Management of New Zealand's Outlying Island Reserves

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Abstract

Six of New Zealand's outlying island groups are set apart as nature reserves which are administered by the Department of Lands and Survey with the help of an advisory committee. The role of this committee is outlined, particularly in policy formulation. The paper gives examples of how a range of policies have been applied to management of these islands and/or the background to their formulation. The administrative structure has allowed special emphasis to be placed on the conservation of these protected areas.

INTRODUCTION

Where man has set foot on smaller islands to settle or harvest, others must often follow to heal and restore. This is part of the challenge of nature conservation in managing New Zealand's outlying islands today.

New Zealand territory extends from the Kermadec Islands in the north (at 29 degrees south latitude) and Campbell Islands in the south (at 53 degrees). The equivalent spread of Australian territory would be from Geraldton north of Perth almost to the latitude of Macquarie Island. The outlying islands are the principal reason why New Zealand has an EEZ fourteen times the size of its total land area (see Fig. 1).

In total New Zealand has over 500 offshore islands or island groups ranging from small rock stacks to areas of several thousand hectares. Fig. 2 shows the control of island natural protected areas by total number (of islands and/or groups) and areas. Offshore and outlying islands are separately grouped and compared. There are 137 offshore islands included in Fiordland National Park alone. About half the remainder are reserves in the three Maritime Parks and are controlled by park boards. The park areas are managed by the Department of Lands and Survey along with the island reserves for which they have a direct control and management responsibility. The Wildlife Service of the Department of Internal Affairs is the other main management and controlling body. (All these protected areas came under the jurisdiction of a new Department of Conservation in 1987 along with the Outlying Islands.)

This paper deals primarily with management necessary for the conservation of New Zealand's Outlying Islands (excluding the Chathams). It describes the administrative organisation and gives examples of how some management problems have been resolved.

