



Hoiho (*Megadyptes antipodes*) recovery plan

2000-2025

THREATENED SPECIES RECOVERY PLAN 35



Department of Conservation
Te Papa Atawhai

Recovery plans

This is one of a series of recovery plans published by the Department of Conservation. Recovery plans are statements of the Department's intentions for the conservation of particular plants and animals for a defined period. In focusing on goals and objectives for management, recovery plans serve to guide the Department in its allocation of resources and to promote discussion amongst a wider section of the interested public.

Scientists, managers and other interested parties, both within and outside the Department have refined the contents of this plan. A draft of this plan was sent to relevant Conservation Boards, tangata whenua and other stakeholders for comment. After further refinement, this plan was formally approved by the Southern Regional General Manager in February 2001. A review of this plan is due after 10 years (2010), or sooner if new information leads to proposals for a significant change in direction. This plan will remain operative until a reviewed plan is in place.

The Department recognises the valuable contribution of all individuals, groups and organisations participating in this recovery programme. The Department recognises its obligation in terms of section 4 of the Conservation Act 1987 to give effect to the Principles of the Treaty of Waitangi in relation to its business, and the need to take account of the views of the tangata whenua and the application of their values in the conservation of natural resources. While the expression of these values may vary, the recovery planning process provides opportunities for consultation between the Department and the tangata whenua. Departmental Conservancy Kaupapa Atawhai Managers are available to facilitate this dialogue.

A recovery group comprising people with knowledge of hoiho, and with an interest in their conservation has been established. The purpose of the Hoiho Recovery Group is to review progress in the implementation of this plan and to recommend to the Department any changes which may be required as management proceeds. Comments and suggestions relating to the conservation of hoiho are welcome and should be directed to the recovery group via any office of the Department or to the Biodiversity Recovery Unit.

This plan sets the long-term direction for the conservation of hoiho, also known as yellow-eyed penguins. The goal over the next 25 years is to increase the hoiho population and have active community involvement in their conservation. This goal will be achieved by maintaining and refining existing strategies, maintaining efforts to retain, manage and create terrestrial habitat, and ensuring continued public support.

Nine objectives with specific actions are set out to meet the goal. Actions, which must be undertaken to achieve each objective, are described. The distribution, abundance and ecology of hoiho are summarised and the threats faced by hoiho are described.

The emphasis over the next 25-year period is to retain, manage and create terrestrial habitat. In addition, actions to investigate the mortality of hoiho at sea are given a higher priority.

This is the second recovery plan for hoiho. The results of the first plan are reviewed.

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2000-2025

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1. Introduction

Hoiho (*Megadyptes antipodes*) are large (4.31–6.69 kg, Marchant and Higgins 1990), distinctive birds that are found along the South East South Island, islands off Stewart Island as well as Stewart Island itself and on the Auckland and Campbell Islands of the New Zealand subantarctic.

The birds are equally dependent on marine and terrestrial habitats. The terrestrial environment supplies the essential life cycle requirements of breeding and moulting. The marine environment provides food for both adults and progeny and is essential for dispersal and movement (see Table 1).

TABLE 1. CURRENT FACTORS IMPACTING ON HOIHO IN MARINE AND TERRESTRIAL ENVIRONMENTS.

TERRESTRIAL	
Islands (including Stewart Island)	<ul style="list-style-type: none"> • very little change in the area or state of habitat • some additional predators
Southeast South Island	<ul style="list-style-type: none"> • area available reduced • locations physically isolated • habitat quality significantly different and now highly variable
Both	<ul style="list-style-type: none"> • discrete parcels of land only involved • nest site selection criteria by hoiho similar • essential for reproduction and moult • hoiho may leave or be absent from specific parts of land distribution for a number of years
MARINE	<ul style="list-style-type: none"> • very large area • no restrictions on physical access by hoiho (except energetic constraints) • periodically cannot sustain hoiho because of food supply crashes • quality of habitat undescribed—allows for dispersal, colonisation and recolonisation of land habitat • allows for genetic exchange • essential for survival of individuals (food supply) • hoiho always present

Hoiho are considered a threatened species (Department of Conservation 1991b) owing to their restricted range, and dramatic periods of decline in parts of this range in the recent past (Department of Conservation 1991b, Darby 1985). Ratz (1997), however, shows that in the period 1959–94 there has been no over-all decline on the Otago Peninsula. The Department of Conservation has ranked hoiho a Category B species for conservation priority (Molloy and Davis 1994). Hoiho are an intrinsically robust species with a high reproductive rate compared to other seabirds and substantial longevity (Richdale 1957).

