

**EAGLES CLAW NATURE RESERVE
PLAN OF MANAGEMENT**

July 1992

Acknowledgements: This plan of management was prepared by staff of the Eden District of the Service with assistance from the Field Services Division in Head Office. The plan is based on the work of a number of people, particularly P. Dann of the Phillip Island Penguin Reserve Committee of Management and Kay Margus, Superintendent, Eden District. Advice on earlier drafts of the plan

was provided by Joss Davies and Liz Dovey of the
Service's South-East Region.

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FOREWORD

Eagles Claw Nature Reserve covers an area of about 1 ha on a section of rugged coastline in the locality of Lookout Point at Eden on the far south coast of New South Wales. Eden is about 500 km south of Sydney and about 50 km north of the Victorian border. Establishment of the nature reserve was originally recommended by the Far South Coast Environment Group acting on reports from locals expressing interest in the penguin colony and strong concern for its future.

The plan emphasises that protection of the colony of little penguins and their habitat is the primary function of management for the nature reserve. Approximately 24 pairs are thought to breed in the reserve. With heavy predation during any breeding season the colony could potentially be rendered non-viable. Encouraging more breeding will reduce the likelihood of local extinction in the short term. The provision of artificial burrows is recognised in the plan as a major initiative to be undertaken to assist in the continued viability of the penguin colony.

The plan proposes strong action with regard to the protection of penguin habitat, notably with respect to clearing of vegetation on the boundary of the reserve, control of predators and control of visitor use. The plan also recognises the importance of better information on the biology of penguins as a requirement of effective management.

The colony's survival will depend heavily on the co-operation of neighbours and other authorities with the Service's management of the reserve. The plan emphasises the importance of liaison being maintained with the local community and the promotion of support within that community for the protection of little penguins.

This plan establishes the scheme of operations for Eagles Claw Nature Reserve. In accordance with the provisions of Section 75 of the National Parks and Wildlife Act, 1974, this plan of management is hereby adopted.

TIM MOORE

Minister for
the Environment

TABLE OF CONTENTS

	PAGE NO
FOREWORD	
1. INTRODUCTION.	1
2. MANAGEMENT CONTEXT	2
2.1 Nature Reserves in NSW	2
2.2 Eagles Claw Nature Reserve	2
2.2.1 Location and Description	2
2.2.2 Importance of Eagles Claw Nature Reserve	3
3. OBJECTIVES OF MANAGEMENT	5
4. POLICIES AND FRAMEWORK FOR MANAGEMENT	7
4.1 Natural and Cultural Resources	7
4.1.1 Landforms	7
4.1.2 Plants	8
4.1.3 Animals	9
4.1.4 Cultural Resources	11
4.2 Impacts	11
4.2.1 Fire	11
4.2.2 Erosion, Flooding and Pollution	12
4.3 Research	13
4.4 Recreation	14
4.4.1 Liaison and Interpretation	15
5. PLAN IMPLEMENTATION	17
MAP	Centre Pages

1. INTRODUCTION

The National Parks and Wildlife Act, 1974, requires that a plan of management be prepared for each nature reserve. A plan of management is a legal document that outlines how the area will be managed in the years ahead.

The procedures for the adoption of a plan of management for a nature reserve are specified in the Act:

- * Where a plan of management has been prepared, the Director is required to refer the plan to the National Parks and Wildlife Advisory Council for its consideration and advice.
- * The Director is required to submit the plan to the Minister, together with any comments or suggestions of the Advisory Council.
- * The Minister may adopt the plan without alteration, or with such alterations as he may think fit, or may refer it back to the Director and Council for further consideration.

Once a plan has been adopted by the Minister, no operations may be undertaken within the nature reserve except in accordance with the plan.

Although not a requirement under the Act, the plan of management for Eagles Claw Nature Reserve was published and distributed to neighbours of the reserve and other persons and organisations with an interest in its management, for comment on the proposals it contained for a period of three months early in 1990. All comments received were referred to the Advisory Council, along with the plan, for its consideration and advice. Comments and suggestions of the Advisory Council were, in turn, considered by the Minister when adopting this plan.