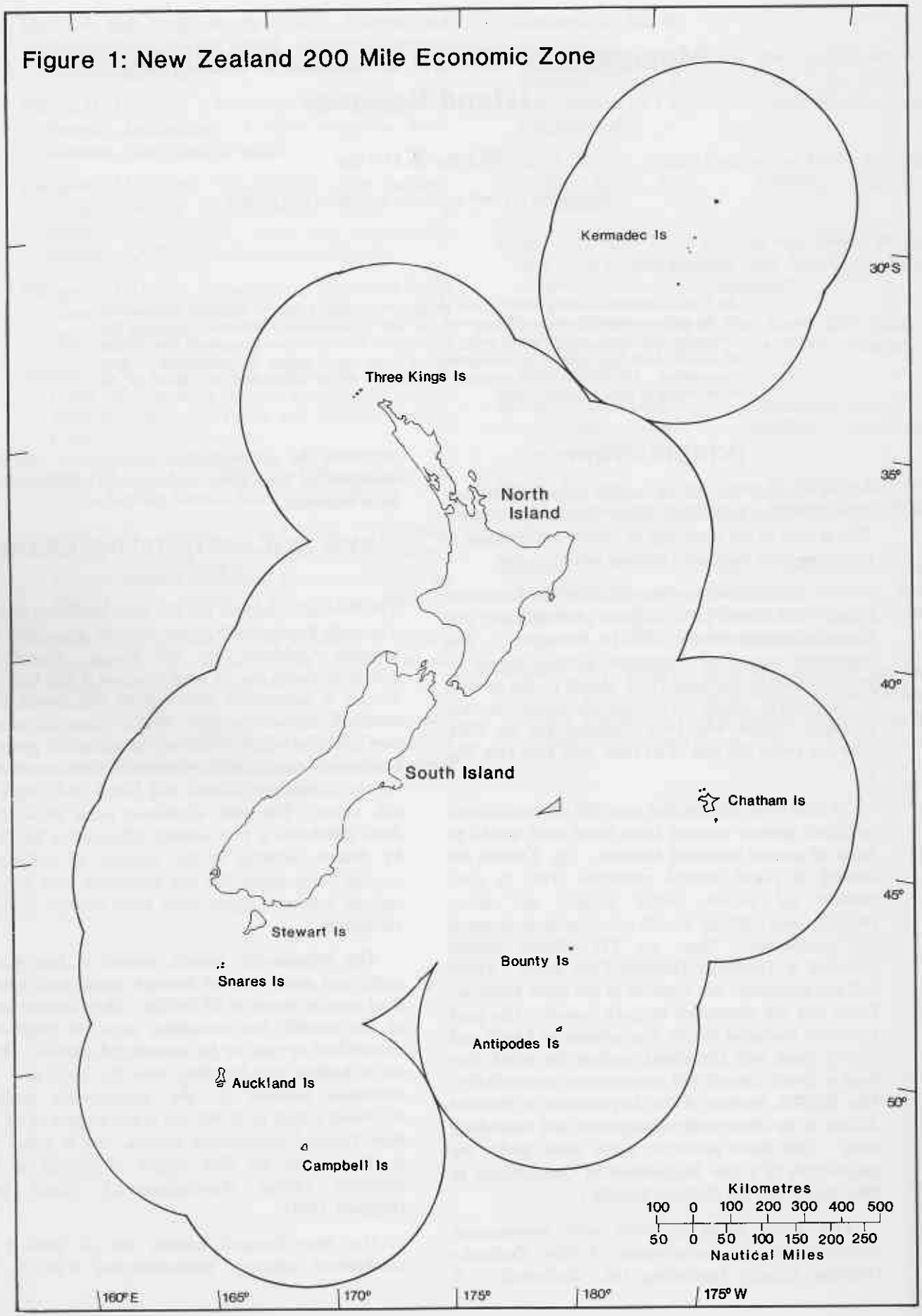
NEW ZEALAND OUTLYING ISLAND RESERVES

The Kermadec Islands are the most northerly of New Zealand's Ecological Regions; they lie about half way between Auckland City and Tonga. Raoul, the principal island, has an area of about 3 000 ha. The climate is subtropical with rainfall distributed fairly evenly throughout the year. Forest covers the greater part of Raoul which is the only island in the group to have more than a purely coastal forest association. All the islands are volcanic and Raoul and Curtis are still active. The most significant point about their flora and fauna is that natural colonisation has been by chance resulting in the number of indigenous species being small; the few endemics have evolved only to a minor degree from their nearest relatives elsewhere.

The Subantarctic Islands consist of five groups south and south east of Stewart Island and have a total area in excess of 85 000 ha. They include some of the world's last remaining areas of vegetation unmodified by man or his introduced animals. They are a habitat and breeding area for birds and sea mammals peculiar to the subantarctic regions. Auckland Island at 45 397 ha, is the largest of all the New Zealand subantarctic islands. As a group the Aucklands are the fifth largest of the 22 in the Southern Ocean (Insulantarctica) (Clark and Dingwall, 1984).

The New Zealand Islands are all classed as uninhabited although meteorological stations are

Figure 1: New Zealand 200 Mile Economic Zone



maintained by the New Zealand Government (Ministry of Transport) on Raoul and Campbell Islands.

All the islands briefly described above are set apart as nature reserves, having been given statutory protection over a period from 1910 to 1961. With the exception of Raoul, these islands have never been held in private fee simple titles. Pastoral leases were offered over the subantarctic islands in the 1800's under their then Crown land status but the only significant grazing took place on Campbell Island over a short period.

Purpose of Nature Reserves

The goal of setting aside nature reserves in New Zealand is to protect and preserve in perpetuity indigenous plants and animals that are "of such rarity, scientific interest or importance or so unique that their protection and preservation are in the public interest."

Statutory management prescriptions require that in nature reserves:

(a) Indigenous plants and animals, ecological associations and the natural environment are preserved as far as possible.

(b) (With prescribed exceptions) exotic plants and animals are as far as possible exterminated.

(c) Any scenic, historic, archaeological, biological or other scientific feature is managed and protected to the extent compatible with the principal purpose.

(d) Their value as soil, water and forest conservation areas are maintained to the extent compatible with the principal purpose.

(e) Entry is prohibited except under the authority of a permit.

"Exotic" is taken as referring to any organism which has established in New Zealand as a result of man's activities. The relevant statutory provisions allow for only indigenous plants and animals to be introduced into a nature reserve. This may be done for the purpose of restoring ecological communities or promoting the survival of species if it is compatible with the principal purpose and conserves the indigenous plants and animals already in the reserve. Thus a species which occurs naturally in an entirely different ecological region of New Zealand is able to be translocated into a nature reserve.

The Outlying Island Reserves Committee

In 1967 the control and administration of the subantarctic islands was shifted to Wellington to allow full advantage to be taken of centralised professional services and expertise in the Department of Lands and Survey and other agencies. A Subantarctic Reserves Committee was set up initially to give scientific advice and later to also coordinate various agency roles. In 1970 the Kermadec Islands were brought into the system under the Committee's jurisdiction and it was renamed the Outlying Island Reserves Committee.

