

PLANNING BRANCH  
DO NOT REMOVE

# Leeuwin-Naturaliste National Park

---

Management Plan

---

1989-1999

---



MANAGEMENT PLAN No. 13



Department of Conservation  
and Land Management

# LEEWIN NATURALISTE NATIONAL PARK MANAGEMENT PLAN

**1989-1999**

## **PROJECT TEAM**

**Paul Frewer**, Co-Ordinator, Planning Branch

**Tony Raven**, District Manager, Busselton

**Neil Taylor**, Parks and Reserves Officer

**Brad Cockman**, Senior Ranger (from March 1988)

**Mike Batchelor**, RangerInCharge (until April 1988)

**Kate Orr**, Technical Officer

This management plan was approved by the Hon. Minister for Conservation  
and Land Management on 24 February, 1989



Department of Conservation and Land Management  
50 Hayman Road  
COMO W.A. 6152

**MANAGEMENT PLAN No. 13**

## **ACKNOWLEDGEMENTS**

Compilation of the draft and final plans for the Leeuwin-Naturaliste National Park involved the efforts of a large number of individuals, interest groups and government agencies. Particular thanks are due to Peter Bowen and John Dunn for preparing the maps for the plan, Dr Steve Hopper and Andrew Brown (rare and endangered flora), John Skillen and John Gillard (dieback), Rick Sneeuwjagt, Jock Smart, Brad Commins and staff at Bunbury Regional Office (fire management), and Richard Hammond (Landscape assessment and view management). Bob Chandler and Alex Errington are thanked for their incisive and detailed comments on the draft plan.

Those people and organisations who prepared comprehensive submissions to the draft plan are especially acknowledged for their effort.

We gratefully acknowledge the efforts of Debbie Bowra in typing the plan.

# CONTENTS

<b>ACKNOWLEDGEMENTS</b>	<b><i>i</i></b>
<b>CONTENTS</b>	<b><i>ii</i></b>
<b>SECTION A: INTRODUCTION</b>	<b><i>1</i></b>
<b>1.0 BACKGROUND</b>	<b>1</b>
1.1 Statutory Objective for National Park Management	1
1.2 General Description of the National Park	1
<b>SECTION B: THE PLAN</b>	<b>4</b>
<b>2.0 OBJECTIVES</b>	<b>4</b>
<b>3.0 LAND TENURE</b>	<b>5</b>
3.1 Leases	7
<b>4.0 MANAGEMENT UNITS</b>	<b>8</b>
4.1 Management Unit Definition (see Table 1 for summary and Fig. 2 inside back cover)	8
4.2 Additions of Land to the National Park	11
<b>5.0 LAND MANAGEMENT</b>	<b>11</b>
5.1 View Management	15
<b>6.0 CAVE MANAGEMENT</b>	<b>15</b>
<b>7.0 VEGETATION</b>	<b>19</b>
<b>8.0 FAUNA</b>	<b>23</b>
<b>9.0 PROTECTION</b>	<b>24</b>
9.1 Weeds and Exotic Species	24
9.2 Dieback	26
9.3 Fire	29
9.4 Feral Animals	33
<b>10.0 ABORIGINAL AND HISTORIC SITES</b>	<b>34</b>
10.1 Aboriginal Sites	34
10.2 Historic Sites	36
<b>11.0 ACCESS</b>	<b>36</b>
<b>12.0 RECREATION AND TOURISM</b>	<b>46</b>
12.1 Philosophy	46
12.2 Camping	52
12.3 Walking	54
12.4 Surfing and Fishing	55
12.5 Other Recreational Activities	58
12.6 Adventure Groups and Tours	59
12.7 Domestic Animals	59
<b>13.0 COMMUNITY EDUCATION AND RESEARCH</b>	<b>61</b>
<b>14.0 RESOURCE MANAGEMENT</b>	<b>63</b>
14.1 Water	63
14.2 Mining	65
14.3 Professional Fishing	67
14.4 Apiaries	68
14.5 Timber Harvest, Firewood Collection and Wildflower Picking	69
<b>15.0 MARINE ENVIRONMENT</b>	<b>69</b>

<b>SECTION C: IMPLEMENTATION</b>	<b>71</b>
<b>16.0 PARK ADMINISTRATION</b>	<b>71</b>
16.1 Staffing	71
16.2 Voluntary Groups	71
16.3 Safety	72
16.4 Park Management Facilities	73
<b>17.0 ASSOCIATED LAND USES</b>	<b>74</b>
<b>18.0 RESEARCH AND MONITORING</b>	<b>75</b>
<b>19.0 PRIORITIES</b>	<b>79</b>
<b>20.0 FUNDING</b>	<b>79</b>
<b>21.0 TENURE OF THE PLAN</b>	<b>79</b>
<i>References</i>	<b>80</b>
<i>Acts</i>	<b>86</b>
<i>APPENDIX 1. Reserves proposed to be vested in the NPNCA and amalgamated into the Leeuwin-Naturaliste National Park.</i>	<b>87</b>
<i>APPENDIX 2 VIEW AND LANDSCAPE MANAGEMENT</i>	<b>89</b>
<i>APPENDIX 3 OPTIONS FOR FUNDING</i>	<b>98</b>

## **TABLES**

1. Management Units
2. Erosion Control Priorities and Action
3. Declared Rare, Vulnerable, Restricted and Poorly Known Flora
4. Proposed Roads and Tracks Classification
5. Recommended Recreation Site Development
- Al. View Potential from Existing Travel Routes

## **FIGURES**

1. Locality Map
2. Management Units                      inserted in back
3. Fire Strategy                            inserted in back

# SECTION A: INTRODUCTION

## 1.0 BACKGROUND

The National Parks and Nature Conservation Authority (NPNCA) is a controlling body established by the Conservation and Land Management Act 1984. A major function of the Authority is to submit proposed management plans for conservation lands vested in it, to the Minister for Conservation and Land Management. The plans are prepared through the agency of the Department of Conservation and Land Management (CALM). The Leeuwin-Naturaliste National Park draft management plan was released for public comment on December 11, 1987. The draft plan attracted 125 submissions from a wide range of individuals, interest groups and government agencies. This plan is the revision of the draft plan, based upon those public comments. A summary of public submissions is published as a separate document.

The final management plan for the National Park is a document written principally for the park management. It contains objectives, strategies and actions required to fulfil the overall objectives for management of National Parks in Western Australia. The resource information and general background to the Leeuwin-Naturaliste National Park is available in the draft management plan, and has not been repeated in this document.

## 1.1 Statutory Objective for National Park Management

Under Section 56(1) of the CALM Act (1984), the objective of a management plan is defined as:

*"in the case of national parks and marine parks to fulfil as much of the demand for recreation by members of the public as is consistent with the proper maintenance and restoration of the natural environment, the protection of indigenous flora and fauna and the preservation of any feature of archaeological, historic or scientific interest."*

The Act provides the overall context for this management plan.

## 1.2 General Description of the National Park

Leeuwin-Naturaliste National Park is located in the south-western corner of Western Australia, 280 km south of Perth within the Shires of Busselton and Augusta-Margaret River. The Park extends along the coastline from Bunker Bay, on the eastern side of Cape Naturaliste, to Cape Leeuwin, south of Augusta, a distance of about 100 km (Fig. 1). It has an area of 15 600 hectares made up of 28 separate reserves. The Park is highly fragmented and in many places is a narrow foreshore reserve connecting more substantial blocks, which extend up to 5 km inland. A major feature of the National

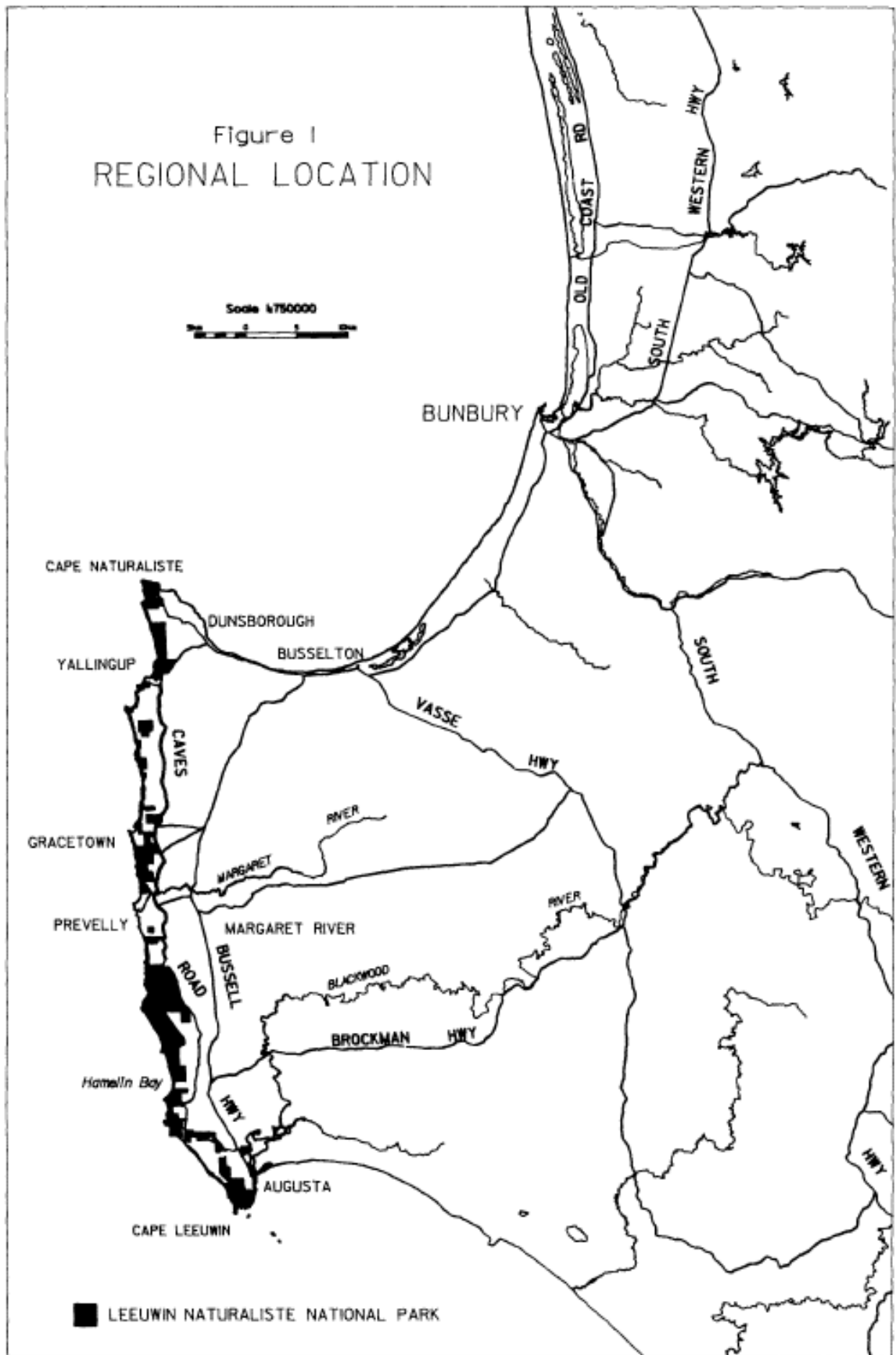
Park is the Leeuwin-Naturaliste Ridge, an undulating surface which rises up to 200 metres above sea level.

The park has a diverse vegetation which ranges from low scrub heath on the exposed western side of the Ridge, to tall karri forest on the sheltered lee side. The fauna of the Ridge has some interesting vertebrate species, though the attenuated nature of park boundaries and its relative isolation is not conducive to large populations or species diversity. It is essentially a refuge. The geologic history of the Ridge, however, has led to the evolution of a unique invertebrate fauna, especially snails.

The Leeuwin-Naturaliste National Park is one of the primary coastal recreation areas in the SouthWest. It has some of the best surfing conditions in Australia, and it is a popular fishing area. The Park also has over 360 known caves which are subject to variable but increasing visitor use.

At present, visitor numbers in the Shires of Busselton and Augusta-Margaret River are increasing at about 8% per year. Most people probably use the National Park at some time during their visit.

Figure 1  
REGIONAL LOCATION





## SECTION B: THE PLAN

### 2.0 OBJECTIVES

General management goals for National Parks are to:

1. Protect and conserve native plants and animals and their habitats.
2. Protect and conserve physical, cultural and scenic resources.
3. Provide opportunities and facilities for appropriate public recreation.
4. Regulate use to be consistent with the maintenance and protection of natural resource values and to minimise conflict between use.
5. Promote visitor safety, awareness and appreciation of natural processes and the scientific and cultural attributes of park resources.
6. Promote research and monitoring of the biological, physical and social environments of the Park to aid future management.

Specifically, management objectives for the Leeuwin-Naturaliste National Park are:

1. To provide for a range of activities, levels of use and management which are compatible with the Park's environment.
2. To protect the groundwater and surface water from over exploitation and pollution.
3. To direct recreational use into areas which are suitable for and can sustain the activity.
4. To ensure that fire management protects life, property and natural values (specific objectives for fire management are in Section 9.3).
5. To limit the spread of dieback and other diseases.
6. To protect cave features from degradation.
7. To provide cave facilities which are appropriate to the level of visitor use and expertise.
8. To provide opportunities for scientific research.
9. To protect sites of archaeological and historic interest.
10. To achieve, where possible, the rationalisation of the National Park boundaries to encompass representative samples of the Ridges natural features.
11. To ensure any commercial operation does not compromise the National Park's natural values.
12. To ensure that commercial operations contribute to and complement the National Park's infrastructure.
13. To propose surveys which could lead to the identification of marine areas which would complement the National Park.
14. To establish an integrated visitor information system which utilises a range of techniques.

## **3.0 LAND TENURE**

The National Park consists of 28 separate reserves and its large boundary to area ratio has created a number of management and conservation problems. Rationalisation of landward and seaward boundaries is an important step toward the alleviation of these problems.

### **STRATEGY**

In 1982 the Environmental Protection Authority (EPA) endorsed a series of recommendations pertaining to Crown Land adjacent to the Study Area. As part of the compilation of this management plan, the Working Group initiated action towards the implementation of a number of those recommendations.

Other areas of Crown Land have been identified by the Working Group as suitable for incorporation into the Park (See Appendix 1).

There are some areas of private land on the Ridge which are unsuitable for development, but which would be suitable for inclusion in the National Park. Where an owner has development intentions, it may be possible to negotiate a land exchange. Availability of land on the Ridge for this purpose is limited, but there may be opportunities from elsewhere within CALM's estate.

Small areas of the existing National Park have potential for leasing, exchange or selling. One example is the cleared land in the southern portion of Location 602 south of Yallingup (see Action 3.13).

### **ACTIONS**

#### **Action 3.1:**

Extend the seaward boundaries of all reserves within the National Park to the Low Water Mark.

Priority: 1

#### **Action 3.2:**

Consult with relevant authorities regarding reserves listed in Appendix I for their vesting in the NPNCA and amalgamation into the Leeuwin-Naturaliste National Park.

Priority: 1

#### **Action 3.3:**

In consultation with the Shire of Busselton, investigate rationalisation of park boundaries around Yallingup Townsite including part of Reserve A8427, Pt Loc. 4308, west of Loc. 4421 and east and north of Caves Road.

Priority: 2

**Action 3.4:**

Declare existing and future reserves within the Study Area, which constitute Leeuwin-Naturaliste National Park, as Class 'A' reserves for the purpose of National Park and vest in NPNCA.

Priority: Ongoing

**Action 3.5:**

Consolidate all internal reserves constituting the Park. The area should be declared a single Class 'A' reserve for the purpose of National Park and vested with the NPNCA.

Priority: 3

**Action 3.6:**

Transfer Reserve A14779 at the Hardy Inlet from the land described as part of Leeuwin-Naturaliste National Park to the Scott National Park.

Priority: 2

**Action 3.7:**

When available and as funds permit, investigate the acquisition of private land west of Caves Road, adjacent to the National Park and suitable for incorporation into the Park. Areas of priority are north of Yallingup (location 1044), Injidup and south of Hamelin Bay.

Priority: Ongoing

**Action 3.8:**

Cancel and amalgamate some unconstructed road reserves within the National Park into the appropriate reserve. These are:

- a) Ellen Brook Road west of the National Park boundary (Loc. 1197)
- b) Old Ellen Brook Road west of the National Park boundary (Loc. 673)
- c) Bobs Hollow between Loc. 1203 and 1204
- d) Redgate west of the eastern boundary of Reserve 20724.

Negotiate with the Local Authorities on the future management of constructed road reserves within the National Park. These are: Sugarloaf Road, Canal Rocks Road, Wyadup Road, Cape Clairault Road, Bunker Bay Road, Hamelin Bay Road, Cosy Corner Road, and Skippy Rock Road.

Priority: 1

**Action 3.9:**

Review the need for adjacent or internal road reserves when land is amalgamated within the National Park.

Priority: Ongoing

**Action 3.10:**

Comment on all subdivision and development applications on private land adjacent to the National Park when referrals are received from the State Planning Commission. The implications of future land uses within the catchment areas of streams and rivers flowing through the National Park should also be assessed.

Priority: Ongoing

**Action 3.11:**

Apply for vesting of all offshore islands and stacks between Bunker Bay and Augusta which are currently Vacant Crown Land in the NPNCA as Nature Reserves.

Priority: 1

**Action 3.12:**

Discuss the rationalisation of tourist cave reserve boundaries with the Local Authorities and Tourist Bureaux.

Priority: 1

**Action 3.13:**

In consultation with the adjacent landowners and the proposed Advisory Committee the cleared land in the southern portion of Location 602 south of Yallingup should be considered for a land exchange, as a potential lease area or for regeneration. Priority: 1

## **3.1 Leases**

At present there is one lease in the National Park which is for Hamelin Bay Caravan Park. The lease is subject to conditions determined by CALM and the existing lease for the Caravan Park will expire during the tenure of this plan. The use of leases in the National Park has led to the development of facilities which probably would not have been developed otherwise. Further leases may provide opportunities for the community to benefit through controlled development.

### **ACTIONS**

**Action 3.1.1:**

Hamelin Bay Caravan Park should be retained as a leasehold area for the use of a caravan park within the National Park. There may be an opportunity for revision of boundaries of Hamelin Bay Caravan Park in conjunction with the development of a site concept plan. The existing lease should be renegotiated when it lapses.

Priority: 1

**Action 3.1.2:**

Investigate opportunities for future lease arrangements in conjunction with the development of future facilities.

Priority: 1

**Action 3.1.3:**

Regularly inspect leases to ensure fulfillment of conditions. Renewal of leases should be dependent upon fulfillment of these conditions.

Priority: Ongoing

## 4.0 MANAGEMENT UNITS

### STRATEGY

Identification of management units is an important part of planning for National Parks. The management units should set the framework within which administrative and development controls are established to ensure sustainable use occurs whilst retaining the Park's environmental integrity. The units are related to a primary use, the amount and level of intended management intervention, and the level of access and facilities. The scheme takes into account the following factors:

- (a) There are numerous recreation areas on the coast, for which the Park serves as a means of access.
- (b) The Study Area has many sites of cultural and environmental significance which require specific management measures.
- (c) A range of opportunities for recreational experiences exists within the Park. Development of facilities within specific zones should reflect the range and type of recreation demand.
- (d) More intensive uses will be allocated to the more common and less sensitive ecosystems.
- (e) In the more substantial blocks of the Park the periphery will be regarded as a buffer for the internal or core area of the block.

### 4.1 Management Unit Definition (see Table 1 for summary and Fig. 2 inside back cover)

**1. Natural Areas-** These are the core areas of the Park which will be retained in their natural state. Minimal disturbance is envisaged. These areas will not be subject to any overt management practises. They are regarded as environmental reference areas. There may be a limited number of

management tracks but vehicle access is generally precluded. Walk trails will be incorporated into some parts of these areas.

**2. Managed Natural Areas-** These usually form the periphery of the Park. They incorporate fire protection buffers, and may be used for limited resource extraction (road building materials). They are generally defined by management tracks, firebreaks and some recreation access tracks. Public vehicle access will be allowed on selected tracks and most trails will be available to walkers.

**3. Special Areas-** These incorporate sites of special environmental or cultural significance. The Park has a range of special areas:

a) **Historical/ Archaeological Conservation Areas-** The aim is to conserve the historical significance of an area. Any buildings, facilities and operations should complement the historical features of these sites. Generally vehicle parking will be established on the periphery of these sites, with walk trails provided to the points of interest.

b) **Cave Protection Areas-** These areas have a high concentration, and frequently outstanding examples, of caves, dolines and other karst features. For safety reasons, and potential environmental damage, use of heavy machinery during operations will be prohibited. Existing public access will be maintained, with no further roads established.

c) **Special Habitat Protection Areas -** Areas which are being used for scientific research. Some areas are associated with conservation of specific species.