In the 1950s L.E. Richdale undertook a landmark population study on hoiho (See Richdale 1951, 1957). Since the 1980s research investigations have been conducted into reproductive success (Seddon 1988, Darby and Seddon 1990); impacts of predation (Alterio 1994, Ratz et al. 1992, Moller et al. 1995, Ratz 1997); parental investment in chicks (Edge 1996); foraging at sea (Moore et al. 1995); and diet (Heezik 1988, Moore et al. 1995).

This is the second Department of Conservation recovery plan for hoiho. The previous recovery plan (known as a species conservation plan, Department of Conservation 1991b) identified habitat loss and predation of chicks as the two key threats to the continuation of this species. Additional threats identified were the impact of commercial and recreational set nets and human impacts on breeding areas (including tourism).

The keys to conserving hoiho are outlined below. Unless there is a change in the environment (or other gross disturbance) we can be confident that the management guidance outlined in this document will be of substantial duration. This plan is written on the basis that it will endure for as long as the goal, objectives and actions it contains are relevant.

The plan will undergo a formal review process in 2010.

2. Distribution and status

It is thought that the breeding distribution of hoiho has moved northward since the 1950s. Hoiho are now found at Banks Peninsula, North Otago, Otago Peninsula, Catlins, Stewart Island and offshore islands of Stewart Island, Auckland Islands, and Campbell Islands. A single individual resides on the Chatham Islands. Richdale surveyed the Otago Peninsula population, but no detailed census was completed until Darby initiated his work in the early 1980s (Darby 1984).

Estimates of total population are readily available for the south-east South Island based on nest searches in some areas, beach counts in others and interpolations for rarely visited sites (Table 2, Darby unpublished data). For Campbell Island there are good population estimates, but the last major census was conducted in 1992 (Moore 1992). Auckland Island estimates have not been substantiated by completed

TABLE 2. ESTIMATE OF THE NUMBERS OF BREEDING PAIRS OF YELLOW-EYED PENGUIN THROUGHOUT THEIR RANGE, 1997.

BREEDING AREA	ESTIMATED NUMBER OF BREEDING PAIRS
South Island ¹	300-320
Stewart Island ²	470-600
Auckland Island ²	520-570
Campbell Island ¹	490-600
Total number of pairs	1780-2090

¹ Considered to be accurate.

² Estimate of varying accuracy only. In the case of Stewart Island, these figures should be treated with a great deal of skepticism. Only a partial survey was completed in the early 1990's (King 1991).

distributional work or monitoring, and are considered to be conservative because they are based on a detailed survey in the North and South of the group in 1989. A similar situation occurs on Stewart Island and outlying islands, with the exception of Codfish Island where partial counts were completed in the early 1990s (Table 2). The figure of 40% given by Richdale as the proportion of non-breeders in the population is an indicator only. The unit of measurement for the censuses is the number of breeding pairs.

Results of ongoing monitoring in 1997 show that the South Island population is now 600–650 pairs. There are large spatial gaps in these data, but it is not correct to describe hoiho as having a disjunct range. Returns from banding records clearly show that individuals are capable of travelling large distances.

Richdale (1957) and Darby (1985) identified habitat loss as a key factor limiting numbers of hoiho. Additionally, predation of chicks was seen as important in reducing the amount of recruitment into the population (Darby and Seddon 1990). In North Otago, attacks by dogs have had a significant impact on the overall number of breeding individuals. Richdale (1957) also identified dogs as a cause of death in the second phase of chick rearing.

TABLE 3. ESTIMATE OF BREEDING AND NON-BREEDING PROPORTION OF THE POPULATION, 1997

Total number of breeders	3560–4180
Non-breeders ¹	2370–2790
Total individuals	5930–6970

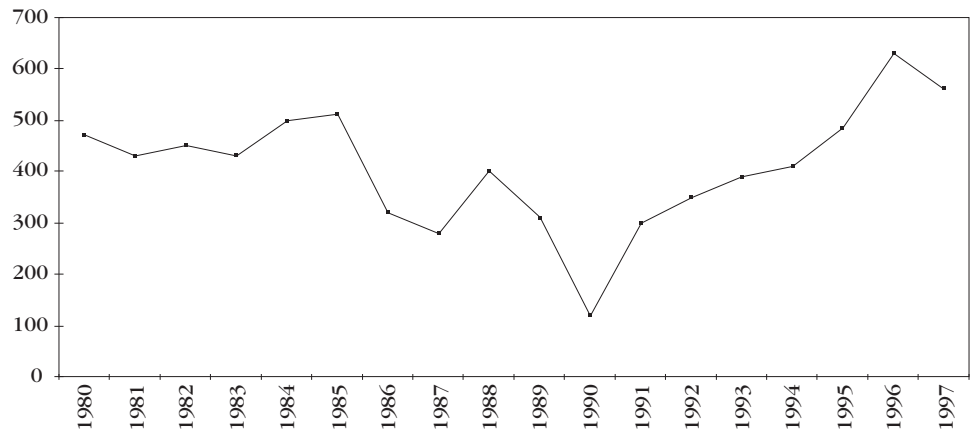
In the period 1982–96 there have been dramatic variations in the number of breeding pairs in the South Island. For example, in 1985 there were 600–620 pairs breeding on the mainland, but in 1986/87 this had dropped to 220 pairs with a recovery in 1987/88 to 400 pairs. Figure 1 summarises the situation for the period 1980–93.