The planning process leading to the development of this plan has involved the collection and use of a large amount of information, which for reasons of document size, has not been included in the plan. For additional information or enquiries on any aspect of the plan, contact the Service's Eden District Office at Twofold Arcade, Imlay Street, Eden or by phone on (064) 96 1434.

2. MANAGEMENT CONTEXT

2.1 NATURE RESERVES IN NEW SOUTH WALES

The concept of reserving areas to include nature conservation as a general purpose was introduced into Australia with the establishment of Royal National Park in 1879, some seven years after the world's first national park was created at Yellowstone in the United States of America. Fauna Reserves were first established under the Fauna Protection Act of 1948 which was replaced by the National Parks and Wildlife Act of 1967. By the latter Act, Fauna Reserves were reclassified as Nature Reserves. The 1967 Act has been replaced by the National Parks and Wildlife Act, 1974.

Under the 1974 Act, nature reserves are areas of special scientific interest containing wildlife or natural environments or natural phenomena.

The purposes of nature reserves are defined in the Act as:

- "(a) the care, propagation, preservation and conservation of wildlife;
- (b) the care, preservation and conservation of natural environments and natural phenomena;
- (c) the study of wildlife, natural environments and natural phenomena; and
- (d) the promotion of the appreciation and enjoyment of wildlife, natural environments and natural phenomena".

Nature reserves differ from national parks which include as a major objective the provision of opportunities for outdoor recreation.

2.2 EAGLES CLAW NATURE RESERVE

2.2.1 Location and Description

Eagles Claw Nature Reserve was dedicated by Government Gazette proclamation of 27th March, 1986, to give protection to the only known mainland breeding colony of little penguins *Eudyptula minor* in New South Wales. The dedication revoked Reserve R.97236 for the Preservation of Native Birds, notified 19th April, 1984.

Eagles Claw Nature Reserve covers an area of about 1 ha on a section of rugged coastline in the locality of Lookout Point at Eden on the far south coast of New

South Wales. Eden is about 500 km south of Sydney and about 50 km north of the Victorian border.

The nature reserve encloses a set of four narrow sea-gutters which are surrounded by low cliffs. The location is a locally well known scenic attraction which, when viewed from the north gives an impression of a giant bird's three-taloned foot; from which the name apparently arose.

Establishment of the nature reserve was originally recommended by the Far South Coast Environment Group acting on reports from locals expressing interest in the penguin colony and strong concern for its future. In 1984 a Crown reserve for the protection of native birds was established over part of a former recreation reserve. Shortly thereafter a Trust of local residents was appointed to manage the reserve. Upon the area's dedication as Eagles Claw Nature Reserve the former Trust was abolished.

The reserve abuts a residential subdivision at Eden comprising permanent residences and holiday flats.

Also located nearby is a major wharfage facility for the local fishing fleet and a bulk petroleum and oil storage complex. Eden, a town traditionally associated with industries such as fishing and logging, is rapidly gaining recognition as a significant tourist centre with a mostly summer visitor influx. Most visitors come from Melbourne, Sydney and Canberra with an increasing percentage from the Riverina in NSW and East Gippsland in Victoria.

The major impacts on the nature reserve are disturbance from domestic cats and dogs, pollution arising from the adjacent residential subdivision and to a lesser extent, recreational rock fishing and diving.

2.2.2 Importance of Eagles Claw Nature Reserve

The nature reserve was dedicated to protect the little penguin breeding colony at Eagles Claw.

Other important features include:-

Scenery: the narrow sea-gutters and ridges which form the basis of the feature known as the Eagles Claw.

Natural Features: an outcropping of Eden rhyolite and metamorphosed sandstone contact rock and associated soils.

Natural the processes of coastal erosion;

Processes: destruction of old and formation of new nesting sites resulting from rockfalls; changes in plant communities after coastal erosion, run-off, severe sea-storms, fire and pollution; the long term changes in the little penguin breeding population.

Recreation the suitability of the steep ridges,
which
and separate the sea gutters, for rock
fishing
Tourism: and recreational diving.