**4. General Outdoor Recreation Areas-** These areas include existing and potential recreation facilities and are generally subject to intensive visitor use. These include access roads, scenic lookouts and site facilities e.g. carparks, toilets and campsites. There are two broad types:

a) **Day Use Facility Areas-** sites where carparks, toilets and picnic facilities are provided. No overnight stays will be allowed.

b) **Campsites-**

(i) **designated camping areas-** some facilities and vehicle access are provided.

(ii) **remote camping areas-** small basic areas where camping associated with walk trails will be provided. No vehicle access will be permitted.

**TABLE 1. MANAGEMENT UNITS**

<b>ZONE</b>	<b>ACCESS</b>	<b>LEVEL OF MANAGEMENT</b>	<b>RECREATION EXPERIENCE</b>
1. Natural Area	No vehicle access. Some walk trails and discrete camping	Low	Unmodified -isolated
2. Managed Natural Area	Vehicle access on defined and approved road and tracks.	Moderate	Modified intermittently -some isolated areas
3. Special Areas			
a) Historical/ Archaeological Conservation	As for 2, with vehicle access generally to periphery of site.	High	Semi developed/developed loped
b) Cave Protection	As for 2, with no heavy machinery allowed in the area.	Moderate	Unmodified -isolated (wild caves) Semi developed - adventure caves.
c) Special Habitat Protection	As for 3a	Variable	Recreation not encouraged
4. General Outdoor Recreation			
a) Day use	As for 2	High	Developed - low level facilities
b) (i) Designated camping	As for 2	Very High	Developed- intensive recreation sites
(ii) Remote camping	Walkers only	Moderate	Semi developed- trail based

## **4.2 Additions of Land to the National Park**

In future, the National Park may have parcels of land added to its area. In the first case the land will be added to the Natural Area, Managed Natural Area or Special Area classification. Site development requirements within these additions will be assessed, and, if any, then General Outdoor Recreation Areas will be established. It is expected that the Boranup State forest will be added to the Leeuwin-Naturaliste National Park during the life of this plan but due to the uncertainty of timing few specific comments have been made about the area in this plan.

## **5.0 LAND MANAGEMENT**

Erosion of the land surface in the National Park is caused by natural processes (wind, water) and human use (e.g. vehicles, pedestrians and horses). The coastal zone is subject to constant interaction of natural processes acting on the beachface, dunes and cliffs. Most areas are inherently unstable and exhibit cyclical (diurnal or seasonal) erosion and accretion or long term erosion. Natural processes are frequently exacerbated by human activities. Prior to the declaration of the National Park many areas were grazed. Grazing of coastal dunes promoted massive instabilities through the removal of vegetation and erosion of large areas. With the discontinuation of grazing many of these areas have naturally revegetated. In recent times, however, erosion in many coastal areas has been initiated by recreation activities. Demand for access to beaches has led to many dunes and cliff faces being covered in a myriad of access tracks. In some cases poor drainage from adjacent recreation sites has contributed to the problems.

### **STRATEGY**

The key to coastal management is the retention and rehabilitation of dune vegetation. This is critical in foredune areas which act as a sediment store in periods of rapid erosion. Where dunes are vegetated defined access paths must be provided. No other developments should occur on foredunes. Areas where vegetation has been damaged should be rehabilitated. In some cases plantings of local native species is sufficient, but in larger areas, where accretion of sediment is desirable such as on parabolic blow out dunes or transgressive sheets, the use of sand trapping fences, brushing or mulching may be required.

Areas subject to heavy visitor use will be the primary object of rehabilitation programmes. Other areas may be subject to natural erosion or from influences such as fire, but these are frequently self-stabilising, or present no threat to human activity or property. Sites will be prioritised to enable rehabilitation programmes to be implemented in each block of the National Park (see also Action 3.13).



## **GUIDELINES**

- a) Where appropriate, local native species should be used in rehabilitation programmes. It may be necessary to use marram grass in some situations. Monitoring and maintenance of existing rehabilitation sites is essential to ascertain the success or otherwise of techniques. There may be a need to promote the establishment of secondary colonising species when initial plantings are successful.
  
- b) Fertiliser should be applied at the time of planting (generally winter months) and at the end of the first year.
  
- c) Design of tracks or roads should take into account the potential erosion hazard. Construction of access should be accompanied with soil stabilisation measures.
  
- d) Provision of walk trails should relate to preferred visitor destination. They should be demarcated by low profile fences. No barbed wire is to be used.
  
- e) Deflated areas may require the erection of sand trapping fences similar to those at South Point, Cowaramup. Because of accretion rates, barbed wire should not be used for fencing.
  
- f) Areas should be 'brushed' with appropriate native vegetation and tied down with wire. Preferably brushing with seed set should be used.
  
- g) Access down cliff faces should be avoided where possible and only provided as a last resort. Low profile wooden structures should be built with care taken with steps and rises and alignment of decking for any boardwalks. Standards outlined in the CALM Recreation Manual should be followed where appropriate.
  
- h) Control of rabbits may be required in rehabilitation areas and these areas should be monitored.

## **ACTIONS**

### **Action 5.1:**

Investigate the establishment of a small area for propagation of species used for coastal rehabilitation, with a primary aim of propagating marram grass (*Ammophila arenaria*). Other suitable species include *Olearia axillaris*, spinifex species and pigface (*Carpobrotus aequilaterus*). Possible propagation sites which require investigation are at Moses Rock, South Point and Hamelin Bay.

Priority: 1

**Action 5.2:**

Conduct research using a variety of rehabilitation techniques with different vegetation types and rehabilitation methods.

Priority: 1

**Action 5.3:**

Rehabilitate sites listed in Table 2 according to the priority listing. A review of the report by Davies (1983) should be carried out to establish detailed measures.

**Action 5.4:**

Monitor erosion of tracks and firebreaks and measures taken to alleviate the problem, or ultimately, realign the break into more stable terrain.

Priority: Ongoing

**Action 5.5:**

Provide adequate and effective drainage as part of any site or access development. Disposal areas for runoff should be away from foreshore cliff tops or existing tracks where gullying can occur.

Priority: Ongoing

**TABLE 2. EROSION CONTROL PRIORITIES AND ACTION  
(refer to Davies (1983) for detail)**

<b>PRIORITY</b>	<b>ACTION</b>
<b>Ongoing</b>	Monitor and maintain all existing rehabilitation sites.
<b>Priority 1</b>	
Kabbejgup	Redefine coastal access, initiate dune stabilisation.
Moses Rock North	Define beach access from carpark, improve and redirect drainage. Stabilise cliff face.
Moses Rock South	Define beach access from carpark to the beach.
Ellen Brook Coast	Rip face of limestone north of existing carpark and preclude vehicle access. Plant marram grass south of existing carpark. Define beach access for pedestrians.
Grace Road	Close existing beach access, brush and rehabilitate. Redefine and stabilise walk trail to beach.
Elephant Rock	Define coastal access and carpark.
Boranup Beach	Define beach access. Recontouring of cliff tops may be required to divert drainage.
<b>Priority 2</b>	
Wyadup	Rip and rehabilitate vehicle tracks to beach. Define walk trail to Wyadup Rocks, some surfacing may be required.
Wilyabrup Brook	Define beach access for pedestrians. Fence and stabilise dune face.
Skippy Rock	Extend walk trail definition from carpark. Extend plantings on blowout.
<b>Priority 3</b>	
Cape Clairault	Trials should be initiated for large scale dune stabilisation.

## 5.1 View Management

The main aim of view management is to ensure that human-induced changes to natural landscapes do not unnecessarily detract from the landscape's features. The changes should be positive to viewers.

To ensure future developments are compatible with the landscape of the National Park an assessment of the Park's features was undertaken.

The assessment of view management involves a number of stages. These are:

- a) Provision for a range of view opportunities enclosed, detailed, enframed, panoramic, canopied and focal;
- b) Identification of optimal view positions;
- c) Identification of points of specific visual attraction;
- d) Inventory of view potential and recommend actions for development opportunities.
- e) Identification of degraded views and recommendations for enhancement methods.

Detailed landscape considerations are outlined in Appendix 2.

### ACTIONS

#### **Action 5.1.1:**

Developments within the Park for road, track and recreation sites should incorporate proposals listed in Appendix 2.

Priority: Ongoing

#### **Action 5.1.2:**

Guidelines outlined in Appendix 2 should be followed in the respective High, Moderate and Low Scenic Quality Zones.

Priority: Ongoing

## 6.0 CAVE MANAGEMENT

The Leeuwin-Naturaliste Ridge has some of the finest cave systems in Australia. They are complex and fragile environments. Because of the time taken to evolve they are regarded as nonrenewable resources. Unfortunately, associated with increased visitation, the amount of damage to the caves is also increasing. At present there are five main users of caves:

i) Members of speleological groups- These people are interested in caves from both a scientific and recreational view point and usually possess a number of skills associated with caving, first aid and abseiling.

ii) Commercial groups- Presently these are few in number, they are using some caves to give guided tours to participants for a fee.

iii) School groups- These tend to make prior arrangements with rangers and are usually given short "oneoff" tours. Some groups stay for longer periods. Usually they are nonprofit making.

iv) Recreationists- These are ad hoc users who visit caves as an adjunct to other activities. They tend to focus on tourist caves, and some of the other better known caves. They are usually poorly equipped and in terms of numbers are the most rapidly growing.

v) General tourists- These are users of the four tourist caves, where fully guided trails and tours are available. These are run by organisations other than CALM.

Extensive knowledge of caves within the Study Area exists within the Western Australian Speleological Group (WASG) and the Speleological Research Group (SRG). At present only a few individuals within CALM have as well developed knowledge as WASG and SRG members and it is important that a formal joint arrangement is reached between these bodies for cave management.

The Caves Access Committee, a self-regulating body, currently manages access to caves. Another group, the EPA Working Group on Cave Protection and Management, meets on an as needed basis to give direction on cave related matters. Although CALM staff are involved in these committees, there is no formal link with CALM.

## **STRATEGY**

A Cave Management Committee will be formed to give accent to management rather than access. The committee should function as an advisory group to CALM and should liaise with relevant CALM Regional and District management to establish effective management guidelines and priorities. The Committee should be composed of suitably qualified and experienced people from CALM and caving groups. Local expertise should be used as required. The new committee should be responsible for:

- a) Recommendations to CALM regarding levels of access and use, including locking of caves where necessary.
- b) Considering ethical questions regarding cave use.
- c) Preparing management plans for subsurface management of caves, as required.

- d) Formalising links between CALM management and speleological groups.
- e) Safety issues.

Caves should be classified according to the system adopted by the Working Group on Cave Protection and Management. These are:

- (i) Tourist Caves
- (ii) Adventure Caves
- (iii) Wild Caves
- (iv) Restricted Entry (locked) Caves

The levels of use for (iii) and (iv) should be set by the proposed Caves Management Committee, and accord with the principles of the existing Caves Access Committee constitution. A permit system should be employed to regulate the levels of cave usage. This system would also function to monitor use levels, raise the level of cave-consciousness among visitors and provide a level of accountability to users. Permits should specify:

- a) Day/s valid
- b) Cave/ s to be visited
- c) Name of permit holder
- d) Conditions of permit

All speleological, commercial, school and adventure groups will require permits and fees should be set in consultation with the Caves Management Committee. Groups will have to demonstrate they have adequate equipment, lighting and a trip leader, with acknowledged expertise in caving and first aid before a permit will be issued. Applications should be made one month prior to the proposed visit. Permits will generally be issued for some wild caves (eg Museum, Golgotha, Nannup, Dingo and Tunnel). Admittance to locked caves for commercial, school and adventure groups will not be permitted. The ratio of participants to leaders should be limited.

Individual members of the public who wish to visit caves will be restricted to Giants and Calgardup Caves. Where possible requirements regarding equipment, group size and safety will apply and the number of people in a cave at any one time will be limited.

Existing use levels indicate Brides, Calgardup and Giants caves are currently receiving the highest visitor numbers. These caves are partially developed with ramps and stairs in some sections, but no lighting. There is a need to develop complementary surface management. In all cases parking and access needs to be redefined, walk trails established, and toilets installed.

At present, groups and individuals who visit caves, other than tourist caves, are requested to register at Lake Cave Kiosk. Until the permit system is implemented, the register should be replaced by a "mail box" into which registration slips can be inserted.

There are several concentrations of caves within the National Park. Where these occur, Cave Protection Areas will be established. Operations within these areas should ensure cave values are not threatened. In particular, fire fighting measures may have to be restricted because of the threat to the safety of machine operators. At other times the use of heavy machinery other than on established tracks is to be discouraged in these areas.

## **ACTIONS**

### **Action 6.1:**

Establish a Cave Management Committee jointly with CALM, Speleological Groups and other appropriate bodies to oversee cave management.

Priority: 1

### **Action 6.2:**

Implement a permit system for visitors to wild caves.

Priority: 1

### **Action 6.3:**

Applicants for cave permits will need to demonstrate a standard of expertise, equipment and lighting applicable to the cave being visited.

Priority: Ongoing

### **Action 6.4:**

Classify Giants and Calgardup Caves as adventure caves. Other caves will be nominated by the Caves Management Committee.

Priority: 1

### **Action 6.5:**

Restrict the use of heavy vehicles within the Cave Protection Areas

Priority: Ongoing

### **Action 6.6:**

Monitor waterlevels in caves to establish long term trends. This programme may need to be extended to other streams. Cave stream systems should not be used for watersupply or disposal of effluent.

Priority: Ongoing

**Action 6.7:**

Investigate and map cave stream systems to establish direction of flow and connections between cave systems, and between surface hydrology (seeps and springs). Management of these catchments should aim to retain the present hydrological balance.

Priority: 1

**Action 6.8:**

Provide specific regulations regarding cave management and protection in the CALM Act. In the longer term, the need for specific legislation should be investigated.

Priority: 1

**Action 6.9:**

With the exception of recognised tourist and adventure caves, remove the location of other caves from existing published maps when these maps are revised.

Priority: Ongoing

## 7.0 VEGETATION

The Study Area comprises diverse and complex vegetation associations. The conservation of these systems is a primary objective of this management plan.

**STRATEGY**

Six species, *Wurmbea* sp., *Kennedia macrophylla*, *Caladenia* sp. (Dunsborough), *Caladenia* sp. (LeeuwinNaturaliste), *Caladenia* sp. (coastal plain) and *Caladenia* sp. (jarrah forest), occur within the Study Area and have been gazetted under the Wildlife Conservation Act (1950) as Rare Flora. Permission is required from the Minister for Conservation and Land Management for any operations which effect such flora.

Within the Study Area there are numerous other species which are potentially rare, endangered or beyond their normal range of distribution. Protection of any such species should be afforded priority in the order in which these plants are listed in Table 3. Further, there are a series of associations with unusual structure or distribution which are poorly represented in reserves elsewhere.

Operations which may adversely effect these associations should occur outside these sensitive areas.



Natural processes and human activity has resulted in the erosion of a number of exposed coastal areas. Regeneration of degraded areas will be necessary, particularly those areas which are subject to heavy visitor pressures (see Section 5).

Currently, there is a lack of information pertaining to the regeneration period of vegetation associations, particularly the coastal heath, following a wildfire. Research and monitoring of these associations will be necessary to provide for future management strategies.

Parts of the Study Area are bounded by privately owned uncleared land. To allow efficient management of the National Park, the Department of Conservation and Land Management could enter into joint management with the owners.

**TABLE 3. DECLARED RARE, VULNERABLE, RESTRICTED AND  
POORLY KNOWN FLORA IN THE LEEUWIN-NATURALISTE  
NATIONAL PARK (LNNP)**

**Declared Rare Species in LNNP in priority order for management**

1. *Wurmbea* sp. (Cape Naturaliste) S.D. Hopper 5871
2. *Kennedia macrophylla*
3. *Caladenia* sp. (Dunsborough) S.D. Hopper 5520b
4. *Caladenia* sp. (LeeuwinNaturaliste) S.D. Hopper 4670
5. *Caladenia* sp. (coastal plain) S.D. Hopper 3400
6. *Caladenia* sp. (Jarrah forest) S.D. Hopper 3990

**Vulnerable species confined or largely so to LNNP in need of high priority and monitoring**

7. *Caladenia* sp. ("nivalis" Hopper in ed.)
8. *Calothamnus graniticus* subsp. *graniticus*
9. *Eucalyptus calcicola*

**Locally common species confined or largely so to LNNP**

10. *Samolus valerandi*
11. *Acacia sub racemosa*
12. *Caladenia infundibularis*
13. *Thryptomene* aff. *hyporhytis*
14. *Conostylis aculeata* subsp. *gracilis*

**Species of special local significance (disjunct outlying populations in LNNP)**

15. *Dasyogon hookeri*
16. *Caladenia* sp ("citrina" Hopper in ed.)
17. *Conostylis laxiflora*
18. *Drakea thynniphila*
19. *Eucalyptus decipiens*
20. *Eucalyptus diversicolor*
21. *Eucalyptus cornuta*

**Poorly known species recorded in LNNP and possibly of conservation significance**

22. *Caladenia* sp. ("abbreviata" Hopper in ed.)
23. *Hydrocotyle* sp. (Hamelin Bay)
24. *Jacksonia mollissimma*

Source; Brown, A.P. and Hopper, S.D. (1987, unpubl)

## **ACTIONS**

### **Action 7.1:**

Control recreational activity so that the only known population of *Wurmbea* species is not damaged.

Priority 1.

### **Action 7.2:**

Undertake prescribed burning and recreational developments so as to minimise impacts on *Kennedia macrophylla*.

Priority: 1

### **Action 7.3:**

Protect the four declared rare *Caladenia* species from inappropriate fire regimes and illegal collecting.

Priority: 1

### **Action 7.4:**

Protect coastal granite communities from fire, excessive recreational use, weeds and rabbits to ensure that vulnerable species such as *Caladenia* species ("nivalis" Hopper ined.) and *Calothamnus graniticus* do not decline in numbers.

Priority: 1

### **Action 7.5:**

Where possible Park management operations should avoid any rare (endangered) species. Where this is unavoidable, the Minister for Conservation and Land Management must be advised and prior permission received.

Priority: Ongoing

### **Action 7.6:**

Prior to any operations consider the presence of any rare (endangered) species currently not gazetted:

Priority: Ongoing

### **Action 7.7:**

Operations should not adversely affect vegetation which provides, or may provide, habitats for rare or endangered fauna.

Priority: Ongoing

### **Action 7.8:**

Prior to management operations, have locations surveyed for the presence of rare, restricted or any unusual flora.

Priority: Ongoing

**Action 7.9:**

Survey locations currently within the National Park selected in the future for excision or private leasing.

Priority: Ongoing

**Action 7.10:**

Use local native flora, including seed stock, in any regeneration or planting programmes. Other than the use of marram grass for rehabilitation works exotic species should not be used.

Priority: Ongoing

**Action 7.11:**

Establish Habitat Protection Areas at Ellen Brook, Boodjidup Brook and at Blackboy Hollow. Interference with these closed heath and low closed woodland communities should not occur.

Priority: 1

## **8.0 FAUNA**

An area at Boojidup, within the Park, has been identified as containing possible habitats for the gazetted rare, Noisy Scrubbird (G. Smith pers. comm., 1986). A listing of areas suitable for relocation of the species, places this site low in priority but the option should be available. Areas selected for future translocation will need to be large enough to support at least twenty pairs of birds, the area will vary according to topography. Future surveys of the area will be necessary. Wetlands within the National Park, support a number of rare and unusual invertebrate species. Little is known of these communities, therefore, before appropriate management strategies can be determined, research into the life history and physiology of individual species, and the dynamics of the wetlands will need to be undertaken. Until this work has been completed it will be necessary to protect aquatic systems from adverse human activity.

### **STRATEGY**

The fragmentation of native vegetation through clearing of the Ridge has probably had the most pronounced effect of all human-induced changes to the native fauna. To maintain and encourage existing species diversity and numbers, habitat preservation is a primary consideration. Of particular importance is the preservation of any existing or potential habitats of rare (endangered) species. This

will include protection from planned burns (unless fire is proved to be ecologically desirable), wildfires, chemical sprays, or management operations.

## **ACTIONS**

### **Action 8.1:**

Afford a high conservation priority to the protection of wetlands. Operations should not adversely effect these ecosystems.

Priority: Ongoing

### **Action 8.2:**

Initiate research into the invertebrate populations of the Study Area and their ecology.

Priority: 1

### **Action 8.3:**

Only disturb habitats of rare (endangered) fauna where it is known to be necessary for their survival.

Priority: Ongoing

### **Action 8.4:**

Retain options to relocate Noisy Scrubbirds within the National Park. Areas selected for future relocation will need to remain free of fire 15-30 years before the actual relocation can occur. Following the introduction of this species, the area will need to be protected from frequent and extensive fires.

Priority: Ongoing

## **9.0 PROTECTION**

### **9.1 Weeds and Exotic Species**

Numerous species of exotic plants occur within the National Park. Nine species have been declared under the Agriculture and Related Resources Protection Act (1976). The declaration imposes an obligation on all land owners to control declared plants on their properties (Madin, et al., 1985). Exotic plants are primarily concentrated along access tracks or in disturbed areas.

