

Black robin recovery plan

2001-2011

THREATENED SPECIES RECOVERY PLAN 40

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Cover: The black robin. (*Don Merton*)

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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.

After a technical report which had been refined by scientists and managers both within and outside the Department had been prepared, a draft of this plan was sent to the Chatham Islands Conservation Board for comment. After further refinement, this plan was formally approved by the Wellington Conservator in January 2001. A review of this plan is due after ten years (in 2011), 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 acknowledges 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 consisting of people with knowledge of the black robin, and with an interest in its conservation has been established. The purpose of the Black Robin 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 black robins are welcome and should be directed to the recovery group via the Wellington Conservancy office of the Department.

1. Introduction

The black robin *Petroica traversi* is a small passerine endemic to the Chatham Islands. The rescue of the black robin from its tiny disintegrating refuge on Tapuaenuku (Little Mangere Island) in the Chatham Islands is one of the most remarkable successes in species conservation worldwide. The story of the species' rescue from extinction, and the transfer of the tiny remnant population to Mangere and Rangatira (South East) Islands, where they survive today, is well documented in film and literature. David Butler and Don Merton's book '*The Black Robin: Saving the World's Most Endangered Bird*' is an authoritative and accessible source of information on the species and the techniques developed to save it from extinction (Butler & Merton 1992).

The Department of Conservation presently ranks black robins as Category A, the highest priority category for conservation management (Molloy & Davis 1994). Black robins are ranked as Endangered internationally by the IUCN Red List Categories (BirdLife 2000).

This plan sets out the recovery programme for black robin over the next ten years (2001–2011). It is preceded by a series of position papers and management strategies (Grant 1989, 1991), and the first black robin recovery plan covering the period 1994 to 1998 (Kennedy 1993).

2. Past/present distribution and population numbers

Black robins were originally present on Mangere, Tapuaenuku (Little Mangere), Chatham, and Pitt Islands (Fleming 1939; Oliver 1955). Although there are no historic records of the species' presence on Rangatira, it seems likely that robins were there also. By 1872, when the species was first encountered by European observers, it had already disappeared from Chatham Island (Nilsson et al. 1994).

For several decades prior to the species' dramatic rescue in 1976, the world population of black robin was confined to privately owned Tapuaenuku, a tiny, cliff-bound island in the Chathams.

Black robins are currently on two small islands in the Chathams group, Mangere and Rangatira. At the end of the 1998/99 season a total of 254 robins were alive, 182 on Rangatira, and 72 on Mangere (Thurley 1999; O'Connor 1999) (Figure 1).

