

PROPOSED RECOMMENDATIONS

MALLEE STUDY AREA

**LAND CONSERVATION COUNCIL, VICTORIA
MELBOURNE, MARCH 1976**

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Contents

	PAGE
INTRODUCTION	5
A. Parks	9
B. Wilderness	14
C. Reference Areas	16
D. Wildlife Reserves	18
E. Hardwood Production	23
F. Agriculture	25
G. Flora and Fauna Reserves	30
H. Education Areas	31
I. Bushland Reserves	33
J. Public Land Water Frontages	36
K. Roadside Conservation	40
L. Recreation and Recreation Reserves	43
M. Scenic Reserves	47
N. Mineral and Stone Production	48
O. Water Supply and Drainage Reserves	51
P. Utilities, Survey, and Other Reserves	58
Q. Eucalyptus Oil Production	60
R. Military Training	61
S. Uncommitted Land	62

MAPS

Map A—The Study Area	1: 300,000	} Packed separately
Maps 1–13—The Study Area	1: 100,000	
Map B—Mildura–Merbein	1: 50,000	

INTRODUCTION

The publication of proposed recommendations for the Mallee study area is the second of the steps the Land Conservation Council takes to "carry out investigations and make recommendations to the Minister with respect to the use of public land in order to provide for the balanced use of land in Victoria" (*Land Conservation Act 1970*).

Procedures

The first step was the publication of the descriptive report on the study area on 11th September, 1974. In the following 60 days, the Council received submissions on the future uses of the public land from 368 organizations and individuals, representing a wide range of interests. After considering the submissions and visiting the study area, the Council has prepared these proposed recommendations. These 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

This volume contains written recommendations and is accompanied by fifteen maps. The recommendations are grouped under major use headings, such as Parks, Hardwood Production, and so on. Map A, at a scale of 1:300,000, covers the whole study area and gives a broad view of the recommendations. It includes a key to thirteen sheets, which cover the study area at the scale 1:100,000, and which show the recommendations in greater detail. Map B shows the recommendations for the public land in the Mildura-Merbein-Red Cliffs area.

Land Uses

Table 1 summarizes the proposed recommendations in terms of the major forms of use. It is important to realize that for each primary use there are a number of compatible secondary uses. In addition to stating 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 enlargement of the Wyperfeld and Hattah Lakes national parks, and the establishment of a State park in the south of the Sunset Country and a regional park at Lake Albacutya, together with the creation of reference areas and education areas covering a range of the land types found in the study area. The recommendations include proposals for a number of wildlife reserves containing habitats of particular wildlife significance, and for conservation of the many small areas of public land still carrying native vegetation that are scattered through the farmlands of the area.

The Council recommends that large areas of public land, most of which is already cleared and developed for farming, be used for agriculture. Alienation (conversion to freehold) is recommended for the greater part of this land, while a new form of lease is proposed for the remainder.

TABLE 1
RECOMMENDED PUBLIC LAND USE

	Area (ha)	Percentage of all land in the study area	Percentage of the public land
Parks	235 000	5	16
Wilderness	114 000	3	8
Reference areas	23 100	<1	2
Wildlife reserves	42 000	1	3
Hardwood production	33 200	1	2
Agriculture—			
Alienation	45 000	1	3
Limited cultivation lease	36 600	1	3
Education areas	3 800	<1	<1
Mineral and stone production	2 000	<1	<1
Water supply and drainage reserves	10 300	<1	1
Other recreation and conservation reserves	22 500	<1	2
Uncommitted land	873 000	20	60

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

The study area covers a total of 4 300 000 ha, of which 1 443 000 ha is public land.

Where a given area of land is subject to demands from competing uses, 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 the demands upon land. 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, since land use should be reviewed periodically as community needs and technology change.

The Council recommends that large areas of the Sunset Country and the Big Desert be uncommitted land. Although many submissions advocated the creation of large reserves for nature conservation and recreation in the Sunset Country, the Council believes that at present the available knowledge concerning the biological, geological, and recreation resources of this area forms an inadequate base for decisions to reserve very large areas. In addition, the capability of the public land for agriculture varies considerably and has not been investigated in detail. However, the Pink Lakes State park recommended by the Council does contain examples of the major land types of the Sunset Country.

Large areas of the Big Desert are recommended for recreation and nature conservation use. The creation of more reserves in the future may be justified by the discovery of plant or faunal associations that are not represented in the existing reserves.

The Council believes that research into all aspects of the ecosystems of the Sunset Country and the Big Desert should be encouraged. This applies especially to research into mallee as a plant community, and research into the mammal fauna. As part of this research the Council believes that the development of techniques for managing the wildlife populations of the area should be permitted on the uncommitted land.

GENERAL RECOMMENDATIONS

The Council makes the following recommendations, which qualify those in the body of the text :

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

In particular the Council wishes to stress that in the Mallee study area the introduced rabbit is a major problem in the management of the public land. There is an urgent need to recognize this, and to provide the necessary resources of both finance and staff to keep rabbit numbers at minimum levels. Regeneration of flora, and consequently fauna, will not occur unless the rabbit problem is dealt with adequately.

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

In its previous recommendations the Council 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 from fire, not only *State forests* and *national parks*, but also *protected public land*, although in *national parks* and *protected public lands*, fire prevention works may be undertaken only with the agreement of the managing authority or as determined by the Governor in Council.

In *State forests*, which comprises *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.

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

Our knowledge of the distribution and ecology of plants and animals and other features is very imperfect, and there must be many places in Victoria where special values are still unrecognized and for which no special provision can be made in present planning.

- IV. As the boundaries of many of the areas referred to in the recommendations have not been precisely surveyed, they may be subject to minor modification, road excisions, easements, and other adjustments that may be necessary.
- V. Where areas of public land are not specifically referred to in these recommendations, present legal uses and tenures should continue.
- VI. 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.

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. If these resources are not provided, the Council's recommendations cannot be effectively implemented. There is an urgent need to make additional field staff and finance

available, particularly to the National Parks Service. The Council recommends 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. It recognizes that in some cases existing legislation will have to be amended in order to effectively implement the recommendations in this volume.

A. PARKS

The number of people participating in recreational activities in natural surroundings is increasing rapidly, and the Council believes that participation will continue to increase. However, the area of natural land available for these activities is decreasing and it is essential to allocate land to them now, before alienation and clearing further reduce the resources available.

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, the main differences arising from variation in size and content and 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 a park is created. Such definitions will help planners, managers, and users of parks.

It is necessary to establish the aims of management of 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 and should include the identification and strict protection of significant ecological systems as well as the development and use of manipulative 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 National Parks Service and the Fisheries and Wildlife Division. Special care will be required in the location and management of areas zoned for intensive recreation 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.

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 for 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 facilities 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. Wilderness zones, which are large undisturbed tracts of land used for solitude and primitive unconfined forms of recreation, could be within a national park. It is envisaged that Victoria would contain only a few national parks.

State park

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

State parks should include samples of each major land type not already represented in national parks. 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.

Regional park

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

These parks would be intensively developed for passive recreation such as picnicking and walking for pleasure and could include reasonable vehicular access. Although natural beauty would enhance their value, proximity 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

National parks

A1 Wyperfeld

That the land shown on the maps (127 000 ha) be used to :

(a) provide opportunities for recreational and educational experiences related to enjoying and understanding natural environments ;

(b) conserve and protect the natural ecosystems ;

and that :

(c) the present licensees of Pine Plains be permitted to continue grazing the area for a lease period of 21 years, after which no further grazing be permitted ;

(d) facilities be provided at Pine Plains to cater for the traditional use of the area for group picnics ;

(e) research projects currently under way on Pine Plains, in particular those concerned with rabbit control, be permitted to continue ;

(f) hunting and the use of power boats not be permitted on the part of Lake Albacutya within the national park ;

(g) funds be made available for the re-establishment of the endangered *Callitris* and *Casuarina* forests in the park, and that the re-establishment work be undertaken in consultation with the Forests Commission and the Soil Conservation Authority ;

(h) special emphasis be placed on the problem of vermin animals, particularly the rabbit, and that the managing authority be provided with adequate resources to properly control this destructive pest ;

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

This recommendation enlarges the existing park. To the north it adds Pine Plains, an extensive area of grasslands and woodlands at the termination of Outlet Creek. Pine Plains has high aesthetic and nature conservation values due to its diverse and unusual vegetation types and land forms. To the south, a wild area of Big Desert dunes is included in the park. The dunes extend to the western shores of Lake Albacutya, an intermittent freshwater lake, with attractive fringing shrubby and grassy woodlands of red gum, black box, and yellow gum. The park boundary in Lake Albacutya is parallel to and 1 km from the high water line on the western shore.

The additions to the park already have a serious rabbit problem, and noxious weeds are a problem within the existing park. Unless the resources necessary to control both rabbits and weeds are made available to the managing authority, the park and the adjoining freehold land will be adversely affected.

A2 Hattah-Kulkyne

That the land shown on the maps (48 000 ha) be used to :

- (a) provide opportunities for recreational and educational experiences related to enjoying and understanding natural environments ;
 - (b) conserve and protect the natural ecosystems ;
- and that :
- (c) grazing of domestic stock be phased out ;
 - (d) camping continue to be permitted on sections of the frontage to the Murray River ;
 - (e) vehicular access through the area continue to be provided ;
 - (f) honey production be permitted in zones of the park subject to conditions imposed by the managing authority ;
 - (g) funds be made available for the re-establishment of the endangered *Callitris* and *Casuarina* forests in the park, and that the re-establishment work be undertaken in consultation with the Forests Commission and the Soil Conservation Authority ;
 - (h) special emphasis be placed on the problem of vermin animals, particularly the rabbit, and that the managing authority be provided with adequate resources to properly control this destructive pest ;

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

This park contains a long frontage to the Murray River, an extensive area of the Murray flood plain, including the Chalka Creek anabranch, and about 20 fresh-water lakes. The park also contains a substantial area of mallee vegetation on aeolian sandy deposits.

The Hattah-Kulkyne area has been the worst rabbit-infested area in Victoria. Enormous resources have been and continue to be used to control this pest, and the managing authority will need special resources to maintain and extend the necessary rabbit control work. The area also has a considerable weed problem. The area's early history of sheep and cattle grazing has led to the introduction of many of these. Grazing has exerted a degree of control over some weed species and when it is phased out particular attention will have to be paid to the weed problem.

State park**A3 Pink Lakes**

That the area shown on the maps (52 000 ha) be used to :

- (a) provide opportunities for recreational and educational experiences related to enjoying and understanding natural environments ;
 - (b) conserve and protect the natural ecosystems ;
- and that :
- (c) grazing by domestic stock be phased out ;
 - (d) salt-harvesting be permitted on Lakes Crosby and Kenyan, but not on Lake Becking ;
 - (e) adequate resources be made available to the managing authority to achieve the required level of control over rabbit numbers ;

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

This park contains an extensive area of the salt pans, saltbush flats, and copi rises typical of the Raak land system. A group of salt pans in the south-east of the park, the Pink Lakes, have potential for recreation and tourism. The harvesting of salt (a layer is deposited each summer) from the beds of two of the three lakes would be of interest to many tourists. The park also contains an area of wild sand dunes (including Mount Crozier) typical of the Berrook land system, and an area (known as the Honeymoon Hut area) of the grassland plains that occur within this land system. In the east of the park the characteristic east-west dunes of the Central Mallee land system are represented.

This park will require constant rabbit control work because of its history of grazing.

Regional park**A4 Lake Albacutya**

That the land shown on the maps (8 000 ha) be used to :

- (a) provide opportunities for open-space recreation and education for large numbers of people, related to the enjoyment and understanding of natural or semi-natural environments ;
 - (b) protect and conserve the natural ecosystems to the extent that this is consistent with (a) above ;
- and that :
- (c) the existing pattern of legal recreation use by local people be permitted to continue ;
 - (d) hunting, boating, and fishing be permitted and, if necessary, these activities be zoned, in particular to minimize disturbance near the national park section of the lake ;
 - (e) grazing on the bed of the lake be permitted at the discretion of the managing authority ;
 - (f) a programme of reclamation and revegetation of the degraded land to the east of the lake be undertaken, and that grazing in these areas be phased out if this is deemed necessary by the managing authority ;

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

This park contains most of Lake Albacutya and its shores, which carry attractive tall woodlands of red gums. It also includes the lunette to the east of the lake, much of which is rabbit infested and badly eroded. To the north, the park contains a section of Outlet Creek and the Big Desert dunes through which the creek meanders. When Lake Albacutya holds water it is intensively used by local people for picnicking, swimming, boating, fishing, and hunting.

B. WILDERNESS

The concept of wilderness ("an uncultivated and uninhabited tract"—Oxford dictionary) is at present receiving attention in Australia after having been established by legislation in the U.S.A. in 1964 (*The Wilderness Act*).

The wilderness experience involves the perception of being part of nature, of an environment unaltered by human intervention, of isolation, and of being exposed to the challenge of the elements. In a wilderness, Man should function as a part of the natural systems, and on equal terms with nature.

The main elements of the appeal of wilderness are :

- * spiritual refreshment and an awareness of solitude, arising from close contact with the uninhabited, undisturbed natural environment ;
- * the knowledge that large, wild natural areas, untouched by Man, exist and can be experienced ;
- * refuge from the pressures, sights, and sounds of modern urban life ;
- * the adventure and challenge of pitting one's powers of endurance and self-reliance against the forces of nature.