#### **STRATEGIES**

Control of exotic species within the National Park is a priority. Methods should be used which do not compromise the conservation values of the area. Prevention is the preferred option as it has no

environmental risk, low cost and a high effectiveness. Chemical and mechanical methods may interfere with other values of the area and therefore should be employed only when there are no other viable options.

Recognition of exotic species is often difficult. Departmental Officers should be made aware of the numerous exotic plants, their ecology and possible control methods, particularly those causing environmental damage.

Statutory requirements with regard to weed control will be observed.

## **ACTIONS**

### **Action 9.1.1:**

Undertake operations within the National Park, so as to minimise the proliferation or introduction of exotic species e.g. minimise the movement of soils.

Priority: Ongoing

### **Action 9.1.2:**

Incorporate into the District's annual works programme and budget the work programmes for the control of exotic plants including those currently not declared under the Agriculture and Related Resources Protection Act (1976-1980) but considered to be a threat to the integrity of the natural environment within the Study Area.

Priority: Ongoing

### **Action 9.1.3:**

Before implementation, consideration should be given to the cost, effectiveness and environmental damage of any weed control operation. The advice of the Agriculture Protection Board (APB) is to be sought before the implementation of any control programmes.

Priority: Ongoing

### **Action 9.1.4:**

Chemical methods for weed control and other species should not be used in areas where chemicals may have an adverse effect on the environment, particularly seepage or catchment areas. Accordingly hand removal of arum lilies at Ellenbrook and in cave areas may be required.

Priority: Ongoing

### **Action 9.1.5:**

A survey of the National Park for exotic plant infestations should be completed in consultation with the APB. Development of weed management plans for specific areas and/or species will be undertaken where appropriate.

Priority: 1

**Action 9.1.6:**

Train CALM staff in the identification, ecology and control methods for declared plants.

Priority: 1

**Action 9.1.7:**

CALM staff will regularly monitor and record the infestations of declared species within the Study Area. Records of all control methods used will be kept by the District.

Priority: Ongoing

**Action 9.1.8:**

Control operations for declared plants within the National Park will follow the guidelines detailed in CALM's Weed Policy and Herbicide Manual.

Priority: Ongoing

**Action 9.1.9:**

Locate and time (season and frequency) burning programmes adjacent to cleared land, disturbed or developed areas to minimise the potential spread of exotic plants.

Priority: Ongoing

**Action 9.1.10:**

Instigate a systematic survey of weeds which are easily transferable by park users, especially double gees. Areas identified with these weeds may need to be fenced and signposted until the weed is eradicated. Areas include Boranup Beach (North Point) and Grace Road.

Priority: 1

## **9.2 Dieback**

Dieback disease is caused by the pathogenic root fungus *Phytophthora cinnamoni*. A related fungus *Phytophthora cryptogea* has also been found in the area. In 1986 CALM initiated the first systematic dieback survey of the National Park. Approximately 70 ha of the Park is known to be infected by dieback disease. Eighty five percent of the total area of the Park supports vegetation associations which do not exhibit reliable indications of disease presence or absence.

Three areas of the Park were noted as requiring attention; Dugdale Road at Yallingup, and Juniper and Waddington Roads at Cowaramup. The infection at Dugdale Road has been defined as a high impact area. The problem is compounded as horseriders cross the infection boundary as they ride through the Park.

Juniper Road and the southern boundary track are infected with dieback. The area within the Park was recently burnt making it uninterpretable during the survey.

The situation at Waddington Road is similar to that at Dugdale Road. Future road maintenance in this area will need to be undertaken carefully.

## **STRATEGY**

CALM has developed a regional dieback protection plan for the Central Forest Region (CALM, 1987). The Department will adopt the following strategies for dieback protection in the Leeuwin Naturaliste Park

1. A system of essential roads and firebreaks which are to be retained will be defined, based wherever possible on existing roads and firebreaks. Other roads and firebreaks will be closed (see Section 11 Access) -
2. Construction of new roads and firebreaks will take place only where essential. Where new roads and firebreaks are necessary, they will be located and constructed so as to minimise the risk of disease introduction or the impact of additional spread.
3. Vehicular access off designated roads and tracks on Departmental lands will be prohibited. Off-road access for management purposes (e.g., fire control) will also be strictly controlled and will be based on a consideration of hygiene requirements.
4. Before any operations are permitted the following factors will be considered in the context of a Seven Way Test to define appropriate hygiene treatments for the prevention, introduction or spread of dieback associated with operations:
  - i) the need for the work proposed
  - ii) hygiene measures required
  - iii) risk of introducing the dieback fungus
  - iv) landform
  - v) vegetation
  - vi) likely impact
  - vii) consequences of impact on land use



A decision to accept, reject or modify the proposed activity will be made only after the relevant factors have been evaluated, using the Seven Way Test.

5. If a decision to proceed is made, existing hygiene practices, as specified in the Dieback Hygiene Manual, will be used. If necessary, new procedures will be developed.

6. Road and firebreak maintenance will be carried out in accordance with the guidelines given in the Dieback Hygiene Manual and such specific prescriptions as are required in special circumstances.

7. Undertake research, as far as practicable, on dieback spread, control, susceptibility of plant communities and risk of infection.

## **ACTIONS**

### **Action 9.2.1:**

Continue research into the impact and spread of the disease on vegetation associations within the Park, particularly the coastal heath. Further identification of disease indicator species is required.

Priority: 1

### **Action 9.2.2:**

Undertake a more detailed dieback survey of the National Park as resources permit and review vehicle access based on the findings.

Priority: 1

### **Action 9.2.3:**

Regularly monitor areas known to be infected by the disease. Avoid controlled burning until the location and extent of disease infections are accurately mapped and the likely future impact of the disease on areas which are presently dieback free has been assessed.

Priority: Ongoing

### **Action 9.2.4:**

Limit artificial spread of the disease in areas of Dugdale Road, Juniper Road and Waddington Road which all require dry soil operations (e.g grading, firebreaks). Access should be limited to existing tracks only.

Priority: 1

### **Action 9.2.5:**

Train National Park Rangers in the recognition of dieback, and hygiene procedures to be followed to minimise the spread of the disease.

Priority: 1

## **9.3 Fire**

### **MANAGEMENT OBJECTIVES**

1. To protect lives of Park visitors, neighbours, fire fighters and staff from wildfires entering and/or burning within the Park.
2. To protect vulnerable species and ecosystems, buildings, facilities and access in the Park and neighbouring properties from severe damage by uncontrolled fire.
3. To encourage and maintain diversity, natural abundance and composition of vegetation associations and wildlife habitats, within major vegetation and landscape types.
4. To minimise the risk of wildfires burning out large portions of the Park by confining them to single fire management blocks surrounded by strategic buffers and firebreaks.
5. To ensure the survival of populations of rare, and restricted flora and fauna species by the maintenance and protection of their particular ecological niche in the Park.
6. To protect vulnerable soils, dunes and cave sites from the risk of wind and water erosion as a result of wildfires, inappropriate fire regimes or machinery activity.
7. To protect landscape values from severe damage by uncontrolled fires or from inappropriate burning regimes or suppression techniques.
8. To minimise the introduction or further spread of dieback disease and weeds by fire management operations
9. To reduce the risk and frequency of unplanned fires starting near to or within the Park as a result of human activity.
10. To provide the opportunity to obtain information about natural processes through the use and nonuse of fire.

### **STRATEGIES**

In order to achieve the objective of protecting life, property and environmental values and to manage natural ecosystems, a system of three separate fire regimes is proposed.

#### **1. Fuel Reduction Burns**

Fuel reduction burns will be applied to strategic protection zones wherever ground fuel loads exceed levels at which fire containment by direct attack, becomes difficult and unsafe for firefighters. The period between burns will vary according to the fuel accumulation rates of the vegetation. This is generally from 6 to 10 years in forest areas but may be longer.

The burns will be arranged as a series of narrow and broad low fuel zones. Low fuel areas will be strategically located adjacent to high risk zones (eg. heavy fuel areas, recreation facilities) and high

value zones (eg. townsites, neighbouring properties). For example, Yallingup townsite, will be protected by a number of fuel reduction burns done at different times, under different conditions.

Broad fuel reduction burn zones will be located to restrict high intensity forest wildfires from covering large areas of the Park and surrounding land.

Narrow fuel reduction burn zones will be located adjacent to boundaries and major roads to minimise the risk of fire entering into or escaping from the Park. Where possible these burns will be linked with natural low fuel areas or scheduled with burns of adjoining lands.

## **2. No Planned Burns**

Parts of each major vegetation type will not be deliberately burnt within the life of the Plan. These areas are located away from likely ignition sources such as major roads, recreation areas and settlements.

Maximum protection will be afforded these areas, including maintenance of good perimeter access and regular burning of adjacent areas.

## **3. Flexible Management Areas (FMA)**

Burns in these areas aim to achieve ecological diversity within each of the major land units to provide a wide range of vegetation succession stages and fauna habitats.

Fire regimes will involve variable rotation burns ranging from 5 to 20 years to be burnt under a range of seasonal conditions. There will be at least a two year time period between burns in adjacent flexible management areas.

It may be necessary to burn some of the FMA areas for protection reasons if it is considered that they constitute an unacceptable fire hazard to other values. Each FMA will be reviewed annually in consultation with local Fire Control Officers and Bush Fires Board and fire ecologists to determine if it should be burnt. A wildfire risk assessment procedure will be applied to assist this consultative process.

## **ACTIONS**

The following prescriptions will be implemented as funds permit. If sufficient funds are not available, fire protection and management will be undertaken according to the objectives for fire.

Strategies and prescriptions will be revised if more fire information becomes available or whenever wildfires occur.

### **Action 9.3.1:**

The fire strategy plan shown in Figure 3 will be implemented (see inside back cover).

Priority: Ongoing

**Action 9.3.2:**

Burns will comply with written prescriptions approved by the District Manager. Prescriptions will incorporate a checklist which considers the impact of burning on environmental values.

Priority: Ongoing

**Action 9.3.3:**

Fuel reduction burns will aim to achieve a 60-80 percent coverage. These areas will be burnt on a rotational basis to ensure fuels do not exceed 8 t/ha in jarrah fuels and 17 t/ha in karri fuels. Burning of heath buffer strips will be determined in the first round by CALM's Director of National Parks. The effects of such burning on the regeneration of vegetation will be monitored and reviewed by the Authority prior to the next round of fuel reduction burns on heath buffer strips, as defined in Figure 3, Fire Strategy.

Priority: Ongoing

**Action 9.3.4:**

Where possible burns will be carried out in a variety of seasons (ie. spring and autumn) and intensities to encourage diversity in treatment and response. Where it is not possible to complete a burn in the season proposed it will be deferred to the next burning season eg. spring burns to the next autumn and autumn burns to the next spring. Where possible successive burns in an area will be programmed in different seasons.

Priority: Ongoing

**Action 9.3.5:**

Where there are known gazetted rare flora or fauna within burn areas, the burn will be either modified, relocated or deferred. Where burning is a requirement of the species, or it is essential for protection purposes, for burning to occur, Ministerial permission to take the species will be requested.

Priority: Ongoing

**Action 9.3.6:**

Existing firebreaks will be assessed for condition and effectiveness. Poorly sited and badly eroded firebreaks will be realigned, upgraded or rehabilitated.

Priority: 1

**Action 9.3.7:**

Roads required for fire control and essential management activities will be defined. Those roads considered unsuitable for public use will be closed to the general public.

Priority: 1

**Action 9.3.8:**

Annual fire prevention programs will be maintained in consultation with neighbours, local Bush Fire Brigades, Shire Bush Fire Advisory Committees and the Bush Fires Board to encourage mutual cooperation in fire prevention, detection and suppression operations.

Priority: Ongoing

**Action 9.3.9:**

Designated public facility areas will be protected by fuel reduction burns, site design and management. Where finance permits, gas barbecues will replace existing wood barbecues, and visitors will be encouraged to use their own gas cooking appliances. Where Shires have banned cooking fires in the open air other than at designated sites, designation of barbecue sites within the Park will be sought.

Priority: Ongoing

**Action 9.3.10:**

All buildings and residences will be maintained at a high level of fire safety.

Priority: Ongoing

**Action 9.3.11:**

All fires in or threatening the Park will be contained to the smallest possible areas. Fire suppression staff will consider the likely threat from wildfires to life, property and environmental values and the likely impact of suppression activities on environmental values in deciding suppression strategies and tactics.

Priority: Ongoing

**Action 9.3.12:**

Procedures will be developed for safe evacuation and care of visitors in a fire emergency. These will be developed in consultation with Shire Counter Disaster Committees and local State Emergency Service groups.

Priority: 1

**Action 9.3.13:**

Visitors will be made aware of restrictions on the use of fire and the consequences of wildfires. Public education and awareness regarding fire risks and use will be promoted through pamphlets, signs and personal contact with district staff.

Priority: 1

**Action 9.3.14:**

Water points for fire control will be maintained and signposted. New requirements for water points will be identified and established taking into consideration their impact on environmental and aesthetic qualities.

Priority: Ongoing

**Action 9.3.15:**

An effective detection system through the use of aerial and tower systems will be maintained at a level commensurate with the fire danger of the day. There will also be continuing reliance on fire notification from the public, neighbours and bushfire organisations.

Priority: Ongoing

**Action 9.3.16:**

Research into the impact of fire on the ecosystem and regeneration of native species, particularly coastal heath, will be encouraged. Monitoring of No Planned Burn areas as reference points will be instigated. Selected prescribed burns and wildfires will also be monitored.

Priority: 1

**Action 9.3.17:**

If a No Planned Burn area is accidentally burnt, an exchange of that area for an area of similar size and ecological type will be considered subject to ecological and protection constraints.

Priority: Ongoing

## 9.4 Feral Animals

The presence of feral animals within the Study Area conflicts with the values of the Park. Also as a landowner, CALM has responsibilities to control feral species.

**STRATEGY**

Implement a programme to monitor feral animal populations with the aim of control and, where possible, eradication of feral species.

**ACTIONS****Action 9.4.1:**

A works programme for the control of feral animals (foxes, cats, dogs, pigs and rabbits) within the National Park should be incorporated into Busselton District's annual works programme and budget. Operations are to be conducted in conjunction with the APB. The programme should be designed to have minimal effect on native fauna.

Priority: Ongoing

**Action 9.4.2:**

Seek cooperation of local landowners, and give notice of CALM's intentions prior to any feral animal control operations being conducted within the National Park.

Priority: Ongoing

**Action 9.4.3:**

Cleared properties adjacent to the National Park are to be fenced to prevent stock straying into the Park. In consultation with CALM, fences adjacent to the Park should be regularly maintained by landowners.

Priority: Ongoing

**Action 9.4.4:**

Monitor and record the levels of feral animal populations, including domestic stock, within the National Park to gauge the success and future requirements of control programmes.

Priority: Ongoing

**Action 9.4.5:**

Cooperate with Local Authorities to reduce the number of domestic animals entering the Park from townsites.

Priority: Ongoing

## **10.0 ABORIGINAL AND HISTORIC SITES**

### **10.1 Aboriginal Sites**

CALM is obliged to conform with the Aboriginal Heritage Act (1972-1980) which protects all Aboriginal sites and objects. The W.A. Museum must be informed if any Aboriginal site or object is located.

There are over 30 registered Aboriginal sites within the National Park. These range from artefact scatters to a cave painting. Because of the size of the National Park and the denseness of vegetation no systematic survey has been undertaken. It is assumed there are many sites yet undiscovered.

#### **STRATEGIES**

All efforts will be made to avoid disturbance of sites during park operations. Where appropriate, consultation with W.A. Museum regarding future operations within the National Park and liaison with local Aboriginal groups should be undertaken.

Visitor interpretation facilities should incorporate information on Aboriginal sites and culture where appropriate.

## **ACTIONS**

### **Action 10.1.1:**

Train management staff in the Area on the requirements and their obligations under the Aboriginal Heritage Act.

Priority: 1

### **Action 10.1.2:**

Protect all known Aboriginal sites during operations. If any disturbance is considered necessary, liaison with W.A. Museum is required.

Priority: Ongoing

### **Action 10.1.3:**

Any operations which uncover artefacts or other material will be reported immediately to the W.A. Museum for advice.

Priority: Ongoing

### **Action 10.1.4:**

Incorporate literature regarding Aboriginal occupation in interpretative information about the National Park, particularly the Ellen Brook area and Quininup Brook.

Priority: Ongoing

### **Action 10.1.5:**

Encourage Aboriginal site studies in consultation with W.A. Museum and tertiary institutions.

Priority: Ongoing

### **Action 10.1.6:**

The protection currently afforded to the Devil's Lair excavation should continue.

Priority: Ongoing



## 10.2 Historic Sites

The National Trust has registered three sites and one area within the National Park. These are the Cape Naturaliste Lighthouse, Ellensbrook House, Cape Leeuwin Waterwheel and the Cape Naturaliste area. There are other registered sites in close proximity to the Study Area including Cape Leeuwin Lighthouse and cottages, Flinders Bay settlement and a stone chimney at Karridale. Sites which have local historical significance and are related to early forestry operations include the remains of Hamelin Bay jetty, Jarrahdene mill site and (on private land) Arumvale mill site. Hamelin Bay is also of interest because of the shipwrecks in the bay. Redgate is the site where Grace Bussell and Sam Isaacs rescued the survivors of the wrecked steamer the 'Georgette'.

### STRATEGY

Historic sites are functionally and visually related to the surrounding area. It is important that any operations or structures which are located near or around sites of historic interest complement the area. The management unit scheme for the Park establishes Historical Conservation Areas where the dominant theme will be the sites historical importance.

### ACTIONS

#### Action 10.2.1:

Establish Historical Conservation Areas at Cape Naturaliste, Ellen Brook and Cape Leeuwin. Each will require a site development plan. Plans for these sites should be compiled in consultation, where appropriate, with the National Trust, Department of Transport and Tourism Commission.

Priority: 1

#### Action 10.2.2:

Incorporate information on the historic significance of the Park in the development of brochures and other interpretive material.

Priority: Ongoing

## 11.0 ACCESS

### STRATEGY

The National Park has hundreds of kilometres of roads, tracks and firebreaks. A classification has been proposed in Table 4. The main categories are:

Class 1 Sealed Bitumen Road	Public Access Allowed
Class 2 Formed Gravel Road	Public Access Allowed

Class 3 Unformed Access Track      Public Access Allowed

Class 4 Management Track              Management Use and Pedestrian Access

There are few opportunities for more roads within the Park other than the development of short spur roads, to service scenic lookouts. The main intent of the access strategy is to rationalise alignment of some roads to coastal recreation sites.

The approach is to provide a hierarchy of roads within the Park which suit a range of visitor demands and activities. Constraining factors are the fragility of some of the vegetation and the highly erodible nature of some areas on the western side of the Leeuwin-Naturaliste Ridge. There is a myriad of access tracks which have developed as people have driven through the bush. Much damage is caused by two-wheel drive vehicles attempting to traverse tracks suitable for four-wheel drives only.

Some tracks should be upgraded for public access while others should be management tracks only. A small number should be closed because of their environmental effects and lack of purpose for management (see Table 4). There may be a need to review the category 2 roads as park usage increases and funds become available to consider sealing these tracks.

To rationalise access to the coast the strategy is to provide defined carparks and other facilities at the terminus of access roads and tracks. They will be located as close as practical to recreation areas and beaches where the site is stable and environmental features are protected. Except where access is provided for vehicles, no vehicle access will be allowed past these points along the coast.

Nodal access points to the coast are preferred for the following reasons, and these are emphasised by the shape of the Park:

- (a) Slope, terrain and erosion hazards on the coast generally make road construction difficult.
- (b) The cost of building and maintaining coast parallel roads is prohibitive.
- (c) The National Park is frequently too narrow to accommodate coast parallel roads for any distance.
- (d) Considerable environmental damage can result from ad hoc access from coast parallel roads i.e. vehicles may stop anywhere along the entire length of the roads.
- (e) Nodal access to areas of "hard" coastline (granitic headlands e.g. Canal Rocks) are more stable than those to "soft" coastline (limestone and dunes).
- (f) In many locations coast parallel roads could have an adverse effect on the scenic qualities of the western side of the Leeuwin-Naturaliste Ridge.
- (g) Many of the existing nodal access roads are scenic drives in themselves. They provide a diversity of built and natural landscapes as they traverse the Ridge, and give short, medium and long views of the area.