Members of the committee are drawn from the:

Department of Internal Affairs - Wildlife Service, Department of Scientific and Industrial Research

- Botany Division

- Ecology Division

- Oceanographic Institute,

National Museum,

Ministry of Agriculture and Fisheries - Fisheries Research Division,

NZ Forest Service - Environmental Forestry Division

Ministry of Transport, and

Ministry of Defence.

The member of the Department of Lands and Survey, Head Office, staff with management responsibility for these reserves is ex officio Chairman of the Committee. The Department's Senior Scientist and Supervising Ranger are officers of the committee.

Originally the committee had a purely advisory role with no delegated powers and the department maintained the right to disregard any of its recommendations. However, this was seldom done and the committee exerted considerable influence over the managerial and administrative activities associated with these islands. The advisory role evolved to include making recommendations on aspects such as tourist visits, the issue of permits for scientific expeditions, wild animal and rodent quarantine requirements and the effect and desirability of commercial activities.

In 1980 the Government brought in new legislation which reorganised the main QUANGOs associated with the department's administration of national parks and reserves. This meant that in general ex officio government members were no longer

Figure 2

NZ Offshore and outlying island reserves (area and control) (excludes islands where there are significant non protected areas)

Other		Maritime Park Board		Dept Lands & Survey		Wildlife Service		Total	
No	Ha	No	Ha	No	Ha	No	Ha	No	Ha
Offshore Islands									
3	250	73	8 959	172	43 170	32	457	280	52 836
Outlying Island Groups									
-	-	-	-	6	78 306	-	-	6	78 306
								286	131 142

Compiled from Register of Protected Natural Areas in New Zealand (Department of Lands and Survey, 1984).

appointed and greater management responsibility was given to the department's staff. QUANGO members lost broad ranging executive powers but, in a partnership with managers, retained responsibility for policy and management plans in addition to an advisory and priority setting role. The Outlying Islands Reserves Committee was left with the same membership structure, a lesser role in day to day management, but gained increased powers. For example, entry permits are now granted by the department without reference to the committee but in accordance with their general policies. Where there is disagreement between the committee and the department an issue is referred to the National Parks and Reserves Authority.

Surveillance

In starting an active management role for the outlying islands in the 1970's the department's first hurdle was to obtain sea transport. (It's largest vessel is able to travel to the nearest reserve, the Snares, but not further and is fully employed in other duties on the mainland coast.) As funding could not be spared for suitable ship purchase or private charter on the necessary scale an approach was made to the Defence Department and initially rebuffed. However, cooperation was obtained at a Ministerial level and has developed to a stage where the department can rely almost totally on Royal NZ Navy transport when it can fit in with Defence operations. Without this support, management programs such as the ones referred to later in this paper may never have started or been sustained. The willing commitment has largely arisen from the representation of Defence Department on the Committee and full participation by its two members in the committee's business. Also, the Royal New Zealand Airforce (RNZAF) has taken on island surveillance responsibilities as part of its EEZ fisheries patrols.

Policy Formulation

The National Parks and Reserves Authority has an overview role for all protected natural areas covered by legislation which the department administers. The existing general and operational policies of the Outlying Island Reserves Committee and the department are providing the foundation for formulating Authority policy on nature reserve management.

Management plans are prepared for each of the reserves in accordance with statutory processes. They apply the common general policies which give management of the far flung outlying islands their cohesive style.

General and operational policies are drafted by the department and put before the committee for approval in principle or for its advice. They are then circulated for invited comment from outside groups, including other affected government agencies, the Royal Society of NZ, the Royal Forest and Bird Protection Society of NZ and similar bodies. Interest in management of the outlying islands tends to be at the organisational level rather than that of individual members of the public. This is hardly surprising since the reserves are so remote from areas of habitation

and scheduled transport routes. Occasionally, because of the complexity of a problem, issues papers have been released before policy is formulated (eg on quarantine precautions against the introduction of rodents). Because there are no staff involved full time with the outlying islands, and there are so many peripherally involved but interested agencies, the process of policy formulation can be a very slow one, often spread over two or three years for each general or operational policy. Such written statements are therefore embarked on only for topics of some consequence to reserve management.

In the remainder of this paper a range of examples of how these policies have been applied and or the background to their formulation will be covered.

