

PROPOSED RECOMMENDATIONS

CORANGAMITE STUDY AREA

**LAND CONSERVATION COUNCIL, VICTORIA
MELBOURNE, SEPTEMBER, 1977**

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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 proposed recommendations concerning the public land in the Corangamite study area. Notices showing the boundary of the study area and advising that an investigation was to be carried out were published in the *Victoria Government Gazette* of 27th February 1974, and in local and other Victorian newspapers in March 1974. A descriptive report was published on 4th September 1976. The Council received 178 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 most feasible forms of land use for the district. Extracts from the *Land Conservation Act 1970* covering the procedure to be followed in formulating recommendations were included in the descriptive report.

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

Layout

The recommendations in the text are grouped under major headings, such as Parks, Hardwood Production, and so on. The text is accompanied by 10 maps. Map A—at the scale of 1 : 250,000—covers the whole study area and gives a broad view of the recommended land uses. Map B—at a scale of 1 : 100,000—shows public land between Warrnambool and Port Fairy in greater detail. Other detailed maps show areas recommended for agriculture. More detailed information on many of the boundaries is held by the Land Conservation Council.

Land Uses

Table 1 summarizes the proposed recommendations in terms of the major forms of use. It is important to realize that each primary use has a number of compatible secondary uses. In addition to nominating the best uses for the land, the recommendations indicate what is considered to be the most appropriate form of tenure for the land and the most appropriate management authority.

The Council recommends the establishment of: two national, two State, and two regional parks in areas of particular importance for recreation and nature conservation; reference areas and education areas (covering the range of land types found in the study area); and wildlife reserves for a number of sites (mostly lakes) containing valuable faunal habitats. Most lakes are recommended as Lake Reserves to better provide for a range of uses. Large areas of land in the Heytesbury area have been recommended for agriculture, softwood production, and bushland reserves. Large areas are recommended for hardwood timber production. Recommendations for softwoods aim at consolidating existing plantations.

Where demands from competing uses vie for a given area of land, it is not possible to satisfy them all. However, these recommendations attempt to achieve balance in providing for the present needs of most forms of use while retaining flexibility and the opportunity to adjust to future changes in such demands. They do so by placing as much of the public land as possible under forms of use that do not have a major impact on the natural ecosystem, and by placing areas into the "uncommitted land" category. Flexibility in planning is essential. Our knowledge of many resources (for example, minerals) and of the distribution and ecology of plants is very imperfect. There must be many places in Victoria where special values still remain unrecognized and for which no

TABLE 1
RECOMMENDED PUBLIC LAND USE

| Major recommended land use. | Area. | Percentage of all land in study area. | Percentage of the public land. |
|---------------------------------------|--------|---------------------------------------|--------------------------------|
| | (ha) | | |
| National parks | 16,600 | 1 | 7 |
| State parks | 22,700 | 1 | 10 |
| Regional parks and recreation | 1,800 | < 1 | 1 |
| Reference areas | 1,990 | < 1 | 1 |
| Wildlife | 5,520 | < 1 | 2 |
| Hardwood production | 80,760 | 5 | 36 |
| Softwood production | 7,900 | < 1 | 4 |
| Forest area | 2,440 | < 1 | 1 |
| Flora and fauna | 4,530 | < 1 | 2 |
| Bushland, scenic reserves | 4,130 | < 1 | 2 |
| Coasts | 1,800 | < 1 | 1 |
| Education areas | 950 | < 1 | < 1 |
| Lake reserves | 40,640 | 3 | 18 |
| Agriculture | 11,770 | < 1 | 5 |
| Uncommitted | 17,100 | 1 | 7 |

All other land uses collectively make up the balance. Figures are rounded off.

special provision can be made in present planning. Furthermore, future demands for resources on public land may require alteration or modification of these recommendations, which are based on the best information presently available. The Council is aware that review will be necessary to ensure that future land use is in the best long-term interests of the community.

General Recommendations

The following seven 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. There is an urgent need to make additional field staff and finance available and the 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. In national parks and protected public land, the Commission's fire-prevention works are subject to the agreement of the managing authority or, if agreement is not reached, to determination by the Governor in Council. In State forests, which comprise reserved forest and protected forest as defined in the *Forests Act 1958*, the Forests Commission is also responsible for the control and management of the vegetation. The Council recommends:

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

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

- III That, when significant new discoveries are made on land within their administration, government agencies enlist the best advice available on the importance of such features and on any measures that should be taken to conserve them. Advice from organizations other than government authorities and academic institutions should be sought whenever appropriate.

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

- IV 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.

The Council further recommends:

- V That, as many of them have not been precisely surveyed, the boundaries of the areas referred to in the recommendations be subject to minor modification, road excisions, easements, and other adjustments that may be necessary.
- VI 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*.
- VII 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.

A park is here defined as "an area of land in a natural or semi-natural condition, reserved because of its scenery, floral and faunal content, historical interest, or other features, which is used by the public primarily for open-space recreation and education". This definition encompasses many different types of parks; they vary mainly in size and content and in the types and intensity of uses to which they are subjected. Definitions of different types of parks are needed to clarify the main 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 to maintain or enhance special values associated with flora and fauna. 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 types of purpose for which they are to be used. 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.

Road-making materials

Road construction authorities may use deposits of road-making materials that occur in parks to construct and maintain roads in the parks, subject to the agreement of the managing authority, or other authority as set out in the Minerals and Stone Production chapter.

Youth camps

Some areas of public land recommended by the Council to become parks contain sites held under licence by schools, church groups, and scouts, and are used as youth camps. The sites chosen for camps are usually in attractive environments near streams, with good access, and not exposed to high fire danger. Such sites are scarce, and their occu-

pation by one organization conflicts with their use by the general public for recreation. The camps may also have a considerable impact on the site, due to the erection of buildings and the provision of car-parking areas.

The Council believes that, while parks should cater for group camps and associated adventure and educational activities, the allocation of permanent sites to single groups in national, State, and regional parks should be phased out. It recognizes, however, that on some sites a great deal of time and effort has been expended in erecting buildings and other improvements, and that phasing out these camps may not be practicable. As an alternative, such camps should be more fully utilized throughout the year, as suggested in the chapter on Recreation, rather than their use being confined to particular groups.

The Council believes that in future the demand for youth camps should be met by the organizations involved, which should purchase or lease private land nearby for the actual camp site and erection of buildings, and use the land in the park for adventure and other activities that do not conflict with park management.

PARK CATEGORIES

National park

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

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

Multi-purpose park

An area of public land set aside to provide recreation and education in natural surroundings, in which other activities such as water production, hardwood timber production, stone extraction, hunting, or grazing are permitted where these form a part of, do not substantially conflict with, or supplement the primary object.

Victoria contains areas where, although recreation is an appropriate primary use of land, it is not desirable, economically possible, or necessary to wholly exclude other uses that would be unacceptable in national or State parks.

Regional park

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

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

Recommendations

A1 Cape Otway National Park

That the area of 10,000 ha shown on the map 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) low-intensity timber production operations by the Forests Commission in consultation with the National Parks Service continue but be phased out within a period of 10 years after the park is approved by order-in-council
 - (d) the Cape Horn quarry continue to be available for the supply of extractive materials
 - (e) permissive occupancies within the area not be transferable and be phased out as soon as possible but not later than 1985
 - (f) the proposed subdivision at Blanket Bay not be proceeded with
 - (g) the road reserve for the Great Ocean Road be excluded from the park (see Chapter L and note below)

and that it be permanently reserved under section 14 of the *Land Act* 1958 pending reservation under the *National Parks Act* 1975 and managed by the National Parks Service.

Note : The Council believes it is necessary to upgrade the Great Ocean Road and understands that this may require the realignment of some road sections. The National Parks Service should be consulted regarding any realignment proposals. Sections of the existing road reserve not required for the new road should be added to the park.

The wet mountain forests of the Otway Ranges have a distinctive flora and fauna; the fauna is intermediate between those of eastern Victoria and Tasmania.

The Cape Otway Park embodies a representative sample of this wet mountain forest—located in the Calder, Parker, and Elliott River catchments—as well as foothill forest, coastal vegetation, and heathy to shrubby woodland, with their associated fauna. Geological diversity and several uncommon plant and animal species enhance nature conservation values.

Recreation features include magnificent examples of myrtle beech gullies, cascading streams, and dramatic undeveloped coastlines.

A2 Port Campbell National Park

That the area of 6,600 ha shown on the map and described in the schedule below be used to :

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments
 - (b) conserve and protect natural ecosystems
- that
- (c) the management agency zone the park to accommodate the recreation activities traditionally associated with this area
 - (d) (i) because of the inherent instability of most of the land in this area, and (as was evident during the inspection of the currently licensed grazing areas) the continued exacerbation of erosion by the grazing on low value grazing land by domestic stock, existing grazing licences be terminated as soon as practicable but not later than 5 years after the acceptance of these recommendations
 - (ii) that a scheme similar to that devised in 1968 by the Soil Conservation Authority for fencing the Discovery Bay reserve from freehold land (in which the fencing was erected under contract at the expense of the Crown with adjacent landholder being responsible for maintenance) be investigated for this area

Note: The National Parks Service should give consideration to the continuation of horse-riding activities under supervision along defined tracks in the public land from the Aire River mouth east to the Cape Otway lighthouse reserve

- (e) vehicular access continue to be permitted to a number of points along the coast and that additional access be provided where appropriate
- (f) the existing legal use of the rifle range at Point Hesse continue
- (g) the Aire River outlet continue to be managed to provided for flood mitigation in consultation with the State Rivers and Water Supply Commission
- (h) the rubbish depot east of Port Campbell be relocated on public land about 1 km to the north (see recommendation S7)
- (i) land damaged by erosion following road construction and gravel stripping in the old Rivernook township area be rehabilitated by the managing authority in consultation with the Soil Conservation Authority
- (j) access to State Rivers and Water Supply Commission pipeline easements be provided

- (k) the remnant stands of softwood species adjacent to the Sherbrook River be maintained for their scenic value and to provide sheltered camping areas
- (l) the lease held by the Girl Guides Association over an area at Sherbrook River remain in force until the expiration of the current lease period, but the lease area or period not be extended (after expiry of the lease, the area should remain available for use by the Association under the guidelines set out in Chapter O—Recreation)
- (m) permissive occupancies within the area not be transferable and be phased out as soon as possible but not later than 1985
- (n) policy with regard to motor-boats on Curdies Inlet be determined by the managing authority (which should be the responsible authority under the *Motor Boating Act 1961*) after consultation with the Shire of Heytesbury

and that it be permanently reserved under section 14 of the *Land Act 1958* pending reservation under the *National Parks Act 1975*, and managed by the National Parks Service.

Schedule of areas listed for inclusion in the park:

- (i) all Crown lands adjacent to the coast including offshore pillars and rock stacks between allotment 17A in the Parish of Mepunga and Cape Otway (including Johanna Beach and allotment 40, Parish of Wangerrip), but excluding unused road reserves which could provide access to freehold allotments
- (ii) the existing Port Campbell National Park
- (iii) Curdies Inlet and associated frontages
- (iv) 154 ha comprising the water reserve east of allotments 21, 17, and 20, and the rubbish depot reserve within the water reserve, Parish of Paaratte
- (v) part of the former Waarre Plantation area as shown on the map.

This park, situated along some of the most spectacular coastline in Australia, is of international significance. It contains numerous sites of archaeological importance as well as relics and landmarks commemorating the many shipwrecks that occurred during colonization.

The diversity of coastline land types within the park provide a variety of flora, fauna, scenic, and recreation values. Extensive outcrops of soft Tertiary limestones, which are actively eroding, produce the rugged rock stacks, caves, arches, and tunnels between Warrnambool and Moonlight Head. To the east of Moonlight Head, the harder Otway Group sandstones resist erosion more effectively and form high steep cliffs with shore platforms that provide habitat for a variety of marine flora and fauna. In some places, particularly Peterborough and Glenaire, the coast is aggrading as sand dunes build up. Recreation and sightseeing are particularly important aspects of the traditional use of this coastline. The inclusion of the former Waarre plantation in the park provides a suitable area for the development of facilities for camping.

Note: Council believes that the area should be managed as one unit, but recognizes that retaining the name "Port Campbell" for the new park does not seem entirely appropriate. The coast has a dramatic maritime history, often being the first landfall for sailing ships out of England and the scene of many shipwrecks. Names such as "Moonlight Head", which was seen and named by Flinders in 1802 in his epic voyage in H.M.S. *Discovery* and "Western Entrance" to recognize its importance in Victoria's early days were sug-

gested. For the proposed recommendation, "Port Campbell" has been left unchanged, but Council hopes that a name providing better cover of the entire new park will be suggested.

A3 Angahook–Lorne State Park

That the area of 16,700 ha shown on the map be used to:

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments
- (b) conserve and protect natural ecosystems
- (c) supply water and protect catchments

that

- (d) the purity and quality of the domestic water supplied by the Erskine and St. George River catchments be a major constraint on the development of facilities for public access and recreation activities (see Water Production Chapter—reserves around storages)
- (e) the strategic location of the park with respect to fire protection around the various nearby seaside resorts be recognized in management

and that it be permanently reserved under section 14 of the *Land Act* 1958 and managed by the Forests Commission.

This park, comprising much of the coastal fall of the eastern Otway Ranges, is characterized by highly dissected terrain developed on Lower Cretaceous sediments and supporting open forests of messmate stringybark, blue gum, mountain grey gum, and manna gum. Particular features include many attractive waterfalls and several scenic drives and lookouts.

The park incorporates the existing Angahook and Lorne forest parks, the Erskine Falls reserve, and Grey River reserve, and is contiguous with the Angahook State Park of 3,300 ha recommended in the Melbourne Study Area.

A4 Carlisle State Park

That the area of 6,000 ha shown on the map be used to:

- (a) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments
- (b) conserve and protect natural ecosystems
- (c) supply water and protect catchments

that

- (d) the strategic location of the park with respect to fire protection in the Otway Ranges as a whole be recognized in management
- (e) emphasis be placed on the conservation of wildlife populations, especially the ground parrot

and that it be permanently reserved under section 14 of the *Land Act* 1958 and managed by the Forests Commission.

Located on the north-western flanks of the Otway Ranges, this park provides an important example of low open forest, heathy woodland, and heathlands growing on soils derived from Tertiary sediments (Wangerrip Group), as well as taller open forest more typical of the northern Otways. The profusion of showy heathland plants and the abundant bird population are attractive features of the park.

A5 Kawarren Regional Park

That the area of 650 ha shown on the map be used to:

- (a) provide opportunities for informal recreation for large numbers of people
 - (b) conserve and protect ecosystems to the extent that this is consistent with (a) above
- that
- (c) as this park is within the Gellibrand water supply catchment, any development should take into account the need to protect water supply and quality

and that it be permanently reserved under section 14 of the *Land Act* 1958 and managed by the Forests Commission.

Situated 12 km south of Colac on the road to Beech Forest and Apollo Bay, this park provides opportunities for activities such as picnicking and walking in a pleasant forest environment. Features include a dismantled railway line running along the environs of the Ten Mile Creek.

A6 Framlingham Regional Park

That the area of 1,020 ha shown on the map be used to:

- (a) provide opportunities for informal recreation for large numbers of people
 - (b) conserve and protect ecosystems to the extent that this is consistent with (a) above
- that
- (c) low-intensity timber production and grazing be permitted, provided these uses do not conflict with (a) and (b) above
 - (d) land adjacent to the reference area (B9) be managed in such a manner that the reference area is protected from the effects of any development associated with the park

and that it be permanently reserved under section 14 of the *Land Act* 1958 and managed by the Forests Commission.

Note: The value of this area as a remnant of the once extensive forests growing on basalt-derived soils should be recognized by the managing authority.

This forested park is surrounded by agricultural land and is bordered on the east by the Hopkins River. Within easy reach of Warrnambool and Mortlake, the area provides abundant opportunities for picnicking, walking, and similar recreation activities.

Geological Monument

Geological monuments are areas that contain features of great geological interest, and are reserved primarily to preserve these features for the education and enjoyment of the people. Such areas often have high recreation, nature conservation, and landscape values, in addition to geological features.

A7 Tower Hill Geological Monument

An area of 606 ha in the Parish of Yangery, managed by the Fisheries and Wildlife Division, is known as the Tower Hill State Game Reserve. This area is within the Borough of Koroit and is therefore not “public land” as defined by the *Land Conservation Act 1970*. (See Chapter C—Wildlife Reserves.)

Tower Hill has been included in this report because it is one of the most important geological features of the surrounding volcanic plain. It consists of a volcanic crater rimmed by beds of volcanic ash. The floor of the crater contains conical hills of red and black scoria surrounded by a shallow lake.

Council believes that the geological significance of Tower Hill should be emphasized in the development of educational programmes associated with this reserve.

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 would normally include typical examples of land types that have been extensively developed elsewhere for productive uses such as agriculture or softwood production. The course and effects of human alteration and utilization of the land can be measured against these relatively stable natural areas. Most developed regions have few areas remaining that are suitable as reference 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 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 reference areas from damaging or potentially damaging activities on surrounding land. It will also protect important values in the surrounding land from potentially damaging natural processes occurring on the reference area.

Access should be restricted, and experimental manipulation should not be permitted. Reference areas will enable continued study of natural features and processes, for example fauna, flora, hydrology, and nutrition. 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.

In recommending the creation of reference areas, the Council foresees the need for new legislation to specify their status. An advisory committee has been established to determine the broad policies for the management of reference areas and their buffers.

