

LAND CONSERVATION COUNCIL

SOUTH-WESTERN AREA DISTRICT 1 - REVIEW

FINAL RECOMMENDATIONS

March 1983

This text is a facsimile of the former Land Conservation Council's South-Western Area, District 1 - Review, Final Recommendations. It has been edited to incorporate Government decisions on the recommendations made by Order in Council dated 26 June 1984 and subsequent formal amendments.

Where the Review refers back to the April 1973 South Western Area, District 1 Final Recommendations, for completeness recommendation wording and Crown descriptions have been reproduced.

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

Annotations [in brackets] explain the origin of changes.

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INTRODUCTION

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 Conservation 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 final recommendations for the review of public land in the South-western area, District 1.

The Council commenced an investigation of this area in 1971 and published final recommendations on the use of public land in April 1973. 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 production, the 1973 recommendations allocated substantial areas as 'land with no primary use'. It was to be used for 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.

The 1973 recommendations also allocated sufficient public land to meet a proportion of the requirements for State and private softwood plantations until 1981 and indicated that Council would review the need to provide additional public land for softwood production after 1981.

The following proposals refer mostly to the land designated as 'land with no primary use' in the 1973 recommendations, although the Council has also proposed some other changes. For example, the Bailey's Rocks scenic and recreation reserve has now been recommended for inclusion in a State park, and the Wilkin Park is now recommended as a flora and fauna reserve.

Notices showing the boundary of the study area and advising that a review was to be carried out were published in the *Victorian Government Gazette* of June 18, 1980, and in local and other Victorian newspapers in June 1980. A descriptive report was published on September 28, 1981. Extracts from the *Land Conservation Act 1970* covering the procedure to be followed in formulating recommendations were included in the descriptive report. The Council received 55 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 district.

After considering these submissions, and having visited the study area, the Council formulated its proposed recommendations, which were published on October 18, 1982. The Council subsequently received 55 submissions commenting on these proposals. After due consideration the Council now presents its final recommendations.

The recommendations in the text are grouped under major headings, such as Parks, Hardwood Production, and so on. The text is accompanied by a map [Note: not in this version] at the scale of 1:250 000, which covers the whole study area and gives a broad view of the recommended land uses. Other detailed maps show areas recommended for agriculture (by alienation). More detailed information on boundaries is held by the Land Conservation Council.

Availability of submissions

Submissions received by the Council will be available for inspection at the Council's offices, 10 days after the closure of the submission period.

Land uses

It is important to realise 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 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 for areas of value for conservation of habitat and representative plant communities; and wildlife reserves for several sites containing valuable faunal habitats. A number of areas are recommended as coastal and scenic reserves, and substantial areas are recommended for hardwood and softwood production.

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. It is desirable that as much of the public land as possible is placed under forms of use that do not have a major impact on the natural ecosystem, or into the 'uncommitted land' category.

Flexibility in planning is essential. Our knowledge of many resources (for example, minerals) and of the distribution and ecology of plants is very imperfect. There must be many places in Victoria where special values remain unrecognised and for which no special provision can be made in present planning. Furthermore, future demands for resources on public land may require alteration or modification of these recommendations, which are based on the best information presently available.

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

Table 1: Recommended Public Land Use

Major recommended land use	Area (ha)	Percentage of all land covered by these recommendations	Percentage of all public land covered by these recommendations
National park	27 320	4	12
State parks	13 330	2	6
Regional park	1 910	< 1	< 1
Coastal park	10 250	1	4
Reference areas	4 350	< 1	2
Wildlife reserves	6 450	1	3
Water production	3 480	< 1	2
Hardwood production	50 740	7	23
Softwood production	25 400	4	12
Flora, flora and fauna reserves	6 150	1	3
Bushland reserves	2 420	< 1	1
Coastal reserve	280	< 1	< 1
Education area	150	< 1	< 1
Recreation reserves	90	< 1	< 1
Scenic reserve	30	< 1	< 1
Mineral and stone production	70	< 1	< 1
Uncommitted	62 400	9	29

All other land uses collectively make up the balance; figures are rounded.

[Note: areas have not been adjusted for subsequent changes]

General Recommendations

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

The Council wishes to stress the need for adequate management and protection of public land, as it has made its recommendations on the assumption that sufficient manpower and finance will be provided for the appropriate managing authority. Unless these resources are provided, the Council's recommendations cannot be effectively implemented. Council recognises that vermin and noxious weeds pose problems in the management of public land in the South-western area, District 1. Finance and staff are required to research and implement methods for control of these pest species. Council therefore recommends:

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

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

- (a) Under the provisions of the *Forests Act 1958* and notwithstanding anything to the contrary in any other *Act*, it is the duty of the Forests Commission to suppress fires in every State forest and national park, and on all protected public land. This includes, for example, all land under the management and control of the National Parks Service.
- (b) In the event of fire in any area for which the Forests Commission has fire suppression responsibility, the Forests Commission has powers of entry under both the *Forests Act 1958* and the *Country Fire Authority Act 1958*. Decisions as to the most appropriate course of action required to suppress the fire, and as to the most appropriate equipment to be used, are the responsibility of the Forests Commission alone.
- (c) The Forests Commission provides the State with an efficient fire-prevention and suppression organisation. The fire-fighting resources of the National Parks Service are available to the Commission for fire-suppression operations, and are used as such under the direction of the Forests Commission. They are used in conjunction with, and not as a replacement for, the resources of the Commission.
- (d) Fire-prevention works in State forests are the sole responsibility of the Forests Commission. In parks, on land reserved under section 4 of the *Crown Land (Reserves) Act 1978*, and on protected public land, however, fire-prevention works are undertaken only with the agreement of the person or body managing the land.
- (e) To facilitate co-operative arrangements for fire prevention in areas under the management and control of the National Parks Service, the Service and the Forests Commission have established a joint fire-protection committee.
- (f) In addition, under the *National Parks Act 1975*, the Director of National Parks shall ensure that proper and sufficient measures are taken to protect each national park, and other parks managed by the National Parks Service, from injury by fire.

- (g) The two organisations that share the duty of fire prevention and suppression in rural Victoria - namely, the Forests Commission and the Country Fire Authority - have excellent arrangements for mutual co-operation that 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*.
- 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 utilisation 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 organisations other than government authorities and academic institutions should be sought whenever appropriate.

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

- V** That the present legal status and management of public land in each case be retained until the recommended authorities have the capacity to manage each area.
- VI** That, as the boundaries of many areas have not been precisely surveyed, they be subject to minor modification, road excisions, easements, and other adjustments that may be necessary.
- VII** That, in cases where occupation does not agree with title, the Department of Crown Lands and Survey may at its discretion make adjustments to boundaries of public land when implementing these recommendations.
- VIII** That the recommendations in this publication do not change the status of roads passing through or abutting public land that are at present declared roads under the *Country Roads Act 1958*.
- IX** That, where 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.

South-western area, District 1, has several areas 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 intensities of uses to which they are subjected. Definitions of different types of parks are needed to clarify the main purpose 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. Management policies for the conservation of wildlife values in parks should be developed jointly by the managing authority and the Fisheries and Wildlife Division.

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.

The categories are not to be confused with the existing terminology of national park, forest park, etc., which mainly denotes tenure and the managing body rather than the intended uses. For instance, some of the present national parks are more akin in character to a State or regional park than to the national park of nation-wide significance outlined in the classification.

PARK CATEGORIES

National park

An extensive area of public land, of nationwide 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, fauna, 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 Statewide system.

Coastal park

An area of coastal land, usually linear in shape and comprising the coastal reserve and adjoining public land, which has natural features, flora, and fauna that give it particular landscape and conservation significance.

Coastal parks usually include small areas that are intensively used for recreation and also areas of conservation significance due to the occurrence of remnant vegetation or important faunal species. It is necessary to zone coastal parks to provide for the continuation of recreational pursuits while ensuring that the natural attributes are protected.

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 could be intensively developed for informal recreation and may 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 timber-harvesting, fossicking, and stone-extraction - may be permitted where they are compatible with the primary use.

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

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

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

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

The particular measures to be taken in individual parks will be incorporated in fire protection plans prepared by the Forests Commission in consultation with the park managing authority.

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

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

Vermin and noxious weeds within parks will be controlled. This will remain the responsibility of the Department of Crown Lands and Survey. Control measures will be taken by both the park managers and the Department, using methods decided upon jointly by the two parties.

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

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

Recommendations

Existing parks

A1—A2, A5 That the areas shown on the map and listed below continue to be used and managed as specified in the 1973 recommendations (as follows)

That a scheme for classifying parks be drawn up for use in Victoria, using terms such as State park, regional park, conservation park, recreation park, coastal park, and so on. The term 'national park' should preferably be restricted to large areas of land containing diverse land types and outstanding natural features.

A1 Lower Glenelg

That the area (64 000 acres) be used to:

- (a) protect and conserve natural ecosystems for the enjoyment and inspiration of visitors, and for scientific study
- (b) protect and conserve the gorge of the Glenelg River and other scenic features

(c) provide opportunities for recreational and educational experiences related to enjoying and understanding nature

and that the area be reserved as a park and that it be controlled by the National Parks Service.

The park includes the gorge of the Lower Glenelg River, the Princess Margaret Rose Caves, the Bulley Ranges, the Kentbruck Heath, and Red Gum Swamp.

In addition, Council recommends that the Glenelg River be available for boating and fishing and that access points and boat ramps be provided for these purposes. The Council recommends that the existing zoning and control of boating on the Glenelg River continue for the present. Occupancies for landings and boatsheds on the Glenelg River in the park should be terminated at the end of 1983, and should not be transferable. The four township sites located within the park should be incorporated into the park.

In view of the particular fire hazard that exists in the park and the value of the assets on nearby land, it is strongly recommended that the National Parks Service and the Forests Commission be required to draw up an adequate fire-protection policy for this park and that the facilities needed for implementation be provided.

It is recommended that the Wanwin Road, Inkpot Road, and the southern extension of Inkpot Road to Hurdle Flats remain open unless satisfactory alternative arrangements can be made.

(See also Rivers and Streams SI A17)

A2 Mount Richmond

That the area (4600 acres) be used to:

- (a) provide opportunities for open-space recreation for large numbers of visitors
- (b) protect and conserve natural ecosystems, especially the flora, for the enjoyment of visitors

and that the area be reserved as a park and that it be controlled by the National Parks Service.

The main feature of the park is Mount Richmond, at 650ft. The park is 10 miles from Portland, and has abundant wildflowers.

A5 Discovery Bay

That the area (20 000 acres) be used to:

- (a) provide opportunities for recreation on the coast, lakes and river mouth (including water-skiing on the largest of the Bridgewater Lakes)
- (b) provide opportunities for recreation in solitude in the sand dunes
- (c) conserve floral, geomorphological, and archaeological features of the area for the enjoyment of visitors and scientific study
- (d) ensure the management and conservation of wildlife
- (e) permit any necessary stabilisation of the dunes -

and that it be set aside under [section 4 of the *Crown Land (Reserves)1978*] as a coastal reserve, and that the area be managed by the Fisheries and Wildlife Division pending the setting up of a means of managing coastal reserves.

The reserve includes the mouth of the Glenelg River, Long Swamp, Lake Monibeong, Swan Lake, Bridgewater Lakes, the sand dunes, and desolate ocean beach.

Council also recommends that a limited area be provided for a trial period for motorised recreation vehicles in the Discovery Bay dunes. There should be full consultation with other departments and interested bodies before an area is selected.