3. OBJECTIVES OF MANAGEMENT

The Director shall, by virtue of Section 8(3) of the Act, in the case of every nature reserve:

- "(a) promote such educational activities as he considers necessary in respect thereof;
- (b) arrange for the carrying out of such works as he considers necessary for, or in connection with, the management and maintenance thereof; and
- (c) undertake such scientific research as he considers necessary for, or in connection with, the preservation, protection, management or use thereof."

Under Section 72(4) of the Act, in the preparation of a plan of management for a nature reserve, regard must be had to the following general objectives:-

- * the conservation of wildlife;
- * the preservation of the nature reserve and the protection of its special features;
- * the prohibition of the execution of any works adversely affecting the natural condition or special features of the nature reserve;
- * the preservation of any historic structure or object or relic or Aboriginal place on the nature reserve;
- * the regulation of appropriate use of the nature reserve;
- * the protection of the nature reserve against fire and soil erosion.

In addition to the general objectives the following specific objectives apply to Eagles Claw Nature Reserve:

- * To maintain a viable and secure population of little penguins primarily by protection of penguin habitat;
- * To control introduced plants;
- * To control or remove non-native animals;
- * The control of run-off entering the reserve from neighbouring lands;
- * To minimise the incidence of fire;

- * To confine recreation to that part of the reserve not utilised by penguins;
- * To increase public appreciation of the value of little penguins; and
- * Through liaison with neighbours and public authorities to discourage practices which have an adverse impact on the natural condition of the nature reserve and/or the penguin colony.

4. POLICIES AND FRAMEWORK FOR MANAGEMENT

This section contains the policies and framework for management of Eagles Claw Nature Reserve together with brief, relevant background information. Policies are summarised under the following headings:

- * natural and cultural resources;
- * impacts;
- * research;
- * provision of appropriate recreation opportunities;
- * liaison and interpretation.

The policies established in this plan of management will provide the framework for management consistent with anticipated resources available to the Service and community trends for the next 5 to 10 years. The actions identified have been allocated broad priorities. Other management actions may be developed over the life span of this plan consistent with the policies set out in the plan.

4.1 NATURAL AND CULTURAL RESOURCES

4.1.1 Landforms

The landscape of the reserve is a well known feature of the foreshores of Twofold Bay at Eden. Folding and erosion of Devonian igneous, sedimentary and metamorphosed rocks have created the much-photographed formation. Although small in scale the reserve's landscape forms an important component of Eden's natural resources.

The general feature of middle head, of which Eagles Claw forms part, is recognised as a category III site of geological significance in New South Wales.

The sea gutters known as Bays 1, 2 and 3 (map 1) are an important feature of the nature reserve. These contain boulders and boulder rubble which form the cavities utilised by nesting penguins and which are extremely important to the breeding viability of the colony.

In the sheltered areas at the foot of cliff lines narrow bands of unconsolidated and generally sandy soils occur. Whereas there are many natural cavities under boulders and rubble, penguins have also excavated breeding burrows in these soils.

Policies

- * The natural landform, geological and scenic qualities of the nature reserve will be protected.

- * Within the reserve the number of cavities suitable for use by penguins will be maximised.
- * The location of any artificial burrows will be selected so that, to the maximum extent possible, the natural appearance of the reserve is retained.

4.1.2 Plants

A survey of vegetation in 1983 covered all of the reserve except the area north of Bay 3. Of 114 species recorded only 52 were indigenous. The remainder included pest species as well as very many "garden escapees" from the adjoining residential subdivision.

Families of native plants, both trees and shrubs, include Mimosaceae, Casuarinaceae, Proteaceae, Myrtaceae, Pittosporaceae, Chelonopodiaceae and Labiatae.

Exposure to prevailing south-easterly to north-easterly winds and salt spray, steepness, amount of exposed bedrock and shallow, skeletal soils have, in combination, precluded the establishment of a well developed vegetation. An exception is the dense stands of coastal scrub dominated by *Melaleuca armillaris* above the cliffs on the headland.

