARCH 1985**

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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 Monday 27 May 1985 will be considered by the Council before Final Recommendations are made for the review of public land use in the North-eastern (Benalla-Upper Murray) Area.

A handwritten signature in cursive script, appearing to read 'I. Kunaratnam'.

I. KUNARATNAM
Secretary

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INTRODUCTION

The North-eastern Area Review

The Land Conservation Council was established by the *Land Conservation Act 1970*. As one of its three functions, it makes recommendations to the Minister for Planning and Environment with respect to the use of public land, in order to provide for the balanced use of land in Victoria. This report contains the Council's proposed recommendations for the review of public land in the North-eastern (Benalla–Upper Murray) area.

When the Land Conservation Council originally divided the State into study areas, the North-eastern Area was split into five districts. The Council published separate reports and recommendations for the North-eastern Area District 1 and District 2, but amalgamated Districts 3, 4, and 5 and published a combined report and combined recommendations for these three.

Districts 3 and 5 were reviewed by the Council in 1981 during the course of a Special Investigation of the Ovens Softwood Plantation Zone that the government directed the Council to undertake.

These proposed recommendations, for the Benalla–Upper Murray review area, cover the balance of north-eastern Victoria that was not subject to the special investigation — that is, Districts 1, 2, and 4.

Following Council's previous investigations for this review area, final recommendations on the use of public land were published in 1973, 1974, and 1977 for Districts 1, 2, and 4 respectively. With one exception those recommendations have been accepted by the government and have been or are being implemented.

As well as recommending land for parks, various other conservation reserves, and hardwood and softwood production, the previous recommendations allocated substantial areas as 'uncommitted land'. It was to serve a variety of uses, such as outdoor recreation, hardwood production, apiculture, grazing, and gravel extraction. The Council indicated that, as community needs changed and more information became available, it would be necessary to review the use of this land.

In addition, some land within the Rural City of Wodonga was included in the review, following its declaration as public land in accordance with section 2 (2) of the *Land Conservation Act 1970*. Most of this land has been vested in the Albury–Wodonga (Victoria) Corporation, but it is not immediately required by the Corporation for regional development purposes, although it could be suitable for other community uses.

The following proposed recommendations refer to: this land at Wodonga; those areas previously recommended as 'uncommitted land'; and the many small blocks of public land for which no recommendations were made in the earlier investigations. The Council also proposes various changes to uses previously recommended. For example, the Mount Lawson Multi-purpose Park is now recommended as a State Park, and the Mount Elliott Regional Park is recommended to become State forest.

Notices showing the boundaries of the study area and advising that a review was to be carried out were published in the *Victoria Government Gazette* of 25 January 1984 and in local and other Victorian newspapers in January 1984. A descriptive resources report was published on 27 August 1984. Extracts from the *Land Conservation Act 1970* covering the procedure to be followed in formulating recommendations were included in the report. The Council received 65 submissions on the future use of public land. Individuals, associations, companies and local and State government bodies, representing a wide cross-section of the community, made helpful submissions covering the most feasible forms of land use for the area.

After considering these submissions and having visited the study area, the Council has prepared these proposed recommendations. They will be distributed to all who made submissions, and their publication will be followed by another 60-day period for further submissions. After this the Council will prepare recommendations for presentation to the Minister and Parliament.

The recommendations in the text are grouped under major headings, such as Parks, State forest, and so on. The text is accompanied by a map at the scale of 1:250,000 (Map A), which covers the whole study area and gives a broad view of the recommended land uses. Other more detailed maps show recommended land uses around Wodonga (Map B) and areas recommended for agriculture (by alienation). Additional information on boundaries is held by the Land Conservation Council.

As the review covers three areas previously investigated separately recommendations have been re-numbered for consistency, for ease of location on Map A, and to remove duplication. Previous recommendations made by Council and proposed in this Review to remain unchanged are shown as existing reservations on Map A and are identified where possible by the same prefix used for the Public Land Use Map in the resources report.

Appendix I comprises a land use plan for the Mount Pilot Multi-purpose Park. Also included in this document is an erratum for Appendix IV of the North-eastern Area (Benalla–Upper Murray) Review resources report.

Availability of submissions

All submissions received by the Council will be available for inspection at the Council's offices, 4th Floor, 464 St Kilda Road, Melbourne, 10 days after the closure of the submission period.

Land uses

It is important to realize that each primary use has a number of compatible secondary uses. In addition to nominating the best uses for the land, the recommendations indicate what is considered to be the most appropriate form of tenure for the land and the most appropriate management authority.

The Council recommends the continued use or establishment of: parks in areas of particular importance for recreation and nature conservation; reference areas and education areas (covering part of the range of land types found in the study area); flora reserves and flora and fauna reserves for areas of value for conservation of representative plant communities and habitat; and wildlife reserves for several sites containing valuable faunal habitats. Other areas are recommended for softwood production; as historic areas and reserves; and as scenic reserves; and substantial areas are recommended as State forest.

Where demands from competing uses vie for a given area of land, it is not possible to satisfy them all. Wherever possible, these recommendations attempt to achieve balance in providing for the present needs of most forms of use while retaining flexibility and the opportunity to adjust to future changes in such demands. They do so by placing as much of the public land as possible under forms of use that do not have a major impact on the natural ecosystem.

Flexibility in planning is essential. Our knowledge of many resources (for example, minerals) and of the distribution and ecology of plants is very imperfect. There must be many places in Victoria where special values 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.

Table 1 summarizes the recommendations in terms of the major forms of use.

Table 1
PUBLIC LAND USE

Land use categories	Area (ha)	Percentage of all land covered by these recommendations	Percentage of all public land covered by these recommendations
National parks	17,500	2	5
State parks	26,330	3	7
Regional parks	18,521	2	5
Multi-purpose park	13,124	1	4
Reference areas	10,690	1	3
Wildlife reserves	320	< 1	< 1
State forest	245,565	23	66
Softwood production	23,755	2	6
Flora reserves	1,208	< 1	< 1
Flora and fauna reserves	2,164	< 1	< 1
Bushland reserves	2,066	< 1	< 1
Scenic reserves	2,890	< 1	< 1
River Murray reserve	1,275	< 1	< 1
Streamside reserves	240	< 1	< 1
Education areas	2,353	< 1	< 1
Historic areas and reserves	1,252	< 1	< 1
Roadside conservation	40	< 1	< 1
Agriculture	3,225	< 1	< 1
Mineral and stone	176	< 1	< 1
Revegetation areas	1,984	< 1	< 1

Other land uses collectively make up the balance.

Figures are rounded.

The Department of Conservation, Forests and Lands

The former Departments of Crown Lands and Survey and State Forests and three agencies of the Ministry for Conservation — namely the Fisheries and Wildlife Division, the National Parks Service, and the Soil Conservation Authority — have been amalgamated to form the new Department of Conservation, Forests and Lands.

The functional arms of the new Department include the Fisheries and Wildlife Service, National Parks Service, State Forests and Lands Service, and the Land Protection Service, and these will be located in Melbourne. The last will comprise those groups formerly in the Soil Conservation Authority and the Vermin and Noxious Weeds Destruction Board who were involved in policy development, technical standards, program development, and research.

The functional arms will be responsible for developing policy options, management plans, and annual programs for public land throughout the State, with appropriate professional inputs from the Fisheries and Wildlife Service and the Land Protection Service.

Public land management will be implemented by the Regional Management Division in accordance with the approved annual program and the guidelines and technical standards provided by the head office functional groups.

The State has been divided into 18 regions and each regional group will be responsible for the management of all public land in that region, irrespective of whether an area is national or State park, State forest, or some other reserve set aside for a particular form of community use.

Particular attention has been given to fire prevention and suppression. Fire-protection services for public land will be provided and co-ordinated by the Regional Management Division. Organizational arrangements to provide the services will be similar to those that have operated effectively in the Forests Commission. The amalgamation provides the significant additional benefits: direct involvement of much larger forces of staff and employees in prevention and

suppression; and better co-ordinated and more readily available support forces of manpower and equipment. All these elements collectively will enable more effective fire-prevention and fire-suppression programs to be achieved on public lands of the State.

The creation of the Department of Conservation, Forests and Lands has not altered the statutory responsibilities of such bodies as the Forests Commission (under the *Forests Act* 1958), the Soil Conservation Authority (under the *Soil Conservation and Land Utilization Act* 1958), and the Vermin and Noxious Weeds Destruction Board (under the *Vermin and Noxious Weeds Act* 1958). Consequently reference is made to such bodies and their responsibilities in various parts of the text.

The Albury-Wodonga Development Corporation

The Albury-Wodonga Development Agreement, signed in 1973, provided for the establishment of a development corporation 'to create an Australian city with a high quality of environment, imaginatively planned and developed with respect for human requirements, and for public involvement'.

As a result, the Albury-Wodonga Development Corporation was established in 1974. This is a statutory authority constituted under legislation passed jointly by the Australian, Victorian, and New South Wales governments. Its main functions are to undertake, supervise, and carry out regional planning and development in the growth centre, under the direction of a Ministerial Council comprising representatives of the three governments.

Under the provisions of the *Albury-Wodonga Development Agreement Act* 1973, the Corporation acquired land in areas designated for urban and associated development, such land being vested in the Albury-Wodonga (Victoria) Corporation. Following changes to the Corporation's long-term plans and goals, the Ministerial Council resolved that certain lands that had been purchased by the Corporation were no longer required for development purposes. The Land Conservation Council was requested to investigate some of this land to identify values associated with it and to make recommendations to the Victorian government about its future use.

On 20 December 1983 the Governor-in-Council declared some land within the Rural City of Wodonga (including Corporation land) to be public land in accordance with section 2 (2) of the *Land Conservation Act* 1970.

This land has now been investigated, and Table 2 summarizes the Council's proposed recommendations for it, which are shown on Map B.

Table 2

PUBLIC LAND USE

LAND VESTED IN THE ALBURY-WODONGA (VICTORIA) CORPORATION

Land use categories	Area (ha)	Percentage of Albury-Wodonga (Victoria) Corpn. land included in this investigation
Regional parks	1880	25
Wildlife reserve	92	1
Water production	127	2
State forest	270	4
Public land water frontages	40	< 1
River Murray reserve	27	< 1
Agriculture (see text)	3050	41
Roadside conservation	5	< 1
Revegetation areas	1940	26

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 management. Unless these resources are provided, the Council's recommendations cannot be effectively implemented. Council emphasizes that vermin and noxious weeds pose problems in the management of public land in the North-eastern (Benalla–Upper Murray) area. Finance and staff are required to research and implement methods for control of 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.

Following Council's proposal that additional arrangements be made for protecting public land from fire, an amendment to the *Forests Act* 1958 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 establishment of the new Department of Conservation, Forests and Lands has brought about certain changes in the organization of fire-protection operations, with the Regional Management Division being responsible for the provision and co-ordination of fire-protection services. Current responsibilities are as follows:

- (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 associated with parks 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 included in the schedules of the *National Parks Act* 1975, the National Parks 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.

Council recognizes that the north-eastern area has a long history of mining, and as such has particular significance with respect to future mining operations.

The Council recommends:

- III That mineral exploration licences held over the area continue except in so far as they affect reference areas.

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:

- 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 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 that existing responsibilities for management are to continue until recommendations are implemented.

The following recommendations concern the implementation of recommendations:

- V That the present legal status and management responsibilities for public land continue until the resources required to implement the recommendations are available.
- 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 Conservation, Forests and Lands 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 *Transport Act 1983*.
- IX That, where areas of public land are not specifically referred to in these recommendations, present legal uses and tenure continue.

A. PARKS

Victoria contains substantial areas of public land that have been retained in a relatively natural state. The number of people using these areas for recreation is increasing and will probably continue to do so. Pressures for the use of public land in ways that would change its condition are also increasing. Council believes that it is essential to reserve, now, viable samples of the various land and vegetation types, together with the outstanding natural features, that occur on public land. These areas can best be reserved in a system of parks.

The North-eastern (Benalla–Upper Murray) area has several areas left that can remind us of the earlier landscape, flora, and fauna. Such lands are a valuable part of our heritage and must be protected for the benefit, education, and enjoyment of present and future generations. This principle of land use is a major consideration in determining that areas should be reserved as parks.

A park is defined here as 'an area of land in a natural or semi-natural condition reserved because of its scenery, floral and faunal content, historical interest, or other features, which is used by the public primarily for open-space recreation and education'. This definition encompasses many different types of parks; they vary mainly in size and content and in the types and intensity of uses to which they are subjected. Definitions of different types of parks are needed to clarify the main purposes for which each one is created, and will help planners, managers, and users of parks.

It is necessary to establish the management aims that apply to areas or zones within parks. Among these, the conservation of native flora, fauna, and other natural features would be an essential part of national and State park management. This should include the identification and strict protection of significant ecological systems as well as the development and use of techniques (including husbandry techniques and population manipulation) to enable species of particular interest to be studied and special values associated with flora and fauna to be maintained or enhanced.

The location and management of areas zoned for intensive recreation will require special care to prevent damage to the environment.

This publication presents recommendations concerning parks in terms of the uses to which the land should be put. Parks have also been placed into categories, according to the scheme of classification suggested below.

PARK CATEGORIES

National park

An extensive area of public land of nation-wide significance because of its outstanding natural features and diverse land types, set aside primarily to provide public enjoyment, education, and inspiration in natural environments.

The conservation of native flora, and other natural features would be an essential part of national park management. Interpretative services would be provided. Development of facilities would be confined to a very small portion of the park. Activities would largely consist of sightseeing and the observation of natural features. Wilderness zones, which are relatively undisturbed tracts of land used for solitude and wide-ranging forms of recreation, could be designated within a national park.

State park

An area of public land, containing one or more land types, set aside primarily to provide public enjoyment, education and inspiration in natural environments.

State parks should include samples of major land types not already represented in national parks and, as in national parks, the conservation of native flora and fauna would be an essential feature of management. Interpretative services would be provided. Development of facilities would be limited to a very small portion of the park. Activities would largely consist of sightseeing and the observation of flora, fauna and other natural features. Regardless of which authority is the manager, the State parks recommended by the Council are intended to complement the national parks so that together they form a State-wide system.

Regional park

An area of public land, readily accessible from urban centres or a major tourist route, set aside primarily to provide recreation for large numbers of people in natural or semi-natural surroundings.

These parks would be intensively developed for informal recreation and could include road systems. Although natural beauty would enhance their value, closeness to an urban centre is more important than natural attributes. Other uses — such as pump and pipeline sites — may be permitted where they are compatible with the primary use.

Multi-purpose park

An area of public land set aside to provide recreation and education in natural surroundings, in which other activities such as water production, hardwood timber production, stone extraction, hunting, or grazing, are permitted where these form a part of, do not substantially conflict with, or supplement the primary object. Victoria contains areas where, although recreation is an appropriate primary use of land, it is not desirable, economically possible, or necessary to wholly exclude other uses that would be unacceptable in national or State parks.

PARK MANAGEMENT

It should be emphasised that the parks recommended below will be available for public use. An essential aim in their reservation 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 all parks the suppression of fires remains the responsibility of the Forests Commission.

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 associated with parks 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.

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 manager.

The two organizations that share the duty of fire prevention 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.

The control of vermin and noxious weeds within parks will be the responsibility of the Department of Conservation, Forests and Lands.

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 parks.

Recommendations

Existing parks

A1—A8, A10, A12 That the parks listed below and shown on Map A continue to be used for those purposes approved by the government following publication of the previous final recommendations.

- A1** Mount Burrowa–Pine Mountain National Park
- A2** Mount Samaria State Park
- A3** Mount Granya State Park
- A4** Chiltern Regional Park
- A5** Reef Hills Regional Park
- A6** Baranduda Range Regional Park
- A7** Beechworth Regional Park
- A8** Jarvis Creek Plateau Regional Park
- A10** Mount Pilot Multi-purpose Park
- A12** Mount Barlow

Notes:

1. Council is aware that the duplication of the Hume Freeway (Chiltern Bypass) may affect the boundaries of the Chiltern Regional Park.
2. The boundary of the Reef Hills Regional Park shown on Map A excludes the route of the Hume Freeway Benalla Bypass.

3. It is proposed that an existing mining tenement within the Beechworth Regional Park, which currently supplies tailings material, be excised from the park (see Recommendation R11).
4. Following careful assessment and taking into account the definition of a regional park, the Council believes that the area designated on the Public Land Use Map as A9, Mount Elliott Regional Park, has relatively limited potential for recreational development. In addition, access is difficult and is not available for two-wheel-drive vehicles. The Council has therefore recommended that Mount Elliott become State forest and be used in accordance with the uses outlined in Chapter E. A new regional park is, however, proposed for the nearby Mount Mitta Mitta (see Recommendation A30).
5. It is proposed that an existing gravel reserve within a recreation and conservation area in the Mount Pilot Multi-purpose Park, which currently supplies fine sand, be excised from the park (see Recommendation R7).
6. A land use plan has been prepared for the Mount Pilot Multi-purpose Park (see Recommendation A31).
7. The area designated on the Public Land Use Map as A11 Mount Lawson Multi-purpose Park, is now recommended as a State park (see Recommendation A27).
8. A12, Mount Barlow, was recommended as an Alpine Park addition in the 1983 final recommendations for the Alpine Area Special Investigation. It has subsequently been approved by the government as part of the Alpine National Park.

Additions to existing parks

Mount Burrowa–Pine Mountain National Park

This proposed addition comprises steep south- and east-facing forested slopes rising from Cudgewa Creek to a ridge, which leads to the Mount Burrowa section of the park and provides access to the park from the Murray Valley Highway. The addition of the frontage to Cudgewa Creek is important, as access to permanently flowing water in the existing park is very limited.

A number of uncommon plants, including *Mirbelia oxylobioides* and a *Pomaderris* species, occur in the area. The addition has also been identified as providing good habitat for birds. McCoys skink, which has a restricted distribution east of the Mitta Mitta River, has been recorded here, as has Lesueurs tree frog, which has not otherwise been recorded in the review area east of Tallangatta.

Recommendation

A13 That the area of 785 ha in the Parish of Wabba, shown on Map A, be added to the Mount Burrowa–Pine Mountain National Park.

that it 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) in the management plan particular attention be given to restoration of the diversity of the understorey vegetation

and that the area be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and included in the schedule to the *National Parks Act 1975*, and be managed by the Department of Conservation, Forests and Lands.

Mount Barlow section of the Alpine National Park

This addition extends the park northwards towards Mount Bunroy, to include a number of short gorges along the Murray River, and to complement the Kosciusko National Park, immediately across the border.

The northern boundary of the park addition is the freehold land marking the point where the Murray River gorge tract gives way to a broad floodplain.

The addition includes an area that has been identified as being of special significance as it contains an occurrence of the rare mountain bertya, *Bertya findlayi*.

Recommendation

A14 That the area of 390 ha in the Parishes of Thowgla and Kancobin, shown on Map A, be added to the Mount Barlow Park

that it be used in accordance with the Council's final recommendations for the Alpine Special Investigation for Mount Barlow

and that the area be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and be managed by the Department of Conservation, Forests and Lands.

Chiltern Regional Park

These areas adjoin the park and are fenced in with it. They contain box-ironbark forests in good condition, and their inclusion will provide additional opportunities for recreation in the attractive and varied environments of this park.

Recommendations

A15—A19 That the areas totalling 49 ha, listed below and shown on Map A, be added to the Chiltern Regional Park

and that they be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and be managed by the Department of Conservation, Forests and Lands.

A15 9.8 ha, being allotment 2C, section C, Parish of Chiltern

A16 4 ha, being allotment 5, section 18, Parish of Chiltern

A17 17.2 ha, being allotment 23B, section 11, Parish of Chiltern

A18 15.2 ha, being allotment 10B, section 11, Parish of Chiltern

A19 3 ha, being north-west of allotment 112A, no section, Parish of Chiltern West

Baranduda Range Regional Park

These additions, presently vested in the Albury–Wodonga (Victoria) Corporation, are situated along the northern and eastern margins of the Baranduda Range Regional Park. They include the very prominent north-eastern end of the range, which is visible from Wodonga and areas further east. Other parts fringe the south-eastern fall of the range, extending the boundary of the existing park to include all the adjacent steep land, and a small area of more gently sloping land with frontage to the Wodonga–Yackandandah road. More than half of this area is predominantly timbered, with open forest I and II of red stringybark and long-leaf box, and its addition to the park will ensure the preservation of landscape values around the fringe of the range.

Recommendation

A20 That the area of 700 ha in the Parish of Baranduda, shown on Map B, be added to the Baranduda Range Regional Park

that the partly cleared areas be revegetated

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978, and be managed by the Department of Conservation, Forests and Lands.

Beechworth Regional Park

Two of the three areas for addition contain evidence of past mining activities — one along Two Mile Creek and the other on a tributary of the Three Mile Creek. These areas are well vegetated and provide ready access to attractive streamside environments. One contains a large dredge hole that now provides valuable waterbird habitat.

Recommendations

A21—A23 That the areas totalling some 8 ha, listed below and shown on Map A, be added to the Beechworth Regional Park

and that they be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978 and be managed by the Department of Conservation, Forests and Lands.

A21 1.5 ha south of allotment 7A, section 3, Township of Beechworth

A22 4 ha west of allotment 5B, section B3, Parish of Beechworth

A23 2.3 ha south of allotment 10B, section D4, Parish of Beechworth

Jarvis Creek Plateau Regional Park

This addition carries forests of red, yellow, and long-leaf box on moderately steep slopes, and contains an access track into the western portion of the park.

Recommendation

A24 That 18.6 ha, being allotments 10 and 10A, section I, Parish of Tatonga, be added to the Jarvis Creek Plateau Regional Park

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978 and be managed by the Department of Conservation, Forests and Lands.

Mount Pilot Multi-purpose Park

These additions comprise the school site at Woolshed, and the Centennial Park Reserve and adjoining public land at Eldorado.

The school formed part of the early mining town of Woolshed. This site has potential as a camping area and could be used as such to reduce the camping pressure on the Reedy Creek frontage. It is located adjacent to a surfaced road abutting Reedy Creek.

The Centennial Park Reserve consists of two major granite hills affording excellent views of Eldorado township, the Reedy Creek valley, and surrounding land. The steeper slopes carry a good cover of native grasses (including kangaroo grass and *Stipa* sp.) beneath an overstorey of Blakely's red gum, red box, red stringybark, and various wattles.

Recommendations

A25—A26 That the areas totalling 24 ha, listed below and shown on Map A and Map I, be added to the Mount Pilot Multi-purpose Park

and that they be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978 and be managed by the Department of Conservation, Forests and Lands.

A25 2 ha, being allotment 6F, section 10, Parish of Eldorado

A26 22 ha, being allotments 23B, 23E, and D12, section A, Parish of Tarrawingee

Mount Lawson State Park

This park spans a large area between the Koetong Plateau and the eastern extremity of Lake Hume. It contains diverse vegetation, important representation of land systems, a broad range of faunal habitats, archaeological features, and many scenic views.

The uplands around Mount Lawson carry narrow-leaf peppermint open forest III on the plateaux and moister sites, with broad-leaf peppermint open forest II on the ridges and drier sites. North of Mount Lawson, the predominant vegetation of the less steep slopes and basins is red stringybark with some long-leaf box.

The steepest and driest slopes in the western and northern parts of the park carry numerous stands of black cypress pine open forest I, with a sparse ground layer or a shrubby understorey. Plant species associated with the pine include the uncommon *Grevillea polybractea* (crimson grevillea) and other species of interest such as cane wire-grass, river bottlebrush, guinea flower, and drooping sheoak.