Rodent Quarantine

None of the outlying islands have populations of all four exotic species of rodent found in New Zealand. In two of the groups only mice have established. The Snares, Bounties, and some significant larger islands of the Auckland group are among those entirely free of rodents.

The committee has always had a concern about the risk of rodents being carried to these reserves or their accidental transfer between islands under its jurisdiction. It has played a leading role in promoting public and departmental awareness of the consequences of such invasions. This was instrumental in the foreshores of the outlying islands being added to the reserves in 1975 and in new statutory provisions affecting all New Zealand's island nature reserves coming into effect in 1978. These measures were essentially aimed at controlling the mooring of vessels to the shore. It is now an offence for any person without authority to bring a boat in physical contact with the shore (by rope or otherwise) or with a wharf constructed on or partly on the reserve. While the department is empowered to grant permits giving this authority, the general policy is to prohibit shore mooring. A consequence is that at some islands or some anchorages smaller vessels have to remain under power if they are to obey the law.

In 1981 it was discovered as a result of RNZAF surveillance that rock lobster fishermen were mooring their boats to the shore of the main island of the Snares group. This practice, it was later learnt, had started before the 1977 legislation making it an offence, although the associated landings were illegal even then. It was established that shore mooring was essential to safe harvesting of the fishery as offshore mooring or anchorage was not feasible and no other shelter was available. The department favoured a policy exception for existing use and the committee was initially opposed. The Authority ruled in favour of the department after careful deliberation. Originally this endorsement was given for one year.

Reasons for the Department's Stance

(a) The cooperation of the fishermen is essential for protection of the reserve since fishing could not be prohibited;

(b) It is a principle of law that anchorage should not be restricted if it is necessary to avoid loss or damage of property or loss of human life or injury;

(c) The grant of conditional shore mooring permits would result in less risk of rodent introduction than prohibition;

(d) While by refusing to grant permits the department could absolve itself from blame this was less important than a mechanism for imposing rodent quarantine precautions on fishing boats.

Reasons for the Committee's Stance

(a) The degree of risk is unacceptable;

(b) The Snares fishing ground has little significance in the overall Southern Rock Lobster Fishery;

(c) The onus is on the fishermen to comply with the policy of mooring prohibition, not on the department to make an exception.

The Fishermen's Stance

(a) The risk of rats being carried on their boats is negligible;

(b) They are prepared to take voluntary precautions;

(c) Catches are declining in the wider fishery and access to the Snares is necessary to sustain the industry, especially for Stewart Island where fishing dominates the economy of the small community.

(d) The Snares has a sustainable fishery and there are no valid fisheries reason for closing it.

The last factor is a significant one as the legislation dealing with fisheries does not allow for the protection of adjoining terrestrial reserves (or their avifauna) as a reason for restricting fishing.

Several shore mooring permits have been issued annually since 1982. They are restricted to the fishermen who were using the anchorage when the use was first detected. Renewal is granted only if the mooring was used in the previous season, with the intention that shore mooring will be phased out. This was agreed to by the committee after a hearing of

submissions on the management plan. There are currently 3 eligible permeates of the original six. However, at least one other fisherman has found a way round the controls by installing a mooring just below mean low water mark. A total of 13 boats are licensed for the fishing ground. While catches are declining, and the problem may resolve itself temporarily, there is still increasing concern from conservationists who believe that as long as fishing boats visit the Snares, the risk of rats swimming ashore remains, no matter how stringent the conditions, or how careful the fishermen.

The problem of reducing to a minimum the risk of rats gaining access to the Snares has been discussed widely among scientists, fishermen, conservationists and managers. Several organisations and individuals consider that the only logical way to achieve the conservation objective in the long term is to close this section of the fishery. Adequate compensation for the fishermen involved would be needed. This view was conveyed to the Minister of Fisheries of the previous National Government in 1983 but no action was taken. The Authority believes that the international significance of the reserve is so high that the matter needs to be raised again with the present government.

Exotic Plants

The present check list of Kermadec Islands flora has 152 taxa of adventive plants of which 81 have been recorded since 1910. Most of these are found on Raoul and result mainly from unsuccessful attempts at settlement before it was reserved in 1934. The amount of modification caused by individual species varies enormously; some turned up once and subsequently died out, while other have persisted and have spread over the island and to some of its offshore islets. Some are probably occupying a larger area than when they were cultivated but have not increased or spread much further. Only a few adventive species are inhibiting the regeneration of indigenous plants or are actually recolonising areas already occupied by indigenous plants. The most significant ecologically are mainly woody dicotyledous or perennial herbaceous monocotyledons and dicotyledons in the tropical and humid sub-tropical element of the adventive flora (Sykes, 1977).