Wilderness, therefore, requires land that still retains its primeval character, and is without improvements or human habitation. Wilderness areas are used for recreation of a primitive unconfined nature, and thus, to preserve the wilderness values, it will be necessary to protect the natural ecosystems and maintain land forms and populations of plants and animals in an undisturbed state. Because of this requirement wilderness will have considerable nature conservation values. Areas suitable for wilderness are a very scarce resource, and are becoming scarcer as the road and fire-trail network on public land is extended and upgraded.

To fulfil the uses for which they are intended, wildernesses must be very large. They should require at least several days to traverse on foot at their narrowest point. This spaciousness is the essential characteristic distinguishing wilderness from the many other smaller undisturbed or primitive areas that may be found as "islands", even in areas which have been developed for more intensive uses.

Many smaller undisturbed or primitive areas that can provide some degree of solitude will continue to exist as zones in parks or other areas, and can be used by people who do not wish to spend several days in the isolation of wild country. These smaller areas, however are not a substitute for the wilderness described here.

Management of a wilderness would aim at maintaining the value of the area for solitude and unconfined types of recreation by strictly controlling the number of people using the area at any one time. Experience in the United States of America has shown that tourism and the more conventional forms of outdoor recreation commonly associated with parks are among the greatest threats to wilderness.

Wilderness activities may include some activities such as horse-riding that may not be acceptable in some parks. Vehicles (other than those necessary for management), grazing, and mining would be excluded from the wilderness.

Users of wilderness areas must be prepared to face difficult and challenging conditions, and Council stresses the need to bring to the attention of the public the potential hazards associated with the use of these areas.

There should be only two or at the most three wildernesses in Victoria. These would include one in the rugged and heavily forested mountain region, preferably covering from sub-alpine to foothill and riparian environments, and one in the semi-arid Mallee country. This will ensure that opportunities continue to exist in a range of environments for people to travel for several days in wild challenging conditions without hearing or seeing evidence of human activity.

RECOMMENDATION

B1 Big Desert

That the area shown on the maps (114 000 ha) be used to :

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

and that :

(b) the value of the area for providing solitude be maintained by strictly controlling the numbers of people using the wilderness at any one time ;

(c) construction of roads or tracks and the entry of vehicles not be permitted ;
and that it be permanently reserved under section 14 of the *Land Act* 1958, and managed by the National Parks Service.

The wilderness consists of the dunes and plains of the Big Desert. Some of the dunes are steep and high, and impart scenic grandeur to the area.

The wilderness contains no major roads or tracks. Substantial areas of uncommitted land separate it from the farmland to the north and south, and the Murrayville-Yanac road to the east. This uncommitted land may be used for some activities not permitted in the wilderness, in particular intensive fire-protection works.

This area is not very vulnerable to vermin and noxious weeds, as it is relatively undisturbed. However, the buffer area should be used, where possible, to control the spread of vermin and noxious weeds into and from the proposed wilderness area.

The Council believes that this is the best wilderness to be found in western Victoria. To the west it adjoins a large area of public land in South Australia. Part of this is reserved as park at present, and firm proposals have been made to similarly reserve the remainder.

C. REFERENCE AREAS

Reference areas are tracts of public land containing viable samples of one or more land types that are relatively undisturbed and that are reserved in perpetuity 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.

Reference areas would normally be typical examples of land types that have been extensively developed elsewhere for productive uses such as agricultural 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 area 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 the status of these areas and for the establishment of an advisory committee 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 our 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 become available. The best basis for selecting reference areas are land systems surveys in which the features of climate, geology, topography, soils, and native vegetation are integrated.

RECOMMENDATIONS

- C1-C11 (a)** That the areas listed below and shown on the maps 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 and the authority managing the 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.

- C1** Millewa (Millewa land system) (2 300 ha)
Woorinen Formation (aeolian sand to clay) ; ridge, plain, and sparse east-west dunes ; grassland, woodland of belar and sugarwood, big mallee ; 250 mm average annual rainfall.
- C2** Lake Walla Walla (Neds Corner land system) (700 ha)
Coonambidgal Formation ; flat river terrace above flood level ; saltbush and bluebush ; 250 mm average annual rainfall.
- C3** Sunset (Central Mallee land system) (8 400 ha)
Woorinen Formation ; dense east-west dunes over north-west to south-east trending ridges ; mallee and hummock-grass mallee ; 275 mm average annual rainfall.
- C4** Chalka Creek (Lindsay Island land system) (500 ha)
Coonambidgal Formation (clay, sand, and sandy clay) ; flat flood-plain with shallow channels ; woodland of red gum and black box ; 280 mm average annual rainfall ; subject to frequent flooding from Murray River.
- C5** Kia (Berrook land system) (1000 ha)
Lowan Sand (white to yellow sand) ; irregular dunes of high and low relief ; mallee, hummock-grass mallee, scrub mallee ; 280 mm average annual rainfall.
- C6** Wymlet (Hopetoun land system) (2 100 ha)
Woorinen Formation ; east-west dunes, heavy plains ; mallee, hummock-grass mallee ; 300 mm average annual rainfall.
- C7** Purnya (Raak land system) (1 800 ha)
Coonambidgal Formation (saline) and Yamba Formation (gypsum) ; salt pans and powdered gypsum (copi) rises ; saltbush, beadbush, and mallee ; 300 mm average annual rainfall.
- C8** O'Sullivan Lookout (Big Desert land system) (1 900 ha)
Lowan Sand ; high irregular dunes with intervening sand plains ; heath, mallee heath, scrub mallee ; 315 mm average annual rainfall.
- C9** Wonga Lake (Tyrrell Creek land system) (400 ha)
Coonambidgal and Shepparton Formations (clay, sand, and sandy clay, often grey) and Lowan Sand ; flat flood-plain, and dunes rising from the flood-plain ; woodland of red gum and black box on the flood-plain, woodland of slender cypress pine on the dunes ; 325 mm average annual rainfall ; infrequently flooded.
- C10** Dattuck (Big Desert land system) (900 ha)
Lowan Sand ; dense, low, irregular dunes ; mallee, hummock-grass mallee, and scrub mallee ; average annual rainfall 325 mm.
- C11** Telopea Downs (Big Desert land system) (2 600 ha)
Lowan Sand ; low irregular dunes ; heath, heath-mallee ; 360 mm average annual rainfall.

[Land systems are taken from Rowan, J. N. and Downes, R. G.—"A Study of the Land in North Western Victoria", Soil Conservation Authority, T.C.2, 1963.]

D. 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. While 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 are selected firstly for conservation of species that are harvested or directly utilized by the community. Secondly, they may contain the habitat of endangered species. Thirdly, they may include areas that have particular wildlife values (such as specialized breeding grounds), a high species diversity, or educational or scientific interest.

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 actively collaborate with the Fisheries and Wildlife Division regarding these aspects of wildlife conservation. The Council recognizes that this may involve manipulation of habitats in certain specific areas. The proposed wildlife reserves represent normal problems for vermin and noxious weeds control and therefore need special resources for this work to be done carefully and regularly.

RECOMMENDATIONS

D1 Kings Billabong

That the area shown on the maps (2 200 ha) be used :

(a) primarily to conserve native animals, and for public education and recreation where this does not conflict with the primary aim ;

and that :

(b) the use of waterways and pump installations to supply irrigation water to Mildura continue ;

(c) in the southern part of the area the disposal of saline drainage water continue to be permitted, pending the construction of works enabling disposal to inland evaporating basins ;

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

The Kings Billabong area contains a mosaic of wet- and dry-land habitats found on the Murray River flood-plain. Its large waterfowl populations and proximity to Mildura make it a popular tourist attraction.

D2 Lakes Powell and Carpul

That the area shown on the maps (660 ha) be used :

(a) primarily to conserve native animals, and for public education and recreation where this does not conflict with the primary aim ;

and that :

(b) check banks blocking the flow of water from the Murray River to Lake Powell be removed ;

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

These lakes are surrounded by red gum and black box woodlands, and are filled by Murray River floods. The value of the lakes for wildlife conservation could be enhanced by works to hold water in the lakes after flood recession.

D3 Wandown

That the area shown on the maps (1 500 ha) 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 reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

This reserve consists mainly of dense mallee, with a few semi-cleared areas. It contains a population of mallee-fowl.

D4 Wathe

That the area shown on the maps (5 500 ha) 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 reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

This reserve contains diverse habitats—cleared grassy areas, regenerating scrub, dense mallee, and shallow lakes formed by surplus flows from a channel passing through the reserve. It supports a high stocking of mallee-fowl.

D5 Bronzewing

That the area shown on the maps (11 700 ha) 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 reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

This reserve contains dense mallee, with a few semi-cleared areas. It is the habitat of the mallee-fowl, and the large size of the reserve will permit research into manipulation of the habitat of this important species.

D6 Red Bluff

That the area shown on the maps (12 000 ha) 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 reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

The distribution of the Victorian sub-species of the rare western whipbird is centred on Red Bluff in the south-west of the Big Desert. Its habitat appears to be the extensive stands of mallee broombush that occur in this locality.

D7 Lake Lalbert

That the area shown on the maps (730 ha) 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 reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

This is a shallow lake fed by Lalbert Creek. On average it receives water once every 3-4 years. It supports a red gum woodland and is prime waterbird habitat.

D8 Tchum Lake (north)

That the area shown on the maps (50 ha) be used :

(a) primarily to conserve native animals, and for public education and recreation where this does not conflict with the primary aim ;
and that :

(b) the lake continue to be used for receiving channel outfall water and as a regulating basin by the State Rivers and Water Supply Commission ;
and that it be reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

The northern part of the Tchum Lakes supports dense reed-beds and is surrounded by black box. It supports good populations of waterbirds, and is a popular hunting area.

D9 Vinifera

That the area shown on the maps (1 200 ha) be used for the conservation of wildlife and for timber production and that a management plan be prepared by the Forests Commission and submitted to the Fisheries and Wildlife Division for their agreement.

Note : This recommendation also appears under E6 in the Hardwood Production chapter.

The Vinifera forest contains stands of red gum of various ages and density. It is flooded frequently by the Murray River, and several billabongs retain water for long periods.

D10 The Marshes

That the area shown on the maps (3 100 ha) be used :

(a) primarily to conserve native animals, and for public education and recreation where this does not conflict with the primary aim ;
and that :

(b) the use of these areas for holding flood flows from the Avoca River continue ;
and that it be reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

This system of lakes and marshes is the termination of the Avoca River. When the Marshes hold water, birds breed there in large numbers. It is one of the most popular hunting areas in Victoria.

D11 Sheepwash Creek

That the area shown on the maps (260 ha) be used :

(a) primarily to conserve native animals, and for public education and recreation where this does not conflict with the primary aim ;
and that :

(b) the use of this area for flood regulation continue ;

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

Sheepwash Creek is an anabranch of the Loddon River. This reserve contains low woodland of black box with dense lignum ground cover. It is flooded frequently.

D12 Stevenson Swamp

That the area shown on the maps (90 ha) 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 reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

This swamp contains semi-permanent water, which is moderately saline (1,000–6,000 mg/l). The muddy flats around the swamp are used by waders.

D13 Wandella

That the area shown on the maps (3 000 ha) be used for the conservation of wildlife and for timber production and that a management plan be prepared by the Forests Commission and submitted to the Fisheries and Wildlife Division for their agreement.

Note : This recommendation also appears under E7 in the Hardwood Production chapter.

The Wandella forest contains black box with an understorey of lignum and grasses and herbs. It is flooded by Wandella Creek, an effluent of the Loddon River.

D14 Lake Murphy

That the area shown on the maps (240 ha) be used :

(a) primarily to conserve native animals, and for public education and recreation where this does not conflict with the primary aim ;
and that :

(b) the lake continue to be used for receiving channel outfall water ;

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

This lake contains permanent fresh water, and is fringed with rushes and sparse trees.

D15 Lake Yando

That the area shown on the maps (90 ha) be used :

(a) primarily to conserve native animals, and for public education and recreation where this does not conflict with the primary aim ;

and that :

(b) the lake continue to be used for receiving channel outfall water; and that it be reserved under section 14 of the *Land Act* 1958 and managed by the Fisheries and Wildlife Division.

This shallow lake contains permanent fresh water, and is fringed with rushes, reeds, and black box.

D16 Reedy Lakes

That these lakes (670 ha) be used for water supply purposes and the conservation of native animals, and for public education and recreation where this does not conflict with the primary aims ;

and that the area be managed by the State Rivers and Water Supply Commission in consultation with the Fisheries and Wildlife Division.

Note : This recommendation also appears under O22, in the Water Supply and Drainage chapter.

The three Reedy Lakes store and transmit water for irrigation and stock and domestic use. The lakes also support populations of waterbirds, including large breeding colonies of white and straw-necked ibis. The proximity of the lakes to Kerang and the Murray Valley Highway gives them potential as a tourist attraction.

D17 Little Lake Charm

That the area shown on the plans (150 ha) be used for water supply purposes and the conservation of native animals, and for public education and recreation where this does not conflict with the primary aims ;

and that the area be managed by the State Rivers and Water Supply Commission in consultation with the Fisheries and Wildlife Division.

Note : This recommendation also appears under O21, in the Water Supply and Drainage chapter.

This lake contains permanent fresh water and it is connected to the " Lakes Channel " running from the Reedy Lakes.

E. HARDWOOD PRODUCTION

Forests within the study area that are used for timber production are limited to the stands of red gum and black box that grow on the flood-plain of the Murray River, and black box on some minor streams in the south.