BLACK ROBIN

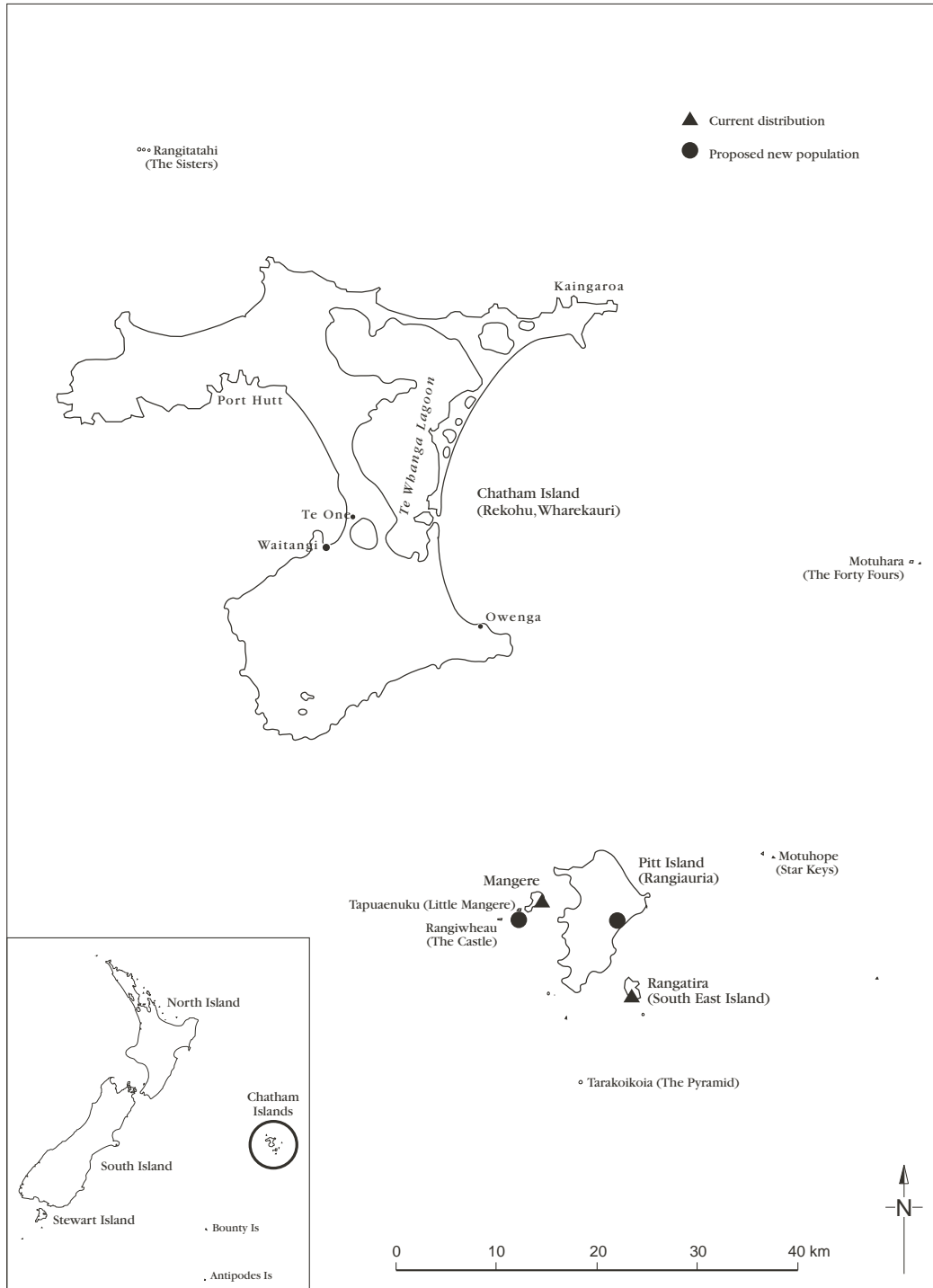


Figure 1. Distribution of black robin in 2001 and potential transfer sites.

3. Cause of decline and present-day threats

Mammalian predators, particularly rodents and cats are likely to have been the main cause of the black robin's decline. All three rat species and the one mouse species present in New Zealand have been introduced to the Chathams. Cats exterminated the black robin on Mangere by about 1900 (Nilsson et al. 1994).

Habitat loss has also been significant. On the two larger islands, substantial areas of forest that made up much of the black robin historical habitat were lost by fire and conversion to farmland before the end of the nineteenth century. Feral stock have accelerated the decline of degraded bush remnants. While considerable areas of forest habitat currently occur on Pitt and Chatham Island, most are in a degraded state, with vegetation modified from years of burning and grazing, and the presence of a suite of introduced mammalian predators. Efforts over the last decade to fence out stock and to control possums and predators on reserve land have resulted in some habitat improvement.

Threats to black robins on Mangere and Rangatira today include the risk of invasion by rodents, weka or cats, interspecific competition from avian competitors such as starlings, habitat loss through fire, and the risk of introduced avian diseases. There is a low incidence of hybridisation between black robins and Chatham Island tomtits *Petroica macrocephala chathamensis*. This has apparently only occurred where black robins cross-fostered to CI tomtits have subsequently chosen to mate with tomtits. There is debate over the extent to which hybridisation with CI tomtits poses a threat to the black robin population. On balance, the threat is now regarded as minor as no malimprinted robins remain alive.

4. Species ecology and biology

The black robin is distinct in form and behaviour from other New Zealand *Petroica* species—the New Zealand robins and tomtits. In appearance it most closely resembles the Snares Island black tomtit, but its behaviour clearly shows its close relationship to the New Zealand robin. Black robins are territorial, with a monogamous pair bond and sometimes pairing for life. The females incubate alone, but both sexes participate in chick raising, and typically produce several broods within one breeding season.