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

Recommendations

B1-B9 (a) That the areas listed below and shown on the map be used to maintain natural ecosystems as a reference to which those concerned with studying land for particular comparative purposes may be permitted to refer especially when attempting to solve problems arising from the use of land.

(b) That each reference area be surrounded by a buffer; that the authority currently managing the recommended buffer be responsible for the management of the enclosed reference area; and that the delineation of buffer zones be by joint agreement between the managing authority and the advisory committee.

- B1** Parker River (205 ha)
Quaternary alluvium, undulating plains; Miocene sediments, undulating plains; Lower Cretaceous sediments, low hills; elevation 60–140 m; approximate annual rainfall 625–750 mm; open forest II, brown stringybark, manna gum.
- B2** Stony Creek (370 ha)
Lower Cretaceous sediments, low hills; Palaeocene sediments, low hills; elevation 0–200 m; approximate annual rainfall 1,000–1,400 mm; coastal complex, brown stringybark, coastal tea tree; open forest I, brown stringybark; open forest III, messmate; open forest I, blue gum, messmate.
- B3** Calder River (155 ha)
Lower cretaceous sediments, hills; elevation 180–410 m; approximate annual rainfall 1,300 mm; open forest IV, mountain ash; closed forest II, myrtle beech–blackwood.
- B4** Olangolah Creek (120 ha)
Lower Cretaceous sediments, hills; elevation 360–520 m; approximate annual rainfall 1,500–1,700 mm; open forest IV, mountain ash.
- B5** Crinoline Creek (340 ha)
Palaeocene sediments, low hills; elevation 120–200 m; approximate annual rainfall 1,100–1,300 mm; woodland, open forest I, shining peppermint; open forest II–III, brown stringybark, messmate.
- B6** Tomahawk Creek (170 ha)
Miocene sediments; Pliocene sediments, low hills, elevation 100–160 m; approximate annual rainfall 900–1,000 mm; open forest II–III, messmate.
- B7** Carpendeit (415 ha)
Pliocene sediments, flat plains; elevation 150–160 m; approximate annual rainfall 700–800 mm; open forest II, brown stringybark, messmate.
- B8** Cooriemungle (70 ha)
Miocene sediments, undulating plains; elevation 90–120 m; approximate annual rainfall 900–1,000 mm; open forest I, brown stringybark; woodland, shining peppermint, brown stringybark.
- B9** Framlingham (140 ha)
Pleistocene Newer Volcanics (phase 1), flat plains; elevation 80 m; approximate annual rainfall 700–800 mm; open forest II, messmate.

C. WILDLIFE RESERVES

While some of Australia's animals have adapted to the changes in the environment brought by European Man, the populations of many have seriously declined, and a few have become extinct.

The conservation of fauna depends on conservation of habitat, and in Victoria the public lands contain large areas of diverse natural habitats.

The Council believes that, in areas with particular wildlife values, the authorities managing public land should note the need for both research into and 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 utilizes. They may contain the habitat of endangered species or they may have specialized breeding grounds, a high species diversity, or 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.

Recommendations

C1-C29 That the areas indicated on the map and described below be used primarily to conserve native animals, particularly water birds, and for public education and recreation where this does not conflict with the primary aim

and that they be permanently reserved under section 14 of the *Land Act* 1958, and be managed by the Fisheries and Wildlife Division.

C1 Lake Kennedy (230 ha)

Salt lake and surrounding frontages, south of allotments 22 and 35B, Parish of Linlithgow.

C2 Krause Swamp (20 ha)

Brackish lake west of and adjoining allotment 2 of section C, Parish of Linlithgow.

C3 Lake (11 ha)

Fresh-water lake and surrounding frontages, west of and adjoining allotment 6 of section 4, Parish of Yatmerone.

C4 Lake Eyang (71 ha)

Salt lake west of and adjoining allotments 112 and 115, Parish of Eilyar.

C5 Lake Oundell (75 ha)

Fresh-water lake east of and adjoining allotment 119, Parish of Nerrin Nerrin.

- C6** Nerrin Nerrin Swamp (270 ha)
Fresh-water depression south-west of and adjoining allotment 124, Parish of Nerrin Nerrin.
- C7** Lake Jollicum (75 ha)
Fresh-water lake, adjoining frontage and the Departmental camping and water reserve, east of allotment 123, Parish of Nerrin Nerrin.
- C8** Lake (13 ha)
Salt lake in the south-east of allotment 86A, Parish of Kornong.
- C9** Lake (38 ha)
Salt lake south-east of and adjoining allotment 50B, Parish of Kornong.
- C10** Pink Lake (42 ha)
Salt lake east of and adjoining allotment 54B, Parish of Kornong.
- C11** Lake (68 ha)
Salt lake east of and adjoining allotment 58, Parish of Kornong.
- C12** Lake Terrinallum (180 ha)
Salt lake south-west of and adjoining allotment 39, Parish of Terrinallum.
- C13** Lake *Barnie Buloke* (40 ha)
Brackish lake east of and adjoining allotment 1 of section VIII, Parish of Jellalabad.
- C14** Lake Bookar (490 ha)
Fresh-water lake and adjoining frontages (excluding the camping and water reserve referred to under recommendation O4), north of allotment 1 of section IV, Parish of Koort-Koort-Nong.
- C15** Round Lake (60 ha)
Brackish lake north of and adjoining allotments 3A and 3B of section VIII, Parish of Taaraak.
- C16** Melingil Lake (125 ha)
Brackish lake east of and adjoining allotment 1 of section IV, Parish of Taaraak.
- C17** Lake Terangpom (275 ha)
Brackish lake and adjoining gravel reserve, south of allotment 24, Parish of Corangamite.
- C18** Lake Struan (32 ha)
Brackish lake in sections 24 and 39, Parish of Struan.
- C19** Lake Rosine (153 ha)
Salt lake, east of and adjoining allotment 3A, Parish of Wilgul South.
- C20** Lake Cundare (395 ha)
Salt lake and the adjoining reserve, north of allotment 97E, Parish of Ondit.
- C21** Lake Murdeduke (1,500 ha)
Salt lake and the adjoining frontages, Parish of Murdeduke.

- C22** Lake Dubban (17 ha)
Fresh-water lake and the adjoining frontage, east of allotment 5 of section 12, Parish of Lake Lake Wollard.
- C23** Lake Gherang Gherang (97 ha)
Fresh-water swamp and surrounding frontages, south of allotment 7 of section 4, Parish of Lake Lake Wollard.
- C24** Lake Ayrey (19 ha)
Fresh-water lake and surrounding frontages, east of allotment 4A of section 17, Parish of Birregurra.
- C25** Lake Purrumbete (570 ha)
Fresh-water lake, including 30 m from each shore to contour line of level of overflow into Curdies River, Parish of Purrumbete.
Note: The Camping Ground north of allotment 16D is excluded from this recommendation.
- C26** Cobrico Swamp (12 ha)
Fresh-water lake south-east of and adjoining allotment 13 of section 12A, Parish of Elingamite.
- C27** Lake Gilliar (20 ha)
Fresh-water lake and frontages south of allotments 1, 2, and 3 of section 2, Parish of Mepunga.
- C28** Lake Aringa (22 ha)
Fresh-water reservoir and surrounding frontages between allotments 17 and 19, Parish of Belfast.
- C29** Goose Lagoon (4 ha)
Fresh-water swamp, south of allotment 10A, Parish of Belfast.
- C30** Lady Julia Percy Island
That the area of 150 ha indicated on the map continued to be used primarily to conserve native animals, and for public education and recreation where this does not conflict with the primary aim
and that it be permanently reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.
Note: Public access to the island should continue to be restricted, and commercial tourist-boat operators prohibited.
Lady Julia Percy Island supports major breeding colonies of a number of wildlife species including the largest colony of fur seals in Victoria and the fairy prion, known to breed on only two other Victorian Islands.

C31 Cobra Killuc

That the area of 450 ha indicated on the map be used:

- (a) to conserve a remnant of the western plains grasslands and to conserve native animals
- (b) for public education and recreation where this does not conflict with (a) above

that

- (c) the area of pine plantation (86 ha) continue to be managed by the Forests Commission in consultation with the managing authority; no further plantations should be established and the current plantation, when felled, should be regenerated with species native to the site
- (d) grazing on the areas of improved pasture be permitted for the time being at the discretion of the managing authority; grazing on the remainder of the area to cease at the end of the current licence period

and that it be reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

Cobra Killuc contains significant areas of *Themeda australis* grasslands, once the most common species on the western plains. The area is suitable for the re-introduction of animals once common to this savannah-grassland habitat. These are the bustard or plains turkey, plain wanderer, fat-tailed dunnart, and Gunn's bandicoot.

C32/A7 Tower Hill Geological Monument

An area of 606 ha in the Parish of Yangery, managed by the Fisheries and Wildlife Division, is known as the Tower Hill State Game Reserve. This area is within the Borough of Koroit and is therefore not "public land" as defined by the *Land Conservation Act* 1970.

Tower Hill has been included in this report because it is one of the most important geological features of the surrounding volcanic plain. It consists of a volcanic crater rimmed by beds of volcanic ash. The floor of the crater contains conical hills of red and black scoria surrounded by a shallow lake.

Council believes that the geological significance of Tower Hill should be emphasized in the development of educational programmes associated with this reserve.

D. WATER PRODUCTION

The catchments of the wet Otway Ranges have a high potential for water harvesting. They currently supply virtually all of the surface water used for domestic and industrial purposes in the study area as well as a large proportion of that used by the adjacent City of Geelong. Three catchments—those of the Upper Barwon, the Gellibrand, and the Erskine Rivers—are proclaimed water supply catchments. Two other areas—the Gellibrand River extension and the Skenes Creek—are currently proposed for proclamation. The use of all land within proclaimed catchments is subject to specification by notice issued by the Soil Conservation Authority, or by determination made by the Authority after consultation with the Land Conservation Council.

Public land within the proclaimed catchments and the areas awaiting proclamation have been shown by blue cross-hatching on the map. Implementation of any recommendations for this public land will require recognition that water catchment values—such as water yield, quality, and flow regime—are of prime concern.

Current management

The sub-catchments of Arkins Creek and West Gellibrand River within the proclaimed Gellibrand River catchment are currently used solely for water production and are closed to the public. The remainder of this one and the other catchments support hardwood and softwood timber production, recreation, and other uses on the public land and normal agricultural pursuits on the substantial freehold areas contained in them.

Land-use planning

The Council notes that the degree of land-use planning varies between catchments. Detailed land-use prescriptions exist only for that of the Upper Barwon River, the other proclaimed catchments being in various stages of investigation by the Soil Conservation Authority in order that it may issue the relevant land determinations. Two catchment areas are currently proposed for proclamation.

The Council maintains that this Authority should investigate all domestic water supply catchments within the study area and, where appropriate, these will be recommended for proclamation by the Land Conservation Council, in order to ensure a uniform procedure for land-use planning within these areas.

Multiple use

Recognizing that the prime water-producing areas of the State coincide with the principal mountain and forested areas, and that inland water bodies are a major attraction for recreation—the Council favours multiple use of catchments wherever possible. Where recreational use of storages is permitted it must be carefully controlled to ensure adequate protection of water quality, and responsibility for this must remain with the water supply authority.

The Council realizes that the optimum combination of land uses for catchments must vary from one land type to another, depending on the inter-relations between the environmental variables of climate, parent material, topography, soils, and organisms. The Council is aware that a particular use may not impair the quantity, frequency, or quality of water yield in one instance, but may have a profound effect in another.

Where a number of other products are required from a catchment supplying water used for domestic, industrial, or irrigation purposes, the catchment should be proclaimed under section 22 (1) of the *Soil Conservation and Land Utilization Act 1958* and also under section 5 (1) of the *Land Conservation Act 1970*.

Council believes that in most situations it is not necessary for a water supply authority to control and manage all land in its water catchment. Public authorities managing land within a proclaimed catchment should, however, consult and co-operate with the water supply authority and the Soil Conservation Authority regarding the location, timing, and type of its management activities. This is the current practice in most areas.

On the other hand, the water supply authority should control and manage the buffer strip (defined in the land-use determination) around storages and diversion works in addition to the actual waterworks area. Although the primary object of management in the buffer must always be to protect water quality, there are situations where secondary uses (such as recreation and timber production) can be accommodated. In such circumstances, the water supply authority and any other authorities concerned must agree upon the principles of management.

Water quality, yield, and regulation

The Council is aware that it is possible to improve the quality of water by treatment—at a cost. It must, however, be recognized that the higher the quality of raw water, the cheaper and more efficient the treatment is and, in most cases, the more acceptable the end product. It is also vital to safeguard the quantity and timing of yield. Catchments must be protected from soil erosion, soil compaction, and contamination from chemical or biological sources.

The implementation of proper management of land uses within catchments is extremely important and recognition must be given to the greater-than-normal need for high levels of protection. Implementation of any recommendations for public land within catchments will require that values such as water yield, quality, and flow regime are of prime concern. The Council recognizes the need for research to provide guidelines for such management.

Council considers that sterilization of drinking water is ultimately inevitable, even with controlled land use in catchments. Where multiple land use in catchments is increasing in intensity, water supply authorities should provide, at the earliest possible time, facilities for sterilization of all drinking water in accordance with established standards. The Council notes that the Commission of Public Health and the Melbourne and Metropolitan Board of Works believes that the standards for water quality adopted by the World Health Organization should be the long-term goals for domestic water supply systems.

Additional water needs

Future water needs for domestic purposes and for stock and irrigation may require the construction of additional water storages. No specific areas can be reserved for this purpose until the need has been reasonably established and possible sites are investigated. The Council notes that the State Rivers and Water Supply Commission is undertaking preliminary investigations into possible sites for major storages on the Aire and Gellibrand Rivers.

Recommendations

D1 That in the Upper Barwon Water Supply Catchment shown on the map (being a catchment that has been proclaimed and for which a land-use determination has been made), the following areas:

- (i) the storage areas
- (ii) diversion works
- (iii) associated facilities
- (iv) the buffer strips around diversion works and storages, as defined in the land-use determination

be used for

- (a) water supply purposes
 - (b) other activities permitted by the water supply authority after consultation with the Soil Conservation Authority and the Environment Protection Authority
- and that these areas be permanently reserved under section 14 of the *Land Act* 1958 for water supply purposes, and be managed by the Geelong Waterworks and Sewerage Trust.

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

- (ii) In cases where the above recommendation causes the control and management of an area to pass to a land management authority from a water supply authority, which thus loses income, Council believes that the new management authority should make adequate compensation or negotiate some other mutually acceptable arrangement.

D2–D14 That in the case of the locations listed below and shown on the map (all these locations being within catchments for which no land-use determinations have been made), the present tenure and management of public land continue for the time being

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

- (i) the storage areas
- (ii) diversion works
- (iii) associated facilities
- (iv) the buffer strips around diversion works and storages, as defined in the land-use determination

be used for

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

and that these areas be permanently reserved under section 14 of the *Land Act* 1958 for water supply purposes, and be managed by the water supply authority named.

- Notes: (i) The buffer should be wide enough to prevent direct pollution, to filter over-land flow of water, and to control access. Its width will vary to suit differences in ground slope, soil type, vegetative cover, adjoining land use, and type of facilities available for treating the water.
- (ii) The primary object of management of the buffer must be to protect water quality. Subject to this principle, the water supply authority may permit other secondary uses on the buffer. In such cases, the principles of management must be agreed upon by that authority and any other authorities concerned.
- (iii) In cases where the above recommendations cause the control and management of an area to pass to a land management authority from a water supply authority, which thus loses income, Council believes that the new management authority should make adequate compensation or negotiate some other mutually acceptable arrangement.
- D2** South Otway Number 2 Pumping Station; State Rivers and Water Supply Commission.
- D3** South Otway Number 1 Pumping Station; State Rivers and Water Supply Commission.
- D4** Gellibrand Main Pumping Station; State Rivers and Water Supply Commission.
- D5** Gellibrand River Pumping Station; State Rivers and Water Supply Commission.
- D6** Arkins Creek diversions; State Rivers and Water Supply Commission.
- D7** West Gellibrand Dam; Colac Waterworks Trust.
- D8** Olangolah Weir; Colac Waterworks Trust.
Note: Refer to recommendation H13, Flora and Fauna Reserves.
- D9** Barham River (West Branch) offtake; Apollo Bay Waterworks Trust.
- D10** Andersons Creek offtake; Apollo Bay Waterworks Trust.
- D11** Skene's Creek offtake; Skene's Creek Waterworks Trust.
- D12** Allen Reservoir; Lorne Waterworks Trust.
- D13** Erskine River offtake; Lorne Waterworks Trust.
- D14** Lardner Creek offtake; Gellibrand Waterworks Trust.
- D15–D40** That in the case of the following off-river storages and water supply installations, the storages and installations and their associated reserves remain under their existing tenure and control. In these cases no proclamation is necessary.
- D15** Rough and Tumble reservoir; north-west of allotment 22 of section 5, Parish of Lorne (Township of Lorne); Lorne Waterworks Trust.
- D16** Service basin; 0.5 ha, being portion of allotment 6, Parish of Krambruk; Apollo Bay Waterworks Trust.
- D17** Service basins; 9.7 ha in the south-east corner of allotment 38, Parish of Elliminyt; Colac Waterworks Trust.