Although the forests are not highly productive, they fulfil a local demand for timber for various uses. They mainly supply vine trellises to the irrigation areas and fencing materials to the dry-land farms. Logs are supplied to two sawmills, and small quantities of railway sleepers and firewood are produced. The area's isolation from alternative sources of supply enhances the value of locally-grown timber.

In addition to supplying timber, the forests of the Murray flood-plain have high wildlife values, which are closely related to the existence of large numbers of mature and overmature trees. It will be necessary to identify some areas where forestry practices are designed to maintain significant areas with these qualities.

The forests are also used for grazing, honey production, and recreation. Grazing in the forests supplements grazing on freehold land, and often flooding in the forests produces good feed when little is available elsewhere.

Red gum is one of Victoria's most important honey-producing species, and large numbers of hives are moved into the forests when a heavy nectar flow occurs. Black box is also a valuable species.

Recreation is an important form of use in the forests, especially in summer. Activities undertaken include swimming, fishing, camping, hunting, and pleasure driving. The forests contain diverse wildlife populations, and conservation of these is also important.

Careful management of the forests is necessary to ensure that conflicts between the various uses are minimized. The recommendations below list several areas in which high nature conservation or recreation values should receive special attention.

RECOMMENDATIONS

E1-E8 That the areas shown on the plans be used to :

- (a) produce hardwood timber in a manner that recognizes the importance of the recreation and nature conservation values of the forests ;
 - (b) provide opportunities for open-space recreation and education ;
 - (c) conserve native plants and animals (see Chapter D : Wildlife Reserves) ;
 - (d) produce honey and other forest produce as defined in the *Forests Act* 1958 ; and that :
 - (e) grazing of domestic stock be permitted under conditions similar to those applying to Grazing Leases as set out in Chapter F ;
 - (f) the particular areas and values listed below be protected, in some cases by means of reserves under section 50 of the *Forests Act* 1958 ;
- and that the areas remain or become reserved forest and be managed by the Forests Commission.

E1 Potterwakagee Creek and Wallpolla Island (600 ha)

- E2** Abbotsford Bend to Bottle Bend (100 ha)
That the management of these forests recognize their importance in providing recreation for the people of the Sunraysia district.
- E3** Lambert Island to Graces Bend (2 800 ha)
- E4** Liparoo to Yungera Island (10 000 ha)
That the management of these forests recognize their importance in providing recreation for the people of Robinvale and district.
- E5** Boundary Bend to Macredie Island (4 000 ha)
(a) That the management of the forest at Boundary Bend recognize its importance for recreation and landscape preservation.
(b) That Major Mitchell's Lagoons be reserved under section 50 of the *Forests Act* 1958 as a site of historical interest.
- E6** Nyah, Vinifera (1 200 ha)
That the Vinifera Forest be used for the conservation of wildlife and for timber production and that a management plan be prepared by the Forests Commission and submitted to the Fisheries and Wildlife Division for their agreement.
Note : This recommendation also appears under D9 in the Wildlife Reserves chapter.
- E7** Wandella, Appin, Leaghur (3 000 ha)
(a) That the Leaghur Forest continue to be reserved under section 50 of the *Forests Act* 1958 as a site of significance for preservation of Aboriginal relics, and conservation of plants and animals.
(b) That the Wandella Forest be used for the conservation of wildlife and for timber production and that a management plan be prepared by the Forests Commission and submitted to the Fisheries and Wildlife Division for their agreement.
Note : This recommendation also appears under D13 in the Wildlife Reserves chapter.
- E8** Green Lake and Outlet Creek (600 ha)
That Green Lake continue to be reserved under section 50 of the *Forests Act* 1958 for its significance for recreation.

F. AGRICULTURE

Production of cereals, mainly wheat and barley, is the major enterprise on the agricultural lands of the study area. Over the last ten years, the area has grown 40 per cent. of Victoria's wheat and 32 per cent. of its barley, and in 1973 and 1974, when demand was high and the seasons good, the Mallee produced more than 50 per cent. of the State's wheat and barley. Although it yields less per hectare than other wheat-growing areas of the State, conditions in the Mallee permit economies of scale that result in low-production costs and economic returns.

Farms in the Mallee carry about 1.28 million sheep, grown mainly for production of fat lambs and wool, and beef cattle numbers have risen over recent years to about 140,000 head.

Government schemes and private diversions irrigate about 72,700 ha along the Murray and Loddon Rivers, and around the lakes between Kerang and Swan Hill. Pastures predominate around Swan Hill and to the south, while horticulture is the main enterprise in the remainder of the irrigated lands.

Native forage on a large proportion of the public lands is grazed by sheep or cattle.

Present land use and tenure

Most of the land used for cropping, grazing, and irrigated agriculture is freehold. The native forage on public land is grazed under 21-year leases or annual licences issued under the *Land Act* 1958, and, in the case of the forests along the rivers and streams of the study area, under agistment rights or annual licences issued under the *Forests Act* 1958. Grazing on public land is usually an adjunct to farming on freehold land, but some of the holders of the large leases and licences do not have freehold land.

In the extensive dry-land areas of public land, control of grazing by annual licence has serious shortcomings, as the licensees have no security of tenure, and have a tendency to overstock some licensed areas, especially in dry years. While the 21-year grazing leases give reasonable security of tenure, at present there is little supervision of the lessee's management of the land, particularly with respect to stocking rates, and in many places the soils and vegetation are deteriorating.

Some of the public land held under grazing leases or licences issued under the *Land Act* 1958 has been cleared and developed for intensive cropping and grazing. Although clearing for development is not permitted under the provisions of the leases and licences, it has occurred as a result of the history of settlement in the Mallee. Many settlers proceeded with clearing, fencing, and cultivation of leased or licensed public land, and in some cases unsuitable land was cleared and some areas were cleared without permission. Much of the cleared and developed public land is relatively sound, and is being used productively for rotational cropping and grazing.

In some areas where the erosion hazard is greater than average, the intensity of grazing and cropping must be carefully related to the ability of the soils to withstand these uses. Other areas with a severe erosion hazard should not be used for agriculture under present systems of management, and in a few places cleared and developed public land is required for non-agricultural uses.

Similar problems are associated with the use for grazing of public land carrying native vegetation. On the areas in which grazing is permitted, its intensity must be related to the need to maintain a vegetative cover over the soil, and to maintain the amenity of the land for other uses such as recreation and wildlife habitat. These other uses are particularly important in the river forests.

Future land tenure

The recommended tenures for land for agricultural uses are set out in detail in the recommendations that follow. Alienation (conversion to freehold) is recommended for many areas. A new form of tenure, Limited Cultivation Lease, is recommended for other areas, where the Government will retain some control over land management and agricultural practices.

Leases and licences covering areas that are considered unsuitable for agriculture should not be renewed. These areas will require rehabilitation.

The Council believes that grazing on public land should be controlled by issuing 21-year leases, annual licences, or agistment rights, depending on the circumstances as outlined below. In all cases the management authority must be able to control stocking rates.

Twenty-one-year leases—with conditions that permit the Government to exercise general supervision of the grazing management of the leased land, especially with respect to stocking rates—give the lessee reasonable security of tenure, and thus encourage him to conserve the forage resource and to erect improvements such as water points and fencing.

Twenty-one-year leases are best suited to situations in which relatively large areas are grazed, the area is used regularly, and grazing is a relatively important use. These leases would normally be on uncommitted land, but in some cases may be in reserved forest.

The issue of agistment rights, or annual licences with stock limits, is well suited to the following situations :

- * the areas to be grazed are small ;
- * the demand for grazing is intermittent ;
- * grazing is used occasionally as a management tool ;
- * the use for grazing is clearly subordinate to other uses ;
- * there is likely to be a change in use within 21 years ;
- * grazing is being phased out.

On these criteria, 21-year leases are not applicable to grazing on small reserves, water frontages, the small river forests in northern Victoria, softwood plantations, wildlife reserves, certain uncommitted lands, and many hardwood forests.

Grazing in river forests differs from grazing in the dry country in that the soils and vegetation differ and, in the more productive areas, growth of forage depends upon flooding as well as rainfall. In most cases the areas grazed are small. In areas of river forest where it is recommended that grazing be permitted, the existing forms of tenure, agistment rights, or annual licences are considered satisfactory, provided the conditions for grazing management are similar to those set out for grazing leases in the notes on the recommendations below.

Future extension of agriculture

The Council does not believe that large areas of public land carrying native vegetation should be developed for agriculture at present. Most of the land that is well suited for dry-land cropping and grazing is already in production. Scope exists for substantial increases in the productivity of the 2·8 million hectares of freehold land.

However, in a few places alienation of relatively small areas of uncleared public land would improve the viability of adjacent farms without detriment to the public lands as a whole.

The Council believes that the existing farmlands can meet the foreseeable demand (at economic prices) for the commodities they produce. Some uncleared public lands that have potential for agriculture have been retained as uncommitted land. If, in the future, the market for agricultural products outgrows the ability of the existing farmlands to produce them, some of this uncommitted land, including some of the land held under grazing lease, could be brought into more intensive production.

Research farms

The Department of Agriculture's Mallee Research Farm at Walpeup occupies 1,036 ha of public land, and the Irymple Technical School operates a school farm on 90 ha of public land in the Parish of Mildura. The Council proposes no change in the use of these areas.

RECOMMENDATIONS

- F1** That the land shown on the maps (45,000 ha) be used for agriculture and that alienation be permitted under the provisions of the *Land Act* 1958 with erosion prevention clauses where deemed necessary by the Soil Conservation Authority.
- F2** That the land shown on the maps (36,600 ha) be used for grazing with occasional cropping and that its use be controlled by the issue of Limited Cultivation Leases, administered by the Department of Crown Lands and Survey. (The terms and conditions suggested for Limited Cultivation Leases are given in the Notes that follow these recommendations.)
- F3** That grazing of native and volunteer pastures be permitted, at the discretion of the managing authority :
 - (a) on uncommitted land ;
 - (b) in the river forests that are not in parks or wildlife reserves.

In the case of (a) above, the grazing should be controlled by the issue of grazing leases administered by the Department of Crown Lands and Survey. (The terms and conditions suggested for grazing leases are given in the Notes that follow.) In these areas annual grazing licences under the provisions of the *Land Act* 1958 should be issued only where it is not practicable to issue a long-term grazing lease.

In the case of (b) above, the grazing should be controlled by the issue of agistment rights or annual grazing licences.

- F4** That the Mallee Research Farm at Walpeup (1,036 ha) and the Irymple Technical School farm (90 ha) continue to be used for agricultural research and education and that they continue to be reserved under section 14 of the *Land Act* 1958 and managed by the Department of Agriculture and the Education Department respectively.

NOTES ON THE RECOMMENDATIONS

Limited cultivation lease

This lease is a new form of tenure not covered by existing legislation. Its introduction is recommended to permit the Government to exercise general supervision of the use and management of public land, which has been altered and developed but which has greater-than-average erosion or salting hazard. It does not lead to freehold.

The suggested terms and conditions of Limited Cultivation Leases are set out below :

- (i) The term of the lease will be 35 years.
- (ii) After the lease has run 25 years, it will be reviewed and a decision made on renewing it at the end of the 35-year term.
- (iii) The leases will not be protected forest (they should be part of the country area of Victoria, and it will be the responsibility of the Country Fire Authority to provide adequate fire protection for them).
- (iv) The conditions applying at present to grazing leases under the *Land Act* 1958, which are consistent with these Notes, will apply.
- (v) The Government may exercise general supervision of the management of the leases, and may issue directions to the lessee with respect to the following matters :
 - (a) grazing management and stocking rates ;
 - (b) subdivisional fencing, water supply, and other improvements ;
 - (c) frequency of cropping and cultivation ;
 - (d) timing and method of cultivation ;
 - (e) retention of native vegetation on erosion-prone areas or near salt pans ;
 - (f) reclamation of eroded areas.

The Department of Crown Lands and Survey should be advised with respect to the supervision of the leases by a group consisting of representatives from the Soil Conservation Authority, the Department of Agriculture, the Department of Crown Lands and Survey, and representatives of the lessees and local landholders. The District Advisory Committees that report to the Soil Conservation Authority are well suited to this task. The Committees consist of a majority of elected landholders, and representatives of relevant Government departments.

The groups supervising the leases should give due consideration to the financial implications of any directions they impose in relation to a lease.

Grazing lease

This lease modifies the existing 21-year grazing leases in order to permit some supervision of the lessee's management of leased land. It does not lead to freehold. The suggested terms and conditions are set out below :

- (i) The term of the lease will be 21 years.
- (ii) After the lease has run fifteen years it will be reviewed and a decision made on renewing it at the end of the 21-year term.
- (iii) The leases will be protected forest.
- (iv) Cultivation and clearing will not be permitted except with written permission.

- (v) The conditions applying at present to grazing leases under the *Land Act* 1958, which are consistent with these Notes, will apply.
- (vi) The Government may exercise general supervision of the management of the leases, and may issue directions to the lessees with respect to the following matters :
 - (a) grazing management and stock rates ;
 - (b) subdivisional fencing and water supply, and other improvements ;
 - (c) reclamation of eroded areas ;
 - (d) exclusion of stock from some areas in order to encourage or establish regeneration of the vegetation, and the permanent exclusion of stock from some control areas.

The Department of Crown Lands and Survey should be advised with respect to the selection of areas on which grazing is to be permitted and the supervision of the leases by a group consisting of representatives from the Soil Conservation Authority, the Department of Agriculture, the Department of Crown Lands and Survey, and representatives of the lessees and local landholders. The District Advisory Committees that report to the Soil Conservation Authority are well suited to this task. The Committees consist of a majority of elected landholders, and representatives of relevant Government departments. The interest of the Forests Commission and the Fisheries and Wildlife Division in the land under lease should be recognized, and these departments consulted when management decisions are made.