The immediate recovery is ascribed to a substantial proportion of the existing breeding population not attempting to breed in 1986/87. It is assumed that the cause of this and other fluctuations were probably caused by changes in the marine ecosystem. Van Heezik identified failure of quality food as a primary cause of reduced reproductive success in 1985/86 (Heezik 1988). A further decline in the numbers of adult penguins in the 1989/90 season was attributed to avian malaria, but this was not confirmed.

Whether such fluctuations are a cause of decline or are part of the environmental network within which hoiho live, and to which they are adapted, has yet to be determined. Recent modeling work (McKinlay 1997, Ratz 1997) has shown that despite these fluctuations hoiho populations are robust over considerable periods of time.

Experimental work has shown that a reduction in predation leads to reproductive success approaching the theoretical maximum (see Moller et al. 1995). Modeling work shows that reductions in predation also lead to a decrease in extinction risk for the species (McKinlay 1997).

FIGURE 1: NUMBER OF BREEDING PAIRS OF HOIHO IN THE SOUTH ISLAND.
(SOURCE: JT DARBY AND YELLOW-EYED PENGUIN TRUST).



Set or gill nets are recognised as having an impact on hoiho (Darby and Dawson 2000), but the number of juvenile and hoiho being caught in these and other fishing gear has not been quantified. Models investigating the likely effects of this show that a small increase in current adult mortality rate leads to a dramatic increase in the extinction probability for hoiho (McKinlay 1997). Current knowledge of adult mortality rates is inadequate, and the proportion that can be attributed to entanglement in fishing gear is unknown.

3. Species ecology

3.1 HABITAT

Hoiho are equally dependent on marine and terrestrial habitats. The terrestrial habitat provides nesting habitat as well as loafing and roosting space. During the moult, which occurs every year for adults from February to April, individuals are restricted to land. In prehistoric times, hoiho habitats comprised areas of coastal forest and shrub margins (Marchant and Higgins 1990). Current terrestrial habitats range from native forest to areas of grazed pasture.

In some places in the South Island, hoiho are now nesting in habitats where active vegetation restoration has occurred with native and other species. In other places they are nesting in areas where stock are still present. Destocking areas is currently an important component of restoration projects. This has costs, because destocked areas can provide improved habitats for predators and their prey (Moller et al. 1995, Ratz 1997). Trapping to control predators is currently practiced in a small proportion of habitats in the South Island. Predator impacts on reproductive success on Stewart Island, where only cats are present, have not been studied or quantified.

3.2 FOOD

The marine habitat is equally important because it provides food for hoiho as well as allowing for dispersal and movement between terrestrial habitats (Table 1, Moore et al. 1995).

Seven species of fish make up 95% of the diet for hoiho. These species are sprat, red cod, silverside, blue cod, ahuru, opal fish, and squid (Moore et al. 1995). In years when squid dominates the diet breeding success is poor (Van Heezik 1988, 1990). Hoiho harvest the juvenile proportion of these species and so are not thought to be in direct conflict with commercial fisheries.

3.3 BREEDING

Hoiho are monogamous (Marchant and Higgins 1990). Females can enter the breeding population at 2-3 years while males start breeding at 2-5 years (Marchant and Higgins 1990). Nest site selection has been described by Seddon (1988). Essential components of the site are a definite back to the nest, often in the form of a flax bush, and being visually hidden from other nesting pairs.

Established pairs typically reoccupy nest sites in July, initiate breeding in late August and early September and lay 1-2 eggs in September. These hatch in early November, and the chicks fledge in early February of the following year (Darby and Seddon 1990). The adults then regain condition for the moult, which occurs in February to April. Annual production varies markedly between pairs and years (Marchant and Higgins 1990), but the average number of chicks per pair is 1.41 (SD 0.43, Moller et al. 1995).