Notes:

1. Since the Council first investigated this area it has developed the classification system for parks outlined in the introduction to this chapter. Under this system the Mount Richmond area (Recommendation A2) falls most appropriately into the State park category.
2. The area that was designated as A3, Crawford River Park, in 1973 is now recommended as a regional park (see Recommendation A11).
3. The area that was designated as A4, Wilkin Park, in 1973 is now recommended as a flora and fauna reserve (see Recommendation G8).

(See also Rivers and Streams SI A17)

Additions to existing parks

Addition to the Lower Glenelg National Park - Parish of Balrook

This land lies between the Glenelg River and the Nelson—Winnap Road. It is an important area for recreation, as it provides access from the road to the river and is surrounded on three sides by the Lower Glenelg National Park.

The area is currently used by the Boy Scouts Association, and the Association should be permitted to continue to use the site until suitable alternative arrangements can be made.

Recommendation

A6 That 3 ha of public land south of Jones Lookout in the Parish of Balrook be added to the Lower Glenelg National Park

that the Boy Scouts Association continue to be permitted to use the area until suitable alternative arrangements can be made but not later than 1990, and that any works on the site be subject to the approval of the National Parks Service

and that the area be reserved under the *National Parks Act, 1975*, and be managed by the National Parks Service.

Addition to the Lower Glenelg National Park - Parish of Glenelg

This area adjoins the southern boundary of the park near the township of Nelson. It is an important addition, as it contains the main entrance road to the park visitor centre. It supports coastal vegetation dominated by coastal wattle.

The area also contains the rubbish tip for the township of Nelson and is used for extraction of limestone. Council believes that the tip should be relocated on an alternative site away from the main entrance to the park.

Recommendation

A7 That 3 ha of public land adjoining the Lower Glenelg National Park in the Parish of Glenelg be added to the Park

that the management authority, in conjunction with the Shire of Portland and other relevant

departments, commence an investigation immediately into alternative sites for the Nelson tip in order that the tip be relocated as soon as possible (consideration could be given to using portion of the uncommitted land in the north-eastern corner of the Township of Nelson)

that extraction of limestone from the existing pit cease by no later than 1993 and the area be progressively rehabilitated

and that the area be reserved under the *National Parks Act, 1975*, and be managed by the National Parks Service.

Addition to Mount Eccles State Park - Parish of Condah

In the adjoining South-western area, District 2, a large block of public land surrounding Mount Eccles was recommended as a State park in the final recommendations for that area published in May 1982 (Recommendation B4).

South-western area, District 1, contains a block of contiguous public land that was recommended as The Stones Wildlife Reserve in the final recommendations published in 1973 (Recommendation C3). This land supports similar vegetation to that in Mount Eccles State Park, and Council believes that it would be more appropriately managed as part of the park.

Recommendation

A8 That 320 ha of public land in the Parish of Condah be added to the Mount Eccles State Park and that the area be reserved under section 4 of the *Crown Land (Reserves) Act 1978* and be managed by the National Parks Service.

Note: Grazing should be permitted on such areas and at such times as the management authority considers necessary for management purposes.

Addition to Discovery Bay Coastal Park

The land recommended for addition to the Discovery Bay Coastal Park includes the coastal frontage around Cape Bridgewater and Bridgewater Bay, a large block of uncommitted land adjoining Bridgewater Bay, the coastal frontage around Cape Nelson to the boundary of the Town of Portland, and land at Cape Nelson, purchased by the government in 1975, that is currently reserved as the Cape Nelson State Park.

One of the features of the area to be added to the park is the series of stabilised and active dune forms adjoining Bridgewater Bay, including one of the best examples of cliff top dunes in Victoria. In addition, the coastline around Cape Bridgewater consists of basalt cliffs that contain a number of sea caves with extensive carbonate decoration, as well as fresh-water springs with secondary carbonate deposits.

Conservation values of the area are high, as it contains good examples of coastal vegetation dominated by coast wattle, moonah, and drooping sheoak. A number of rare species are present, including the only Victorian occurrence of soap mallee at Cape Nelson and the rare leafless beard-orchid at Cape Bridgewater. The area also contains the 'Petrified Forest' at Cape Bridgewater, believed to be formed by deposition of calcareous material into the hollows left by decayed or eroded plant roots.

The area provides habitat for a large range of native fauna. The rare and endangered orange-bellied parrot has been recorded as Bridgewater Bay, and caspian terns also use it as a nesting site.

Being located in close proximity to Portland, the area is popular for outdoor recreation. Its main attractions include the surf beach at Bridgewater, the views of the blowholes and cliffs at Cape Bridgewater, and the picnic facilities and walking tracks that have been developed at Cape Nelson and Cape Bridgewater. It also includes a section of the Great South-west Walking Track, which offers excellent opportunities for extended walks.

Recommendation

A9 That the area of 1800 ha shown on Map A be added to the Discovery Bay Coastal 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
- that
- (c) the management authority zone the area to accommodate the legal recreational activities traditionally associated with the area, such as surfing, fishing, camping, and walking
- (d) the Portland Surf Lifesaving Club and the adjacent kiosk be permitted to continue to occupy their present sites
- (e) camping be permitted to continue at sites approved by the managing authority
- (f) honey production be permitted at sites approved by the management authority in this area as well as the existing park
- (g) a local advisory committee that includes representatives of the Shire of Portland and interested local residents be established to advise the managing authority on the management of the area
- (h) the re-establishment trials for Mellblom's spider-orchid (*Caladenia hastata*) be permitted to continue

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978*, the seaward boundary being the low-water mark, and be managed by the National Parks Service.

Note: The scenic road around Nelson Bay is excluded from this addition to the park.

Dergholm State Park

This park is located north of the township of Dergholm and contains good examples of the vegetation communities and land forms of the Kanawinka Land System.

One of its features is the diversity of vegetation communities present. These include woodlands and open forests of brown stringybark, extensive areas of relatively undisturbed heath, swamp communities, and mixed woodlands of river red gum, yellow gum, manna gum, and swamp gum. The gum woodlands also contain pink gum, a species whose distribution in Victoria is confined to the northern portion of the study area and similar country to the north.

The heath communities have particular conservation significance. In the Bogalara section of the park, a mosaic of heath communities includes some species normally only found in drier areas such as the Little Desert. The distribution of these communities is governed mainly by soil type, with totem-poles (*Melaleuca decussata*) dominant on sandy soils where an impeding clay layer is present and sheoak (*Casuarina sp.*) and silver banksia (*Banksia marginata*) dominant where the depth of sand increases. Some of the heath communities have not been burnt for many years

and thus are of considerable botanical interest. Heath communities are also scattered throughout the portion of the Youpayang block included in the park.

In addition, the Youpayang section of the park contains a number of circular fresh-water swamps differing in geomorphic origin from those west of the Kanawinka fault. The associated vegetation ranges from dry spongy sedgelands 1 m tall to permanently wet closed sedgelands more than 3 m tall.

The park supports a diverse range of fauna - including the red-tailed black cockatoo, whose Victorian distribution is confined to the brown stringybark forests of south-western Victoria, and the southern emu-wren, which reaches the northern limits of its distribution in this area. The occurrence of species such as the silky mouse, typical of country further to the north, in the same area as species typical of the Bassian faunal region to the south is unusual. There is also evidence that a small isolated population of the common wombat, a species that is almost extinct in western Victoria, occurs near Bailey's Rocks.

The main recreational attractions of the park are centred around Bailey's Rocks, which consist of a number of large granite tors. The widely diverse environments that occur in this park offer considerable potential for walking, nature study, and picnicking.

Council's final recommendations for this area; published in 1973, recommended the area around Bailey's Rocks as a scenic and recreational reserve. They also stated that, following further study of the conservation potential of the remainder of the Bogalara block, consideration could be given to establishing a large conservation reserve in the future. Having carded out further detailed investigations in the course of this review, Council now proposes that the bulk of the Bogalara block, including the Bailey's Rocks Scenic and Recreational Reserve, and portion of the Youpayang block be managed as a State park.

Recommendation

A10 That the area of 11 300 ha shown on Map A be used to:

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments
- (b) conserve and protect natural ecosystems
- that
- (c) honey production be permitted
- (d) a local advisory committee be established that includes representatives of the Shire of Glenelg and interested local residents to advise the management authority on the management of the area
- (e) grazing only be permitted on such areas and at such times as the management authority considers necessary for management purposes

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

Crawford River Regional Park

This park is centred on the attractive forested valley of the Crawford River. A scenic drive follows the river through the park and provides access to the river at a number of locations.

Vegetation types present include messmate stringybark brown stringybark, manna gum, shining

peppermint, and swamp gum as well as small areas of yellow gum, heath, and swamp communities.

The river and its environs provide the recreational focus of the park and the area is currently used for fishing, picnicking, pleasure driving, and nature study. Picnic facilities have been developed at a number of locations along the river and there is potential to develop walking tracks through the park.

The facilities along the Crawford River attract many people from Mt Gambier and Portland. The proximity of the Princes Highway increases the recreational potential of the area.

Recommendation

A11 That the area of 1910 ha shown on the map be used to:

- (a) provide the opportunities for informal recreation for large numbers of people
- (b) conserve and protect ecosystems to the extent that this is consistent with (a) above
- that
- (c) honey production be permitted
- (d) in the north of the park, outside a 1 km wide zone along the river, some forest products may be available from time to time associated with the use and development of the park for the uses specified above

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

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 utilisation can be measured against these relatively stable natural areas.

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

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

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

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

The selection of the reference area 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—B4 That the areas shown on the map and listed below continue to be used and managed as specified in the 1973 recommendations (as follows)

- (i) That, because of restrictions on their use, and to help ensure their viability, reference area should be surrounded by a buffer zone in which the natural features of the land type are conserved but with less stringent restrictions on use. Such areas could include parks, native forest, and wildlife or flora areas. The selection of area for all these uses must be co-ordinated.
- (ii) That the authority managing the buffer zone control an enclosed scientific reference area.

The Council, in recommending the creation of scientific reference areas, foresees the need for new legislation to specify the status of these areas and for the establishment of a co-ordinating body to determine the broad policy for their management.

B1 Keegans Bend

That the area (2400 acres) be used to maintain the ecosystem (permitting natural processes to continue with a minimum of human interference) for scientific study related to the impact of Man's activities on that ecosystem; and that the area be reserved for scientific reference, be added to the adjoining park area, and be controlled by the National Parks Service.

The land in Keegan's Bend is a representative sample of the thousands of acres of land in the Victorian—South Australian borderland that have been cleared for softwood production. Of the limited areas of this land type remaining in a natural state, Keegan's Bend is best suited for scientific reference due to its relatively undisturbed nature and its inaccessibility.

(See also Rivers and Streams SI A17)

B2 Kentbruck Heath

That the area (1800 acres) be used, reserved and controlled as recommended in B1.

The Kentbruck Heath is the only large area of wet heath remaining in western Victoria, and is similar to the large areas of the heath that have been cleared for agriculture. The scientific reference area includes a range of land types, and is located away from tracks and scenic features that will attract visitors.

B3 Cobboboonee

That the area (950 acres) be used, reserved and controlled as recommended in B1.

This area contains examples of the Cobboboonee land type - that is, tall forests growing on clayey gradational soils derived from basalt. This land type is one of the most important in the Portland area; it has been developed for agriculture, fruit-growing, and hardwood forestry, and will soon be used for softwood production. The scientific reference area is located at least 40 chains from main roads, and is buffered by land under park use.

B4 Roseneath

That the area (5500 acres) be used as recommended in B1, and that the area be reserved for scientific reference under [section 4 of the *Crown Land (Reserves) Act 1978*].