- D18** Service basin; 0·5 ha, being portion of allotment 4A in section A, Parish of Yaugher; Forrest Waterworks Trust.
- D19** Barramunga Pumping Station; 0·5 ha north-west of allotment 23, Parish of Barramunga; Geelong Waterworks and Sewerage Trust.
- D20** Groundwater treatment site; 10·0 ha on the Barwon Railway Station Reserve; Geelong Waterworks and Sewerage Trust.
- D21** Wurdiboluc Reservoir; 200 ha south-east of Winchelsea, Parish of Tutegong; Geelong Waterworks and Sewerage Trust.
- D22** Storage tanks; 0·1 ha, being portion of allotment 10C, Parish of Moorbanool; Gellibrand Waterworks Trust.
- D23** Service basin; 1·0 ha, being portion of allotments 5 and 6A, Parish of Tooliorook; Lismore–Derrinallum Waterworks Trust.
- D24** Timboon service basins; 1·3 ha, being portion of allotment 77C, Parish of Timboon; Shire of Heytesbury Waterworks Trust.
- D25** Storage tank; ·04 ha, being portion of allotment 17B of section 2, Parish of Paarate; Shire of Heytesbury Waterworks Trust.
- D26** Service basin; 0·7 ha, being portion of allotment 24A, Parish of Lake Lake Wollard (Township of Winchelsea); Winchelsea Waterworks Trust.
- D27** Birregurra service basins; 4·3 ha, being portion of allotment 7 of section 9, Parish of Whoorel; State Rivers and Water Supply Commission.
- D28** Simpson service basin; 10·0 ha east of the Township of Simpson; State Rivers and Water Supply Commission.
- D29** Carpendeit Pumping Station; 0·1 ha, being part of allotment 16, Parish of Carpendeit; State Rivers and Water Supply Commission.
- D30** Donalds Hill storage; 9·0 ha, being part of allotment 2 of section 9, Parish of Colongulac; State Rivers and Water Supply Commission.
- D31** Camperdown Pumping Station; ·01 ha west of allotment 5, Parish of Tandarook; State Rivers and Water Supply Commission.
- D32** Cobden service basin; 22·0 ha, being part of section D, Parish of Tandarook; State Rivers and Water Supply Commission.
- D33** Mt. Ewen storage; 50 ha, being portion of section 10A, Parish of Marida Yallock and part of allotment 2 of section 2 and adjacent road reserve, Parish of Elin-gamite; State Rivers and Water Supply Commission.
- D34** Terang Pumping Station; 0·1 ha, being part of allotment 30, Parish of Terang; State Rivers and Water Supply Commission.
- D35** Terang tank and Noorat Pumping Station; 0·3 ha, being part of allotments 13 and 14 and adjacent road reserve, Parish of Terang; State Rivers and Water Supply Commission.
- D36** Noorat storage tank; 0·4 ha, being part of section 21, Parish of Glenormiston; State Rivers and Water Supply Commission.

- D37** Tank Hill storage; 25 ha, being part of allotments 67A and 67B, Parish of Garvoc; State Rivers and Water Supply Commission.
- D38** Cudgee Pumping Station; 0·1 ha, being part of allotment 3 of Section A, Parish of Tallangatta; State Rivers and Water Supply Commission.
- D39** Brierley Pumping Station and basin; 2·85 ha, being part of allotment 8 of section A, Parish of Wangoom, City of Warrnambool; State Rivers and Water Supply Commission.
- D40** Plantation road storage; 4·4 ha within the Sherbrook River pine plantation, Parish of Waarre; State Rivers and Water Supply Commission.
- D41–47** That the following areas be used to provide watering points for stock and that they be reserved under section 14 of the *Land Act* 1958 as water reserves, and managed by the Department of Crown Lands and Survey. These areas include springs and waterholes in predominantly grazing districts.
- D41** 2·5 ha north of allotment 29A(2), Parish of Cundare.
- D42** 20 ha east of allotment 6B, Parish of Warrion.
- D43** 7 ha east of allotment 2A of section VI, Parish of Wangoom.
- D44** 0·2 ha east of allotment 49B, Parish of Bamba.
- D45** 8·4 ha south-west of allotment 67, Parish of Bamba.
- D46** 9·7 ha west of allotment 2 of section 38, Parish of Struan.
- D47** 2·4 ha, being section A, Parish of Struan.

E. HARDWOOD PRODUCTION

Timber from the hardwood forests of the study area has played a significant part in the State's development since the earliest days of European settlement. About 9% of Victoria's high-quality forests are found here, and their proximity to the major markets considerably enhances their value.

The most important species are mountain ash and messmate stringybark. Other species include manna gum, blue gum, and mountain grey gum. The hardwood industry based on the study area directly employs about 360 persons in harvesting and initial processing of sawlogs and currently utilizes about 110,000 m³ of timber annually. This volume comprises sawlogs and pulpwood in roughly equal quantities. Minor products such as poles and veneer logs are also obtained.

On the scale at which it has traditionally been practised, hardwood production is compatible with many other uses, such as conservation of flora and fauna and many types of outdoor recreation. It has also been a flexible use, allowing the possibility of later adaptation.

Constraints are nevertheless placed on timber production in order to protect floral, faunal, recreational, water catchment, and landscape values when intensive silvicultural techniques such as clear-felling are employed, and as the community becomes increasingly aware of other forest values. Logging is excluded from reference areas and from many parks; furthermore, management prescriptions normally apply restrictions in areas close to streams, on steep slopes, or of special landscape significance.

The net area available for timber production thus decreases, and so it may be necessary to increase the productivity of areas to be used for timber production, despite the fact that their capability for non-timber uses may well decline as a consequence.

The Council believes that most of Victoria's timber requirements could be produced from intensively managed forests located in the areas of highest productivity. Intensive management is the accepted practice with softwood and other forms of primary production; in the case of hardwood it has the advantage of reducing the costs involved in roading, harvesting, regeneration, protection, and management. Although a general constraint to maintain the productivity of these areas would still apply, short rotations, changes in species or genetic strains, application of fertilizers, and extensive clearing would be appropriate in some instances.

The Council realizes that, although some areas of ash-type species are intensively managed at present, the extension of this type of management to significant areas of forest can be achieved only in the long term. Thus many existing forests—which have generally resulted from past fires and logging activity and whose productivity is far below their potential—must continue to be used to meet existing and foreseeable needs, and in these recommendations hardwood timber production remains the primary use of large parts of the study area.

The Council also realizes that the recommended hardwood production area contains a mosaic of forests of varying productivity, including some parts that are unsuitable for timber production. These are nevertheless included for ease of management. The hardwood production area also includes some areas of productive forest with significant

water production, landscape, or conservation values. Constraints are therefore imposed in some cases, and the Council has defined areas where particular non-timber values must be protected.

Recommendations

E1–E12 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 recognized and protected

(d) particular values as listed below be protected by means of reserves under section 50 of the *Forests Act 1958*, or by management prescriptions prepared (in the case of fauna) in consultation with the Fisheries and Wildlife Division

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

E1 Boonah Forest (14,000 ha)

E2 Barwon Forest (11,700 ha)

(a) Lake Elizabeth and its environs should be reserved for recreation under section 50 of the *Forests Act 1958*.

E3 South-eastern Otways Forest (13,300 ha)

(a) The special values of this forest for recreation use in association with the adjacent State park should be recognized in management.

E4 Barham Forest (7,860 ha)

(a) Landscape values of forested slopes as viewed from Turtons track should be maintained.

(b) Turtons tracks should not be used for access to logging areas or for the transport of logs.

E5 Aire Forest (10,200 ha)

(a) The stands of myrtle beech along the Aire River, Youngs Creek, and tributaries in this catchment should be reserved for recreation and conservation under section 50 of the *Forests Act 1958*

Note: The Council is aware that the Aire River is a potential source of high-quality water and that it will eventually be required for water supply purposes as demands on the present supply systems increase.

(b) The area of 175 ha indicated by cross-hatching on the map should be reserved under section 50 of the *Forests Act* 1958 for the protection of mountain forest—including mountain ash—growing on Tertiary sediments.

- E6** Sheeppark Creek Forest (1,700 ha)
- E7** Kennedys Creek Forest (2,500 ha)
- E8** Jancourt Forest (1,900 ha)
- E9** Wonga Forest (4,200 ha)
- E10** Upper Gellibrand Forest (1,200 ha)
- E11** Lardner Creek Forest (4,000 ha)
- E12** North-western Otways Forest (8,200 ha)

F. SOFTWOOD PRODUCTION

The study area contains substantial areas of softwood plantations on both public and private land. The Forests Commission plans to increase its plantations within the Otway development zone from its present area of 3,800 ha net to 8,000 ha net at a rate of 200 ha annually.

Its existing plantation at Aire Valley currently supplies two sawmills in the Colac area. The Commission intends to increase the supply of softwood sawlogs to industry as part of its policy to maintain a viable timber industry based on the Otways. No legislation concerning long-term commitments to supply softwood pulpwood has been enacted.

The recommendations make available to the Commission an area of 500 ha net in four different localities. Plantings at two of these will consolidate existing plantations and at another will complete plantings on cleared farmland recently purchased for this purpose.

An additional area of 2,300 ha at Irrewillipe has been recommended for softwood plantations. This public land has been cleared by the Rural Finance and Settlement Commission. Council has not specified whether the Forests Commission or private companies should have rights to this area.

Non-government Plantations

The Council believes that private softwood plantings should be substantially based on private property. Public land may be made available to companies for softwood plantings, where its use would serve to consolidate the project. Such land should remain in public ownership, with the rights to and conditions of its use covered by a lease.

A number of private companies own substantial areas of land suitable for softwoods and have established a total of about 3,000 ha of softwood plantation in the area.

Recommendation F2 leaves the option open for private softwood planting on land at Irrewillipe.

Plantation Planning Guidelines

Council believes the impact that large plantations of softwoods have on the natural environment can be lessened by retaining selected areas of native vegetation, and by adhering to catchment prescriptions laid down by the relevant management authorities where applicable. The guidelines set out below apply to the establishment of plantations on public land in this study area.

No continuous plantation area should exceed 1,400 ha without obvious break-up areas retained as native forest. Large samples (100–200 ha) of all vegetation types in the area should be retained. Where possible, several types 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 recreational values.

Any utilization, including that carried out prior to clearing, should be carefully controlled, and slash, snig tracks, and landings cleaned up. No retained area should be fuel-reduced in its entirety in any one year.

Native vegetation should be retained for at least 40 m from each bank along minor streams and 80 m from each bank along major streams, and such areas should be kept free of exotic vegetation. This is in line with other Council recommendations that all wetlands on public land be conserved. These strips of retained native vegetation should be kept free of bulldozed material, and windrows should be swept back from them to protect them from hot burns. They should be linked to areas of native forest wherever possible, to allow movement of wildlife.

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:

- (i) retaining uncleared foreground reserves
- (ii) breaking up areas to be cleared with strategically located strips or blocks of vegetation
- (iii) 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.

The above guidelines have been adapted from those prepared and used by the Forests Commission. Obviously, planning plantations in this way increases their gross area. Allowances for this have been made in calculating the areas allocated to softwoods.

Recommendations

F1 That the present plantations of 5,000 ha gross shown on the map continue to be used for the production of softwoods and the provision of other goods and services compatible with the primary use, as well as providing opportunities for education and recreation

and that they be reserved forest under the provisions of the *Forests Act* 1958 and managed by the Forests Commission.

F2 Rural Finance and Settlement Commission (Irrewillipe)

That an area of 2,300 ha gross be used for softwood production, within which the available suitable area may be planted to softwoods in accordance with the plantation planning guidelines, and use of this land for this purpose be dealt with under existing legislation.

F3–F6 That the areas shown on the map and described below be used for softwood production in accordance with the plantation planning guidelines

and that they be reserved forest under the provisions of the *Forests Act* 1958 and managed by the Forests Commission.

F3 McDonald Creek; 74 ha gross, within which an area of 40 ha may be planted to softwoods.

F4 Lardner Track; 175 ha gross, within which an area of 140 ha may be planted to softwoods.

F5 Barramunga; 105 ha, being allotments 73 and 78C, Parish of Barramunga, within which the available area may be planted to softwoods.

F6 Wormbete; 250 ha gross, within which an area of 215 ha net may be planted to softwoods.

Note: Proposed plantation areas F3 to F5 fall within the Upper Gellibrand proclaimed water catchment, and F2 falls within the proposed extension to the Upper Gellibrand catchment.

G. FOREST AREA

When making recommendations on land for softwood plantations, the Council has recognized that their establishment constitutes a major change from any natural ecosystems they replace. Further, it realizes that softwood production is a long-term endeavour and that restoring the plantation areas to a natural condition may be difficult. Adjacent areas of public land that have high nature conservation and/or landscape values thus play an important role in maintaining a local balance in land use. Because of their locations, these areas are also important for protecting the softwood resource from fire, and therefore must also be managed for this purpose. Such land has been designated forest area.

Recommendation

G1 That the area of 2,440 ha indicated on the map be used for:

- (a) conservation of fauna and flora, and preservation of scenic values
- (b) protection of the adjacent area recommended for softwood production
- (c) low-intensity hardwood production, recreation, education, forest grazing, honey production, and mining, where these activities do not conflict with (a) above
- (d) water supply and catchment protection where these areas lie within water supply catchments

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

H. FLORA RESERVES AND FLORA AND FAUNA RESERVES

FLORA RESERVES

These reserves are significant because they contain examples of native vegetation with considerable floristic value in a natural or near natural state. They are set aside primarily to conserve species that may be rare or endangered and associations of native plants that are poorly represented on public land. Council recognizes that all flora reserves have an associated fauna, and where these values are known they have been referred to in the following recommendations.

Recommendations

- H1-H4** That the areas indicated on the map and described below be used to conserve particular species or associations of native plants and that they be permanently reserved under section 14 of the *Land Act 1958*, and managed by the Department of Crown Lands and Survey.
- H1** 1.0 ha in the south-west of allotment 36A, Parish of Nullawarre.
- H2** 287 ha, being allotments 9A, 9C, 13, 16, and 17 and an area to the north and west of allotment 1, of section C, Parish of Waarree.
Note: The area occupied by the Corriemungle telephone exchange in allotment 9C is excluded.
- H3** 16.2 ha east of allotment 8A of section 2A, Parish of Krambruk.
- H4** 64 ha south of allotment 24B, excluding stream frontage, Parish of Wongarra.

FLORA AND FAUNA RESERVES

These reserves are significant because they contain flora and fauna communities in a natural or near-natural state.

Recommendations

- H5-H13** That the areas shown on the map and described below be used to conserve native plants and animals and that they be permanently reserved under section 14 of the *Land Act 1958*, and managed as indicated in the schedule below.
- H5** 103 ha south of allotments 11A, 11B, 11C, and 11D, Parish of Yambuk—to be managed by the Department of Crown Lands and Survey.
- H6** 4 ha north-east of allotment 70D, Parish of Nullawarre—to be managed by the Department of Crown Lands and Survey.
- H7** 13.5 ha adjoining south-east corner of allotment 18B, Parish of Pomborneit—to be managed by the Fisheries and Wildlife Division.

- H8** 3·2 ha in the south-east of allotment 13B, section A, Parish of Pomborneit—to be managed by the Fisheries and Wildlife Division.
- H9** 16 ha north of allotment 74, Parish of Yan Yan Gurt—to be managed by the Department of Crown Lands and Survey.
- H10** 825 ha, being the area south of Carpendeit adjacent to the Jancourt Forest, Parish of Carpendeit—to be managed by the Forests Commission.
- H11** 1,550 ha, being the area adjacent to Crinoline Creek, east of Chapple Vale, Parish of Moomowroong—to be managed by the Forests Commission.
- H12** 125 ha, being the existing native flora and fauna reserve, west of allotments 28D and 28B, of section A, Parish of Yaughter—to be managed by the Forests Commission.
- H13** 1,525 ha, being portions of the Olangolah water reserve, reserved forest and unreserved Crown land adjacent to Turtons Track and west of Mt. Sabine, Parishes of Olangolah and Barramunga—to be managed by the Forests Commission.

- Notes: (i) Turtons Track traversing the southern portion of this reserve should be preserved as a scenic road and the present alignment retained.
- (ii) Portion of this area (260 ha) comprises land purchased for water supply purposes in 1948/49. Council believes that the purchasing authority should be relieved of indebtedness resulting from the purchase of this land.
- (iii) The values of this area for water supply should be recognized in management and the water supply authority should be consulted in matters relating to water supply protection.

I. BUSHLAND RESERVES

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

The Council recommends that many of these small remnants of the native vegetation should become bushland reserves. Their major use is to maintain the distinctive Australian character of the countryside, and to provide diversity in the landscape. They may also provide some opportunities for passive recreation in relatively natural surroundings. The areas are generally too small to be significant 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, timber production, and gravel extraction 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, however, and the management authority may have to exclude them from some, at least temporarily, in order to permit regeneration of tree species.

Recommendations

II-II5 That the areas indicated on the map and described below be used to:

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

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

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

and that they be permanently reserved under section 14 of the *Land Act* 1958, and be managed as indicated in the schedule below.

II 283 ha, being the reserved forest south of allotment 73, Parish of Timboon—to be managed by the Department of Crown Lands and Survey.

II2 520 ha north of allotments 13A and 14, Parish of Waarre—to be managed by the Department of Crown Lands and Survey.

II3 200 ha, being allotments 1 and 2, Parish of Coradjil—to be managed by the Forests Commission.

II4 850 ha, being uncleared land adjacent to Tomahawk Creek, Parish of Coradjil—to be managed by the Forests Commission.