Black robins are forest dwellers, but do make use of more scrubby vegetation. On Mangere they are confined to the 8 ha bush remnant surviving on the island, where they occur at high population densities. Two discrete forest habitats, a total of approximately 150 ha, are present on Rangatira, and it is considered that the island is capable of sustaining much greater numbers of robins than it

currently supports. Forest habitat on Rangatira is recovering from 130 years of burning and grazing.

Population trends differ markedly on the two islands. In the more limited habitat area on Mangere, the birds are increasing relatively rapidly in number and population density, while on Rangatira, increase in numbers has been at a slower rate, with evidence of a decline in the rate of increase with time (Kennedy 1998). This is despite the seeming abundance of suitable habitat on Rangatira.

5. Past conservation efforts

Conservation efforts to save the black robin from extinction began in the late 1970s, when many of the threatened species recovery techniques used today in New Zealand were pioneered. After the dramatic rescue of black robin from Tapuaenuku and transfer to Mangere, a period of intensive manipulation of breeding began. The number of black robins increased from a low of five in 1979 to nine adult birds in 1983, when a second population was established on Rangatira. By the 1989-90 breeding season, when numbers of black robins reached 50, a decision was made to discontinue the intensive nest manipulation programme. An intensive monitoring programme was put into place, where breeding pairs were monitored for their productivity, all chicks banded, and regular census undertaken of the total population. The programme continued at this level until the end of the 1998/99 breeding season, when a less intensive monitoring programme was initiated.

6. Recovery goal

Two goals are proposed—a longer-term goal and a shorter-term goal. The short-term goal of ten years is to be achieved by the year 2011, which is when this plan expires.

LONG-TERM GOAL

Restore sufficient areas of Chatham Islands' forests so that black robins have been re-established in a number of self-sustaining populations that will require minimal management.

TEN-YEAR GOAL

Establish a third self-sustaining population of black robins, where all three populations are stable or increasing in numbers, and they have a combined minimum population size of **250 adult birds**. If supported by the island owners, re-introduce black robins to Tapuaenuku.

THIS WILL CHANGE THE IUCN CONSERVATION RANKING OF BLACK ROBIN FROM ENDANGERED TO VULNERABLE.

7. Options for recovery

7.1 OPTION 1

No action

This option is not recommended. If there was no further management effort apart from monitoring, black robin recovery would be very slow, and the populations would be limited to the habitat available on Rangatira and Mangere. With only two small populations, the species is exposed constantly to the risk of loss through natural or human-induced disaster. Without the continuation of the current revegetation programme on Mangere, the recovery of forest habitat there would be extremely slow, and the black robin population would soon reach the limit of available habitat. Limiting black robin populations to Rangatira and Mangere would not allow for an improvement in the species' conservation status and would not give the public, including the Chatham Island community, an opportunity to freely view black robin.

7.2 OPTION 2 (PREFERRED OPTION)

Establish additional black robin populations within the Chathams group, and protect and restore black robin habitat on Mangere and Rangatira

This is the preferred option for recovery. The establishment of a third substantial population of black robin within the Chathams group would reduce the status of the species from Endangered to Vulnerable (IUCN 1994) and thus meet this plan's ten-year objective. This option requires the selection of a third site in the Chatham Islands where the threats to black robin survival can be removed or mitigated, and the transfer of birds from Rangatira and/or Mangere. Continuation of the revegetation programme on Mangere will enhance habitat available to black robins there and allow for an increase in population size. Re-introduction of black robins to Tapuaenuku will restore the species to its recent historic range, although the small, degraded habitat area on this island is likely to support only a small population.

7.3 OPTION 3

Establish black robin populations in captivity or outside of the Chathams

This option is not recommended. Black robins are endemic to the Chatham Islands and, with management measures to control threats such as predators, there is suitable habitat available within the Chathams group to improve the status of the species without moving birds outside that area. Captive management is not considered necessary at this stage. The related North Island robin has been held and successfully bred in captivity in New Zealand, and similar techniques could be applied to black robins should it become necessary. This option should only be considered if a major disaster threatens the Rangatira and/or Mangere populations.