All of the vegetation, whether native or introduced, performs important functions including stabilising soils, especially on steep slopes; reducing the impact of wind and rain on the loose topsoil; slowing and scattering surface water run-off; and preventing collapse of burrows.

Vegetation provides shade and directly reduces heat on the rocky slopes utilised by penguins. This is particularly important during the height of the breeding period in summer.

Vegetation also helps to provide protection and cover for penguin nest sites from human visitors during the day and from predators whilst penguins travel to and from their burrows at night.

Many garden plants have been introduced into the reserve by the practice by some neighbours of dumping off-cuts over their back fences. Some plants such as prickly pear *Opuntia stricta*, African box-thorn *Lycium ferocissium* and century plant *Agave americana* are particular problems as their considerable spines prevent the free movement of penguins through their foliage. All three species spread easily. Conversely some other introduced plants, especially some of the scramblers, are of considerable advantage to breeding penguins because of the cover they provide.

Policies

- * All endemic vegetation in the reserve will be protected.
- * Non-native plants which reduce the suitability of the reserve as habitat for little penguins will be removed as a matter of priority.
- * Introduced plants which assist the survival of the little penguin population will not be removed.
- * The removal of any introduced plants will not be undertaken until after improvement by planting with native species.
- * Plants propagated from seeds and cuttings taken from native plants on the reserve will be used to revegetate land which is eroded or otherwise disturbed.

4.1.3 Animals

Very little is known about the fauna of Eagles Claw Nature Reserve. The most prominent species present is the little penguin *Eudyptula minor*.

Little penguins breed in natural rock cavities or excavated burrows and until the chicks have hatched and are old enough to be left in the nest alone (approx. 50 days) one or both of the parents must attend the nest 24 hours a day. After this time both parents leave the nest to hunt during the day in order to satisfy the chicks' need for food. During the moulting period the adult penguins must remain in the nest for up to 15 - 20 days as their plumage is not watertight during this phase. As a result of nest building, egg laying and attendance till hatching, chick raising and moult, the presence of some members of the colony at the nesting site is ensured at any time of the year.

The white-breasted sea eagle *Haliaeetus leucogaster* and probably leopard seals *Hydrurga leptonyx* are the major native predators of little penguins. They prey on penguins in the water near the penguin colony.

The main non-native predators which have been noted in the reserve are dogs (domestic strays), foxes and cats. So far there is no evidence at Eagles Claw to confirm that cats prey on penguins, although this has been recorded at Phillip Island. Both dogs and foxes are the major predators on penguins in the reserve. Both species are capable of digging penguins out of their burrows and foxes also appear to prey on birds travelling between the ocean and their burrows.

Occasionally many penguins are killed in a single attack. Even if only one partner in a breeding pair is killed, the brood will fail. Accordingly colony mortality is compounded beyond killed individuals.

Approximately 24 pairs are thought to breed in the reserve. With heavy predation during any breeding season the colony could potentially be rendered non-viable. Encouraging more breeding will reduce the likelihood of local extinction in the short term.

A number of options for reducing predation pressures on the penguin colony have been investigated including the provision of predator-resistant burrows and cavities, protective fencing and physical removal of predators.

Artificial burrows have been successfully utilised at Phillip Island and in Port Campbell National Park, Victoria to encourage additional breeding within the penguin colony and thus increase the size and viability of the colony. The penguin colony at Eden is a small population and the opportunity exists to encourage further breeding by the provision of artificial burrows.

Provision of predator-resistant burrows and cavities is a logical and achievable management strategy. Although such provision reduces the naturalness of the reserve it also maximises breeding opportunities for little penguins and other native fauna and will assist the long-term viability of the little penguin colony. Any artificial burrow must be adequately drained and ventilated to reduce or eliminate pooling of water in it.

Predation from non-native animals poses the most threat to the penguin rookery. Most non-native predators are domestic animals that live in Eden township. Physical removal of predators can be achieved by seizure or impounding or by humane trapping, in the case of dogs, or by the destruction of foxes and cats. Action may be taken against the owner of any domestic animal allowed to stray onto the reserve.