This area is representative of the thousands of acres of sheets and low dunes of siliceous sands occurring in south western Victoria, and carries low brown stringybark forest, with heaths, swamps, and some gum woodlands. This land type has been developed for agriculture and softwood production. The scientific reference area also contains a section of the major geological feature, the Kanawinka Fault. Access into the area is difficult, and a buffer zone 40 chains wide surrounds it on three sides.

Notes:

1. No additional reference areas are recommended.
2. A small area has been excised from the north-western corner of the Kentbruck Heath reference area (Recommendation B2) in order to facilitate the management.

C. WILDLIFE RESERVES

The conservation of fauna depends upon the conservation of habitat. Public land in South-western area, District 1, is important for the conservation of fauna as it contains a diverse range of natural habitats, some of which do not occur elsewhere in Victoria. Council believes that in areas with particular wildlife values the authorities managing public land should note the need for both research into and the application of wildlife management techniques and should actively collaborate with the Fisheries and Wildlife Division regarding these aspects of wildlife conservation.

Although some forms of land use do not have marked detrimental effects on habitat, it is necessary to set some areas aside specifically for conserving fish and wildlife, and for developing wildlife conservation techniques.

These areas may be selected for conservation of species that the community harvests or directly utilises. They may contain the habitat of endangered species or have specialised breeding grounds or a high species diversity, or they may be of educational 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.

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

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

Recommendations

Existing wildlife reserves

C1—C2; C4—C15 That the areas shown on the map and listed below continue to be used and managed as specified in the 1973 recommendations (as follows)

- (i) That natural wildlife and fish habitats on public land be conserved and restored if practicable, especially in the cases of wetlands and water frontages.

C1 Lawrence Rocks

That the area be used primarily to conserve wildlife, and that it remain a Wildlife Reserve under [section 4 of the *Crown Land (Reserves) Act 1978*] and be controlled by the Fisheries and Wildlife Division.

Lawrence Rocks, a group of small islands 6 miles south-east of Portland, contain populations of several species of sea birds.

C2 Bats Ridge

That the area (800 acres) be used primarily to conserve wildlife, and that the whole area be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a wildlife reserve to be controlled by the Fisheries and Wildlife Division.

Bats Ridge, a limestone dune surrounded by sandy heath, lies 5 miles west of Portland. The proposed reserve consists of all the public land lying south of Allotments 19, 20, 21 and 22 of Section 11, Parish of Trewalla, and north of the Portland—Cape Bridgewater main road. This is an extension to an existing reserve.

C4 Crawford Lake

That the area (250 acres) be used primarily to conserve wildlife, and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

C5 Red Hill Swamp

That the area (135 acres) be used primarily to conserve wildlife, and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

The swamp adjoins Allotments 35 and 36 of Section B, Parish of Myaring.

C6 Kerr's Swamp

That the area (700 acres) be used primarily to conserve wildlife, and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

Kerr's swamp lies south of Allotments 22 and 29A, Parish of Ardno.

C7 Kaladbro Swamp

That the area (400 acres) be used primarily to conserve wildlife, and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

Kaladbro Swamp lies south-east of Allotment 70, Parish of Kaladbro.

C8 Church Swamp

That the area (300 acres) be used primarily to conserve wildlife, and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

Church Swamp lies west of Allotments 14 and 17, Parish of Werrikoo.

C9 Beniagh Swamp

That the area (530 acres) be used primarily to conserve wildlife, and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

This proposed reserve is Allotment 19, Parish of Mageppa.

C10 Lake Condah

That the area (500 acres) be used primarily for the production of waterfowl and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

Lake Condah is the area of public land lying north-west of and adjacent to Allotment 5 of Section 11, Parish of Condah.

The Council believes that a full survey and investigation of the possibility of flooding Lake Condah without detriment to the Condah Swamp drainage scheme should be carried out.

and notes that such a study has been commissioned by the Fisheries and Wildlife Division and is in progress.

C11 Sinclair Lake

That the area (37 acres) be used primarily for the production of waterfowl and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

Sinclair Lake is an area of public land within Allotment 12B, Parish of Drumborg.

C12 Tremaine Swamp

That the area (270 acres) be used primarily for the production of waterfowl, and that it remain reserved forest and be managed jointly by the Forests Commission and the Fisheries and Wildlife Division.

C13 Grassy Flats

That the area (540 acres) be used primarily for the production of waterfowl, and that it remain reserved forest and be managed jointly by the Forest Commission and the Fisheries and Wildlife Division.

C14 Burgess Swamp

That the area (130 acres) be used primarily for the production of waterfowl and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

Burgess Swamp is Allotment 8 of Section A, Parish of Wataepoolan.

C15 Tooloy—Lake Mundi

That the area (11 000 acres) be used primarily for the production of waterfowl and that conservation of other forms of wildlife, and flora be given special attention; and that it be set aside under [section 4 of the *Crown Land (Reserves) Act 1978*] as a Wildlife Reserve to be controlled by the Fisheries and Wildlife Division.

This reserve contains a complex of swamps, heaths and forest. It consists of Allotments 8, 8A, 9, 9A, 10, 11, 13 (part), 13A, 14, 15, 15A, 16, 17A and 17B and the area south of 15A known as Lake Mundi, in the Parish of Tooloy and Allotment 16 in the Parish of Byjuke.

Notes:

1. The former wildlife reserve C3 has now been recommended for inclusion in the Mount Eccles State Park (see Recommendation A8).
2. The Lake Condah area (C10) adjoins a large block of public land in the South-western Area, District 2, that was recommended as a State Park in the final recommendations for that area published in May 1982 (Recommendation B4).

Lake Condah was formed as a result of lava flows from the Mount Eccles volcano and is an important component of the regional volcanic landscape.

Adjacent to the lake are a number of Aboriginal fish traps and channels constructed from the local basalt rocks. The traps were situated to utilise the fluctuating level of the lake: the Aborigines constructed a series of channels to channel fish to where they could more readily catch them. Clustered around the traps are the remnants of a hundred or so semicircular

structures, also constructed of the local stone. These structures were probably roofed with bushes and served as dwellings. This evidence of occupation and modification of the environment is one of the most important sites in the State exhibiting Aboriginal history prior to European settlement. Council believes that these sites should be protected and that management of this area should also involve the local Aboriginal community.

Council therefore recommends that the Lake Condah area should continue to be managed as a wildlife reserve and that management be co-ordinated with the contiguous Mount Eccles State Park. The reserve should be managed by the National Parks Service in conjunction with the Fisheries and Wildlife Division, and the Victorian Archaeological Survey should also be consulted. As discussed above, management of the area should also involve the local Aboriginal community.

Additional wildlife reserve

C16 That the Pieracle Swamp area (130 ha) indicated on the map and described below should be used:

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

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

This land was purchased by the Fisheries and Wildlife Division in February 1980, and thus was not public land when the Council first investigated the area in 1973. It forms part of a larger swamp that extends onto freehold land and has potential to provide good habitat for water birds.

D. WATER PRODUCTION

Part of the domestic water supply for the town of Casterton and the supply planned for the town of Merino tap shallow groundwater aquifers beneath public land. While these aquifers provide a cheap source of high-quality water, their shallowness and unconfined nature present several problems in the management and conservation of supplies.

The rate of recharge into these aquifers can be affected by activities within the intake area, and drastic changes to the nature of the vegetation or extensive drainage schemes can reduce the quantity of water soaking into the aquifers. Dumping garbage or sewage or using agricultural chemicals within an intake area can pollute the groundwater supplies.

The following recommendations cover the intake areas on public land for the two water supply schemes. Both intake areas include some freehold land, and it may be desirable after further investigation to proclaim water supply catchments covering private and public land. Most uses are compatible with groundwater conservation in intake areas, with the exception of waste disposal, use of agricultural chemicals, clearing, and drainage.

Recommendations

Existing water-production areas

D1-D2 That the areas shown on the map and listed below continue to be used and managed as specified in the 1973 recommendations. (The recommendation number used in the 1973 final recommendations is given in brackets after each recommendation.) (as follows)

D1 Drajurk (G1)

That the area (4900 acres) be used to safeguard the quality and quantity of the groundwaters tapped to supply the town of Casterton, and that it remain reserved forest.

D2 Weecurra (G2)

That the area (3700 acres) be used to safeguard the quality and quantity of the groundwaters tapped to supply the town of Merino, and that it remain unoccupied Crown land.

This area includes Allotments 1 of Section 16, 3 of Section 24, 3, 3A and 2C of Section 23, 1 and 2 of Section 21, 1 of Section 18, 4 of Section 19 and 2 of Section 20, Parish of Mocamboro.

Council has not recommended any changes to the boundaries of the areas, which were identified in the 1973 recommendations as portions of the recharge areas that supply Casterton and Merino. These areas are particularly important in maintaining the quality and quantity of the groundwater and they should continue to be managed to protect these values.

E. HARDWOOD PRODUCTION

The mixed-species eucalypt forests of the study area have been used as a source of wood since early settlement. The most important timber species - messmate and brown stringybark - produce a strong, moderately durable timber that is used for general construction purposes. In the north of the study area, river red gum and yellow gum produce a durable timber suitable for heavy construction works, sleepers, and fencing, but unfortunately only small pockets of these species remain on public land.

Currently the study area supplies about 25 000 m³ of sawlogs annually, which represents about 2.5% of the State output. Most of the hardwood timber produced is sold locally for general construction purposes. The forests are important for local timber supplies, as the closest hardwood forests to this region are the Grampians and the Otways.

Minor forest products including poles, fencing materials, firewood, and sleepers are also obtained from the hardwood forests of the study area. They are important for servicing the local demand, but their total volume is small.

The 1973 recommendations allocated large areas of public land for hardwood production (nearly 49 000 ha). Council believes that these areas should continue to be used for hardwood production and recommends an additional 1750 ha also be used for hardwood production.

The areas recommended for hardwood production include some from which timber products are not currently available, as they contain the growing stocks necessary for sustained production in the future. They also include some areas of productive forest with significant water production, landscape, conservation, recreational, and apicultural values. Constraints are therefore necessary and the Council believes non-timber values should be protected when management plans are prepared.

Recommendations

Existing hardwood-production areas

E1—E6 That the areas shown on the map and listed below continue to be used and managed as specified in the 1973 recommendations. (The recommendation number used in the 1973 final recommendations is given in brackets after each recommendation.) (as follows)

- (i) That the provision of opportunities for open-space recreation, and the conservation of native animals and plants be major secondary uses of areas for hardwood timber production. In particular, wetlands should be used to conserve populations of diverse species of water birds. Other uses are honey production, grazing, and the production of other forest produce as defined in the *Forests Act 1958*, including gravel, sand and limestone.

E1 Cobboboonee (D1)

That the area (66 000 acres) be used primarily to produce hardwood timber; that within this area special attention be given to the protection and conservation of koalas near Lyons; and that the area be reserved forest.

Note: This area provides habitat for isolated populations of the tiger quoll and yellow-bellied glider, which should be protected by management prescriptions drawn up in consultation with the Fisheries and Wildlife Division.

E2 Annya (D4 D2)

That the area (27 000 acres) be used primarily to produce hardwood timber; and that it be reserved forest.

Note: This area provides habitat for isolated populations of the yellow-bellied glider, which should be protected by management prescriptions drawn up in consultation with the Fisheries and Wildlife Division.

E3 Homerton (D3)

That the area (6800 acres) be used primarily to produce hardwood timber; and that it be reserved forest.