3.4 DEMOGRAPHY

Hoiho are long-lived birds with life spans of 20 years for some individuals (Richdale 1957). There is a lower mortality rate for males, which leads to a skewed sex ratio of 2.0:1.0 (M:F) at 10-12 years (Richdale 1957). Established pairs are generally faithful to the same breeding location, but some movement between years takes place within habitats. Both adults attend the nest, brood and feed the chicks.

4. Conservation efforts 1985-97

The objectives of the preceding species conservation plan (Department of Conservation 1991b) are:

- *the immediate, urgent requirement to stabilise hoiho numbers at or above present levels.*
- *to establish self sustaining populations, each with a minimum of 500 pairs in five discrete population groups:*
 - *Campbell Island*
 - *Auckland Island*
 - *Stewart Island*
 - *Catlins*
 - *Otago/Banks Peninsula*
- *to provide meaningfully for self sustaining expansion of the species beyond the population minimums.*

These three objectives were to be implemented by:

- *protecting and improving breeding habitats*
- *providing stable breeding environments for established pairs*
- *ensuring that established and productive breeding populations were maintained.*

The plan set out that the objectives could be achieved by implementing the following mechanisms:

- *total exclusion of grazing animals from breeding habitats to eliminate the factors which degrade habitat quality*
- *enduring (legal) guarantees of protection for habitats through reservation or covenant*
- *revegetation to restore breeding sites and vegetation cover to damaged habitats*
- *where outright protection is not possible immediately for critical habitats, recognition of wildlife values in land use practices.*

From 1985 to 1997 the following were achieved:

1. Hoiho numbers in the key habitat area of south-east South Island have stabilised from previous dramatic swings and are now increasing.
2. An acceptance that hoiho are entitled to large areas of land that are managed exclusively for their enhancement.
3. The acquisition of a significant number of habitats that are not only currently occupied by hoiho but have sufficient space to support an increase in the population in the future.
4. The completion of research into the key factors that affect the survival of hoiho, particularly on the impacts of predation and foraging.

5. The mobilisation of substantial public support for the conservation of hoiho not only in Otago and Southland but nationally and internationally.
6. An increased understanding of marine perturbations and their relative importance as a factor affecting hoiho population dynamics.
7. The growth of small but persistent breeding numbers on the north Otago Coast.
8. An extensive research programme into the efficacy of using habitat to manage predators.

Conversely the following tasks were not completed:

1. Full distribution surveys and census counts for Auckland Island and Stewart Island.
2. Estimation of the population trend on Stewart Island.
3. Maintenance of population numbers on Banks Peninsula.
4. Meeting the performance standard in the objective outlined above to manage populations on the Catlins and Otago/Banks Peninsula each with a minimum of 500 pairs.

5. Recovery strategy 2000–2025

The long-term goal for the duration of this recovery plan is:

Hoiho populations have increased and the community is actively involved in their conservation.

This goal will be achieved by maintaining and refining the existing strategies outlined below. The goal will be achieved when the IUCN threat status and the Department of Conservation's priority status of hoiho has been improved by at least one category.

6. Options for recovery

Option 1: Do nothing

This option is not preferred because it will lead to a population decline of this species. Such an option would have high public interest risk for the Department.

Option 2: Monitor with no active intervention

Such an option is not preferred because the tools to promote recovery are available. Similarly for Option 1 this option would have high public interest risk for the Department.

Option 3: Manage the hoiho population by providing a framework for community and DOC initiatives to actively enhance hoiho numbers

This is the preferred option because it builds upon existing community and Departmental initiatives.

Option 4: Captive population

The Hoiho Recovery Group has considered the use of captive populations as part of the recovery programme. It concluded that a captive population would not contribute meaningfully to the conservation of hoiho at this time for the following reasons:

- i. advocacy needs for this species are adequately catered for in public and private viewing hides on the South Island coast,
- ii. the production of captive penguins for release is not justified because sufficient pairs exist to form a viable wild population,
- iii. when the marine ecosystem has failed in the past there has been no point in having captive progeny for release because such individuals will enter into an ecosystem which cannot sustain them,
- iv. the establishment of a captive population may increase the risk of introducing disease to the wild population.

7. Objectives for the term of this recovery plan

The following objectives must be achieved to meet the long-term goal:

1. To obtain accurate population census and trend data from all parts of the hoiho range using approved survey and monitoring techniques.
2. To manage terrestrial habitat primarily for hoiho.