The groups supervising the leases should give due consideration to the financial implications of any directions they impose in relation to a lease.

IRRIGATION

The demand for land for irrigation depends largely on the future availability of water for allocation from the Murray River. This will not be known until a recently established Government inquiry into Victoria's water resources and their allocation is completed, and water from the Dartmouth Dam, now under construction, is allocated.

Expansion of irrigated agriculture in the study area during the last 20 years has taken place by private diversions of water onto freehold land. Further large areas of freehold land between Swan Hill and Mildura are suitable for irrigation development. Public land suitable for irrigation occurs south of Robinvale and at Lindsay Point, in the north-west of the study area. In both places little suitable freehold land is available for expansion of the existing irrigation developments, and the use of some of the public land for irrigation in the future may be justified. Most of the suitable public land near Robinvale is cleared and farmed, and that near Lindsay Point is semi-cleared.

Public land could be allocated for extension of irrigation if future review by the Council shows that it is justified. The Council considers that any future expansion of irrigation should be by means of private diversions rather than Government schemes.

G. FLORA AND FAUNA RESERVES

These areas are significant because of the particular species, associations, or communities of native plants and animals they contain.

RECOMMENDATIONS

G1-G32 That the areas shown on the maps and described below be used to conserve native plants and animals.

Map 1

- G1** 330 ha at the south of allotments 27 and 28, Parish of Meringur—to be managed by the Forests Commission.
- G2** 680 ha, being the southern section of allotments 35 and 36, Parish of Meringur, and allotments 31 and 40, Parish of Yarrara—to be managed by the Forests Commission.
- G3** 1 100 ha comprising all, or sections, of allotments 1, 3, 3A, 4 and 12, Parish of Kurnwill—to be managed by the Forests Commission.
- G4** 370 ha comprising allotments 29 and 31, Parish of Mallanbool—to be managed by the Forests Commission.

Map B

- G5** 2 ha, being allotment 170E, block B, Parish of Mildura—to be managed by the Fisheries and Wildlife Division.

Map 3

- G4** Southern section of the flora and fauna reserve fully described under G4, Map 1, Parish of Mallanbool—to be managed by the Forests Commission.

Map 5

- G6** 250 ha, being the northern portion of allotment 5, Parish of Wemen—to be managed by the Fisheries and Wildlife Division.
- G7** 300 ha east of allotments 25 and 26, Parish of Annuello—to be managed by the Forests Commission.
- G8** 300 ha being sections of allotments 8, 23, 24, and 25, Parish of Toltol—to be managed by the Fisheries and Wildlife Division.
- G9** 400 ha comprising a section of allotment 29, and an area to its west, Parish of Toltol—to be managed by the Fisheries and Wildlife Division.
- G10** 210 ha, being allotment 19 and the Water Reserve to its south-east, Parish of Myall—to be managed by the Fisheries and Wildlife Division.
- G11** 200 ha including and south of allotment 9B, and south of allotment 9c, Parish of Kulwin—to be managed by the Department of Crown Lands and Survey.

Map 6

- G12** 80 ha east of allotments 22 and 24, Parish of Boinka—to be managed by the Department of Crown Lands and Survey.

Map 7

- G13** 125 ha in allotments 26 and 35, Parish of Nyang—to be managed by the Forests Commission.
- G14** 200 ha, comprising allotment 17 and sections of allotment 16 and the area between these two allotments, and an area south of the township of Walpeup, Parish of Walpeup—to be managed by the Fisheries and Wildlife Division.
- G15** 1 260 ha in the Timberoo Forest, Parish of Timberoo—to be managed by the Forests Commission.
- G16** 160 ha south of allotment 11, Parish of Patchewollock North—to be managed by the Fisheries and Wildlife Division.
- G17** 200 ha, being allotment 22, Parish of Patchewollock North, and 170 ha west of allotments 32 and 33, Parish of Patchewollock—to be managed by the Forests Commission.
- G18** 210 ha, being allotment 17, Parish of Patchewollock—to be managed by the Fisheries and Wildlife Division.
- G19** 240 ha, being allotment 31, Parish of Gorya—to be managed by the Fisheries and Wildlife Division.

Map 8

- G20** 250 ha, being allotment 33, Parish of Managatang—to be managed by the Fisheries and Wildlife Division.
- G21** 140 ha north-east of allotment 5, Parish of Eureka—to be managed by the Forests Commission.
- G22** 1000 ha, being the Towan Plain Reserve, Parish of Turoar—to be managed by the Fisheries and Wildlife Division.
- G23** 35 ha north of allotment 79, Parish of Piangil—to be managed by the Fisheries and Wildlife Division.
- G24** 150 ha, being allotment 49, Parish of Eureka—to be managed by the Forests Commission.
- G25** 250 ha south of allotment 66, Parish of Eureka—to be managed by the Forests Commission.
- G26** 260 ha north of allotment 3, Parish of Chillingollah—to be managed by the Fisheries and Wildlife Division.
- G27** 230 ha, being allotment 27 and a section of allotment 25, Parish of Moah—to be managed by the Fisheries and Wildlife Division.

Map 11

- G28** 90 ha north of allotment 10, Parish of Cambacanya—to be managed by the Fisheries and Wildlife Division.

Map 12

- G29** 220 ha north of allotments 1 and 31, Parish of Towma—to be managed by the Fisheries and Wildlife Division.
- G30** 200 ha south of allotments 41 and 36, Parish of Wangie—to be managed by the Fisheries and Wildlife Division.

Map 13

- G31** 180 ha south of allotment 37, Parish of Leaghur—to be managed by the Fisheries and Wildlife Division.
- G32** 65 ha west of allotment 12, Parish of Budgerum East—to be managed by the Fisheries and Wildlife Division.

H. EDUCATION AREAS

Environmental education is a fundamental step in the conservation of natural resources and 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 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 use 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 :

- * examples of major land types in the study area ;
- * areas of maximum diversity, preferably with natural boundaries ;
- * areas large enough to be viable and to allow recovery of different sections as use is rotated ;
- * proximity to other land types and variety of land uses nearby ;
- * reasonable vehicular access to the area ;
- * areas in different parts of the study area ;
- * sites selected in order to minimize fire, erosion, and pollution hazards.

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. 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 use of the areas.

RECOMMENDATIONS

H1-H4 That the areas of public land listed below and shown on the maps be used to provide opportunities for students of all ages to :

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

and that they be reserved under section 14 of the *Land Act* 1958.

H1 Outlet Creek (1 680 ha)

Flood-plain with red gum and black box woodland ; dunes with slender cypress pine woodlands ; dunes with mallee and mallee heath ; close to farmland, national and regional parks ; to be managed by the National Parks Service.

H2 Timberoo (450 ha)

East-west dunes with broad swales ; woodland of slender cypress pine and mallee and grassland ; close to farmland and Walpeup Lake recreation area : to be managed by the Forests Commission.

H3 Wemen (920 ha)

Murray River flood-plain, including lakes ; red gum and black box woodland, and sand dunes with slender cypress pine woodland, mallee, and hummock grass mallee ; close to farmland, national park, and irrigation areas at Wemen ; to be managed by the National Parks Service.

H4 Koorlong (800 ha)

Plains and low dunes ; belar-sugarwood woodland, savannah grassland, and mallee ; close to wheat farms, irrigated vines and citrus, and basins holding saline drainage water ; to be managed by the Department of Crown Lands and Survey.

I. BUSHLAND RESERVES

These pieces of land, relatively small and frequently isolated, carry remnants of native vegetation, providing diversity in predominantly agricultural regions.

RECOMMENDATIONS

I1-I123 That the areas indicated on the maps and described below be used to :

- (a) maintain the local character and quality of the landscape ;
- (b) provide opportunities for passive recreation such as picnicking and walking ;

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

Expansion of existing recreational facilities or new development should be permitted only where this does not conflict with the primary aim.

Map 1

- I1** 50 ha at the north-west of allotment 3, Parish of Malloren.
- I2** 25 ha at the north-west of allotment 1, Parish of Mallanbool.
- I3** 16 ha at the south-west of allotment 22, Parish of Karawinna.

Map 2

- I4** 40 ha south-east of allotment 25, Parish of Ginquam.
- I5** 10 ha at the south-east of allotment 21, Parish of Ginquam.
- I6** 150 ha, being allotment 7A, Parish of Yatpool.
- I7** Lake Iraak, Parish of Karadoc.
- I8** 40 ha between allotment 13 and the township of Carwarp, Parish of Carwarp West.
- I9** 38 ha, being allotment 43, Parish of Carwarp West.

Map B

- I10** 130 ha south of allotments 162c, 162d, 153 and 153d, of block B, Parish of Mildura.

Map 4

- I11** 200 ha, being allotment 69 and part of allotment 70, Parish of Nurnurnemal.
- I12** 18 ha in allotment 10b, Parish of Gayfield.
- I13** 20 ha in allotment 28, Parish of Mamengoroock.
- I14** 10 ha in allotment 38, Parish of Kattyong.
- I15** 220 ha in allotments 23 and 24, Parish of Wymlet.
- I16** 30 ha, being allotment 6A and south, Parish of Nulkwyne.
- I17** 10 ha east of allotment 59, Parish of Tiega.
- I18** 20 ha, being allotment 13, Parish of Nulkwyne.
- I19** 15 ha, being allotment 18, Parish of Nulkwyne.
- I20** 25 ha between allotments 30, 31 and 32, Parish of Kia.

Map 5

- I21** 2 ha at the north-west of allotment 22, Parish of Bumbang.
- I22** 50 ha in allotments 22 and 19, Parish of Bumbang.
- I23** 115 ha in allotments 12A and 13, and 8 ha east of allotment 14, Parish of Bumbang.
- I24** 25 ha south of allotment 20, Parish of Toltol.
- I25** 10 ha north-east of allotment 8, Parish of Koorkab.
- I26** Heywoods Lake, Parish of Narrung.
- I27** 100 ha north of allotment 11, Parish of Narrung.
- I28** 45 ha at the south-west of allotment 3, Parish of Geera.
- I29** 210 ha west of the township of Annuello, Parish of Geera.
- I30** 50 ha south-east of the township of Kooloonong, Parish of Mirkoo.
- I31** 14 ha north of allotment 11, Parish of Winnambool.
- I32** 10 ha east of allotment 10A, Parish of Kulwin.

- I33 100 ha west of allotments 5 and 8, Parish of Larundel.
- I34 10 ha in allotment 32, Parish of Myall.
- I35 110 ha at the west of allotment 13, Parish of Piangil West.
- I36 12 ha, both sides of the road, north-west of allotment 9A, Parish of Coonimur.

Map 6

- I37 80 ha, being allotment 47, Parish of Duddo.
- I38 15 ha west of allotment 2, Parish of Pallarang.
- I39 80 ha, being allotment 16, Parish of Boinka.
- I40 85 ha, being allotments 5A and 9, Parish of Purnya.
- I41 90 ha, being allotment 15, Parish of Underbool.
- I42 160 ha immediately east and north-east of the Murrayville township, Parish of Danyo.
- I43 69 ha, being allotment 36, Parish of Danyo.
- I44 28 ha, being allotment 41, Parish of Danyo.
- I45 70 ha, being allotment 17, Parish of Duddo.
- I46 15 ha, being allotment 56, Parish of Tutye.
- I47 15 ha east of allotment 9, Parish of Tutye.
- I48 120 ha, being allotment 27 and part of allotment 28, Parish of Tutye.
- I49 190 ha comprising allotments 9 and 9c and adjoining areas, Parish of Tyalla.
- I50 75 ha south-east of allotment 43, Parish of Boinka.

Map 7

- I51 140 ha, being allotment 23, Parish of Mamengorooock.
- I52 67 ha in allotment 10, Parish of Underbool.
- I53 120 ha in allotment 7, Parish of Gnarr.
- I54 7 ha at the north-west of allotment 10, Parish of Gnarr.
- I55 75 ha, being allotment 6, Parish of Walpeup.
- I56 35 ha at the south of allotment 13, Parish of Tiega.
- I57 180 ha immediately west of Ouyen township, Parish of Ouyen.
- I58 23 ha east of allotment 31, Parish of Boorongie.
- I59 190 ha at the east of allotment 33, Parish of Wagant.
- I60 30 ha north-east of allotment 4a, Parish of Woornack.
- I61 3 ha east of allotment 24, Parish of Woornack.
- I62 130 ha at the south of allotment 31, Parish of Woornack.
- I63 70 ha, being allotment 1, Parish of Pirro.
- I64 8 ha at the south/east of allotment 14, Parish of Baring North.
- I65 30 ha south of allotment 12A, Parish of Patchewollock North.
- I66 170 ha in allotment 69, Parish of Pirro.
- I67 60 ha, being allotment 20, Parish of Baring.
- I68 15 ha, being allotment 46, Parish of Patchewollock.
- I69 120 ha, being allotment 33, Parish of Dennyning.
- I70 10 ha at the south-east of allotment 34, Parish of Dennyning.
- I71 110 ha, being allotment 13, Parish of Dennyning.
- I72 55 ha south-east of allotment 13, Parish of Dering, and including allotment 1A, Parish of Dennyning.
- I73 20 ha at the north-west of allotment 25, Parish of Gorya.
- I74 55 ha, being allotment 26, Parish of Dattuck.