The area covered by this recommendation consists of Allotments 13, 14, 15C, 15D, 57A, 58B and 61B, Parish of Homerton; Allotments 6, 6A, 6B, 7B, 8A (part), 10, 11, 12, 12A, 16, 20, 21 and 26 and Allotment east and north of Allotment 23, Parish of Dunmore, and part of Allotment 8, Allotments 78, 81, 82, 83 and 86, and the area east of 80B, Parish of Bessie Belle.

E4 Narrawong (D4)

That the area (4250 acres) be used primarily to produce hardwood timber; and that it be reserved forest.

E5 Hotpur (D5)

That the area (15 000 acres) be used primarily to produce hardwood timber; and that it be reserved forest.

Note: This area provides habitat for isolated populations of the yellow-bellied glider, which should be protected by management prescriptions drawn up in consultation with the Fisheries and Wildlife Division.

E6 Strathdownie (D6)

That the areas (2020 acres) be used primarily to produce hardwood timber, and that they be reserved forest.

This recommendation refers to Allotments 25 and 54 of Section B, the public land north of Allotment 35A of Section B, and Allotment 56 of Section B, Parish of Wilkin; the public land west of Allotment 1, Parish of Tooloy; the public land west of Allotment 27, Parish of Tullich; and Allotment 26A, Parish of Nawarry.

Additional hardwood-production areas

E7-E10 That the areas listed below and shown on the map be used:

- (a) primarily to produce hardwood timber in a manner having due regard for landscape values as seen from the main roads outside the forest

that

- (b) major secondary uses be to:
 - (i) provide opportunities for open-space recreation and education
 - (ii) conserve native plants and animals, and provide opportunities for the development of wildlife conservation techniques
 - (iii) produce honey, forage, gravel, sand, and other forest produce as defined in the *Forests Act 1958*
- (c) water-production values be recognised and protected

(d) the special values located in portions of some of the hardwood areas listed below be protected (these values should be protected by the creation of reserves under section 50 of the *Forests Act 1958* or by management prescriptions)

and that the areas remain or become reserved forest under the provisions of the *Forests Act 1958* and be managed by the Forests Commission.

E7 Wataepoolan (240 ha)

E8 Milltown (190 ha)

E9 Cobboboonee (1020 ha)

Note: A species of *Cassinia* that previously occurred over large areas of wet heaths in the Cobboboonee area has been recorded on the eastern boundary of the Cobboboonee block near the Surry River. This and any other occurrences should be protected by management prescriptions.

E10 Narrawong (300 ha)

F. SOFTWOOD PRODUCTION

The study area includes all of the Portland—Rennick Softwood Development Zone. In conjunction with land planted in the south-east of South Australia, the region supports one of the largest concentrations of softwood plantations in Australia. These plantations provide raw material for particle-board plants, sawlog and veneer mills, and preservative treatment plants in both Victoria and South Australia.

Existing Plantations

A net total of 14 920 ha has already been established by the Forests Commission in the Portland—Rennick Softwood Development Zone (including 1981 plantings). This includes some 3000 ha of former freehold land purchased by the Commission for softwood plantations.

In addition, private forestry companies have established a net total of 23 400 ha of softwood plantations in the zone. The greater part of these have been established on private land but a total of 8570 ha net have been established on public land leased under the *Land (Plantation Areas) Act 1968*.

Land for Softwood Production

Forests Commission, Victoria

The current planting rate by the Forests Commission in the Portland—Rennick Softwood Development Zone is 600 ha per annum. To meet the target for the zone, the Commission considers a further 9080 ha net will be needed, resulting in a total net area of approximately 24 000 ha of Forests Commission plantations. Consideration is given in these recommendations for land requirements for softwood production until 1993.

The final recommendations for this area published in 1973 allocated 6280 ha gross of public land to be used for softwood production by the Forests Commission, including some 1180 ha of previously purchased land. Of this total, about 1455 ha has not yet been planted, and a further 815 ha of land, purchased since that time, also remains unplanted. Together these give the Forests Commission a gross area of 2260 ha, within which an estimated 1897 ha can be planted.

The government has expressed concern about the extent to which native forest is being cleared in order to establish pine plantations and has indicated its intention to review the State's softwood establishment program.

As an alternative to using forested public land, the government will also investigate 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.

Until these investigations have been completed, the extent to which land either private or public within this study area would be required for softwood plantation remains uncertain.

Prior to the preparation of these recommendations, Council commissioned a study of the cost and availability of private land suitable for softwood production in the Portland—Rennick Softwood Development Zone. The study indicated that sufficient areas of suitable private land are likely to be available for purchase in the future to provide for a substantial portion of the current planting program, particularly if the purchasing arrangements have sufficient flexibility to

allow increased areas to be purchased in years of lower agricultural returns.

Several other values are associated with the uncommitted land in the study area. These are outlined in Appendix I and in the chapter on uncommitted land. Council has taken these into consideration when preparing its recommendations 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 recommendations and the areas of private land purchased by the Forests Commission but not yet planted (sufficient to establish a net total of 1897 ha of softwoods) should continue to be available for softwood production.

Should the government determine that additional public land is to be used for softwood production, Council has delineated an area of public land sufficient to establish a further net 1000 ha of softwoods that could be used for this purpose.

Private forestry companies

Following publication of the descriptive report and proposed recommendations for the review of this area, Council received submissions from a number of private forestry companies requesting allocation of public land to them for softwood production. After examining these requests, Council considers that no additional public land should be made available at this time for use by private softwood companies.

Productivity of Second and Subsequent Rotations

In the adjoining areas of south-eastern South Australia, significant plantation areas have been harvested at maturity and replanted. On many sites the productivity of the second crop has shown a substantial decline. The soils on these sites are coarse-textured dune sands, which are infertile and contain low levels of organic matter, and they are similar to those on which some of the softwood plantations have been established in the study area.

Because substantial planting of radiata pine began much later in south-western Victoria than in South Australia, only recently have small areas been replanted. Research is, however, in progress in both States to study the productivity of the problem sites in relation to the previous rotation, and preliminary results, although available, are not yet conclusive. The early results from concurrent studies of matched first- and second-rotation sites in fact show no evidence for a second-rotation decline in productivity, and suggest that retention of logging residue is the important factor in successfully establishing second-rotation crops.

This presents an operations problem, as the residue is a severe fire hazard and it has been standard practice to remove it by burning at safe times. This burning was also used to eliminate thickets of natural pine regeneration, and to improve access for the machinery used in cultivation and planting. It is now apparent that, on these infertile sands, this practice causes an unacceptably high loss of nutrients by volatilisation and transfer of particulate matter. It also removes much of surface mulch of logging residue and litter, and thus lowers the level of soil organic matter. Retention of that surface mulch is especially important on these freely drained and infertile soils, however. It helps retain soil moisture and, as it decomposes, it returns nutrients and organic matter to the soil. In support of this, some evidence suggests that the mulch reduces the need for fertilisers. It may also reduce the need for weedicides. Consequently,

a conflict arises between considerations of fire hazard and access and the promotion of long-term productivity. Operational techniques are therefore being developed to reduce the fire hazard and improve access by mechanical means.

The techniques used for growing softwood plantations are progressively being modified as the results from research programs become available. The techniques now being used have enabled successful planting of sites that were previously considered to be marginal to unsuitable for softwoods.

Council notes, however, that the plantations established in Victoria on second-rotation sites and on sites previously considered to be marginal or unsuitable are still relatively young. Although the early growth rates generally show evidence of increased productivity rather than a decline, none of these plantations has yet been grown to maturity.

The Council believes that the results of research programs and the growth rates of existing plantations (particularly those on second-rotation sites and on lower-site-quality land) should be carefully considered when allocating any further public land for softwood production.

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 1400 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 utilisation, 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 recognised.

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 swaths 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 Forests Commission should consult with the Soil Conservation Authority in relation to matters affecting soil stability and water quality, and with the Fisheries and Wildlife Division on matters concerning wildlife conservation.

Recommendations

F1 That the present plantations of 25 400 ha gross, shown on the map, 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, with the exception of those areas currently leased to private forestry companies under the provisions of the *Land (Plantation Areas) Act 1966*, they remain reserved forest under the provisions of the *Forests Act* and be managed by the Forests Commission.

Notes:

1. Some of the land shown on the map consists of land previously allocated in the 1973 recommendations for softwood production but not yet planted. (This includes private land purchased by the Forests Commission but not yet planted.) Together this gives sufficient land to establish a further 1897 ha net.
2. Portions of the Kentbruck and Rennick Plantations were planted prior to the establishment of the guidelines outlined above. In accordance with the current guidelines, amenity plantings with species native to the area will be established along major roads when these areas are harvested.

F2 That State purchase of private land for plantation establishment continue, in order that the zone planting target as determined by the government might be achieved.

F3 That, should the government decide it is needed to achieve softwood plantings targets in this zone, some additional forested public land could be allocated from the land shown on the map, within which a net 1000 ha of softwoods could be planted in accordance with the guidelines in these recommendations

and that such land, until and unless it is required for softwood production, remain uncommitted land.

G. FLORA RESERVES AND FLORA AND FAUNA RESERVE

In addition to the floristic and wildlife values of the parks that have been recommended in the South-western area, District 1, a number of areas contain native vegetation with considerable floristic importance. Others are important not only for their floral values but also because of the significance of wildlife populations and habitat.

Council has recognised the special conservation significance of these areas and has accordingly recommended their reservation as flora reserves or flora and fauna reserves. They are set aside primarily to conserve species that may be rare or endangered, and also other plant associations and animals 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.

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

FLORA RESERVES

These reserves are significant because they contain examples of native vegetation with considerable floristic value in a relatively natural state. They are set aside primarily to conserve species that may be rare or endangered, and other plant associations that are of particular conservation significance.

Recommendations

Existing flora reserves

G1 Johnstone's Creek (J2 in the 1973 final recommendations)

That the area shown on the map continue to be used as specified in the 1973 final recommendations but that it be managed by the National Parks Service (as follows)

That the area be used to preserve the plants in the valley of Johnstone's Creek, and that it be reserved under [section 4 of the *Crown Land (Reserves) Act 1958*].

This reserve contains the land within 5 chains of the banks of Johnstone's Creek, south of the Portland—Nelson Road. The gully of the creek is a specialised habitat, and contains several rare and interesting species.

Note: Council has recommended investigation of a land exchange involving freehold land being between this area and the Discovery Bay Coastal Park (see Recommendation O7). Should the exchange be successful, this reserve should be added to the Discovery Bay Coastal Park.

G2—G3 That the areas shown on the map and listed below continue to be used and managed as specified in the 1973 final recommendations. (The recommendation number used in the 1973 final recommendations is given in brackets after each recommendation.) (as follows)

G2 Tooloy (J3)

That the area be used to preserve the manna gum-silver banksia woodland formation and that it be reserved under [section 4 of the *Crown Land (Reserves) Act 1958*].

G3 Roseneath (J4)

That the area be used to preserve pink gum (*Eucalyptus fasciculosa*); and that it be reserved under [section 4 of the *Crown Land (Reserves) Act 1958*].

This reserve consists of Allotment 67A, Parish of Roseneath, and the public land immediately to the north of this in the Parish of Dergholm.

Additional flora reserves

G4—G7 That the areas indicated on the map 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 3 years following the adoption of these recommendations
- and that they be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and managed as indicated below.

G4 Tyrendarra (150 ha)

An open forest of manna gum has developed in the younger basalts of the Tyrendarra lava flow. It supports a rich and diverse understorey that includes many species of grasses and ferns. A number of rare and significant species have been recorded in this area, including the willow spleenwort (*Asplenium falcatum*), a fern that is extremely rare and localised in Victoria.