The bulk of the department's budget for outlying island field operations is spent on controlling these latter plants on Raoul, with the long term goal of eradication. Action was promoted largely as a result of 1966-67 Ornithological Society of New Zealand's scientific expedition to the Kermadecs.

A program using herbicides, fire and manual measures was begun in 1973 (Devine, 1977) and is continuing, with the committee giving advice as required. To ensure this is efficient, the principal exotic species have been categorised under one or other of the following groupings on the advice of the committee and as a result of environmental impact assessment:

(a) Widespread adventives which it is desirable and feasible to eventually exterminate (10 species).

(b) Adventives which it is desirable to exterminate but which are too abundant (2 species).

(c) Adventives which are not spreading but need to be monitored (5 species).

(d) Persistent relics of cultivation either of historical interest, a landscape feature or used to provide edible fruit (although wild these plants have not become properly adventive).

(e) Casual adventives which are only present as a few plants, often in one place or which have recently arrived and not yet become common; extermination is desirable.

These groupings provide the basis for determining work program priorities, with the greatest attention being given to aggressive adventives in Category A. These are likely to spread further if not controlled.

No control of category B or D plants is currently carried out. The main historical interest is in old cultivars which could shed light on the origins of early Polynesian visitors to Raoul (eg ti, *Cordyline terminalis*) and in Norfolk Pines reputed to have been planted by the original European settlers.

The department has one employee on the island all year round with the Meteorological Station team and a further two work there for 6 months of the year. Appointments are made annually and lack of staff continuity poses some hindrance to effective operations.

Control methods have been determined on the basis of scientific premise, tried and satisfactorily proven in the field. The Category A plants do not occur elsewhere in New Zealand and there was no prior experience to build on and no record was found in a search of overseas literature. Scientific monitoring has been casual but the department has been fortunate in having the same expert advisor (now a member of the committee) since the inception of the program. He has been able to make brief visits every 2-3 years.

A comprehensive review of operations was carried out in 1984 after an appraisal by an experienced

protected area field manager. A number of improvements are being made to organisation, work methods, and recording.

Shipwreck Salvage

The sailing ship *General Grant* struck the western cliffs of Auckland Island on the night of 14 May 1866 and finally sank inside one of the many sea caves along that coast. The ship's manifest showed that she carried two boxes of gold (2 576 ounces) though there may have been more; a number of passengers were goldminers returning to England and reputed to be carrying large quantities of gold. Attempts to recover the gold (some with loss of life) began in 1868 and continue to the present day, with the latest expedition planned for late 1985.

The committee's policy is based on consideration of an application made in 1969 which was referred to it for advice. Neither the department nor the committee has jurisdiction over salvage rights, and any wreck of this vintage is protected by legislation administered by the New Zealand Historic Places Trust, not by the department. Although some shore-based salvage attempts have been mooted all those carried through have been made from the sea, which again has put them outside the jurisdiction of the department.

Because of the natural attractions of the Islands and because salvage attempts are so rigorous in such a location inevitably salvors wish to land for sightseeing and might do so illegally if not authorised. Since there is little prospect of the gold being recoverable (even assuming the right wreck can be found) the department attempts to discourage them from proceeding with their plans and prohibits any land based operations. If the salvor is determined to proceed, however, he is usually permitted restricted landing privileges on a similar basis to tourist visitors.

Tourist and Related Visits

The department and the committee began to develop a policy for tourist and related non scientific visits to the outlying islands in 1967 when overseas Antarctic cruising expeditions started showing an interest in making visits. The circuit included Macquarie Island until 1982 when the Australian Commonwealth Government, for quarantine reasons, required boats visiting the Island to first be cleared at an Australian Port.

The department consulted with the Australian Department of Science, Antarctic Division to find out about Macquarie tourist policies during a 1977 review. A further review was carried out in 1983 at the request of the committee.

In terms of New Zealand tourism the number of people wishing to visit these reserves would be very small and little growth is likely. However, the department is currently considering the first application by a New Zealand adventure tourism promoter. The opportunity of gaining world-wide public support and sympathy for conservation of the outlying islands is considered to be the greatest benefit to this country rather than any economic one. Under IUCN criteria, strict nature reserves are generally expected to be closed to tourism, but New Zealand legislation is silent on the subject. However, unlike other classes of reserve, the public is not given freedom of entry and access.