In addition, the park includes a number of rare or uncommon plant species *Pimelea treyvaudii* (grey rice-flower), *Brachychiton populneus* (kurrajong), *Dampiera purpurea* (mountain dampiera), *Haecckeria ozothamnoides* (cottony haecckeria), a *Pomaderris* species, *Pultenaea polifolia* and *P. vrolandii* (bush peas), *Tetratheca labillardierii*, and *Westringia eremicola* (slender westringia).

The park contains excellent representation of the Lawson land system, and the Towong, Sandy Creek, and Murray (low) land systems. The Lawson land system here contains the full range of components — plateaux, dissected plateaux, broad ridge-tops, steep side-slopes, deeply dissected creek valleys, and minor drainage lines — but is otherwise only poorly represented (in the Mount Granya State Park). The Towong, Sandy Creek, and Murray (low) land systems have only minimal representation in existing national and State parks, although two of them occur extensively on public land. The addition of Mount Lawson to the State's parks will provide important additional representation of these land systems.

Other features of the park include the Aboriginal rock shelters and rock paintings on Mount Porcupine, the spectacular waterfall and gorge on Flaggy Creek, opportunities for rock-climbing on the steep rocky slopes and outcrops, panoramic views of the park and surrounding countryside from Mount Lawson, and the catchment of Flaggy Creek, which contains vegetation associations (including dry heaths) of special botanical significance.

As its main recreational attractions, the park offers the prominent peak of Mount Lawson, the undulating upper Flaggy Creek valley containing mining relics, the steep-sided Koetong Creek valley, and the views into its dry northern aspects from the Murray Valley Highway. The park also offers considerable potential for walking, nature study, and picnicking.

It was recommended as a multi-purpose park in Council's final recommendations for the North-eastern Area District 1, 1973. Having further considered the outstanding features of this area, and the way in which the multi-purpose park has been used over the last 11 years, Council now proposes that the area become a State park.

Recommendation

A27 That the area of 12,270 ha shown on Map A become a State park and 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) protect sites of geological, archaeological, and historical significance
- (d) supply water and protect catchments

that

- (e) apiculture be permitted
- (f) grazing be phased out unless considered by the land manager to be necessary for management purposes

and that the area be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and be managed by the Department of Conservation, Forests and Lands.

Addition to the Mount Lawson State Park

This land contains important floral values and faunal habitat not presently found within the park. Moreover, it incorporates an example of the Koetong land system, which is not currently represented within the State's network of conservation parks and reserves.

Areas of wet heathland found here contain several species of plants that are more typical of higher-elevation heath communities.

The general area containing this addition has a very high faunal diversity, and the inclusion of an area of plateau, identified as the Koetong land system, enhances the representation of habitat types found in the park.

Recommendation

A28 That the area of 680 ha in the Parishes of Koetong and Bungil East, shown on Map A, be added to the Mount Lawson State Park

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978 and be managed by the Department of Conservation, Forests and Lands.

Proposed new parks

Wodonga Regional Park

This proposed new park, located along the Murray River and Kiewa River flood-plains, incorporates the peaks of Huon Hill, situated near the confluence of the two rivers. It contains red gum woodlands with open grassy understoreys, a network of billabongs, anabranches, and seasonal wetlands, and continuous frontages to both the Murray and Kiewa Rivers.

Its riverine sections comprise the public land water frontage reserves along the two rivers, some adjacent areas of public land, and those sections of the land currently vested in the Albury-Wodonga (Victoria) Corporation located on the river environs, which flood regularly.

The Murray and Kiewa flood-plains form the major seasonal wetlands in the region, and support a rich and diverse population of bird species. The park contains important representation of these lands. The density of river red gums in the riverine areas varies from a few remnant trees in a paddock, through open woodlands, to the open forests still found in small pockets. With removal of grazing, selected areas will quickly regenerate.

From the top of Huon Hill extensive views can be enjoyed in all directions — over Wodonga, Albury, Lake Hume, the Murray Valley, and the Kiewa Valley, to the timbered and cleared hills surrounding both cities. The peaks would thus make ideal lookouts.

Below the peaks the park descends steep, largely cleared side-slopes to gently sloping foothills, and then to the flood-plains of both the Murray and Kiewa Rivers. Because of its range of land forms, this block provides opportunities for many recreational uses. In addition, the eventual reforestation of the prominent upper slopes will enhance the Wodonga landscape.

The section of the park adjacent to the Lincoln Causeway is presently used for public access to the Murray River in summer, in particular to a sandy bank. This use would continue, with the bulk of the land area of the block capable of development for picnicking and associated facilities. All development would have to take account of the fact that the block floods.

After development, the regional park will offer a range of recreation uses, including pleasure driving, picnicking, walking, horse-riding, swimming, and fishing. Conservation values are secondary at present, but the characteristics of the land types in the park are such that these values can be greatly enhanced over time.

Recommendation

A29 That the area of 1,180 ha in the Parishes of Wodonga and Bonegilla be used to:

- (a) provide opportunities for informal recreation for large numbers of people

- (b) protect and conserve the riverine wetlands and red gum woodlands to the extent that this is consistent with (a) above

that

- (c) a zoning plan be prepared to define areas
- (i) to be developed for more intensive recreation
 - (ii) to facilitate access to the rivers
 - (iii) to be managed for wildlife conservation

and

- (iv) for strategic reforestation

- (d) unlicensed occupancies of Murray River frontage land be removed

that it be managed by the Albury–Wodonga Development Corporation for the time being, but that responsibility for management be transferred to the Department of Conservation, Forests and Lands according to a time schedule and on a basis to be determined by the two authorities in consultation

and that, following transfer, the area be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978*.

Mount Mitta Mitta Regional Park

The mountain rises from an undulating plain immediately north of Corryong township. It is a striking feature in the landscape, and views from surrounding roads of its high rocky bluffs and steep forested slopes are very impressive. Views from vantage points on Mount Mitta Mitta are equally impressive, looking over the broad plains of the Corryong and Cudgewa Creeks, along the upper Murray River valley, over Mount Burrowa and Pine Mountain, towards the forested Thowgla and Wabba hills, and to the peaks around Mount Kosciusko.

The Mount Mitta Mitta massif is formed of Devonian red and grey granites, and consists of rocky cliffs and slopes, dissected plateaux, and long ridges trending north and north-east from the peak. Large perched basins flanked by rocky spurs are a feature of the highest parts of the massif.

Vegetation types present include open forests of red stringybark and long-leaf box (with a heathy or grassy understorey) on the drier slopes and ridges, and narrow-leaf and broad-leaf peppermint associations on the wetter south-facing slopes. Blakely's red gum and black cypress-pine are found on the driest northern faces.

A two-wheel-drive track from the Murray Valley Highway provides good access to the park from the north-east. It leads to Embrey's lookout, the main recreational focus of the mountain. Here an attractive sheltered saddle provides a parking and picnic area, with easy access to the lookout and its expansive views. The road continues to the peak (1,003 metres) where the Department of Aviation has two communications installations. Vantage points near the summit give views of Mount Burrowa and Pine Mountain.

The area is currently used for picnicking, pleasure driving, nature study, and some bushwalking. The park has the potential to attract further interest in such uses.

Recommendation

A30 That the area of 3,630 ha shown on the map be used to:

- (a) provide opportunities for informal recreation for large numbers of people
- (b) conserve and protect ecosystems to the extent that is consistent with (a) above that
- (c) apiculture be permitted
- (d) some firewood may be available from time to time associated with the development of the park for the uses specified above

and that the area be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and be managed by the Department of Conservation, Forests and Lands.

Land Use Plan — Mount Pilot Multi-purpose Park

Council has prepared a land use plan for this park, indicating primary and secondary uses in identified areas.

Recommendation

A31 That the land use plan for the Mount Pilot Multi-purpose Park, as specified in Appendix 1 and shown on Map 1, be effected by the land manager.

B. 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 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*, assists 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.

Recommendations

B1—B8, B10—B13 That the areas listed below and shown on Map A continue to be used for those purposes approved by the government following publication of the previous final recommendations.

- B1** Toorour
- B2** Glen Creek
- B3** Blue Range
- B4** Ryan Creek
- B5** Pilot Range
- B6** Mitta Mitta

- B7 Bungil
- B8 Jemba
- B10 Dry Forest Creek
- B11 Lucyvale Creek
- B12 Cudgewa Creek
- B13 Burbibyong Creek

Note:

In B13, Burbibyong Creek, the manager should give particular attention to blackberry control.

Relocation of Reference Area B9 — Pine Mountain

The existing Pine Mountain Reference Area is subject to some pressure from walkers, as it lies across two spurs that provide the easiest and most feasible walking routes to the peak. The new site for the reference area also contains representation of the Mittamatite land system, for which the original area was set aside, and is not used as a bushwalking route.

Recommendation

- B9 That the Pine Mountain Reference Area (480 ha) be relocated to the site shown on Map A and be used and managed as specified in the 1973 recommendations.

Additional Reference Area

Recommendation

- B14 That the area described below and shown on the map:
 - (a) be used to maintain natural ecosystems as a reference to which those concerned with studying land for particular comparative purposes may be permitted to refer, especially when attempting to solve problems arising from the use of land
 - (b) be surrounded by a buffer, the delineation of which will be by joint agreement between the advisory committee and the land managers of the area itself and of the land adjacent to it
 and that
 - (c) activities (such as grazing, exploration for minerals and gold, mining, logging, and beekeeping) that conflict with the purposes of a reference area not be permitted, and any such activities in the reference area described below cease when these recommendations are adopted.

- B14 White Box Ridge (90 ha)

Ordovician sandstones, siltstones, and mudstones, and metamorphosed sediments; irregularly dissected hills; elevation 260 to 390 m; approximate average annual rainfall

630 mm; vegetation comprises alliances of red stringybark–red box, red ironbark–red stringybark, white box and white box–red box, and Blakely’s red gum; aspect predominantly southerly.

To be managed by the Department of Conservation, Forests and Lands.

Note:

This reference area is within the Chiltern Regional Park, which is included in a schedule to the *National Parks Act 1975*.

C. 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 use 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 study area, animal habitats range from the swamps and river red gums, the cleared farmland areas and dry granitic hills and plateaux, to the tall forests and sub-alpine ridges in mountainous areas.

The Vegetation map of the study 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 part 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 Service has an important role in the management of the entire area and, by working in close co-operation with the land managers 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 squirrel glider, apparently restricted to open forests and woodlands of river red gum and box species, is one such species. One of the major strongholds of this animal is in the forests of the Chiltern Regional Park, where suitable tree hollows 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 changes 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 well documented. 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.

The many streams and wetlands of the study area, especially those associated with the Murray and Kiewa Rivers and tributaries, provide specialized habitat for a large group of birds, fish, and crustaceans, and some mammals. They also form important elements of the scenery of the region.

Although some forms of land use are compatible with fish and wildlife conservation, it is necessary to set some areas aside specifically for their conservation, and for developing wildlife conservation techniques.

These areas may be selected for conservation of species that the community harvests. They may contain the habitat of endangered species or they may have specialized breeding grounds or a high species diversity, or be of educational, recreational, or scientific interest. They may also be selected because of their ecological significance for (or regional representation of) a species or faunal association, or for their value as a stop-over for migratory or nomadic species.

Some of the public land lakes and swamps have been cleared of trees — at least partially — and are grazed. Grazing may need to be excluded from some of them for a period, to permit regeneration of the native tree species.

In all wildlife reserves the responsibility for the suppression of fires remains with the Forests Commission, and fire-prevention measures will be carried out where necessary.

Recommendations

Existing Wildlife Reserves

C1—C4 That the areas listed below and shown on Map A continue to be used for those purposes approved by the government following publication of the previous final recommendations.

C1 Seven Creeks

C2 Clarke Lagoon

C3 Jeremal

C4 Tintaldra

Note:

Part of the Seven Creeks, between Polly McQuinns Weir and the junction with Watchbox Creek, is closed for fishing, for the conservation of the trout-cod.

Additional Wildlife Reserve

Ryan's Lagoon is a shallow fresh-water swamp with floodways, lagoons, and grasslands. It comprises the unreserved Crown land south of allotment 3, section 1, and the adjoining Albury-Wodonga Development Corporation land, being allotment 5, section 6, Parish of Bonegilla. This reserve supports a breeding rookery of white ibis, nankeen night herons, egrets, and other waterfowl.

C5 That the 92 ha area indicated on Map B be used:

(a) primarily to conserve the habitat of native animals, particularly water birds

and

(b) for public recreation and education where this does not conflict with the primary aim

that

(c) grazing be permitted at the discretion of the land manager

that the area be managed by the Albury-Wodonga Development Corporation for the time being, but that responsibility for management be transferred to the Department of Conservation, Forests and Lands according to a time schedule and on a basis to be determined by the two authorities in consultation

and that, following transfer, the area be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978*.

D. WATER PRODUCTION

Local catchments are very important for water production, both for domestic consumption and for irrigation water supply. Catchments wholly or partly in the study area provide domestic supply for the major centres of Wodonga, Wangaratta, Benalla, Euroa, and Beechworth, and for many smaller townships. The study area includes 46% of the Victorian catchment to Lake Hume, and a portion of the Lake Eildon catchment. Both of these lakes supply domestic water as well as their main use for irrigation water storage.

Current management and use

None of the catchments is used solely for water production, although restrictions limit the type of activity permitted in some of them and on some of the reservoirs. The catchments are subject to a variety of land uses, including recreational activities, timber production, and agriculture on open farmlands.

Land use planning

Council notes that the degree of land use planning varies between catchments. The nine Proclaimed Water Supply Catchments in the study area cover about 55% of it. Land use determinations exist for the Ryans Creek catchment (Benalla Water Supply) and for part of the Lake Eildon catchment. A land use notice is current for freehold land in the Lake Hume catchment, covering proposals to clear land.

Council maintains that the Soil Conservation Authority should investigate all remaining domestic water supply catchment within the study area and, where appropriate, the Land Conservation Council will recommend these for proclamation in order to ensure a uniform procedure for land use planning within these areas.

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 consultations 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. Authorities with land management responsibilities 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, types 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 manager 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 manager 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 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 Environment Effects Statement is now required as part of the planning of any new major storage.

Recommendations

D1—D2 That in the case of the locations listed below and shown on the map (these locations being within catchments that have been proclaimed and for which land use determinations have been made), the following areas:

- (i) the storage areas
 - (ii) diversion works
 - (iii) associated facilities
 - (iv) the buffer zones around diversion works and storages, as defined in the land use determination
 - (v) other areas specified below
- be used for
- (a) water supply purposes
 - (b) other activities permitted by the water supply authority after consultation with the Soil Conservation Authority and the Environment Protection Authority

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

Notes:

1. The primary object of management of the buffer zone must be to protect water quality. Subject to this principle, the water supply authority may permit secondary uses in the buffer zone. In such cases the principles of management must be agreed upon by that authority and any other authorities concerned.

2. 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 an appropriate land managing authority and the water supply authority. The agreement may include leaving the management of the buffer zone with the adjacent land managing authority, on the basis that it would be managed with the prime object of protecting the water quality.
3. The Council considers that fossicking and prospecting under a Miner's Right should not be permitted on land reserved for water supply purposes around storages and facilities, etc.

D1 Lake McCall–Say, Benalla Water Board; the reserve to include the 364 ha area shown on Map A

D2 Loombah Weir, Benalla Water Board; the reserve to include the weir and its associated water reserves

D3—D20 That in the case of the locations listed below and shown on Map A (all these locations being within catchments for which no land use determinations have been made, or for which a determination has been made for part of the catchment only) the present tenure and management of public land continue for the time being

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

- (i) the storage areas
- (ii) diversion works
- (iii) associated facilities
- (iv) the buffer zones around diversion works and storages, as defined in the land use determination
- (v) any other allotments considered necessary

be used for

- (a) water supply purposes
- (b) other activities permitted by the water supply authority after consultation with the Soil Conservation Authority and the Environment Protection Authority

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

Notes:

1. The primary object of management of the buffer zone must be to protect water quality. Subject to this principle, the water supply authority may permit other secondary uses in the buffer zone. In such cases the principles of management must be agreed upon by that authority and any other authorities concerned.
2. In some instances it may not be practicable for the water supply authority to manage all or part of the buffer zone. In such cases agreement should be reached between an appropriate 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.

3. The Council considers that fossicking and prospecting under a Miner's Right should not be permitted on land under the control of water supply authorities, around storages and facilities, etc.

D3 Mountain Hut Creek storage; Euroa Water Board

D4 Gooram Diversion Weir; Euroa Water Board

D5 Honeysuckle Creek storage; Violet Town Water Board

D6 Lake Eildon; Rural Water Commission

Note:

A land use determination has been made for part of this catchment around the lake.

D7 Lake Nillahcootie; Rural Water Commission

D8 Ovens River offtake; City of Wangaratta

D9 Diddah Diddah Creek storage; Springhurst Water Board

D10 Barambogic Creek storage; Chiltern Water Board

D11 Lake Kerferd; United Shire of Beechworth

D12 Nine Mile Creek offtake; United Shire of Beechworth

D13 Nine Mile Creek offtake; Yackandandah Water Board

D14 Clear Creek storage; Yackandandah Water Board

D15 Wodonga Creek offtake; Rural City of Wodonga Water Board

D16 Kiewa River offtake; Lower Kiewa Water Board

D17 Lake Hume; Rural Water Commission

Note:

Following concern over clearing of steeply sloping land in the Lake Hume catchment, a land use notice has been imposed under the *Soil Conservation and Land Utilization Act* 1958.

D18 Murray River offtake (Walwa); Upper Murray Water Board

D19 Cudgewa Creek offtake; Upper Murray Water Board

D20 Corryong Creek offtake; Upper Murray Water Board.

That in the case of the following stock and domestic water supply offtake and channel, and the various off-river storages, water supply installations and channels (not individually listed), these, and their associated reserves remain under existing tenure and control.

Notes:

1. Many other water installations located on public land are scattered throughout the study area. These occupy small areas and carry service basins and the like. They are not shown on Map A and Council proposes that their existing tenure and control should continue.

2. The Council considers that fossicking under a Miner's Right should not be permitted on land reserved for water supply purposes, around storages and facilities, etc., or adjacent to water distribution channels.

D21 Lake Mokoan Diversion Weir and Channel; Rural Water Commission

- D22—D24** That in the case of the locations listed below, and shown on Maps A and B, their value for lake access and passive recreation be considered in the preparation of the land use determination for the Lake Hume catchment

that

once the land use determination is made, those areas not required as protective buffer zones or for water management be used for recreational use according to the capability of each area to sustain such use

and that they be reserved and managed as specified below.

- D22** 5 ha, being portion of allotment 26F, section F, Parish of Talgarno; to be permanently reserved under the *Crown Land (Reserves) Act 1978* and managed by the Department of Conservation, Forests and Lands.
- D23—D24** To be managed by the Albury–Wodonga Development Corporation for the time being, with responsibility for management being transferred to the Department of Conservation, Forests and Lands according to a time schedule and on a basis to be determined by the two authorities in consultation, and following transfer the areas to be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978*.
- D23** 31 ha, being portions of allotments 5 and 6, section 1, Parish of Berringa.
- D24** 96 ha, being portions of allotments 2, 3, 4, and 5, section V and 2, 7 and 8 section IV, and portion of Bethanga pre-emptive right, Parish of Berringa.

HARDWOOD PRODUCTION

The hardwood forests of this area have been used as a source of wood since early settlement. They currently supply up to 44,000 cu. m of sawlogs annually, which is about 3–4% of Victoria's annual production from State forests. Most of the timber produced is narrow-leaf peppermint or messmate and is sold locally for general construction purposes.

Hardwood sawmilling directly employs about 120 person in the study area. Individual sawmills drawing supplies from this area are located at Granite Flat, Mitta Mitta, Stanley, Mount Beauty, Chiltern, Yackandandah, and Alexandra, and the Euroa–Mansfield area contains a total of eight mills. It should be noted that the mills at Mansfield, Granite Flat, Mitta Mitta, Mount Beauty, and Alexandra also draw supplies from outside the area and, in addition, mills at Corryong and Wodonga currently receive supply entirely from the Alpine area.

Minor forest products such as fencing materials, poles, and firewood are also obtained from the hardwood forests and service the local demand for these products.

Impact of proposed recommendations

Council recognizes the importance of timber production based on the North-eastern area but also recognizes the need to set aside areas of particular conservation significance; as a result, some stands of productive timber are included in parks and other reserves where timber-harvesting is not proposed.

The 1973, 1974, and 1977 recommendations allocated three areas of public land for hardwood production. Council believes that these areas should continue to be used for hardwood production and they have been included in the State forest category. Where variations have been made to previous recommendations that will affect timber availability, such as the upgrading of the Mount Lawson multi-purpose park to State park status, the effect on sawlog production capability has been slight.

E. STATE FOREST

The larger areas of forested public land in the State that were not incorporated into parks, or set aside in various reserves or for softwood production, were in the past designated by the Council as either areas for hardwood timber production, or uncommitted land. In the Council's final recommendations for the Alpine Area — Special Investigation, published in November 1983, it was proposed that such forested land be managed as a single unit.

The Council decided to refer to this land as 'State forest', as it believes that term best describes public land in timber production areas and uncommitted land, even though this may contain a range of vegetation types from tall mountain forests through to woodlands, mallee scrub, heathlands, and swamplands. The name is used only in a descriptive sense rather than as a term defined in the *Forests Act 1958*.

Council has now resolved to apply the concept of State forest to the public land in the North-eastern (Benalla–Upper Murray) area that was previously recommended for hardwood production and uncommitted land.

Existing land use categories

Hardwood areas and uncommitted land are administered under provisions of the *Forests Act 1958* and the *Lands Act 1958*. In the past this has led to differences in fees for essentially the same type of licence and in some instances has resulted in the necessity to obtain two or three licences to occupy a single parcel of land.

State forest comprises a mosaic of forests of varying productivity, and the separation of land into timber production areas and uncommitted land has tended to reinforce the belief that the State's commercially productive hardwood forest is entirely located within hardwood production areas and that timber production is the sole object of management there. In fact, a significant volume of commercial timber is extracted, in conformity with Council's recommendations, from uncommitted land; at the same time, hardwood production areas are managed for a range of uses as well as for wood production.

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

Areas delineated as forest areas, adjacent to softwood plantations, were set aside in previous recommendations. These areas are used to maintain nature conservation and landscape values, and to allow protection of the adjacent plantations. Low-intensity timber production and various other uses are also permitted. This range of uses is appropriate to the State forest concept and consequently forest areas are also included.

Management of State forest

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

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

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

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

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

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

Land use and management principles

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

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

- * protect forests and their associated vegetation and fauna from damage by wildfire and from injury by biological or other agents
- * conserve landscape values, wildlife habitats, and floral, historical, and other natural values

- * provide a continuing supply of hardwood timber on a sustained-yield basis
- * provide opportunities and facilities for public recreation and education
- * protect water supply catchments
- * protect adjacent softwood plantations from fire
- * provide for apiculture, forest grazing, extraction of road-making materials, defence training, etc. where appropriate

In relation to these goals the Council has referred below to a number of principles that should be incorporated into management plans for State forest. The principles are based on harvesting prescriptions used by the Department of Conservation, Forests and Lands.