II5 1,350 ha, being uncleared land west of the Gellibrand River, Parish of Wiridjil—to be managed by the Forests Commission.

- I6** 79 ha, being allotments 22N, 22O, and 22P, Parish of Yaugher—to be managed by the Forests Commission.
- I7** 2·2 ha south of allotment 76E, Parish of Murroom—to be managed by the Department of Crown Lands and Survey.
- I8** 12 ha east of allotment 51E, Parish of Bamba—to be managed by the Department of Crown Lands and Survey.
- I9** 30 ha, being allotments 70A and 70B, and the gravel reserve adjoining the north-east of allotment 70A, Parish of Bamba—to be managed by the Department of Crown Lands and Survey.
- I10** 11 ha north of allotment 24C, Parish of Wensleydale—to be managed by the Department of Crown Lands and Survey.
- I11** 125 ha north of allotment 57, Parish of Gherang Gherang—to be managed by the Department of Crown Lands and Survey.
- I12** 300 ha, being allotments 16D and 21B, Parish of Latrobe—to be managed by the Forests Commission.
- I13** 64 ha, being allotment 64, Parish of Aire—to be managed by the National Parks Service.
- I14** 46 ha, being the eastern part of allotment 60, Parish of Aire—to be managed by the National Parks Service.
- I15** 1·4 ha adjacent to the south of allotment 19C, Parish of Wongarra—to be managed by the Forests Commission.

J. THE COAST

The coastal zone within the study area contains some of the most spectacular coastline scenery in Australia and is also of great value for nature conservation. This resource will undoubtedly come under increased recreation pressures.

In formulating the following recommendations for public land along the coast, the 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 any committees of management on the coastal reserve should be subject to approval (prior to implementation) by the Department of Crown Lands and Survey. Other government agencies concerned with coastal development (such as the Ministry for Tourism and the Department of Youth, Sport, and Recreation), or with coastal maintenance (such as the Ports and Harbors Division of the Public Works Department) should also consult with the management authority before authorizing any expenditure for the implementation of coastal works.

COASTAL RESERVES

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 purpose (national and State parks, flora reserve, recreation reserves, or major ports) would not be included in the coastal reserve.

Recommendations

J1–J2 That the areas listed below and shown on the maps

(a) be used to:

- (i) provide opportunities for informal recreation for large numbers of people, and also for recreation related to enjoying and understanding nature
- (ii) protect and conserve natural coastal landscapes and ecosystems—and geomorphological, archaeological, and historic 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 shipping, fishing, and boating (including harbor facilities), together with the necessary navigation aids

and that the management authority

- (b) manage the areas according to policies they develop in consultation with the Ports and Harbors Division, Soil Conservation Authority, and the municipalities or Committees of Management

- (c) in the policies for the coastal reserve, recognize 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 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 jetties, marinas, mining, sea walls, etc.
 - (iii) occupation of coastal public land by private individuals or organizations should be phased out; 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 management authority
 - (iv) if camp sites and car parks are to be established on coastal reserves, the managing authority should avoid locating these on sensitive areas or on areas of importance for nature conservation; consideration should be given to relocating some existing camp sites and car parks
 - (v) where public rights-of-way are obstructed by privately constructed walls, buildings, fences, etc., such obstructions should be removed

that

- (d) in order to rectify or prevent soil erosion on coastal public land, the Soil Conservation Authority should, after consultation with the managing authority and the Ports and Harbors Division, recommend that the Governor-in-Council proclaim certain sections of the coast—with a view to carrying out such reclamation and stabilization measures as are necessary and determining appropriate land uses and management practices

- (e) J2 be zoned in order to provide for a range of uses as outlined below and be managed in co-operation with the Fisheries and Wildlife Division

and that

- (f) the areas J1 and J2 be permanently reserved as coastal reserve (their seaward boundaries being low-water mark) and managed by the Department of Crown Lands and Survey.

J1 The coastal frontage from Loutit Bay, Township of Lorne, to south of allotment 12, Parish of Krambruc, excluding the frontage from the north-eastern boundary of allotment 71A, Parish of Lorne, to the northern boundary of allotment 27A, Parish of Kaanglang.

J2 The coastal frontage from Pickering Point, City of Warrnambool to Griffiths Island, Borough of Port Fairy.

J2—Zone I The coastal frontage land, swamps, and dunes, except those areas specifically referred to under other zones.

The land within this zone should be used to:

- (i) conserve the flora and fauna
- (ii) maintain the stability of the coastal dune formations
- (iii) provide for low-intensity recreation activities such as walking and picnicking

- (iv) provide for access through the dunes to the Zone II beach frontage at points defined by the managing authority in consultation with the Soil Conservation Authority
 - (v) protect areas of archaeological significance, especially the aboriginal shell midden and camp deposit sites from Belfast Lough to Killarney Beach
- and no further roads parallel to the coast should be built in this zone from Levys Point to Belfast Lough except between the existing Port Fairy Golf Club road and allotment 12, Parish of Koroit.

J2—Zone II The beach frontage and rock outcrop areas on the coastline, except the area from Mills Reef to Killarney Beach and Killarney Beach to Rutlegdes cutting.

The land within this zone should be used to:

- (i) provide for recreation activities such as swimming, fishing, boating, walking, and picnicking
- (ii) conserve fauna, particularly migratory beach wading birds
- (iii) maintain the stability and scenic beauty of the coastline.

J2—Zone III The beach frontage and rock outcrop areas on the coastline from Mills Reef to Killarney Beach and Killarney Beach to Rutledges cutting.

The land within this zone should be used to:

- (i) conserve the habitat and resting places for migratory beach wading birds
 - (ii) provide for nature study activities, walking, and fishing
 - (iii) maintain the stability and scenic beauty of coastline
- and the area should be managed in co-operation with the Fisheries and Wildlife Division.

J2—Zone IV The areas of lake and swamp land contained in Belfast Lough and Salt Water Swamp.

The land within this zone should be used to:

- (i) conserve wildlife
- (ii) provide for low-intensity recreation and public education.

J2—Zone V The existing public park reserve (Golf Course) and Killarney Beach in the Shire of Belfast, and the Rutledges Cutting area in the Shire of Warrnambool.

The land within this zone should be used to:

- (i) provide for recreation activities
 - (ii) maintain the scenic beauty and stability of the area
- and the area should be managed in co-operation with the Shires of Belfast and Warrnambool.

J2—Zone VI The area of swamp land known as Kellys Swamp.

The land in this zone should be used to:

- (i) provide for existing drainage and flood mitigation
- (ii) provide for stock grazing
- (iii) provide wildlife habitat consistent with (i) and (ii) above.

Note : Council recognizes that portions of the reserve extend within the City of Warrnambool and the Borough of Port Fairy. It considers it desirable to treat the land in this coastal reserve as a whole, and therefore suggests that land within the City and Borough be managed in a similar manner to adjacent areas.

SCENIC COASTS

A scenic coast is defined for the purpose of these recommendations as a coastline of outstanding beauty that remains in a relatively unspoilt state. This quality is derived primarily from natural attributes, but may be supplemented or enhanced by man-made features such as lighthouses that serve to dramatize the landscape, or by pleasant rural landscape elements.

A high proportion of the Corangamite coastline fits this description, and is an important component in the State's coastal landscape heritage. The Council believes that it is important to protect the landscape qualities of such coastlines, and that such areas should be used primarily for public enjoyment, education, and inspiration in coastal surroundings in a manner that will leave landscape values unimpaired.

In making these recommendations for the Corangamite study area the Council has taken into account the landscape qualities of the coastline elsewhere in the State.

Recommendation

- J3** That the coastline from Lorne to Warrnambool shown on the map be designated scenic coast, and that planning and management in the area give special emphasis to the protection of the outstanding natural landscape qualities.

K. RIVERS AND STREAMS

PUBLIC-LAND WATER FRONTAGES

Along numerous rivers and streams in the study area a strip of public land has been retained between the water and adjacent alienated land. No public-land strip adjoins land alienated before 1881, and a large number of properties in the study area have titles that extend to the 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 a 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. In all cases the land usually comes under the control of the Department of Crown Lands and Survey, while 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 reserves, and river improvement or drainage trusts under the guidance of the State Rivers and Water Supply Commission may be formed in certain areas. The Forests Commission controls forest produce on public-land water frontages, except where a committee of management has been formed. Public-land frontages alongside artificial water storages and aqueducts are often controlled by the management authority that controls the water.

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

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

previously unlicensed public water frontages, now being issued by the Department of Crown Lands and Survey, require the licensee to erect a stile or gate in any fence erected across the frontage where appropriate, to facilitate public access. This condition has not been applied to the majority of existing licences and Council believes that in some situations—for example, along popular fishing streams—the provision of stiles would facilitate pedestrian access along public-land water frontages and would reduce damage to fences and avoid gates being left open.

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

The maintenance of a vegetation cover along stream banks is important in preventing soil erosion and in preserving the local landscape. Public-land water frontages are sometimes valuable for nature conservation as well, as they may provide corridors for movement of nomadic and migratory species, or support native plants and animals that are no longer found in surrounding areas. In too many cases, however, the provisions of the relevant Acts have not been enforced effectively and such public-land water frontages have been progressively cleared of native vegetation. Some with special value for uses such as protection of water supplies, recreation, or nature conservation have been designated as water, streamside, flora and fauna, or bushland reserves, as appropriate in the particular case.

Public-land water frontage reserves

Water frontage reserves are defined for the purposes of the recommendations as being all existing water frontage reserves and other reserved or unreserved public land adjoining streams, except for those areas that have been set aside elsewhere in these recommendations, either as part of a large reserve (such as a national park or reserved forest) or for some special purpose (such as a wildlife, flora, recreation, or streamside reserve).

Recommendation

K1 That the public land defined above

(a) be used to:

- (i) protect adjoining land from erosion by the maintenance of an 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

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 should be permitted (non-damaging activities such as walking, observing nature, fishing, or just

relaxing should be allowed, but potentially damaging activities such as camping, lighting fires, or using motor or motorized recreation vehicles should be prohibited)

- (ii) licensees be required to provide stiles in any fences erected across their licence area if requested to do so by the 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 Utilization Act 1958*
- (iv) in particular cases, licensees may be required to fence off and exclude stock temporarily from some parts of the licence area where, in the opinion of the management 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 erection of buildings on public-land water frontages

and that

- (d) (i) public-land water-frontages be permanently reserved under section 14 of the *Land Act 1958*
- (ii) where it is adjacent to or within a proposed national, State, or regional park, reserved forest or education area, or reference, bushland, streamside, scenic, flora or fauna, or wildlife reserve, it be managed by the authority responsible for the adjoining or surrounding land
- (iii) where it is not adjacent to a park or reserve 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.

STREAMSIDE RESERVES

Throughout the study area, small blocks of public land adjoin streams but are not included in the public-land water frontage. These blocks have, where appropriate, been designated streamside reserves.

Some of them are currently reserved under section 14 of the *Land Act 1958*; others are unreserved Crown land, although they may be licensed for grazing. Vegetation on these areas varies from woodland to open 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 management 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 streamside reserves be managed by the authority responsible for the streamside reserve.

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

Recommendations

K2-K10 That the areas shown on the map and described below be used to:

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

and that they be reserved under section 14 of the *Land Act* 1958 and managed by the Department of Crown Lands and Survey, except where otherwise indicated.

- K2** 8.5 ha on the Hopkins River, east of allotment 48, Parish of Framlingham East.
- K3** 3.0 ha, being the water reserve north of allotment 2A of section 1, Parish of Marida Yallock.
- K4** 5.25 ha, being the water reserve north-west of allotment IIIA, Parish of Vite Vite.
- K5** 12 ha, being the road, camping, and water reserve east of allotments 70A and 70B, Parish of Wilgul North.
- K6** 4 ha, being the camping and water reserve east of allotment 19A, Parish of Gellibrand.
- K7** 1.6 ha, being the camping and water reserve east of allotment 38, Parish of Yeo.
- K8** 0.5 ha, being the water reserve adjacent to allotment 26C of Section A, Parish of Yaughar—to be managed by the Forests Commission.
- K9** 20 ha, being the water supply reserve west of allotment 18 of section 3, Parish of Krambruk.
- K10** 16 ha, being the camping reserve east of allotment 1, Parish of Wangerrip.

L. ROADSIDE CONSERVATION

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

Nature conservation

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

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

Recreation and landscape

In rural districts vegetation along roads is often a major component of the landscape, breaking the monotony of cleared paddocks and accentuating the contours of the land. It provides a pleasant, variable road environment for motorists, and shady areas for rest and relaxation, especially where wayside stops have been established.

The character of such roadside environments should be recognized and maintained where possible. Examples include the Hawks Nest road (which crosses the "stony rises" between Pomorneit and Pirron Yallock) and the Wild Dog Creek and Skenes Creek roads (which climb from the Otway coastline to the main ridge).

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 (9,000 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 forest. (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.

Main recreation roads

A number of roads in the study area receive high recreational use. They include the Great Ocean Road, the Colac-Apollo Bay Road, and Turtons Track.

Council believes that it is important that the diversity and attractiveness of the landscape viewed from such roads should be maintained or improved. This requires concern for the landscape values of adjoining private and public land, as well as proper management of the road reserve. In considering the planning of such roads, the need to provide roadside relaxation facilities should also be given high priority.

Back roads

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

Recommendations

- L1** That road reserves throughout the State continue to be used for communication, transport, access, surveys, and utilities. Landscape, recreation, and nature conservation values can best be protected by observing the following guidelines. The Council recognizes that many of these are already being implemented by the Country Roads Board:
- (i) 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.
 - (ii) Where a road carrying a healthy stand of trees is to be duplicated, the new carriageways should be located, where feasible, on purchased private land, and the trees be retained as a median strip.
 - (iii) Where re-alignment of a road results in a section of the old road being cut off from the new alignment, wherever possible the section of the old road should not be sold but used as a recreation and rest area.

- (iv) 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 for these utilities on private land alongside the road if this is already cleared, rather than clearing roadside vegetation to accommodate them.
- (v) Grazing of domestic stock should be discouraged on roadsides in areas where there is a predominantly native ground flora or where it is necessary to encourage regeneration of native species.
- (vi) Plantings of trees and shrubs native to the area should be established along roads from which trees and shrubs have been cleared.
- (vii) If gravel, sand, and earth for roadworks must be taken from the road verges, then this should be done in such a manner 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.
- (viii) The practice of burning off roadside vegetation should be kept to a minimum consistent with providing adequate fire protection.
- (ix) Weeds and vermin on roads should be controlled by means that do not conflict with the uses given above.

For unused roads, the Council recommends that the following guidelines be observed:

- (x) The clearing of native trees and shrubs other than noxious weeds should continue to be clearly prohibited in the conditions of unused-road licences.
- (xi) Where it appears to be reasonable, a condition permitting public use should be written into unused-road licences where necessary to provide access to public land.
- (xii) 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.

M. EDUCATION AREAS AND SCHOOL PLANTATIONS

EDUCATION AREAS

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

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

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

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

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

No one organization should have the exclusive right to use a particular education area, as it is important that students have the opportunity to visit a number of education areas in various land types throughout the State rather than visiting the one site several times. Minimum facilities such as toilets and shelters would be required at each education area, and it would be desirable to have accommodation either on the area or at some nearby locality. Whether or not accommodation facilities are located on the education area will depend on its proximity to other areas of educational value in the

region and also on the availability and location of existing accommodation. In forested areas accommodation and other permanent facilities should only be provided where adequate safeguards against fire can be made.

Council believes that the land management of education areas should be the responsibility of the authority managing the adjacent or surrounding public land, while the Ministry for Conservation (in consultation with representatives of the Education Department, other user organizations, and the land manager) should be responsible for implementing educational aspects, and for co-ordinating usage of the areas.

Recommendations

M1–M4 That the areas of public land listed below and shown on the map be used to provide opportunities for students of all ages to:

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

and that they be permanently reserved under section 14 of the *Land Act* 1958 and managed as indicated in the schedule below.

M1 Framlingham Forest (200 ha)

Late Pliocene–early Pleistocene basalt; relatively flat, with steep banks to the Hopkins River; open forest II of messmate, manna gum, and swamp gum with an understorey of bracken, dogwood, and other low shrubs; cleared area in north-west; elevation 80 m; rainfall 700 mm.

To be managed by the Forests Commission.

M2 Sherbrook River (395 ha)

Miocene limestone and marl; undulating to hilly; open forest II and I of messmate with low shrub understorey; elevation 80 m; rainfall 900 mm.

To be managed by the National Parks Service.

M3 Barramunga Creek (135 ha)

Lower Cretaceous sandstone and shale; steep slopes exceeding 20°; open forest IV of mountain ash, with typical dense understorey; some areas of regrowth; elevation 300 mm; rainfall 1,400 mm.

To be managed by the Forests Commission.

M4 Bamba (217 ha)

Pliocene sediments (Moorabool Viaduct formation and Dorodong sand) undulating to hilly; open forest II of messmate, brown stringybark, and narrow-leaf pepper-

mint with understorey varying from blackwood, wirilda, and other wattles with bracken and tussock grass to a heathland with small grass-tree; elevation 200 m; rainfall 625 mm.

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

Note : There is limited use of a small portion of this area as a sanitary depot. This use may continue for up to five years after which it is anticipated arrangements will be made for disposal into the proposed Winchelsea sewerage system.