Map 8

- I75 65 ha at the north of allotment 20, Parish of Kulwin.
- I76 150 ha in allotment 19, Parish of Kulwin.
- I77 200 ha at the south of allotment 31, Parish of Kulwin.
- I78 80 ha at the east of allotment 38, Parish of Mittyack.
- I79 60 ha east of allotment 30, Parish of Kulwin.
- I80 14 ha south-west of allotment 15, Parish of Larundel.
- I81 20 ha south-east of allotment 22, Parish of Gerahmin.
- I82 10 ha north-west of allotment 37, Parish of Gerahmin.
- I83 90 ha south-west of allotment 24, Parish of Eureka.
- I84 27 ha south-east of allotment 22A, Parish of Eureka.

- I185 120 ha east of allotment 41, Parish of Eureka.
- I186 25 ha south-west of allotment 15, Parish of Eureka.
- I187 10 ha, being allotment 27, Parish of Prooinga.
- I188 20 ha, being allotment 31, Parish of Prooinga.
- I189 12 ha south-west of allotment 19, Parish of Prooinga.
- I190 10 ha north-east of allotment 54, Parish of Turoar.
- I191 50 ha, being allotment 32A, Parish of Turoar.
- I192 50 ha north of allotment 47A, Parish of Turoar.
- I193 40 ha north of allotment 18, Parish of Towan.
- I194 15 ha between allotments 34 and 35, Parish of Towan.
- I103 Western section of the area described fully under map 9, recommendation I103, Parish of Tyntynder North.
- I195 75 ha, being allotment 14, Parish of Pirro.
- I196 110 ha in allotment 14, Parish of Pier-Millan.
- I197 60 ha south-east of allotment 2, Parish of Lianiduck.
- I198 10 ha north-east of allotment 12, Parish of Chillingollah.
- I199 70 ha including, and to the north of, allotment 8B, Parish of Chillingollah.
- I100 35 ha, being allotments 5D and 5E, Parish of Polisbet.
- I101 5 ha at the east of allotment 7, Parish of Burupga.
- I102 12 ha east of allotment 28, Parish of Chinangin.

Map 9

- I103 120 ha west of the Racecourse, Parish of Tyntynder North.
- I103A 30 ha, being the southern section of the Water Supply and Timber Reserve, east of allotments 12 and 16, Parish of Kunat Kunat.

Map 10

- I104 650 ha at Broken Bucket Tank, at the centre-south of the County of Weeah.

Map 11

- I105 62 ha east of allotment 12, Parish of Yaapect.
- I106 140 ha west of allotments 13, 13A and 18A, Parish of Albacutya.
- I107 14 ha in allotment 43A, Parish of Werrap.
- I108 20 ha at the south of allotment 26, Parish of Nandemarriman.

Map 12

- I109 10 ha north of allotment 25, Parish of Chiprick.
- I110 10 ha at the west of allotment 4, Parish of Watchupga.
- I111 10 ha in the Parish of Chinangin north of allotment 69, Parish of Murnungin.
- I112 12 ha at the east of allotment 20, Parish of Wangie.
- I113 50 ha south-east of allotment 8A, Parish of Marlbed.
- I114 40 ha west of allotment 4, Parish of Towma.
- I115 50 ha west of allotments 1 and 2, Parish of Wirmbirchip.
- I116 35 ha, being allotment 52B, Parish of Karyrie.
- I117 12 ha south-west of allotment 39, Parish of Nullawil.
- I118 9 ha north-west of allotment 19, Parish of Ninyeunook

Map 13

- I119 8 ha north-east of allotment 5, Parish of Talgitcha.
- I120 50 ha in allotment 14, Parish of Korrak Korrak.
- I121 40 ha east of allotment 28, Parish of Towaninny.
- I122 29 ha, being allotment 12A, Parish of Quambatook.
- I123 9 ha south-west of allotment 47, Parish of Quambatook.

J. 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. There is no retained public land on some of the minor ephemeral streams, and the recommendations which follow do not apply to these privately owned water frontages.

The location of public land water frontages is 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 both cases the land is under the control of the Department of Crown Lands and Survey, while the water is under the control of the State Rivers and Water Supply Commission.

Each of these authorities may delegate some of their responsibilities to local bodies. Committees of management may be formed for public purposes reserves by the Department of Crown Lands and Survey, while river improvement or drainage trusts under the guidance of the State Rivers and Water Supply Commission may be formed in certain areas.

Forest produce on public land water frontages is under the control of the Forests Commission except where a Committee of Management has been formed. Public land frontages alongside artificial water storages and aqueducts are often under the control of the management authority that controls the water (e.g. State Rivers and Water Supply Commission).

Public land water frontages are often held under licence by adjoining occupiers 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 due to an understandable fear of damage, intentional or otherwise, to his property. Vandalism and littering are problems in many areas open to the public and firm action by management authorities is often required. Control is obtained through the normal exercise of fire, litter, fire-arms and other regulations, although it is evident that more effective policing is required, particularly at week-ends. Education of the public to understand the rural environment is perhaps the best solution in the long term.

These licensed river frontages are, however, public land and they are often valuable for low-intensity 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*. Unlicensed public land frontages are normally fenced off from adjacent freehold land. There is no obligation for a landholder to provide access through freehold land to a public land water 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 the public land water frontages have been progressively cleared of native vegetation.

Public land water frontage reserves

Water frontage reserves are defined for the purposes of these recommendations as being all-existing frontage reserves and other reserved or unreserved public land adjoining streams, except for those areas that, elsewhere in these recommendations, have been set aside either as a national park, reserved forest or as a wildlife reserve.

RECOMMENDATIONS

J1-J16 That the public land shown on the maps and either defined in the Schedule or listed below :

(a) be used :

- (i) to protect adjoining land from erosion due to flooding by the maintenance of an adequate vegetation cover ;
- (ii) to maintain the local character and quality of the landscape ;
- (iii) to conserve native flora and fauna ;
- (iv) to provide opportunities for low intensity recreation ;
- (v) to 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 recreational use by the public be permitted. Non-damaging activities such as walking, nature observation, fishing, or just relaxing, should be allowed, while potentially damaging activities such as camping, lighting of fires, use of motor vehicles and motorized recreation vehicles should continue to 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 written approval of the Department of Crown Lands and Survey) ;
- (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, rehabilitate eroding areas, or to permit regeneration of native plants which have particular value for nature conservation ;

- (c) On public land water frontages the consent of the Department of Crown Lands and Survey be obtained prior to the declaration of roads or the construction of roadways or the erection of buildings ;
- (d) (i) water frontage reserves be, or continue to be, permanently reserved under section 14 of the *Land Act* 1958 ;
- (ii) where the water frontage reserve is adjacent to or within a proposed national park, regional park, reserved forest, scenic reserve, flora and fauna reserve or wildlife reserve, it be managed by the authority responsible for the adjoining or surrounding land ;
- (iii) where the water frontage reserve 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 ;
- and that :
- (e) The relevant provisions of the *Water Act* 1958 and the *Forests Act* 1958 continue to apply.

J1 Existing water frontage reserves are shown in the following schedule :

SCHEDULE OF WATER FRONTAGE RESERVES
(Order in Council of 23rd May, 1881.)

Stream	Frontage
Avoca River and anabranches	1½ chains from each bank throughout, and also from the contour line of the wasting level of all dams where such exist, and a strip 3 chains wide following the lowest level where the defined channels are lost.
Lalbert Creek	1½ chains from each bank from the point where it breaks off from the Avoca River till it falls into Lake Lalbert, also from the contour line of the wasting level of all dams where such exist, and a strip 3 chains wide following the lowest level where defined channel is lost.
Loddon River	1 chain from each bank from its source to the junction of Muckleford Creek, thence 1½ chains from each bank to the junction with the Little Murray River.
Murray River and anabranches	3 chains from its left bank throughout, and 2 chains from each bank of the anabranches from winter level.
Outlet Creek	1½ chains from each bank from the point where it leaves Lake Hindmarsh to the point where it enters Lake Albacutya and from Lake Albacutya to the point where it terminates on Wirrengren Plain, and also from the contour line of the wasting level of all dams where such exist, a strip 3 chains wide following the lowest level where the defined channel is lost, and another strip 3 chains wide across Wirrengren Plain following the line of lowest depression northward so far as water will flow.
Tyrrell Creek	1½ chains from each bank from the point where it breaks off from the Avoca River till it falls into Lake Tyrrell, and also from the contour line of the wasting level of all dams where such exist, and a strip 3 chains wide following the lowest level where the defined channel is lost.

Stream	Frontage
Yarriambiack Creek	1½ chains from each bank from the point where it breaks off from the Wimmera River onwards to Lake Coorong, and also from the contour line of the wasting level of all dams where such exist, and a strip 3 chains wide following the lowest level where the defined channel is lost.

J2-J16 Other public land to be reserved as water frontage is listed in the schedule below:

Map 1

J2 3 ha north-east of allotment 11D, Parish of Mullroo.

Map 2

J3 Either side of the inlet south of allotment 12, Parish of Karadoc.

Map B

J4 15 ha on the Murray River bank about 4 km east of Redcliffs township, Parish of Mildura.

Map 5

J5 18 ha east of allotments 110, 111 and 112, Parish of Piangil.

Map 8

J6 Along the Lalbert overflow channel south of Lake Timboram, Parishes of Waitchie, Koro-Ganeit and Chinangin.

Map 12

J7 34 ha both sides of the creek east of allotments 56 and 57, Parish of Kalpienung.

Map 13

J8 40 ha north-east of allotment 17, Parish of Tittybong.

J9 20 ha south of allotment 3, Parish of Budgerum West.

J10 100 ha both sides of the Avoca River, west of allotments 1, 2, 3 and 4, Parish of Budgerum East, and west of allotments 4 and 4A, Parish of Quambatook.

J11 28 ha between allotment 8 and the Avoca River, Parish of Quambatook.

J12 60 ha, being allotment 9A and an area between allotment 10B and the Avoca River, Parish of Quambatook.

J13 60 ha west of allotment 32, Parish of Towaninny.

J14 50 ha west of allotments 12c, 17, 10a and 10, Parish of Bael Bael.

J15 20 ha west of allotment 14, Parish of Korrak Korrak.

J16 50 ha west of allotments 7 and 8, Parish of Korrak Korrak.

K. 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.

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.

Much of the distinctive character of the Mallee farmlands derives from the native vegetation on the road reserves. The value of this vegetation for landscape preservation and nature conservation is especially high in the eastern and southern Mallee, where very few substantial areas of native vegetation remain. Roadside vegetation has some value in breaking the force of the wind and ameliorating soil erosion.

While many roads retain wide strips of native vegetation, others are mostly cleared—in general the main roads have fared worse than the minor ones. Some of the roadsides were cleared at the time of settlement, but the vegetation on others has been removed by road-making activities, and by farmers killing mallees to promote better growth of crops in the adjacent paddocks. Grazing, burning-off, and rabbit-control measures have also contributed to the deterioration of roadside vegetation.

Stock graze many roadsides in the study area, particularly in the eastern Mallee. The Council believes that this practice should stop, as the grazing conflicts with the conservation of the remaining vegetation. The long, narrow strips of roadside vegetation are very susceptible to outside influences, and have lower regenerative capacities than large areas of vegetation.

However, good stands of vegetation remain along the Henty and Ouyen Highways, the northern parts of the Calder Highway, the Nyah West-Chinkapook road, the Manangatang-Robinvale road, the Kerang-Quambatook road, and the roads in the Kooloonong area.

In addition to the vegetation on the highways and main roads, that on the road leading from Hopetoun to Wyperfeld National Park is of special significance, as many of the visitors to the park use this road. The vegetation along it is gradually being cleared. The road from Patchewollock to Pine Plains, which is likely to be used by tourists in future, carries some fine stands of mallee.

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 such vegetation is vested in several authorities depending on the status of the road. The most important roads of the State (State highways, tourist and forest roads, and freeways) are 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.

In order that trees and shrubs be conserved wherever possible, and the road reserves used for landscape preservation, recreation, and nature conservation as well as transport, the Council considers that the following guidelines (many of them already implemented by the Country Roads Board) should be applied.

RECOMMENDATIONS

K1 That road reserves throughout the study area continue to be used primarily for communication, transport and access :

and that the following guidelines be applied in order to preserve landscape, recreation and nature conservation values (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, the easements for these utilities should be located 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 not be permitted on roadsides.

- (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 :

- (i) The clearing of native trees and shrubs other than noxious weeds should continue to be clearly prohibited in the conditions of unused-road licences.
- (ii) Where it appears to be reasonable, a condition permitting public access should be written into unused-road licences.
- (iii) Unused roads should be alienated only if an investigation shows that they have no value for recreation, conservation, or other public use.

L. RECREATION AND RECREATION RESERVES

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 as 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 this type of recreation. Throughout these recommendations the countless forms of outdoor recreation have been referred to in a number of ways :

- * Formal recreational activities include all organized sports and other group activities, while activities such as picnicking, fishing and hiking are grouped as informal.
- * Passive recreation covers situations where the individual obtains his recreation through 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, bush-walking 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 carrying 10,000 visitors or more per hectare per year 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 be available for recreational uses of some sort.

Various types of recreation have been recommended as a primary use of land in four cases.