**TABLE 4. PROPOSED ROADS AND TRACKS CLASSIFICATION**

<b>Road/Track</b>	<b>Class</b>	<b>Action</b>	<b>Priority</b>
Bunker Bay Road	1	Maintain	Ongoing
Cape Naturaliste Road	2	Redevelop access and carparks for lighthouse area.	2
West Coast Track	2	Maintain	Ongoing
Sugarloaf Road	1	Maintain	Ongoing
Three Bears Track	3	Short term - Upgrade access along eastern boundary of Reserves 8427, 8768 and 2045. Long term - construct access which accords with future structure planning for Cape Naturaliste. Provide a spur road to Kabbejgup generally along road reserve between Locs. 1046 and 660 in consultation with State Planning Commission, Main Roads Dept., local landowners and Shire of Busselton.	1
Yallingup Caves Road	1	Maintain	Ongoing
Smiths Beach Road	1	Maintain	Ongoing
Canal Rocks Road	1	Maintain	Ongoing
Wyadup Road	1	Maintain	Ongoing
Injidup Road	1	Maintain. No vehicle access to south end of beach. Extend to coast if park is consolidated.	Ongoing
Cape Clairault Track	3	Retain track, with landowners consent. Terminate north of Quininup blowout. If consolidation of Park occurs, investigate use of access from Quininup Road through Reserve 8428.	Ongoing
Quininup	2	Maintain - Terminate at SE corner of Reserve 20171. Extend to coast if park is consolidated.	Ongoing
Moses Rock North	2	Upgrade and realign. Close carpark south of main access track.	1
Moses Rock South	2	Upgrade and realign	1
BiIjedup Beach Road	3	Provide carpark near boundary of Loc 487. Close ad hoc tracks to Wilyabrup	2

		Brook.	
Cullen Road	3	Terminate at park boundary.	1
Juniper Road	3	Terminate at Gallows and Guillotine car parks. Create new carpark adjacent to Veryiuca Brook.	1
North Point-Cowaramup	2	Maintain - define carpark. Close tracks north of Cowaramup Road.	1
Lefthanders and Big Rock	2	Maintain, improve carpark circulation.	Ongoing
Tracks sth of Gracetown	3/4	Rationalize track usage.	1
Ellen Brook Road	2	Upgrade and realign access. Investigate use of a one way pair along dual fire break system.	1
Joeys Nose Track	3	Realign and close beach access	2
Redgate Road	1/2	Close western part of loop road. Develop coastal car park. Walk trail to beach from northern node. Seal road.	1
Calgardup Road	3	Maintain four-wheel drive access	Ongoing
Bobs Hollow	3	Maintain - terminate at car parks.	Ongoing
Forest Grove Road	2	Maintain	Ongoing
Conto Road/Cape Freycinet Track	2	Upgrade and realign to coincide with site development at Conto's Field.	1
Point Road	2	Upgrade and realign.	1
Brozie Road	4	Management Track Only	2
Georgette Road	3	Maintain	Ongoing
Trig Road	3	Maintain	Ongoing
Hooley Road	3	Maintain	Ongoing
Boranup Beach Road	3	Upgrade and define carpark on southern spur. Close vehicle access to beach. Upgrade track to North Point. North Point carpark to be sited back from foreshore.	2
Grace Road	2	Realign road and define carpark. Close existing access and carpark. Provide pedestrian access	1
Salmon Track	3	Negotiate with Lands Department for continued use of the track. Maintain beach access for vehicles north of the track. South of the track - professional fishermen only.	1
Hamelin Bay Road	1	Realign road to north side of Lake	2

		Davies . Existing road to be used for caravan park access only. Retain beach access for professional fishermens vehicles.	
South Hamelin	3	Maintain	Ongoing
Cosy Corner Road	2	Maintain	Ongoing
Foul Bay Lighthouse Track	3	Maintain - close north of lighthouse.	1
Foul Bay	2	Maintain, upgrade carpark.	3
Elephant Rock Track	3	Realign and upgrade. Create new car-parks. Retain existing vehicle access to Deepdene Beach.	2
Green Hill Road	2	Maintain	Ongoing
Hillview Road	2	Maintain	Ongoing
Quarry Bay Road	2	Maintain	Ongoing
Skippy Rock Road	2	Maintain - provide spur road for future scenic lookout.	Ongoing
Water Wheel access road	1	Redesign carpark, vehicle access and facilities.	1

## **YALLINGUP -SUGARLOAF ROAD**

The National Park north of Yallingup has a number of significant environmental features and recreation sites which will require careful and sensitive planning. Access through this block of the park focusses on Kabbejgup beach, which is a popular surfing area.

Kabbejgup is currently accessed via an extremely degraded, coast parallel track; the eastern firebreaks of Reserves 20455, 8768 and 8427, or a combination of these. The tracks are experiencing a high level of use, and erosion of the track surfaces is increasing.

General arguments cited in this section support the use of nodal access routes rather than coast parallel roads. For Yallingup Sugarloaf the following considerations are relevant:

- a) A coast parallel road from Sugarloaf to Yallingup would traverse an area which is adjacent to cliffed coastline. There are few recreational opportunities on this section of coast. Fishermen have indicated that it is not an important area for fishing and there are few beaches accessible to swimmers and surfers.
- b) The terrain just north of Yallingup townsite is extremely difficult and the alignment of a road link would present engineering problems. Land to the east of Yallingup townsite has been identified as a Cave Protection Area in this plan which further limits road options.
- c) The road proposal would traverse one of the few substantial blocks of the National Park which has an environmental gradient from the coast to the eastern side of the Ridge. That is, there is a cross section of different vegetation, soil and habitat types from the coast (cliffs and heath) through the western side of the Ridge (limestone, heath and scrublands) to the eastern side of the Ridge (woodland /forests on sands). This configuration exists in few other areas of the Park.
- d) Visually, the road would present panoramic, long views, but would not give a range of scenic diversity which would promote it as a true scenic route. The road would represent an adverse visual impact on the landscape, especially from viewpoints on the existing Yallingup Road.
- e) Other options exist which have less environmental impact, are more efficiently managed, have greater scenic quality and retain the integrity of that block of the Park.
- f) There is a need to consider the proposal for both short term and long term needs. From a park management point of view in the short term, access to Kabbejgup is the major factor. Long term issues involve the most efficient route to service the needs of the future community land uses on the Cape. The development of such a road will involve private landowners.
- g) A road link between Sugarloaf and Yallingup is not supported by the State Planning Commission (Leeuwin-Naturaliste Region Plan, Stage 1) or the W.A. Tourism Commission (Tourism Development Plan).

In view of the above, a coastal road from Sugarloaf to Yallingup is not supported. There is a need, however, for short term access to Kabbejup to be improved. This should be accomplished by upgrading the eastern firebreaks of Reserves 20455, 8768 and 8427. Access to these will be along Hemsley Road. The existing coastal track will be closed to vehicles, and used as part of the Cape to Cape walktrail.

In the longer term, the Department recognises the need for improved vehicle circulation on Cape Naturaliste. A link between Cape Naturaliste Road and Caves Road would provide such an improvement. Existing gazetted road reserves could be utilised, but other options may be presented in the future as the Cape and Dunsborough develops. A spur road to Kabbejup should be constructed from such a road link.

The development of future road options is a matter of liaison between the State Planning Commission, Main Roads Department, CALM, Shire of Busselton and local landowners (refer to State Planning Commission Leeuwin- Naturaliste Region Study, Stage 1).

### **CAVES ROAD**

Caves Road provides the major access to the National Park. It runs parallel to virtually the entire length of the Park, and it traverses part of the National Park near Boranup State Forest. It is under the control of the Shires of Augusta /Margaret River and Busselton and is a two-lane undivided road. The road has several steep and winding sections which are also some of the most scenic on the Ridge. As such it complements the National Park and greatly adds to the experience of visitors in the area. Upgrading of the existing alignment through this section could cause extensive clearing of karri. The NPNCA will support retention of the road on its existing alignment and regard it as a scenic tourist road. Rather than widening, the use of traffic management measures would be preferred.

In the longer term it is recognised that Caves Road could need realignment through sections of Reserve 8434.

### **ADJACENT LANDOWNERS**

Adjoining landowners make frequent demands for access through the National Park to their properties. Arrangements should be made with the local authorities, other adjacent landowners, and/or gazetted road reserves used. The National Park should not be viewed as a public access corridor to private land.

### **VEHICLE ACCESS ON BEACHES**

There are few beaches on the Leeuwin-Naturaliste Ridge which are suitable for vehicle use. The seasonal erosion of beach surfaces limits this activity to the summer/autumn period, and access to many of the beaches is difficult. Further, the use of beaches by vehicles conflicts with other users in

some parts of the Park. This particularly occurs at Hamelin Bay where a northerly facing, sheltered beach and adjacent caravan park leads to high numbers of visitors, including many children.

The major determinants of access on the beaches are:

- a) Sustainability of access points, including erosion potential of tracks to the beach access point and cost of maintenance
- b) Safety
- c) Conflict with other users
- d) Retention of "remote" feeling in parts of the Park
- e) Existing closures
- f) Threat of dieback spread
- g) Potential of weed infestation.

There remains, however, the need for professional fishermen to have access on to some beaches for salmon fishing. This will be determined on a case-by-case basis using the above criteria. This acknowledges the limited time span within which the professionals require access, and that this generally does not conflict with peak use periods.

When detailed site development plans are prepared consideration should be given for professional fishing access, and contribution towards the establishment and maintenance costs of tracks may be sought from fishermen.

## **GUIDELINES**

1. Rationalisation of roads and tracks will occur following site developments.
2. Roads and tracks should not impinge on the landscape, or diminish its visual qualities. This is extremely important on the western side of the Ridge. Tracks and firebreaks straight down the face of the Ridge should be re-aligned.
3. Where possible, tracks in dune areas should be avoided. If it is necessary to breach a dune this should be done to minimise erosion. Where possible, such a cutting should not trend south-west or north-east due to prevailing winds. Cuttings should be stabilised immediately with brush and reseeded.
4. Cutting and clearing of vegetation for track maintenance or widening should be completed prior to machine operations. A clear line of vegetation will result rather than vegetation being pushed into adjoining areas, with a reduction of landscape values.
5. Track surfacing should allow for drainage. The use of humps rather than side drains may be appropriate in some areas.
6. Grading of firebreaks should occur as required. Alternatives such as ploughing should be considered to avoid trenching and gullyng of steeper slopes.



7. Where possible firebreak definition should commence about 10 metres from the intersection with public use tracks, and the intersection designed to minimise visual impact.
8. Class 3 tracks should be maintained to allow public access. This may involve sheeting short sections of rough track.
9. Dieback hygiene measures must be followed in any operations involving soil movement.

## **ACTIONS**

### **Action 11.1:**

Ensure sealed road access into the National Park conforms with gazetted road reserves. Where this does not occur, e.g. Sugarloaf Road, resurvey is required.

Priority: 3

### **Action 11.2:**

Classification of roads and tracks within the National Park will reflect the level of access, intent of use, and the construction standard. Public vehicle access will be permitted on Classes 1, 2 and 3 roads and tracks and construction and maintenance performed accordingly (see Table 4). Pedestrian access will be encouraged along management tracks (Class 4).

Priority: Ongoing

### **Action 11.3:**

Generally coastal access tracks will have terminating access points (carparks and other facilities), beyond which general vehicular access will not be allowed. Ad hoc access tracks should be closed as site development occurs.

Priority: Ongoing

### **Action 11.4:**

Vehicles will not be allowed on foredunes.

Priority: Ongoing

### **Action 11.5:**

Within the National Park, the NPNCA will regard Caves Road as a scenic route. Traffic management measures are supported rather than widening of the road in the National Park. In the long term some sections may require realignment.

Priority: Ongoing

### **Action 11.6:**

Public vehicle access will be allowed on the following beaches

- a) Deepdene northern section of the beach.

b) Hamelin Bay north of Salmon Track, between the hours of 5 pm and 9 am.

This should be kept under constant review because of the erosion and safety hazard. Seasonal closure of these tracks may be necessary.

The NPNCA will review the overall issue of beach access for vehicles five years after the final plan is adopted.

Priority: 1

**Action 11.7**

Existing defined professional fishing access on beaches will be maintained, where this can be achieved without undue environmental damage. Contributions to the cost of maintenance of these access tracks may be required by CALM. Detailed site design work should give consideration to the incorporation of specific access for professional salmon fishermen. The review mechanisms in Action 11.6 will also apply.

Priority: Ongoing

**Action 11.8:**

The present permit system for use of specified off-road vehicles will remain.

Priority: Ongoing

**Action 11.9:**

No unlicensed trail-bikes will be permitted in the National Park.

Priority: Ongoing

**Action 11.10:**

The following tracks will be closed to vehicle access and rehabilitated:

(a) Access track to Deepdene Beach on eastern side of Reserve 21451 .

(b) Tracks north of Gallows /Guillotine to Cullen Road; and tracks west and south of Veryiuca Brook.

(c) Following provision of an alternative access route, Three Bears Track north of Yallingup and south of Sugarloaf. Retain as walk trail. Track along the southern boundary of Loc. 1340 to be retained as management track only. Close access through Loc. 1044 .

(d) Tracks from Biljedup Road reserve to Willyabrup Creek. Provide carpark at terminating point.

Other ad hoc coastal tracks will be closed as part of site development.

Priority: 1

## **12.0 RECREATION AND TOURISM**

### **12.1 Philosophy**

Tourism in the Shires of Busselton and Augusta-Margaret River has grown rapidly in recent years. Busselton ranks second and Augusta-Margaret River fourth statewide in terms of tourism numbers. Since 1985, visitor numbers have increased 9% to 10% per year, and it is estimated that 350,000 visitors per year visit the Park (W.A. Tourism Commission estimates).

The Leeuwin-Naturaliste National Park is regarded as one of the prime tourist assets in the region. The range of activities which are undertaken in the National Park has also broadened, and there are demands for activities such as hang gliding, horseriding and "adventure" tours. Park recreation activities should be resource based. That is, the recreation activity should be fulfilled through contact with nature, and the enjoyment of the activity heightened by that contact. Not all recreational activities have to be accommodated within a National Park. This is neither necessary nor desirable. Many people go to National Parks to escape their urban existence, to be inspired, enriched and recharged. They do not want to be confronted with crowds and congestion.

This dilemma faces the Leeuwin-Naturaliste National Park. It does get crowded because of its attractions, and these attractions such as good surfing waves and fishing tend to be of an ephemeral nature. Crowds tend to be transient creating short peaks within the overall visitor pattern. Competitive events produce spectators and competitors which tend to occupy sites for longer periods.

#### **STRATEGY**

Facilities within the National Park should complement, rather than compete with, those available outside the Park. The recreational experience and the expectations of visitors who wish to stay in the National Park are different from those who choose to stay in more developed urban facilities. Generally, facilities in the National Park will be either for day-use or camping. The National Park offers a different experience from commercial areas. There will be a range of sites provided in the Park from those with minimal facilities which simply guide visitors to avoid adverse impacts on the surrounding environment, to developed sites with facilities such as walk trails and barbecue areas.

The provision of recreation sites within the National Park should cater for the quality, rather than the quantity, of the experience. Retention of the qualities which enrich recreation is a major factor. In areas where conservation is the aim, it is impossible to cater for unconstrained recreation demand. It is possible to cater for the "supply" side of recreation by provision of sound management strategies, site design and access to certain areas.

## **GUIDELINES**

The CALM Recreation Manual guidelines will be followed, and Recreation and Landscape Branch and the Regional Parks and Reserves Officer consulted prior to any development proceeding. Generally the following should apply:

- a) Site development should intrude on the landscape as little as possible.
- b) Design should maximise site utility. That is, the least amount of disturbed area should cater for the maximum number of people.
- c) Materials should complement their surroundings.
- d) Visitor movement through fragile areas should be controlled.
- e) Facilities should not cater for peak demand as this is a waste of resources.

Future use and location of Study Area facilities will take the following factors into account:

- a) Much staff time is currently used in tasks such as emptying bins. Bins at remote sites should be removed and visitors requested to remove their own rubbish. This already successfully occurs at numerous sites in the Park.
- b) Carparks should always have boundary definition. The size should be assessed to ensure it is adequate to cope with average summer day visitor numbers. They should be designed to ensure vehicle flow and safety is maintained. Many existing carparks will eventually need to be redesigned (See Table 5).

Under no circumstances should carparks be built on foredunes. Assessment will be required on a site basis, however in principle, the swale behind the secondary dune should be the limit for parking areas.

Car parks should not be located on clifftops, but placed further inland at an unobtrusive site.

Some existing sites will require relocation.

- c) Wood-fired barbecues are a central part of camping experience. The cost of wood and ranger time to manually load and unload is a major burden. Wood-fired barbecues should only be provided at camping areas, on a communal share basis. Some day-use sites and camping areas should have suitably designed gas barbecues installed. Visitors should be encouraged to bring their own portable gas cooking facilities.
- d) Toilets should be sited unobtrusively. Where possible they should be screened by natural vegetation, and signposted from the nearest access point.
- e) Signs are to conform with the CALM Sign Manual.

## **ACTIONS**

### **Action 12.1.1:**

Recreation site developments and priorities should be approached according to the list in Table 5.

Priority: 1

**Action 12.1.2:**

Site developments will be carried out in accordance with a site development plan. At coastal sites, coastal management measures, such as walkways and dune rehabilitation, will be installed prior to the upgrading of any access (See Table 5).

Priority: Ongoing

**Action 12.1.3:**

Site construction will conform with the guidelines of the CALM Recreation Manual.

Priority: Ongoing

**Action 12.1.4:**

Review the siting of bins with the aim of removing bins from remote sites.

Priority: 1

**Action 12.1.5:**

Rationalise use of wood fires, retain in designated fireplaces and replace with suitably designed gas-fired barbecues at appropriate areas.

Priority: 1

**Action 12.1.6:**

Monitor all recreation sites for negative impacts, such as soil erosion and vegetation destruction. Immediate measures should be taken to mitigate degradation.

Priority: Ongoing

**Action 12.1.7:**

All signs will conform with the CALM Sign Manual. Priority: Ongoing

**Action 12.1.8:**

Inventory all signs to record size, wording and condition. Records should be kept of vandalism to signs to form the basis of an assessment of sign suitability and effectiveness.

Priority: 1

**TABLE 5. RECOMMENDED RECREATION SITE DEVELOPMENT**

<b>Site</b>	<b>Proposal</b>	<b>Comments</b>	<b>Priority</b>
Bunker Bay	Upgrade walk trails to Cape Naturaliste, toilets for handicapped and signposting.		1
Cape Naturaliste	Site Development Plan required for carparks, lighthouse, cottages and walk trails. Fencing needs review. Re-survey of boundaries of lighthouse compound required.	Historical Conservation Zone. Consult with Commonwealth Government.	2
West Coast Track	Monitor tracks for erosion. Redefine carpark. Lookout needs re-design.		3
Willanup Spring	Rehabilitate site- remove all exposed pipes, fencing and earth from flowstone below the spring. Site Development Plan required.	In conjunction with Commonwealth Government.	1
Sugarloaf	Carparks need redefinition. Close all tracks leading south from the carpark.		2
Kabbejgup	Option 1 Relocate carpark south of northern boundary of Reserve 20455. Beach access and walk trail required. Option 2 Joint agreement with owner of Lot 1044 for access and carpark.	To be investigated by District	1
Rabbit Hill Carpark	Circulation pattern and parking bays need to be marked and defined. Upgrade beach access track.		3
CanalRocks	Site Plan required. Carpark requires re-design to accommodate and segregate boat trailers and sight-seers. Boat ramp to be upgraded. The need for a second ramp to be investigated. Warning signs for heavy swell required. Maintain pedestrian bridge.	Consult with Department of Marine and Harbours.	2
Canal Rocks Spring/	Tidy up spring area, define carpark and walk trail		2

Canal Rocks Lookout	to spring. Incorporate lookout into coastal walktrail.		
Wyadup	Ad hoc vehicle access tracks from road to beach to be rehabilitated. Redefine walk trails to beach and Wyadup Rocks. Warning signs for heavy swell required. Carpark needs redefinition. Close and rehabilitate unsealed roads		2
Injidup	Relocate camping area-site to become day-use facility area. Investigate vesting of southern section of road reserve in NPNCA. Possible joint management agreement with adjacent landowners Beach access and parking needs review.	Consult with Shire of Busselton and adjacent landowners.	1
Moses Rock North and South	Site Development Plans required. Carparks require upgrading and redesign, attention to drainage. Beach access points needs definition and stabilisation. Vehicle access to be realigned to both sites. Walk trail to be defined to Quininup Falls. Close central carpark.		1
Biljedup Cliffs	Close vehicle access to Wilyabrup Creek. Fencing required on National Park boundary, access to cliffs to be defined. Carpark to be developed at north end of Biljedup Beach Road.	Consult with adjacent landowner and Shire.	1
Gallows/Guillotine	Site Plan required. Carpark capacity needs review, Beach access needs redefinition. Create new carparks adjacent to Veryiuca Brook.		1
Gracetown-North Point	Site Plan required. Link with developments on Cowaramup Bay. Signpost National Park.	Consult with Shire of Augusta-Margaret River.	3
Gracetown-South Point	Rehabilitation work to be extended and monitored. Signpost National Park. Review walk trails.		Ongoing
Lefthanders and Big Rock	Carparks to be redefined and vehicle circulation improved.		3

Ellensbrook	Site Development Plan. Need to link coast, house and cave. Coastal management and access issues need to be resolved. Education and interpretation facilities required. Security of house to be formalised.	Historical Conservation Zone. Consult with National Trust.	1
Gnoocardup	Site Development Plan for access and carpark.	Rare Snail habitat. Drainage status is not to change.	3
Redgate	Site Development Plan required. Close western connection in loop road. Dangerous intersection near eastern park boundary. Beach access from northern carpark to be defined.	Consult with Shire re: road maintenance responsibilities.	2
Bobs Hollow	Define carparks. Erosion control and beach access to be defined.		3
Conto's/Cape Freycinet	Site Development Plan required Present campsite at Conto Springs to be phased out and relocated to Conto's Field. Point and Conto Roads need realignment, with spur roads constructed to key access points on the coast. Brozie Road to be closed. Walk trails to be developed around Cape Freycinet, link with Cape to Cape Walktrail.		1
Hooley Road	Carpark and beach access requires definition. Realign road access away from clifftops.		2
Grace Road	Site Development Plan required- Redefine carpark. Close and rehabilitate existing walktrail to beach. Re-establish walktrail and implement coastal management measures. Investigate realignment of access track.		1
Boranup Beach- North Point	Site Development Plan required- Road access needs rationalisation. Car parks need relocation and definition. Erosion and coastal cliffs needs		2



stabilisation. No vehicle access to beach.