SCHOOL PLANTATIONS

Throughout the study area, numerous areas of public land have been set aside as school endowment plantations as part of various schools' education 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 school plantations have been planted to radiata pine and the revenue from the sale of produce has been used to provide amenities required by the school. In some cases, however, these plantations have not been very successful in providing revenue as the sites are unsuitable for economic growth or the plantations are too small or the location too far from processing centres to allow economic harvesting. In some instances, radiata pine plantations have failed due to poor management.

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

Unused sand or gravel pits, or cleared areas such as former school sites require rehabilitation or revegetation. Council considers that, in some instances, such areas could be used as school plantations. Their rehabilitation not only could be used to demonstrate various aspects of environmental science but also could provide an opportunity to involve pupils in projects that are clearly in the public interest.

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

Recommendations

M5 That areas set aside for school plantations be primarily used as a teaching resource and utilized to foster awareness and knowledge of the trees and other living organisms that comprise a forest.

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

- M6** 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.
- M7** That new school plantations not be established on public land unless they would clearly enhance conservation values—for example, by the rehabilitation or reforestation of cleared or eroded areas.

N. LAKE RESERVES

The study area includes the major part of the volcanic plains of western Victoria. These fertile plains were formed by lava flows from numerous volcanoes, which also resulted in the formation of many lakes. Some of the lakes are interconnected and others not; nevertheless, all are regarded as forming a system of "Volcanic Plains Lakes". The plains are almost entirely freehold as their agricultural potential was appreciated very early in Victorian history. The majority of the lakes, however, remain in public ownership.

Some of the public land lakes are reserved for "public purposes", but others are simply unreserved Crown land. The Council considers that, while "public purposes" reservations have in the past served to protect particular lakes, the value of the whole system has not been recognized. This system, unique within Australia, contains a range of physical characteristics—such as size, depth, salinity, flora and fauna, ephemeral nature, surrounding topography, and isolation due to the limited extent of public access available. The differences in these characteristics provide opportunities for comparative studies of lake ecosystems.

The capability and current use of the individual lakes vary widely. Scenic quality varies from picturesque to barren and unattractive, and similar quality variations occur for uses such as recreation (mainly boating and angling), wildlife conservation (particularly waterfowl), water supply, and drainage. The ephemeral nature of many lakes also leads to a variation of uses and values with time on individual lakes: higher water levels provide, for example, better conditions for recreation and irrigation, while lower levels provide a generally more saline habitat, with different classes of birds frequenting the lake. In some cases, a lake may dry up completely and remain until the next wet season as either a bare salt pan or a fertile plain that can be used for agriculture.

The natural water levels in some lakes are manipulated—either by deliberate drainage or by pumping for irrigation. Fresh-water lakes support more diverse ecosystems than the saline ones and are thus the more valuable for nature conservation, but they also suffer from a larger number of competing pressures—to the extent that some, such as Lake Terang and Lake Peawick Gorra, are entirely drained and their wetland habitat and water sport recreation value has been completely lost. Others, such as Lake Elingamite, have suffered a continuing reduction in water level associated with an increase in irrigation water use.

The water levels in Lake Corangamite and adjacent lakes are subject to manipulation by the State Rivers and Water Supply Commission and the Lough Calvert Drainage Trust, in order to avoid a repetition of the serious flooding of freehold land that occurred in the 1950s. The Crown resumed areas of land adjacent to these lakes, under the *Lake Corangamite Act 1966*, and in most cases leases them for grazing under licence. The lakes have values for wildlife conservation and for recreation, and conflicts thus arise between these uses and the drainage function as well as agricultural uses on the adjoining leasehold and freehold land. Council considers that these conflicts can best be resolved by co-operation between the various government departments with responsibilities in the area and by consultation with local sporting and farmer organizations. A mechanism for formal co-operation and consultation can be established by the formation of Committees of Management.

Public access to numerous lakes can only be gained by entry through freehold land, as no public land exists beyond the water's edge. In other cases there is legal public access along unmade roads that are cleared and grazed under licence by adjoining landholders.

The Council nevertheless considers that, although in some cases legal access should be made more legally usable, sufficient public access is available to meet the present and foreseeable recreation demand. The isolation of some lakes enhances their value for waterfowl conservation and scientific study through a reduction in competing pressures.

Availability of public access through freehold land is presently determined by the owners of the land, and nothing in these recommendations suggests that this situation should change.

Form of Reservation

In preparing its recommendations the Council has considered the various competing uses for and the capabilities of each lake separately as well as considering the system as a whole. Those lakes with high wildlife values and where wildlife conservation is the prime use have been recommended as wildlife reserves (see Chapter C).

More than half of the lakes have been recommended as lake reserves, thus establishing a secure form of tenure and enabling the managing authority flexibility to introduce those controls necessary to protect the values both of specific lakes and of the system as a whole while providing for existing legal uses to continue. The managing authority will be able to set up local committees of management and can frame and enforce regulations that are specific to a particular lake. This will ensure that proposals for use can be evaluated in relation to the capabilities of the particular lake and to the impact on the system as a whole.

In making these recommendations the Council emphasizes the general lack of knowledge available on this unique lake system and stresses the need for positive management in the future to ensure that the important values of the system for scientific study are maintained. The complex of small crater lakes around Red Rock is of special importance, as it provides examples of lakes with a range of salinity levels and other characteristics in close proximity to one another.

Recommendations

N1-N65 That the lakes described in the schedule below and shown on the map be used, according to their particular capabilities, for:

- (a) recreation
- (b) wildlife conservation
- (c) scientific study
- (d) water supply
- (e) drainage

that current legal use for low-intensity grazing be permitted under the control of the managing authority (such control may involve exclusion of grazing, at least temporarily, from some reserves)

and that they be reserved under section 14 of the *Land Act* 1958 and be managed by the Department of Crown Lands and Survey, which may delegate management where appropriate; there should be consultation with the State Rivers and Water Supply Commission and the Fisheries and Wildlife Division regarding management of these reserves.

- N1** Lake Linlithgow (1,000 ha) and Bulrush Swamp (150 ha), Parish of Linlithgow. Lake Linlithgow and Bulrush Swamp are used in conjunction as recreation and water-sports areas. Depending on water levels and the growth of aquatic vegetation, the use for water sports shifts from one lake to the other. Both lakes also have considerable value as wildlife habitats, and water birds similarly move from one to the other depending on habitat conditions and the disturbance from water sport. Each of these major uses can be accommodated, provided water sports are not conducted on both lakes at the same time.
- The management authority should recognize the importance and interrelations of the recreation and wildlife values of these two lakes in their policies for them.
- Note : Council realizes that Bulrush Swamp is under consideration for use as a water storage and in making the above recommendation does not preclude such use in the future.
- N2** Tabor Swamp (57 ha) in sections 2 and 3, Parish of Yatchaw East. This area is a remnant of the large Buckleys Swamp system, most of which is now freehold land. Management should be orientated towards preserving the remaining wildlife habitat. The possibility of restoring breeding areas for ibis and habitat areas for Gunn's bandicoot should be investigated.
- N3** Picnic Lakes and surrounding frontages (68 ha) east of allotments 44 and 53A, Parish of Towanway.
- N4** Lake Peawick-Gorra (24 ha) between allotments 46B and 47B, Parish of Towanway.
- N5** Tim Dunn Lake (16 ha) east of allotment 59A, Parish of Towanway.
- N6** Lake (8 ha) between allotments 37A and 38A, Parish of Towanway.
- N7** Lake (10 ha) south-west of allotment 38A, Parish of Towanway.
- N8** White's Lake (7 ha) north of allotments 78 and 79, Parish of Woorndoo.
- N9** Salt Lake (37 ha) in and south of allotment 103, Parish of Kornong.
- N10** Lake and frontage to the west (20 ha) between allotments 24 and 24AA, Parish of Terrinallum.
- N11** Lake (6 ha) adjoining allotments 24 and 25, Parish of Terrinallum.
- N12** Deep Lake (80 ha) east of allotment 42B, Parish of Dunnawalla.
- N13** Logans Lake (250 ha) south of allotments 32, 25B, 25A, and 23A, Parish of Dunnawalla.
- N14** Lake Koonangurt (23 ha) between allotments 1 and 3 of section 31, Parish of Ettrick.
- N15** Lake Tooliorook (250 ha) in section 3, Parish of Ettrick.

- N16** Lake Cartcarrong (24 ha) south-west of township of Winslow, Parish of Yarrpturk.
- N17** Salt lake and the adjoining reserve (40 ha) north of allotment 4A of section 25, Parish of Mortlake.
- N18** Salt Lake (40 ha) east of allotment 4A of section 25, Parish of Mortlake.
- N19** Lake Keilambete and the adjoining reserve to the north (320 ha) in section 1, Parish of Keilambete.
- N20** Lake Terang and the adjoining reserve to the south (120 ha) south of the township of Terang, Parish of Keilambete.
- N21** Lake Colongulac (1,400 ha) in section 3, Parish of Kariah.
- N22** Lake Kariah and the adjoining reserve to the east (160 ha) in section 3, Parish of Kariah.
- N23** Lake Koreetnung (200 ha) in section 10, Parish of Kariah.
- N24** Lake Weeranganuk (400 ha) in sections 12 and 14, Parish of Kariah.
- N25** Kooraweera lakes and swamps
- (a) Lake (20 ha) adjoining allotments 51 and 61B, Parish of Taaraak.
 - (b) Lake (20 ha) in allotment 61B, Parish of Taaraak.
 - (c) Lake (96 ha) north-east of allotment 61A of section K, Parish of Taaraak.
 - (d) Lake (10 ha) east of allotment 43D, no section, Parish of Corangamite.
 - (e) Salt lagoon (60 ha) east of allotment 40A, no section, Parish of Corangamite.
 - (f) Salt lake (21 ha) north-west of allotment 60 of section K, Parish of Taaraak.
 - (g) Fresh-water lake (48 ha) north-east of allotment 60 of section K, Parish of Taaraak.
 - (h) Lake (70 ha) north of allotment 58 of section M, Parish of Taaraak.
- N26** Lake Gnarpurt (2,350 ha) and adjoining frontage to the south-west and land resumed by the Crown, Parish of Struan.
- Note: The Crown has resumed a large number of separate areas of land around the shores of Lakes Corangamite and Gnarpurt that are subject to inundation by the manipulation of lake levels. This land is included in the recommendation, but the management authority should consult with the State Rivers and Water Supply Commission before implementing any changes in land use programs for these areas. In most cases, the areas are currently leased for agriculture and no change is proposed in this use (see Recommendation Q6).*
- N27** Lake Coradgill (45 ha) in allotment 18 of section 1, Parish of Corangamite.
- N28** Lake Terang-Goodtditch (13 ha) in allotment 17 of section 1, Parish of Corangamite.
- N29** Lake Bulkil Narra (5 ha) in allotment 16 of section 1, Parish of Corangamite.
- N30** Lake Punpundal (30 ha) in allotment 27 of section 1, Parish of Corangamite.
- N31** Lake Tatutong (25 ha) north-east of allotment 33, Parish of Corangamite.

N32 Lake and adjacent frontage (26 ha) west of allotments 6, 7A, 8, and 9, Parish of Purumbete North.

N33 Lake Corangamite (23,000 ha) County of Grenville and the public purposes reserve (2.5 ha) to the north-east of allotment 36 of section 1, Parish of Corangamite.

Note: The Crown has resumed a large number of separate areas of land around the shores of Lakes Corangamite and Gnarpurt that are subject to inundation by the manipulation of lake levels. This land is included in the recommendation, but the management authority should consult with the State Rivers and Water Supply Commission before implementing any changes in land use programs for these areas. In most cases the areas are currently leased for agriculture and no change is proposed in this use (see Recommendation Q6).

N34 Cundare Pool (2,230 ha)—incorporating Lake Martin, un-named salt depressions, and the Woody Yallock River flood plain—north-east of Lake Corangamite, Parish of Cundare.

Note: The State Rivers and Water Supply Commission developed this area as a flood pondage basin to prevent flood flows entering Lake Corangamite and to maintain a constant flow in the flood-water diversion channel from the Woody Yallock River to the Warambine Creek. It has a primary drainage function and should be managed for the purpose of water control. The Council therefore proposes that the management authority delegate the management of the Cundare Pool to the State Rivers and Water Supply Commission.

N35 Lakes (16 ha) north-east and north-west of allotment 46A, Parish of Cressy.

N36 Lake Weering (450 ha), including frontages to the south-west and north-east and the adjacent camping ground reserve, south of allotment 57 A3, Parish of Cressy.

N37 Saline lake (16 ha) in allotments 102 and 105, Parish of Weering.

N38 Lough Calvert (2,100 ha), consisting of a chain of lakes and swamps approximately 16 km long, north-east of Lake Colac.

Note: The function of this reserve in the removal of surplus water from the surrounding areas should be recognized by the management authority.

N39 Salt lakes (14 ha between allotments 144 and 144C, 6 ha in allotment 145 and 8 ha between allotments 143A and 146A), Parish of Ondit.

N40 Salt lake (100 ha) south-east of allotment 67, Parish of Cundare.

N41 Lake Cockatoo (44 ha) west of allotments 119B, 120A, and 120B, Parish of Ondit.

N42 Cemetery Lake (25 ha) west of allotments 99A and 99B, Parish of Ondit.

N43 Salt lakes (11 ha between allotments 100A and 100B, 12 ha between allotments 100A¹ and 100A, 59 ha between allotments 95B and 96C, 20 ha between allotments 91A and 92A, and 10 ha between allotments 87A and 88B), Parish of Ondit.

N44 Lake Beac (647 ha), including surrounding public reserves, Parish of Ondit.

Note: The Beac rubbish depot is presently located on the north-east bank of this reserve. The managing authority should investigate the availability of an alternative site or method for rubbish disposal.

- N45** Saline lake (50 ha) east of allotments 22A and 22B, Parish of Ondit.
- N46** Salt lake (40 ha) north of allotment 60B, Parish of Turkeeth.
- N47** Salt lake (11 ha) east of allotment 55A, Parish of Turkeeth.
- N48** Salt lake (57 ha) south of allotment 21, Parish of Warracbarunah.
- N49** Salt lake (20 ha) between allotments 12 and 13, Parish of Mirnee.
- N50** Fresh-water lake (32 ha) west of allotments 37AA, 37AB, and 37F, Parish of Mirnee.
- N51** Lake Bura (50 ha) west of allotment 69, Parish of Birregurra.
- N52** Salt lake (450 ha) east of allotment 138A, Parish of Turkeeth.
- N53** Lake Colac (2,700 ha) north of the City of Colac, Parish of Colac.
 Note: This reserve supports a variety of recreation activities (such as swimming, fishing, and boating), forms part of the water-control system for the surrounding area, is utilized as a disposal area for treated effluent, and is a valuable area for wildlife. The management authority should recognize the values of this lake and the complex nature of its utilization in formulating policies for its management.
- N54** Lake Ondit (110 ha) south of allotment 2A, Parish of Ondit.
- N55** Lake Coragulac (40 ha) south of allotment 12A, Parish of Warrion.
- N56** Lake Werowrap (42 ha) and unnamed lakes to the east and west in allotments 11C and 11D, Parish of Warrion.
- N57** Lake Gnalinegurk (26 ha) east of allotment 19L, Parish of Warrion.
- N58** Lake Purdiguluc (90 ha) north-east of allotment 19A, Parish of Warrion.
- N59** Salt lagoons (45 ha) between allotments 11A and 22, and north-east of allotment 22, Parish of Nalangil.
- N60** Lagoon (6 ha) south of allotment 11D, Parish of Barongarook.
- N61** Lake Elingamite (35 ha) south of township of Elingamite North, Parish of Elingamite.
 Note: The water level in this lake has continually declined in recent years. The management authority should investigate the extent to which this decline is due to pumping of water from the lake and place restrictions on this use if necessary.
- N62** Lake Numblin (15 ha) and the stone reserve adjoining it to the north-east, adjacent to allotments 6A and 6B of section 8 and allotments 3A and 3B of section 7, Parish of Ecklin.
- N63** Lake Munderong (20 ha) adjoining allotments 71A and 71B, Parish of Garvoc.
- N64** 10 ha adjoining allotments 58, 59, 63, and 64, Parish of Mepunga.
- N65** Lakes Horden, Costin, and Craven, and the adjoining frontages north-west and east of allotment 7A, Parish of Aire.
 Note: These three wetlands have considerable wildlife value: they are among the relatively few fresh-water lakes along the coast and lie in the path of the flightline for intercontinental migratory waders. They are situated in a flood-plain, the remainder of which is freehold and used for agriculture, and serve as part of an extensive drainage system for this area.

O. RECREATION

The term recreation includes the multitude of different activities that people undertake during their leisure time. In fact, the distinguishing characteristic of recreation is not the activity itself so much as the attitude with which it is undertaken—activities (or inactivities) 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 recreation activities include all organized sports and other group activities, while activities such as picnicking, fishing, and hiking are grouped as informal.
- * Passive recreation covers situations where the individual obtains his recreation through absorbing the sights, sounds, and atmosphere of the surrounding environment while expending little physical effort. Examples are picnicking, nature observation, and strolling.
- * Active recreation covers situations where the individual must expend considerable physical effort to obtain some mastery of physical forces in order to satisfy his particular recreational needs. Examples are playing organized sport, bushwalking, and 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, areas such as picnic grounds and beaches along the coastal strip in the Corangamite area would be considered to be intensively used.