3. To protect areas of habitat for hoiho to allow for an increase in population.
4. To improve habitats for hoiho by revegetation and other strategies.
5. To protect hoiho chicks from predators and ensure that the most cost-effective methods are utilised.
6. To identify the proportion of adult and juvenile mortality resulting from fishing activity and develop strategies to reduce this.
7. Ensure continued public support for hoiho conservation by maintaining existing consultative structures and developing new advocacy initiatives.
8. To manage the impacts of tourism by identifying suitable locations for tourist activity to take place.
9. To identify and undertake research on hoiho that will assist in achieving the objectives of this plan.

8. Work plan

Objective 1

To obtain accurate population census and trend data from all parts of the hoiho range using approved survey and monitoring techniques.

Explanation

Data on abundance and population trend are still lacking for Stewart Island and its outlying islands, and the main Auckland Island. Completion of survey work and establishment of basic monitoring would provide a clear picture of the national status of hoiho and, in the case of these islands, a baseline for future comparisons of abundance.

Existing programmes to census nest numbers on the mainland should be continued because this is the key parameter in determining success or otherwise of management programmes. An exception to this is Green Island Nature Reserve, which is one of two habitats free of terrestrial predators (the other being Codfish Island) and is sufficiently accessible to sustain a monitoring programme.

On Green Island, maintenance of low-intensity nest monitoring for the duration of this plan is desirable to investigate nest density and overall reproductive success in the absence of predators.

All monitoring programmes will need to be designed so that they will return the information asked of them within the required time frames. The Department of Conservation has produced a guide to definitions, principles and guidelines to implement when designing a monitoring programme (Department of Conservation 1999).

Actions (in priority order):

1. Ensure that all programmes meet minimum standards for scientific design and best practice so that expectations will be met.
2. Initiate a full survey of the Auckland Islands Group to establish nest numbers.
3. Repeat the 1990 survey by S. King on Stewart Island and extend it to complete coverage of Stewart Island to identify nest numbers.
4. Develop a programme in association with relevant landowners to survey for hoiho on the islands surrounding Stewart Island.
5. Maintain existing nest search programmes on the South Island to investigate population trends.
6. Maintain low intensity nest monitoring at Green Island Nature Reserve.

Outcome

A clear picture of the status of hoiho and a baseline for future comparison of changes in abundance.

Key Personnel

Area and Conservancy staff, DOC; John Darby; OSNZ Volunteers, University of Otago students and staff.

Objective 2

To manage terrestrial habitat primarily for hoiho.

Explanation

The presence of stock (cows, goats, deer) in hoiho habitats is incompatible with restoration objectives for the birds because stock open up areas, browse replantings and trample nests. The destocking of habitat is not without its costs, however, because research has shown that predators of hoiho chicks prefer areas of rank ungrazed habitat (Moller et al. 1995, Ratz 1997), and rank grass may impede penguin access to nest sites. The conservation of hoiho can contribute to other long-term conservation goals of coastal forest restoration in key locations but only in the absence of stock. Other land management options for hoiho habitat will be assessed in terms of their long-term sustainability and for the contribution they make to meeting this objective.

Actions (in priority order):

1. Advocate for hoiho habitats to be destocked.
2. Assess options for alternative land-use strategies, including limited grazing, for hoiho habitat in terms of the contribution made to long-term sustainable management.

Outcome

Appropriate land management strategies will be in place at all hoiho habitats.

Key Personnel

Area and Conservancy staff, DOC; landowners/land managers.

Objective 3

To protect areas of habitat for hoiho to allow for an increase in population.

Explanation

A key point in considering design for potential protected areas is to ensure that future needs are included in any such design and that new reserves are sufficiently large. Protected areas greater than 25 ha are preferred because they have a higher robustness against local extinction. Smaller areas are still important as parts of an overall network of protected areas. Protected areas that are close together need to be managed concurrently (McKinlay 1997).

Actions (in priority order):

In assessing reserve proposals:

1. They should be of sufficient size to protect against local extinction.
2. Priority should be given to ensuring that hoiho habitats close together are protected to form a nucleus of closely linked habitats.

Outcome

All new protected habitats will allow for an increase in hoiho numbers.

Key Personnel

Area and Conservancy staff, DOC; Yellow Eyed Penguin Trust; landowners

Objective 4

To improve habitats for hoiho by revegetation and other strategies.

Explanation

In many habitats in the South Island, past land use practices have not benefited hoiho.

Ratz (1997) discusses the assumptions that have been made as background to establishing revegetation as a priority. She points out that there is only tenuous evidence that a decline in hoiho is associated with habitat removal and further makes the point that we have no evidence that forest cover was hoiho preferred habitat. Coastal forest has been much reduced since the 1840s on both the Otago Peninsula (See NZ Wildlife Service 1986) and the Catlins. Hoiho take advantage of replanted vegetation in some areas on the Otago Peninsula and North Otago. In the very long term the re-establishment of indigenous coastal vegetation will have benefits not only for hoiho, but also in maintaining the overall indigenous biodiversity of the Otago and Southland Coast. In the short to medium term there are likely to be costs in the form of increased control of predators. Nest boxes can be used as a tool for providing nest sites in the short term.