Hamelin Bay	Site Development Plan required.- Zoning of beach recreation areas required. Access road through caravan park to be reviewed. Consider relocation of toilet block. Vehicle access to beach for professional fishermen only. Alternative public access along Salmon Track to be retained. Vehicles to be restricted to north of Salmon Track.	Consult with lessee.	1
Cosy Corner	Site Development Plan required.- Carpark needs redesign.	Rare snails habitat. Drainage status is not to change.	3
Elephant Rock	Site Development Plan- coastal management measures required. Upgrade and realign access track. Create new carpark. Retain vehicle access to Deepdene beach.		1
Skippy Rock	Walk track needs further definition from carpark. Carpark redesign. Rehabilitation of blowout required.		3
Quarry Bay	Carpark location to be reviewed.		3
Cape Leeuwin Waterwheel	Site Development Plan required. Walk trail loop to be developed to Quarry Bay. Carpark needs relocation. Waterwheel structure requires stabilising.	Consult with local interest groups, W.A. Museum and W.A.W.A	1

## 12.2 Camping

Camping is a popular form of recreation in the National Park. At present there are campsites at Injidup, Conto's Field, Conto's Springs and Point Road. The first two sites are subject to heavy over-use during the summer period and public holidays. These are due for relocation and upgrading respectively.

a) Designated site camping- these will be accessible by vehicles and pedestrians. They will have limited facilities. There are opportunities for some sites to be developed in conjunction with private enterprise. Fees will be collected at these sites.

b) Remote backpacking camping areas- generally these will be segregated from vehicle access and associated with walk trails. These sites will be designed to cater for approximately 15 people (6 sites). They should only be used for one overnight stay. No wood fires will be permitted at these sites.

There are several commercial caravan parks within the region therefore, no special provisions for caravans should be made within the Park outside of Hamelin Bay.

## **ACTIONS**

### **Action 12.2.1:**

Provision of all camping areas should be carried out in accordance with Site Development Plans.

Priority: Ongoing

### **Action 12.2.2:**

Camping fees should be instituted for all designated camping areas. No fees will be payable by backpackers in remote camping areas.

Priority: 1

### **Action 12.2.3:**

An alternative to the Injidup camping area will be actively sought in consultation with the proposed Leeuwin-Naturaliste National Park Advisory Committee. Once the alternative site is developed, Injidup will be closed to camping. Injidup should be retained as a day-use facility picnic area. Consultation with the Local Shire will be required.

Priority: 1

### **Action 12.2.4:**

Conto's Springs camping area should be relocated to Conto's Field. The present site should be retained as a day-use facility area.

Priority: 1

### **Action 12.2.5:**

Point Road camping area requires a redesign including deviation of road access around the camping area.

Priority: 1

### **Action 12.2.6:**

In consultation with Local Authorities and the National Park Advisory Committee assess the need for and location of future possible campsites.

Priority: 2

**Action 12.2.7:**

Remote camping areas at intervals of not less than 10 kilometres should be provided along long distance walk trails.

Priority: Ongoing

**Action 12.2.8:**

Conditional joint arrangements for the development of designated camping areas with commercial interests should be investigated.

Priority: Ongoing

**Action 12.2.9:**

In consultation with local authorities and the proposed Advisory Committee the possibility of additional campsites should be investigated as the need arises.

Priority: Ongoing

## **12.3 Walking**

There are few existing walk trails within the Study Area. The diversity of scenery and attractions provides many opportunities for their development. There is a need to provide trails for different levels of expertise. Some will be intended as short walks, with an accent on interpretation, and some will be loops which may take several hours to complete. A long distance walk trail should be constructed from Cape Naturaliste to Cape Leeuwin.

The Cape-to-Cape trail will consist of a diversity of sections. The trail should, where appropriate, use the existing firebreaks and management trails (Class 4) to minimise construction costs. Vehicular access to these tracks will be restricted (see Section 11). All sections of the track will be subject to assessment of environmental hazards eg. dieback, erosion.

Loop trails and short distance walks will focus on areas of historical or ecological significance, or areas of high scenic quality. These should be associated with designated camping areas.

### **ACTIONS**

**Action 12.3.1:**

A long distance walk trail from Cape Naturaliste to Cape Leeuwin will be developed. It will traverse a diversity of landscapes and utilise existing management trails for some of its length. Remote camping should be established as per previous section.

Priority: Ongoing

**Action 12.3.2:**

Loop trails should be considered at:

Quininup Falls	Priority: 1
Yallingup to Canal Rocks	Priority: 3
Ellen Brook Area	Priority: 1
Cape Freycinet	Priority: 2
Cape Leeuwin Waterwheel	Priority: 1

**Action 12.3.3:**

Trails should be signposted according to the CALM Sign Manual.

Priority: Ongoing

**Action 12.3.4:**

Walking should be discouraged on the long distance walk trails during periods of extreme fire danger.

Priority: Ongoing

**Action 12.3.5:**

Some constructed sections of walk trails should make provision for access for disabled people.

Priority: Ongoing

## **12.4 Surfing and Fishing**

In the past major management problems have arisen through the desire of fishermen and surfers to "camp" overnight in carparks and foredunes, to be "on the spot" when desired conditions prevail. In general the use of carparks for camping is undesirable because facilities there are not designed for this function, and difficulties with litter, waste disposal, disorderly behaviour, and destruction of vegetation for example have frequently occurred.

Difficulties with past practices are compounded by the significant growth in numbers of people wishing to avail themselves of these opportunities. One answer to these difficulties is to improve facilities and levels of supervision, which would effectively lead to carparks becoming camping

grounds. The plan is addressing the need for additional camping space elsewhere, but the notion of turning carparks into de facto campgrounds is rejected because of their locations as prime sites, user conflict, and the impracticability of providing scarce resources for the supervision which would be necessary.

There are some circumstances, however, where certain users, for example anglers, have a genuine requirement to be on site during the night. Representatives from the WA Recreation and Sportsfishing Council point out that much recreational fishing occurs in winter months and often the most successful fishing takes place at night.

In response to these representations this plan will allow for recreational fishermen to rest in their vehicles in carparks during the night between 1 May and 31 October. "Resting in vehicles" will not allow use of tents and other camping equipment.

This system will be periodically reviewed in the context of the problems of carpark use as discussed above and will be discontinued if these problems are unmanageable.

## **COMPETITIVE EVENTS**

The National Park is the venue for several organised competitive events each year. At present, these involve mainly surfing (including wave skiing and windsurfing), and fishing. These competitions range from small inter and intraclub events, to State and National Championships. The latter can attract hundreds of competitors and thousands of spectators.

These events can cause many management problems concerning vehicle access, parking, litter and destruction of vegetation, especially on foredunes. The presence of food vending caravans compounds problems of crowding at carparks, littering and focussing pedestrian traffic.

To assess the need for large scale events within the National Park, it must be shown by the organisers that the event is reliant on sites within the Park, and that no other options are available elsewhere. There are few sites within the National Park which can cope with large crowds.

## **ACTIONS**

### **Action 12.4.1:**

Organisers of competitive events to be held within the Study Area will need to apply for permission to CALM's Regional or District Office at least three months prior to the event, detailing; preferred sites, number of participants and spectators and proposed management measures.

Priority: Ongoing

**Action 12.4.2:**

Organisers will need to demonstrate they have adequate management capabilities to handle participants, spectators and vehicles. This includes provision of bins and toilets, crowd control measures and access definition.

Priority: Ongoing

**Action 12.4.3:**

Siting of large events will generally be favoured close to existing townsites, or at sites with sealed access roads. Organisers should be prepared to provide a public transport service to the event from the nearest townsite or other agreed point.

Priority: Ongoing

**Action 12.4.4:**

CALM will not provide specific facilities for these events.

Priority: Ongoing

**Action 12.4.5:**

Subject to the above, a permit to hold the event will be issued at the discretion of the CALM Regional Manager.

Priority: Ongoing

**Action 12.4.6:**

A fee may be charged and a bond may be required from organisers where it is considered environmental damage may result from the event.

Priority: Ongoing

**Action 12.4.7:**

Food vending vans or other commercial activities will not be permitted at the site of these events.

Priority: Ongoing

**Action 12.4.8:**

Local Authorities will be consulted when notice is received regarding competitive events to be held in the National Park.

Priority: Ongoing

**Action 12.4.9:**

Number of events will be monitored, and if necessary, will be limited depending on demand.

Priority: Ongoing.

**Action 12.4.10:**

In the case of amateur fishing, arrangements for the use of unlicensed Off-road Vehicles will be subject to permits with specified conditions, including areas of use and for a period of 12 months.

Priority: Ongoing

**Action 12.4.11:**

In the case of bona fide recreational fishermen, resting in vehicles in carparks will be allowed between 1 May and 31 October subject to no tents or other camping equipment being erected in the carparks, and only for one night. This arrangement will be reviewed periodically.

Priority: Ongoing

## 12.5 Other Recreational Activities

a) Hang gliding- there are a few sites within the National Park which may be suitable for hang gliding. These are Conto's Cliffs and near Greenhill, Augusta. Access to the latter site is restricted. It may be possible to establish a takeoff area near Conto's Cliffs.

b) Orienteering and rogaining these events require terrain which generally has open understorey vegetation. There are few areas of the Park which are suitable for these activities.

c) Rock climbing- the main area for this activity is at Biljedup Cliffs. These are sheer granite cliffs rising to 40 metres from the sea. They are used by experienced climbers. No climbing will be permitted on any limestone cliffs, except on defined access paths.

d) Car rallies- should not be held in the National Park.

### ACTIONS

**Action 12.5.1:**

Allow hang gliding for a trial period at Conto's Cliffs to ascertain the suitability of the site. The provision of parking and takeoff areas will need to be considered if the site is suitable. The site should be used only by experienced hang gliders. Usage will be subject to review by CALM.

Priority: Ongoing

**Action 12.5.2:**

Orienteering and rogaining will not be permitted in the National Park.

Priority: Ongoing

**Action 12.5.3:**

Rock climbing should continue at Biljedup Cliffs. Access to the site requires discussions and agreement with the adjoining landowners. No climbing on limestone cliffs will be permitted.

Priority: Ongoing

**Action 12.5.4:**

Car rallies will not be permitted within the National Park.

Priority: Ongoing

## **12.6 Adventure Groups and Tours**

A growing number of adventure groups use the National Park. Activities undertaken by these groups include caving, bushwalking, rockclimbing and abseiling. Traditionally, school groups using the Park have made prior arrangement with park management. Some commercial groups, however, are now using the Park frequently with no prior arrangements with CALM. Some of these are locally based and well established, others are run on a part-time basis with a low level of equipment.

### **ACTIONS**

**Action 12.6.1:**

Use of the Park by adventure groups and tour operators for commercial purposes will require written permission from CALM for which a charge may be made. Non-profit making groups will not be charged.

Priority: Ongoing

**Action 12.6.2:**

Written permission will be subject to conditions imposed at the discretion of the Regional or District Manager. For tour operators this will include conditions regarding route, type of vehicle and number of passengers. Permits will initially be issued for a maximum of 12 months.

Priority: Ongoing

**Action 12.6.3:**

Tour operators who wish to traverse any park management tracks (Class 4- see Section 11) will require written permission. Operators who use existing formed roads for short sightseeing stops will not be charged.

Priority: Ongoing

## **12.7 Domestic Animals**

### **HORSE-RIDING**



A number of riding schools adjacent to the National Park are using the Park on an ad hoc basis. Horse-riders are using the area near to Dugdale Road in the Yallingup block.

Horse-riding can have adverse consequences on the environmental values of the National Park. Horses can spread weeds, and cause erosion of sensitive areas. Their grazing can also damage native vegetation. They do, however, provide a recreational experience which relies heavily on the quality of the surrounding environment. On balance, although most of the Leeuwin-Naturaliste National Park is subject to high visitor numbers, and there are many existing use conflicts there are some limited areas which are appropriate for horseriding. These areas have relatively low erosion hazards, and limited conflicts of use.

## **ACTIONS**

### **Action 12.7.1:**

The block of the Park south and east of Caves Road near Yallingup will be available for horse-riding on defined access trails only. This will be subject to agreement with local users and CALM, and subject to review every 12 months.

Priority: 1

### **Action 12.7.2:**

A horseriding area using existing trails will be established in the north-eastern part of Boranup State forest. This will be bounded by Boulter Road, the northern boundary of Boranup State forest, Caves Road, Vlam Road and Bruce Road. No riding on, or across, Caves Road reserve will be permitted for safety reasons. Overnight stay with horses may be permitted.

Priority: 2

## **DOGS AND CATS**

The National Park occupies 90% of the coastline between Cape Naturaliste and Cape Leeuwin. The Park is quite small and occupies a narrow foreshore reserve for most of its length. There are relatively few beaches which offer suitable areas for dog exercise and these are prime recreation areas. Dogs frequently accompany visitors to the National Park, and CALM staff are constantly warning people to leave the Park with their dogs.

Dogs may cause a number of management problems. They can create health problems, conflict with other park users, and if they are left in the Park, can predate or chase fauna. Dog's scent can also restrict native fauna movements and hence limit opportunities of visitors to view park fauna. On the other hand, many people enjoy the company of dogs in their recreational activities.

It was decided not to create a permitted area for dogs within the National Park. There are many other areas within close proximity of the Study Area within which dogs are permitted. These include State forest (ie. Yelverton), and areas under Shire control.

Given potential conflicts with park visitors, the limited availability of space at recreation sites, and the potential environmental problems, dogs will not be permitted within the National Park.

Predation of native fauna by domestic and feral cats is well documented.

#### **ACTION**

##### **Action 12.7.3:**

Dogs and cats will not be permitted within the National Park.

Priority: Ongoing

## **13.0 COMMUNITY EDUCATION AND RESEARCH**

#### **STRATEGY**

The high visitor numbers, and the expected increase of numbers provides CALM with a significant opportunity to promote awareness, understanding, and support for the natural and cultural values of the National Park. These opportunities present an effective tool of management to ensure that visitors are more aware of their surroundings, and the effects which people have on the environment.

There is a range of techniques which can be used to provide visitors with information and these include publications (pamphlets and maps), facilities (information bays, signs, guided walk trails) and personal interaction with park rangers and other CALM staff by both informal public contact and through a planned interpretive activities programme.

#### **ACTIONS**

##### **Action 13.1:**

Establish information bays at suitable locations throughout the Study Area. New and existing bays will contain information relevant to the specific locality or feature as well as details of facility areas, regulations, and other visitor concerns.

Priority: 1

##### **Action 13.2:**

Produce a Park visitors guide as a saleable item that details the natural history of the Study Area.

The guide should contain information on facility areas, points of interest, recreational opportunities, sites and conditions and park regulations.

Priority: 1

**Action 13.3:**

Produce a series of Park notes /publications dealing with specific themes or issues eg. bushwalks, fishing, wildlife and research and containing details of management activities being conducted by CALM.

Priority: 2

**Action 13.4:**

Produce a specific pamphlet for members of the public intending to visit caves within the Study Area. Such a pamphlet should contain details of the caves open to the public, regulations to be followed during the visit to the cave, safety precautions to be taken, how and where to apply for a permit, and any associated facilities.

Priority: 1

**Action 13.5:**

Retain original place names in all CALM publications.

Priority: Ongoing

**Action 13.6:**

Erect warning signs in potential hazard areas e.g. coastline, cave areas.

Priority: 1

**Action 13.7:**

Frequently update and reinforce CALM staff training in public education and relations. Involvement in public interpretive walks and special seasonal interpretive programmes should be maintained.

Priority: Ongoing

**Action 13.8:**

Establish interpretive walk trails within each natural community with signs detailing points of interest. The need for and the possible location of walktrails for the disabled should be investigated.

Priority: Ongoing

**Action 13.9:**

Consideration should be given to the establishment of a visitor information centre, and Park administrative centre. Joint funding and management arrangements should be investigated.

Priority: 3

**Action 13.10:**

Approach local conservation groups and interested individuals to establish their possible involvement in leading organized walks through the Study Area after appropriate training and approval by CALM.

Priority: 1

**Action 13.11:**

Encourage research by tertiary institutions and school groups into aspects of the Park's natural history and management.

Priority: Ongoing

**Action 13.12:**

Maintain close liaison with the Tourist Industry, where possible utilising existing Tourist Information Centres to disseminate information. Produce a tourist operators guide.

Priority: Ongoing

## **14.0 RESOURCE MANAGEMENT**

### **14.1 Water**

The existing surface and groundwater resources of the National Park have a number of features.

These are:

- a) Surface water streams are small and there are few opportunities for townsite water supply. There is a limited number of towns which require the provision of a reticulated water supply.
- b) The lower reaches of some major streams are saline.
- c) Groundwater on the Ridge is restricted to shallow aquifers because of the geology of the area. They constitute an important resource for local water supplies and rural purposes. Development of groundwater resources are constrained by the proximity of the resources to areas of demand
- d) Caves on the Ridge are, in many cases dependent on the flow regime and water quality of underground streams. At present, water levels are falling.
- e) Springs and seeps are important habitats for rare or restricted examples of invertebrate fauna
- f) Maintenance of vegetation is a key factor in retaining water quality and quantity.

There have been a number of demands for water supply from the National Park by local landowners and the Water Authority of Western Australia. Impacts associated with these demands are not specifically related to the water source, but may also involve pipeline and powerline easements, fencing and alterations to landscape and vegetation.

Water supplies may be required in future to support park facilities. These will require careful assessment regarding the source and potential impacts on local hydrology. The use of roof and tank supplies is most appropriate, but care should be taken to preclude access by native fauna which may pollute supplies.

## **STRATEGY**

Maintenance of present water supplies to areas of high conservation value is essential. These are springs, seeps, wetlands and caves.

Ensure that water quality is maintained and park operations do not pollute any surface or groundwater.

Identify flow networks of shallow aquifers and their relationship with seeps, cave streams and springs.

## **ACTIONS**

### **Action 14.1.1:**

In consultation with the Water Authority of Western Australia, Geological Survey of W.A. and the Water Resources Council, investigate the Park and adjacent land's hydrology, include cave streams, springs and seeps. These investigations should indicate the need to declare the Leeuwin-Naturaliste Ridge a Groundwater Area.

Priority: 1

### **Action 14.1.2:**

Any existing water supply or effluent disposal which has a demonstrable adverse impact on the National Park's natural values should be reviewed to ascertain alternative sources or disposal sites.

Priority: 1

### **Action 14.1.3:**

There should be no extraction of water from any surface or groundwater body within the Park boundary, without prior approval of the N.P.N.C.A. in consultation with W.A.W.A. Considerations will include environmental effects, cultural values, existing and projected demand, and availability of alternative supplies.

Priority: Ongoing

**Action 14.1.4:**

Where extraction will occur, the flow rate and network of groundwater should be ascertained. Networks should be identified to ensure there are no adverse impacts on the Park's environment. Extraction should generally occur for park management purposes only. No extraction by local landowners should occur within the Park boundaries.

Priority: Ongoing

**Action 14.1.5:**

Park operations should not interfere with any surface water body. Care should be exercised to ensure drainage is not diverted into these water bodies.

Priority: Ongoing

**Action 14.1.6:**

There may be a need to provide easements for water supply mains to townsites located adjacent to the National Park. Where possible, these should follow existing gazetted or constructed road reserves. Where this is not possible the alignment should follow existing firebreaks and tracks and clearing should be minimised. Areas of high conservation or landscape value, endangered species or cultural sites should not be disturbed.

Priority: Ongoing

**Action 14.1.7:**

Chemicals, sprays or fertilisers used in park management should not enter any water body within the National Park.

Priority: Ongoing

**Action 14.1.8:**

Strategies for the maintenance of water supply to the Augusta Waterwheel should be developed in consultation with W.A.W.A. and local interests.