This area of land also has geomorphical interest, as it consists of extensive basalt barriers formed at the junction of the Fitzroy River and Darlots Creek as part of the Tyrendarra lava flow.

To be managed by the Department of Crown Lands and Survey.

G5 Narrawong (1600 ha)

This reserve supports a wide range of vegetation communities that include brown stringybark, messmate stringybark, swamp gum, shining peppermint, and an area of closed heath dominated by scented paperbark and prickly tea-tree. The considerable variation in its topography and soil types is reflected in the structural and floristic diversity of the vegetation communities present.

Its main feature is the complex mosaic of vegetation communities present within a relatively small area. Although the individual components are represented in other conservation reserves, this compact mosaic has particular conservation significance.

The area is renowned for its displays of flowering plants, which include more than 50 species of orchids, and is popular for nature study. A number of significant plant species have been recorded here, including a number of species reaching the western limits of their distribution.

To be managed by the Forests Commission.

G6 Weecurra (40 ha)

The government recently purchased this tract to preserve some ground flora.

To be managed by the Department of Crown Lands and Survey.

G7 Addition to Johnstone's Creek Flora Reserve

This area supports a closed scrub community dominated by brown stringybark and shining peppermint with a heathy understorey. The existing Johnstone's Creek Flora Reserve and the extension together total approximately 55 ha.

To be managed by the National Parks Service.

Note: Council has recommended an investigation of a land exchange involving freehold land lying between this area and the Discovery Bay Coastal Park (see Recommendation O7). Should the exchange be successful, this area should be added to the Discovery Bay Coastal Park.

FLORA AND FAUNA RESERVE

This reserve has significance because it provides valuable habitat for populations of native fauna and contains examples of native vegetation with considerable floristic value in a natural or relatively natural state.

Recommendation

G8 That the Wilkin area (3600 ha) indicated on the map and described below be used to:

- (a) conserve native plants and animals
- that
- (b) honey production be permitted
- (c) passive recreation such as nature study and picnicking be permitted
- (d) grazing be phased out

and that it be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and managed by the Forests Commission. Management plans should be prepared by the management authority in consultation with the Fisheries and Wildlife Division.

The complex mosaic of vegetation communities occurring here includes brown stringybark, heaths dominated by heath tea-tree and prickly tea-tree, and shining peppermint, as well as small areas of swamp gum, river red gum, and swamp communities. The area is renowned for its diverse and colourful under-storey plants, and 45 species of orchids have been recorded here.

Due to the close proximity of large softwood plantations to the north and south, this reserve is an important faunal refuge. The wide-ranging vegetation communities present provide habitat for a large wildlife population and the swamp communities are used by many species of waterfowl.

In the final recommendations published in 1973, this area was set aside as 'unoccupied Crown land pending possible future incorporation into the park system'. Having carried out further investigations during the course of this review, Council believes the area's value lies in the vegetation alliances and associated fauna present rather than in the diversity of recreational opportunities available. Council therefore recommends the area be reserved as a flora and fauna reserve.

H. BUSHLAND RESERVES

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

The Council recommends that many of these small remnants of the native vegetation should become bushland reserves. Their major uses are to maintain the character of the countryside and to provide diversity in the landscape. They may also provide some opportunities for passive recreation in relatively natural surroundings, but it is not intended that they be developed for recreation. In some instances the only access is via an unused road covered by an unused-road licence, which should continue subject to the approval of the Department of Crown Lands and Survey. These bushland reserves are generally too small to 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. 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 management authority may have to exclude them, at least temporarily, in order to permit regeneration of tree species.

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

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

Recommendations

Existing bushland reserves

H1—H14 That the areas shown on the map and listed below continue to be used and managed as specified in the 1973 recommendations. (These reserves were all included under recommendation J7 in the 1973 final recommendations.) (as follows)

That the areas be used to help maintain the local character and quality of the landscape and that these areas be reserved under [section 4 of the *Crown Land (Reserves) Act 1978*].

H1 198 ha, being allotment 62A, Parish of Mageppa.

H2 380 ha, being allotments 15, 23, 25A, 36, and 36A, and public land adjoining allotments 15 and 23, Parish of Ganoo Ganoo.

H3 156 ha, being allotments 34 and 50 of section B, Parish of Kaladbro.

Note: Any proposals by the Strathdownie Drainage Trust to construct a drain through this area should involve discussions with the land manager and the Fisheries and Wildlife Division.

H4 100 ha north and west of allotment 45E, Parish of Bahgallah.

H5 20 ha, being allotments 4F and 4G and public land south of allotment 4G of section 5, Parish of Digby.

- H6** 125 ha, being allotment 20, Parish of Killara.
- H7** 121 ha, being allotment 26, Parish of Malanganee.
- H8** 80 ha, being allotment 18A, Parish of Mumbannar.
- H9** 120 ha north of allotment of section 1, Parish of Drik Drik.
- H10** 62 ha, being allotment 34, Parish of Balrook.
- H11** 35 ha, being allotment 8 of section 2, Parish of Mouzie.

Note: Council recommends that this area should be managed by the National Parks Service. Should the land exchange involving freehold land lying between this area and the Discovery Bay Coastal Park be successful (see Recommendation O7), consideration should be given to adding this reserve to the Discovery Bay Coastal Park.

- H12** 22 ha adjoining allotment 33 of section A, Parish of Glenaulin.
- H13** 50 ha, being allotment 5A, Parish of Drumborg, and adjoining public land to the north in the Parish of Curracurt.
- H14** 24 ha in allotment 12, Parish of Kentbruck.

Additional bushland reserves

H15—H51 That the areas indicated on the map and described below be used to:

- (a) maintain the character and quality of the local 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 management authority
- (e) gravel extraction could be considered in the future for portions of those reserves listed below, where reference to this use is made

and that they be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and managed by the Department of Crown Lands and Survey except where otherwise indicated.

Notes:

1. Some reserves specifically referred to in the list below contain gravel resources. The utilisation of those deposits should only take place when other gravel resources (listed in Chapter P) have been exhausted, or when it can be established that a particular type or grade of deposit is not found elsewhere other than in a designated bushland reserve.
2. Gravel extraction, if permitted, should proceed in accordance with the guidelines and recommendations set out in Chapter P, Mineral and Stone Production.

- H15** 6 ha adjoining allotment 21A, Parish of Kanawinka.
- H16** 14 ha, being the water reserve adjoining allotment 47A, Parish of Kanawinka.
- H17** 5 ha north of allotment 20A, Parish of Nagwarry.
- H18** 6 ha east of allotment 6, Parish of Nagwarry.
- H19** 6 ha adjoining allotment 18, Parish of Nagwarry.

Note:

Portion of this reserve contains road-making materials and the use of this resource could be considered in the future. See Note 1 above.

H20 40 ha, comprising allotment 39 and 39A, Parish of Kaladbro.

Note: Portion of this reserve needs to be revegetated.

H21 24 ha west of allotment 84, Parish of Werrikoo.

H22 36 ha, being allotment 59, Parish of Ardno.

Note: Portion of this reserve contains road-making materials and the use of this resource could be considered in the future. See Note 1 above.

H23 2 ha adjoining allotment 67, Parish of Dartmoor.

H24 22 ha east of allotment 3, Parish of Malanganee.

H25 10 ha, being the stone reserve north of allotment 5, Parish of Malanganee.

Note: Portion of this reserve contains road-making materials and the use of this resource could be considered in the future. See Note 1 above.

H26 20 ha, being the camping and water reserve north of allotment 13, Parish of Youpayang.

H27 27 ha, being allotments 41C and 41D, Parish of Langkoop.

H28 16 ha, being the camping and water reserve and adjoining public land east of allotment 6, Parish of Mocamboro.

H29 8 ha, being allotment 1 of section 11, Parish of Mocamboro.

Note: Portion of this reserve contains road-making materials and the use of this resource could be considered in the future. See Note 1 above.

H30 6 ha adjacent to allotment 2A of section 9, Parish of Digby.

H31 8 ha west of allotments 12 and 12B, Parish of Digby.

Note: Portion of this reserve contains road-making materials and the use of this resource could be considered in the future. See Note 1 above.

H32 8 ha in the north-eastern corner of allotment 55A, Parish of Digby.

Note: Portion of this reserve contains road-making materials and the use of this resource could be considered in the future. See Note 1 above.

H33 5 ha south of allotment 59A, Parish of Winyayung.

To be managed by the Forests Commission.

Note: Portion of this reserve contains road-making materials and the use of this resource could be considered in the future. See Note 1 above.

H34 58 ha west of sections 18 and 19, Township of Hotspur. (This reserve does not include the recreation reserve Rs. 2442 in the Township of Hotspur.)

H35 50 ha south of allotment 5 of section C, Parish of Annya.

H36 10 ha, being the water reserve south of allotment 2A, Parish of Greenhills.

H37 48 ha on the northern boundary of the Township of Lyons.

H38 40 ha, comprising allotment 3B, Parish of Myamyn.

H39 15 ha, being allotment 4E, Parish of Dunmore.

H40 7 ha north of allotment 13, Parish of Heywood.

H41 8 ha adjoining allotment 3 of section 11, Parish of Bolwarra.

H42 2 ha, being the public purposes reserve adjoining allotment 23 of section 4, Parish of Gorae.

H43 24 ha north of allotment D of section 2, Parish of Bolwarra.

Notes:

1. The remains of the former quarry and tramway used to transport bluestone for construction of the Portland Harbour is of historical significance and should be protected.
2. The stone resource on this reserve could be used if required. See Note 1 above.

H44 119 ha, being the former quarry reserve west of allotment F of section 2, Parish of Bolwarra.

Notes:

1. An area within this reserve could be developed as a camp for community youth activities.
2. The stone resource on this reserve could be used if required. See Note 1 above.

H45 24 ha, being the quarry and water reserve adjoining allotment F of section 2, Parish of Bolwarra.

Note: The stone resource on this reserve could be used if required. See Note 1 above.

H46 31 ha, being allotment 8 of section 9, Parish of Portland.

H47 42 ha, being allotment 15 of section 9, Parish of Portland.

Note:

This reserve does not include the area covered by Extractive Industry Lease No. 212. However, when extraction from the area covered by that lease is completed, the area should be revegetated and added to the bushland reserve.

H48 6 ha south of allotment 4 of section 11, Parish of Trewalla.

H49 9 ha adjoining allotment 14, Parish of Trewalla.

Note: Portion of this reserve contains road-making materials and the use of this resource could be considered in the future. See Note 1 above.

H50 130 ha south of allotment 10 of section 5, Parish of Kentbruck

To be managed by the National Parks Service.

H51 45 ha south of allotment 3 of section 3, Parish of Drik Drik.

I. THE COAST

The coastline of the State is a resource of great value for recreation, for nature conservation, and for the preservation of features of historical interest.

In formulating recommendations for public land along the coast, Council is aware that coasts represent a dynamic zone of interaction between land and sea, encompassing fragile environments. The various management authorities of coastal land should take steps to ensure that management is co-ordinated.

All works to be implemented by committees of management or government agencies on the coastal reserve should be conducted in accordance with plans approved by the Coastal Management and Co-ordination Committee.

Coastal Reserve

A coastal reserve is an area of public land on the coast set aside primarily for public recreation, education, and inspiration in coastal environments. Coastal areas specifically reserved for some other purposes (parks, wildlife reserves, sites for navigational aids, or major ports) would not be included in the coastal reserve.