A key activity for conservation management has been restoration of areas of habitat by revegetation. There is now considerable experience in replanting hoiho locations and much knowledge is available. A key reference has been produced by the Queen Elizabeth National Trust (Porteous 1993).

Actions (in priority order):

1. Continue to develop revegetation techniques and ensure that this information is available to other groups who wish to embark on revegetation projects.

2. Ensure that an appropriate plan is available before embarking on a revegetation project and that matters such as progressive change in species numbers are catered for.

Outcome

Best practice for revegetation is improved through experience and networking, and will lead to improved habitat for hoiho.

Key Personnel

Area and Conservancy staff, DOC; Yellow-Eyed Penguin Trust; landowners

Objective 5

To protect hoiho chicks from predators and ensure that the most cost-effective methods are utilised.

Explanation

There is now a substantial body of research work that describes the effect of chick predation on the population in the South Island part of the hoiho range. Introduced mustelids and cats have reduced hoiho productivity. This threat is manageable with trapping or other more cost-effective methods to protect chicks in nests (McKinlay et al. 1997). Recent research (Ratz 1997) has shown that protection of 43% of nests in the South Island in any season is the minimum necessary to ensure positive population growth.

Trapping, while effective, is expensive and labour intensive. Alternative methods need to be investigated that provide the required level of protection but at reduced cost so that more nests are protected. Much current management of predators in New Zealand is directed towards management of predators in forests or other homogeneous habitats. In contrast, hoiho live in habitats of diverse structure and type. Predator strategies for the former may or may not be the most effective for hoiho. A suggested approach to developing more effective techniques and the research necessary to complete these is contained in *Research and management to protect hoihos* (Alterio et al. 1996). This document will be the basis for investigating alternative methods for predator control.

Actions (in priority order):

1. Protect 50% of all South Island nests from predators focusing on a range of key locations.
2. Continue to examine options for predator management in consultation with other workers who are developing predator control strategies and to disseminate those results.
3. Participate in trials and other work to develop predator control strategies which are tailored to meet the needs of hoiho and which increase efficiencies without reducing effectiveness

Outcome

Predation no longer constrains positive population growth.

Key Personnel

Area and Conservancy staff, DOC; Science, Information and Technology Staff, DOC; other researchers; landowners.

Objective 6

To identify the proportion of adult and juvenile mortality resulting from fishing activity and develop strategies to reduce this.

Explanation

Adult mortality has been shown (McKinlay 1997) to be a key determinant in assessing the likelihood of extinction for hoiho. Set net and other fisheries entanglement is likely to be the largest source of human-induced mortality of hoiho at sea. It is not possible to quantify this component at this stage. Understanding this source of mortality and working to reduce it is a major contribution that conservation managers can make to enhance hoiho longevity throughout its range.

International experience with fisheries bycatch shows that independent observers are necessary to gain reliable estimates of bycatch mortality. Use of the Conservation Services Levy established within the Fisheries Act is a recognised method for achieving this objective with respect to commercial fisheries. Understanding effect and extent of the voluntary code of practices for recreational fishing on the Otago Peninsula and elsewhere will require liaison with fisheries groups.

Actions (in priority order):

1. Advocate for appropriate research to be undertaken to quantify the impact of commercial and recreational fishing gear on hoiho.
2. Continue liaison with fisheries managers to reduce the impact of fishing operations on hoiho.
3. Participate in relevant forums to ensure that fisheries managers and industry are aware of the impact of the fishing industry on hoiho.
4. Continue to gather and collate information about hoiho caught in fishing gear.
5. Implement the results of such research to reduce the impact of fishing gear on hoiho.

Outcome

Strategies are implemented to reduce adult and juvenile mortality from fishing activity.

Key Personnel

Area and Conservancy staff, DOC; John Darby, Ministry of Fisheries, other researchers; recreational fishers groups.

Objective 7

Ensure continued public support for hoiho conservation by maintaining existing consultative structures and developing new advocacy initiatives.

Explanation

Hoiho are an icon for the conservation movement in Otago and Southland. Reasons for this could be that they are a threatened species, and they are easily viewable at a number of locations. Also penguins are appealing because of their shape and behaviour.

One of the successes so far has been the conservation messages that hoiho convey to the public about habitat loss, environmental change and the impact of predation. The advocacy messages that use hoiho as an example have wide application and appeal. Continuing advocacy will continue to develop these themes.