Priority: 1

## 14.2 Mining

Significant deposits of industrial minerals including limestone, sand, marl and gravel occur within the Study Area. These are used for road maintenance and construction purposes by CALM and the local authorities. Although it is not a sustainable use of the Park, quarrying is a necessary part of park management as frequently there are no other sources of these minerals. With care, areas which are utilised can be restored and rehabilitated.

In terms of commercial potential, the National Park has submarginal deposits of heavy mineral sands and other minerals which are not economic at present.

In accordance with current Government Policy on mining in National Parks the Park is closed to exploration and mining activities. This situation will remain unless the Park is opened for the granting of an exploration licence or reclassified.

Geoscientific survey work is allowed under a permit issued by the Minister for Mines with agreement from the Minister for CALM (an exploration licence is not required).

The Park (or part thereof) can be opened for exploration only after a detailed assessment by the Environmental Protection Authority (EPA) with involvement from both CALM and the Mines Department. Parliament makes a decision based on the recommendations of the Government. If the area is opened the exploration licence is then processed and may be granted subject to conditions.

A mining lease can only be granted over an area declared open for exploration. The proposal for a mining lease is assessed by the EPA and if accepted by the Minister for CALM and for Mines the consent of both Houses of Parliament is sought.

Strict conditions are imposed on Exploration licences and Mining leases including the rehabilitation of the surface of the land or anything on the surface of the land and controls of access.

## **STRATEGY**

Since the National Park is closed to mining in accordance with Government Policy, any further actions regarding mining will require Environmental Protection Authority approval.

Allowance is made under CALM policy for Shires, Main Roads Department and other authorised agencies to extract material for roads on, servicing, or within 5 km of CALM land. These will require a lease.

## **ACTIONS**

### **Action 14.2.1**

Any proposals for mining will be assessed by the Environmental Protection Authority in accordance with Government Policy.

Priority: Ongoing.

### **Action 14.2.2:**

In the case of road building materials these will be limited to borrow pits in Managed Natural Areas. They should not be visible from park access points or recreation areas; pits should not be created on

the western side of the Ridge; access should not conflict with recreation users; where necessary, hours of operation may be limited. Pits should be restricted to the smallest possible size and the number of active pits will be restricted. These conditions should apply to CALM and other agencies. Priority: Ongoing

**Action 14.2.3:**

A survey should be conducted prior to quarrying to ensure that no rare (endangered) species or Aboriginal site will be disturbed.

Priority: Ongoing

**Action 14.2.4:**

Prior to the commencement of quarrying local authorities and other agencies should demonstrate that no other option is available for raw material extraction. A lease will be required.

Priority: Ongoing

**Action 14.2.5:**

Rehabilitation of all borrow pits should occur as soon as the pit is no longer required. This should be done by the relevant authority. Where there is joint use, an agreement for rehabilitation should be made prior to mining commencement. Site rehabilitation should only use local native species. Where possible, top soil should be stockpiled and used in pit rehabilitation.

Priority Ongoing

**Action 14.2.6:**

Quarrying will not be permitted in Cave Protection Areas or in dieback infected or susceptible areas. Similarly, quarrying will not be permitted in areas suspected of being infected by the disease.

Priority: Ongoing

## **14.3 Professional Fishing**

The National Park is used by shorebased professional fishermen for coastal access. Professional fishermen currently use sheltered bays such as at Hamelin, Cowaramup and Kilcarnup to anchor their boats. The main target species for shorebased fishermen are salmon and Roe's abalone. Salmon fishing occurs at Deepdene, Hamelin Bay and some smaller beaches. Abalone are taken from a number of areas. In Proclaimed Fishing Zones Professional fishermen are given right of access and priority over amateurs. These zones are located at Cape Naturaliste and Smiths Beach.

### **STRATEGY**



CALM recognises its responsibility to provide access to professional fishermen to Proclaimed Fishing Zones.

Access onto the beach will be retained at Deepdene and Hamelin Bay.

## **ACTIONS**

### **Action 14.3.1:**

Salmon fishermen will be allowed to retain existing access to beaches where this can be achieved without undue environmental damage. This will be subject to contributions by fishermen to the establishment and maintenance of access tracks. This arrangement will be subject to satisfactory negotiations between fishermen and CALM.

Priority: 1

### **Action 14.3.2:**

Existing off-road vehicle permits for use within the Leeuwin-Naturaliste National Park should be cancelled and re-issued for 12 month periods only. Renewal should be subject to CALM's satisfaction of fulfillment of conditions.

Priority: 1

### **Action 14.3.3:**

Permits, issued to professional fishermen for use of unlicensed off-road vehicles or motor bikes, should stipulate area of operation, and beach access points.

Priority: Ongoing

## **14.4 Apiaries**

The National Park supports a number of apiary sites. Some research suggests honeybees have an adverse effect on native flora and fauna. Those involved in the industry, however, depend on bee keeping and honey production for their livelihood. Public safety may be involved where apiary sites are sited too close to recreation areas and tracks.

### **STRATEGY**

Bee keeping should be restricted to the present sites and reviewed if vegetation loss through bushfires occurs.

Access to these sites should be reviewed to ensure dieback is not being spread.

## **ACTIONS**

### **Action 14.4.1:**

In consultation with existing permit holders, assess the existing access arrangements to ensure the spread of dieback disease does not occur. If necessary, access should be redefined,

Priority: 1

### **Action 14.4.2:**

Review existing apiary sites to ascertain their need for retention. Sites within 500 metres of recreation areas should be relocated.

Priority: 1

## **14.5 Timber Harvest, Firewood Collection and Wildflower Picking**

Timber harvesting, firewood collection and wildflower picking are not permitted in the National Park.

### **ACTION**

#### **Action 14.5.1:**

No wildflower picking, firewood collection or timber harvesting will occur in the Leeuwin-Naturaliste National Park.

Priority: Ongoing

## **15.0 MARINE ENVIRONMENT**

Marine areas adjacent to the National Park are of high ecological and recreation value. The area also supports a professional fishing industry.

### **STRATEGY**

There is a need to investigate areas which are suitable for inclusion in a multiple use marine park which may complement the National Park. Areas of high conservation value include Yallingup Reef, Cape Naturaliste, Cosy Corner, Hamelin Bay, the Indicators and Cape Leeuwin. Other areas of high recreation value and productive fishing could be incorporated into a future Marine Park.

### **ACTIONS**

#### **Action 15.1:**

Marine areas adjacent to the Leeuwin-Naturaliste Ridge should be investigated to ascertain their suitability for declaration as a Marine Park.

Priority: 2

**Action 15.2:**

Any future Marine Parks in this area should be zoned for multiple use.

Priority: 2

**Action 15.3:**

The declaration of the National Park to the Low Water Mark will give National Park Rangers jurisdiction over the intertidal zone. Suitable regulatory arrangements should be made to ensure the protection of these areas from over-exploitation.

Priority: 1

## **SECTION C: IMPLEMENTATION**

### **16.0 PARK ADMINISTRATION**

#### **16.1 Staffing**

The National Park is currently staffed by a Senior Ranger and four National Park Rangers who are responsible to the District Manager in Busselton. Park Rangers are each responsible for a section of the Park and one is specifically responsible for caving. Mobile rangers are used to supplement existing rangers during the summer period.

##### **STRATEGY**

Reallocation of ranger tasks should give more flexibility in performing on-ground management rather than maintenance and cleaning tasks.

A Senior Ranger has been recently appointed to the Park to oversee operations and supervise ranger staff.

A Trainee Ranger may be appointed to assist the Caving Ranger and to develop expertise in cave related matters. Use of mobile rangers should continue, and be reviewed periodically.

A team of park workers is desirable in the Leeuwin-Naturaliste National Park to work on recreation related projects and to assist in Park maintenance and development. The team would play an important role in the implementation of this management plan.

#### **16.2 Voluntary Groups**

A number of conservation, recreation and community groups are frequent users of the National Park. These groups have considerable knowledge of the area and frequently are involved in field excursions. The Department of Conservation and Land Management has received several inquiries as to how these groups can become involved in park management.

##### **STRATEGY**

Involve representatives of local community groups in park management where appropriate.

##### **ACTION**

###### **Action 16.2.1:**

Establish an advisory committee for the National Park. The committee will advise the Executive Director of CALM, through local CALM management. Membership of the committee should be composed of representatives from local government and others from the community with relevant expertise and experience. The committee should:

- a) Advise on the implementation of the management plan.
- b) Provide advice on matters referred to the committee.
- c) Liaise between the Department of CALM, Local Government and the community.

Priority: 1

## **16.3 Safety**

Safety is a major concern of the Department of Conservation and Land Management. Staff attend frequent safety courses, and are involved in many safety initiatives within the Department and local community. Unwary visitors to areas which are potentially dangerous are a major problem. Although accidents can happen anywhere, there are three main places where visitor safety is a problem: the coast, with shelving rocks and heavy swells; the caves; and on park tracks.

### **STRATEGIES**

Ensure that staff safety training is frequently updated.

Provide signs warning visitors of potential danger.

Establish effective links with local Police, State Emergency Services and other relevant bodies in case of any large scale event. Practise for such events should be encouraged.

### **ACTIONS**

#### **Action 16.3.1:**

Continue and update staff training courses, including first aid, and in search and rescue techniques.

Priority: Ongoing

#### **Action 16.3.2:**

Place warning signs at popular fishing and swimming areas which are potentially dangerous in certain conditions e.g. Wyadup Rocks, Canal Rocks, North Point. Consideration should be given to providing life preservers at these and other sites as required. Warning signs should also be established near to popular caving areas.

Priority: 1

#### **Action 16.3.3:**

Formal arrangements should be maintained between CALM, local Police, State Emergency Services and other relevant bodies for major disasters, including search and rescue and fire.

Priority: 1

**Action 16.3.4:**

Existing levels of ranger patrols should be maintained.

Priority: Ongoing

**Action 16.3.5:**

Literature about the Park should include information on potential hazards in the National Park and visitors obligations.

Priority: 1

## **16.4 Park Management Facilities**

Three permanent ranger houses are located within the National Park at Yallingup, Cowaramup and Augusta. The ranger for the Boranup block resides in Margaret River. CALM leases a cottage at Cape Naturaliste from the, Commonwealth Department of Transport for use by mobile rangers. Mobile ranger facilities also exist at Cowaramup and Hamelin Bay.

Each ranger has a four-wheel drive vehicle. There is no plant or machinery permanently stationed in the National Park. Margaret River workshop provides the depot for machinery utilised in the National Park and other CALM lands.

Rubbish disposal is currently done in agreement with the Local Authorities. Radio communications for CALM and other agencies is hampered by the topography of the Ridge.

### **STRATEGY**

Provide ongoing capital resources for park management.

### **ACTION**

**Action 16.4.1:**

Given the level of recreation, rehabilitation and maintenance work required, assess the need to have some machinery stationed within the National Park. Contract work should be utilised in appropriate situations for projects.

Priority: 1

**Action 16.4.2:**

Agreements with local authorities for rubbish disposal should continue. CALM should assist local authorities in the assessment of sites suitable for rubbish disposal. In general, the National Park should be considered as a last resort, but there may be opportunities in other CALM land. Priority: Ongoing

**Action 16.4.3:**

No further power line easements will be cleared within the National Park. Where possible power lines should be laid underground.

Priority: Ongoing

**Action 16.4.4:**

Establishment of communication towers within the Study Area should be reviewed on a case by case basis. Consideration should be given to sensitive siting and the access arrangements.

Priority: Ongoing

## **17.0 ASSOCIATED LAND USES**

Increasing development pressure exists on land adjacent to the National Park. At present, rural uses predominate, but large areas are zoned, under local Town Planning Schemes, for rural smallholdings. Many of these uses have a direct impact on the National Park and it is important at the subdivision and development stages, CALM provides input to these proposals. Some tracts of land with high conservation value may be valuable additions to the National Park. The reversioning or acquisition of land is not always the best method of managing land and there may be opportunities to enter into joint agreements with landowners. This would involve multiple use of their land, whereby assistance may be given by CALM with land management in exchange for retention of vegetation, landscape or access.

### **STRATEGY**

CALM should liaise with other agencies to ensure that the effects related to adjacent land uses are minimised.

### **ACTIONS**

**Action 17.1:**

When subdivision and development applications for land on the Leeuwin-Naturaliste Ridge are referred to CALM by State Planning Commission, the Department will consider them in the light of their impact on the Park.

Priority: Ongoing

**Action 17.2:**

Where appropriate CALM should enter into agreements, under Section 16 of the CALM Act, for joint management arrangements with local landholders.

Priority: Ongoing

**Action 17.3:**

The Busselton District Manager, should hold regular meetings (ie 3 monthly) with staff and councillors of the Shires of Busselton and Augusta-Margaret River and CALM regional staff to discuss management matters of mutual interest, eg. fire, sub division proposals.

Priority: Ongoing

## **18.0 RESEARCH AND MONITORING**

The following recommendations have been made in the plan which propose further research and monitoring:

### **EROSION CONTROL**

**Action 5.1:**

Investigate the establishment of a small area for propagation of species used for coastal rehabilitation with a primary aim of propagating marram grass (*Ammophila arenaria*). Other suitable species include *Olearia axillaris* and pigface (*Carpobrotus aequilaterus*). Nursery sites which require investigation are at Moses Rock, South Point and Hamelin Bay.

Priority: 1

**Action 5.2:**

Conduct research using a variety of rehabilitation techniques with different vegetation types and rehabilitation methods.

Priority: 1

**Action 5.4:**

Monitor erosion of tracks and firebreaks and measures taken to alleviate the problem, or ultimately, realign the break into more stable terrain.

Priority: Ongoing

### **CAVES**

**Action 6.6:**



Monitor water-levels in caves to establish long term trends. This programme may need to be extended to other streams. No cave stream should be used for watersupply or disposal of effluent.

Priority: Ongoing

**Action 6.7:**

Investigate and map cave stream systems to establish direction of flow and connection between cave systems, and between surface hydrology (seeps and springs). Management of these catchments should aim to retain the present hydrological balance.

Priority: 1

**VEGETATION**

**Action 7.8:**

Prior to management operations, have locations surveyed for the presence of rare, restricted or any unusual flora.

Priority: Ongoing

**Action 7.11:**

Establish Habitat Protection Areas at Ellen Brook, Boodjidup Brook and at Blackboy Hollow. Interference with these closed heath and low closed woodland communities should not occur.

Priority: 1

**FAUNA**

**Action 8.2:**

Initiate research into the invertebrate populations of the Study Area and their ecology.

Priority: 1

**WEEDS AND EXOTIC SPECIES**

**Action 9.1.5:**

A survey of the National Park for exotic plant infestations should be completed in consultation with the APB. Development of weed management plans for specific areas and/or species will be undertaken where appropriate.

Priority: 1

**Action 9.1.7:**

CALM staff will regularly monitor and record the infestations of exotic species within the Study Area. Records of all control methods used will be kept by the District.

Priority: Ongoing

**Action 9.1.10:**

Instigate a systematic survey of weeds which are easily transferable by park users, especially double gees. Areas identified with these weeds may need to be fenced and signposted until the weed is eradicated. Areas include Boranup Beach (North Point), and Grace Road.

Priority: 1

**DIEBACK****Action 9.2.1:**

Continue research into the impact and spread of the disease on vegetation associations within the Park, particularly the coastal heath. Further identification of disease indicator species is required.

Priority: 1

**Action 9.2.2**

Undertake a more detailed dieback survey of the National Park as resources permit and review vehicle access based on the findings.

Priority: 1

**Action 9.2.3:**

Regularly monitor areas known to be infected by dieback disease. Avoid controlled burning until the location and extent of disease infections are accurately mapped and the likely future impact of the disease on areas which are presently dieback free has been assessed.

Priority: Ongoing

**FIRE****Action 9.3.6:**

Existing firebreaks will be assessed for condition and effectiveness. Poorly sited and badly eroded firebreaks will be realigned, upgraded or rehabilitated.

Priority: 1

**Action 9.3.16:**

Research into the impact of fire on the ecosystem and the regeneration of native species, particularly coastal heath will be encouraged. Monitoring of No Planned Burn areas, as reference points, will be instigated. Selected prescribed burns and wildfires will also be monitored.

Priority: 1

**FERAL ANIMALS****Action 9.4.4:**

Monitor and record the levels of feral animal populations, including domestic stock, within the Study Area to gauge the success and future requirements of control programmes.

Priority: Ongoing

## **HAMELIN BAY**

### **Action 11.2: (from Table 4)**

Prior to the development of alternative access to Hamelin Bay the physical and biotic characteristics of Lake Davies should be determined and the possible impacts on the lake of increased access.

## **RECREATION**

### **Action 12.1.6:**

Monitor all recreation sites for negative impacts such as soil erosion and vegetation destruction. Immediate measures should be taken to mitigate degradation.

Priority: Ongoing

## **HORSE RIDING**

### **Action 12.7.1:**

The block of the Park south and east of Caves Road near Yallingup will be available for horseriding on defined access trails only. This will be subject to agreement with local users and CALM, and subject to review every 12 months.

Priority: 1

## **COMMUNITY EDUCATION AND RESEARCH**

### **Action 13.11:**

Encourage research by tertiary institutions and school groups into aspects of the Parks natural history and management

Priority: Ongoing

## **HYDROLOGY**

### **Action 14.1.1:**

In consultation with the Water Authority of Western Australia, Geological Survey of Western Australia and the Water Resources Council, investigate the Park and adjacent lands hydrology, including cave streams, springs and seeps. These investigations should indicate the need to declare the Leeuwin-Naturaliste Ridge a Groundwater Area.

Priority: 1

### **Action 14.1.4:**

Where groundwater extraction will occur, the flow rate and network should be ascertained. Networks should be identified to ensure there are no adverse impacts on the Park's environment. Extraction should generally occur for park management purposes only. No extraction by local landowners should occur within the Park boundaries.

Priority: Ongoing

### **APIARIES**

#### **Action 14.4.1:**

In consultation with existing permit holders for apiaries, assess the existing access arrangements to ensure the spread of dieback disease does not occur. If necessary, access should be redefined.

Priority: 1

### **MARINE AREAS**

#### **Action 15.1:**

Marine areas adjacent to the Leeuwin-Naturaliste Ridge should be investigated to ascertain their suitability for declaration as a Marine Park.

Priority: 2

## **19.0 PRIORITIES**

The critical phase following planning is implementation. This draft management plan has many and varied recommendations, each of which has been prioritised as ongoing priority, 1, 2 or 3. The priorities recommend an order in which tasks should be approached. Because of the vagaries of funding and the availability of staff it is difficult to establish a definitive time frame for the implementation of recommendations. The priorities establish a ranking to the approach of proposals in the plan.

## **20.0 FUNDING**

Funding is one of the major public concerns regarding the implementation of the plan. There are a number of options through which the plan could be funded. These are summarised in Appendix 3.

## **21.0 TENURE OF THE PLAN**

This plan should be reviewed within 10 years from the date of the Ministerial approval of the Final Plan. There is provision under section 61 of the CALM Act for the Plan to be amended, as required. The issue of beach access for vehicles will be reviewed after Ministerial approval of the final plan (see Action 11.6).

## References

- Abbott, I. (1977), 'Seabird Islands, No. 62 Hamelin Island, Western Australia', **Corella** 2(2),38-39.
- Archer, M. (1972), 'Domestic Cats and Dogs A Danger to the Australian Fauna', **Swans** 3(3), 70-71.
- Archer, M. and Baynes, A. (1972), 'Prehistoric Mammal Faunas From Two Small Caves in the Extreme South-West of Western Australia', **Journal of the Royal Society of Western Australia** 55(3),80-89.
- Bastian, L. (1964), 'Morphology and Development of Caves in the southwest of Western Australia', **Helictite** 2(4), 105-119.
- Baynes, A., Merrilees, D., and Porter, J. K. (1975), 'Mammal remains from the upper levels of a late Pleistocene deposit in Devil's Lair, Western Australia', **J. Roy. Soc. W.A.** 58(4), 97-126.
- Blakers, M., Davies, S.J.J.F. and Reilly, P.N. (1984), **The Atlas of Australian Birds**, R.A.O.U., Melbourne University Press.
- Brown, A.P. and Hopper, S.D. (1987), Gazetted Rare Flora of the Leeuwin-Naturaliste Ridge, Department of Conservation and Land Management, Unpublished Report.
- Burbidge, A.A., Folley, G.L. and Smith, G.T. (1986), **The Noisy Scrubbird**, Wildlife Management Programme No. 2, Department of Conservation and Land Management, Western Australia. Conservation Through Reserves Committee (1976), **Conservation Reserves for Western Australia as Recommended by the EPA, Systems 1, 2, 3 and 5**. EPA, Western Australia.
- Cogger, H. G. (1975), **Reptiles and Amphibians of Australia**, Reed, Sydney.
- Cook, D.L. (1960), 'Some Mammal Remains Found In Caves Near Margaret River', **The Western Australian Naturalist** 7(4).
- (1963), 'The Fossil Vertebrate Fauna of Strongs' Cave, Boranup, Western Australia', **The Western Australian Naturalist** 8(7), 153-162.
- Dames and Moore (1986), **Biotic Survey of Ellensbrook, Prepared for the Water Authority of Western Australia**, Dames and Moore, Western Australia.