The committee has decided on a compromise whereby entry permits are granted for a few islands. Landings elsewhere are prohibited for any one or more of the following reasons:

(a) highly sensitive habitats present (eg petrel burrows).

(b) extremely valuable habitats (eg absolutely pristine islands),

(c) rodent free islands (especially free of mice),

(d) only dangerous or extremely difficult landings are possible,

(e) features can be viewed or appreciated without the necessity of landings.

With the exception of Raoul, only daylight visits are generally allowed to the "open" islands. On Raoul visits are limited to no more than 2 days as a joint policy with the Ministry of Transport. No special facilities or on-site interpretation is provided on any of the Islands. Except for visits to Raoul and Campbell, where there are resident honorary rangers, a person who has the confidence of the department is required to travel on the vessel to watch out for the interests of the reserves. This person also takes part in shipboard education and interpretation programs.

Exotic Animals

Feral sheep on New Zealand's southernmost reserve are taken as an example under this topic. The main Campbell Island (11 000 ha approx) was offered as a pastoral leasehold run in 1895. It was stocked with Lincolns, Romneys, Lincoln/Merino, Romney/Merino and Merinos. Probably around 8 000 animals were run at the peak of farming activity. As the grazing became eaten out sheep numbers declined, farming was abandoned in 1931, and only 2 000 animals remained 10 years later. The population halved again over the next 20 years and it was expected it would become extinct.

However, in 1969, when counted again, the sheep population was found to have increased to 3 000. This raised concern over their presence in a reserve dedicated to the preservation of the indigenous biota. At the time, there was no law requiring that consideration be given to their extermination. The strategy of taking sheep off half the island at a time was decided on to help determine how best to manage the reserve's seral vegetation and its wildlife and to lessen the risk of creating new and unexpected conservation problems. (For example it was thought that the grazed vegetation might favour albatross nesting.) A post and netting fence was erected across the "waist" of the Island in 1970 and the sheep on the northern side were shot.

A monitoring program was set up, and research into the biology, population ecology and agricultural value of the sheep was intensified. However, because of a number of factors, but mainly the isolation of the reserve, it was not possible to tightly co-ordinate research, and study objectives were not therefore fully satisfied in the first 10 years of the experiment.

Apart from containment, and the taking of an occasional animal by meteorological staff for food and by scientists for autopsy, the sheep on the Island were not disturbed (McKerchar and Devine 1982).

The publication of a draft management plan for the reserve in 1981 revealed differences of opinion in the scientific community about what should happen to the remaining sheep, since it was estimated that the population left south of the fence was increasing. From the point of view the manager, a decision had to be made under a new statutory obligation to far as possible exterminate introduced animals. At the same time there was an onus to protect scientific features to the extent compatible with preserving the important indigenous biota.

As to the original experiment, removing the sheep showed clear advantages and no apparent disadvantages to the natural vegetation and birds, although it was considered too early to anticipate with confidence the final repercussions of complete removal (Taylor, 1977).

The Outlying Islands Reserves Committee held hearings of interested parties about the future of the sheep and made a recommendation on policy to be included in the final management plan. This policy was, in view of the scientific interest of the sheep but concern by some botanists:

> *"To preserve for at least 5 years a minimum population including about 400 ewes, confined in their range in such a way that they (a) do not threaten the survival of any indigenous taxa of plants and animals, or (b) do not diminish natural scientific features of the reserve, and (c) are maintained in a wild state."*

As a result of further consultation and environmental impact assessment it was decided to fence of approximately 1 000 ha on the south-western end of the island. This work was undertaken in 1984 and the sheep (found to be in excess of 4 000) in between the two fences are being eradicated. A population of about 800 animals in the new enclosure will be protected and remain unmanaged. Scientifically randomised culling may however be undertaken if numbers increase to levels likely to induce severe wind erosion. The situation will be reviewed in 1989.

CONCLUSIONS

The paper illustrates how a particular administrative structure involving scientists and managers from within the department and other agencies has placed special emphasis on conservation of New Zealand's outlying islands. It has facilitated policy formulation, management and funding. The same degree of co-ordination and co-operation could not otherwise have been achieved.

The management tasks faced are common to protected island management world-wide, being concerned with protection; the strict control of access; the restoration of conditions prior to disturbance by man where necessary; encouraging public awareness and support for management policies; and trying to bring about compatible use of adjacent marine areas for ecological and management reasons.

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