In view of the predicted increase in demand for outdoor recreation and the high capability of some public land to meet this demand, the Council, in making its recommendations, has suggested that much 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. Council could not, however, make recommendations covering in detail all the forms of recreation currently pursued on public land. These include activities such as bush-walking, rock-climbing, orienteering, canoeing, fishing, hunting, fossicking, picnicking, horse-riding, boating, trail-bike riding, and pleasure driving. Council believes that activities such as these can be accommodated, without detriment to other values, somewhere on public land. Consequently, Council points out that outdoor recreation in general is an acceptable primary or secondary use of much public land (except reference areas and some water storages and their buffers) and has left 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 any 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 in coastal and low-rainfall areas, and where the natural environment or special natural features are being preserved.

Two particular forms of recreation that may pose a problem for the land managers, whether now or in the future, are further discussed below.

Motorized Recreation

Much of our outdoor recreation depends on motor vehicles. These may be conventional cars, four-wheel-drive vehicles, or motor-bikes. 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. Any vehicle registered under the *Motor Car Act 1958* has access to any legally open road anywhere on public land. Roads are defined in the *Land Conservation (Vehicle Control) Regulations* as being “any road formed for the passage of vehicles having four or more wheels”. The land management authorities can close roads when traffic exceeds their physical capacity, or when vehicular access or its associated activities seriously conflict with the area’s primary purpose. Seasonal closure of some roads may be necessary to avoid erosion and excessive maintenance, or because of extreme fire hazard. As the intensity of recreational use on public land increases it is inevitable that more roads and tracks will be closed to vehicular access, particularly in areas with erodible soils. Council believes that these closures will not significantly reduce the many hundreds of kilometres of roads and tracks currently open to the public.

Motor vehicles leaving roads on public land without the written permission of the land management authority contravene the provisions of the *Land Conservation (Vehicle Control) Act 1972* and *Regulations*. Moreover they can, and do, cause extreme damage to vegetation and soils.

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 there is a serious and growing problem of damage to soils and vegetation by spectators attracted to these activities.

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 or general camping.

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

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

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

Recommendations

Recreation

- O1** 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 management authorities aim at controlling the types, levels, and patterns of recreational use according to the capability of particular areas to sustain such use without irreversible change or significant conflict with the primary purpose of the area.

Motorized Recreation

- O2** 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.
- O3** That the land management authorities endeavour to provide some areas for off-road vehicular use within land under their control.

Recreation Reserves

- O4–O13** That the areas described below and shown on the map be used for organized sports (football, horse-racing, golf, etc.) and informal recreation (picnicking, camping, etc.) as permitted by the managing authority
that native trees be conserved where possible
and that these areas be permanently reserved under section 14 of the *Land Act* 1958 and managed by the Department of Crown Lands and Survey.
- O4** Existing recreation reserves.
- O5** 24 ha, being part of the former public purposes reserve, south of allotment 20A, Parish of Yambuk. See recommendation S4, establishment of rubbish depot.
- O6** 67 ha, being an extension of the Mt. Rouse Public Park by inclusion of the adjacent water reserve and gravel reserve, south of the township of Peshurst, Parish of Purdeet. Scoria production may continue subject to strict controls to preserve landscape values.
- O7** 2.4 ha, being the existing cemetery reserve (unused), west of the township of Timboon; to be used as an addition to the existing golf course. The area occupied by the water tower is excluded from this recommendation.
- O8** 1.6 ha west of allotment 20 of section 5, Parish of Paaratte (township of Port Campbell), as an addition to adjoining recreation reserve.
- O9** 15 ha south of the Wiridjil Recreation Reserve, Parish of Wiridjil, as an addition to existing recreation reserve.
- O10** 8 ha, being the temporary camping reserve east of Lake Craven, Parish of Otway.
- O11** 18 ha south-west of allotment 2 of section 3, Parish of Krambruk. Grazing could be permitted to continue at the discretion of the managing authority.
- O12** 1.6 ha, being part of the former camping and water reserve south of allotment 42, Parish of Barongarook.
- O13** 8 ha west of allotment 1F, Parish of Yaughar, as an addition to adjoining recreation reserve. Provision should be made for a road reserve on the north-western boundary to provide access to allotment 1G(2).

P. SCENIC RESERVES

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

Recommendations

- P1–P11** That the areas shown on the map and described below be used to preserve scenic features or lookouts
and that they be permanently reserved under section 14 of the *Land Act* 1958, and that except where otherwise indicated they be managed by the Department of Crown Lands and Survey.
- P1** 0·8 ha adjoining the Hopkins River for a distance of 100 metres (5 chains) radius from the centre of Hopkins Falls, Parishes of Purnim and Tallangatta.
- P2** 4·0 ha, being the Red Rock public park and recreation purposes reserve, within and to the east of allotment 11D, Parish of Warrion.
- P3** 9·0 ha, being the waterfall reserve, west of allotment 14D, Parish of Wongarra.
- P4** 57·9 ha, being the Carisbrook Falls reserve, south-west of allotment 29A, Parish of Wongarra.
- P5** 82·0 ha, being the Barham Paradise picnic reserve, adjacent to the north-east and south of allotments 7 and 8, Parish of Krambruk.
- P6** 32·0 ha, being the Beauchamp's Falls reserve, west of allotment 36A, Parish of Olangolah—to be managed by the Forests Commission.
- P7** 2·1 ha, being the public purposes reserve (Hopetoun Falls), Parish of Olangolah—to be managed by the Forests Commission.
- P8** 29·8 ha, being the waterfall reserve in section B, Parish of Wyelangta.
- P9** 13·1 ha, being the waterfall reserve (*Glasgow Falls*), allotment 44A(1), Parish Barwongemoong—to be managed by the Forests Commission.
- P10** 16·0 ha, being the public purposes reserve (the Beauty Spot) west of allotment 9, Parish of Barwongemoong—to be managed by the National Parks Service.
- P11** 12·0 ha, being the Johanna Falls recreation reserve and the adjacent allotments 66A and 68D, Parish of Aire—to be managed by the National Parks Service.

Q. AGRICULTURE

Most land in the area suitable for agriculture was alienated in the early days of settlement. Apart from the public land cleared and developed for agriculture under the Heytesbury Settlement Scheme, and 310 ha associated with the Cooriemungle Prison Camp, little of the public land has significant value for agricultural production. Areas of marginally suitable land in and around the Otway Ranges were alienated and used for agriculture, but now many of these areas are being used for timber production, mainly softwoods, following sale to the Forests Commission or private softwood companies.

Heytesbury Land Settlement Scheme

The Rural Finance and Settlement Commission started development of the Heytesbury Settlement in 1956. Of the total areas of 42,500 ha cleared and sown, 29,500 ha have been alienated for dairy production. The remaining land is presently managed by the Rural Finance and Settlement Commission and used for beef cattle production.

Most of the unallocated land is suitable for dairy production in the long term, but Council realizes that under the present circumstances it would not be appropriate to alienate further land in this area for new agricultural units. The land will remain under present management and be utilized for agricultural production pending eventual alienation except for an area of 2,300 ha recommended for softwood production (see Chapter F).

Cooriemungle Prison Camp Area

The area at Cooriemungle, presently reserved as a prison camp and managed by the Department of Social Welfare, is highly suitable for agriculture. It has been cleared and developed for agriculture and currently supports beef cattle production. The Council believes that this land could be made available to existing agricultural producers in the immediate vicinity of Cooriemungle for the purpose of adding to present land-holdings.

Glenormiston Agricultural College

The Department of Agriculture manages 280 ha of the original Glenormiston Estate north of Noorat as an agricultural college. The Council does not propose any changes in the use or management of this area.

Lake Corangamite (Resumption of Land) Act 1966

Many separate areas of land around the shores of Lakes Corangamite, Gnarpurt, and Murdeduke were resumed under the *Lake Corangamite (Resumption of Land) Act 1966* or purchased on behalf of the Crown by the State Rivers and Water Supply Commission. This land is subject to inundation and the bulk of it is leased for grazing under licence, in many cases to the original owners. Council proposes no change in the current use of these areas.

Commons and Unused Recreation Reserves

The agricultural region in the west of the study area contains very little public land. The remaining areas, apart from the lakes, consist mainly of commons and now-unused recreation reserves, particularly racecourses. They have been used for agriculture for many years, being well managed for grazing, and the land is both stable and productive. Very little native vegetation remains and the areas would have major conservation value considering the general lack of public land in the region, if the native vegetation was restored to provide habitat for species such as the bustard, plain wanderer, and brolga. Such a programme would, however, be difficult and expensive and the Council considers that, for the present, the areas should continue to be used for agriculture. They should be retained as public land and managed with the assistance of the Fisheries and Wildlife Division to retain those wildlife conservation values that they may presently have.

Recommendations

Q1 That the land described in Schedule 1 below and shown on the maps 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 land in the schedule be made available for agriculture in accordance with the provisions of the *Land Act* 1958.

Schedule 1

LAND RECOMMENDED FOR AGRICULTURE Q1

| Parish. | Location. | Area. |
|------------------|--|-------|
| | | (ha) |
| Bambra | To the east of allotment 83 | 2.4 |
| Paarette | In the east of allotment 12 of section 2 | 0.7 |
| Waarre | Being allotment 11B of section C | 2.0 |
| Weaproinah | Unused road sections south of allotment 38 and between allotments 38 and 36C, and portion of allotment 36C | 3.0 |
| Weaproinah | Adjacent to allotment 17 | 0.8 |
| Wormbete | South of allotment 17 | 1.0 |
| Wyelangtha | Unused road section between allotments 7A and 20C of section 3 | 1.0 |
| Yaughter | To the north and to the south of allotment 26G | 2.0 |
| | Total | 12.9 |

Q2 That an area of 26.3 ha south of allotment 79, Parish of Wangerrip, be made available for agriculture in exchange for 30.6 ha of freehold land being allotment 77, Parish of Barwongemoong, and that allotment 77 be added to the proposed streamside reserve (Recommendation K10).

Heytesbury Land Settlement Scheme

Q3 That the land shown on the map be used for agriculture and be managed by the Rural Finance and Settlement Scheme

that portion of the area be alienated to eligible applicants for the purpose of adding to existing agricultural holdings, the policy for alienation to be determined by the Rural Finance and Settlement Commission

and that the timing of further alienations to provide new agricultural units be reviewed periodically by the Rural Finance and Settlement Commission.

Note: An area of 2,300 ha has been recommended for use for softwood production—see Recommendation F2.

Coorimungle Prison Camp

Q4 That the area of 310 ha shown on the map—comprising allotment 43A of section B, and allotments 10 and 11 of section C, Parish of Waarre—be used for agriculture. With reference to section 5 (3) of the *Land Conservation Act* 1970, the Council recommends that the land be made available for agriculture in accordance with the provisions of the *Land Act* 1958.

Note: This land could form additions to present farms.

Glenormiston Agricultural College

Q5 That the land shown on the map and described below be used as the Glenormiston Agricultural College and that it be permanently reserved under section 14 of the *Land Act* 1958 and managed by the Department of Agriculture.

Agricultural College Reserve (Gaz. 1971 222), 281 ha, Parish of Glenormiston.

Land Resumed Around Lakes

Q6 That the land resumed by the Crown and reserved pursuant to the *Lake Corangamite (Resumption of Land) Act* 1966 around the shores of Lakes Corangamite, Gnarpurt, and Murdeduke be available for use for agriculture under licence, and be managed by the Department of Crown Lands and Survey.

Note: These areas of land are also referred to under Recommendations N33 and N26—lake reserves, and C21—wildlife reserves.

Commons and Unused Recreation Reserves

Q7 That the areas described in the schedule II below, and shown on the map be used for:

(a) grazing

(b) conservation of wildlife

and that they be reserved under section 14 of the *Land Act* 1958 and managed by the Department of Crown Lands and Survey with the assistance of local committees of management and in consultation with the Fisheries and Wildlife Division.

Schedule II

Mortlake Common (300 ha) (excluding the Education Department plantation), Parish of Connewarren.

Caramut (50 ha), being the northern part of the Racecourse and Recreation Reserve and the adjacent Caramut Common, Parish of Caramut.

Koroit Racecourse and Recreation Reserve (35 ha), being allotments 2 and 3 of section 32A, Parish of Yarpurturk.

Darlington (50 ha), being the former Darlington Common (excluding the Education Department plantation) in section 14, Parish of Darlington.

R. MINERAL AND STONE PRODUCTION

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

Government has the responsibility to establish the existence and extent of the State's mineral resources. When a new deposit is discovered in an area where mineral extraction is not a currently approved land use, it may be of such importance that a change of the land use is required in the national 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 alternative sources of the particular mineral.

It is important therefore that the reservation of conservation areas should not automatically exclude exploration for mineral or fossil fuel resources, either by exploration companies under strict supervision or by the Mines Department itself. Attention should be directed towards ensuring that other values and interests are protected, rather than attempting to prevent exploration activities.

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 Council is concerned by the complexity of legislation and procedures governing extraction of "stone", and by the lack of control accompanying some of these procedures. (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 some instances the rehabilitation of excavated land is lagging. There is a need for review of existing legislation and procedures to enable more rational use of the "stone" resource of the State.

Poorly planned and located excavations can affect surrounding lands through noise, dust, unsightliness, and erosion, and can diminish the value of the land. With care, however, these effects can be avoided or minimized.

The Council believes that:

- (i) All exploration for and extraction of "gold", "minerals", and/or "petroleum" on public land (including operations under miner's rights) should be subject to the approval of, and to the conditions imposed by, the Department of Mines, such approval and conditions being subject to agreement with the authority managing the public land and the Soil Conservation Authority, and being in conformity with the guidelines outlined hereunder.

- (ii) There should be co-operation and consultation between the land managing authorities, the Mines Department, 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.

- (iii) A system should be established that would guarantee, before work commences, the availability of funds for progressive and final reclamation for any excavation or operation. Provision should also be made to enable the acceleration of the rehabilitation of all existing extraction areas on public land.
- (iv) 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.
- (v) The following guidelines should apply to all extraction from public land:

* No sites for the extraction of "gold", "minerals", and "petroleum" should be opened in areas that the Mines Department and the land management authority in consultation consider to be of greater value for their aesthetic or nature conservation values.

The Mines Department should not permit any extraction of "gold", "minerals", or "petroleum", unless satisfied as to the reasonable economic viability of the proposed extraction. The Department should also require, as far as is reasonably possible, the lodgment of mining plans that show the expected post-mining state of the land.

* No sites for the extraction of "stone" should be opened in areas that the managing authority, in consultation with the Mines Department, considers to be of greater value for other uses including aesthetic or nature conservation values. The advice of the Mines Department should also be sought as to the desirability of proposed excavations having regard to alternative sources of "stone".

* Extraction of "stone" should generally be concentrated on the fewest possible sites in an area, and any one site should be completely 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 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 granitic sand occurring as shallow deposits in the weathered profile should not be permitted until it has been established that no suitable alternatives are available. In the special circumstances where approval is given for this form of extraction, particular attention should be given to the prevention of soil erosion.

* Where an application for the removal of "stone" from a stream bed is considered, the land management authority should take particular care to ensure that the operations will not directly or indirectly cause erosion of the bed or banks, or undue pollution of the stream. In addition to the arrangements outlined above for "stone", the land management authority should also consult with the relevant

water supply and conservation authorities, and should consider the scenic and recreation values of the area. Alternative sources with a lower environmental impact should be used where they are available. The environmental effect of extraction may be reduced if alluvial stone is obtained from properly managed quarries on the river terraces, rather than from the present stream bed.

* 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, filling a quarry 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 any exploration or extraction operations for "gold", "minerals", "petroleum", or "stone", where the subject land is:

- (a) at an elevation exceeding 1,200 m
- (b) within a coastal foreshore reserve
- (c) within a proclaimed water supply catchment.

Recommendations

- R1** That public land in the study area (other than land excepted from occupation for mining purposes under the *Mines Act* and the *Land Act 1958*) continue to be available for exploration and extraction of "gold", "minerals", "petroleum", and "stone", subject to the principles and guidelines set out above. (Some deposits of "stone" are specifically identified in Recommendation R2–R8 below.)
- R2–R8** That the areas listed below and shown on the map be used for the extraction of "stone", subject to the principles and guidelines set out above and that they be temporarily reserved under section 14 of the *Land Act 1958*, and managed by the Department of Crown Lands and Survey.
 - R2** 16 ha south-east of allotment 49, Parish of Barwongemoong.
 - R3** 50 ha south of allotments 32C and 33C of section A, Parish of Yaughar.
 - R4** 12.5 ha south of allotment 21L, Parish of Yaughar.
 - R5** 4 ha west of allotment 34B, Parish of Gerangamete.
 - R6** 6 ha north-west of allotment 16, Parish of Wormbete.
 - R7** 2 ha west of allotment 71A, Parish of Gherang Gherang.
 - R8** 115 ha between allotments 48B and 57, Parish of Gherang Gherang.

Anglesea Lease Area

- R9** The recommendations for the area marked on the map were included in the Final Recommendations for the Melbourne Area and reference should be made to these for details.

S. UTILITIES AND SURVEY

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

It is not possible at present to provide for future requirements of land for survey and utilities, in the absence of firm planning proposals accompanied by the necessary detailed information. The use of land for these purposes will need to be considered when particular projects are firmly proposed. The various recommendations in the report are not intended to preclude such use of the land, and would be subject to review at the appropriate time.

Council believes that government agencies concerned with provision and installation of communication equipment, transmission lines, pumped storage sites, power stations, port facilities, pipelines, roads, etc. should be requested to submit to the Council and the management authority during the early planning stages any major proposals that would involve occupation agreements or the setting aside of sites on public land. This would assist in achieving co-ordinated planning, and perhaps avoid the necessity for costly resurveys.