Davey, A. et al. (1978), **Yallingup Cave Park A Management Plan**, Australian Speleological Federation.

Davies, S.M. (1983), Identification and Control Proposals for Coastal Erosion in the Leeuwin-Naturaliste National Park A Report to the National Parks Authority of Western Australia, Unpublished Report.

Department of Conservation and Environment (1978), 'Caves in Western Australia', **D.C.E. Bulletin** No. 51.

Department of Conservation and Land Management (1986a), **South Coast Region Dieback Protection Plan 1986-1988**, CALM, W.A.

- (1986b), Workshop Proceedings for the Leeuwin-Naturaliste National Park, Margaret River, Unpublished Report, (Supplementary Paper No 2), W.A.

(1986c), A Summary of Public Submissions Received to the Leeuwin-Naturaliste National Park Draft Management Plan, Unpublished Report. (Supplementary Paper No. 3).

Dexter, B.D. (1976), **Fire Protection and Management Policy for Victoria's National Parks**, National Parks Service, Victoria.

Dortch, C. (1984), **Devils' Lair, A Study in Prehistory**, W.A. Museum, Western Australia.

Dortch, C.E. and Merrilees, D. (1971), 'A Salvage Excavation Of Devils' Lair, Western Australia', **Journal of the Royal Society of Western Australia** 54(4), 103-112.

Dortch, C.E. and Merrilees, D. (1973), 'Human Occupation of Devil's Lair, W.A., During the Pleistocene', **Archaeology and Physical Anthropology in Oceania** 8(2), 89-115.

Douglas, A.M. (1977), 'Some Inimical Effects of the Domestic Bee on the Native Fauna and Flora', **The Western Australian Naturalist** 14(1), 1-2.

Eagles, P.F.J. (1984), **The Planning and Management of Environmentally Sensitive Areas**, Themes in Resource Management, Longman, London.

Fall, V.G. (no date), Giants in the South A History of W.A's Land of the Leeuwin, Typescript made by the University of W.A. Feral Pig Committee (1985), **Position Paper on Feral Pigs in the Southwest of Western Australia**, Agricultural Protection Board, Western Australia.

Ford, J. (1985), 'Summary of Aboriginal Use of Fire and Current Impact of Fire on Major Vegetation Assemblages', in J. Ford (Eds) **Fire Ecology and Management in Western Australian Ecosystems**, Proceedings of May 1985 Symposium, WAIT Environmental Studies Group Report No. 14.

Forster, P.R. (1973), **Planning for Man and Nature In National Parks Reconciling Perpetuation and Use**, IUCN Publication New Series, No. 26, International Union for Conservation of Natural and Nature Resources, Morges, Switzerland.

Fox, B.J. and McKay, G.M. (1981), 'Small Mammal Responses to Pyric Successional Changes in Eucalypt Forest', **Australian Journal of Ecology** 6, 29-41.

George, A.S. (1984), 'Seven New Orchids from W.A.', **Nuytsia** 5(1), 53-62.

George, R.W. (1962), 'The Burrowing Shore Crab of Southern Australia', **Australian Natural History** 14(3), 71-74.

Glauert, L. (1910), 'The Mammoth Cave', **Records of the Western Australian Museum** VI(1), 11-38 and 39-45.

(1910), 'The Mammoth Cave', **Records of the Western Australian Museum and Art Gallery** 1(3), 244-253.

Hallam, S. J. (1975), **Fire and Hearth A Study of Aboriginal Usage and European Usurpation In SouthWestern Australia**, Australian Aboriginal Studies No. 58, Australian Institute of Aboriginal Studies, Canberra.

(1981), 'The First Western Australians', in C.T. Stannage, **A New History of Western Australia**, University of Western Australia Press, Perth.

(1984), Evidence to the Land Rights Enquiry, Unpublished Report.

Hames Sharley Australia (1986), **Tourism Development Plan- South West Region**, Western Australian Tourism Commission, Perth, Western Australia.

Hawkeswood, T.J. (1984), 'Nine New Species of Calothamnus (Labill.) (Myrtaceae: Leptospermoidiae) from Western Australia', **Nuytsia** 5(1), 123-153.

Hendee, J.C., Stankey, G.J. and Lucas, R.C. (1978), **Wilderness Management**, Miscellaneous Publication No. 1365, U.S Department of Agriculture Forest Service.

Heppingstone, D. (1964), 'The Story of Alfred and Ellen Bussell. Pioneers of the Margaret River', **The Early Days RWAHS Journal and Proceedings** 6(3), 33-45.

Hesp, P.A. (1982), A Geomorphological Study of the Leeuwin-Naturaliste Coastline - An Assessment of Stability and Potential Development Sites, Unpublished Report.

Hickey, M.W. (1981), Weeds in National Parks and Their Control, BApplied Sci. Thesis, Queensland Agricultural College.

Howard, M.C. (1979), 'Aboriginal Society in South-Western Australia', in R.M. Berndt, and C.H. Berndt, **Aboriginies of the West- Their Past and Their Present**, University of Western Australia Press.

Jennings, J.N. (1971), **Karst** ANU Press, Canberra.

Keating, C. and Trudgen, M. (1986), A Flora and Vegetation Survey of the Coastal Strip from Forrest Beach-Cape Naturaliste-Woodlands, Unpublished Report.

King, D. (1982), 'How Toxic 1080 selects its Targets', **Australia Natural History** 20(10), 329-332.

King, D.R., Oliver, A.J. and Mead, R.J. (1981), 'Bettongia and Fluoroacetate: A Role for 1080 in Fauna Management', **Australian Wildlife Research** 8(3), 529-536.

Kuss, F.R. and Morgan, J.M. (1986), 'A First Alternative for Estimating the Physical Carrying Capacities of Natural Areas for Recreation,' **Environmental Management** 10(2), 255-262.

Lee, R.G. (1975), **The Management of Human Components of the Yosemite National Park Ecosystem**, Yosemite Institute, California.

Leeuwin-Naturaliste Working Group (1982), Report to the Environmental Protection Authority, Unpublished Report.

Lowry, D.C. (1967), **Explanatory Notes on the Busselton and Augusta Geological Sheets**, 1:250,000 Geological Survey Western Australia.



Madin, R.W. and Smith, T.F. (1985), **Recommendations for the Control of Declared Plants in Western Australia**, Agriculture Protection Board, Western Australia.

Marchant, N.G. and Keighery, G.J. (1979), **Poorly Collected and Presumably Rare Vascular Plants-of Western Australia**, Kings Park Research Notes No. 5, King Parks Board, Western Australia.

Marchant, L.R. (no date), The French Origin of Resources, Surveying and Mapping in Australia; A Synopsis, Unpublished Report.

Matthews, E. (1982), The Introduced Honeybee in Conservation Parks in South Australia, Unpublished Report.

Merrilees, D. (1969), 'A Newly Discovered Bonebearing Deposit in Labyrinth Cave, near Augusta, Western Australia', **The Western Australian Naturalist** 11 (4), 86-87.

Merrilees, D., et. al. (1973), 'Aboriginal Man in South-West Australia', **Journal of the Royal Society of Western Australia** 56 (pts 1 + 2), 44-55.

Morse, K. (1984), 'First Record of Painted Aboriginal Rock Art in a South-Western Australian Limestone Cave', **Records of the Western Australian Museum** 11 (2), 197-199.

Muir, B.G. (no date), A Proposal to Establish Quarantine Areas for the Control of Dieback Disease (*Phytophthora cinnamomi*) in National Parks, Unpublished Report.

(1983b), Weeds in National Parks of Western Australia in Preworkshop Papers to the Workshop on Management of Weeds of Recreation Areas, Particularly Bushland and National Parks, Adelaide, Unpublished Report.

National Parks Authority (1978), Leeuwin-Naturaliste National Park, Working Plan 1978-1983, Draft, Western Australia, Unpublished Report.

Niven, B.S. (1983), **The Precise Environment of Some Well -known Animals XXV, The Common Honeybee (*Apis mellifera*)**, School of Australian Environmental Studies, Griffith University.

Patrick, S.J. and Hopper, S.D. (1982), **A Guide to the Gazetted Rare Flora of Western Australia: Supplement 1**, Report No. 54, Department of Fisheries and Wildlife, Western Australia

Pyke, G. and Balzer, L. (1985), **The Effects of the Introduced Honeybee on Australian Native Bees**, Occasional Paper No. 7, Parks and Wildlife Service.

Riek, E.F. (1967), 'The Freshwater Crayfish of Western Australia (Decapoda: Parastacidea), **Australian Journal of Zoology** 15,103-121

Robinson, A. (1960), 'The Importance of the Marri as a Food Source to South-west Australian Birds', **The Western Australian Naturalist** 7(5), 109-115.

Rye, B.L. (1982), **Geographically Restricted Plants of Southern Western Australia**, Report No. 49, Department of Fisheries and Wildlife, Western Australia.

Saunders, D.A. (1979), 'The Availability of Tree Hollows for Use as Nest Sites by Whitetailed Black Cockatoo's', **Australian Wildlife Resources** 6,205-216.

Scheltema, M. (1981), To Bee or Not to Bee: Honeybee Utilization of National Parks in Western Australia, Population and World Resources Project, Murdoch University, Unpublished Report.

Serventy, D.L. and Whittell, H.M. (1976), **Birds of Western Australia**, University of Western Australia Press, Perth.

Serventy, V.N. (no date), 'The Nesting of the Redtailed Tropic Bird near Cape Naturaliste', **The Western Australian Naturalist** 9, 171.

Shelby, B. and Nielsen, J.M. (1975), **Use levels and user satisfaction in the Grand Canyon**, Paper presented to the annual meeting of the Rural Sociological Society, San Francisco.

Smith, F.G. (1973), **Vegetation Map of Busselton and Augusta, Latitude 30 30', Longitude 114 00' to 115 31', Scale 1:250,000**, Notes and Accompanying Text, Department of Agriculture, Western Australia.

Smith, G.T. and Forrester R.I. (1980), 'The Status of the Noisy Scrub-bird, *Atrichornis clamosus*', **Biological Conservation** 19,239-254.

Smith, G.T. and Robinson, F.N. (1976), 'The Noisy Scrub-bird: An Interim Report', **Emu** 76,37-42.

Sneeuwjagt, R.J. and Peet, G.B. (1985), **Forest Fire Behaviour Tables for Western Australia**, Department of Conservation and Land Management, Western Australia.

Solem, A., Girardi, E., Slack-Smith, S. and Kendrick, G.W. (1982), '*Austroassiminea lethra*, gen. nov., sp. nov., A Rare and Endangered Prosobranch Snail from South-western Australia', **Journal of the Royal Society of Western Australia** 65(4), 119-129.

Specht, R.L., Roe, E.M. and Boughton, V.H. (Eds), (1974), '**Conservation of Major Plant Communities in Australia and Papua New Guinea**, Australian Journal of Botany Supp. Series No. 7, C.S.I.R.O., Melbourne.

Springett, J. (1975), An Overview, Resources Study of the Leeuwin Naturaliste Ridge, Unpublished Report.

Strahan, R. (Eds), (1983), **The Complete Book of Australian Mammals**, The Australian Museum, Angus & Robertson, Melbourne.

Tindale, N.B. (1975), **The Aboriginal Tribes of Australia**, Australian National University Press, Canberra.

Underwood, R.J. and Christensen, P.E.S. (1981), 'Forest Fire Management in Western Australia', **Special Focus** (1), Forests Department, Western Australia.

Valentine, P.S. and Enright, N.J. (1975), 'The Cape Naturaliste Area, Western Australia, An Environmental Resource Evaluation', **Geowest** No. 6.

Webb, R. (1982), Development and Management Plan for Giants and Golgotha Caves, Unpublished Report.

Willard, B.E. and Marr, J.W. (1970), 'Effects of human activities on alpine tundra ecosystem in Rocky Mountain National Park, Colorado', **Biol. Cons.** 2(4), 257-265.

Winfield, C. (1986), 'Maurice Coleman Davies: Timber Tycoon', **Landscape** 2(1), 10-15.

## **Acts**

Aboriginal Heritage Act (1972-1980)

Agricultural and Related Resources Protection Act (1976)

Bush Fires Act (1954)

Conservation and Land Management Act (1984)

Wildlife Conservation Act (1950)

## **APPENDIX 1. Reserves proposed to be vested in the NPNCA and amalgamated into the Leeuwin-Naturaliste National Park.**

NOTE: All recommendations will involve consultation with Department of Land Administration and other relevant authorities.

<b>Reserve</b>	<b>Current purpose</b>	<b>Current Vesting</b>	<b>Recommendations</b>
A21751*	Recreation and Camping	Shire of Busselton	Incorporate sections north-west of 26857 in A15633.
C9041	Water and Pipe Track	(Annual lease to Commonwealth)	Cancel and amalgamate with A15633 and A13404.
C24622	Public Recreation Grounds	Shire of Busselton	Incorporate portions west of Yallingup Beach Road in A8427
Loc. 1410	No Purpose	Unvested	To be amalgamated into A1 0922.
Loc. 1409	No Purpose	Unvested	That portion north of the western extension of Loc 381 to be incorporated into A8427.
Gracetown Townsite			Negotiate with local authority a suitable Townsite boundary incorporating the alienated land within the townsite
Ellen Brook South of Loc.673	Vacant Crown Land	Unvested	Incorporate into A8430.
C13702	Gravel	Unvested	Cancel and incorporate into A8430.
A8431	Protection and Preservation of Caves and Flora and Health and Pleasure Resort	Unvested	North of Margaret River- Agreement with the Augusta - Margaret River Shire for foreshore areas to come under their control. Remainder to be vested in the NPNCA for the purpose of National Park.  South of Margaret River Portion south of Wallcliffe Road and east of a northern extension of the eastern boundary of Prevelly townsite boundary be vested in NPNCA for the purpose of National Park. Remainder to be vested in the Augusta-Margaret River Shire.
C15426*	Limestone	Unvested	Cancel and amalgamate with A8423.
C20724*	Recreation	Unvested	Cancel and amalgamate with A8433.
C21769	Recreation Golf link	Unvested	Cancel and amalgamate with A35035.
A13404	Recreation and Ocean Frontage	Pt NPNCA Pt Shire of Augusta-Margaret River	All portions (excluding the portion currently vested with the Shire) to be permanently vested in the NPNCA.

8249*	Accommodation Caves House	Unvested	Cancel and incorporate into A8434. Vest permanently in the NPNCA.
A8434	Protection and Preservation of Caves and Flora and Health and Pleasure Resort	Temporary vesting with the NPNCA	To be permanently vested in the NPNCA.
Loc. 4172		Augusta- Margaret River Tourist Bureau	Portion east of Caves Road to be excised and incorporated into A8434.
A8436*	As above	Unvested	Cancel and amalgamate into Boranup State Forest, No. 45.
A8437*	As above	W.A. Museum	Cancel and incorporate into A20548. The portion of State Forest to be incorporated into A20548.
26493*	Vacant Crown Land	Unvested	South western portion to be vested in the NPNCA. Agreement required with the Minister for Mines.
Timber 30826. Reserve 176/25	Timber Reserve	L. F. C.	Cancel and amalgamate with Reserve
C1393*	Access to Water	Minister for Water Resources	Cancel and incorporate into A21451.
Loc. 4173		Augusta-Margaret River Tourist Bureau	Negotiate joint vesting with Shire of Augusta-Margaret River and NPNCA or Executive Director, CALM.
Loc. 4174		Augusta-Margaret River Tourist Bureau	Boundary to be rationalised in consultation with the Shire of Augusta- Margaret River.
C19020*	Recreation	Shire of Augusta- Margaret River	Portion containing Golf Course to be excised. The remaining portion to be vested in the NPNCA. Negotiate with Shire of Augusta- Margaret River.
Greenhill*	Vacant Crown Land	Unvested	To be vested in the NPNCA.
Loc. 6	Water Reserve		Cancel and incorporate into A32376.

\* The EPA (11982) made a series of recommendations which applied to reserves adjacent to the Study Area. The Department of Conservation and Land Management has approached the Lands Department to have these recommendations implemented.

## APPENDIX 2 VIEW AND LANDSCAPE MANAGEMENT

### A.1.1 Optimal View Positions

Points or areas which offer a most favourable perspective to landscapes of distinction are identified as Optimal View Positions.

Selection criteria: (one or more required)

elevation, a point or area rising above the surrounding landscape;

view cone, a position which offers panoramic views (360);

landform, a point or land promontory which offers extensive views to land-sea interface zones;

view focus, points or travel routes which focus views on landscape features due to alignment or vegetation enframing;

scenic quality, a position from which substantial areas of high scenic quality are viewed.

Positions identified are:

Leeuwin Road	Skippy Rock Road
Skippy Rock car park and lookout	Hillview lookout
Bussell Highway (specific sites only)	Cosy Corner (north and south view points)
Caves Road at Cosy Corner Road junction	Hamelin Bay boat launching site
Bussell Highway at Karridale	Lefthanders car park
Grace Road terminus	Trig Road
Boranup Hill	Georgette Road (specific site Cape Freycinet only)
Conto's Springs	Bob's Hollow
Redgate Loop Road	Prevelly townsite and coastal sites
Wallcliffe Road	Wilderness Drive
Caves Road near Burnside	Cape Mentelle Kilcarnup
Joeys Nose	Ellen Brook-Gracetown Road
Cowaramup Road and vista point	Gracetown Settlement
Gracetown tip site	Gallows- Guillotine area
Biljedup Beach Road terminus point	Moses Rock Road and terminus point
Wydap Road terminus view point	Quininup Road
Smiths Beach access road	Cape Clairault Road and terminus
Yallingup townsite	Canal Rocks road, vista point, spring and terminus point
Three Bears access track and carpark	Bunker Bay picnic site
Yallingup Road	Cape Naturaliste lighthouse
Sugarloaf Road and terminus points	West Cape Road and terminus points

### **A.1.2 Visual Focus Points**

Points, areas or features which become a focus of view due to position in the landscape or unusual location, scale or combination of landform, landcover pattern or water are identified as Visual Focus Points.

Points identified are:

Leeuwin lighthouse and peninsula	Waterwheel swamp
Skippy Rock	Green Hill Road canopied drive
Cape Hamelin	Honeycomb Rock
Cosy Corner promontory	Foul Bay
Dune domes at Cosy Corner	Cosy Corner lighthouse
Cemetery at Hamelin Road junction	Lake Davies
Hamelin Island-Cape Hamelin	Boranup Sand Patch
North Point	Karri forests of Boranup Drive
Lake Cave	Karri Patch- Georgette Road
Point Road at Cape Freycinet	Calgardup estuary
Mammoth Cave	Dune formations north of Redgate Road
Black Rock Point	Margaret River gorge and estuary
Cape Mentelle ridge	Cowaramup Road and north vista point
Cowaramup Point	Cape Mentelle and unnamed promontaries to the south
Cowaramup Bay	Wilyabrup gorge and estuary
Coastal cliffs and caves south of Moses Rock	Quininup Falls
Canal Rocks and promontory	Cape Clairault
Gull Rock	Yallingup townsite
Cape Naturaliste	Sugarloaf Rock
Cape Naturaliste lighthouse	Bunker Bay

### **A.1.3 View Potential from Existing Travel Routes**

There is a wide range of opportunities to develop and enhance views on existing travel routes. These are listed in Table A1.

**TABLE AI ASSESSMENT: VIEW POTENTIAL FROM EXISTING TRAVEL ROUTES**

<b>Site</b>	<b>Comment</b>	<b>Recommendations</b>
Bunker Bay/Shelly Bay	Unsurpassed feature views of Bunker Bay and its shoreline landscape	Completion of vista point within the day-use area
Cape Naturaliste Lighthouse	Panoramic sea views in relation to an historic lighthouse precinct but without evident coastline features; view potential unrealized.	Consider special scenic interest track focussing on feature views with raised platform and view interpretation.
West Cape Road	Superb cliff-edge views from northern terminus point view platform at southern point.	Definition of view point(s); at northern point needed. Could be integrated into a Cape walking/vista track.
Sugarloaf Road terminus point	Exceptional views- north and south from two points View platform.	Define optimal viewpoint for north terminus point.
Three Bears	Majestic coastal views both north and south.	Definition of optimal view points desirable: coastal vista walk track potential high.
Yallingup Road	Exceptional views from roadway west of Caves House little screening vegetation until reaching townsite, vista points effective. terminus carpark enclosed views.	None
Smith Beach access road	Superb distant view focus on Sugarloaf Rock and coastline, foreground view disturbed by bins, barriers, fences, carparks; terminus point excellent views north.	None
Canal Rocks Road	View potential unrealized; existing vista point- excellent view but poorly located; spring view point low key and magnificent, terminus points- superb rock scramble and carpark view positions	Consider vista loop road or walking track above current roadway, reconsider safety of existing vista point, define optimal view point at carpark
Cape Clairault Road	Nice enclosed landscape along road to feature vista point at carpark terminus.	Maintain enclosed drive and consider removal of some human imposed negative elements barriers, fences, signs.
Wyadup Road	Superb view to Wyadup Valley near junction with Cape Clairault Road, Feature views to Cape Clairault and Canal Rocks from terminus point.	None
Quininup Road	Filtered views to forested landform ridge.	None
Moses Rock Road	Site of immense view potential to coastal cliff landscape.	Consider a series of defined coastal view points- possibly linked by a long walking track.
Biljedup Beach Road terminus	Views to Wilyabrup Gorge and estuary of special interest	Define optimal vista point.