- (1) Recreation reserves, where small areas of land are developed for a particular type of recreation—often organized sports such as golf, target shooting, horse riding, tennis, football, and so on, or for other formalized activities such as caravan parks. (See Recommendations L1–L36.)
- (2) National and State parks—where land has been set aside to ensure that opportunities continue to exist for types of recreation requiring relatively undisturbed environments. (See Recommendations A1–3.)
- (3) Regional park—where land readily accessible from population centres is developed for intensive recreation, generally of a passive nature. It is intended that this will cater for many of the activities requiring open space in pleasant surroundings and free the State and national parks to cater for the more special forms of recreation requiring relatively undisturbed environments. (See Recommendation A4.)

- (4) Wilderness—where land has been set aside to ensure that opportunities continue to exist for recreational activities requiring an environment free from signs of Man's influence. (See Recommendation B1.)
- (5) Scenic reserves—where major vantage points are developed for intensive recreation of a passive nature. (See Recommendations M1–M2.)

Apart from these special cases it has not been possible for Council to 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, pleasure driving, and motorized recreation. 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 recreational 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 recreational activities). Generally, any one activity pursued at a low level of intensity poses little threat to the environment and does not often conflict 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 use. 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 soils are unstable (such as the sandy soils of the Big Desert), and where the primary use is conservation of the natural environment or special natural features.

A particular recreational activity which may pose a problem for the land managers either now or in the future is further discussed below.

Motorized recreation

Much outdoor recreation depends on motor vehicles. These may be conventional cars, dune buggies, 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 they may be a source of recreation in themselves when they are driven in competitive rallies or in adverse but challenging road conditions.

Any vehicle, whether two-wheel-drive or four-wheel-drive car, or bike, 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 is in excess of the physical capacity of the road, or when vehicular access or its associated activities seriously conflicts with the primary purpose for which the area is used. 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 increases on public land it is inevitable that more roads and tracks will be closed to vehicular access, particularly in areas with unstable soils. Council believes that these closures will not significantly reduce the thousands 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*, and can and do cause extreme damage to vegetation and soils.

The demand exists for the provision of some areas of public land in order to accommodate and relocate the off-road activities of motor vehicles, particularly trail-bikes. Such areas could be, for example, in the form of defined trails through 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 near-by areas. Council points out that there is a serious and growing problem of damage to soils and vegetation associated with the spectators attracted by these activities.

RECOMMENDATIONS

- L1** That public land continue to be available for a wide range of recreational uses where these can be accommodated without detriment to other values. Land management authorities should aim at controlling the levels and patterns of recreational use according to the capability of particular areas to sustain this use without irreversible change or significant conflict with the primary purpose of the area.
- L2** That vehicular use of all 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.
- L3** That the land management authorities endeavour to provide some areas for off-road vehicular use within land under their control.
- L4** That the land (in the Parish of Ouyen) indicated on the maps (50 ha) be used as the site for a motor sports circuit for use by local clubs.
- L5** That the Soil Conservation Authority and the Lands Department investigate the feasibility of locating a trail or trails in the uncommitted land in the south-east of the Big Desert for use by motor sports clubs from the surrounding districts.

Recreation reserves

- L6-L36** That the areas described below and shown on the maps be used for organized sports (football, cricket, horse-racing, golf, and so on), picnicking, camping and informal recreation as permitted by the managing authority and that they be reserved under section 14 of the *Land Act 1958* and managed by the Department of Crown Lands and Survey. Note : In some cases such as the Ouyen Golf Club and Koorlong Shooting Range another form of tenure under the *Land Act 1958* may be more appropriate.

Map 1

L6 180 ha to the west, north, and east of Lake Cullulleraine, Parish of Mullroo.

Map B

- L7** 41 ha being the Racecourse and Public Recreation Reserve, north-east of allotments 3, 4 and 5, Section B, Parish of Merbein.
- L8** 8.5 ha being the Recreation Reserve adjoining the west of allotments 86A and 89A, Parish of Mildura.
- L9** 95 ha being the Recreation Reserve to the west of allotments 49 and 50, Parish of Mildura.
- L10** 40 ha being the Recreation Reserve to the west of allotment 18, and bordered by Gibbs Street and Ranfurly Way, Parish of Mildura.
- L11** 17 ha being the Recreation Reserve between Ranfurly Way and Ranfurlys Bend on the Murray River, north of Recreation Reserve L10, Parish of Mildura.
- L12** 425 ha being the Recreation Reserve used as a glider field, and comprising allotment 83, and parts of allotments 82, 84, 96, 97 and 98, and an area to the west of these, Parish of Mildura.
- L13** 2 ha west of allotment 133, Parish of Mildura.
- L14** 34 ha being the Victorian Field and Game Association Reserve east of allotment 63, south of allotment 130, and west of allotment 61, Parish of Mildura.
- L15** 5 ha being the Recreation Reserve bordered by Dairtnunk Avenue, and allotments 636, 637A and 637D, Parish of Mildura.
- L16** 185 ha being the Racecourse, and Sandalong Park Recreation Reserve, Parish of Mildura.

Map 5

- L17** 15 ha in the south-west corner of allotment 19, Parish of Bumbang.
- L26** 20 ha being the northern portion of the reserve fully described under Map 8, recommendation L26.

Map 7

- L18** 11 ha in the south-east of allotment 1, and 21 ha to the north-west of allotment 16, Parish of Walpeup.
- L19** 40 ha adjoining the north-west of allotment 16A, Parish of Walpeup.
- L20** 30 ha at the south-west of the Timber Reserve adjoining the north-east of allotment 42, Parish of Timberoo.
- L21** 75 ha west of Ouyen township, and 20 ha south of Ouyen township, Parish of Ouyen.
- L22** 60 ha being the northern section of allotment 20C, Parish of Baring.
- L23** 30 ha being the south-western section of allotment 31, Parish of Patchewollock.
- L24** 14 ha at the south-west of allotment 3, Parish of Gorya.
- L25** 9 ha at the eastern boundary of allotment 47, Parish of Gorya.

Map 8

- L26** 70 ha being part of the Water Reserve immediately north-east of the township of Manangatang, and south of allotment 15, Parish of Manangatang.
- L27** 14 ha immediately west of the township of Chinkapook, Parish of Eureka.
- L28** 25 ha being the western section of allotment 151, Parish of Piangil.
- L29** 104 ha comprising the Nyah Rifle Range, the Nyah West Golf Club, and the area between these two, Parish of Tyntynder North.
- L30** 16 ha south-east of the Township of Nandaly Parish of Bimbourie.
- L31** 10 ha south-east of the Township of Sealake Parish of Burupga.

Map 9

- L32** 31 ha being the western section of the Water Supply and Timber Reserve, east of allotments 12 and 16, Parish of Kunat Kunat.

Map 11

- L33** 72 ha between allotment 24, and the township of Rainbow, Parish of Werrap.
- L34** 30 ha being Lake Lascelles and its boundary, south of allotment 2, Parish of Wiall.

Map 12

- L35** 40 ha being the Racecourse Reserve, allotment 21J, Parish of Wirmbirchip.
- L36** 40 ha being the southern section of the Tcham Lakes Water Reserve, west of allotment 6, Parish of Karyrie.

M. SCENIC RESERVES

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

RECOMMENDATIONS

M1-M2 That the areas listed below and shown on the maps be used to preserve lookouts; and that they be reserved under section 14 of the *Land Act* 1958 and managed by the Department of Crown Lands and Survey:

M1 12 ha between Woomera Avenue and the Murray River, about 4 km east of the township of Redcliffs, Parish of Mildura.

M2 Lake Timboram (2 200 ha), Parish of Chillingollah.

N. MINERAL AND STONE PRODUCTION

The study area contains deposits of “minerals” as defined in the *Mines Act 1958* and further deposits may be found.

The continued existence of our technological society will depend on the availability of minerals. Our present mineral requirements may be well known, but it is impossible to predict future needs arising from further scientific advances. Presently known but uneconomic deposits of currently important minerals may become economically exploitable; 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. It is therefore important that the reservation of conservation areas should not automatically exclude exploration for mineral or petroleum 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* are widespread in the area. These materials include rock of any kind, gravel, clay, sand, and soil.

There is a strong community demand for new and better roads and buildings, and so for the materials needed for their construction. Most of these materials are supplied from private land, but in some cases public land is also an important source.

The Council is concerned at the complexity of legislation and procedures governing extraction of “stone”, and the lack of control accompanying some of these procedures, whether in theory or in practice. (For example, the Country Roads Board and municipal councils are not bound by many of the 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. Poorly planned and located excavations can affect surrounding lands through noise, dust, unsightliness and erosion, and diminish or destroy the value of the land for nature conservation; however, with care these effects can be minimized.

The Council believes that :

- (i) All exploration for and extraction of “minerals”, and/or “petroleum” on public land should be subject to the approval of, and conditions imposed by, the Department of Mines.

Note : In considering an application, the Department of Mines should apply the guidelines listed below, and should be required to consult the public authority that manages the land and enforce any reasonable conditions imposed by that authority within the field of its expertise. In addition, the Department should be required to consult the Soil Conservation Authority if the area disturbed will exceed 0.2 ha or where the area is an erosion hazard area.

- (ii) All exploration for and extraction of “stone” on public land should be subject to the approval of and conditions imposed by the authority that manages the land.

Where the area disturbed will exceed 0.2 ha or where the area is an erosion hazard area, the managing authority is required under the *Soil Conservation and Land Utilization Act 1958* to obtain the approval of the Soil Conservation Authority and enforce any conditions imposed by that Authority.

If approval for extraction of "stone" is granted by the authority that manages the land (and the Soil Conservation Authority when necessary), any project involving extraction of material to a depth of more than 2 metres below the land surface should then be subject to the approval of, and conditions imposed by, the Department of Mines as is currently required of extractive industries.

These requirements should apply to municipal councils, the Country Roads Board, and other public authorities, as well as to commercial operators, but to allow this the relevant Acts would have to be amended.

- (iii) A system should be established that would guarantee that funds for rehabilitation would be available for any operation, before the operation commences. This is already the case for operations where the *Extractive Industries Act 1966* applies.
- (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 of "minerals", "petroleum", or "stone" from public land :
 - * No sites for the extraction of "minerals", and "petroleum" should be opened in areas considered, by the Department of Mines after consultation with the land management authority, to be of greater value for their aesthetic or nature conservation values. Similarly, no sites for the extraction of "stone" should be opened in areas considered by the managing authority to be of greater value for their aesthetic or nature conservation values.
 - * Extraction of "stone" should be concentrated on the fewest possible sites in an area, and any one site should be completely worked out and rehabilitation ensured before a new site is exploited. The emphasis should be on quarries properly managed for stone production where this is feasible, rather than shallow surface pits.
 - * All extraction sites should be fully rehabilitated. Rehabilitation should follow extraction progressively when possible, but otherwise should begin immediately extraction is completed. The aims for rehabilitation should be defined by the authority that manages the land, and may include, for example, 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 rehabilitation, or restoring the site as closely as possible to its original topography and revegetating it with species native to the site.
 - * The present method of extracting crystalline gypsum leaves very unsightly mounds of overburden resting in excavated pits. In many cases the pits intercept the water table. The Council believes that the Mines Department and the mineral lessees should devise and implement a method of spreading the overburden, and possibly the washed fines also, into the excavations to restore a near-natural surface to the mined areas. In addition, closer supervision of the mining appears to be necessary to ensure that all available gypsum is mined from the excavations.

- * The extraction of powdered gypsum (copi) from dunes in salt pans on public land takes place in the eastern Mallee. These dunes carry scattered to dense mallees, which are significant for nature conservation because very little native vegetation remains in the region. Current mining procedures destroy the mallees, and although topsoil may be replaced, the sites are not revegetated. Extraction of powdered gypsum should be concentrated in areas denuded of mallee cover. If in future it becomes necessary to mine vegetated areas, complete reclamation should take place, including planting of the native mallees.

RECOMMENDATIONS

- N** That public land in the study area continue to be available for exploration and extraction of "minerals", "petroleum" and "stone" subject to the principles and guidelines set out above.

N1 Clay Workings—Merbein

- (a) That the area (21.5 ha) shown on the plans be used for the extraction of clay, and activities associated with brick-making.
- (b) That the alienation of the area (3 ha) shown on the plans (on which a brick-factory and house are situated) be permitted.

N2 Crystalline Gypsum Workings

- (a) That the existing mining leases (1 780 ha) shown in the plans continue to be used for the extraction of gypsum, and that new leases be issued for uncommitted land nearby as deemed necessary by the Mines Department.
- (b) That the Mines Department and the mineral lessees devise and implement a method of spreading the over-burden, and possibly the washed fines also, into the excavations left by the mining.
- (c) That all readily available gypsum be mined from excavated areas.

N3 Powdered Gypsum Workings

- (a) That the existing mining leases (170 ha) shown in the plans continue to be used for the extraction of powdered gypsum, and that new leases be issued for uncommitted land nearby as deemed necessary by the Mines Department.
- (b) That mining of powdered gypsum be concentrated onto areas denuded of mallee cover.
- (c) That if it becomes necessary to mine vegetated areas, the native mallees be replanted.

N4 Salt Workings

That the extraction of salt from pans and lakes on uncommitted land be permitted at the discretion of the management authority.

Note : This recommendation does not preclude the future use of Lakes Tyrrell and Wahpool, and other lakes, for the disposal of saline drainage water.

Note : Recommendation A3 permits salt extraction from two of the Pink Lakes, north of Underbool.

O. WATER SUPPLY AND DRAINAGE

WATER SUPPLY

Most of the settled districts of the study area are supplied with water for stock and domestic purposes by the large network of earthen channels that bring water northwards from storages to the south and east. Most towns have an elevated reservoir into which water is pumped from an earthen storage. Many of the channels and town storages are on public land, but are not shown on the maps because of their small area. The Council proposes no change in the use of these areas.