Recommendation

II That the Narrawong area (200 ha) shown on the map:

(a) be used to:

- (i) provide opportunities for informal recreation and also for recreation related to enjoying and understanding nature
- (ii) protect and conserve natural coastal landscapes and ecosystems - and geological, geomorphological, archaeological, and historical features - for public enjoyment and inspiration and for education and scientific study
- (iii) ensure the conservation of both aquatic and terrestrial fauna and flora
- (iv) provide facilities for fishing and boating (including harbour facilities) together with the necessary navigation aids

that the managing authority:

(b) zone the area in order to provide for the range of uses outlined above

(c) manage the area according to the policies developed by the Coastal Management and Co-ordination Committee in conjunction with the municipalities or Committees of Management and the Fisheries and Wildlife Division

(d) in its policies for the coastal reserve, recognise the following principles:

- (i) new roads should not be sited along the coast, but rather should be located far enough back in the hinterland to avoid damaging sensitive environments or impairing the scenic qualities of the coastal landscape
- (ii) any major coastal development projects should be subject to a detailed environmental study prior to commencement by the body proposing such development (examples of such projects would include proposals for waste-disposal pipelines, jetties, marinas, mining, sea walls, etc.)
- (iii) occupation of coastal public land by individuals or organisations should be phased out, and no new occupation leases should be granted; certain coast-oriented uses such as yacht clubs and surf clubs could be permitted, subject to conditions laid down by the managing authority
- (iv) when camp sites and car parks are to be established on the coastal reserve, the

managing authority should avoid locating these on sensitive areas or areas of importance for nature conservation, or of archaeological significance

and that the area be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* as coastal reserve, the seaward boundary being low-water mark, and be managed by the Department of Crown Lands and Survey.

J. RIVERS AND STREAMS

(See also Rivers and Streams SI Chapter E)

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 frontages.

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

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

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

These licensed river frontages are, however, public land; they are often valuable for low-intensity forms of recreation such as walking, fishing, and observing nature, and provide access to extensive lengths of streams and lake shores. As mentioned above, members of the public are legally entitled to walk through a licensed frontage.

Licences for previously unlicensed public water frontages, now being issued by the Department of Crown Lands and Survey, require the licensee to erect a stile or gate in any fence erected across the frontage, where appropriate, to facilitate public access.

This condition has not been applied to the majority of existing licences and Council believes that

in some situations - for example, along popular fishing streams - the provision of stiles would facilitate pedestrian access along public and 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.

Maintenance of a stable vegetative cover on frontages can contribute significantly to water quality by filtering overland flow and reducing soil contamination of water. Public land water frontages are frequently valuable for preserving local landscapes. They may also be valuable for nature conservation, as they 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 (for example, public land abutting section of the Glenelg and Fitzroy Rivers); exceptions are 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 reserved forest) or for some special purpose (such as a flora, recreation, or streamside reserve).

Recommendation

J1 That the public land water frontages:

- (a) be used to:
 - (i) protect land from erosion by the maintenance of adequate vegetation cover
 - (ii) maintain the local character and quality of the 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
 - (vi) provide a buffer zone for the protection of water quality
- 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 (non-damaging activities such as walking, nature observation, fishing, or just relaxing should be allowed, while potentially damaging activities such as camping, lighting fires, or using motor or motorised 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 management authority
- (iii) cultivation not be permitted, except with the approval of the Department of Crown Lands and Survey, 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 Utilisation 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 managing authority, special measures are necessary to protect water supplies, to rehabilitate eroding areas, or to permit regeneration of native plants that have particular value for nature conservation.

that

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

and that

- (d) (i) public land water frontages be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978*
 (ii) where an area currently reserved as a water frontage is adjacent to or within a State park, regional park, or other reserve, it be managed by the authority responsible for the adjoining or surrounding land
 (iii) where it is not within or adjacent to a reserve or park as described in (d) (ii) above, it be managed by the Department of Crown Lands and Survey or by a committee of management where one is appointed.

Notes:

1. Public land water frontage reserves cannot be accurately defined at the scale used on Map A (1:250 000); however, they have been indicated on the Map. The appropriate Parish plan should be referred to in order to determine the precise boundaries of these reserves.
2. The frontage of the Pigeon Ponds Creek south of Mooree supports a good example of remnant vegetation that should be protected. This area includes a good stand of the scarlet bottlebrush (*Callistemon macropunctatus*), a species that is uncommon in this area.
3. The frontage to the Glenelg River in the township of Dartmoor supports a diversity of vegetation types that should be protected.

(See also Rivers and Streams SI A17)

RIVER IMPROVEMENT

The study area contains two River Improvement Trusts constituted under the *River Improvement Act 1958*: the Strathdownie Drainage Trust and the Glenelg River Improvement Trust. The former has carried out a comprehensive program of drainage of freehold land in the Strathdownie area and the latter has carried out improvement works along the Glenelg River. Improvement works in the Glenelg River are designed to maintain the carrying capacity (for water supply or drainage purposes), to protect adjoining land from flooding and erosion, to maintain the security of structures such as bridges on the flood plain, and to prevent siltation of the lower reaches by control of upstream erosion.

The works carried out include:

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

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

- Clearing of vegetation has increased run-off and reduced time of concentration of storm

flows. The situation is sometimes aggravated by overgrazing and unwise cultivation in the catchment and along the river banks, accelerating soil erosion and transport of sediment to the stream. Increases in urban development - with disposal of storm water directly to streams - have also altered flow regimes.

- Regulation of stream flow by water storages and use of streams to transport water for irrigation and domestic use also change the natural flow regime.
- The construction of barriers such as road embankments and bridges, through which the river must pass has often resulted in substantial modification of the bed and banks. Present legislation requires that all proposed replacement or new structures across waterways or other interference with the bed and banks of streams are referred to the State Rivers and Water Supply Commission and to the River Improvement Trust, where one is involved, for approval.

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

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

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

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

The flow regimes of some rivers must of course be modified and flood plains used for agriculture, but it is appropriate to look at the principles of the natural system, in seeking solutions to the problems that thus arise rather than to move further from those principles. The Council believes that the following principles should apply in determining the need for and design of river improvement works.

- Where problems in river management arise, the whole catchment should be considered in seeking a solution.
- Where flood control in a catchment is necessary, planning strategies should include consideration of ways of reducing run-off from the catchment.
- Total flood control is seldom practicable. In the case of minor flooding it may often be more appropriate to take action to minimise the consequences of flooding rather than attempt to prevent it.
- An adequate vegetation cover should be maintained along stream frontages, to stabilise the

banks and to reduce the velocity of flood-waters as they leave and re-enter the stream course.

- Structures such as road embankments and bridges on flood plains are a variation of the natural situation, and consideration should be given in their design of 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

J2 That the assessment of the need for, and the planning and implementation of, any works involving changes to the beds and banks of streams be based on the principles set out above.

Notes:

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

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

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

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

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

STREAMSIDE RESERVES

Throughout the study area, small blocks of public land adjoin streams but are not included in the public land water frontage.

Where appropriate, these blocks have 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 woodland 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 managing authority 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

J3 That the areas shown on the map on the Stokes and Glenelg Rivers continue to be used and managed as specified in the 1973 recommendations (J6 in the 1973 final recommendations) (as follows)

- (i) That the areas be used to maintain the natural habitat for plants, wildlife and fish, and to provide opportunities for open-space recreation; and that they be reserved under [section 4 of the *Crown Land (Reserves) Act 1978*].
- (ii) That water frontages be used to conserve native vegetation, especially trees, and to maintain the local character and quality of the landscape; and that cultivation of the soil not be permitted.
- (iii) that where water frontages are subject to water frontage licences, the licensing legislation and regulations be amended so as to clearly provide for free public access to and use of water frontages for passive recreational purposes, such as fishing.

Glenelg River

The Council recommends that the Glenelg River reserve below the Lower Glenelg park remain permanently reserved for public purposes. However, the Council is of the opinion that the management of the reserve should follow the guidelines set out below.

- (i) the area should be used primarily for open-space recreation, and to maintain the local character and quality of the landscape.
- (ii) All occupancies for boatsheds and landings should be terminated by 1st January, 1985 or on prior death of the occupant, and they should not be transferable.
- (iii) All boatsheds and shacks should be removed from the river reserve by 1st January, 1985.
- (iv) The occupancies for the Nelson Kiosk and the two hire-boat services currently operating in Nelson should be permitted to continue.

(See also Rivers and Streams SI A17)

Additional streamside reserves

J4—J13 That the areas shown on the map and described below be used to:

- (a) provide passive recreation such as picnicking, walking, and angling
- (b) provide opportunities for camping at the discretion of the management authority if this does not conflict with the maintenance of the water quality of the adjacent stream
- (c) provide a buffer zone for protection of water quality

- (d) conserve flora and fauna
- (e) maintain the local quality and character of the landscape
- (f) provide grazing, at the discretion of the management authority, if this does not conflict with the maintenance of the water quality of the adjacent stream or with (a),(b),(c), and (d) above

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

- J4** 16 ha east of allotment 14B and adjacent to the Glenelg River, Parish of Ganoo Ganoo.
- J5** 8 ha west of allotments 28 and 35 and adjoining the Glenelg River, Township of Dergholm.
- J6** 7 ha east of allotment 6B, Parish of Warrock.
- J7** 15 ha east of allotment 8B, Parish of Warrock.
- J8** 22 ha, being the camping and water reserve east of allotment 13A and 14A, and adjacent to the Glenelg River, Parish of Nangeela.
- J9** 6 ha, being the camping and water reserve east of allotment 3 adjacent to the Wando River, Parish of Barnoolut.
- J10** 5 ha adjoining allotments 26, 26E, 26G, 26A, and 26F and adjacent to the Wannon River, Parish of Casterton.
- J11** 2 ha, being allotments 1 and 2 of section 7 and adjacent to the Wannon River, Parish of Tahara.
- J12** 12 ha south of allotment 37A, and adjacent to the Glenelg River, Parish of Bahgallah.
- J13** 3 ha adjoining allotment 4 of section B and adjacent to the Fitzroy River, Parish of Homerton.

K. ROADSIDE CONSERVATION

Roadside Conservation

The primary purpose of road reserves is obviously to provide for communication, transport, and access. However, vegetation along road verges can have particularly high conservation, recreation, and landscape values, especially in agricultural districts where most of the native vegetation has been cleared.

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 not only species with restricted distribution but also 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.

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, by slashing, or by clearing of roadside vegetation. These practices sometimes conflict with scenic and conservation values, and the Council believes that such practices should be restricted to strategically important areas and kept to a 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 *Country Roads Act 1958* are completely under the control of the Country Roads Board (9000 km). Main roads (14 500 km) are also declared, but are controlled jointly by the Country Roads Board 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 Forests Commission has the control of vegetation on unclassified roads that pass through or adjoin State forests. (Note: These figures are for all Victoria.)

Unused roads constitute another category. When the State was being settled, surveyors provided access to blocks by means of surveyed Crown roads. Many of these have never been used as roads, and they are usually held by the occupiers of the adjoining land under unused-road licences. The Forests Commission controls the vegetation on unused roads that have been formally declared as such.

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 fulfill 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 realignment is being considered.

Recommendations

K1 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 recognises that many of these are already being implemented by the bodies responsible for the construction and maintenance of roads.

- When improvements to a road are being carried out, trees and shrubs on the road reserve should be disturbed to the minimum extent consistent with the safe and efficient design and use of the road.
- Major works to re-align minor roads carrying 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 recognising 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 Forests Commission regarding the manner in which the risk posed by vegetation can be reduced while at the same time reducing the environmental impact to a minimum.
- Road-making materials should not be taken from road reserves unless no suitable alternative sources are available. Any such removal should be done so as to ensure a minimum disturbance of the native vegetation, and the disturbed area should be rehabilitated, where possible, with vegetation native to the area.
- Burning off, slashing, or clearing 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 recreation 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.