Nature conservation

The fact that State forest comprises 66% of the public land in the study area means that it is particularly important for the conservation of native plants and animals. The wide range of vegetation types support a rich assemblage of flora and fauna. The Council is aware that a number of uncommon or rare plants and animals occur within State forest, which are specifically referred to in the recommendations below, along with broad guidelines for management to protect these species. This may make it necessary to exclude grazing from some areas, at least temporarily, in order to protect particular species or habitats.

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

In the management of State forest areas:

- * Management plans should include details as to how significant vegetation communities and colonies of rare or endangered plants and animals may best be protected, following consultation with specialist groups such as the Fisheries and Wildlife Service or the National Herbarium. Some species or communities may require long-term monitoring in order to assess their habitat requirements and the most appropriate methods of management to ensure their survival. The land manager may, in some cases, need to:
 - create and manage buffer zones of adequate size
 - erect protective fencing
 - provide additional weed and vermin control
 - manipulate fire regimes to maintain or enhance the viability of certain species
 - collect and store seed for use in planting and re-establishment programs

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

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

Recreation

Outdoor recreation is an important use of much of the State forest throughout the area, which caters for a wide range of recreational pursuits. The outstanding landscapes are a major factor contributing to the area's significance and popularity for recreation.

The extensive road network throughout State forest is of particular value for motorized recreation, and many of the other outdoor activities depend on motor vehicles. Council maintains that a system of linked roads, of two- or four-wheel-drive standard, should continue to be available for public use. In the more accessible areas pleasure driving on the scenic valley and ridge tracks is a common use.

Deer-hunting, using guns or bows and either with or without hounds, is a permitted use within State forest and interest in this activity is increasing. The wetter valleys and forests are important breeding areas for Sambar deer, and the adjoining open stringybark and gum forests provide hunting grounds. Sambar deer are presently hunted in the larger blocks of State forest between the Kiewa and Indi Rivers, and in the Strathbogie Ranges. Feral pigs and goats are also hunted in the State forest areas.

Other popular recreational pursuits include horse-riding, nature study, and fossicking and prospecting. Various creeks provide a recreational focus, particularly for activities such as angling, swimming, and picnicking.

In the management of State forest areas:

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

Soil conservation and water supply catchment protection

Much of the State forest is already included in proclaimed water supply catchments. In fact the Victorian catchment to Lake Hume covers 46% of the total study area.

Catchments containing substantial areas of State forest include: Ryans Creek; Broken River headwaters (Lake Nillahcootie); Honeysuckle Creek; Evans Creek and King River West Branch (Lake William Hovell); Diddah Diddah Creek; Nine Mile Creek; and Cudgewa Creek and Nariel Creek in the Lake Hume catchment.

The remaining catchments will be investigated for proclamation. Where appropriate, the Soil Conservation Authority will prepare land use determinations, after consultation with the Council and the land managers, for those catchments that require further protection.

In the management of State forest areas:

- * Adequate filter strips of at least 40 metres along major streams and 20 metres along minor streams should not be logged and where possible other operations that cause soil disturbance should not take place in the buffer strips. They should, as far as is practicable, be protected from fire.
- * All roads and snig tracks, log landings, and dumps should be designed and constructed to minimize potential erosion. These should be adequately drained, breached, and barred when not required, and revegetation should be encouraged.
- * Intensive utilization operations on areas of high erosion hazard should be subject to specific constraints or excluded, especially on slopes generally greater than 30°.
- * Where necessary, logging operations should be restricted during winter and periods of heavy rainfall; consideration should be given to closing unsurfaced logging roads during these periods. Seasonal closure of other roads will continue to be necessary because of excessive damage, erosion, or cost of maintenance, or because of extreme fire hazard.
- * Fuel dumps and logging camps should not be sited immediately adjacent to streams; adequate provision should be made for the disposal of wastes from these sites.

Historic sites

In the management of State forest areas:

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

Recommendation

E1 That the areas shown on Map A and Map B be used in accordance with the principles outlined above to:

- (a) supply water and protect catchments and streams
- (b) produce hardwood timber
- (c) conserve native plants and animals, and provide opportunities for the development of wildlife conservation techniques
- (d) provide opportunities for open-space recreation (including hunting) and education
- (e) produce honey, forage, gravel, sand, and other forest produce
- (f) protect adjacent areas recommended for softwood production
- (g) protect the values in the areas described in the following sections (recreation and landscape; nature conservation; historic sites; natural features along streams; and educational use) by the implementation of management prescriptions

and that they become State forest and be managed by the Department of Conservation, Forests and Lands.

Notes:

1. This recommendation covers all land recommended in previous studies for hardwood production, forest area and uncommitted land, with the exception of areas for which other recommendations have been made in this review.
2. State forest includes an area of 270 ha at Mount Murrumbungong currently vested in the Albury–Wodonga (Victoria) Corporation, and shown on Map B.
3. This recommendation includes several areas designated for specific uses in the 1973 final recommendations for the North-eastern area, District 1, which have now been reconsidered by Council. These are (with 1973 recommendation numbers):
 - A5 Mount Elliott Regional Park
 - H2 Agriculture — Cascade Creek
 - I1 Minerals and Stone — Walwa

Recreation and landscape

The areas described below are considered by the Council to contain scenic qualities or recreational values that warrant particular protection:

- * high vantage points in the Mount Strathbogie forest used to obtain scenic views, including the summit of Mount Strathbogie
- * eastern fall of the Strathbogie massif, west and south of Lima
- * environs of the Tatong–Tolmie forest road
- * areas affording views of and from the Murrumbidgee Basin forests
- * the scenic forest drive and its environs, from Stanley to Buckland Gap
- * forested escarpment fringing the Stanley plantations, west of Bruarong
- * forested escarpment of Mount Big Ben as seen from the Yackandandah–Dederang Road
- * scenic landscapes of the Kiewa and Mitta Mitta River valleys and the Myrtle Creek valley from Stanley to Mudgegonga

Nature conservation

A number of important plant and animal species occur in State forest at the sites listed below, and these should be protected in accordance with the principles previously outlined.

- * The uncommon eastern horse-shoe bat (*Rhinolophus megaphyllus*) has been recorded in the Moonee Moonee Creek catchment north of Mount Strathbogie, and as well in a mine south-east of Fords Bridge east of Mount Samaria.
- * In the rocky valleys of the Barambogie area, protection for ground fauna is required by retention of fallen timber and rocks, and by limiting fuel-reduction burning in these areas.
- * The Dorchap Range, between Tallangatta and Mount Beauty, and the Dry Forest Creek headwaters north of Reference Area B10 have provided many of the records for the tiger quoll (*Dasyurus maculatus*) in the study area.
- * The Mount View area south of Strathbogie has numerous records of the brush-tailed phascogale, and a diverse reptile fauna.
- * Around Lightning Ridge, north of Education Area L1, a wide range of habitats occurs within the wet and dry open forest types. The area has a very high diversity of reptiles, and records include the notable species, the blind snake (*Ramphotyphlops nigrescens*).

- * Stockyard Creek and Evans Creek catchments are important for conservation of arboreal mammals and, where possible during forest operations, stags and feed trees should be retained.
- * Ryans Creek catchment between the Benalla Water Board storages is also important for arboreal mammal conservation, in particular as it is the north-western limit of the yellow-bellied glider's distribution, and forest management should be planned to conserve stags and feed trees.
- * Along Trappers Creek south of Mitta Mitta, stands of tall manna gums support a wide range of arboreal mammals, in particular the yellow-bellied and greater gliders.
- * At its eastern end, the Dorchap Range south of Mitta Mitta contains *Eucalyptus goniocalyx* open forests I and II with an undisturbed and diverse understorey containing *Themeda australis* grasslands, *Xanthorrhoea australis* tussock grassland, and *Dillwynia retorta* — *Acacia gunnii* heathland.
- * The Little Bucheen Creek and Dribbling Creek watershed, north of Cravensville, contains the best development of wet sclerophyll vegetation within the study area, including species more typically found south of the Great Dividing Range such as *Hedycarpa* spp.
- * Areas along the banks of the north-draining tributaries of the Lucyvale Creek, immediately south of Reference Area B11, carry vegetation with sub-alpine characteristics, including low-altitude occurrences of *Hakea microcarpa*, *Callistemon sieberi*, and *Sphagnum* sp., with certain species characteristic of high-altitude bogs such as *Baeckia gunniana*.
- * In the vicinity of Mount Elliott, extensive occurrences of *Xanthorrhoea australis* with a grassy understorey and stands of *Eucalyptus nortonii*, a glaucous variety of long-leaf box, may be found.

Historic sites

The following sites of historic interest should be protected in accordance with the principles previously outlined:

- * McCashney and Harpers sawmill sites and tramway in the Old Archerton area
- * the 12 Apostles mining sites along the Nine Mile Creek east of Stanley
- * the old township sites of Hillsborough and Bruarong
- * the Granya quartz gold-mining area on Mount Firebrace
- * the Emperor Company's alluvial gold and tin workings south of Koetong
- * Dumbrell Brothers' sawmill site and tramway south of Lucyvale
- * alluvial gold- and tin-mining sites and the sapling-framed hut on the Upper Cudgewa Creek
- * at Thowgla Creek, alluvial gold workings and a water race constructed from stone

Natural features along streams

The Council believes that all streams in State forest should be protected in accordance with the principles previously outlined.

However, the Council has referred to a number of streams where particular values and attributes have been identified. These streams have significant scenic and nature conservation values:

- * Snowy Creek
- * Log Bridge Creek
- * Thowgla Creek

Educational use

Many school groups use the Lightning Ridge area in the eastern Strathbogie Ranges regularly and frequently for educational purposes. Seven of these have permanent camps here. Forest management should be planned so as to be compatible with such educational use. For example, forest operations should avoid small areas used for experimentation or projects, and no further tracks should be constructed in this vicinity, to allow the teaching of bush navigation along untracked spurs.

F. SOFTWOOD PRODUCTION

The study area includes all of the Upper Murray and parts of the Benalla–Mansfield and Ovens Softwood Development Zones. In conjunction with land planted in the south-east of New South Wales, the region supports one of the largest concentrations of softwood plantations in Australia. These provide raw material for paper and pulp mills, a medium-density fibre-board plant, sawlog and veneer mills, and preservative-treatment plants in both Victoria and New South Wales.

Existing Plantations

A net total of 23,730 ha has already been established by the Department of Conservation, Forests and Lands in the three Softwood Development Zones (including 1984 plantings). This includes some 15,600 ha of former freehold land purchased by the Department for softwood plantations.

In addition, private individuals and companies have established a net total of 3,040 ha of softwood plantations on private land in these zones.

Land for Softwood Production

The final recommendations for this area published in 1973, 1974, and 1977 allocated 17,830 ha gross of public land to be used for softwood production by the Forests Commission, including some 5,700 ha of previously purchased land. Of this total, about 2,600 ha has not yet been planted, and a further 1,260 ha of land, purchased since that time, also remains unplanted. Together these provide a gross area of 3,750 ha, within which an estimated 2,810 ha can be planted.

The current planting rate in the three Softwood Development Zones is 1,750 ha per annum. Some 600 ha were planted in the study area in 1984.

The government has expressed concern about the extent to which native forest is being cleared in order to establish pine plantations.

As an alternative to using forested public land, the government is investigating strategies whereby softwood supply commitments may be met by plantations on freehold land by private companies, private farm forestry, and the purchase or lease of suitable private land by the State for plantation establishment. The Council supports such proposals in appropriate areas.

Until these investigations have been completed, the extent to which private land within this study area would be required for softwood plantation remains uncertain. It is government policy that no further areas of public land carrying native forest be made available for softwood production.

In order to meet existing supply commitments and until alternative strategies can be implemented the government may, in the short term, decide that it is necessary to use some areas of public land for the establishment of softwoods.

Council believes that the areas previously allocated for softwood production in the 1973, 1974, and 1977 recommendations and the areas of private land purchased by the Department but not yet planted should continue to be available for softwood production.

These recommendations include only a small addition to the existing area set aside for softwood plantations.

Plantation Planting Guidelines

The Council believes that the impact large plantations of softwood have on the natural environment can be reduced by retaining selected areas of native vegetation, and by adhering to catchment prescriptions prepared by the relevant authorities after consultation with the Soil Conservation Authority where applicable. The guidelines set out below apply to the establishment of plantations on public land in this study area.

No continuous plantation units should exceed 1,400 ha without obvious break-up areas retained as native forest. Samples (100–200 ha) of all vegetation types in the area should be retained. Where possible, several should be combined in one unit. The unit may be sited to improve the appearance of the plantation, or to combine with land unsuitable for planting to form a range of habitats for wildlife. Units may also include stands of native hardwood managed for timber production. While logging and fuel-reduction burning need not be prohibited in areas where native vegetation is retained, it is important to protect their functions in relation to soil conservation, water quality, and nature conservation. Any utilization, including that carried out prior to clearing, should be carefully controlled, and slash, snig tracks, and landings cleaned up. No retained area should be fuel-reduced in its entirety in any one year.

Native vegetation should be retained for at least 80 m from each bank along major streams and 40 m from each bank along minor streams. In order to maintain soil stability and water quality, it may be necessary to retain a strip of native vegetation of at least 20 m from the centreline along some other watercourses. This is in line with other Council recommendations that all wetlands on public land should be conserved. These strips of native vegetation should be kept free of exotic vegetation, and bulldozed material and windrows should be swept back to protect them from hot burns. The importance of ground cover and surface soil conditions in reducing the amount of sediment reaching streams should be recognized.

Landscape values of areas visible from main roads and major vantage points should be maintained or enhanced, with preference given to landscapes carrying native forests. The aim should be to avoid as far as practicable views of continuous swathes of cleared country, during both the establishment phase and the final felling of the mature crop.

This may be achieved by:

- * retaining uncleared foreground reserves
- * breaking up areas to be cleared with strategically located strips or blocks of vegetation
- * retaining native forests as a backdrop on higher slopes and ridges.

On minor through roads, an interesting environment should be maintained by amenity plantings (preferably of native and local species). Where plantations are to be established adjacent to private property, consideration should be given to reasonable requests by the landholders for the retention of native vegetation along boundaries.

Clearing prior to planting makes the soil more liable to erosion until a new vegetation cover forms. Special care must be taken to ensure that soil erosion does not begin or increase during this period, and that water catchment values are not impaired. Clearing is to be confined to areas with a ground slope generally less than 20 degrees. Other factors that influence the extent of erosion hazard—such as aspect, soil type and parent material, length of slope, and the amount of rainfall—should also be considered prior to clearing operations.

Roading is a major cause of concentration of water flows and a major source of sediment. In some plantations, special criteria in respect of road location, design, and maintenance may be necessary.

Prior to the commencement of clearing operations, the Soil Conservation Authority should be consulted on matters affecting soil stability and water quality, and the Fisheries and Wildlife Service on matters concerning wildlife conservation.

Recommendation

- F1** That the present plantations of 23,730 ha gross, shown on Map A, be used for the production of softwoods and for the provision of other goods and services compatible with the primary use, as well as providing opportunities for recreation and other uses

and that they remain reserved forest under the provisions of the *Forests Act* 1958 and be managed by the Department of Conservation, Forests and Lands.

Notes:

1. Some of the land shown on the map consists of land previously allocated in the 1973, 1974, and 1977 recommendations for softwood production but not yet planted. (This includes private land purchased by the Department of Conservation, Forests and Lands but not yet planted.) Together this gives sufficient land to establish a further 2,810 ha net.
2. Two small areas, set aside in the 1977 final recommendations for softwood production, are no longer required to be planted. They have been recommended for addition to the Mount Stanley Scenic Reserve — refer to Recommendation J5.

Plantation extension

The following recommendation is for an area of cleared land adjacent to an existing plantation.

Recommendation

- F2** That the area of 25 ha south of Koetong shown on Map A be used for softwood production in accordance with the above Plantation Guidelines

and that it be reserved forest under the provisions of the *Forests Act* 1958 and be managed by the Department of Conservation, Forests and Lands.

G. FLORA RESERVES

In addition to the floristic values of the parks that have been recommended in this study area, a number of areas contain native vegetation of considerable floristic importance and in a relatively natural state.

Council has recognized the special conservation significance of these areas and has accordingly recommended their reservation as flora reserves. They are set aside primarily to conserve species that may be rare or endangered, and also other plant associations that have particular conservation significance. Timber production from these areas would not be permitted.

In all such reserves, suppression of fires remains the responsibility of the Forests Commission. Appropriate fire-prevention measures such as maintenance of fire access tracks and protective burning will be carried out where necessary as will the control of vermin and noxious weeds.

Recommendations

Existing flora reserves

G1—G2 That the flora reserves listed below and shown on Map A continue to be used for those purposes approved by the government following publication of the previous final recommendations.

G1 Tenneriffe

G2 Big Hill

Note:

In the north-western corner of the Big Hill flora reserve, 1 ha has been excised for gravel extraction (see Recommendation R6).

Additional flora reserves

G3—G8 That the areas shown on Map A and described below be used to:

- (a) conserve particular species or associations of native plants that
- (b) honey production be permitted
- (c) passive recreation such as nature study and picnicking be permitted
- (d) grazing be phased out within three years following the adoption of these recommendations

and that they be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978 and be managed by the Department of Conservation, Forests and Lands.

G3 Wallaby Gully

62 ha west of allotment 26A, section 3, Parish of Tarcombe, to be used to preserve the open forest III of messmate with long-leaf box and associated heathland dominated by heath-myrtle (*Micromyrtus ciliata*)

G4 Ruffy

6 ha, being the Public Purposes 'Preservation of Native Plants' Reserve, adjoining allotment 10, section B, Parish of Ruffy, to be used to preserve the open forest-woodland of swamp gum and narrow-leaf peppermint and the disjunct occurrence of snow gum

G5 Balmattum

11 ha north of allotment 156, Parish of Balmattum, to be used to preserve the woodland of white box with some yellow box and the occurrence of *Acacia penninervis*

G6 Wises Creek

32 ha, being the Public Purposes (Conservation of Native Plants) Reserve, north of allotment 4, section D, Parish of Talgarno, to be used to preserve a relic of white box with an understorey of native grasses (this vegetation type has been almost entirely alienated within the north-eastern area, District 1)

G7 Pheasant Creek

200 ha, being the Water Reserve, allotment 16 and part allotment 15, Parish of Jinjelic, to be used to preserve the vegetation complex containing the wet heath formations, unique to this district, containing low-altitude occurrences of sub-alpine species

Note:

This reserve does not include a quarry (see Recommendation R13) or a proposed dam site. The Shelley-Burrowye Road is also excluded.

G8 Mount Mitta Mitta

775 ha, being the area shown on Map A located on the west and south faces of Mount Mitta Mitta, Parish of Cudgewa, to be used to preserve the rare species *Grevillea ramosissima*, *Dodonaea rhombifolia*, and *Brachycome ptychocarpa*, and the uncommon species *Asplenium trichomanes* and *Pultenaea vrolandii*

H. FLORA AND FAUNA RESERVES

Throughout the north-eastern area, a number of locations provide valuable habitat for populations of native fauna and contain examples of native vegetation with considerable floristic importance.

Council has recognized the special conservation significance of two of these areas and has accordingly recommended their reservation as flora and fauna reserves.

In such reserves, suppression of fires remains the responsibility of the Forests Commission. Appropriate fire prevention measures such as maintenance of fire access tracks and protective burning will be carried out where necessary, as will the control of vermin and noxious weeds.

Recommendations

H1—H2 That the flora and fauna reserves listed below and shown on Map A continue to be used for those purposes approved by the government following publication of the previous final recommendations:

H1 Mount Wombat

H2 Hat Hill

I. BUSHLAND RESERVES

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

Council recommends that many of these small remnants of the native vegetation should become bushland reserves. Their major uses are to maintain the distinctive Australian character of the countryside and to provide diversity in the landscape. When accessible, 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 many 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 Conservation, Forests and Lands. These bushland reserves are generally too small to have 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. Limited gravel extraction, low-intensity grazing, 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, railway lines, and lookout points. These uses may not be appropriate to all reserves. In some instances the land manager 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.

Recommendations

Existing bushland reserves

I2—I38 — excluding I7, I14, I19, and I22

That the bushland reserves shown on Map A continue to be used for those purposes approved by the government following publication of the previous final recommendations.

Notes:

1. Council has made subsequent recommendations for the reserves excluded from the above list, as follows: I1 — see Recommendation G3; I7 — see Recommendation Q2; I14 — see Recommendation R10; I19 — see Recommendation K20; I22 — see Recommendation Q3; I39 — see Recommendation G6.
2. Council is aware that the proposed route of the Hume Freeway Euroa Bypass may slightly affect the boundaries of I2, the Euroa Hill bushland reserve.

Additional bushland reserves

I40—I100 That the areas shown on Map A and described below be used to:

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

that

- (b) passive recreation such as picnicking and walking be permitted
- (c) honey production be permitted
- (d) grazing be permitted subject to the approval of the land manager

and that they be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and managed by the Department of Conservation, Forests and Lands.

Notes:

1. Some reserves include relics of gold-mining activities that may, in some cases, constitute a hazard to public safety. The land manager should comply with the public safety requirements of the Department of Minerals and Energy with regard to the mining relics.
2. A number of dams and springs, located within the bushland reserves, are used for fire-protection, stock water, or Shire purposes and these uses should continue.

- 140** 6 ha, being the Water Reserve adjoining allotment 36, Parish of Monea South
- 141** 2 ha, being the Water Reserve, north of allotment 15, section 1, Parish of Monea South
- 142** 28 ha, being allotment 35B, section 1, Parish of Monea South
- 143** 3 ha, being the Water Reserve, south of allotment 1, section J, Township of Longwood, Parish of Longwood
- 144** 27 ha, being allotment 13A, section D, Parish of Ruffly
- 145** 125 ha, being the Conservation of an Area of Natural Interest Reserve, allotment 12, section E, Parish of Dropmore
- 146** 20 ha, being the Conservation of an Area of Natural Interest Reserve, allotment 42C, Parish of Gooram Gooram Gong
- 147** 48 ha, being the Conservation of an Area of Natural Interest Reserve, allotment 41E, section E, Parish of Gooram Gooram Gong
- 148** 12 ha adjoining allotment 31B, section I, Parish of Euroa

Note:

The rare tiger quoll has been recorded on freehold land adjoining this reserve.

- 149** 12 ha, south of allotment 25B, section I, Parish of Euroa
- 150** 6 ha, being the Quarry Reserve, south-west of allotment 21, section H, Parish of Euroa
- 151** 16 ha south-east of allotment 12D, section H, Parish of Euroa
- 152** 6 ha, comprising the Water Reserve and Quarry Reserve, north of allotment 36A, Parish of Balmattum
- 153** 8 ha north of allotments 35 and 19, section A, Parish of Wondoomarook
- 154** 84 ha, being allotment 51, section A, Parish of Marraweeny

- 155** 2 ha, being the State School Reserve south-east of allotment 8, Parish of Balmattum
- 156** 17 ha, being allotment 40, section A, Parish of Marraweeny
- 157** 12 ha, being allotment 56E, Parish of Boho
- 158** 23 ha, being allotment 58, section C, Parish of Marraweeny
- 159** 8 ha north of allotment 14, Parish of Wondoomarook
- 160** 8 ha north of allotment 17A, Parish of Wondoomarook
- 161** 10 ha, comprising allotments 11 and 11A, Parish of Wondoomarook
- 162** 10 ha, being allotment 10A, Parish of Wondoomarook
- 163** 11 ha west of allotments 23, 4, 4A, and 25, Parish of Tallangalook
- 164** 6 ha, comprising the Water Reserve and unreserved Crown land south and east of allotment 41, Township of Baddaginnie, Parish of Warrenbayne
- 165** 7 ha north of allotment 108, Parish of Samaria
- 166** 9 ha, being the Departmental Reserve south of allotment 44, Parish of Moorngag
- 167** 75 ha west of allotment 69, Parish of Moorngag
- 168** 3 ha north-west of allotment 1C, Parish of Lurg
- 169** 15 ha, being the Quarry Reserve south-east of allotment 24A, Parish of Lurg
- 170** 3 ha, being allotment 3C, section 5, Parish of Barambogie
- 171** 1.4 ha east of allotment 2A, section 5, Parish of Byawatha
- 172** 1 ha in the north-western corner of allotment B1, Township of Eldorado
- 173** 1.4 ha, being allotments 1 to 8, and 12 to 16, section 1, Township of Everton
- 174** 3.2 ha west of allotment 2B, section 1A, Parish of Murmungee

Note:

This block has a diverse ground flora and shrub component and should not be grazed.