Predator proofing of the reserve by protective fencing is not a practicable option for the following reasons:

- any fence would have to extend into the sea below tidal limits;
- predators such as foxes, cats and rats which are able to penetrate or circumnavigate a fence, will not be excluded from the colony;
- fencing may restrict the movement of penguins into potential breeding areas beyond the reserve; and

- the nature of the terrain and very harsh salt environment would make the construction of a fence and it's future maintenance prohibitively costly.

It may however be appropriate to install small sections of protective, strategic fencing where it will serve a practical purpose either alone or in conjunction with other measures.

The penguins are most at risk from predators when they are resting in their burrows during the day. Therefore the principal protective strategy will be the provision of secure nesting and shelter sites. No strategy will completely protect the colony, but protection strategies will aim at providing the best option for minimising impact so that the colonies survival is enhanced.

Penguins are also nesting on Lookout Point outside the nature reserve on land managed by Bega Valley Shire Council.

Policies

- * The entire nature reserve will be protected from any disturbance which will detract from its value as a nesting and roosting area for little penguins.
- * Suitable areas may be modified by the strengthening of existing burrows, construction of artificial burrows, placement of prefabricated burrows and construction of strategically located fencing so as to enhance the value of the nature reserve for the conservation of little penguins.
- * Exotic animals will be controlled and where possible removed by seizure, impounding, trapping or destruction.
- * The co-operation of Bega Shire Council will be sought in the protection of little penguins on that part of Lookout Point outside the nature reserve.

4.1.4 Cultural Resources

Whilst no detailed survey has been carried out to locate Aboriginal sites, none are known in the reserve. However several sites have been found in the vicinity. Any sites discovered will be recorded in the Service's sites register.

Policy

- * Given the importance of Eagles Claw Nature Reserve for the protection of the little penguin population and the lack of any known Aboriginal sites, priority will be given to the protection of the reserve's natural values.

4.2 IMPACTS

4.2.1 Fire

Naturally occurring fire does not appear to have affected Eagles Claw Nature Reserve and there is no reasonable basis for introducing fire to the reserve. Similarly the reserve does not pose any fire threat to neighbours. Fire kills native vegetation, increases the possibility of erosion and increases the potential for spread of introduced plants.

Fire could have a disastrous impact on little penguins by removing the plant cover between the sea and their burrows. Any nesting or resting penguins caught under burning vegetation would be killed. Cavities which are under rocks would be further exposed to the heat of the summer sun during the peak of the breeding season by the destruction of vegetation.

Any fire is a threat to Eagles Claw Nature Reserve and is most likely to arise from activities associated with the neighbouring residential subdivision, arson or angler's escaped fires.

Policy

- * Fire will, to the maximum extent possible, be excluded from the nature reserve.

Actions

- * The lighting of fires will be prohibited in the nature reserve.
- * Action will be taken immediately to extinguish any fire detected in the nature reserve.
- * Neighbours and visitors will be encouraged not to deliberately or accidentally introduce fire into the reserve.

4.2.2 Erosion, Flooding and Pollution

Uncontrolled water flow is a significant problem to the breeding penguins. Clearing of cliff top vegetation on private property increases the velocity of run-off into the nature reserve. Storm-water from overflowing gutters in Bramble Street and, to a lesser extent from roofs or dwellings in the adjoining residential

subdivision, is generally concentrated into certain locations which constantly flood penguin burrows lower down. The Bramble Street run-off cascades down a significantly eroded foot-track south of Bay 1.

Highly concentrated run-off may also enter natural rock crevices, thereby lubricating unstable areas and contributing to cliff collapse.

Besides garden rubbish thrown into the reserve, builders working in the adjoining subdivision have often dumped building debris over the cliff. This practice poses a serious hazard to the fauna and to any person who needs to traverse the area. Roof discharge and septic tank overflow may contribute to pollution of the reserve.