<b>Site</b>	<b>Comment</b>	<b>Recommendations</b>
Cowaramup Road and Gracetown	Majestic views to Cowaramup Bay and Point. North point view potential unfulfilled.	Consider redesign of vista points road to allow greater access to view panorama.
Ellen Brook to Gracetown Road	Superb view potential at points near the tip site and approaching Ellensbrook homestead- both panoramic and enclosed	Consider view enhancement with selected clearing and definition of parking bays.
Caves Road near Burnside	Offers feature views to Mentelle Ridge.	None
Cape Mentelle/Kilcarnup	Settlement area offers superb coastline views north and south.	Definition of optimal vista points desirable.
Wallcliffe Road and Wilderness Drive	Magnificent vistas to Margaret River Gorge and Mentelle Ridge.	Little opportunity to influence this area.
Redgate Road	Little view potential until first defined lookout point. Exceptional view to Calgardup estuary and sand beach south of Black Rock.	Consider vista point within loop road system- possible for pedestrian access only- for focus on the estuary landscape.
Bob's Hollow Road	Magnificent coastal views north and south.	Definition of circulation, parking and primary viewpoints.
Conto's Field	Landform defined views of interesting open land cover patterns and landforms.	Consider view potential when developing site plans for overnight/day-use facilities.
Point Road-Conto Road	Loop offers inland and sea views of exceptional note.	Definition of principle vista points and construction of parking bays
Georgette Road	Views east of karri forest exceptional.	Consider vista point with turnout parking bay.
Boranup Hill Lookout	Panoramic view	Definition of circulation and parking view enhancement.
Karri forest-Boranup Drive	Offers views of enclosed magnificence	Little change
Trig Road	Views to Boranup Sand Patch	Discourage further sand removal.
Hamelin Bay Caravan Park	Exceptional views to extensive sand beach to the north.	Enhance view to Lake Davies by road realignment as part of area redevelopment
Caves Road near Cosy Corner	Feature views to dune domes.	Maintain views from Caves Road By selective clearing of roadside
Hill View Lookout	Panoramic vista point with observation platform.	Define parking and circulation pattern at summit point; selective vegetation removal required to maintain view
Green Hill Road	Canopied landscape drive of exceptional beauty and special interest.	Maintain canopied landscape.

<b>Site</b>	<b>Comment</b>	<b>Recommendations</b>
Hill View Road	Enclosed drive with Hill View Lookout as terminus feature point.	Maintain as enclosed landscape; consider scenic loop walk or drive to Green Hill area.
Leeuwin Ridge	Offers exceptional panoramic view potential.	Consider access road, parking and vista point construction
Skippy Rock Road	View potential high, but unfulfilled.	Additional view points constructed with roadside turnouts, selective roadside clearing to enhance views
Leeuwin Road	Views exceptional however powerline between viewer and sea is a serious negative intrusion	Powerline underground or moved across the road.

## A.1.4 Visual Alterations

Alterations to naturally established landscapes can have a positive or negative affect on scenic quality. Undesirable impacts can usually be avoided or minimized if alterations are carefully designed to reflect natural characteristics of the surrounding landscape. Alterations within or immediately adjacent to the Park which have resulted from past management decisions and do not attain the desired visual quality standards are listed with recommendations for rehabilitation.

**Leeuwin Road powerline;** view disruption, alien vertical element.

*Recommendation:* encourage placement of line underground.

**Cape Leeuwin toilet block;** undesirable visual focus due to siting and colour dominance.

*Recommendation:* remove as part of Cape redevelopment plan.

Skippy Rock Road; foreground disturbance due to poor alignment, drainage, slash removal and construction techniques.

*Recommendation:* realign portions of the road, define drainage patterns, remove slash and sensitively groom verges.

**Cosy Corner 4WD damage;** soil disturbance and road scars compete with natural elements for visual dominance.

*Recommendation:* reduce colour contrast by surface grooming and re-establishment of vegetation; control vehicles.

**Hamelin Bay powerline;** line and clearing impose linear scar on textural dominant landscape

*Recommendation:* encourage screening vegetation at junction point with road, undulation of clearing edge and maximum height of vegetation within the clearing corridor.

**Hamelin Bay toilet block;** undesirable visual focus due to siting, materials, form and colour.

*Recommendation:* remove as part of area redevelopment plan.

**Boranup sand quarry;** form and colour alteration to natural landscape elements as viewed from Bussell Highway.

*Recommendation:* closure of sand extraction operation (preferred) or encouragement of development and/or rehabilitation plans to ensure minimum impact extraction.

**Prevelly;** alien form and line dominance created by structures, roads and utilities.

*Recommendation:* encourage a townscape study to assess both positive and negative visual elements and recommend visual impact reduction techniques and standards.

**Margaret River erosion scar;** severe erosion zone resulting from 4WD and pedestrian activity visible from Wallcliffe Road terminus point.

*Recommendation:* restrict all pedestrian and vehicular traffic; revegetate and groom surface.

**Cape Mentelle-Kilcarnup;** form and colour contrast between shacks, caravans, roads and the natural environment, severe dune disturbance.

*Recommendation:* site development plan to accommodate desired land uses, site rehabilitation and planting.

**Ellensbrook beach erosion;** severe 4WD damage alien to integrity of landscape.

*Recommendation:* close to all vehicles, define pedestrian areas, rehabilitate to establish natural vegetation patterns.

**Gracetown;** alien form, line and colour contrasting severely with naturally established environment.

*Recommendation:* as with Cape Mentelle.

**Gracetown tip;** visual intrusion upon a prominent visual focus point, a depreciative land use.

*Recommendation:* encourage removal of rubbish, groom disturbed landform to original surface configuration, rehabilitate.

**Cowaramup beach development;** visual and functional problems - signs, bins, beach shelter, toilet parking bays detract from scenic quality of the area.

*Recommendation:* encourage site redevelopment plan.

**Moses Rock Road (south):** 4WD damage dominant with severe colour and form contrast.

*Recommendation:* close to all vehicles, and rehabilitate damaged areas.

**Injidup Springs Road;** linear road scar alien to forms and colours common to the region; impact severe.

*Recommendation:* closure and rehabilitation or realignment to complement natural landforms and land cover patterns.

**Canal Rocks -Caravan Park Road;** alien straight line and colour contrast visible from Yallingup and distant points north.

*Recommendation:* reduction of line dominance by modification of edge clearing.

**Smiths Beach car park;** disturbed focus point to northbound traffic on Caravan Park Road.

*Recommendation:* site plan and redevelopment to recognise visual importance of focal point facilities.

**Yallingup Road;** excessive roadside clearing and rubble fill slopes (one dropping to the beach) impose severe line and colour dominance upon the natural environment.

*Recommendation:* encourage a visual assessment of this sensitive travel route to fully realise visual potential yet, alleviate negative impacts as viewed from foreground as well as background (Canal Rocks area) viewpoints.

**Yallingup town;** some alien form and line contrast due to form and colour of structures and line of roads and utilities.

*Recommendation:* encourage a townscape study.

#### **NON-SITE SPECIFIC ALTERATIONS:**

**Private residence;** scale, form, colours, materials and positions in the landscape which don't effectively borrow/blend with natural characteristics can impose negative impacts upon a viewshed.

*General Recommendations:* encourage private landholders to recognize the importance of visual resource management by sensitive siting of facilities, selection of site compatible materials/ colours and careful planning and siting of utilities and roads.

**Terminus car parking** areas; large free-for-all cul-de-sac parking roadway combinations can severely impact coastal landscapes and seldom function efficiently.

*Recommendation:* redevelopment plans for all terminus parking areas should be prepared to assess site efficiency and visual impacts and consider modifications.

**Coastal tracks;** line and colour contrasts impose severe visual impacts along many coastal landscapes; parking bays and beach access tracks often contrast sharply with natural landform and landcover patterns.

*Recommendation:* suggest closure of unneeded or undesirable tracks, rehabilitation and planting; establish definition and realignment of required tracks and parking bays.

## **A.1.5 Landscape Management Implications**

### **Introduction**

Changes to landscapes occur continually. Natural changes are generally subtle and harmonious and complement perceived scenic qualities of the land. Human-imposed changes to landscape, however, have a greater capacity to subordinate natural elements and appear discordant and abruptly alien. Whether changes are perceived to be positive or negative depends on numerous variable factors including viewer position, view duration, view distance, landform, soils, aspect and type of alteration—road, building or vegetation clearing. The ability of landscapes to absorb change without loss of scenic value also varies significantly depending on slope, soils and vegetation cover.

Therefore, management of landscape and alterations to it are largely dependent upon specific on site analysis, project impact evaluation, site development planning and resource sensitive construction techniques.

### **HIGH SCENIC QUALITY ZONES**

Areas of greatest visual concern and sensitivity to alterations;

A primary resource value;

Changes should borrow totally from the naturally established environment and be invident to the casual observer.

### **Guidelines**

- Alterations to the naturally established landscape character should be subtle, remaining subordinate to natural elements by borrowing extensively from form, line, colour, texture and scale found commonly in the surrounding landscape.
- Alterations should achieve a visually invident condition within one year of project completion resulting in little more than natural change.
- Site specific visual resource factors should be carefully identified and evaluated prior to any management activities.

- A site development plan should be completed and approved by the Regional Manager or his representative prior to implementation of any development or rehabilitation projects.
- Facilities and activities which utilise and yet disturb little of the natural environment should be encouraged. Examples: walking tracks, small picnic sites.
- Landuses and developments which do not require particularly scenic environments should be excluded. Examples: quarries, tips, large car parks.
- Road design and construction should remain subordinate to landscape elements by utilising minimum design standards, limited cuts and fills, minimum clearing width, undulating edges, sensitive alignment and immediate revegetation of disturbed areas.
- Interpretive and explanatory signing should be utilised before and during operations which alter landscape character.
- Where structures are required they should be sympathetic in design, materials and colour to complement surrounding landscape elements and be carefully sited away from focal points, out of viewer sight lines and where screening vegetation or landform can be utilised.
- Roads and walking tracks should focus views onto distinctive features within the zone by selecting siting and alignment.
- Essential firebreaks should follow natural landform, vegetation or landuse patterns /breaks.
- Protection burning, if required, should be done prior to periods of vegetation growth and using impact minimising prescriptions.
- Previously disturbed areas within zones of High Scenic Quality should be given the highest priority for rehabilitation until the desired standard of scenic quality is attained.
- Where environmental or visually destabilising facilities or activities are essential; the degree of resource value lost should be recognised, controlled by management and carefully monitored.

### **MODERATE SCENIC QUALITY ZONES**

Areas of moderate visual concern and sensitivity to alterations;

A major resource value;

Changes should borrow significantly from natural elements but may be apparent to the observer.

#### **Guidelines**

- Alterations to the naturally established landscape character should borrow form, line, colour, texture and scale from natural elements and may result in an apparent but not dominant impact.
- A site development plan should be completed and approved by District Manager, or his representative, prior to implementation of any development or rehabilitation works.

### **LOW SCENIC QUALITY ZONES**

Areas of least visual concern and sensitivity to alterations;

A secondary resource value;

Changes should consider natural elements but may be dominant to the observer.

## **Guidelines**

- Essential but visually depreciative facilities not requiring areas of scenic amenity should be accommodated in this zone first where possible (eg. rubbish tips, quarries).
- Enhancement of scenic quality through rehabilitation works should be considered to upgrade the area to a higher amenity standard.
- Views to disturbed landscapes may require landform or vegetation screening.

## **APPENDIX 3 OPTIONS FOR FUNDING**

The following is a brief summary of options for sources of funds for implementation of this plan.

a) CALM budget- this is allocated to the Department through Treasury funds, and is based on Departmental work programmes. At the time of writing the plan the Departmental budget is in a "no growth" situation. Funding for all proposed projects in the Study Area would require an internal reallocation of funds.

The State Government recently made an allocation funding capital works in National Parks. Some of this will directly fund projects proposed in this plan.

The Department is instigating a policy of charging fees within the National Park, which accords with recommendations of this plan. The development of publications such as field guides, posters and park information for sale to the public is another source of funds for National Park management.

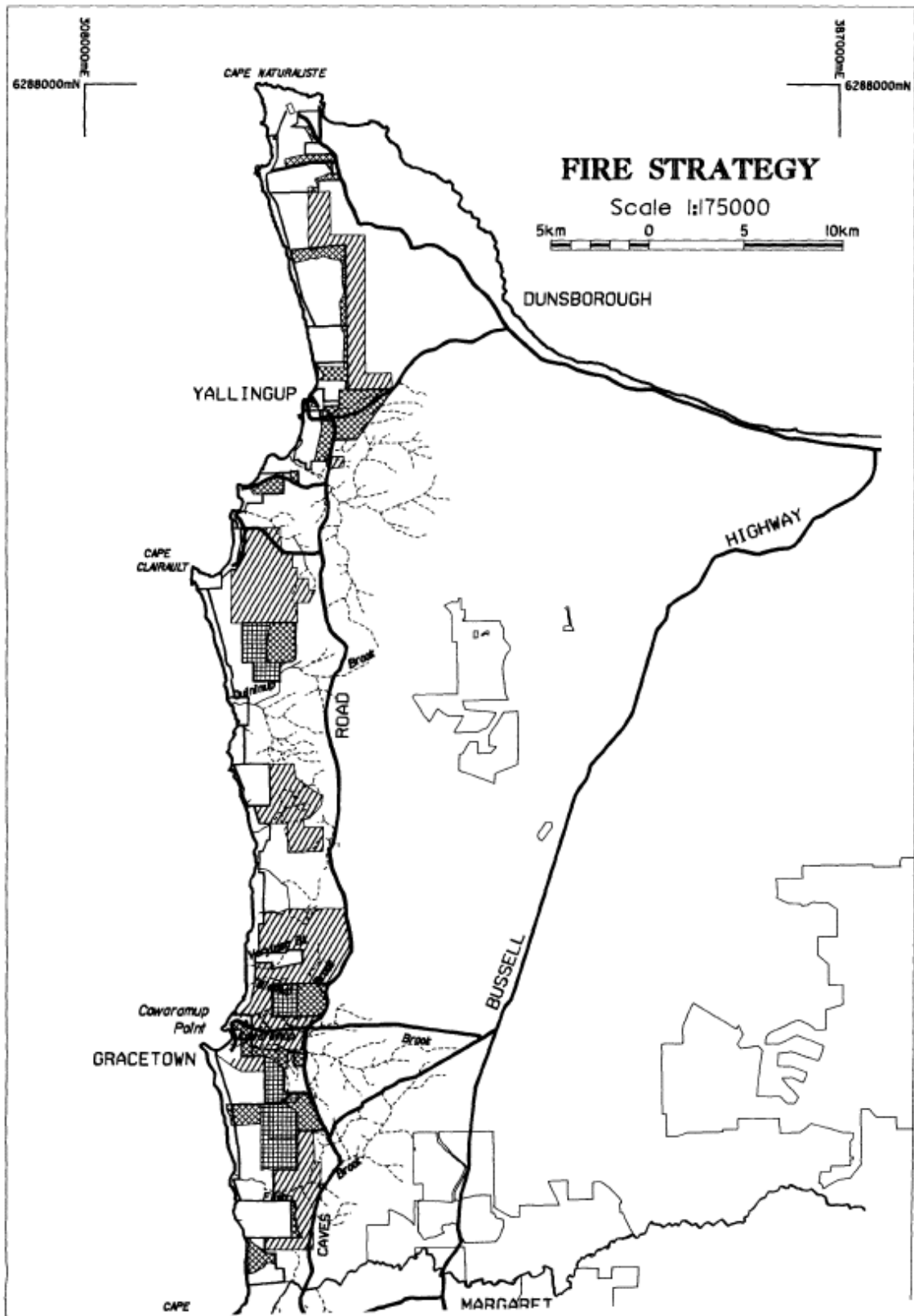
b) Commercial involvement:

(i) Sponsorship- there may be opportunities for commercial sponsorship of facets of park development. This could include recreation sites and walk trails.

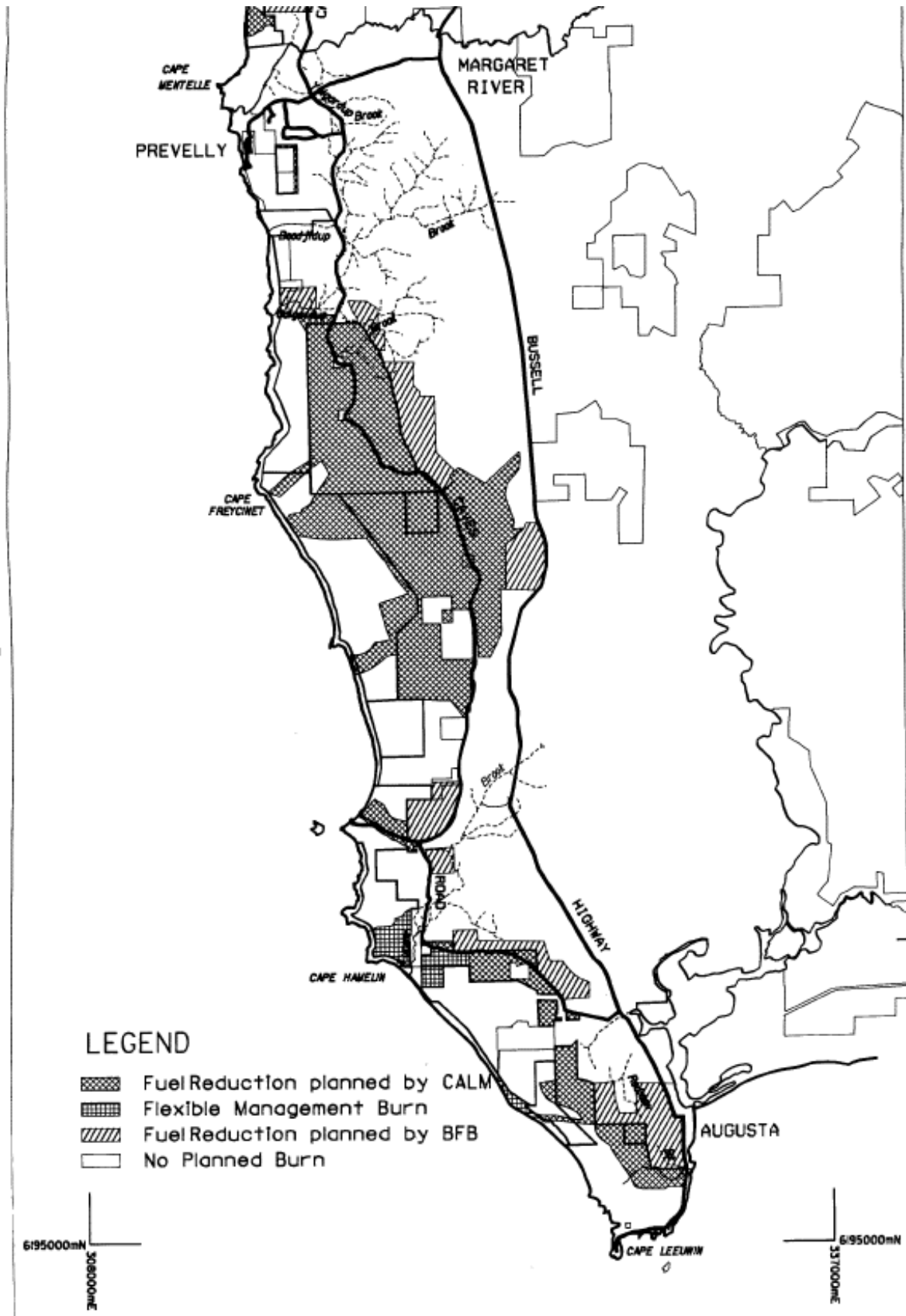
(ii) Leasing- the development of camping facilities within the Study Area could be done on a lease basis whereby one, or several operators are given leases based on joint development and conditional on CALM's requirements for site design, construction and management.

(iii) Permits- commercial operators within the National Park will be required to pay a permit fee for operations such as tours and adventure groups.

c) Community involvement- the plan recommends that an advisory committee should be established. Whilst this group acts in an advisory capacity to the Department, there are also other groups and individuals who have participated in the planning and management of the park. This has already occurred through some projects and site developments, and it is hoped that it will continue. Although not directly related to funding, it does provide CALM with a valued avenue of assistance.







PRODUCED BY DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT GEOGRAPHIC INFORMATION GROUP AUSTRALIAN MAP GRID COORDINATES UTM ZONE