- 175** 2.4 ha, being allotment 8K, section 7, Parish of Murmungee
- 176** 5 ha north-east of allotment 21A, section 13, Parish of Everton
- 177** 2.9 ha, being allotment 9, section M, Parish of Murmungee

Note:

This block has a diverse ground flora and shrub component and should not be grazed.

- 178** 2 ha, being the Water Reserve within allotment 6B, section 14, Parish of Murmungee
- 179** 19.4 ha, being allotments 2C, 2D, and 2E, section B, Parish of Murmungee

- 180 1.6 ha south-east of allotment 5, section 12A, Parish of Stanley
- 181 11.6 ha north of allotment 4, section K, Parish of Beechworth
- 182 1.2 ha, being allotment 11A, section H, Parish of Eldorado
- 183 7.3 ha north of allotments 1, 2, 2A, and 3, section M1, Township of Chiltern
- 184 13 ha, being allotment 10A, section A1, Parish of Chiltern
- 185 3.6 ha, being allotment 7A, section G, Parish of Chiltern

Note:

Portion of this reserve contains road-making materials, and use of the reserve for extraction could be considered in the future.

- 186 6.9 ha, being allotments 9, 9A, and 9B, section 3A, Parish of Chiltern
- 187 2.5 ha, being allotment 11A, section D, Parish of Chiltern
- 188 4 ha, being allotment 1B, section 2, Parish of Chiltern
- 189 21 ha south-east of allotment 1A, section N2, Parish of Wooragee North
- 190 1.3 ha south-east of allotment 1, section M, Parish of Wooragee
- 191 83 ha, being allotments 22 and 22A, section 5, Parish of Bruarong
- 192 4.9 ha west of allotment 13C, section 5, Parish of Wodonga
- 193 1 ha south of allotment 2A, section A, Parish of Yackandandah
- 194 7 ha, being allotment 8A, section 7, Parish of Bonegilla
- 195 2 ha, being portion of allotment 35A, Parish of Bonegilla

Note:

The house site on this block is not included in the reserve.

- 196 2.4 ha east of allotment 8A, section 12, Parish of Beethang
- 197 59 ha, being allotment 16, section 7, Parish of Granya
- 198 8 ha, being allotment 21A, section A, Parish of Keelangie
- 199 5 ha, being allotment 2B and adjoining land to the west, section 8, Parish of Colac Colac

Note:

Use of the existing Departmental facility located here should continue.

- 1100 2.7 ha, south of allotment 12, section 7, Parish of Towong

J. SCENIC RESERVES

These are set aside to preserve scenic features and lookouts of particular significance.

Aims of management of these areas should be to maintain the character and quality of the landscape and to maintain native vegetation.

Recommendations

Existing scenic reserves

J1—J3 That the scenic reserves listed below and shown on Map A continue to be used for those purposes approved by the government following publication of the previous final recommendations.

J1 Mount Stanley

J2 Barnawartha

J3 Murrungee

Note:

Embery Lookout (J4) is now recommended as part of the Mount Mitta Mitta Regional Park.

Additions to existing reserve

J5 That the areas totalling 115 ha shown on Map A be added to the Mount Stanley scenic reserve (J1)

and that they be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978 and managed by the Department of Conservation, Forest and Lands.

Note:

These areas were previously recommended by Council for softwood production, but they are no longer required for that purpose.

Additional scenic reserve

J6 That the Bishops Mitre Rock area (10 ha), being the Public Purposes Reserve north-west of allotment 6, section D, Parish of Ruffly, be used to preserve scenic features

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978 and be managed by the Department of Conservation, Forests and Lands.

Note:

Grazing may be permitted at the discretion of the land manager.

K. 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 in the study area 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 Conservation, Forests and Lands. 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 State Forests and Lands Service in the Department of Conservation, Forests and Lands while in all cases the Rural Water Commission controls the water.

Each of these authorities may delegate some of its responsibility to local bodies. The State Forests and Lands Service may form committees of management for public purposes, while river improvement or drainage trusts under the guidance of the Rural Water 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 authorities with management responsibilities 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 State Forests and Lands Service 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 a water frontage, that have been set aside elsewhere in these recommendations whether as part of a large reserve (such as a State park or State forest) or for some special purpose (such as a flora, recreation or streamside reserve).

Recommendation

K1 That the public land water frontages:

- (a) be used to
 - (i) protect adjoining land from erosion by the maintenance of adequate vegetation cover
 - (ii) maintain the character and quality of the local landscape
 - (iii) conserve native flora and fauna
 - (iv) provide opportunities for low-intensity recreation
 - (v) allow access to water and for grazing of stock by adjoining landholders under licence where appropriate

that

- (b) (i) where a licence has been issued for a public land water frontage as in (a) (v) above, restricted recreation use by the public be permitted (activities such as walking, nature observation, fishing, or just relaxing should be allowed, while camping, lighting fires, or using motor or motorized recreation vehicles should be prohibited)
- (ii) licensees be required to provide stiles in any fences erected across their licence area if requested to do so by the land manager
- (iii) cultivation not be permitted, except with the approval of the Department of Conservation, Forests and Lands, and that, in proclaimed water supply catchments, the Soil Conservation Authority be consulted to ensure that approval to cultivate is in accordance with land-use determinations affecting the water frontage made under the *Soil Conservation and Land Utilization Act 1958*

- (iv) in particular cases, licensees be required to fence off and exclude stock temporarily from some parts of the licence area where, in the opinion of the land manager, special measures are necessary to protect water supplies, to rehabilitate areas that are eroding or salt-affected, or to permit regeneration of native plants that have particular value for nature conservation

that

- (c) the State Forests and Lands Service be consulted prior to the proclamation of roads, the construction of roadways, or the creation of buildings on public land water frontages

that

- (d) the areas vested in the Albury–Wodonga (Victoria) Corporation along the Kiewa River and shown on Map B be added to the public land water frontage reserve and be managed by the Albury–Wodonga Development Corporation for the time being, with responsibility for management being transferred to the Department of Conservation, Forests and Lands according to a time schedule and on a basis to be determined by the two authorities in consultation and, following transfer, be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978*

and that

- (e) the remaining public land water frontages be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and managed by the Department of Conservation, Forests and Lands.

Note:

Public land water frontage reserves cannot be accurately defined at the scale used on Map A (1:250,000). However, some of the larger reserves have been shown on the map. The appropriate Parish plan should be referred to order to determine the precise boundaries of these reserves.

RIVER MURRAY RESERVE

Public land in the immediate vicinity of the River Murray on both the Victorian and New South Wales sides has significant scenic, recreation, historical, and conservation values.

In association with the river, these lands provide a natural attraction for people wishing to engage in river-based recreation in an essentially natural environment, and provide an outstanding scenic landscape. A wide range of recreational activities is pursued on and adjacent to the river. Camping in secluded spots is very popular, as too are fishing, walking, nature study, or in many cases just relaxing by the river. Swimming, canoeing, and rafting are all popular pastimes. The enjoyment derived from various activities depends in large measure on the maintenance and protection of the 'riverine corridor': that is, the river itself and the treescape environment adjacent to it.

The river red gum woodlands, along with the many billabongs and floodways, provide suitable feeding and breeding habitat for many species of native birds, native mammals, and fish, in addition to numerous impressive river red gum trees, which are identified with the Australian riverine landscape.

Management and use of public land adjoining the Murray can affect:

- * the degree of streambank erosion

- * the maintenance of the riverine landscape
- * water quality, particularly above Lake Hume
- * conservation and protection of flora and fauna
- * preservation of archaeological sites
- * the recreational opportunities that the river and adjoining woodland offer

To conserve and protect the many values and capabilities of this land and to maintain a treescape corridor along the river, Council proposes a further section of the River Murray Reserve, linking with the Reserve established in the Murray Valley Area Proposed Recommendations.

The proposed River Murray Reserve would follow the river upstream from Browns Plains to the Hume Weir wall, with the exception of the area in the Wodonga Regional Park, then from the tailwaters of Lake Hume to Biggara. The reserve would include the existing 60-metre-wide Public Purposes Reserve and, in some locations, additional areas of reserved and unreserved Crown land considered necessary to maintain the treescape corridor along the river.

Management of the River Murray Reserve should be directed towards enhancing the scenic, recreation, and nature conservation values, protecting archaeological features, and providing opportunities for a diversity of recreation activities in an essentially natural riverine environment.

In addition, Council believes that the reserve should be zoned in order to provide for the range of permitted uses recommended below.

In a number of sections the River Murray Reserve is a relatively narrow strip of public land immediately abutting private land. Here the reserve consists of the existing 60-metre-wide Public Purposes Reserve, and in some cases, additional small areas of unreserved Crown land.

Usually the public land in these narrow sections is licensed for grazing to the adjoining land holder under the terms and conditions of a water frontage licence. Where such licences are issued, recreational uses such as walking, fishing, and nature observation should be permitted, while activities such as camping, lighting of fires, hunting, or using vehicles should be prohibited. This conforms with the recommendations made for similar water frontage areas throughout the State (see earlier section on water frontages).

A number of licensed pump sites and pump-line sites occur within the reserve and the use of these facilities would continue. However, Council believes that more stringent guidelines should be applied to the general appearance of these structures, particularly at pump sites, so that their impact on the scenic riverine environment is minimized.

The Council considers that the authorities responsible for the re-issue of these licences should place certain conditions on the appearance of the sites in order to avoid the proliferation of unsightly structures along the river.

Recommendations

K2 That the areas indicated on the map be used to:

- (a) protect the natural and scenic values
- (b) conserve native flora and fauna

- (c) protect streambanks from erosion
- (d) provide opportunities for informal recreation that
- (e) honey production be permitted
- (f) stock access to water and grazing be permitted at the discretion of the land manager where this is compatible with the zoning plan
- (g) use of existing and licensed pump and pump-line sites be permitted to continue
- (h) operations for the maintenance of bank stability and public safety continue to be permitted
- (i) current legal access continue to be provided
- (j) dispersed camping adjacent to the river be permitted at the discretion of the land manager where this is compatible with the zoning plan
- (k) hunting be permitted at the discretion of the land manager where this is compatible with the zoning plan and the use of adjoining public land
- (l) in narrow sections of the reserve subject to grazing under licence, recreational activities such as walking, fishing, and nature observation be permitted as outlined in Recommendation K1 — Public Land Water Frontages (these sections consist of the existing 60-metre-wide Public Purposes Reserve plus, in some instances, small areas of currently unreserved Crown land)
- (m) that the areas vested in the Albury–Wodonga (Victoria) Corporation and shown on Map B be added to the River Murray Reserve and be managed by the Albury–Wodonga Development Corporation for the time being, with responsibility for management being transferred to the Department of Conservation, Forests and Lands according to a time schedule and on a basis to be determined by the two authorities in consultation and, following transfer, be permanently reserved under Section 4 of the *Crown Land (Reserves) Act 1978*

and that the reserve be zoned in order to provide for the range of uses outlined above and the remaining areas be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and that the reserve be managed by the Department of Conservation, Forests and Lands.

STREAMSIDE RESERVES

In many instances, small blocks of public land adjoin streams but are not included in the public land water frontage.

These blocks have, where appropriate, been designated streamside reserves. Some are currently reserved under section 4 of the *Crown Land (Reserves) Act 1978*; others are unreserved Crown land, although they may be licensed for grazing. Vegetation on these areas varies from open woodlands to grassland. Every effort should be made to conserve native trees on these reserves, where they exist, and to encourage regeneration or restoration where the vegetation has been depleted or destroyed.

Blocks of public land such as this have values for nature conservation and recreation. They allow public access to the river or stream, especially where access along the public land water

frontage is difficult. The land manager may provide facilities for activities such as camping on streamside reserves in areas where conflict with nature conservation values are minimal.

It is intended that public land water frontages adjacent to or within a streamside reserve be managed by the authority responsible for that reserve.

Streamside reserves are separate and distinct from the public land water frontages described earlier in these recommendations.

Recommendations

Existing streamside reserves

K8, K10, K11 That the streamside reserves shown on Map A continue to be used for those purposes approved by the government following publication of the previous final recommendations.

Note:

Streamside reserves K2–K7, shown on the Public Land Use Map in the resources report, have been incorporated in the River Murray Reserve proposed above; K9 has been included in K20 listed below.

Additional streamside reserves

K12—K32 That the areas shown on the map and described below to be used to:

- (a) provide passive recreation such as picnicking, walking, and angling
- (b) provide opportunities for camping at the discretion of the land manager if this use does not conflict with the maintenance of the water quality of the adjacent stream
- (c) conserve flora and fauna
- (d) maintain the quality and character of the local landscape
- (e) provide grazing, at the discretion of the land manager, if this use does not conflict with the maintenance of the water quality of the adjacent stream or with (a), (b) and (c) above

and that they be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and be managed by the Department of Conservation, Forests and Lands.

K12 10 ha east of allotment 53B, Parish of Benalla, which abuts the Broken River

K13 4 ha, being the Departmental Reserve west of allotment 105A, Parish of Moorngag, which abuts both the Broken River and the Midland Highway

K14 15 ha south-east of allotment 2A, section 10A, Parish of Carraragarmungee

K15 9 ha adjoining allotments 1, 1D, 1C, no section, Parish of Tarrawingee

K16 2.2 ha south-east of allotment 2, section 18, Parish of Wooragee

K17 10 ha east of allotment 2 and north-east of allotment 3, section 6, Parish of Wooragee

- K18** 79 ha, being allotment 4, section D1, allotment 2B, section G1, and allotment 10, section F1, Parish of Woorragee North
- K19** 5.4 ha north and east of allotments 9, 13A, and 14, section 16A, Township of Barnawartha North
- K20** 19 ha south-west of allotments 5B and 11, section O, Parish of Yackandandah
- K21** 14 ha north of allotments 2B and 4B, section G, and west of allotments 4, 4B, 4C, 4D, 5, 6, 6A, and 7, section 6, Parish of Myrtleford
- K22** 3 ha west of allotment 3C, section 9, Parish of Gundowring and east of allotment 2B, section 3, Parish of Kergunyah
- K23** 7.6 ha adjoining allotments 9, 9A, 11A, 12, section A, Parish of Dederang
- K24** 4.4 ha, being allotment 12G, section 10, and land north of allotment 3, section 1, Parish of Tangambalanga

Note:

This area, located on Sandy Creek, includes a number of dredge holes that provide good aquatic habitat. Considerable revegetation is required for it to achieve its full potential.

- K25** 2 ha east of allotment 9, section 8, Parish of Bolga
- K26** 6.5 ha north of allotment 1, section 14, Parish of Yabba
- K27** 2.5 ha north of allotment 8, section A, Parish of Berringama, adjacent to Beetoomba Creek
- K28** 16 ha west of allotments 3 and 4, section 7, Parish of Wabba, adjacent to Cudgewa Creek
- K29** 7 ha north of allotment 1, section 3, and including the stream frontage, Parish of Cudgewa, adjacent to Stony Creek
- K30** 5 ha west of allotments A and A3, Parish of Colac Colac, adjacent to Corryong Creek

Note:

This area does not include the adjacent land used for a caravan park.

- K31** 2 ha south of allotment 8, Parish of Towong, adjacent to Corryong Creek
- K32** 10 ha west of allotment A9, section 1, Parish of Towong and east of allotment 1, section 12, Parish of Tintaldra, on both sides of Corryong Creek

RIVER IMPROVEMENT

River Improvement Trusts are constituted under the *River Improvement Act 1958*, and the Black Dog Creek, Broken River, Kiewa River, Mitta Mitta River, Ovens and King Rivers, and Upper Murray Improvement Trusts are included in the study area.

Improvement works in rivers are designed to maintain the stable carrying capacity of the stream consistent with other essential values. In addition, works may be aimed at protecting adjoining land from flooding and erosion, maintaining the security of structures such as bridges on the flood-plain, and reducing siltation of the lower reaches by control of upstream erosion.

The works carried out include:

- * erosion-prevention 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 Rural Water 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 ultimately could 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 the initial stages, 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 with their Districts 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. There is thus little opportunity in the design and implementation of works for consideration of their likely impact on areas outside the Trusts' Districts.

The Minister for Water Resources recently established two task forces to investigate and make recommendations on the stream and catchment management throughout Victoria. The first of these was appointed to review those recommendations of the Public Bodies Review Committee's Eighth Report (May 1983) that related to restructuring of River Improvement and Drainage Trusts. A report by this task force is currently under consideration by the Minister for Water Resources.

The second, known as the 'State of the Rivers Task Force', was established in August 1984 to examine and recommend the future legal, institutional, technical and financial arrangements

for an effective, regionally based river management system. It is expected that this task force will take some 12 to 15 months to complete its work.

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

- K 33** 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 policies and principles set out above.

Notes:

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

Rural Water Commission
 Department of Water Resources
 Conservation Council of Victoria
 Soil Conservation Authority
 Fisheries and Wildlife Service
 State Forests and Lands Service
 Association of Victorian River Improvement Trusts

The Committee is convened by a representative of the Rural Water Commission.

2. The Standing Consultative Committee, a body that advises the Rural Water Commission, has prepared three documents that expand on the principles set out above. The first of these documents, 'Guidelines for River Management, 1979', requires 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 habitat for wildlife and for recreation on the other.

In 1982 the Committee prepared the document entitled 'Revegetating Victorian Streams', to provide government, semi-government and local government bodies, community groups, and land-owners with information on the vegetation of stream systems, and to encourage maintenance and enhancement of the environment.

More recently (November 1983) the Committee produced 'The State of the Rivers' report, which recommended the establishment of the second task force referred to above. This report presents a review of the state of Victoria's rivers, drawing attention to the undesirable changes in the river environment that have occurred over the past century. It develops the concept that river management works should be based on a whole catchment philosophy.

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.
4. The Rural Water Commission recently released the publication 'River Management — Glossary of Terms' to help explain the terminology used relating to management of rivers and streams.

L. EDUCATION AREAS AND SCHOOL PLANTATIONS

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, the establishment of growth plots, and demonstrations of the techniques involved in erosion control and in restoration of native vegetation and stream conditions.

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 one, 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 manager, in consultation with representatives of the Education Department and other user organizations, should be responsible for implementing educational aspects and for co-ordinating usage of the areas.

Existing education areas

Recommendations

L1—L4 That the education areas listed below and shown on the map continue to be used for those purposes approved by the government following publication of the previous final recommendations.

- L1** Lima South
- L2** Mount Barambogie
- L3** Lockhart Creek
- L4** Mountain Creek

Other educational use

The disused State school site, 5 km south of Eskdale, is situated in a most picturesque location. The site has good all-weather road access, and the existing building is serviced by a sweeping internal driveway lined with established exotic trees. Because of its location near public land used for different purposes, this site has considerable potential to serve as a base for school excursions.

Recommendation

- L5** Little Snowy Creek (2.6 ha)

That this State school site be investigated for use as a school camp, and base for excursions into the adjacent large areas of public land.

SCHOOL PLANTATIONS

Throughout the study area, numerous areas of public land have been set aside as school endowment plantations as part of various schools' educational resources. The plantations were initially established to instil, through community involvement, a love of forests and an appreciation of their value; and in fact many of them are well suited for regular use as a teaching resource of this nature. It is expected that this use will increase as courses embracing various aspects of environmental science are developed. Many schools have planted their plantations to radiata pine, and used revenue from the sale of produce to provide amenities they required. In some cases, however, these plantations have not been very successful in providing revenue, as the sites proved unsuitable for economic growth or the plantations were too small or the location too far from processing centres to allow economic harvesting. In some instances, radiata pine plantations have failed because of poor management.

Council believes that all the existing plantations should be assessed in order to establish their value as a teaching resource. The use of those that are not now needed or that are unsuitable for teaching purposes for some reason, such as their location, should be terminated. Those planted to radiata pine that have limited value as a teaching resource although satisfactory for wood production may continue to be used for such production, but should be reviewed when the pines are harvested.

Unused sand or gravel pits, or cleared areas such as former school sites, require rehabilitation or revegetation. Council considers that, in some instances, such areas could be used as school

plantations. Their rehabilitation not only could be used to demonstrate various aspects of environmental science but also could provide an opportunity to involve pupils in projects that are clearly in the public interest.

It should be realized that most of the public land in the State is available for some form of educational use, and education areas have been recommended specifically for this purpose. While, as indicated in the section on youth camps, the Council is not in favour of setting aside land exclusively for the use of any one organization, schools wishing to use an area of nearby bushland for teaching purposes should consult with the appropriate managing authority. Their use of such an area should be in harmony with the manner in which the surrounding public area is used.

Recommendations

- L6** That areas set aside for school plantations be primarily used as a teaching resource and utilized to foster awareness and knowledge of the trees and other living organisms that comprise a forest.

Note:

This recommendation does not exclude the use of school plantations as a means of raising revenue for schools. Such use, however, should be secondary to the educational use.

- L7** That the value of each existing school plantation as a teaching resource or for revenue production be assessed by the Education Department — in consultation with the Department of Conservation, Forests and Lands and that the use of those considered unsuitable or no longer required be terminated.
- L8** That new school plantations only be established on public land for education purposes and where their establishment allows the rehabilitation or reforestation of cleared or eroded areas.

M. 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. For example, parts of the Lake Hume frontage and scenic drives and walks around Beechworth would be considered to be intensively used.

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, has suggested that the majority of public land should be available for recreational uses of some sort. Accordingly, it has set aside a variety of reserves that will 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, 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 the details of recreational use to the land manager.

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 manager 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 granite soils), and where the natural environment or special natural features are being preserved.

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

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 area use conventional two-wheel-drive vehicles and keep to the major through routes. 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. The roads are frequently rough and sometimes 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 manager. 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. Authorities with management responsibilities 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 State 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.

Hunting

The North-eastern area offers good opportunities for the hunting of a range of game species.

Populations of Sambar deer are found in the large blocks of public land between the Kiewa and Indi Rivers, and also in the Strathbogie Ranges. 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.

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.

For the large areas of public land now proposed to become State forest, no restrictions on deer-hunting are proposed by the Council, other than existing legal requirements.

The numerous lakes and wetlands throughout the study area are visited by many licensed hunters during the proclaimed Victorian duck-hunting season.

The proposed recommendations do not allow hunting in the State and regional parks, reference areas, and Education areas, nor in proposed flora reserves and flora and fauna reserves.