The Millewa district in the north-west of the study area is supplied from the Murray River, via Lake Cullulleraine and a storage at Bambill South and then pipelines to individual farms.

The irrigation districts along the Murray River downstream from Swan Hill draw their water directly from the river. Supplies for the irrigation districts in the Kerang region are drawn from the Torumbarry system. This diverts water from the Murray River at Torumbarry, east of the study area, to the Loddon River at Kerang, whence it flows through a system of natural lakes, connected by channels. These are the Reedy Lakes, Racecourse Lake, Lake Charm, Kangaroo Lake, and Lake Boga. Water for irrigation and domestic use is drawn from these lakes. Other lakes receive fresh water intermittently from the water supply system.

The lakes mentioned above, which would normally be dry for long periods, now receive assured supplies of fresh water and consequently have considerable value for recreation and nature conservation. Around Kerang, many species of water-birds use and breed in the lakes; the Second (Reedy) Lake contains Victoria's largest colony of white and straw-necked ibis. Lake Boga and Lake Cullulleraine are used extensively for boating, swimming, and fishing. Duck-hunting is an important recreational activity on many of the lakes.

The Council proposes that the lakes currently used for water supply purposes continue to be so used, and that their importance for nature conservation and recreation be recognized in their management.

RECOMMENDATIONS

O1-O20 That the areas shown on the plans and listed below be used for :

- (a) storage and distribution of water for irrigation and domestic purposes ;
 - (b) nature conservation and recreation to the extent consistent with the primary aim ;
- and that they be reserved under section 14 of the *Land Act* 1958 and managed by the State Rivers and Water Supply Commission.

Map 1

O1 Lake Cullulleraine, Parish of Muliroo.

Map 2

O2 61 ha at the north-west of allotment 19, Parish of Yatpool.

Map 5

O3 40 ha to the east and north-east of the township of Kooloonong, Parish of Mirkoo.

Map 7

- O4 30 ha north of allotment 31, Parish of Underbool.
- O5 30 ha immediately north-west of Ouyen township, Parish of Ouyen.
- O6 57 ha at the north-east of allotment 19, Parish of Mittyman.
- O7 80 ha, being allotments 20B, Parish of Baring.

Map 8

- O8 8 ha, being part of allotment 54A, Parish of Eureka.
- O9 9 ha at the east of allotment 7, Parish of Burupga.

Map 9

- O10 13 ha at the east of allotment 44, Parish of Mumbel.
- O11 Lake Boga, Parish of Boga.
- O14 Northern Section of the area fully described under Map 13, O14, Parish of Dartagook.

Map 12

- O12 77 ha south of allotment 111, Parish of Karyrie.

Map 13

- O13 8 ha south-west of allotment 1, Parish of Talgitcha.
- O14 Kangaroo and Racecourse Lakes, Parish of Dartagook.
- O15 Lake Charm, Parish of Dartagook.
- O16 The Recreation Reserve north of Cullen's Lake, Parish of Dartagook.
- O17 Lake Lookout, west of allotment 6, Parish of Bael Bael.
- O18 Sand Hills Water Reserve, and the Water Reserve immediately north-west of allotments 1 and 1A, Parish of Bael Bael.
- O19 Lake Meering, Parish of Meering.
- O20 Lake Leaghur, Parish of Leaghur.

O21–O22 That the areas shown on the plans and listed below be used for water supply purposes and conservation of native animals, and for public education and recreation where this does not conflict with the primary aims ;
and that they be reserved under section 14 of the *Land Act* 1958 and managed by the State Rivers and Water Supply Commission in consultation with the Fisheries and Wildlife Division.

Note : This recommendation is also listed under D16 and D17 in the Wildlife Reserves chapter.

Map 13

- O21 Little Lake Charm, Parish of Dartagook.
- O22 Third, Middle, and Reedy Lakes, Parish of Dartagook.

DRYLAND WATER RESERVES

The dryland farming districts of the Mallee study area contain many isolated small (10 to 100 ha) areas that have been reserved for water supply purposes.

In the early days of settlement, the channel-filled public tanks (dams) on these water reserves were the main source of water for stock and domestic use. In addition, other tanks used for public purposes were constructed on road reserves. Many areas set aside as water reserves were never, or are no longer, supplied with water. Recommendations on the future use of these have been made elsewhere in this report. Following the extension of the channels to deliver water to private tanks on holdings and the use of road transport to move stock, the use of the public tanks to provide water for stock and domestic use is now limited to a few cases.

The State Rivers and Water Supply Commission fills the public tanks annually, free of charge, from its stock and domestic channel system. The major cost involved in filling these tanks is the maintenance of the earthen channels leading from a main channel to each tank. The channels require cleaning by mechanical equipment annually or biennially, often at considerable cost.

The Council believes that the number of public tanks can be reduced. Tanks are still required in fringe areas for stock and domestic purposes, and it is not proposed that such tanks will be closed. Council appreciates that, in addition to the few public tanks still used for stock and domestic purposes, some tanks are needed to supply water for constructing roads, but believes that fewer are required than are operating at present. In order to identify those that should be retained for road construction, the Council believes that the system of public tanks on water reserves and road reserves should be thoroughly investigated.

In assessing tank requirements for road construction purposes, the Council believes that, where feasible, tanks should be retained on a grid of approximately 50 km, so that the maximum distance that water would have to be carried would be 25 km.

However, the following factors should also be taken into account :

- * the length of channel leading to each tank from the main channel, and its cost of maintenance ;
- * the proximity of tanks to areas requiring major roadworks ;
- * ease of access to the tanks.

Field inspections will be necessary to determine which tanks should be retained, and shire councils will be consulted.

RECOMMENDATIONS

O23-O130 That all water reserves with public tanks, including those shown on the plans and listed below, be investigated and assessed using the guidelines set out above.

The water reserves listed below have channel-filled tanks. The list is not complete, and does not include public tanks on road reserves. Against each water reserve is the use to which the Council recommends the area be put if the investigation and assessment concludes that the area should no longer be used for water supply purposes.

Map 1

O23 50 ha, being allotment 12, Parish of Wallpolla. (Alienation).

Map 2

O23A 40 ha in allotment 36, Parish of Yatpool. (Bushland Reserve).

O24 6 ha south of allotment 57, Parish of Yatpool. (Bushland Reserve).

O25 16 ha at the north-west of allotment 14B, Parish of Carwarp West. (Alienation).

O26 8 ha at the south of allotment 13, Parish of Carwarp West. (Bushland Reserve).

Map 4

O27 113 ha, being allotments 25 and 25A, Parish of Wymlet. (Bushland Reserve).

O28 52 ha, being allotment 25, Parish of Nulkwyne. (Bushland Reserve).

O29 53 ha, being allotment 23, Parish of Nulkwyne. (Bushland Reserve).

O30 71 ha west of allotment 62, Parish of Tiega. (Bushland Reserve).

O31 34 ha, being allotment 59A, Parish of Tiega. (Bushland Reserve).

O32 46 ha, being allotment 57, Parish of Kia. (Bushland Reserve).

O33 8 ha to the west of allotment 41, Parish of Ouyen. (Alienation).

O34 55 ha at the south-west of allotment 10, Parish of Kia. (Bushland Reserve).

O35 21 ha at the north-east of allotment 43, Parish of Ouyen. (Bushland Reserve).

O36 10 ha at the south-west of allotment 1, Parish of Burnell. (Bushland Reserve).

O37 25 ha at the eastern edge of allotment 7, Parish of Burnell. (Bushland Reserve).

O48 25 ha, being the northern section of the Reserve fully described under Map 7, Recommendation O48.

Map 5

- O38 10 ha north of allotment 13A, Parish of Prooinga. (Bushland Reserve).
 O39 30 ha between allotments 4 and 5, Parish of Coonimur. (Bushland Reserve).
 O40 11 ha, being allotment 8A, Parish of Burra. (Bushland Reserve).
 O41 15 ha at the north-east of allotment 12, Parish of Coonimur. (Bushland Reserve).

Map 6

- O42 14 ha at the north-east of allotment 22A, Parish of Underbool. (Bushland Reserve).

Map 7

- O43 23 ha at the east of allotment 12, Parish of Gnarr. (Bushland Reserve).
 O44 10 ha north-east of allotment 2, Parish of Underbool. (Bushland Reserve).
 O45 40 ha in allotment 29, Parish of Underbool.
 O46 45 ha in allotment 22, Parish of Nyang. (Bushland Reserve).
 O47 83 ha, being allotment 31 and the Reserve to its south-east, Parish of Kattyong. (Bushland Reserve).
 O48 116 ha, being allotments 35 and 36, Parish of Pagnie. (Bushland Reserve).
 O49 60 ha between allotments 4 and 6, Parish of Timberoo, and extending into the Parish of Tiega. (Bushland Reserve).
 O50 178 ha, being allotment 16, Parish of Tiega. (Uncommitted Land).
 O51 40 ha south of allotment 1, Parish of Boulka. (Bushland Reserve).
 O52 23 ha at the south-west of allotment 4, Parish of Boorongie. (Bushland Reserve).
 O53 18 ha at the north-west of allotment 11, and 25 ha at the east of allotment 10, Parish of Boorongie. (Bushland Reserve).
 O54 24 ha at the north-east of allotment 12, Parish of Ouyen. (Bushland Reserve).
 O55 9 ha in allotment 12, Parish of Boulka. (Bushland Reserve).
 O56 41 ha to the east of allotment 34A, Parish of Boulka. (Bushland Reserve).
 O57 15 ha east of allotment 20A, Parish of Boulka. (Bushland Reserve).
 O58 14 ha at the west of allotment 50B, Parish of Woornack. (Uncommitted Land).
 O59 234 ha, being allotment 23, Parish of Manpy. (Flora and Fauna Reserve).
 O60 93 ha, being allotment 15, Parish of Daalko. (Bushland Reserve).
 O61 112 ha in allotment 21, Parish of Daalko. (Bushland Reserve).
 O62 39 ha between allotments 8A and 8B, Parish of Daalko. (Bushland Reserve).
 O63 26 ha between allotments 58 and 60, Parish of Walpeup. (Bushland Reserve).
 O64 40 ha, being allotment 70, and 35 ha, being allotment 43, Parish of Walpeup. (Bushland Reserve).
 O65 28 ha at the south-east of allotment 32, Parish of Walpeup. (Bushland Reserve).
 O65A 403 ha, being allotment 43, Parish of Timberoo. (Bushland Reserve).
 O66 13 ha at the south-east of allotment 61, Parish of Pirro. (Bushland Reserve).
 O67 20 ha, being allotment 43A, Parish of Patchewollock. (Bushland Reserve).
 O68 70 ha being allotment 28, Parish of Patchewollock. (Uncommitted Land).
 O69 10 ha to the north of allotments 34 and 35, Parish of Patchewollock. (Bushland Reserve).
 O70 39 ha south-east of allotment 36A, Parish of Dering. (Uncommitted Land).
 O71 8 ha south-east of allotment 24, Parish of Dering. (Bushland Reserve).
 O71A 20 ha south of allotment 4, Parish of Denning. (Bushland Reserve).
 O72 45 ha at the east of allotment 14, Parish of Dattuck. (Uncommitted Land).

Map 8

- O73 24 ha at the south-west of allotment 25, Parish of Larundel. (Alienation).
 O74 19 ha in allotment 21A, Parish of Gerahmin. (Bushland Reserve).
 O75 13 ha at the north-east of allotment 42, Parish of Gerahmin. (Bushland Reserve).
 O76 15 ha west of allotment 7A, Parish of Turoar. (Bushland Reserve).
 O77 20 ha being the Water Reserve between allotments 57A and 59B, Parish of Turoar. (Bushland Reserve).
 O78 36 ha south-west of allotment 18, Parish of Turoar. (Bushland Reserve).
 O79 8 ha at the north of allotment 8, Parish of Towan. (Bushland Reserve).
 O80 21 ha, being allotment 16A and the Reserve north of allotment 16A, Parish of Polisbet. (Bushland Reserve).
 O81 17 ha at the south-east of allotment 24, Parish of Woorinen. (Bushland Reserve).
 O82 10 ha at the north-west of allotment 6, Parish of Bitchigal. (Bushland Reserve).
 O83 32 ha at the north-east of allotment 45, Parish of Bourka. (Bushland Reserve).
 O84 52 ha in the west of allotment 1, Parish of Burupga. (Bushland Reserve).
 O85 67 ha, being allotment 5A, Parish of Moah. (Uncommitted Land).
 O86 13 ha at the north of allotment 23, Parish of Waitchie. (Bushland Reserve).

- O87 100 ha being allotments 26A and 27, Parish of Waitchie. (Flora and Fauna Reserve).
 O88 215 ha, being allotment 28, Parish of Berriwillock. (Flora and Fauna Reserve).
 O89 27 ha at the north-west of allotment 34, Parish of Chinangin. (Water Frontage Reserve).
 O90 20 ha west of allotment 30 and south-west of allotment 35, Parish of Chinangin. (Water Frontage Reserve).
 O91 38 ha south-east of allotment 11 and south-west of allotment 12, Parish of Chinangin. (Water Frontage Reserve).
 O92 15 ha north-east of allotment 62, Parish of Wortongie. (Bushland Reserve).
 O93 8 ha south of allotment 36, Parish of Boigbeat. (Bushland Reserve).