Pollution of the sea from deliberate or accidental marine oil or chemical spillage, whereas not affecting the actual land-area of the reserve, will affect those inhabitants of the reserve which swim in the sea or rely on it for food. Although control of sea pollution is beyond the capacity and responsibility of the National Parks and Wildlife Service, the Service has contributed to a marine pollution control plan for Twofold Bay and adjacent tidal waters under the jurisdiction of the Maritime Services Board.

Policies

- * The nature reserve will be protected from pollution originating in residential areas or from the sea.
- * Little penguin burrows will be protected from erosion and flooding by storm run-off.
- * Any weeds which compromise the status of little penguin habitat will be removed.

Actions

- * Neighbouring residents and municipal authorities will be encouraged to retain native cliff-top vegetation on private lands abutting the nature reserve and to divert run-off entering the reserve into locations which are not occupied by penguins. The Service may contribute to the construction and/or cost of these diversions.
- * Those areas in the reserve which are sensitive to storm water run-off will be identified and storm water re-directed to other sections of the reserve or away from the reserve.

- * Action will be taken to divert the run-off from the gutters in Bramble Street.
- * Neighbours will be encouraged to avoid polluting the reserve.
- * Any existing or potential pollution of the nature reserve will be closely monitored and in co-operation with neighbours and municipal authorities, works will be undertaken to protect the reserve from potential pollution events.
- * Immediate action will be taken to clean up any pollution detected within the reserve utilising methods which have least impact on the reserve. The methods chosen will be dependent on the nature of each pollution event.

4.3 RESEARCH

Extensive research has been conducted and is ongoing at little penguin colonies elsewhere (for example at Phillip Island and Gabo Island), but there is little direct information on the Eagles Claw colony. The few known nesting sites at Eagles Claw indicate a small breeding population, approximately 24 breeding pairs in 1987. The population's potentially precarious breeding viability and its susceptibility to dramatic population decline through predation and other interference places the survival of the colony at considerable risk.

Hence all activity relating to little penguins, including research, within Eagles Claw Nature Reserve will aim at maximising the potential for the little penguin population to breed and survive in perpetuity. Large little penguin colonies occur elsewhere in southern Australia. Therefore research which can be conducted elsewhere and which is not directed specifically at the survival of the Eagles Claw little penguin colony will not be permitted. An inventory of research proposals will be maintained and modified as appropriate.

Policy

- * Research on the little penguins at Eagles Claw Nature Reserve will only be permitted if it has the potential to enhance the security of the population.

Action

- * Ongoing research will be conducted to establish the following:

- size of the colony within and beyond the reserve;
- census of breeding and non-breeding penguins;
- causes of population fluctuations;
- viability of the breeding colony;
- degree of intermingling with other populations;
- provision of improved breeding opportunities;
- identification and mitigation of impacts; and
- any other matters which directly affect the penguin colony.

4.4 RECREATION

While no records have been kept of visitor use of the reserve, casual observation indicates that most recreation occurs in summer and is aimed at rock fishing and diving. Access to the rocks is mostly gained from Bramble Street to the area south of Bay 1. Some use is also made of the narrow ridges between the sea-gutters, but heavy use is naturally controlled by access across the very difficult terrain.

Of considerable concern are occasional visits to the penguin colony by well-meaning people who wish to see the penguins. Some of these visitors are known to have poked and prodded with sticks into burrows and may have interfered with nesting penguins. Children have been known to deliberately destroy nesting burrows apparently for fun.

Eagles Claw Nature Reserve is utilised by penguins in their breeding and moulting cycle for virtually the whole year. This involves not only breeding and raising chicks from July to March but also burrow attendance and nest building during the other months. Moulting takes place during January to the end of April. Access will be encouraged to those areas in the southern part of the reserve which are away from nesting sites. During the breeding and moulting season those sections of the reserve used for breeding and moulting by the penguins may be declared closed to all recreational access.

Policies

- * Full protection for penguins is the paramount aim of management at Eagles Claw Nature Reserve and, where other activities conflict with this aim,

protection of nesting sites will receive precedence.

- * Recreational access into Eagles Claw Nature Reserve to view the little penguins will be discouraged.
- * Pedestrian access will be generally limited to that part of the nature reserve situated below Bramble Street, south of Bay 1, away from any identified penguin nesting sites.
- * Short barrier fences and signs may be erected to control pedestrian access and explain the importance of the nature reserve.