K2 That the following guidelines be applied to unused roads:

1. The clearing of native trees and shrubs other than noxious weeds should continue to be clearly prohibited in the conditions of unused-road licences.
2. 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.
3. 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.

K3 That when widening or realignment of roads is proposed, sites of significance - because of geological, historical, vegetation, or landscape features that may be affected - be investigated and every effort made to retain or preserve them.

K4—K7 That a number of important sites along road reserves, listed and described below, be protected.

K4 The stands of snow gum on Winnap—Nelson Road near Drik Drik. To be managed by the Country Roads Board.

K5 The occurrences of golden wattle on the Portland—Cape Nelson Road. To be managed by the Shire of Portland.

K6 The woodlands of river red gum that occur in a number of locations on the Casterton—Langkoop Road.

To be managed by the Shire of Glenelg.

K7 The stands of snow gum on the Weecurra Road west of Digby. To be managed by the Shire of Glenelg.

Roadside picnic areas

Smaller less-developed picnic areas should supplement the Statewide system of highway parks and major reserves. They should be in attractive locations, off the road reserve, and should have some picnic facilities provided.

Recommendation

K8 That the land managing authorities establish picnic areas in suitable locations adjacent to the road reserves.

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, realising that public land provides excellent opportunities for studies of a wide range of environments, has recommended that almost all public land (including parks, wildlife reserves, and 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 minimise the danger that wildfires present to users
- located in proximity to other land types and to a variety of other land uses
- large enough to prevent over-use and to allow for zoning to protect areas of special value
- selected so as to minimise erosion and pollution hazard

No one organisation should have the exclusive right to use a particular education area, as it is important that students have the opportunity to visit a number of education areas in various land types throughout the State rather than visiting the one site several times. Minimum facilities such as toilets and shelters would be required at each 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 management of education areas should be the responsibility of the authority managing the adjacent or surrounding public land, while the Ministry for Conservation

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

Recommendation

L1 That the Tarragal area (150 ha) of public land described below and shown on the map be used to provide opportunities for students of all ages to:

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

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

Pleistocene limestone and sand sheets of siliceous sands, flat to undulating topography; open forest I of brown stringybark, shining peppermint, and manna gum, closed scrub of coast wattle; elevation 60–80 m; rainfall 860 mm per annum.

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 realised 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 organisation, 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

L2 That areas set aside for school plantations be primarily used as a teaching resource and utilised 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.

L3 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 Forests Commission and the Department of Crown Lands and Survey, where appropriate - and that the use of those considered unsuitable or no longer required be terminated.

L4 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 in which it is undertaken - activities undertaken with little or no feeling of compulsion are almost certainly recreation.

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

- Formal recreational activities include all organised sports and other group activities, while activities such as picnicking, fishing, and hiking are grouped as informal.
- Passive recreation covers situations where the individual obtains his recreation through enjoying the sights, sounds, and atmosphere of the surrounding environment while expending little physical effort. It includes 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 include playing organised sports, bushwalking, and rock-climbing.
- 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, the camping sites within the Lower Glenelg National Park would be considered to be intensively used, particularly during the summer period.

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 bulk of public land should be available for recreational uses of some sort. Accordingly it has set aside a variety of reserves that will provide a wide range of opportunities. It could not, however, make recommendations covering in detail all the forms of recreation currently pursued on public land. These include activities such as bushwalking, 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 managers.

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

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

be affected and where the natural environment or special natural features are being preserved.

Three particular forms of recreation are discussed below.

Motorised recreation

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

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

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

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

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

The demand exists for the provision of some areas of public land to accommodate and relocate the off-road activities of motor vehicles, particularly trail-bikes. Such areas could, for example, take the form of defined trails in some hardwood or softwood 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 spectators attracted to these activities are creating a serious and growing problem of damage to soils and vegetation.

Youth camps

Currently the study area contains few 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 organisation allowing use by other groups. Others are used only occasionally and exclusively by one group.

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

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

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 the chapter on 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.

Motorised 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 the land management authorities endeavour to provide some areas for off-road vehicular use within land under their control.
- M4—M5** That the areas described below and shown on the map be used for organised sports (football, horse-racing, golf, etc.) and informal recreation (picnicking, camping, etc.) as permitted by the managing authority
- 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 Crown Lands and Survey.
- M4** Existing recreation reserves.
- M5** 11 ha, being the camping and water reserve south of allotment 2A of section 4, Parish of Branhholme.

N. SCENIC RESERVES

These are set aside to preserve scenic features or lookouts of particular significance. Management of these areas should aim at maintaining the character and quality of the landscape, maintaining the native vegetation, and protecting water quality.

Recommendations

Existing scenic reserve

N1 That the existing uses and management for the Hedditch Hill area continue (J5 in the 1973 final recommendations) (as follows)

That the area be used as a lookout, and that it be reserved under [section 4 of the *Crown Land (Reserves) Act 1978*].

This recommendation refers to the existing reserve of 19 acres, which was surveyed by the Lands Department in Allotment 12, Parish of Kentbruck, in 1970.

Additional scenic reserve

N2 That the Mount Kincaid area (15 ha) shown on the map and described below be used to preserve scenic features and lookouts

and be permanently reserved under section 4 of the *Crown Land (Reserves) Act 1978* and be managed by the Forests Commission

N2 15 ha adjoining allotments 1,2,3,4, Parish of Cobboboonee

O. 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 O1—O4).

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 (see Chapter J). 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

O1—O4 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*.

Areas previously recommended for agriculture

O1 26 ha, being allotment 62B, Parish of Mumbannar (F1 in the 1973 recommendations) (as follows)

That the land at Palpara be made available in viable units for livestock production by the Rural Finance and Settlement Commission when pasture consolidation and other development is complete.

Additional areas recommended for agriculture

O2 88 ha, being allotment 25, Parish of Kaladbro.

O3 16 ha, being allotment 61B, Parish of Digby.

O4 25 ha adjoining allotments 46A and 47A, Parish of Kanawinka.

Land exchanges

O5—O6 The Council approves in principle the following land exchanges and recommends that the Department of Crown Lands and Survey be requested to proceed with these exchanges. In both cases the areas of freehold land involved should be included in the addition to the Discovery Bay Coastal Park (Recommendation A9).

O5 An area of public land north of allotment 29 of section 9, Parish of Trewalla, and an area of freehold land, being the northern portion of allotment 29 of section 9, Parish of Trewalla.

O6 An area, of public land south of allotments 2, 4, and 5A of section 3 and west of allotments 6 and 7, Parish of Trewalla, and an area of freehold land, being allotment 2 of section 8, Parish of Trewalla.

O7 The Council approves in principle a land exchange involving on the one hand an area within the uncommitted land east of allotment 11 of section 1, Parish of Kentbruck, and on the other an area of freehold land adjoining Johnstone's Creek, comprising the eastern portion of allotment 2 of section 1, Parish of Kentbruck, and the western portion of allotment 2 of section 1, Parish of Mouzie. Further, Council recommends that the National Parks Service and the Department of Crown Lands and Survey be requested to commence negotiations on this exchange (see also Recommendations G1, G7, and H11). The freehold land involved in this exchange should be added to the Discovery Bay Coastal Park (see Recommendation A5).

P. 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. In the main, it meets this responsibility through the provisions of 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 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 places human life at risk. In relation to public safety, nothing in the recommendations shall affect the powers of Inspectors under the *Mines Act 1958* and the *Extractive Industries Act 1966*.

Gold

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 the State – 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 the search not only for gold and minerals but also for other items such as bottles or coins.

Prospecting is a systematic activity, defined in the *Mines Act 1958* as 'all operations conducted in the course of exploring for gold and minerals' (including gemstones). It is necessary to hold either an exploration or search licence, or a Miner's Right, before prospecting may be undertaken. Most individual miners and prospectors operate under a Miner's Right, which does not permit prospecting on private land.

Under current legislation there is a small percentage of public land in the State where prospecting under a Miner's Right is not permitted. This includes areas used for various community purposes such as golf courses, cemeteries, 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. In some areas, however, such activities may not be permitted or may require limitation and these areas have been specifically nominated in the recommendations (see Chapter B Reference Areas).

In addition, other limited areas of land surface may, because of their special public importance or inherent instability, warrant either permanent or temporary exclusion from fossicking and prospecting. These areas may include, for example:

- land that, if disturbed, may detrimentally affect water quality, especially where the water is used for domestic consumption
- important habitats for plant species or fauna
- important historical relics that could be damaged
- sites of high erosion hazard
- community assets such as recreation areas and water or sewerage installations.

These limited areas of land surface have not been specified in the recommendations, but will be determined by the managing authority 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. Many of these materials are provided from private land, but public land is also an important source.

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

Based on current knowledge, the Council believes that these recommendations allow the shires access to resources of gravels that, together with the resources located on private land, are sufficient to last well beyond the time when Council will next review the area.

Public land is the major source of road-making material for some shires. Although resources remain on areas 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 Country Roads Board and municipal councils are not bound by many provisions of the *Extractive Industries Act 1966*.)

A substantial number of unwise excavations have been made upon public land, and in many instances, particularly with the 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 minimised.

Principles and guidelines

The terms 'exploration and extraction', referred to below, do not relate to the forms of these activities described above under fossicking and prospecting.

The Council believes that the principles and guidelines outlined below should be followed.

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', 'mineral', and 'petroleum'. The Department of Minerals and Energy and the managing authority 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 managing authority should be consulted regarding the conditions to apply, and the supervision should be in accordance with the agreed conditions as specified in the claim, licence, or lease and with the requirements of the Act.
3. Consultation should continue between the land managing authorities, the Department of Minerals and Energy, the Soil Conservation Authority, and the other relevant authorities with respect to the procedures to be adopted for the exploration and extraction of 'stone' on public land. Any operations on public land should continue to be subject to the approval of the appropriate managing authority.

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

4. A system should be established that would ensure, before work commences, the availability of funds for progressive and final reclamation of any excavation or operation. Provision should also be made to enable the acceleration of the rehabilitation of all existing extraction areas on public land.
5. Royalties for materials extracted from public land, including 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', 'mineral', or 'petroleum' unless satisfied with the program submitted by the applicant. In the case of Miner's Right claims, prior assessment is impractical and the Department should require the lodgement of a bond as surety for adequate rehabilitation. Wherever practical, the Department should seek the lodgement of mining plans that show the expected post-mining state of the land and should state operating conditions to achieve an appropriate standard of rehabilitation acceptable to the land manager.
- (b) No sites for the extraction of 'stone' should be opened in areas that the managing authority, in consultation with the Department of Minerals and Energy, considers to be of greater value for other uses, including aesthetic or nature conservation values. The advice of the Department of Minerals and Energy should also be sought as to the desirability of proposed excavations, having regard to alternative sources of 'stone'.
- (c) Extraction of 'stone' should generally be concentrated on the fewest possible sites in an area, and any one site should be substantially worked out and where possible reclamation ensured before a new site is exploited. The type of excavation to be carried out should be that with the lowest environmental impact consistent with the effective use of the resource. In general, and where the nature of the resource permits, excavations for 'stone' should be deep and limited in area in preference to shallow excavations over a wide area. The extraction of granite sand occurring as shallow deposits in the weathered profile should be discouraged unless it has been 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) All applications for the removal of stone from a stream-bed are submitted to the Department of Crown Lands and Survey. Before approving the application, the Department seeks agreement with the Soil Conservation Authority and the State Rivers and Water Supply Commission regarding particular measures that must be taken to prevent erosion, stream pollution, or permanent damage to the stream environment. It is also necessary that scenic and recreation values of the stream and adjacent frontages be considered.
- (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

- P1** 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 chapter on Reference Areas)
 - (ii) those areas that the managing authority and the Department of Minerals and Energy together may determine (see the guidelines in the section on fossicking and prospecting)

(iii) the areas referred to in P2 below.