Recommendations

General Utilities

- S1 That existing easements continue to be used to provide access and services.
- S2 That new powerlines, pipelines, communications equipment, and other utilities be planned to minimize disturbance to public land and protect the values associated with this land, that they not be sited on public land without the agreement of the managing authority, and that new pipelines and powerlines follow existing easements if possible (this may require widening some easements).

Garbage and Sanitary Depots

Council believes that sites on public land used for the disposal of garbage and sanitary material should be located to cause minimal conflict with nature conservation values. Facilities on public land should be shared by municipalities wherever practicable to minimize the number of sites required. At the same time, sites should be provided in reasonable proximity to users to minimize transport costs and illegal dumping of rubbish.

- S3 That areas used on a temporary basis (such as garbage depots and sanitary depots) be fully rehabilitated. This should apply to sites used illegally as well as those used legally. Where the user or users are known, rehabilitation should be at their expense.
- S4 That 2 ha south of allotment 20A, Parish of Yambuk, be used as a garbage depot, and that adequate native vegetation be retained to screen the area from adjacent land.

- S5** That 6 ha east of allotment 8A of section 2A, Parish of Krambruk, be used as a garbage depot, and that adequate native vegetation be retained to screen the area from adjacent land.
- S6** That 5 ha in the south-west of allotment 24, Parish of Lorne, be used as a garbage depot, and that adequate native vegetation be retained to screen the area from adjacent land.
- S7** That 1 ha adjacent to the south of allotment 17 of section 5, Parish of Paaratte, be used as a garbage depot, and that adequate native vegetation be retained to screen the area from adjacent land.
- S8** That 1 ha in the north of allotment 70B, Parish of Bambra, be used as a garbage depot, and that adequate native vegetation be retained to screen the area from adjacent land.
- Note: This area is within the proposed bushland reserve 19.

Railway Lines

- S9** That, where isolated remnants of the original vegetation remain on land associated with railway lines, every effort be made to protect that vegetation consistent with management practices.
- S10** That disused railway land within the study area be retained as public land where it may have value for use as cycling or walking tracks or may eventually be needed again as routes for public transport.

Trigonometrical Stations

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

- S11** That the minimum area necessary for survey purposes be temporarily reserved around trigonometrical stations on public land where it would otherwise remain as unreserved Crown land and, where other forms of public land tenure apply, that the Department of Crown Lands and Survey have the right to occupy a minimum area around the station and provide lines of sight.

Navigation Aids

- S12** That the minimum area necessary for access to and maintenance of navigation aids 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 Ports and Harbors Division have the right to occupy a minimum area around the aid and provide lines of sight.

Other Utility Areas

- S13** That existing legal uses and tenure continue for areas that are at present reserved and used for utility purposes such as public buildings, municipal depots, cemeteries, schools, etc.

Note: Areas are approximate.

T. TOWNSHIP LAND

Public land in townships is currently used for a wide range of purposes. The Council has not generally proposed any change of use for such public land where the present use is for schools, public halls, sports grounds, and the like. In some cases, however, Council has made a specific recommendation for township land to be used for recreation. These recommendations are included in the section on recreation reserves.

Recommendation

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

Note: At the mapping scale used (1 : 250,000), it is generally not possible to 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 map or referred to in these recommendations.

U. UNCOMMITTED LAND

In planning for balanced land use, known resources are allocated to meet known or predicted demands. The Council is aware that many changes in demand cannot be foreseen, and that the value of resources to the community will inevitably change.

Similarly, knowledge of resources will change as exploration, research, and technology progress. For these reasons, it is desirable that planning be reviewed periodically, and it must be expected that resources will be reallocated or adapted to meet changed demands.

In addition, to satisfy such future requirements, it is desirable that land not be committed unnecessarily to relatively inflexible forms of land use. The Council therefore considers it necessary to recommend that substantial 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 demand, 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.

The Council wishes to emphasize that sufficient resources should be made available to the managing authorities to enable careful management of uncommitted land. Funds and personnel are essential for conservation of specific features and values, for protection of the land and adjacent areas from soil erosion, wildfire, vermin and noxious weeds, and for silvicultural treatment of forests.

Arkins Creek and West Gellibrand River

The sub-catchments of Arkins Creek and West Gellibrand River within the Gellibrand River Catchment comprise another category within uncommitted land. The whole catchment of the Gellibrand River is used to supply water to cities and towns north and west of the Otway Ranges. A substantial proportion of the catchment is cleared farmland and some of the remainder supports timber production. Water harvested from pumping stations in the lower reaches of the Gellibrand River, including that from the Arkins Creek below the offtakes, requires chlorination and excessive colour is a problem at times. The two closed sub-catchments can, however, supply high-quality water. These sub-catchments contain areas of scrub-covered farmland, acquired to protect the water supply, together with dense stands of mountain ash regrowth that regenerated following wildfires in 1919 and 1939.

The Council realizes that the continued supply of high-quality water from these sub-catchments is of great importance in reducing the total cost of supplying treated and untreated water from the Gellibrand River systems. The colour of water supplied from all of the Otway catchments is very sensitive to disturbance of the highly colloidal clays that form on the arkosic sediments of the Otway Ranges. This is particularly important in the Arkins Creek catchment, which is relatively small and has no reservoir that could permit clarification of the water by storage.

Council believes, however, that it is possible to safeguard the water quality in both catchments while at the same time enhancing the potential for other forms of use. The scrub-covered areas of abandoned farmland should be reforested to enhance the nature conservation values of the catchments and perhaps in the long term to provide timber supplies.

Decisions regarding other forms of use in the catchments, including the supply of timber, should not be made until sufficient knowledge is available to determine the possible effects on water quality. To obtain information on the effects of timber harvesting, Council suggests that some experimental forestry operations could be initiated, the details of these to be worked out in consultations between the State Rivers and Water Supply Commission, the Forests Commission, and the Soil Conservation Authority.

Recommendations

U1 That the land indicated 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 listed below be protected

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

U2 That the land in the catchments of the Arkins Creek and West Gellibrand River shown on the map be used to:

- (a) maintain the stability of the land and its usefulness for all possible future uses
- (b) protect water catchments
- (c) conserve native flora and fauna

that

- (d) native forest be re-established on the areas of scrub-covered former farmland
- (e) the water supply authority, in consultation with the Forests Commission and the Soil Conservation Authority may initiate small-scale experimental forestry operations, the effects of which should be monitored

and that it be uncommitted land and remain under present tenure and management until reviewed by the Council.

V. MILITARY TRAINING

The Council believes that military training is a legitimate use of public land. Military training should not occur in reference areas, and only under special circumstances in parks and other recreation and conservation areas.

Recommendations

- V1** That the following conditions apply to military training conducted on public land:
- (a) The types of activities, and their timing and location, should be subject to agreement between the Army, the managing authority, and other relevant bodies such as the Soil Conservation Authority.
 - (b) The training activities should be carried out under conditions specified by the managing and relevant authorities, to minimize any detrimental effects.
 - (c) The Forests Commission should be consulted (for fire-protection purposes) with respect to training activities in protected forest, and protected public land.
- V2** That the area proclaimed under the *Defence Act* section 69 known as the Wonga Training Area, to the north-west of Gellibrand, continue to be available for military training purposes.

W. OTHER RESERVES AND PUBLIC LAND

Some small areas of public land in the study area that are used for various purposes such as water, grazing, camping, 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. These areas are sometimes cleared and, although their present value for recreation or conservation is limited, they may have considerable value in the future for as-yet-unknown public purposes.

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

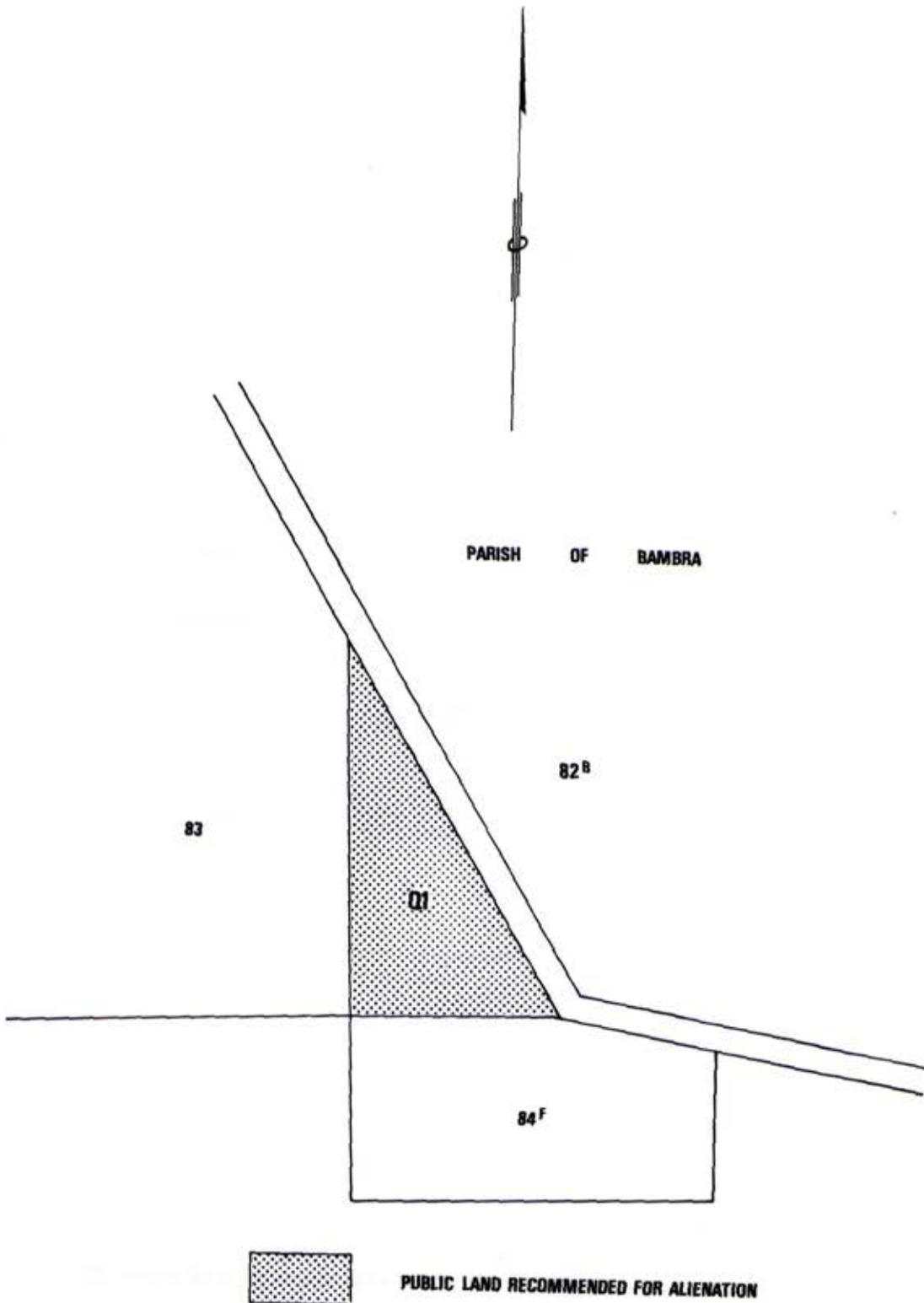
Recommendation

W1 That for small areas of public land not specifically mentioned in these recommendations, existing legal uses and tenure continue and that