Map 11

- O94 40 ha south-west of allotment 16, Parish of Wyperfeld. (Bushland Reserve).
 O95 12 ha at the south of allotment 12, Parish of Chiprick. (Bushland Reserve).
 O96 20 ha at the south-east of allotment 10, Parish of Cambacanya. (Alienation).
 O96B 10 ha northwest of allotment 53, Parish of Werrap. (Bushland Reserve).
 O97 12 ha south east of allotment 2, Parish of Pigick. (Uncommitted Land).

Map 12

- O98 21 ha north-west of allotment 17, Parish of Wortongie. (Bushland Reserve).
 O99 111 ha north of allotment 52, Parish of Willangie. (Bushland Reserve).
 O100 11 ha north-east of allotment 82, and north-west of allotment 83, Parish of Boigbeat. (Bushland Reserve).
 O101 8 ha at the north-east of allotment 22, Parish of Wangie. (Water Frontage Reserve).
 O102 62 ha south-west of allotment 39A, and 15 ha south-east of allotment 49A, Parish of Murnungin. (Water Frontage Reserve).
 O103 143 ha east of allotment 39, Parish of Wangie. (Water Frontage Reserve).
 O104 60 ha west of allotment 37, Parish of Wangie. (Bushland Reserve).
 O105 10 ha at the south of allotment 15, Parish of Kinabulla. (Bushland Reserve).
 O106 20 ha at the east of allotment 22, Parish of Kinabulla. (Bushland Reserve).
 O107 16 ha at the east of allotment 2, Parish of Curyo. (Bushland Reserve).
 O108 9 ha at the north-east of allotment 45A, Parish of Marlbed. (Bushland Reserve).
 O109 32 ha at the south-east of allotment 13, Parish of Karyrie. (Bushland Reserve).
 O110 15 ha at the south-west of allotment 45, Parish of Jil Jil. (Alienation).
 O111 49 ha north-west of allotment 20, Parish of Nullawil. (Bushland Reserve).
 O112 3 ha south of allotment 33, Parish of Nullawil. (Garbage Depot).
 O113 40 ha both sides of the creek, between allotments 8 and 9A, Parish of Kalpienung. (Water Frontage Reserve).
 O114 13 ha both sides of the creek north and west of allotment 37C, Parish of Kalpienung. (Water Frontage Reserve).
 O115 12 ha north of allotment 38, Parish of Carapugna. (Bushland Reserve).
 O116 12 ha north-east of allotment 9, Parish of Cooroojerrup. (Water Frontage Reserve).
 O117 16 ha north-east of allotment 21, Parish of Towaninny. (Water Frontage Reserve).

Map 13

- O118 8 ha north-east of allotment 8C, Parish of Lalbert. (Bushland Reserve).
 O119 11 ha between allotment 5 and the creek to the east, Parish of Budgerum West. (Water Frontage Reserve).
 O120 20 ha, being allotment 8A, Parish of Cannie. (Bushland Reserve).
 O121 12 ha between allotments 13 and 13A, Parish of Towaninny. (Alienation).
 O122 8 ha at the west of allotment 30, Parish of Ninyeunook. (Bushland Reserve).
 O123 40 ha, being allotment 13, Parish of Quambatook. (Water Frontage Reserve).
 O124 69 ha east of allotment 59, Parish of Quambatook. (Flora and Fauna Reserve).
 O125 40 ha north of allotments 26B and 26C, Parish of Quambatook. (Bushland Reserve).
 O126 10 ha south-east of allotment 22, Parish of Marmal. (Bushland Reserve).
 O127 16 ha west of allotment 24A, Parish of Marmal. (Bushland Reserve).
 O128 25 ha north of allotment 8, Parish of Gredgwin. (Bushland Reserve).
 O129 10 ha between allotments 28B and 22, Parish of Leaghur. (Bushland Reserve).
 O130 10 ha north of allotment 22A, Parish of Leaghur. (Uncommitted Land).

DRAINAGE

High saline water tables are a problem throughout the irrigated lands of the study area. The method most commonly used to keep the water table below the plant rooting zone is the installation of sub-surface drains. While these drains prevent waterlogging and salting on the irrigated land, disposal of the saline drainage water

presents a further problem. Disposal directly into the Murray River must be avoided wherever possible in order to keep the salinity of the river, which causes concern during the summer months, below critical levels.

Current practice is to run the drainage water into lakes and low-lying areas, which act as evaporation basins, although some drain directly into the river. Water is released from some basins into the Murray River at times of high flow, when it will be rapidly diluted.

These depressions and natural lakes have considerable nature conservation value because of the habitat they provide for water-birds and waders. For example, Lake Tutchewop is noted for the migratory waders found there from time to time, while the Cardross Lakes at times attract large numbers of water-birds.

As the salt content of these lakes increases over time, their value as habitat will fall until they become lifeless bodies of brine. However, the build-up of salt is usually slow, and the lakes can be expected to provide useful habitat for many years.

The Council believes that the provision of wildlife habitat is an important aspect of the management of areas used for disposal of saline drainage water. The public land currently used for this purpose is shown on the maps. Some areas that may be needed in future have been retained as uncommitted land.

Nangiloc-Colignan

The State Rivers and Water Supply Commission is currently preparing a scheme to drain the extensive private irrigation developments at Nangiloc and Colignan, south of Mildura. Of the nine low-lying areas that were considered for use as evaporating basins for saline drainage water, two are wholly on public land. One is a lake in the north-west of the proposed Hattah-Kulkyne National Park, and the other is Lake Iraak on the Murray River flood-plain.

The Council agrees with the present intention not to use these two lakes for drainage disposal. The lake in the proposed Hattah-Kulkyne National Park forms part of the mosaic of wet and dry-land habitats within the proposed park, although it is filled only infrequently by Murray River floods. Lake Iraak has considerable landscape and scenic value, as it contains vigorous native vegetation and is set in an area that has been extensively developed for irrigation. It has been recommended to become a bushland reserve.

Lake Tyrrell

The State Rivers and Water Supply Commission proposes enlarging the existing Barr Creek saline drainage disposal works in the Kerang area. The diversion capacity of Barr Creek to Lake Tutchewop would be increased, and a lined channel or pipeline would carry the drainage water 80 km from Lake Tutchewop to Lake Tyrrell in the central Mallee. Lake Tyrrell (area 160 sq. km) would act as a large evaporating basin. Further detailed planning for the scheme, including assessment of the environmental impact, has yet to be done.

RECOMMENDATIONS

- O131-O139** That the areas shown on the plans and listed below be used for the disposal of saline drainage water and, as far as is possible, for nature conservation and recreation ;
and that they be reserved under section 14 of the *Land Act* 1958 and managed by the State Rivers and Water Supply Commission.

Map 2

O131 3 ha, being allotment 39A, Parish of Wargan.

Map B

O131A Various areas in the Parishes of Mildura and Merbein, as shown on the map.

Map 9

O132 40 ha, being allotment 39A, Parish of Tyntynder.

O133 Lake (Basin) south-west of allotment 14, Parish of Tyntynder.

O134 Drainage area south of allotment 17, Parish of Tyntynder.

O135 Long Lake and Round Lake Water Reserves, east of allotments 2, 3, 4, 5 and 7, Parish of Kunat Kunat.

O136 Drainage area west of allotments 1, 4 and 5A, Parish of Kunat Kunat.

O137 Lake Tutchewop, Parish of Benjeroop.

O138 Lake William, Parish of Benjeroop.

O139 Lakes Little and Kelly, Parish of Benjeroop.

P. UTILITIES, SURVEY, AND OTHER RESERVES

Many utilities occupy public land. These include roads, powerlines, pipelines, sewerage farms, aerodromes, garbage depots, hospitals, schools, and cemeteries. Many small areas where no change in use is proposed are not specifically referred to in these recommendations. 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, and land for these purposes will have to be allocated when firm proposals are made. The Council believes that government agencies concerned with provision and installation of communication equipment, transmission lines, pipelines, roads, etc., should submit to the Council, 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 re-surveys.

RECOMMENDATIONS

General utilities

- P1** (a) That the areas currently used for public utilities (powerlines, garbage depots, sewerage farms, aerodromes, etc.) some of which are shown on the maps, continue to be used for these purposes.
- (b) That roads, powerlines, and pipelines be sited to minimize disturbance to public land, and not impinge on parks, reference areas, bushland reserves or scenic reserves without the approval of the management authority and that new pipelines and powerlines follow existing easements if possible ; this may require widening of some easements.

Garbage and sanitary depots

- P2** 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.

Railway lines

- P3** 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.

Trigonometrical stations

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

- P4** That the minimum area necessary for survey purposes be reserved around trigonometrical stations on public land in the study area where it would otherwise remain as unreserved Crown land and, where other forms of public land tenure apply, the Department of Crown Lands and Survey should have the right to occupy a minimum area around the station and provide lines of sight.

Other reserves and public land

There are small areas of both reserved and unoccupied Crown land in the study area which are used for various purposes such as water, gravel, camping and so on, and which have not been specifically mentioned in these recommendations. The Council intends that existing legal uses and tenure of such land should continue.

P5 That, for small areas of public land not specifically mentioned in these recommendations, existing legal uses and tenure continue.

Q. EUCALYPTUS OIL PRODUCTION

Extraction of oil from the leaves of mallee eucalypts takes place on a small scale in the Manya district, north of Murrayville. The species utilised are dumosa mallee and acorn (oil) mallee. Regrowth shoots are cut and placed in a still, and the oil extracted by steam distillation. Up to the present time only small areas have been cut, and production of oil during the last year was 1,700 kg.

RECOMMENDATION

- Q1** That harvesting of mallee eucalypt foliage and extraction of oil be permitted in the uncommitted land shown on the map (5,600 ha), subject to the provisions of the *Land Act* 1958 and the *Forests Act* 1958 and to any conditions imposed by the managing authority.

R. MILITARY TRAINING

The Council believes that military training is a legitimate use of public land. Close supervision of training activities in the Mallee is necessary to minimize erosion arising from the use of vehicles on erosion-prone soils. Military training should not occur in reference areas, and only under special circumstances in parks and other recreation and conservation areas.

The Council believes that the following conditions should apply to military training 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 the other relevant authorities 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.

RECOMMENDATIONS

R1 Sunset Country

That military training activities (consisting of minor infantry tactics, and firing of small-arms weapons) be permitted in the area of uncommitted land shown on the maps, subject to the conditions set down above.

R2 Big Desert

That military training activities (consisting of exercising armoured units and live firing of non-high-explosive ammunition) be permitted in the areas of uncommitted land shown in the maps, subject to the conditions set down above.

S. UNCOMMITTED LAND

In planning land use, known resources are allocated to satisfy known or predicted demands. However, Council is aware that many changes cannot be foreseen and that resources themselves will change as exploration, investigation, and technology progress. For these reasons it is desirable that planning be flexible so that, when land use is reviewed, resources can be re-allocated or adapted to meet changed demands. Changes in demand may affect the present uses or may create entirely new ones.

Provision for future demands is made by placing land under flexible forms of use (that is, uses that do not have a major impact on the ecosystem) and by retaining as much land as possible in an uncommitted state.

Such uncommitted land is securely retained as public land, although the form of tenure permits changes in use or status if these are recommended following review by this Council. All resources on uncommitted land are to be carefully managed, in order to prevent the impairment of the land's capability for future uses. In practice this means conserving the capabilities that the land is known to possess, while allowing low levels of some types of use (provided this can be done without reducing options for future uses by causing changes that would be difficult to reverse). Uncommitted land includes areas that, although having a low capability to satisfy any known demand, have an unknown (and perhaps high) capability to satisfy future demands.

It also includes areas that, although having a high capability to satisfy one or more known demands, are at present not committed to any one use, as foreseeable requirements can readily be met from other areas.

The Council wishes to emphasize that sufficient resources should be made available to the authorities responsible for managing uncommitted land to permit careful management of the land. In particular, measures to protect the land and adjacent areas from soil erosion, wildfire, and vermin and noxious weeds are essential.

Millewa area

An area of public land in the far north-west of the State—bounded by the Murray River, the South Australian border, the Sturt Highway and, to the east, by freehold land—has especially high nature conservation values. It contains examples of three major land types, two of which (Neds Corner and Millewa land systems) have a very restricted distribution in Victoria.

A large part of this area will be inundated if the proposed Chowilla Dam is built. Because of the Chowilla Dam proposal, the Council has no option but to recommend that the area be uncommitted land. (If there was no dam proposal, Council would have recommended that the area be a park.) This decision will be reviewed when the Council next examines the Mallee study area. Meanwhile, the authorities responsible for managing grazing and timber production in the area should ensure that park and wildlife habitat values are fully protected.

Robinvale area

A large area of public land lies to the south of the township and irrigation areas of Robinvale. This land, most of which is cleared and used for cereal production, was acquired by the Government for possible future extension of the irrigation settlements. The Council proposes that most of this land be uncommitted, and that it continue to be leased or licensed for dry-land farming.

RECOMMENDATION

S1 That the land (873 000 ha) indicated on the maps be used to :

- (a) achieve or maintain stability of the land and maintain its usefulness for all possible future uses ;
- (b) conserve native fauna and flora ;
- (c) provide other products, including forest produce and eucalyptus oil (see Chapter Q), and services, including grazing (see Chapter F) and military training (see Chapter R), where this can be done in a manner compatible with the uses given above ;

and that :

- (d) new access tracks or roads be constructed on this land only where necessary for management ;

and that it be uncommitted land withheld from sale under section 36 of the *Land Act* 1958 and that it be *protected forest* under the provisions of the *Forests Act* 1958.