The treatment and rehabilitation of injured birds is recognised as a means of sustaining public interest and support for the hoiho recovery programme.

Actions (in priority order):

1. Develop a strategy for measuring the effectiveness of advocacy activities.
2. Maintain the Hoiho Consultative Group as a key conduit for disseminating information to interested groups and members of the public through regular meetings (See Section 9.2).
3. Continue to use hoiho as a focus for conservation advocacy in Otago and Southland.
4. The Department of Conservation will authorise suitable people to hold hoiho for treatment of injuries and rehabilitation to the wild.

Outcome

Public support for hoiho as an icon species is enhanced.

Key Personnel

Area and Conservancy staff, DOC; Yellow-Eyed Penguin Trust; tourist industry; local government

Objective 8

To manage the impacts of tourism by identifying suitable locations for tourist activity to take place.

Explanation

Tourism based on hoiho is now a significant industry in Otago and Southland. In the subantarctic part of the species' range, visitors view hoiho as part of a much wider package. In the South Island, hoiho tend to be the main focus.

The key identified impact on hoiho by visitors is that an incoming hoiho will not come ashore if it can see a person on a beach, or if hoiho have landed they will go to sea again if people are seen (Wright 1998).

Disturbance at nest sites and during the moult is also likely to have an adverse effect on individuals.

Some penguin habitats are unsuitable for tourist development because the topography of the location is such that visitors can not be accommodated without impacting on hoiho. Other locations are admirably suited to development for visitors because they can easily accommodate visitors without impact on hoiho. The situation can be compounded by recreational use of some beaches by members of the public who have no interest in penguins. Selecting locations where tourist development could occur should take account of the critical importance of the location for the future of hoiho, the breeding potential of the location and the exceptional nature of the location itself.

Actions (in priority order):

1. To maintain a working relationship with tourist firms and industry representatives through the consultative group and other forums to ensure that impacts on hoiho as a result of tourist operations are minimised and opportunities for co-operation are maximised. The following locations are suitable for development as tourist destinations to observe hoiho:
 - Stony Bay
 - Bushy Beach Scenic Reserve
 - Katiki Point Wildlife Management Reserve
 - Kumo Kumo Whero Bay Wildlife Refuge
 - Pipikaretu Beach
 - Sandfly Bay Wildlife Refuge
 - Nugget Point Reserve
 - Mahaka Point Scenic Reserve.
2. To advocate that the current practice of viewing hoiho remains the same at the following locations:
 - Goughs Bay
 - Okahau Point (Barracouta Bay)
 - Papanui Beach habitat complex
 - Otapahi
 - Boulder Beach habitat complex
 - Green Island
 - Sandy Bay
 - Long Point West
 - Penguin Bay
 - Hinahina Cove Scenic Reserve
 - Purakanui Bay Scenic Reserve
 - Tunnel Rocks Scenic Reserve
 - Te Rere
 - Curio Bay.
3. Use of the above lists to guide the issuing of concessions issued by the Department of Conservation in hoiho locations that are part of the public conservation estate.

Outcome

Tourism associated with hoiho will focus on those identified sites where impacts can be minimised.

Key Personnel

Area and Conservancy staff, DOC; local government; tourist operators.

Objective 9

To identify and undertake research on hoiho that will assist in achieving the objectives of this plan.

Explanation

Research has provided most of the background information so that hoiho can truly enter into a recovery mode. It will continue to aid managers in ensuring that the objectives of this plan are completed. A research proposal can be specifically aimed at resolving a problem faced by hoiho or can be of more general application in

understanding the natural world. Both types of research are legitimate and will be supported so long as ethical and other standards are met. Priority will be given to supporting research proposals that investigate topics directly relevant to the conservation of hoiho. Any application for holding hoiho for specific research will be considered on its merits by the recovery group.

Actions (in priority order):

1. Evaluate research proposals which involve hoiho to ensure that any adverse effects are minimised.
2. Encourage research that is of direct management need to hoiho.
3. Give priority to writing up existing data before initiating new projects.
4. Consider applications for holding hoiho for specific conservation research purposes.

Outcome

Research priorities have been developed and implemented.

Key Personnel

John Darby; University of Otago students and staff, Area and Conservancy staff, DOC.

9. Role of the recovery and consultative groups

9.1 RECOVERY GROUP

There is a recovery group in place as part of the existing recovery plan. This group is convened by the Technical Support Officer (Terrestrial Ecosystems) Otago Conservancy. It has representatives on it from Otago, Southland and Canterbury Conservancies. These representatives include Area and Conservancy Office staff.