Youth camps

The study area contains several permanent youth camp sites. Demand is likely to increase, however, for sites for use by scouts, schools, church groups, and the like. 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 and general camping.

Camps on public land vary greatly — in the purpose for which they are constructed, in their standards of maintenance, and in the degree to which they are used. Some are designed to provide full accommodation, with campers living in huts that have electricity and hot water provided; others have only minimal facilities, with campers living in tents. Some have considerable amounts of money and volunteers' time and effort put into their construction and maintenance; others have been built and are maintained at very low standards. Some are used for much of the year, with the owner 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 that 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 limited tenure over a minimum area at any individual camp site, under the control of the land manager. 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 some existing camps may need to be phased out or relocated where these conflict with the primary use of the surrounding land, or if they are in particularly hazardous areas from the point of view of pollution, erosion, or wildfire.

Fossicking or prospecting

Fossicking, or prospecting (prospecting as defined by the *Mines Act* 1958 means operations conducted in the course of exploring for gold or minerals), is a popular recreational activity in parts of the study area. Most people are seeking gold, but there is also an interest in gemstones.

It is necessary to obtain a Miner's Right before prospecting for gold or other minerals (including gemstones) can be undertaken on public land.

Guidelines and recommendations relating to fossicking and prospecting are given in Chapter R, Mineral and Stone Production.

Recommendations

Recreation

M1 That public land continue to be available for a wide range of recreational uses where these can be accommodated without detriment to other values, and that land managing authorities aim at controlling the types, levels, and patterns of recreational use according to the capability of particular areas to sustain such use without irreversible change or significant conflict with the primary purpose of the area.

Motorized recreation

M2 That vehicular use of roads within the meaning of the *Land Conservation (Vehicle Control) Regulations* continue to be permitted on public land except where closure is necessary because of erodible soils, seasonal conditions, excessive maintenance, or conflict with the primary use of the area.

M3 That land managers endeavour to provide some areas for off-road vehicular use for land under their control.

M4—M5 That the areas described below and shown on Map A be used for organized sports (football, horse-racing, golf, etc.) and informal recreation (picnicking, camping, etc.) as permitted by the land manager

that native vegetation be conserved where possible

and that these areas be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978 and be managed by the Department of Conservation, Forests and Lands.

M4 Existing recreation reserves

M5 1.2 ha between allotment 14A and Little Scrubby Creek, Parish of Tallandoon (Council considers that this area, located adjacent to the Omeo Highway at Tallandoon, could be developed for camping to complement the informal recreational use of the Mitta Mitta River and the adjacent recreational facilities).

Disused Wodonga–Cudgewa railway

The Wodonga–Cudgewa railway was constructed from Wodonga to Tallangatta in 1891, with extensions to Shelley and then Cudgewa being completed in 1916 and 1921 respectively. Its early use was largely for timber cartage, and for transport to and from the agricultural districts around Koetong and Corryong.

This line's peak use came during construction of the Snowy Mountains scheme, but following completion of the scheme tonnage carried gradually dropped until the line was closed in 1981.

The railway does, however, have many important features, including a scenic alignment, a number of outstanding timber trestle bridges, a relatively steep gradient and sharp curves in the hilly sections, the highest railway station in the State, and two relocations of parts of the track, which were below the 1932 and 1953 water levels of Lake Hume.

The National Trust considers the line to be one of the most visually pleasing and exciting railways in the State, offering outstanding scenery, with lush farmed valleys, open forests, fern gullies, and many views to nearby mountains. From Ebden to Old Tallangatta the railway closely follows the edge of Lake Hume, with expansive views over the lake and its flanking hills, and long crossings of the Mitta Mitta River and Sandy Creek inlets.

In the period 1915 to 1921, 16 timber trestle bridges were built at road and creek crossings between Tallangatta and Cudgewa. Several of these are very impressive, being up to 30 m high and 200 m long.

From Bullioh to Koetong the line follows a steep serpentine route on the climb onto the Koetong plateau. The gradient on this section includes some stretches of 1 in 30, with an average of 1 in 47. The track winds up the Dry Forest and Darbyshire Creek valleys, with some curves so sharp that a third rail was provided for stability. One such series of bends is known as the Horseshoe Curves.

Owing first to the construction of the Hume Weir in 1932, then to the raising of the weir wall in the early 1950s, sections of the track had to be relocated, and Huon and Old Tallangatta stations were inundated. When the lake level is low, the layout of Old Tallangatta township and rows of street trees are evident from the present railway.

The Shelley station is the highest in the State, with an elevation of 809 m, and it also marks the highest point in the Cudgewa railway.

Ebden–Old Tallangatta section

This section of the disused Wodonga–Cudgewa railway line has valuable recreation potential. Its main feature is its proximity to Lake Hume, with its alignment between the lake and the high, timbered or partly-cleared hills to the west and south.

Potential recreational use of the line includes walking, horse-riding, and eventually bicycling. The Tallangatta Valley Railway Incorporated is proposing that part of this section together with the Old Tallangatta–Shelley section become a tourist railway, and this would require maintaining the track in an operational condition. However, arrangements could be made to enable use of the line for both the tourist railway and various recreational activities without conflict.

Parts of this section of the line would make significant additions to the narrow width of public land fronting Lake Hume, while other sections, together with the road reserve, would offer opportunities for developing viewing areas overlooking the lake.

Recommendation

- M6** That the Ebden–Old Tallangatta railway line be retained as public land and its potential for various activities associated with the recreational use of Lake Hume be investigated.

Old Tallangatta–Koetong section

In addition to the Ebden–Old Tallangatta section of the Wodonga–Cudgewa railway, this section provides further opportunities for recreational use and development.

It provides opportunities for a recreational use link between the Mount Lawson State Park, the Mount Granya State Park, and Lake Hume.

From Old Tallangatta to Bullioh, the route runs parallel to the Murray Valley Highway but at a lower elevation, with outlooks over Lake Hume, the remnants of Old Tallangatta township, and the scenic Tallangatta Creek valley.

The Murray Valley Highway leaves the railway at Bullioh and follows a pleasant route through forests and partly-cleared freehold, up to the Mount Granya State Park, giving several possible points of access into the park.

Past Bullioh, the railway climbs the opposite side of the Dry Forest Creek from the main Corryong Road, giving a new perspective across this attractive valley. This section includes the two most impressive of the high timber trestle bridges, a continuously steep gradient, and a picturesque winding route that includes the Horseshoe Curves. Past Darbyshire, the track passes through forested public land adjacent to the Mount Lawson State Park, and crosses another, lower trestle bridge, before reaching Koetong, on the plateau top.

The proposed track climbs 420 m in a total length of 26 km.

The tourist railway proposal referred to previously would utilize the Huon–Shelley section, and would incorporate this section. However, arrangements could be made to enable use of the line for both the tourist railway and various recreational activities without conflict.

Recommendation

- M7** That the Old Tallangatta–Koetong railway line be retained as public land and used to
- (a) provide a link between Lake Hume and the Mount Lawson State Park
 - (b) protect the historic timber trestle bridges along the railway line
- and that
- (c) the development of a walking track along the line be investigated.

Note:

This section of the railway easement is currently being considered as forming part of a tourist railway proposal, which Council believes would be compatible with the use of the easement for recreation.

Stanley Township recreation area

This area, located along the Nine Mile Creek, includes evidence of past gold-mining activity as well as pleasant bushland surroundings. Parts that have been recently disturbed could be developed for organized recreation, while the forested areas have potential for development for walking tracks and for picnicking.

Recommendation

- M8** That a 15-ha area in Stanley Township as shown on Map A be used for informal recreation and that the area be permanently reserved under section 4 of the *Crown Land (Reserves) Act* 1978, and managed by the Department of Conservation, Forests and Lands.

N. HISTORIC AREAS AND RESERVES

In the North-eastern area relics associated with the history of the area occur on many sites on both public and private land. Aspects or themes of Australian history found include sites and relics related to early exploration, pastoral development, mining, transport and education and to the development of secondary industries and services.

The discovery of gold in north-eastern Victoria had a major influence on development there. The study area contains a large number of gold-mining sites that provide examples of different mining techniques, ranging from small alluvial hand workings to large deep lead mines. The relics of the settlements and developments associated with the goldfields also provide information on the social environment of that period.

There is considerable interest in the community about the State's history. This interest is likely to increase, particularly as more becomes known about historical relics located on public land. Council considers that sites of historical interest should be protected as far as possible from progressive deterioration due to exposure to the weather and from damage by the public.

Council conducted a study to identify the major historical themes represented on public land in the study area and also to identify the sites and areas of greatest historical significance. Information on historical sites was also provided in submissions to Council. Council believes that a number of areas should be reserved and managed to protect representative examples of historical themes. Two types of reserve are proposed — historic areas and historic reserves.

Historic areas

Historic areas are relatively large areas of land that contain historical relics covering a range of historical themes. They are large enough to permit the development of interpretative centres and recreational facilities such as picnic areas and walking tracks.

Historic reserves

Historic reserves are small areas that contain important relics, but generally have only one historical theme represented. Their size will generally preclude the development of recreational facilities, although some aids to interpretation could be provided.

Management of historic areas and reserves

The recommended historic areas and reserves include portions of the major goldfields of the region. Council recognizes that there is considerable interest in the exploration and possible mining of these goldfields. Council believes that exploration and mining activities should be permitted in historic areas and reserves, as specified in the recommendations below, and that a balance should be achieved between exploration and mining activities and the protection of historical relics. Areas to be excluded from exploration and mining should be agreed upon jointly by the *Department of Minerals and Energy* and the *land manager*.

The management of historic areas and reserves should take into account the need for public safety in the vicinity of old mines and other relics. The *Department of Minerals and Energy* has a statutory function with respect to the safety of mines, and nothing in these recommendations affects the powers of *Inspectors of Mines* as defined under the *Mines Act 1958* and *Extractive Industries Act 1966*.

A number of the recommended historic areas have important landscape values. Council believes that these values should be considered when management plans for these areas are prepared.

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 historic areas and reserves as in other areas.

In the event of a fire in or near any such reserves, decisions as to the most appropriate course of action required to suppress the fire — including the type of equipment to be used — are the responsibility of the Forests Commission alone.

The fire-fighting resources of the management authority, where this is not the Forests Commission, 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.

Fire-prevention measures such as maintenance of fire-access tracks and protective burning will also be required in those areas of strategic importance for fire control. In all historic areas the suppression of fires remains the responsibility of the Forests Commission.

HISTORIC AREAS

Recommendations

N1 That the Toombullup Historic Area continue to be used for those purposes approved by the government following publication of the final recommendations for North-eastern Area District 2 in 1974.

Additional historic areas

N2—N4 That the areas indicated on the map and listed below be used to:

- (a) protect specific sites that carry or contain relics of buildings, equipment, construction works, and artefacts associated with the history of the locality
- (b) provide opportunities for recreation and education associated with the enjoyment and understanding of their history

that

- (c) use of these areas be such as to ensure the safety of visitors (in matters of public safety *nothing in these recommendations affects the powers of Inspectors under the Mines Act 1958 and the Extractive Industries Act 1966; it is understood that in exercising these powers the land manager would be consulted*)
- (d) exploration for and the extraction of 'gold' and 'minerals' — including fossicking and prospecting under a Miner's right — be permitted in accordance with Recommendations R1–R4 and the principles and guidelines contained in the Mineral and Stone Chapter
- (e) low-intensity harvesting of timber could be permitted from N2 and N3 except where this would have an impact on the historic features or their surroundings
- (f) removal and treatment of material from mine dumps only be permitted in areas agreed to by the Department of Minerals and Energy and the land manager (safety, the availability of material from other sources, and the historical importance of the dump should be taken into account)
- (g) honey production be permitted

(h) grazing within N4 be permitted at the discretion of the land manager

and that the areas described below and shown on Map A be permanently reserved under the *Crown Land (Reserves) Act 1978* and managed by the Department of Conservation, Forests and Lands.

Notes:

1. Mining tenements are current within N2, N3, and N4.
2. In accordance with (c) above, any development of public access should pay particular attention to the dangerous nature of the shafts, rock faces, and caverns at the Wallaby and Rechabite sites in N3, and the deep earth faces at the hydraulic gold-slucing claim in N2.

N2 Tallangallook–Dry Creek (240 ha)

This historic area includes the Tallangallook township site, two major hydraulic gold-slucing sites, the Golden Mountain mine, the Tallangallook alluvial goldfield, and one of the Crystal King quartz mines.

Tallangallook township

An 1892 plan shows Tallangallook as a well-populated township centred on an isolated but major gold-mining region. It was first settled near the present Dry Creek–Barjarg Road when major gold discoveries were made at Hell's Hole Creek in the 1850s, and was gazetted as a township in 1901.

Hydraulic gold-slucing claim

On the Barjarg–Dry Creek Road, south of Golden Mountain Track and near the Brankeet Creek, is a large open-cut mine, approximately 100–200 m long, 50–60 m wide, and 25 m deep with mature tree ferns (approximately 50 years old) at the base. This impressive hole, produced by hydraulic sluicing, clearly shows the scale of such mining operations in remote localities.

Alluvial hydraulic sluicing and open-cut quartz gold-mining — Dry Creek

These large open cuts (subsequently hydraulically sluiced) and eroded river banks are located south-west of the old town of Tallangallook, and adjacent to the Dry Creek Reserve. The largest open cut is approximately 7 m deep, 40 m wide, and 60 m long.

Golden Mountain mine

The Golden Mountain mine is located south of Old Tallangallook, and consists of a series of small open cuts joined by tunnels. It is of significance as the highest-producing mine in Victoria of the type where finely disseminated gold was extracted from country rock.

Tallangallook Creek alluvial goldfield

Many tunnels, shafts, and earth and rubble races occur along the eastern and southern banks of the Tallangallook Creek and its tributary, Blacks Creek. These workings represent the early alluvial gold-seeking that preceded the sluicing and dredging along Dry Creek.

Crystal King quartz mine

This group of shafts in a forest setting forms the only site in Victoria where systematic mining for piezo-electric quartz crystals (for such uses as radio transmitters) was carried out.

N3 Nine Mile Creek (460 ha)

This historic area includes the Nine Mile Creek alluvial gold workings, and the Wallaby, Kerry Eagle, Rechabite, and Homeward Bound mines. The location is picturesque, being in the steep-sided valley of the Nine Mile Creek, the upper section of which contains a cascade. It falls within a proclaimed water supply catchment.

Nine Mile Creek alluvial gold workings

Here, an extensive network of dry-stone rubble water races criss-crosses on the hillside and along the Nine Mile Creek flats.

Another mining method used on the flats was sluicing, using hydraulic pumps placed on flat barges, which also carried riffle boxes to process the washdirt. Five-metre-high cliffs remain from these operations.

The stone wall races are particularly impressive; the area is part of a site that is highly significant to the region.

Wallaby quartz gold-mine

Located on a steep hillside beside the Nine Mile Creek, this site has one major and many minor shafts, several adits, an open cut (45 m deep), a stoped area about 30 m deep, high mullock heaps, a 12-head battery, various water races, and a tramway alignment leading to the battery. The mine yielded 5,666 oz of gold from 1871 to 1904. On the basis of the artefacts here, it is judged to be of State significance.

Rechabite quartz gold-mine

Near the Wallaby Reef, the Rechabite mine consists of several drives from an 18 m-deep open cut, served by a tramway. Its main shaft has a wide entry into a stoped cavern some 24 m high.

Kerry Eagle quartz and Homeward Bound mines

Several visible shafts are present, protected at the Kerry Eagle mine by a post and three-rail fence.

N4 Bethanga (230 ha)

Gold was first discovered in the Bethanga district in 1875. By 1877, 12 main gold reefs had been prospected and Bethanga's population had grown to around 1,000.

A number of shallow mines were opened in quick succession, as they proved to be both rich and extensive. Bethanga was essentially a shallow goldfield, but below the weathering zone the lodes were found to contain an exceptionally high proportion of sulphide minerals. The high-sulphide ore was difficult to treat, and in the 1880s two smelting plants were erected to treat the complex ores.

Smelting ceased in 1887, when burning in open furnaces was forbidden in order to prevent air pollution. By 1891 only 40 miners remained. A brief resurgence occurred in 1896 with the formation of the Wallace Bethanga Company, which built a large plant to handle the more arsenical ores by roasting and chlorination. Labour and financial problems finally forced closure of the venture. A few years later the 'New Bethanga Company' erected another blast furnace, but the costs of operations exceeded the income from sales. Little further mining activity has occurred at Bethanga to the present day.

Areas of public land around the township were set aside for use by the miners, for access, timber, and grazing. By 1877, 1,800 acres of land around the township had been declared a Miners' Common, although the area of Crown land has been whittled away by selection. Public land in the Parish of Berringa currently consists of the remaining 170 ha of the Common, and various rectangular blocks of land preserved along the major gold lodes, which cover another 125 ha.

The mining areas and the Common carry many relics of the mining days, including artefacts from the processing plants, open shafts and adits, surface workings, and the scars of log skids. Many of these relics are concentrated together within easy walking distance of the main road.

Bethanga is one of the few goldfields in the State where one can predict with reasonable confidence that a substantial reserve of ore remains in the ground. Any future mining development is likely to be underground with minimal disturbance to the land surface.

The area consists of steep hills and ridges, cleared and currently grazed. Some sections retain native grasses (*Themeda* and *Stipa* spp.). It is infested with Paterson's curse and subject to gully erosion and land slips. Some of it requires revegetation, while other portions have the potential to be developed for recreation, with lookouts, signs, and walking tracks. Some of the finest views in the Wodonga region can be enjoyed from vantage points within the Common, while many interesting historical relics lie close to the road.

The existing rubbish tip in this area should be phased out and rehabilitated, and a new site found. The present location near the New Bethanga mine site is not satisfactory, as it lies too close to the township, and is visible from the lookout and from many vantage points around the valley.

Notes:

1. The land manager should prepare a plan of management for the area, in consultation with the Trustees of the Common, community groups and the Shire of Tallangatta, with the aim of protecting and enhancing its historical, scenic, natural, and recreational values.
2. The existing rubbish depot should be phased out and rehabilitated following the selection of a more satisfactory site.
3. Grazing of the area should be carefully managed.

HISTORIC RESERVES

Recommendations

N5—N16 That the areas listed below be used to:

- (a) protect specific sites that carry or contain the relics of buildings, equipment, construction works, and artefacts associated with the history of the locality

(b) provide opportunities for recreation and education associated with the history of the locality (development of recreational facilities would be minimal)

that

(c) use of these areas be such as to ensure the safety of visitors (in matters of public safety nothing in these recommendations affects the powers of Inspectors under the *Mines Act 1958* and the *Extractive Industries Act 1966*; it is understood that in exercising these powers the land manager would be consulted)

(d) exploration for and the extraction of 'gold', and 'minerals' — including fossicking and prospecting under a Miner's Right — be permitted in accordance with Recommendations R1–R4 and the principles and guidelines contained in the Mineral and Stone Chapter

(e) removal and treatment of material from mine dumps only be permitted in areas agreed to by the Department of Minerals and Energy and the land manager (safety, the availability of material from alternative sources, and the historical importance of the dump should be taken into account)

(f) honey production be permitted

(g) grazing be permitted at the discretion of the land manager

and that the areas be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and be managed by the Department of Conservation, Forests and Lands.

N5 Mansfield railway station buildings, sheds, and water tower; Merton–Mansfield railway

When it was completed in 1891, this section of the Tallarook–Yea–Mansfield railway expedited the agricultural development of the broad lower Delatite and Howqua River valleys. A feature of the railway is the remaining buildings. At Mansfield in particular, the complex of platform buildings and sheds constructed in 1891 has been identified as having regional significance.

N6 Cocks Eldorado Gold Dredging Company;
Parish of Tarrawingee

This is a more recent example of dredge workings in the bed of Reedy Creek, with cliffs and widespread tailings.

Both N6 and N7 illustrate the large scale of the dredging and sluicing operations on Reedy Creek, which has, as a consequence, been severely degraded.

N7 Cocks Pioneer open-cut mine;
Parish of Tarrawingee

The mine at Eldorado provides a major example of the results of large-scale open-cut gold-mining and sluicing. It contains vertical cliffs 15 m high, and a water-filled dredged area.

N8 Cunningham Gully mine sites and plant;
Parish of Murmungee

A network of earthen races and some closed-in shafts adjoin the remains of a battery and a relatively complete water-wheel, constructed mainly of sawn timber, with metal connections, set on a sapling cradle.

Shallow alluvial working was carried out here as early as 1855. Leads were first discovered by M. Cunningham in 1858, followed by the Perseverance Lead (1860) and the Murrungee Lead (1865).

N9 Reform quartz gold-mine;
Parish of Myrtleford

The site of this mine lies in a forested, hilly area on the eastern bank of the Happy Valley Creek. Developed by John Riley, the Reform Reef initiated the settlement of Myrtleford.

N10 Pioneer Hydraulic Sluicing Company alluvial gold-mining claim;
Parish of Magorra

This area, beside the Mitta Mitta River, contains what is claimed to be the largest goldmining open-cut in Victoria. It comprises a large excavated area bordered by cliffs, up to 76 m high, produced by hydraulic sluicing, and an extensive mullock heap.

The Pioneer Hydraulic Sluicing Company operated here between 1884 and 1904, and sluiced and dredged some 20 ha of ground for alluvial gold.

N11—N16 Timble trestle railway bridges; Wodonga–Cudgewa railway

On the rising section of the railway from Tallangatta to Shelley, and along the descent into Cudgewa, 16 timber trestle bridges were built over creek and road/rail crossings. These two sections were completed in 1916 and 1921 respectively.

All the original bridges were constructed of timber, probably blue gum, which was appropriate given the early use of the railway in carrying timber from the far north-eastern forests. At that time it also transported agricultural produce from the Koetong Plateau, but its peak use was during construction of the Snowy Mountains scheme. It was closed in 1981.

Its builders chose a route over the plateau that enabled it to cross the major creeks with low structures — for example, at Tallangatta, Dry Forest, and Cudgewa Creeks. However, this required that minor but deep gullies located along the resulting alignment be crossed with high structures, to maintain the grade of the track.

The six bridges listed below have been identified as having particular significance because they are among the most impressive remaining groups of timber trestle bridges in the State.

- N11** 1 ha containing the bridge across a tributary of Dry Forest Creek, adjoining allotment 4, Parish of Granya
- N12** 1 ha containing the bridge across Tucker Box Creek, adjoining allotment 5, Parish of Granya
- N13** 1 ha containing the bridge across Koetong Creek, adjoining allotment 38, Parish of Granya
- N14** 1 ha containing the bridge across Koetong Creek, adjoining allotment 39A, Parish of Granya
- N15** 1 ha containing the bridge across Cudgewa Creek, adjoining allotment 38, Parish of Berringama

N16 1 ha containing the bridge across Cudgewa Creek, adjoining allotment 51, Parish of Berringama

Notes:

1. Bridges N11, N12, and N13 are also included in a proposed walking track—see Recommendation M7
2. Bridge N16 is well sited to provide pedestrian access across Cudgewa Creek to an area of public land adjoining the Mount Burrowa National Park.

O. ROADSIDE CONSERVATION AND HIGHWAY PARKS

ROADSIDE CONSERVATION

The primary purpose of road reserves is obviously to provide for communication, transport, and access. However, vegetation along the road verges can have particularly high conservation, recreation, and landscape values, especially in agricultural districts where most of the native vegetation has been cleared. Geological features exposed in roadside cuttings are a useful adjunct to more detailed work involved in mapping the geology of an area and are often used as an educational resource.