Actions

- * The effects of visitor use of the reserve will be monitored and if adverse impacts become apparent public access into sensitive areas may be closed or relocated.
- * The walking track leading from Bramble Street will be re-routed and properly drained.

4.4.1 Liaison and Interpretation

There is a great public demand for wildlife information and for access to wildlife. In the case of the penguin colony at Eagles Claw however, such access to view the little penguins may be harmful because of the small population of the colony, the nature of the terrain and limited size of the nature reserve. Information dealing with little penguins generally and the natural history of the nature reserve and surrounds can be made available in the form of information sheets.

Best protection for the little penguins is achieved by limiting publicity and information specific to the Eagles Claw colony. Also it is recognised that the colony's future survival will depend heavily on the co-operation of neighbours and other management authorities with the Service's management of the reserve.

Policies

- * Information about the little penguins shall only be given to direct enquiries and the nature reserve will not be publicised.
- * Close liaison will be maintained with neighbours and the municipal authorities with regard to the management of the nature reserve.

Action

- * General wildlife and natural history information sheets will be prepared and released for educational purposes.

5. PLAN IMPLEMENTATION

This plan of management is part of a system of management developed by the Service. The system includes the National Parks and Wildlife Act, management policies, established conservation and recreation philosophies and strategic planning at corporate, regional and district levels.

The orderly implementation of this plan of management will be undertaken within the annual programmes of the Service's Eden District. Priorities, determined in the context of district and regional strategic planning, will be subject to the availability of necessary staff and funds and to any special requirements of the Minister or Director.

District programmes are subject to ongoing review within which works and other activities carried out at Eagles Claw Nature Reserve are evaluated in relation to the objectives laid out in this plan.

The environmental impact of all development proposals will continue to be assessed at all stages from planning to implementation and any necessary investigations undertaken in accordance with established environmental assessment procedures.

Under Section 81 of the National Parks and Wildlife Act, 1974, this plan shall be carried out and given effect to by the Director and no operations can be undertaken within Eagles Claw Nature Reserve except in accordance with the plan. However, if after adequate investigation operations not included in the plan are found to be justified, this plan will be amended in accordance with Section 76(6) of the Act.

As a guide to the orderly implementation of this plan of management, relative priorities for identified activities are summarised below:

ACTIVITY	PRIORITY TERM	
Penguin Breeding Opportunities		
Study of the colony's viability, nesting opportunities, protection needs; implement approved research activities; survey for additional breeding sites	High	Ongoing
Investigate designs/materials for artificial burrows	High	Short
Install artificial/prefabricated burrows	High	Moderate

Establish a programme to monitor erosion related to siting of artificial burrows	Medium	Ongoing
Vegetation Management		
Remove dumped vegetation and other waste	Medium	Ongoing
Remove certain non-native plants and replant with endemics	Medium	Moderate
Prepare vegetation map	Medium	Short
Assess any erosion resulting from removal of vegetation	Medium	Ongoing
Re-establish endemic plants at appropriate locations	Medium	Ongoing
Control of Stormwater and Pollution		
Identify areas sensitive to storm water run-off and redirect storm water to other locations	High	Short
Monitor aspects of storm water on vegetation and habitats	High	Ongoing
Investigate and seek control of any outstanding problems caused by storm water run-off	High	Moderate
Identify and seek removal of any sources of pollution	High	Ongoing
Liaison		
Liaise with neighbours and other appropriate authorities to discourage		
- dumping of refuse and garden cuttings		
- diversion of run-off into the reserve		
- introduction of fire	High	Ongoing
Recreation Management		
Erect fences/signs to direct visitors away from breeding sites	High	Short
Discourage recreational access to view penguins; prepare information sheets	Medium	Moderate
Formalise pedestrian access to divert recreational use away from breeding sites	High	Short

Other Management Needs

Remove non-native animals	High	Ongoing
Survey and assess management requirements of other native animals	Low	Moderate