Current membership of the Hoiho Recovery Group is: Bruce McKinlay (Convenor Otago Conservancy) Brian Rance (Southland Conservancy), Dean Nelson, Dave Houston, Cheryl Mudford, (Otago Conservancy), Robin Smith, (Canterbury Conservancy), John Darby, Hiltrun Ratz Chris Lalas, a representative of the Yellow-Eyed Penguin Trust, and a representative of Te Runanga O Ngai Tahu.

The primary function of the recovery group is to recommend priority tasks which need to be undertaken to achieve the objectives of this plan, and to report on progress in meeting the objectives of this plan.

As necessary throughout the duration of this plan the recovery group should prepare such plans and protocols as are required under Department of Conservation Standard Operating Procedures to guide this plan's implementation. Additionally, the recovery group shall be responsible for providing information and advice to

Departmental managers on the state of hoiho, the impacts of any given specific issue or proposal, or other matter which the group may be asked to comment on.

The recovery group shall also:

- i. review the outcomes of tasks prescribed for and performed in the previous year;
- ii. identify and prioritise tasks under each objective to be undertaken in the forthcoming year and define appropriate performance measures for those tasks;
- iii. recommend to appropriate agencies and individuals (e.g. Department of Conservation Conservancies) tasks that support the recovery programme.
- iv. develop funding applications to support research and management programmes and forward them to appropriate agencies and individuals with recommendations for submission;
- v. review its own performance as a co-ordinating and liaison body and modify its operations as necessary;
- vi. maintain a record of its activities and produce reports to the Biodiversity Recovery Unit as necessary outlining progress to date on meeting the objectives of this plan and the priority tasks for forthcoming years.

Nothing in the above list is intended to limit the operation and initiative of the recovery group. The operational philosophy that underpins this recovery plan is one of encouraging contributions to the conservation of hoiho from all interested agencies and individuals, and the creation of widespread ownership of the recovery programme.

9.2 CONSULTATIVE GROUP

The Hoiho Consultative Group is made up of members of the general public and groups who have an interest in the conservation of hoiho throughout their range.

The group meets approximately four times a year but will convene a meeting when required to do so on any given topic. Additionally, the group sponsors an annual symposium in which all members are invited to report back on the year's activities.

The consultative group has the following key functions:

- i. keep all groups up to date on hoiho issues;
- ii. identify and provide input to management and research issues which affect hoiho;
- iii. ensure that information and resources are pooled;
- iv. provide mutual support for conservation projects;
- v. address differences in opinion which relate to management and /or responsibilities.

The Department will service this group.

10. Acknowledgements

Scientific participants of the recovery group have changed over time as research projects have been initiated and completed. An exception has been John Darby whose dedication, support and co-ordination to management and research has enabled conservation efforts to progress to the stage they are at now. Other scientists who have been members of the Hoiho Recovery Group are: Kerri-Anne Edge (University of Otago), Murray Efford (Landcare Research), Henrik Moller (University of Otago) and Peter Moore (DOC S&R).

11. References

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Published recovery plans

NUMBER	SPECIES	YEAR APPROVED
34	Pygmy button daisy	2001
33	<i>Hebe cupressoides</i>	2000
32	Inland <i>Lepidium</i>	2000
31	<i>Muehlenbeckia astonii</i>	2000
30	North Island kokako	1999
29	Weka	1999
28	<i>Pittosporum patulum</i>	1999
27	<i>Cyclodina</i> skinks	1999
26	Coastal cresses	1999
25	Threatened weta	1998
24	Striped skink	1998
23	Fairy tern	1997
22	Blue duck	1997
21	Kakapo	1996
20	Stitchbird	1996
19	Brown teal	1996
18	Native frogs	1996
17	New Zealand (Hooker's) Sea Lion	1995
16	<i>Dactylanthus taylorii</i>	1995
15	Bat (peka peka)	1995
14	Otago and grand skinks	1995
13	Giant land snail	1995
12	Takahe	1994
11	South Island saddleback	1994
10	New Zealand Dotterel	1993
9	Tuatara	1993
8	Kowhai ngutukaka	1993
7	Subantarctic teal	1993
6	Mohua (yellowhead)	1993
5	Chevron skink	1993
4	Black stilt	1993
3	Whitaker's and robust skinks	1992
2	Kiwi	1991
1	North Island kokako	1991
-	Yellow-eyed penguin*	1991

Available from DOC Science Publications, Science & Research Unit, P.O. Box 10-420, Wellington.

* Available from Otago Conservancy, Department of Conservation, P.O. Box 5244, Dunedin.