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

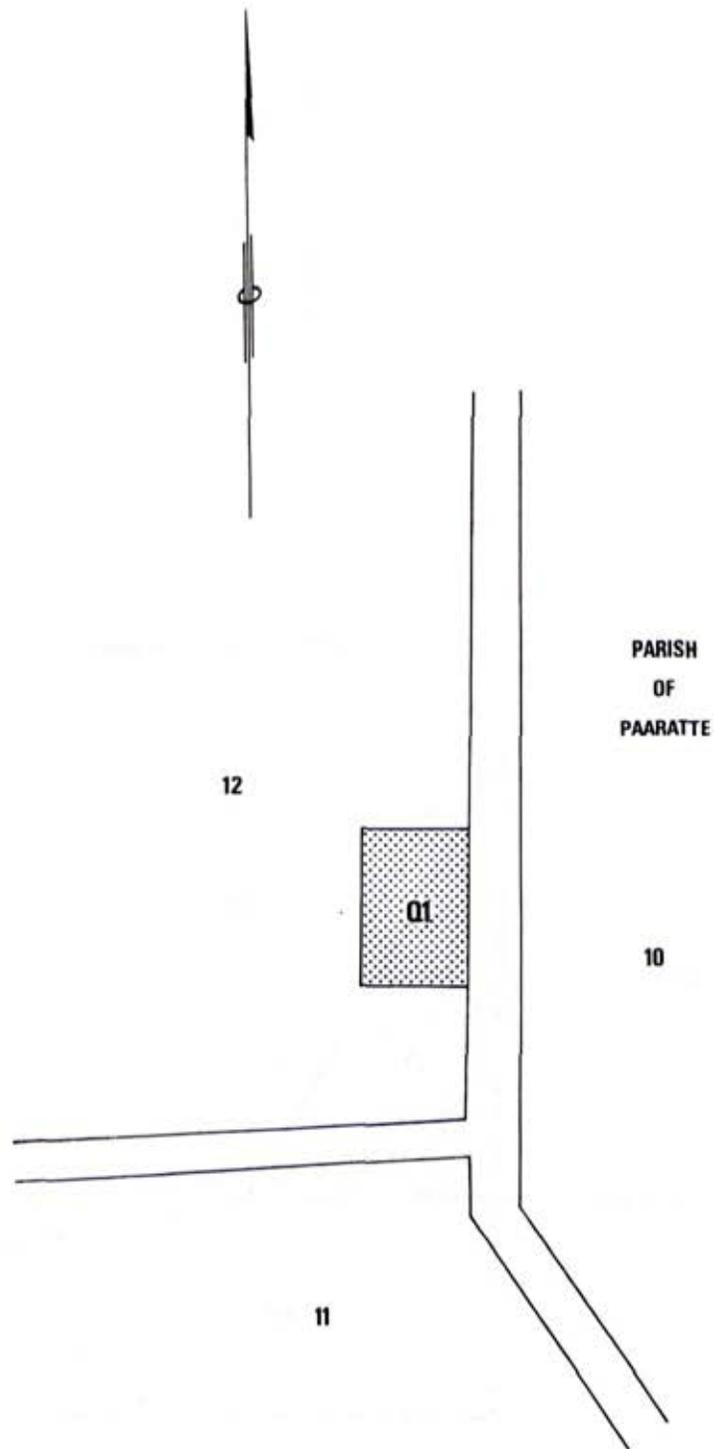
AGRICULTURE Q1
BAMBRA

MAP 1



SCALE 1:5000

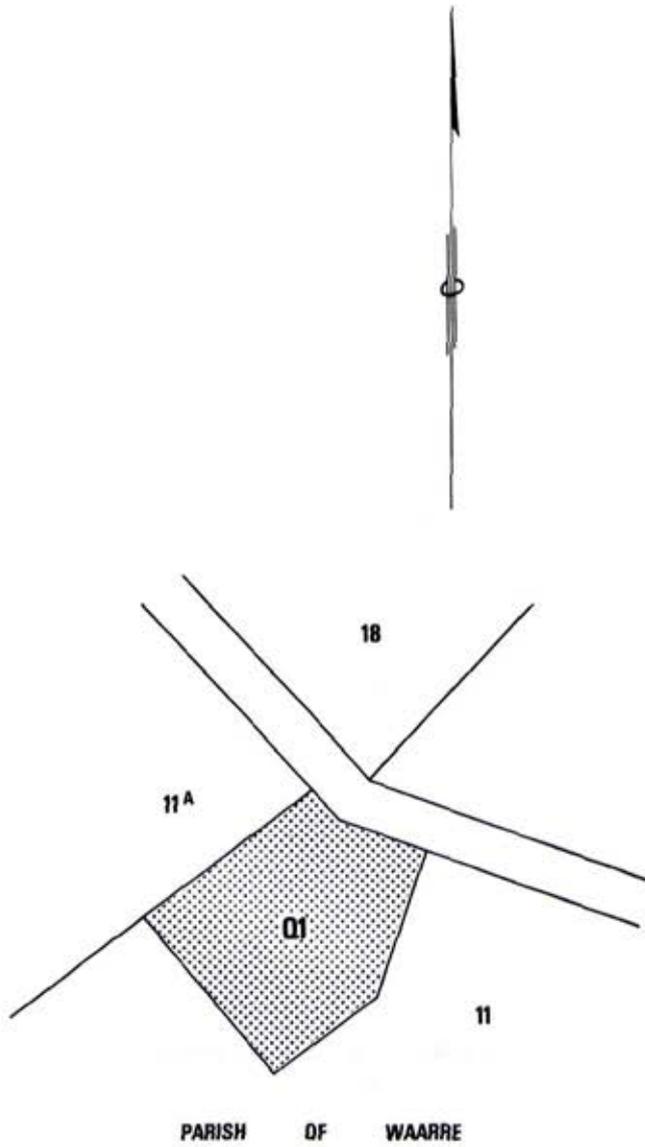
PAARATTE



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**AGRICULTURE Q1
WAARRE**

MAP 3

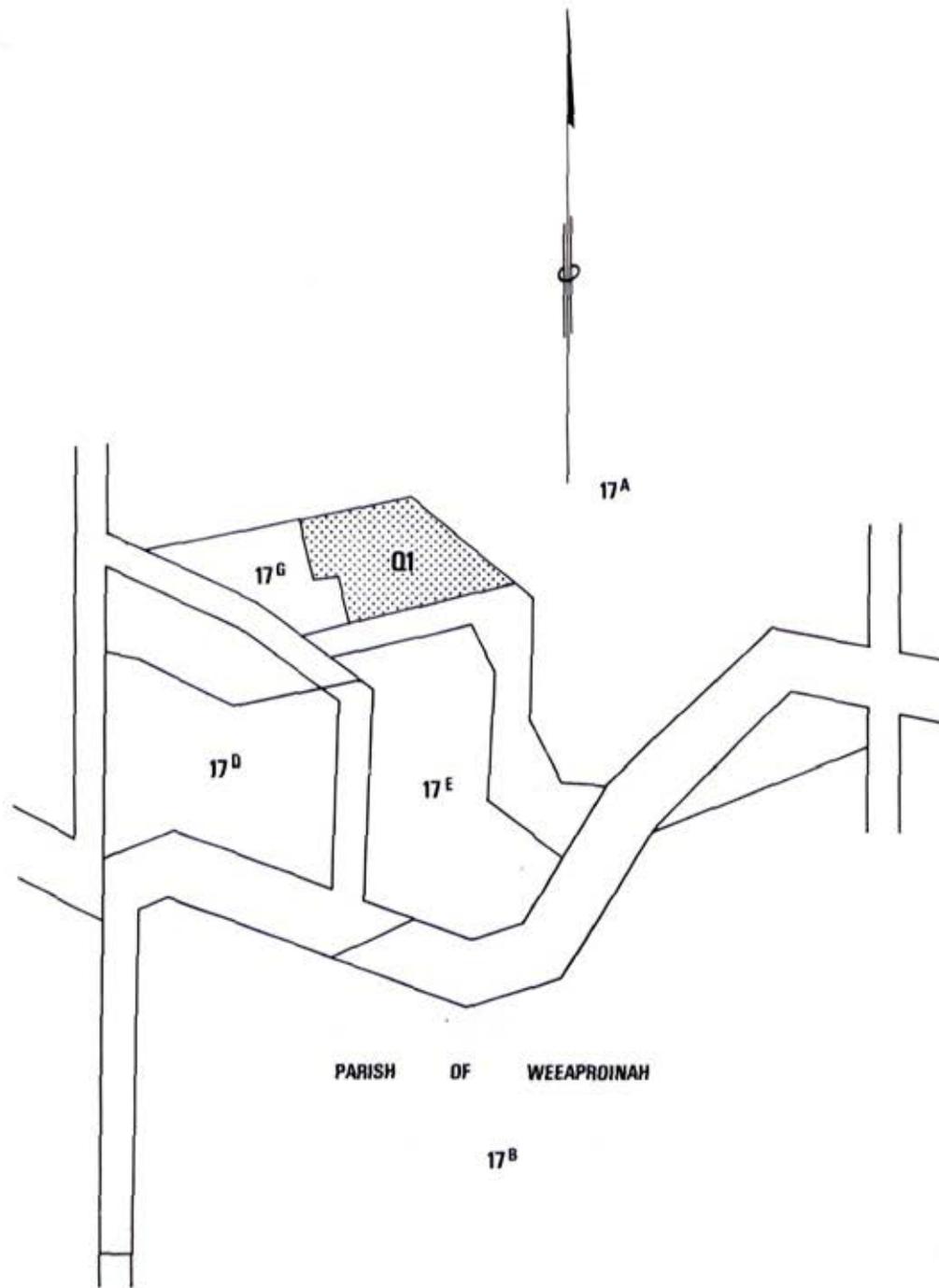


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SCALE 1:5000

**AGRICULTURE Q1
WEEAPROINAH**

MAP 4



PARISH OF WEEAPROINAH

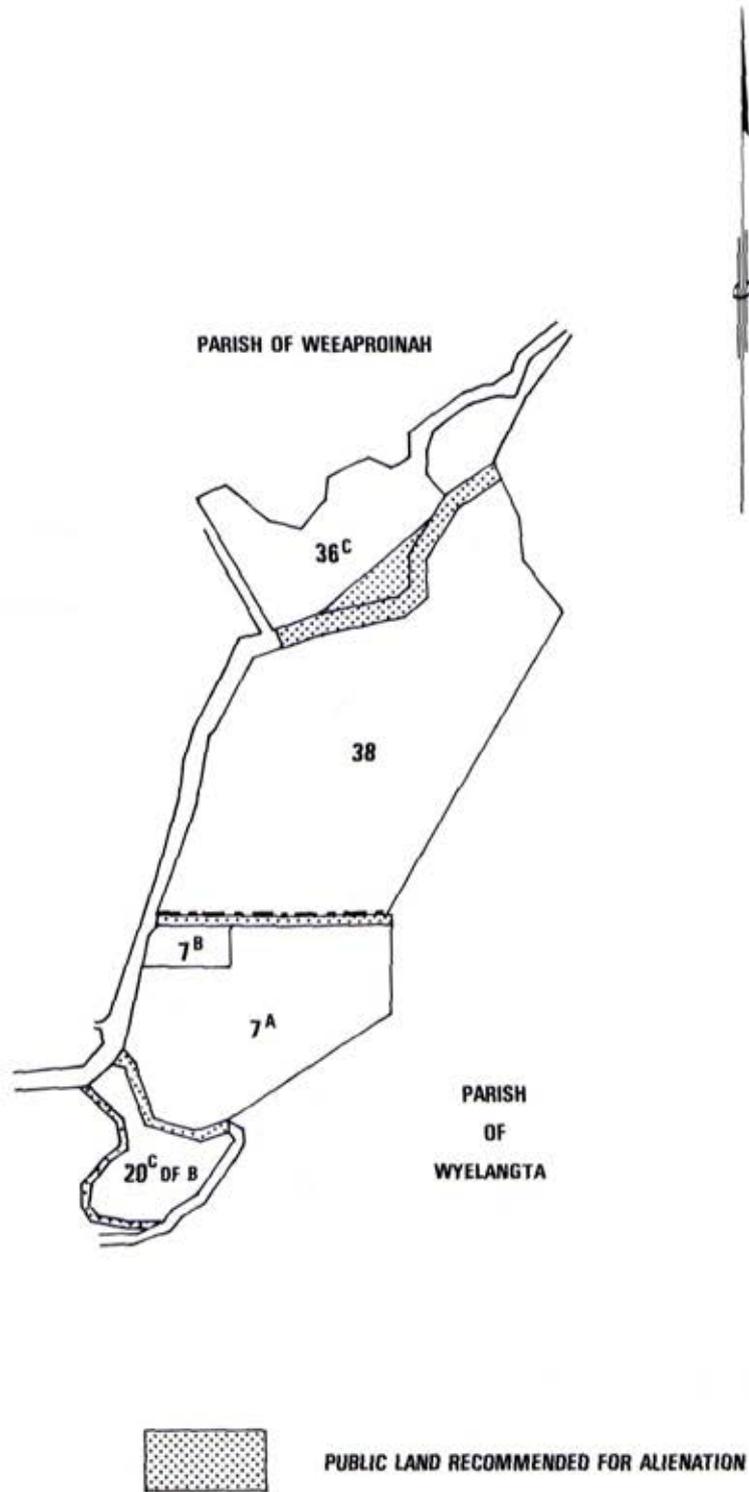
17^B



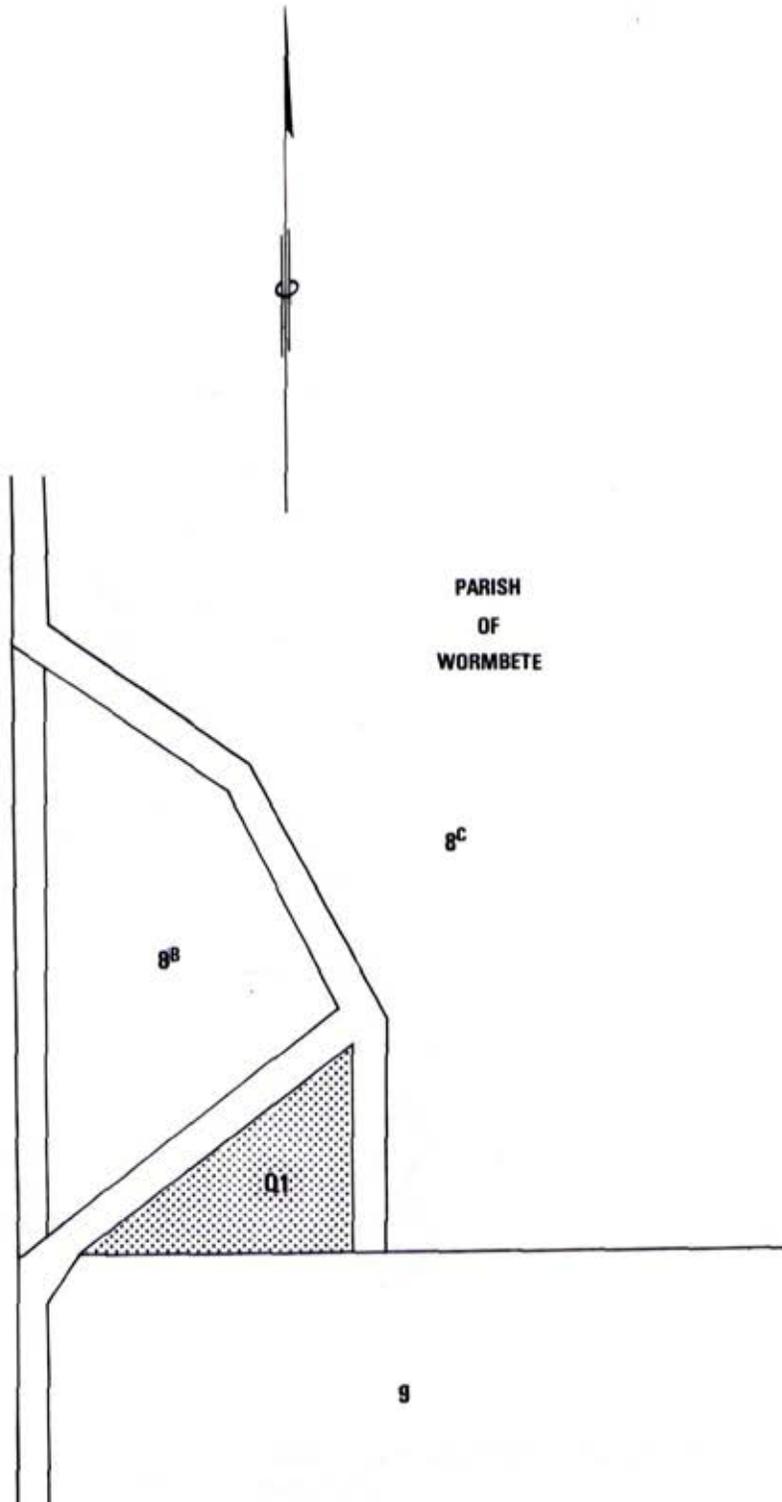
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SCALE 1:5000

WEEAPROINAH-WYELANGTA



WORMBETE



PARISH
OF
WORMBETE

5

8^B

8^C

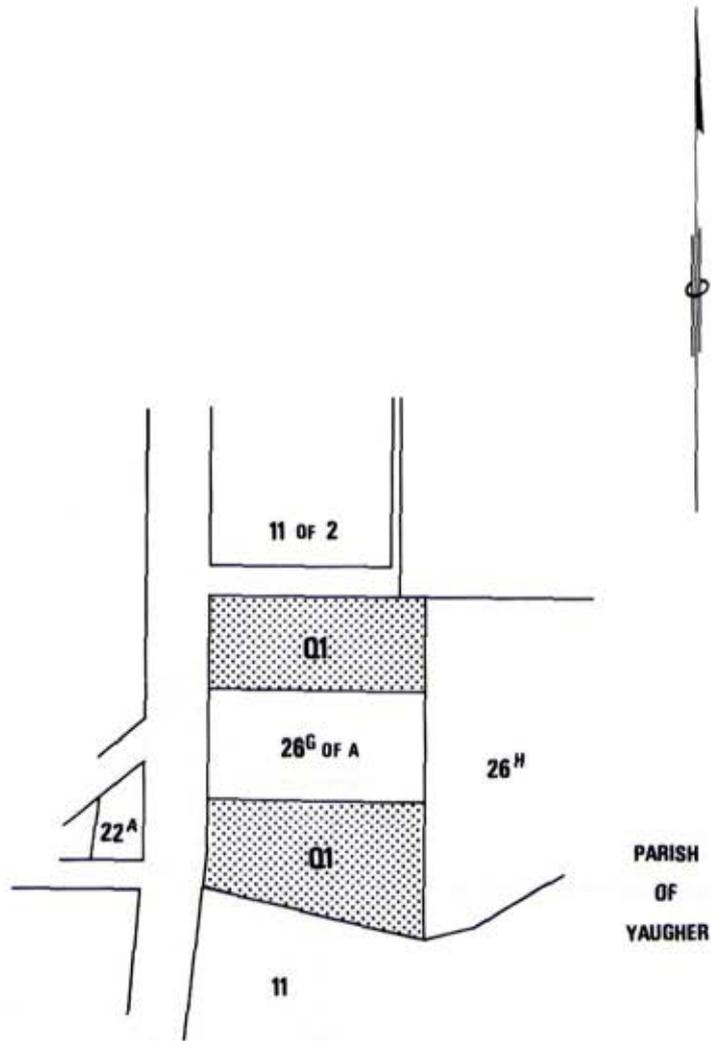
Q1

9



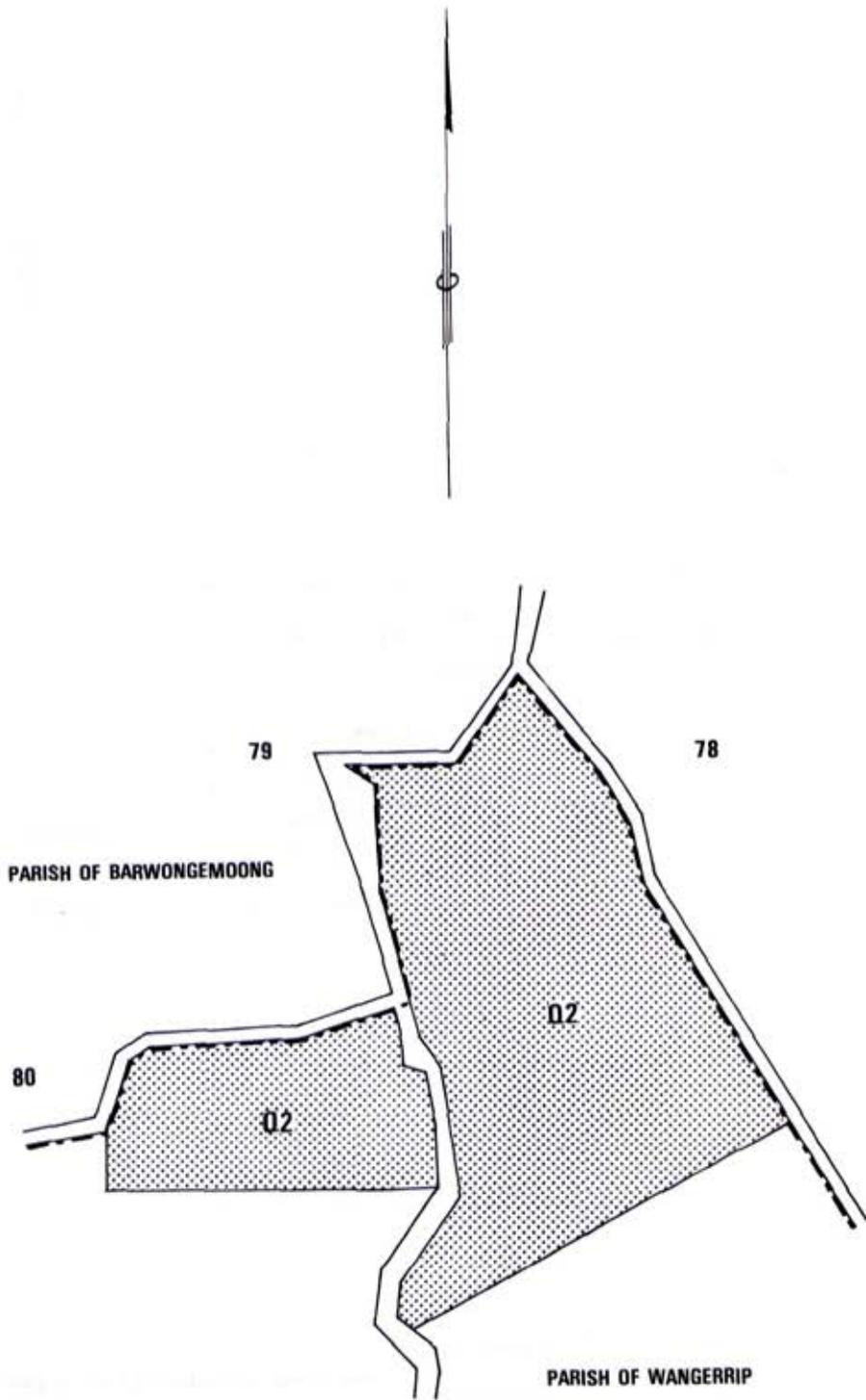
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YAUGHER



PUBLIC LAND RECOMMENDED FOR ALIENATION

WANGERRIP



PUBLIC LAND RECOMMENDED FOR ALIENATION