Note: The Council is aware that some changes to existing legislation will probably be necessary to give effect to this and the following recommendation.

P2 That those areas of public land currently exempted or excepted from prospecting and 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.

P3 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 P2 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 P1.

P4 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.

P5—P11 That the areas described below be used for the extraction of 'stone' in accordance with the 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 Crown Lands and Survey.

(These areas are additional to sites on larger blocks of public land that have gravel extraction as one of the recommended uses.)

Note: 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*.

P5 2 ha adjoining allotment 27, Parish of Youpayang.

P6 10 ha west of allotment 12A, Parish of Nangeela.

Note: Part of this reserve has been stripped for gravel in the past and should be revegetated.

P7 4 ha being the quarry reserve adjoining allotment 50, Parish of Nagwarry.

P8 10 ha, being allotment 68C, Parish of Mumbannar.

P9 2 ha west of allotment 40H, Parish of Dartmoor.

P10 17 ha south of allotment 15A, Parish of Digby.

P11 4 ha adjoining allotment 1 of section 10, Parish of Mouzie.

Q. UTILITIES AND SURVEY

Many utilities occupy public land. They include roads, pipelines, power lines, power stations, hospitals, cemeteries, public halls, shire offices and depots, garbage depots, sanitary depots, and sewage-treatment works. These recommendations do not specifically refer to many of the small areas used for the purposes listed above, and no change of use is proposed. It is intended that for such areas existing legal uses and tenure should continue.

In the absence of firm planning proposals, accompanied by the necessary detailed information, it is not possible for the Council to provide for future requirements of land for survey and utilities. The use of land for these purposes will be considered when the need arises.

Government agencies concerned with provision and installation of communications equipment, transmission lines, pumped storage sites, power stations, port facilities, pipelines, roads, etc. are requested to submit proposals involving occupation agreements or the setting aside of sites on public land to the appropriate land managers at an early planning stage. This would assist in achieving co-ordinated planning, and perhaps avoid the necessity for costly resurveys.

Recommendations

General utilities

- Q1** That existing easements continue to be used to provide access and services. (Map A shows the easement for the S.E.C. power line to supply electricity to the Alcoa aluminium smelter where it crosses public land).
- Q2** That new power lines, pipelines, communications facilities, and other utilities be planned to minimise disturbance to public land and protect the values associated with this land, that they not be sited on public land without the agreement of the management authority, and that new pipelines and power lines follow existing easements if possible (this may require widening of some easements).

Garbage and sanitary depots

Council considers that sites on public land used for the disposal of garbage and sanitary material should be located so as to cause minimal conflict with conservation values. It therefore suggests that shires, together with the land managers, investigate future sites for waste disposal in areas set aside for hardwood production, as uncommitted Crown land, or in worked-out gravel pits. Particular care should be taken to avoid contamination of groundwater resources.

Facilities on public land should be shared by municipalities wherever possible to minimise the number of sites required. At the same time, it is appreciated that locating sites reasonably close to users minimises 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.

- Q3** That existing legal garbage depots (including those approved by the relevant authorities but not yet operating) continue to be available for garbage disposal.

- Q4** That rubbish-dumping be phased out of the site currently being used in the township of Dergholm (west of allotment 36B) and that the tip be relocated on public land elsewhere in the township.

Railway lines

- Q5** That, where remnants of the original vegetation remain on railway land, such vegetation be protected to the extent consistent with management practices.
- Q6** That the potential of disused railway land to be used for other government needs be assessed and taken into account when arrangements for the disposal of this land are being considered.

Trigonometrical stations

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

- Q7** That the minimum area necessary for survey purposes be temporarily reserved around trigonometrical stations on public land where it would otherwise remain as unreserved Crown land and, where other forms of public land tenure apply, that the Department of Crown Lands and Survey has the right to occupy a minimum area around the stations and provide lines of sight.

Other utility areas

- Q8** That existing legal use and tenure continue for areas that are at present reserved and used for utility purposes such as airports, public buildings, municipal depots, cemeteries, schools, etc.

but in relation to land that is apparently surplus to requirements, an assessment of public land values be undertaken and, following appropriate consultation, these areas be considered for re-categorisation by Environment Conservation Council, land exchange or disposal [added by Order in Council 10/3/1999]

Navigation aids and communications installations

- Q9** 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.

R. TOWNSHIP LAND

Public land in townships is currently used for a wide range of purposes. The Council has not proposed any change of use for such public land where the present use is for schools, public halls, sports grounds, and the like. In general, public land in townships, other than those areas that have been specifically reserved, should remain as unreserved Crown land – to be used, if required, for township purposes in the future.

Recommendation

R1 That public land in townships, other than those areas that have been specifically reserved, remain as unreserved Crown land to meet future requirements.

but in relation to land that is apparently surplus to requirements, an assessment of public land values be undertaken and, following appropriate consultation, these areas be considered for re-categorisation by Environment Conservation Council, land exchange or disposal [added by Order in Council 10/3/1999]

Note: At the mapping scale used (1:250 000), it is generally not possible to accurately define boundaries of public land in townships. 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 maps or referred to in these recommendations.

Milltown

Milltown is a small township north of Heywood. Some of the township land supports native forest and Council believes that the township boundary should be redefined. Any land not required for township purposes should be reserved as a bushland reserve.

R2 Consideration should be given to redefining the boundary of the Milltown township. Any land not included in the new boundary should be reserved as a bushland reserve.

Note: The boundaries should be defined by the Department of Crown Lands and Survey.

S. UNCOMMITTED LAND

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

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

Land classed as uncommitted includes:

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

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

Recommendation

S1 That the land shown on the map be used to:

- (a) maintain the capability of the land to meet future demands
- (b) produce those goods and services required by the community (such as forest produce, grazing, and military training) that can be supplied without seriously reducing the long-term ability of the land to meet future demands

that

- (c) the special features and values below be protected

and that the land be unreserved Crown land withheld from sale and protected forest under the provisions of the *Forest Act 1958*.

Note: Some of this land was recommended as multi-purpose areas and some was recommended uncommitted land in the 1973 recommendations.

Special features

1. Weecurra

Land in the eastern portion of the Weecurra area contains an interconnected network of perched swamps and wet heath that should be protected. The fauna of this area is also significant, as it includes the swamp antechinus, which reaches the northern limits of its distribution in this area, and the heath rat, a species that has a restricted distribution in western Victoria.

2. Roseneath—Drajurk

A chain of heavily vegetated fresh-water swamps runs along the base of the Kanawinka escarpment through these blocks. These swamps provide habitat for many species of water birds and are also important recharge areas for groundwater supplies.

3. Aquifers

Shallow unconfined aquifers underlie much of the uncommitted land. Management of the uncommitted land should aim at safeguarding the quality and quantity of the groundwater, particularly the intake areas for the aquifers used to supply groundwater to Casterton and Merino (see Recommendations D1 and D2).

4. Rennick

An extensive tract of wet shrub east of the Rennick Plantations supports a diverse and abundant small mammal fauna. Species that have been recorded there include the short-nosed bandicoot, swamp antechinus, and swamp rat.

T. 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, and only under special circumstances in parks and other areas of recreation and conservation significance.

Recommendation

T1 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 managing authority, and other relevant bodies such as the Soil Conservation Authority
- (b) the training activities be carried out under conditions specified by the managing and relevant authorities, to minimise any detrimental effects
- (c) the Forests Commission be consulted (for fire-protection purposes) with respect to training activities in protected forest and protected public land
- (d) it be excluded from reference areas, and, except under special circumstances, from parks and other areas of recreation and conservation significance.

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

U1 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 and be managed as if they were uncommitted land.

but in relation to land that is apparently surplus to requirements, an assessment of public land values be undertaken and, following appropriate consultation, these areas be considered for re-categorisation by Environment Conservation Council, land exchange or disposal [added by Order in Council 10/3/1999]

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 recognised 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.

Recommendation

U2 That the areas indicated on the map 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 Crown Lands and Survey.

1. 5 ha, being the Water Reserve adjoining allotment 15A, Parish of Nangeela.
2. 39 ha north of allotments 4 and 6, Parish of Ardno.
3. 9 ha west of allotment 74, Parish of Winyayung.
4. 4 ha adjacent to allotment 3, Parish of Bramburra.
5. 5 ha north of allotment 10, Parish of Branhholme.

APPENDIX I

The Brown Stringybark Communities of South-Western Victoria

Brown stringybark is a conspicuous component of the native vegetation over a large area of land supporting sandy soils in south-western Victoria. It occurs throughout the South-western area, District 1, and extends north to the margins of the Little Desert as well as into the Grampians area.

Over the range of this species, the considerable variation in environmental parameters such as rainfall and soil type is reflected in changes in the structure and floristics of the plant communities in which brown stringybark occurs.

A vegetation survey commissioned by the Council identified 14 different communities associated with the species in south-western Victoria in terms of their structure and understorey floristics. The survey indicated that a number of broad trends in the vegetation occur with the general increase in rainfall from less than 400 mm in the Little Desert to approximately 900 mm near the coast. The vegetation tends to become more mesic and has a gradual shift through a long list of understorey species, from characteristically 'desert' species into 'western' and Grampian species and then into 'eastern' and coastal species. There is also a gradual closure and increase in height of the formation with increasing rainfall. In the higher-rainfall areas, the vegetation communities exhibit greater complexity and other eucalypts tend to mix more with the brown stringybark.

The subtle changes in the floristics of the brown stringybark communities and the zones of overlap between the different communities provide an excellent example of the adaptations and changes in vegetation in response to changes in the environment.

One of the features of this continuum is that it contains zones of overlap between species characteristic of the drier inland areas with species normally confined to coastal areas. It is also unusual for one species of eucalypt (brown stringybark) to be represented in a sequence of vegetation communities that cover such a wide variation in environment.

The distribution of many species of native fauna is closely related to variations in the native vegetation. Due to their wide geographic distribution and variations in structural form, the brown stringybark communities provide valuable habitat for many species of birds and mammals.

Such links between the larger blocks of native vegetation enable several species that are normally restricted to coastal areas to extend their distribution inland. For example, the swamp antechinus and short-nosed bandicoot are normally only found in coastal areas except in south-western Victoria, where they have been recorded as far inland as the Dergholm region in the northern part of the study area. The presence of species such as these in the same area as species typical of the drier inland only occurs in this part of Victoria and is of considerable zoogeographic interest.

Council has included examples of each of the brown stringybark communities that occur in the South-western area, Districts 1 and 2, in conservation reserves. When the Council prepares its recommendations for the Wimmera area, it will consider including examples of the brown stringybark communities at the northern end of the continuum in conservation reserves.

Council believes, however, that as much of this continuum as possible should be retained as

native forest. If changes in land use that involve large-scale clearing of parts of the continuum occur, then the conservation value of this unique combination of plant communities will be reduced.

Clearing in the past has already fragmented several large blocks of native vegetation and severely reduced the links between other blocks. If it is necessary to allocate land to uses that involve large-scale clearing of native vegetation, it is important to preserve the remaining links and not to remove whole sectors of this continuum.