Nature conservation

Vegetation on roads is important for nature conservation because it often contains the only remnants of the region's native plant associations. Such remnants are valuable for preserving species with restricted distribution and genetically interesting variants of widespread species. They are often useful in land studies, as they may permit the original pattern of the vegetation to be pieced together. They also provide habitat for some native animals, and have special significance as pathways permitting birds to move through the countryside on annual migration, or in search of food or nesting sites. While some roads retain wide strips of native vegetation, many are mostly cleared or otherwise greatly altered. Valuable remnants of native vegetation growing on the verges of some roads should be protected where possible. Of particular note is the vegetation along roadsides in the largely cleared foothill areas and broad river valleys.

Accumulation of fuel along roadsides is a fire hazard of concern to fire-control authorities and it must often be reduced by burning off during cool weather. This burning off sometimes conflicts with scenic and conservation values and the Council believes that such burning should be restricted to strategically important areas and kept to the minimum consistent with efficient fire protection.

Recreation and landscape

In rural districts, vegetation along roads is often a major component of the landscape, breaking the monotony of cleared paddocks and accentuating the contours of the land. It provides a pleasant, variable road environment for motorists, and shady areas for rest and relaxation. The Council believes that as much roadside vegetation as possible should be retained when roads are being upgraded. If a major upgrading is being planned, the feasibility of purchasing a strip of private land should be considered in order to preserve good stands of roadside vegetation.

Management

Responsibility for the management of roadside vegetation is vested in various authorities, depending on the status of the road. The most important roads of the State (State highways, tourist and forest roads, and freeways) declared under the *Transport Act* 1983 are completely under the control of the Road Construction Authority (9,000 km). Main roads (14,500 km) are also declared, but are controlled jointly by the Road Construction Authority and local municipal councils. Vegetation on unclassified roads (about 98,000 km of mostly minor roads) is under the care and management of municipal councils, although it is owned by the Crown. The Department of Conservation, Forests and Lands has the control of vegetation on unclassified roads that pass through or adjoin State forests. (Note: these figures are for all Victoria.)

Back roads

With increasing population and use of cars, a tendency has developed for through-roads in the study area to be continually upgraded. Tree-lined back roads with gravel surfaces on narrow winding alignments are becoming increasingly uncommon. Yet for many people such roads best fulfil their need for contact with rural environments. The Council believes that a conscious effort must be made to maintain the character of these roads, particularly when upgrading or realigning is being considered.

Recommendations

- O1** That road reserves throughout the study area continue to be used for communication, transport, access, surveys and utilities.

Landscape, recreation, and conservation values can best be protected by observing the following guidelines. The Council recognizes that many of these are already being implemented by the bodies responsible for the construction and maintenance of roads.

- * When improvements to a road are being carried out, trees and shrubs on the road reserve should be disturbed to the minimum extent consistent with the safe and efficient design and use of the road.
- * Major works to realign minor roads carrying trees and shrubs should not be undertaken unless clearly warranted by the nature and volume of the traffic carried, and the managers of adjacent public land should be consulted regarding such works.
- * Where re-alignment of a road results in a section of the old road being cut off, wherever possible that section should not be sold but used as a recreation and rest area or incorporated into an adjacent appropriate reserve.
- * Where a pipeline or overhead wires are to follow a road carrying trees and shrubs in a rural district, every effort should be made to locate the easements on private land alongside the road if this is already cleared, rather than clearing roadside vegetation to accommodate them.
- * While recognizing the need for clearing or pruning vegetation close to power lines to reduce the associated fire risk, the State Electricity Commission should consult with the Department of Conservation, Forests and Lands regarding the manner in which the risk posed by vegetation can be reduced, while at the same time reducing the environmental impact to a minimum.
- * Road-making materials should not be taken from road reserves unless no suitable alternative sources are available. Any such removal should be done so as to ensure a minimum disturbance of the native vegetation, and the disturbed area should be rehabilitated, where possible, with vegetation native to the area.
- * Burning off, slashing, or clearing of roadside vegetation should be kept to a minimum consistent with providing adequate fire protection.
- * Weeds and vermin on roads should be controlled by means that do not conflict with the uses given above.
- * The various road management authorities, when planning to upgrade roads that have heavy recreational use, should give due consideration to recreational requirements, and give priority along such roads (when funds are available) to the development of roadside recreational facilities.

- * On soils of moderate to high erosion hazard, road management authorities should ensure that pre-planning, design, construction, and funding of roads cater adequately for erosion prevention and control. Advice should be sought from the Soil Conservation Authority.
- O2—O8** That, when widening or re-alignment of roads is proposed, sites of geological, historical, habitat, or botanical significance that may be affected be investigated and every effort made to retain and preserve them.

A number of important sites along road reserves should be protected, and these are listed below.

Sites of habitat and/or botanical significance

- O2** Kelly Gap Road and Oak Valley Road (for a distance of 2 km from the Hume Highway); native vegetation, in particular *Acacia penninervis*
- O3** The roadside north of allotment 14B, section 13, Parish of Burrowye; a community of the uncommon species *Pomaderris subcapitata*
- O4** The Old Coach Road, south of Strathbogie; a population of brush-tailed phascogale in its habitat of mature narrow-leaf peppermint, blue gum, and candlebark
- O5** The Georges Creek Road; a community of tumbledown red gum

Sites of geological significance

- O6** Permian tillites at Woorragee
- O7** Quartz diorite–Yackandandah granite contact at Yackandandah
- O8** Garnet–sillimanite–cordierite gneiss at Bethanga

Unused roads

- O9** That the following guidelines be applied to unused roads:
- * The clearing of native trees and shrubs other than noxious weeds should continue to be clearly prohibited in the conditions of unused-road licences.
 - * A condition permitting public use of licensed unused roads should be written into unused-road licences where necessary to provide practical access to public land.
 - * Unused roads or easements should not be alienated if there is any likelihood that they will have value for future traffic, nature conservation, recreation, or other public use.

HIGHWAY PARKS

Along some roads, the reserve carries picnic areas and wayside stops, but along major tourist routes there is an additional need for areas sufficiently large to allow travellers to be isolated from the road environment and to allow dispersion of picnickers. These areas should have scenic qualities, perhaps incorporating a stream, and be sufficiently stable to withstand intensive use. They would be used for relaxation and picnicking and should be adequately developed with picnic and rest facilities (fireplaces, tables, etc.).

Recommendation

O10 That the area described below and shown on Map A be used:

(a) for picnicking and to provide relaxation for the travelling public

(b) to maintain the local character and quality of the landscape

that

(c) facilities in keeping with the nature of the reserve be provided

and that it be permanently reserved under section 4 of the *Crown Lands (Reserves) Act* 1978 and managed by the Department of Conservation, Forests and Lands.

O10 18 ha, being allotment 7A, section 1, Parish of Barambogie

Roadside picnic areas

Smaller less-developed picnic areas should supplement the system of highway parks and major reserves. Unlike highway parks, these would not be sufficiently large, nor developed to the high standards necessary, to cater for large numbers of people. They should be in attractive locations off the road reserve, and some picnic facilities should be provided.

Recommendations

O11—O19 That the land manager establish picnic areas in suitable locations adjacent to road reserves, suitable locations being listed below and shown on Map A.

O11 3 ha, comprising the Police Reserve and Reserve for Public Purposes, west of allotment 122, Parish of Samaria

O12 6 ha, being the Camping and Watering Reserve, allotment 1, section A, Parish of Doolam

O13 3 ha east of allotments 2 and 2A, section I, Parish of Woorragee

O14 5 ha at the crossing of the Kiewa River by the Murray Valley Highway, west of Bonegilla

O15 0.5 ha east of allotment 3B, section 13, Parish of Yabba

O16 2 ha north of allotment 42, section 2, Parish of Dorchap

O17 0.5 ha east of allotment 7, section 5, Parish of Tallandoon

O18 Adjacent to the Cudgewa Creek opposite allotment 1A, section 2, Parish of Wabba, on the Corryong–Tallangatta Road

O19 At the crossing of Thowgla Creek by the Murray Valley Highway, east of Corryong

P. MILITARY TRAINING

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. It is Council's view that military training should not occur in reference areas or wilderness areas, and only under special circumstances in parks and other areas of recreation and conservation significance.

Recommendation

P1 That, where military training is conducted on public land:

- (a) the types of activities, and their timing and location, be subject to agreement between the Defence Department, the land manager, and the other relevant government bodies such as the Land Protection Service in the Department of Conservation, Forests and Lands
- (b) the training activities be carried out under conditions specified by the land manager and other relevant authorities, to minimize any detrimental effects
- (c) the Forests Commission be consulted (for fire-protection purposes) with respect to training activities in protected public land
- (d) it be excluded from reference areas, and, except under special circumstances, from parks and other areas of recreation and conservation significance

Note:

It is proposed that certain specified military training activities, as recommended in the final recommendations for the North-eastern Area, Districts 3, 4, and 5, be permitted to continue in the Mount Pilot Multi-purpose Park.

Q. AGRICULTURE

The Council recommends that, at this stage, no additional large areas of public land be developed for agriculture and that only small areas of suitable land on the perimeter of public land be made available (see recommendations Q1—Q8).

Grazing on public land

Licensed grazing on public land is practised throughout the study area, both as forest grazing and grazing on public land water frontages. The availability of this public land is not of great significance in the economy of the grazing industry in the region. It is, however, of considerable importance to the individual licensees, for whom the forest grazing often forms an integral part of their enterprise.

Situations also arise where graziers who do not normally depend on forest grazing do require additional areas to provide short-term feed for livestock. These situations include drought, fire, and flooding. Council believes that areas of public land could be available to meet such emergency situations, and that such grazing could be controlled by the issue of agistment rights commensurate with the management goals of the particular areas of public land.

The Council believes that, for the areas available for grazing, an important management goal must be to maintain the vegetative cover and, where the cover is inadequate, to ensure its recovery.

Apiculture

The Council considers that apiary sites should continue to be permitted on public land other than in Reference Areas.

Recommendations

Agricultural land

Q1—Q8 That the land described below and shown on the map be used for agriculture.

It is intended that this land should form additions to present farms rather than be developed as new units.

With reference to section 5 (3) of the *Land Conservation Act* 1970, the Council recommends that the land described below be made available for agriculture in accordance with the provisions of the *Land Act* 1958.

Q1 Areas previously recommended for agriculture

- 7 ha east of allotment 1, Parish of Adjie
- 5 ha south of allotments 46 and 47, Parish of Moorngag
- 133 ha, being allotments 21, 22, and 23, Parish of Ruffy
- 6.5 ha in allotment 2, section 2, Parish of Wagra

Q2—Q8 Additional areas recommended for agriculture

Q2 1.2 ha east of allotment 21D1, section A, Parish of Tarrawingee

- Q3** 3 ha adjoining allotment 17, section 7, Parish of Stanley, and extending into the township of Stanley
- Q4** 1.7 ha, being allotment 22D, section B10, Parish of Yackandandah
- Q5** 2 ha west of allotments 4 and 4C, section 3A, Parish of Kergunyah
- Q6** 1.2 ha, being allotment 5B, section 8, Parish of Kergunyah
- Q7** 2 ha west of allotment 12E, Parish of Koetong
- Q8** 3 ha east of allotment 14, section 9, Parish of Walwa

Albury–Wodonga (Victoria) Corporation Land

Other land

Much of the land purchased by the Corporation supported productive agriculture. Of this, large areas of the river flats and gently sloping foothills had been developed for dryland grazing and fodder-cropping. Following its purchase by the Corporation a large proportion has continued to be used for agriculture under various leasing arrangements. Consequently its agricultural productivity has been maintained and parts of it may continue to be used for agricultural purposes.

This land has not been identified by objective study as being primarily suited to agriculture, other than by inference from its pre-existing uses. Rather, it comprises those areas of the Corporation's land remaining following the other recommendations made by Council. In particular, refer to A29, Wodonga Regional Park; A20, Baranduda Range Regional Park addition; and U15, revegetation areas.

Parts of these areas could be managed in conjunction with adjacent U15 revegetation areas, and other parts could be developed for ridgeline recreation trails.

Recommendation

- Q9** That the areas shown on Map B be available for agricultural use under terms and conditions determined by the Albury–Wodonga (Victoria) Corporation.

Proposed sewage treatment area

This land is under investigation as a site for the development of a proposed tertiary treatment scheme for effluent from the Wodonga sewage treatment plant.

Recommendation

- Q10** That the areas shown on Map B be investigated as sites for a sewage tertiary treatment scheme and that any such development take account of the recreational use of the adjacent Wodonga Regional Park and River Murray Reserve.

R. MINERAL AND STONE PRODUCTION

The continued existence of our technological society will depend on the availability of minerals. The study area contains known deposits of 'gold' and 'minerals' as defined in the *Mines Act* 1958 and as subsequently gazetted (metallic minerals, coal, etc.). Nevertheless, knowledge of the location of our mineral resources is far from complete and new deposits of commercial significance will undoubtedly be found. Furthermore, currently uneconomic deposits of important minerals may become economically exploitable, and other minerals that are not used at present may become important.

Exploration for gold and minerals

The government has the responsibility to establish the existence and extent of the State's mineral resources. The government, in the main, meets this responsibility through the provisions in the *Mines Act* 1958 that provide the tenure under which private enterprise is encouraged at its own cost to locate new deposits of gold or minerals. When a new deposit is discovered in an area where mining is not a currently approved land use, it may be of such importance that a change of the land use is required in the State interest. The decision on whether such a change is in fact necessary can only be made against a background of the best available knowledge of the location and extent of the particular mineral deposit. It is important therefore that the reservation of conservation areas should not automatically exclude exploration for mineral or fossil fuel resources. Attention should be directed towards ensuring that other values and interests are protected, rather than preventing exploration activities.

The protection of other values — particularly those historical values around old mine sites — should never be enforced to the point that it places human life at risk. In relation to public safety, nothing in the recommendations affects the powers of Inspectors under the *Mines Act* 1958 and the *Extractive Industries Act* 1966.

Gold

Since 1977, sharp rises in the price of gold have resulted in a significant upturn in exploration activity. The interest of individual prospectors has also increased, as seen by the increased number of claims being registered. A number of attempts are being made to re-open previously uneconomic mines on existing leases.

The substantial rise in the gold price has also stimulated a renewed interest in general prospecting (fossicking), evidenced by the increased number of Miner's Rights issued.

This increased interest in prospecting and mining has not been confined to the large-scale operations being planned and undertaken by the corporate sector. Many individual miners and prospectors are operating in Victoria — some professionally (that is, they rely on these activities for their sole source of income), some on a part-time, semi-professional basis, but many as a form of recreation encouraged by the possibility of 'striking it rich'. In terms of the number of people involved, this latter group has experienced the most substantial growth, especially since the increased use of the metal detector.

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 for the purpose of discovering or establishing the presence or extent of mineralization or of a mineral'. 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, and flora reserves.

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 recommendations (see Chapter B — Reference Areas and Chapter D — Water Production).

In addition to these, there may be other limited 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 area and water or sewerage installations
- * important geological formations.

These limited areas of land surface have not been specified in the recommendations, but will be determined by the land manager and the Department of Minerals and Energy together. Fossicking and prospecting, where they involve minimal disturbance to soil or vegetation, will be permitted on public land other than these limited 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 buildings, and so for the materials necessary for their construction. Most of these materials are provided from private land, but public land is also an important source.

The requirements of the shires with regard to their needs for 'stone' production have been determined by a process of consultation and investigation, involving the shires, the Department of Minerals and Energy and this Council.

Public land is a significant source of road-making material for some shires. Although resources remain on area of public land, they are not unlimited and Council believes that shires should be investigating now the extent to which private land could be used as a source of 'stone'.

The Council is concerned by the complexity of legislation and procedures governing extraction of 'stone'. (For example, the Road Construction Authority and municipal councils are not bound by many provisions of the *Extractive Industries Act 1966*.)

A substantial number of unwise excavations have been made upon public land, and in many instances, particularly with older excavation sites, the rehabilitation of excavated land is lagging.

There is 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 land manager should together determine these areas. An inter-departmental committee convened by the Department of Minerals and Energy is currently establishing the procedures to be followed by the Departments involved.
2. When tenure is issued for operations under the *Mines Act 1958* on public land, the land manager 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 manager, 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 land manager.

In all cases, the procedures that are established should apply to municipal councils, the Road Construction Authority, and other public authorities as well as to commercial operators. To ensure this, the relevant *Acts* may have to be amended.

4. A system should be established that would ensure, before work commences, the availability of funds for progressive and final reclamation of any excavation or operation. Provision should also be made to enable the acceleration of the rehabilitation of all existing extraction areas on public land.

5. Royalties for materials extracted from public land, including 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 land manager, 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 established that no suitable alternatives are available. In the special circumstances where approval is given for this form of extraction, particular attention should be given to the prevention of soil erosion.
 - (d) Where an application for the removal of 'stone' from a stream-bed is considered, the land manager 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 manager should also consult with 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.

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 in the recommendations (see the Chapters on Reference Areas and Water Production)
 - (ii) those areas that the land manager 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.
- 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 excepted or exempted unless the land manager and the Department of Minerals and Energy together determine that such exemption or exception should no longer apply.
- R3** That public land in the study 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 study area (other than reference areas) continue to be available for exploration for 'stone' subject to the principles and guidelines set out above.
- R5—R13** That the areas listed below and shown on the map be used for the extraction of 'stone' in accordance with the principles and guidelines outlined above and, if not already reserved for this purpose, be temporarily reserved under section 4 of the *Crown Land (Reserves) Act 1978*, and managed by the Department of Conservation, Forests and Lands. (These areas are additional to sites on larger blocks of public land where gravel extraction is one of the recommended uses.)

Portions of some of these areas are currently used for extraction of stone under an Extractive Industries Lease and those portions would not be reserved under section 4 of the *Crown Land (Reserves) Act 1978*.

- R5** Existing stone production areas

Note:

Public land at Walwa recommended for mineral production in the North-eastern Area, District 1, final recommendations has been included in State forest.

Additional stone production areas

- R6** 1 ha in the north-western corner of allotment 3A, section 1, Parish of Monea South

Note:

This area is located in the north-western corner of the Big Hill flora reserve; however, it has been heavily grazed in the past and bears little evidence of its original vegetation. Following completion of operations, in about 5 to 10 years, the area should be rehabilitated and then managed to encourage regeneration of *Acacia penninervis*.

- R7** 1.2 ha, being north and west of allotment 12B, section A2, Parish of Byawatha
- R8** 5.8 ha, being allotment 12C, section A2, Parish of Chiltern
- R9** 3.5 ha, being allotment 18E, section C, Parish of Chiltern
- R10** 2 ha, being allotment 1E, section 39, Parish of Barnawartha North
- R11** 4 ha south of allotments 9, 10, 12A, and 13, section B4, Parish of Beechworth, held under Tailings Licence
- R12** 5 ha north-west of allotment 4, section 4, Parish of Murramurrangbong
- R13** 15 ha, being part allotment 17, section 2, Parish of Jinjelic, known as the Walwa road quarry

Note:

This area is excluded from flora reserve G8.

S. UTILITIES AND SURVEY

Many utilities occupy land. They include roads, pipelines, power lines, power stations, hospitals, churches, 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, as 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.

Recommendations

Existing utilities

S1—S4 That the areas listed below and shown on Map A continue to be used for those purposes approved by the government following publication of the previous final recommendations.

- S1** Transmission lines
- S2** May Day Hills hospital
- S3** Beechworth prison
- S4** Other utility areas

Garbage and sanitary depots

Council considers that sites on public land for the disposal of garbage and sanitary materials should be located so as to cause minimal conflict with conservation values.

Facilities on public land should be shared by municipalities wherever practicable to minimize the number of sites required. At the same time, it is appreciated that locating sites reasonably close to users minimizes transport costs and the illegal dumping of rubbish. Areas used on a temporary basis (such as garbage depots and sanitary depots) should be fully rehabilitated at the operator's expense.

Within areas used as garbage depots, disposal of waste should be confined to small sections of the site at any one time, and there should be tighter supervision to ensure that garbage is dumped only in the designated areas.

- S5** That existing legal garbage depots (including those approved by the relevant authorities but not yet operating) continue to be available for garbage disposal.
- S6** That areas used on a temporary basis (such as garbage depots and sanitary depots) be fully rehabilitated. This should apply to sites used illegally as well as those used legally. Where the user or users are known, rehabilitation should be at their expense.

- S7 That, within areas reserved as garbage depots, disposal of waste be confined to small sections of the site at any one time, and that steps be taken to prevent the dumping of garbage other than in the designated areas.
- S8 That existing licensed waste-disposal depots in State forest continue to operate.
- S9 That 1.9 ha west of allotment 4, section 5, Parish of Dorchap, be used as a garbage disposal depot.

Railway land

Disused railway lines and other railway land often carry significant remnants of native vegetation, contain buildings and structures of historical importance, or may be suitable for walking, horse-riding, or cycling tracks. Accordingly the potential of railway land for uses such as these should be carefully examined before arrangements are made for its disposal.

Specific proposals for areas of railway land have been described in Chapters M and N. These proposals, and the potential of other areas of railway land to be used for other government needs, should be assessed and taken into account when disposal of such railways is being considered. Where sections of disused railways do have important recreational or historical values, they should be retained as public land.

Another common feature of railway land is that it often supports remnants of native grassland vegetation. For example, the Bonegilla railway siding contains a grassland of *Themeda australis* and associated species. Arrangements should be made to protect the vegetation here and in any other area found to have remnants of the original vegetation, as far as is consistent with management practices.

Recommendations

- S10 That, where isolated remnants of the original vegetation remain on land associated with railways lines, every effort be made to protect that vegetation consistent with management practices.
- S11 That disused railway land within the study area be retained as public land where it may have historical, recreational, or educational value.

Trigonometrical stations

The Council recognizes the necessity to reserve sites for new trigonometrical stations in the future.

- S12 That the minimum area necessary for survey purposes be temporarily reserved around trigonometrical stations on public land where it would otherwise remain as unreserved Crown land; and, where other forms of public land tenure apply, that the appropriate department have the right to occupy a minimum area around the station and provide lines of sight.

Navigation aids and communications installations

- S13 That the minimum area necessary for access to and maintenance of navigation aids and communications installations be temporarily reserved on public land where it would otherwise remain as unreserved Crown land; and, where other forms of public land tenure apply, that the government utility involved have the right to occupy a minimum area and provide lines of sight.

Other utility areas

- S14** That existing legal uses and tenure continue for areas that are at present reserved and used for utility purposes, such as public buildings, municipal depots, cemeteries, schools, etc.

Proposed utilities

- S15** That new power lines, pipelines, communications equipment, and other utilities be planned to minimize disturbance to public land and protect the values associated with this land, that they not be sited on public land without the agreement of the land manager, and that new pipelines and power lines follow existing easements if possible (this may require widening of some easements).

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 some cases, however, Council has made a specific recommendation for township land to be set aside as a Bushland Reserve, as a Streamside Reserve, or to be used for water production; these recommendations are included in the appropriate sections. Other areas of public land in townships should remain as unreserved Crown land — to be used, if required, for township purposes in the future.

Recommendation

T1 That public land in townships, other than those areas that have been specifically reserved, should remain as unreserved Crown land to meet future requirements.

Note:

At the mapping scale used (1:250,000), it is generally not possible to define the boundaries of public land in townships accurately. Reference should be made to the appropriate township plan to determine the accurate boundaries and form of reservation for those townships where public land is not shown on the map or referred to in these recommendations.

U. OTHER RESERVES AND PUBLIC LAND

Some small areas of public land in the study area that are used for various purposes, such as water production, grazing, camping, public utilities, and so on, have not been specifically mentioned in these recommendations. Others (both reserved and unreserved) receive little active use at present, even though they may once have been reserved for some specific purpose.

The Council intends that existing legal uses and tenure of these small areas of public land should continue, and that those not currently used for any particular purpose be used in a way that will not preclude their commitment in the future to some specific public use.

Recommendation

UI That, for small areas of public land not specifically mentioned in these recommendations, existing legal use and tenure continue

and that

where the land is not reserved for a specific purpose at present, such areas be used in a way that will not preclude their reservation in the future for as-yet-unknown public purposes.

Revegetation of areas

The deterioration of tree cover in some of the rural areas of the State is causing increasing and widespread concern. Clearing — to establish pasture and crop lands — has been the initial cause of this deterioration and continues in some areas. The gradual decline, and ultimate death, of the remaining trees, however, is emerging as the major problem.

Soil compaction by stock, exploitation for timber, attacks by insects, parasites, and other pathogens, exposure to winds, salting of the soil, erosion, and natural senescence among aging trees are all possible causes of the decline. The prevention of natural regeneration by grazing or other practices is exacerbating the problem.

Increasing soil salinity resulting in the degradation of grazing and crop country, loss of shelter for stock and for wildlife, and diminished aesthetic value are all consequences of this decline, which, although difficult to express in monetary terms, results in economic loss.

Throughout the study area, a large number of small parcels of public land carry little or no natural vegetation. In many cases they have been reserved for specific purposes, although not used for them, and have been continuously licensed to the adjoining landholders; over a period of time they have been cleared and integrated with the surrounding farmlands. In other cases the reserves can still be recognized by the native vegetation, but, for a number of reasons, the tree cover has declined.

A recent amendment to the *Forests Act* 1958 has introduced a tree-growing assistance scheme to encourage tree-planting and tree-fostering projects — where these are in the community interest.

To complement this scheme, in areas where tree decline and salting are becoming a problem and in areas where native trees are greatly reduced in number, Council recommends that some of the small areas of public land be used as pilot schemes or nuclei for the re-establishment of tree species native to the area.

Following successful revegetation, some of these areas could serve as examples to the rural community of the effectiveness of such revegetation schemes, and consideration could be given to reserving them for various public uses.

Recommendations

- U2—U14** That the areas indicated on Map A and described in the schedule below be used to foster the re-establishment of tree species native to the area
- that
when revegetation is completed, consideration be given to reserving them for various public uses
- and that they be managed by the Department of Conservation, Forests and Lands.
- U2** 2 ha, being the Quarry Reserve adjoining allotment 14C, Parish of Lurg
- U3** 2 ha, being the Gravel Reserve, allotment 20, Township of Winton, Parish of Winton
- U4** 3 ha east of allotment 37, Parish of Lurg
- U5** 3.5 ha, being the Water Reserve south of allotments 6 and 7, section 10B, Township of Chiltern
- U6** 1.4 ha south of allotment 4A, section 36, Parish of Barnawartha North
- U7** 1.2 ha south of allotment 10, section 31, Parish of Barnawartha North
- U8** 4 ha, being allotment 2, no section, Township of Wodonga
- U9** 7.2 ha north of allotment 9A, section 6, Parish of Wodonga
- U10** 1 ha south of allotment 6, section K, Parish of Woorragee
- U11** 1.4 ha, being allotment 9C, section 10, Parish of Murmungee
- U12** 2.4 ha, being allotment 11A, section 12, Parish of Murmungee
- U13** 2 ha, being allotment 8A, section 15A, Parish of Baranduda
- U14** 12.5 ha south and east of allotments 5A and 10, section 20, Parish of Yackandandah

Albury–Wodonga (Victoria) Corporation land

The North-eastern area contains many cleared or partly cleared hills that should never have been cleared. In such areas, replacement of the deep-rooted trees with grasses results in reduced use of rainfall and increased surface run-off. Drainage lines must as a consequence carry more water, and higher peak flows, leading to scouring and gully erosion. Deposition of the resulting sediment, and the clay-rich (turbid) water itself, can also cause problems, particularly in water supply catchment areas.

Good grazing management can ensure that a protective ground cover of grasses is retained on such hills, while poorly managed grazing can result in a bared soil surface, vulnerable to erosion. Over-grazed hills are also liable to weed infestation. Unfortunately, the times when the grazing is most needed occur during drought, and such hills are most likely to be overgrazed then, with consequent degradation during the storms that follow.

The purchase of some such hills by the Corporation has provided the opportunity to return them to the public land estate, for the primary purpose of land protection.

In order to rank the priority of retaining various parcels of the Corporation's hilly lands, the technique of land capability was used. This gives an objective method of comparing different land areas for their risk of erosion, by classifying them on the bases of soil and site criteria into land capability classes, ranging from 1 (low erosion risk) to 5 (very high erosion risk). Most of the land included under this recommendation for revegetation is class 5 land.

Steep hills are necessarily prominent features in the landscape surrounding Wodonga, and their retention as public land will enable them to be managed for the enhancement of the landscape, as well as for land protection. For this reason, some areas that have high scenic values have been included in the revegetation areas recommended, even though their land capability class may be 4 or 3.

The main aim of management of these areas will be to return the steepest hills to a stable state, by ensuring a level of ground cover remains to protect the soil surface from sheet erosion and by encouraging reforestation to an appropriate tree density. Bare slopes, spurs, and ridges that are prominent in the landscape, viewed from Wodonga, can similarly be reforested.

The eventual result of this recommendation need not be a return to dense forest cover on all revegetated areas. Indeed, many people regard a more open woodland appearance as characteristic of hills in the Wodonga landscape. Coupled with well-managed grazing, a woodland would give sufficient protection to the moderately steep slopes, and to areas with less erodible soil types.

Reforestation may require planting of trees in particular areas. Such plantings should give an appearance of randomness in the location of individual species, and should preferably use seed of local provenance. It will be possible to achieve revegetation from existing trees in many areas by excluding grazing. Areas to be revegetated in this way should be carefully selected and treated progressively to reduce the fire risk of large areas of ungrazed grasses.

Controlled grazing under lease or licence will continue to be an appropriate management tool in much of this area, provided stock can be removed whenever there is a risk of overgrazing.

An area at Wodonga West (hatched on Map B) is currently leased to a recreational shooting organization. Council considers that this use could be permitted to continue.

Recommendation

U15 That the areas shown on Map B:

- (a) be set aside for revegetation, for land protection, and for landscape enhancement
- (b) that grazing continue in certain areas under controlled conditions
- (c) that a current legal occupation of part of this area be permitted to continue, subject to the normal legal requirements associated with such leases

and

that these areas be managed by the Albury-Wodonga Development Corporation for the time being, but that responsibility for management be transferred to the Department of Conservation, Forests and Lands according to a time schedule and on a basis to be determined by the two authorities in consultation

and that, following transfer, the areas be reserved under section 4 of the *Crown Land (Reserves) Act 1978*.

Appendix 1

LAND USE PLAN — MOUNT PILOT MULTI-PURPOSE PARK

Area boundaries on the land use plan for the Mount Pilot multi-purpose park (Map 1) are indicative only and it is expected that adjustments to boundaries could be necessary when management plans are prepared.

Area 1 — Recreation and Production

Land in this zone is to be used primarily to provide opportunities for recreation and education.

Permitted secondary uses:

- Low-intensity hardwood production
- Grazing
- Honey production
- Fire protection
- Army training
- Gravel extraction from specified sites only

Values requiring particular protection:

- The visual amenity of vegetation adjoining roads*
- The buffer adjoining the Mount Pilot Reference Area

Area 2 — Recreation and Conservation

Land in this zone is to be used to provide opportunities for low-intensity recreation and to conserve and protect the natural ecosystems. It includes extensive areas of black cypress pine open forest I and stands of Blakely's red gum in open forest and woodland I and II forms, on the steep granite slopes and crests of the Pilot Range.

Permitted secondary uses:

- Honey production
- Fire protection in strategic locations

Area 3 — Streamside Areas

Land in this zone is to be used for stream protection and to provide opportunities for recreation. It is intended that this zone include Reedy Creek and the adjacent area used for recreation based on the creek.

Permitted secondary uses:

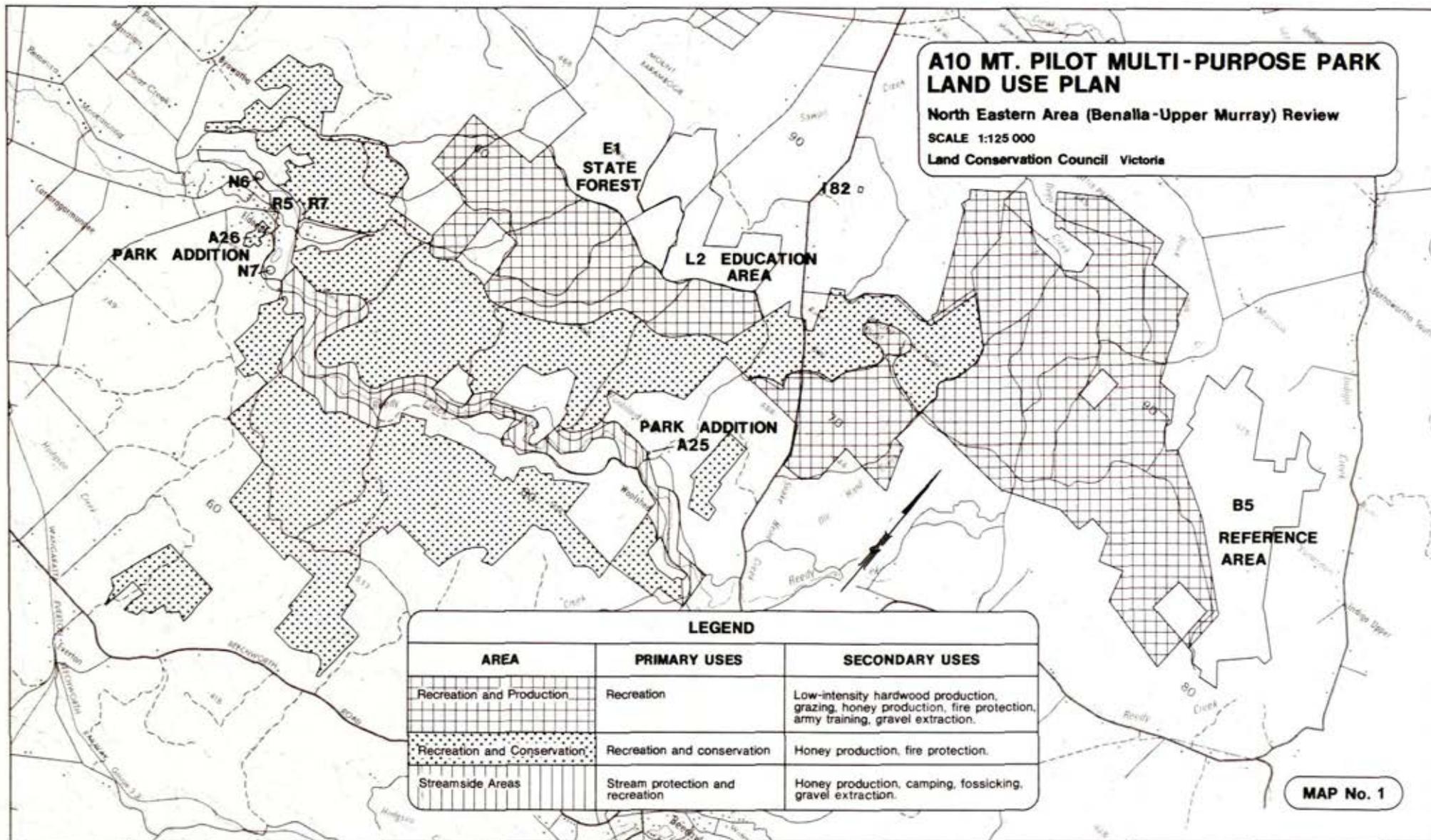
- Honey production
- Camping, at specified locations
- Fossicking, under strict control and in specified areas
- Gravel extraction from sites specified by the land manager, and in accordance with the guidelines for extraction in Chapter R, Minerals and Stone

A10 MT. PILOT MULTI-PURPOSE PARK LAND USE PLAN

North Eastern Area (Benalla-Upper Murray) Review

SCALE 1:125 000

Land Conservation Council Victoria



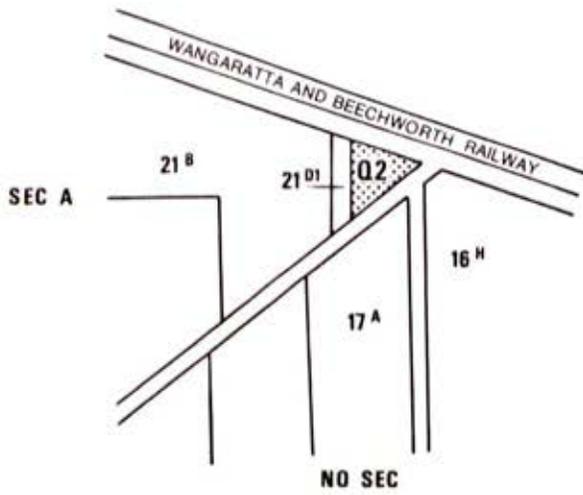
LEGEND

AREA	PRIMARY USES	SECONDARY USES
Recreation and Production	Recreation	Low-intensity hardwood production, grazing, honey production, fire protection, army training, gravel extraction.
Recreation and Conservation	Recreation and conservation	Honey production, fire protection.
Streamside Areas	Stream protection and recreation	Honey production, camping, fossicking, gravel extraction.

MAP No. 1

**AGRICULTURE Q2
TARRAWINGEE**

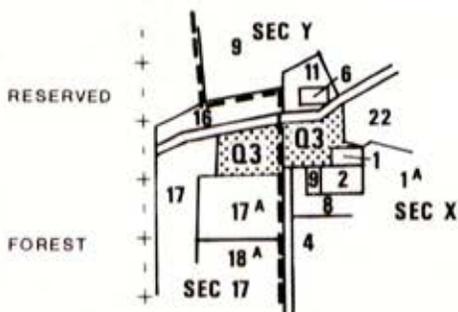
MAP 2



PARISH OF TARRAWINGEE

**AGRICULTURE Q3
STANLEY**

MAP 3



PARISH OF STANLEY TOWNSHIP OF STANLEY

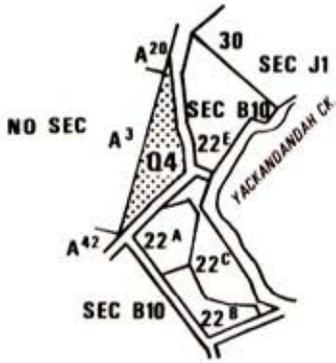
PUBLIC LAND RECOMMENDED FOR ALIENATION



SCALE 1 : 15,840

**AGRICULTURE Q4
YACKANDANDAH**

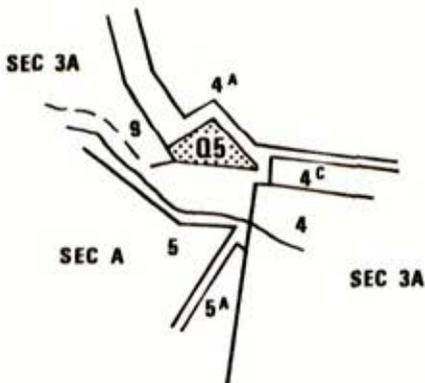
MAP 4



PARISH OF YACKANDANDAH

**AGRICULTURE Q5
KERGUNYAH**

MAP 5



PARISH OF KERGUNYAH

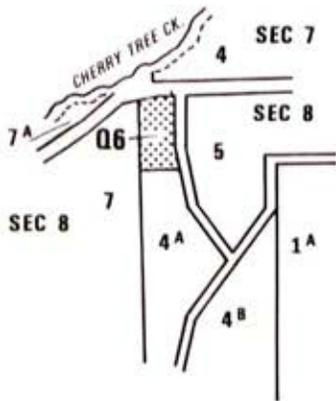
PUBLIC LAND RECOMMENDED FOR ALIENATION



SCALE 1 : 15,840

**AGRICULTURE Q6
KERGUNYAH**

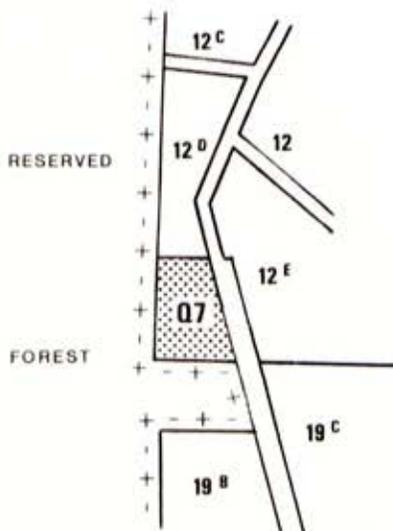
MAP 6



PARISH OF KERGUNYAH

**AGRICULTURE Q7
KOETONG**

MAP 7



PARISH OF KOETONG

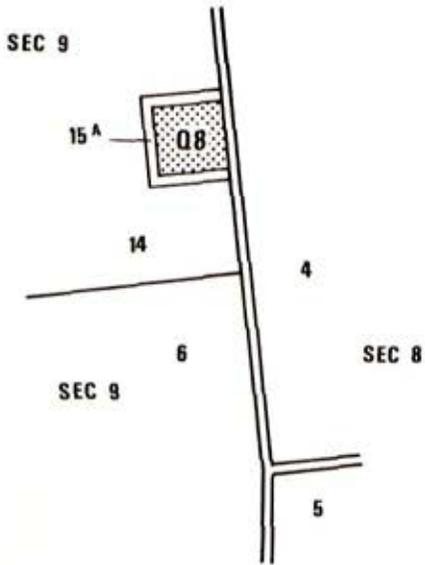
PUBLIC LAND RECOMMENDED FOR ALIENATION



SCALE 1 : 15,840

**AGRICULTURE Q8
WALWA**

MAP 8



PARISH OF WALWA

PUBLIC LAND RECOMMENDED FOR ALIENATION



SCALE 1 : 15,840

NORTH-EASTERN AREA (BENALLA-UPPER MURRAY) REVIEW

ERRATA - DESCRIPTIVE REPORT

Please replace pages 212-214 with the following:

Appendix IV

DISTRIBUTION OF FAUNA BY HABITAT TYPES

Key:

A	Abundant	L	Literature or personal communication
C	Common	I	Introduced species
U	Uncommon	E	Extinct in study area
R	Rare	*	Old records with no habitat information available
V	Vagrant		
+	Recorded but abundance not assessed		

Common name	Habitat type							Common name	Habitat type							
	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland		Urban	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland
<i>Mammals</i>								<i>Birds - Non-passerines</i>								
Short-beaked echidna	U	U	U	+	+		+	Emu	R	R						R
Platypus							U	Great crested-grebe								R
Yellow-footed antechinus		U	C					Hoary-headed grebe								U
Brown antechinus	A	C						Australasian grebe								U
Dusky antechinus	U							Australian pelican								U
Tiger quoll	R	R					R	Darter								R
Eastern quoll * (E)								Great cormorant								U
Brush-tailed phascogale	U	U	U					Pied cormorant (L)								
Long-nosed bandicoot	U	U					R	Little black cormorant								R
Mountain brushtail possum	C	U						Little pied cormorant								U
Common brushtail possum	U	C	C	+			+	Pacific heron								U
Feathertail glider	U	U						White-faced heron								C
Eastern pygmy-possum	U	U						Cattle egret (L)								
Yellow-bellied glider	U							Great egret								U
Sugar glider	C	C	C					Little egret								R
Squirrel glider			U					Intermediate egret (L)								
Common ringtail possum	C	C	C		+			Rufous night heron								R
Greater glider	A	C						Little bittern (L)								
Rufous bettong * (E)								Australasian bittern (L)								
Eastern grey kangaroo	C	C	C	+	C		C	Black-necked stork (L)								
Brush-tailed rock-wallaby *(E)	C	C	C	U	U			Glossy ibis (L)								
Swamp wallaby	C	C	U	U				Sacred ibis								C
Koala	C	C	U	R				Straw-necked ibis								U
Common wombat	A	A			C		C	Royal spoonbill								C
Little red flying-fox *								Yellow-billed spoonbill								U
Eastern horseshoe-bat	R	R						Plumed whistling-duck								R
Little mastiff-bat				+			U	Black swan								C
White-striped mastiff-bat	C	C	C	+			+	Freckled duck								R
Gould's wattled bat	U	U	U	+				Australian shelduck								U
Chocolate wattled bat	C	U	U	+			+	Pacific black duck								C
King River eptesicus	C	U				+	+	Grey teal								U
Large forest eptesicus	C	U	U	+	+			Chestnut teal								R
Little forest eptesicus	C	C	U	+				Australasian shoveler								R
Common bent-wing bat	R							Pink-eared duck								R
Broad-nosed bat		R						Hardhead								R
Lesser long-eared bat	C	C	C	+	+		+	Maned duck								C
Gould's long-eared bat	U	U	U	+				Blue-billed duck (L)								
Great pipistrelle	U	U						Musk duck								R
Water-rat							U	Black-shouldered kite								
House mouse (I)	U	C	U		+		+	Square-tailed kite		R	R					
Bush rat	A	U						Whistling kite				R	U			C
Black rat (I)	C	U						Brown goshawk		U	U	U	R			U
Feral dog, dingo (I)	C	C						Collared sparrowhawk		R	U	R				U
Fox (I)	C	C	C		+		+	Grey goshawk (L)			L	L				R
Feral cat (I)	C	C	U		+		+	White-bellied sea-eagle (L)								
Goat (I)	U	U						Wedge-tailed eagle		U	U	U				U
Fallow deer (I)						U		Little eagle		+	U	U	R			R
Feral pig (I)	U	U						Spotted harrier			R					U
Brown hare (I)			U				+	Marsh harrier								R
European rabbit (I)	A	A	C		A		A	Black falcon (L)								

Common name	Habitat							Habitat								
	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland	Urban	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland	Urban
<i>Birds - Non-passerines</i> (continued..)																
Peregrine falcon	R	R	R	R		R	R								R	R
Australian hobby	R	R	R	R				R		U	U	+			U	+
Brown falcon		U	U	U		C	C	U		U						
Australian kestrel			U	U		U	U	U								
Stubble quail			+			+	+									
Brown quail (L)																
King quail (L)																
Painted button-quail	R	U														
Little button-quail (L)																
Buff-banded rail (L)																
Baillon's crane (L)																
Australian crane (L)																
Black-tailed native-hen (L)																
Dusky moorhen					U	U	U									
Purple swamphen					U	U	U									
Eurasian coot					U	U	U									
Brolga					R	R	R									
Bush thick-knee		R	R					R								
Masked lapwing					C	C	U									
Banded lapwing (L)																
Red-kneed dotterel					R											
Double-banded plover (L)																
Black-fronted plover					U	R										
Black-winged stilt (L)																
Greenshank					+											
Marsh sandpiper (L)																
Latham's snipe					+											
Sharp-tailed sandpiper (L)																
Red-necked stint (L)					U											
Silver gull																
Whiskered tern (L)																
Feral pigeon (I)							R	U								
Peaceful dove		R	U	U												
Common bronzewing	U	U	U	U			U									
Brush bronzewing		R														
Crested pigeon			R	U			U	U								
Wonga pigeon	U															
Yellow-tailed black-cockatoo	U	R					R									
Gang-gang cockatoo	C	C	R				R	R								
Galah	R	R	U	C		U	C	U								
Sulphur-crested cockatoo	C	C	C	C		U	C	U								
Musk lorikeet			R													
Purple-crowned lorikeet (L)																
Little lorikeet		R	U				R									
Australian king-parrot	U	U	R				R	U								
Cockatiel (L)																
Budgerigar			V				V									
Swift parrot (L)																
Crimson rosella	A	A	U	U	+		U	U								
Yellow rosella				U												
Eastern rosella		R	U	C	+	U	C	C								
Red-rumped parrot		R	U	C		U	C	U								
Blue-winged parrot (L)																
Turquoise parrot		R	U	R			U									
Pallid cuckoo				U	U	+	U	+								
Brush cuckoo	U	R														
Fan-tailed cuckoo	U	U	U	U		+	U	+								
Black-eared cuckoo (L)																
Horsfield's bronze-cuckoo	U	U	+	+			+									
Shining bronze-cuckoo	U	U	+	+			+									
Channel-billed cuckoo (L)																
Powerful owl	R															
Southern boobook	U	U	U	+		+	U	+								
Barking owl		R														
Barn owl															R	R
Tawny frogmouth									U	U	U	+		+	U	+
Australian owllet-nightjar											U					
White-throated nightjar	R															
White-throated needletail	+	+	+	+												
Fork-tailed swift (L)																
Azure kingfisher (L)																
Laughing kookaburra	C	C	C	C					C	C	C	C		C	C	U
Red-backed kingfisher																
Sacred kingfisher	C	C	+	+					C	C	+	+		+	+	+
Rainbow bee-eater	+	+	+	+					+	+	+	+		+	+	+
Dollarbird												+	+		U	
<i>Birds - Passerines</i>																
Superb lyrebird	U	U							U	U						
Singing bushlark (L)																
Skylark (I)																+
White-backed swallow											R				R	
Welcome swallow	R	R							R	R	U	C	+	C	C	C
Tree martin											R	U	U	U	U	R
Fairy martin											R	U			U	C
Richard's pipit															R	C
Black-faced cuckoo-shrike	U	U	U	U					U	U	U	U	+	U	U	U
White-bellied cuckoo-shrike											R					
Cicadabird	U	U							U	U						
White-winged triller										R	R				R	
White's thrush	U	R							U	R					R	U
Blackbird (I)	R								R							
Rose robin	U	R							U	R						
Pink robin	R								R							
Flame robin	U	U	U	U					U	U	U	U	+	U	C	U
Scarlet robin	U	U	U						U	U	U		+		C	U
Red-capped robin		R	R							R	R				R	
Hooded robin			R	U							R	U			R	
Eastern yellow robin	C	C	U	+	+				C	C	U	+	+		R	
Jacky winter		R	U	U						R	U	U			U	
Crested shrike-tit	U	U	U	+					U	U	U	+				
Olive whistler	R								R							
Gilbert's whistler											R					
Golden whistler	C	C	U						C	C	U					
Rufous whistler	C	C	C	+					C	C	C	+				
Grey shrike-thrush	C	C	C	+	+				C	C	C	+	+			U
Crested bellbird											R					
Leaden flycatcher	U	U	R						U	U	R					
Satin flycatcher	R	R							R	R						
Restless flycatcher		R	U	+						R	U	+		U	U	R
Rufous fantail	R								R							
Grey fantail	C	C	C	+	+				C	C	C	+	+		R	U
Willie wagtail		R	U	C	+	+	C	C		R	U	C	+	+	C	C
Eastern whipbird	U	R							U	R						
Spotted quail-thrush	U	U							U	U						
Grey-crowned babbler											R				R	
White-browed babbler											U	R				
Clamorous reed-warbler																
Little grassbird														U	R	
Golden-headed cisticola														R		R
Rufous songlark															R	R
Brown songlark															R	R
Superb fairy-wren	C	C	C	C	+	U	C	C	C	C	C	+	U	C		
Pilotbird	U	R							U	R						
Large-billed scrubwren (L)																
White-browed scrubwren	C	C	U						C	C	U		+			R
Chestnut-rumped hylacola										R	R					
Speckled warbler										R	U					
Weebill										R	U					

Common name	Habitat							Common name	Habitat							
	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland		Urban	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland
<i>Birds - Passerines</i> (continued..)								<i>Reptiles and Amphibians</i>								
Western gerygone		U	U					Tree goanna	+	+	+					
White-throated gerygone	U	U	R					Sand goanna			+					
Brown thornbill	A	A	U				R	Bearded dragon								+
Buff-rumped thornbill	R	U	C		+		U	Mountain dragon	+							
Yellow-rumped thornbill	R	R	U		+	+	U	Tree dragon		+	+					
Yellow thornbill	R	R	U				C	Wood gecko		+	+					
Striated thornbill	A	A	C		+	+		Marbled gecko		+	+					
Southern whiteface							R	Legless lizard				+				+
Varied sittella	U	U	U					McCoy's skink	+							
White-throated treecreeper	A	A	C	U			U	Rainbow skink			+					
Red-browed treecreeper	U	U						Snake-eyed skink				+				
Brown treecreeper		R	C	C			U	Large striped skink		+	+					+
Red wattlebird	C	C	U	U			U	Copper-tailed skink		+	+					
Little wattlebird (L)							U	Skink ¹								
Noisy friarbird	C	C	C	+			U	Cunningham's skink		+	+					+
Little friarbird			U	U			U	Black rock skink	+	+						
Regent honeyeater			R	R				Tree skink			+	+				
Blue-faced honeyeater							R	White's skink	+	+						
Noisy miner		R	U	U			C	Three-toed skink	+	+	+					+
Lewin's honeyeater (L)								Delicate skink		+						
Yellow-faced honeyeater	A	A	C	U			U	Garden skink	+	+	+	+				+
Singing honeyeater (L)								Weasel skink	+							
White-eared honeyeater	U	U	R					Coventry's skink	+							
Yellow-tufted honeyeater		R	U					Grass skink ²								+
Puscous honeyeater	R	U	C	R			R	Grass skink ³	+							
White-plumed honeyeater	R	R	C	A			C	Red-throated skink		+	+					
Black-chinned honeyeater			U	U				Three-lined skink	+							+
Brown-headed honeyeater	U	U	U					Bougainville's skink		+	+					
White-naped honeyeater	C	U	U					Boulenger's skink			+	+				+
Painted honeyeater			R					Spencer's skink	+							
Crescent honeyeater	U	R						Water skink ⁴	+							
New Holland honeyeater		R						Water skink ⁵	+	+						
Eastern spinebill	U	U	U				U	Blotched blue-tongue lizard	+	+						
White-fronted chat							R	Common blue-tongue lizard			+					+
Mistletoebird	R	U	U				R	Copperhead snake ⁶	+	+						
Spotted pardalote	A	A	C	U			U	Copperhead snake ⁷								+
Striated pardalote	A	A	A	C			C	Small-eyed snake	+	+	+					
Silvereye	C	C	U				U	White-lipped snake	+	+						
European goldfinch (I)			R				R	Tiger snake				+				+
House sparrow (I)							U	Red-bellied black snake		+	+	+				+
Tree sparrow (I)							C	Common brown snake		+	+					+
Red-browed firetail	U	U	R		+	+	U	Dwyer's snake		+	+					
Diamond firetail		R	U				R	Little whip snake								+
Zebra finch							R	Bandy bandy				+				
Double-barred finch (L)								Blind snake ⁸		+	+					
Common starling (I)			U	U			C	Blind snake ⁹								
Olive-backed oriole	U	U	U				C	Eastern long-necked tortoise								+
Satin bowerbird	U	R					R	Brown tree frog ¹⁰	+	+		+	+	+	+	+
White-winged chough	R	U	U	+			U	Brown tree frog ¹¹	+	+		+	+	+	+	+
Australian magpie-lark	+	+	+	U			C	Lesueur's tree frog	+	+						
White-breasted woodswallow							A	Spotted tree frog								
Masked woodswallow			R				C	Peron's tree frog			+	+				+
White-browed woodswallow			R				R	Green and gold bell frog				+				+
Dusky woodswallow	U	C	C	+			U	Froglet ¹²	+	+						
Grey butcherbird	R	U					R	Southern bullfrog		+	+	+				+
Pied butcherbird (L)								Barking frog								+
Australian magpie	R	R	U	C	+		C	Giant bullfrog								+
Pied currawong	C	U	U	+	+		U	Striped marsh frog								+
Grey currawong	U	U	R				R	Spotted grass frog				+	+			+
Australian raven	U	U	U	+	+		U	Spotted burrowing frog				+	+			+
Little Raven			R	+			U	Brown toadlet		+	+					+
							U	Southern toadlet	+	+						

Appendix IV (continued..)

Common name	Habitat							
	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland	Urban
<i>Reptiles and amphibians</i> (continued..)								
Froglet ¹³				+		+	+	
Eastern froglet	+	+	+	+	+	+	+	+
Sloan's froglet				+		+	+	
Red-groined toadlet			+	+		+		

Footnotes:

1. *Ctenotus uber orientalis*
2. *Leiolopisma entrecasteauxii* form A
3. *Leiolopisma entrecasteauxii* form B
4. *Sphenomorphus tympanum* C.T.F.
5. *Sphenomorphus tympanum* W.T.F.
6. *Austrelaps superba* highland
7. *Austrelaps superba* lowland
8. *Ramphotyphlops nigrescens*
9. *Ramphotyphlops proxima*
10. *Litoria ewingii*
11. *Litoria paraewingii*
12. *Geocrinia victoriana*
13. *Ranidella parinsignifera*

NORTH-EASTERN AREA (BENALLA-UPPER MURRAY) REVIEW

ERRATA - DESCRIPTIVE REPORT

Please replace pages 212-214 with the following:

Appendix IV

DISTRIBUTION OF FAUNA BY HABITAT TYPES

Key:

A Abundant
C Common
U Uncommon
R Rare
V Vagrant
+ Recorded but abundance not assessed

L Literature or personal communication
I Introduced species
E Extinct in study area
* Old records with no habitat information available

Common name	Habitat type								Common name	Habitat type							
	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland	Urban		Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland	Urban
<i>Mammals</i>									<i>Birds - Non-passerines</i>								
Short-beaked echidna	U	U	U	+	+			+	Emu								
Platypus								U	Great crested-grebe	R	R						R
Yellow-footed antechinus			U	C					Hoary-headed grebe								R
Brown antechinus	A	C							Australasian grebe								U
Dusky antechinus	U								Australian pelican								U
Tiger quoll	R	R						R	Darter								U
Eastern quoll * (E)									Great cormorant								U
Brush-tailed phascogale	U	U	U						Pied cormorant (L)								
Long-nosed bandicoot	U	U						R	Little black cormorant								R
Mountain brushtail possum	C	U							Little pied cormorant								U
Common brushtail possum	U	C	C	+				+	Pacific heron								U
Feathertail glider	U	U							White-faced heron								C
Eastern pygmy-possum	U	U							Cattle egret (L)								C
Yellow-bellied glider	U								Great egret								U
Sugar glider	C	C	C						Little egret								R
Squirrel glider			U						Intermediate egret (L)								
Common ringtail possum	C	C	C		+				Rufous night heron								R
Greater glider	A	C							Little bittern (L)								
Rufous bettong * (E)									Australasian bittern (L)								
Eastern grey kangaroo	C	C	C	+	C			C	Black-necked stork (L)								
Brush-tailed rock-wallaby*(E)	C	C	C	+	C			C	Glossy ibis (L)								
Swamp wallaby	C	C	U	U					Sacred ibis								C
Koala	C	C	U	R					Straw-necked ibis								U
Common wombat	A	A			C			C	Royal spoonbill								C
Little red flying-fox *									Yellow-billed spoonbill								R
Eastern horseshoe-bat	R	R							Plumed whistling-duck								U
Little mastiff-bat				+				U	Black swan								C
White-striped mastiff-bat	C	C	C	+				+	Freckled duck								R
Gould's wattled bat	U	U	U	+					Australian shelduck								U
Chocolate wattled bat	C	U	U	+				+	Pacific black duck								C
King River eptesicus	C	U	U	+				+	Grey teal								U
Large forest eptesicus	C	U	U	+	+				Chestnut teal								R
Little forest eptesicus	C	C	U	+					Australasian shoveler								R
Common bent-wing bat	R								Pink-eared duck								R
Broad-nosed bat		R							Hardhead								R
Lesser long-eared bat	C	C	C	+	+			+	Maned duck								C
Gould's long-eared bat	U	U	U	+					Blue-billed duck (L)								C
Great pipistrelle	U	U							Musk duck								R
Water-rat								U	Black-shouldered kite								R
House mouse (I)	U	C	U		+			+	Square-tailed kite	R	R						
Bush rat	A	U							Whistling kite								C
Black rat (I)	C	U							Brown goshawk	U	U	U	R				U
Feral dog, dingo (I)	C	C							Collared sparrowhawk	R	U	R					U
Fox (I)	C	C	C		+			+	Grey goshawk (L)		L	L					R
Feral cat (I)	C	C	U					+	White-bellied sea-eagle (L)								
Goat (I)	U	U							Wedge-tailed eagle	U	U	U					U
Fallow deer (I)						U			Little eagle	+	U	U	R				R
Feral pig (I)	U	U							Spotted harrier		R						R
Brown hare (I)			U					+	Marsh harrier								R
European rabbit (I)	A	A	C		A			A	Black falcon (L)								

Common name	Habitat							Common name	Habitat								
	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland		Urban	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland	Urban
<i>Birds - Non-passerines</i> (continued..)																	
Peregrine falcon	R	R	R	R		R	R	Barn owl						R	R		
Australian hobby	R	R	R	R				Tawny frogmouth	U	U	U	+			+	U	+
Brown falcon		U	U	U		C	C	Australian owl-nightjar		U							
Australian kestrel			U	U		U	U	White-throated nightjar	R								
Stubble quail			+			+	+	White-throated needletail	+	+	+	+			+	+	+
Brown quail (L)								Fork-tailed swift (L)									
King quail (L)								Azure kingfisher (L)									
Painted button-quail	R	U						Laughing kookaburra	C	C	C	C		C	C	U	
Little button-quail (L)								Red-backed kingfisher							V		
Buff-banded rail (L)								Sacred kingfisher	C	C	+	+			+	+	+
Baillon's crane (L)								Rainbow bee-eater	+	+	+	+			+	+	+
Australian crane (L)								Dollarbird			+	+			U		
Black-tailed native-hen (L)								<i>Birds - Passerines</i>									
Dusky moorhen						U	U	Superb lyrebird	U	U							
Purple swamphen						U	U	Singing bushlark (L)									
Eurasian coot						U	U	Skylark (I)								+	
Brolga						U	U	White-backed swallow		R						R	
Bush thick-knee		R	R					Welcome swallow	R	R	U	C	+	C	C	C	
Masked lapwing						C	C	Tree martin			R	U		U	U	R	
Banded lapwing (L)								Fairy martin			R	U		U	C	R	
Red-kneed dotterel						R		Richard's pipit							R	C	R
Double-banded plover (L)								Black-faced cuckoo-shrike	U	U	U	U	+	U	U	U	
Black-fronted plover						U	R	White-bellied cuckoo-shrike				R					
Black-winged stilt (L)								Cicadabird	U	U							
Greenshank						+		White-winged triller		R	R				R		
Marsh sandpiper (L)								White's thrush	U	R					R	U	
Latham's snipe						+		Blackbird (I)	R								
Sharp-tailed sandpiper (L)								Rose robin	U	R							
Red-necked stint (L)								Pink robin	U	U	U	U	+	U	C	U	
Silver gull						U		Flame robin	U	U	U	U	+	U	C	U	
Whiskered tern (L)								Scarlet robin	U	U	U		+		C	U	
Feral pigeon (I)							R	Red-capped robin	U	R	R				R		
Peaceful dove		R	U	U				Hooded robin		R	U					R	
Common bronzewing	U	U	U	U				Eastern yellow robin	C	C	U	+	+		R		
Brush bronzewing		R						Jacky winter		R	U	U				U	
Crested pigeon			R	U			U	Crested shrike-tit	U	U	U	+					
Wonga pigeon								Olive whistler	R								
Yellow-tailed black-cockatoo	U	R					R	Gilbert's whistler			R						
Gang-gang cockatoo	C	C	R				R	Golden whistler	C	C	U						
Galah	R	R	U	C			U	Rufous whistler	C	C	C	+					
Sulphur-crested cockatoo	C	C	C	C			U	Grey shrike-thrush	C	C	C	+	+			U	
Musk lorikeet				R				Crested bellbird			R						
Purple-crowned lorikeet (L)								Leaden flycatcher	U	U	R						
Little lorikeet		R	U				R	Satin flycatcher	R	R	U	+		U	U	R	
Australian king-parrot	U	U	R				R	Restless flycatcher									
Cockatiel (L)								Rufous fantail	R								
Budgerigar			V				V	Grey fantail	C	C	C	+	+		R	U	
Swift parrot (L)								Willie wagtail	U	R	U	C	+	+	C	C	
Crimson rosella	A	A	U	U	+		U	Eastern whipbird	U	U							
Yellow rosella			U	U			U	Spotted quail-thrush	U	U							
Eastern rosella		R	U	C	+	U	C	Grey-crowned babbler			R				R		
Red-rumped parrot		R	U	C		U	C	White-browed babbler			U	R					
Blue-winged parrot (L)								Clamorous reed-warbler						U			
Turquoise parrot		R	U	R			U	Little grassbird							R		
Pallid cuckoo			U	U		+	U	Golden-headed cisticola							R	R	
Brush cuckoo	U	R						Rufous songlark		U	U	+			R		
Fan-tailed cuckoo	U	U	U	U		+	U	Brown songlark							R		
Black-eared cuckoo (L)								Superb fairy-wren	C	C	C	C	+	U	C		
Horsfield's bronze-cuckoo	U	U	+	+			+	Pilotbird	U	R							
Shining bronze-cuckoo	U	U	+	+			+	Large-billed scrubwren (L)									
Channel-billed cuckoo (L)								White-browed scrubwren	C	C	U		+			R	
Powerful owl	R							Chestnut-rumped hylacola		R	R						
Southern boobook	U	U	U	+		+	U	Speckled warbler		R	U						
Barking owl	R							Weebill		R	U						

Common name	Habitat							Common name	Habitat								
	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland		Urban	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland	Urban
<i>Birds - Passerines</i> (continued..)								<i>Reptiles and Amphibians</i>									
Western gerygone		U	U					Tree goanna		+	+	+					
White-throated gerygone	U	U	R					Sand goanna				+					
Brown thornbill	A	A	U		+		R	Bearded dragon									+
Buff-rumped thornbill	R	U	C		+		U	Mountain dragon		+							
Yellow-rumped thornbill	R	R	U	+	+	U	C	Tree dragon			+	+					
Yellow thornbill		R	U				R	Wood gecko			+	+					
Striated thornbill	A	A	C	+	+		U	Marbled gecko			+	+					
Southern whiteface							R	Legless lizard			+	+					+
Varied sittella	U	U	U					McCoy's skink		+							
White-throated treecreeper	A	A	C	U			U	Rainbow skink				+					
Red-browed treecreeper	U	U						Snake-eyed skink				+					
Brown treecreeper		R	C	C			U	Large striped skink			+	+					+
Red wattlebird	C	C	U	U			U	Copper-tailed skink			+	+					
Little wattlebird (L)								Skink ¹									
Noisy friarbird	C	C	C	+			U	Cunningham's skink		+	+						+
Little friarbird			U	U			U	Black rock skink		+	+						
Regent honeyeater			R	R				Tree skink			+	+					
Blue-faced honeyeater							R	White's skink		+	+	+					
Noisy miner			R	U	U		C	Three-toed skink		+	+	+					+
Lewin's honeyeater (L)								Delicate skink			+						
Yellow-faced honeyeater	A	A	C	U			U	Garden skink		+	+	+					+
Singing honeyeater (L)								Weasel skink		+							
White-eared honeyeater	U	U	R					Coventry's skink		+							
Yellow-tufted honeyeater		R	U					Grass skink ²									+
Fuscous honeyeater	R	U	C	R			R	Grass skink ³		+							
White-plumed honeyeater	R	R	C	A			C	Red-throated skink			+	+					
Black-chinned honeyeater			U					Three-lined skink		+							+
Brown-headed honeyeater	U	U	U					Bougainville's skink		+	+						
White-naped honeyeater	C	U	U					Boulenger's skink		+	+						+
Painted honeyeater			R					Spencer's skink		+							
Crescent honeyeater	U	R						Water skink ⁴		+							
New Holland honeyeater		R						Water skink ⁵		+	+						
Eastern spinebill	U	U	U				U	Blotched blue-tongue lizard		+	+						
White-fronted chat							R	Common blue-tongue lizard		+	+						+
Mistletoebird	R	U	U					Copperhead snake ⁶		+	+						
Spotted pardalote	A	A	C	U			U	Copperhead snake ⁷		+	+						+
Striated pardalote	A	A	A	C			C	Small-eyed snake		+	+	+					
Silvereye	C	C	U				U	White-lipped snake		+	+						
European goldfinch (I)			R				R	Tiger snake				+					+
House sparrow (I)							U	Red-bellied black snake		+	+	+					+
Tree sparrow (I)							R	Common brown snake		+	+						+
Red-browed firetail	U	U	R		+	+	U	Dwyer's snake		+	+						
Diamond firetail		R	U				R	Little whip snake		+							+
Zebra finch							R	Bandy bandy		+							
Double-barred finch (L)								Blind snake ⁸		+	+						
Common starling (I)			U	U			C	Blind snake ⁹									
Olive-backed oriole	U	U	U				U	Eastern long-necked tortoise		+	+						+
Satin bowerbird	U	R					R	Brown tree frog ¹⁰		+	+		+	+	+	+	+
White-winged chough	R	U	U	+			U	Brown tree frog ¹¹		+	+		+	+	+	+	+
Australian magpie-lark	+	+	+	U			C	Lesueur's tree frog		+	+						
White-breasted woodswallow							R	Spotted tree frog				+	+				
Masked woodswallow					R		</										

Appendix IV (continued..)

Common name	Habitat							
	Wet open forest	Dry open forest	Dry open forest and woodland	River red gum	Softwood	Wetland	Farmland	Urban
<i>Reptiles and amphibians</i> (continued..)								
Froglet ¹³				+		+	+	
Eastern froglet	+	+	+	+	+	+	+	+
Sloan's froglet				+		+	+	
Red-grained toadlet			+	+		+		

Footnotes:

1. *Ctenotus uber orientalis*
2. *Leiopisma entrecasteauxii* form A
3. *Leiopisma entrecasteauxii* form B
4. *Sphenomorphus tympanum* C.T.F.
5. *Sphenomorphus tympanum* W.T.F.
6. *Austrelaps superba* highland
7. *Austrelaps superba* lowland
8. *Ramphotyphlops nigrescens*
9. *Ramphotyphlops proxima*
10. *Litoria ewingii*
11. *Litoria paraewingii*
12. *Geocrinia victoriana*
13. *Ranidella parinsignifera*