8. Objectives for term of plan

The objectives for black robin recovery for the term of this plan are:

1. Protect the black robin populations and habitat on Mangere and Rangatira.
2. Restore areas of forest habitat on Mangere.
3. Establish a third black robin population within the Chatham Islands.
4. Re-introduce black robin to Tapuaenuku if supported by landowners.
5. Promote opportunities to establish additional black robin populations on Chatham and Pitt Islands.

9. Work plan

Specific tasks required to achieve each objective, and performance measures to assess success in meeting objectives are set out below.

OBJECTIVE 1. PROTECT THE BLACK ROBIN POPULATIONS AND HABITAT ON MANGERE AND RANGATIRA

Performance measures

The black robin populations on Rangatira and Mangere are stable or increasing in size at the current population level of 250 birds, over the term of the plan.

Explanation

Maintenance of two black robin populations with a combined population of 250 birds will substantially increase the species' change of survival. Monitoring of

the black robin populations must be carried out to ensure that this objective is being met. It is now proposed to undertake a less intensive method of monitoring than following individually marked birds as was done from 1990 to 1999.

Actions required

Action 1.1 Implement quarantine measures and restrict visitors to Rangatira and Mangere

Explanation

With the total robin population being found on only two small islands, it is essential that these small populations are protected from threats. The arrival of introduced predators (especially rodents and cats), and of alien diseases must be prevented. The risk of habitat loss or deterioration due to human disturbance, the introduction of invasive plant species or fire must also be mitigated against. Quarantine measures have been in place on Rangatira and Mangere for many years—new people visiting the island need to be made aware of these measures and there should be regular audits to ensure that these measures are being followed vigilantly. Rangatira and Mangere are Nature Reserves and entry is by permit only. Currently, numbers permitted entry are restricted and this needs to continue. Prevention of illegal entry needs to be rigorously enforced.

Priority

Essential

Responsibility

Chatham Island Area Office

Action 1.2 Monitor black robin populations to determine their population trends and habitat range

Explanation

At the end of the 1998/99 breeding season the black robin population had reached a total of 254 birds (O'Connor 1999). With this number of individuals, the population was considered secure enough to reduce the intensive monitoring effort that had been conducted between 1990 and 1999. The development of a less intensive programme to monitor black robin population trends is in progress. As a minimum, monitoring needs to provide reliable information on the total numbers of adult birds in both populations to show when the objectives of the plan are achieved. There are also a number of population parameters that would provide useful information about the health of the population. A method of monitoring black robins using distance sampling to provide an index of black robin population densities in differing forest types and locations is currently being trialed (Hay 1999, 2000). In addition, a representative sample of black robin territories on Mangere, and the woolshed bush and top bush on Rangatira, will be closely followed each breeding season to monitor more detailed population parameters such as pair stability and productivity.

Priority

Essential

Responsibility

Chatham Island Area Office

Science Technology and Information Services

Action 1.3 Analyse black robin population data to assist with management, particularly future transfers

Explanation

Analysis is required of data gathered on black robin, particularly using the banding and re-sighting records collected over the last decade. This will provide information on productivity, longevity, age class structure, adult and juvenile survivorship, pair bond stability and family relationships. This information will be valuable when assessing the results of black robin transfers to new sites as well as assisting with detecting changes in the Rangatira and Mangere populations.

Priority

Moderate

Responsibility

Wellington Conservancy

Science Technology and Information Services

Action 1.4 Monitor changes in forest habitat on Rangatira and Mangere

Explanation

A five-yearly comparison of photo-points and/or aerial photos should be used to monitor forest health and expansion. Photos should be taken in 2001, 2005 and again in 2011. Plots representative of the forest types on Rangatira and Mangere should be established to measure the cover percentage, height and trunk dimensions of all plants growing within the plot. This will provide information on forest replacement, and the vegetation composition and structure. In the long-term, regeneration of forest on Rangatira and Mangere will provide habitat for a larger black robin population. Other forest bird species, such as the Chatham Island tomtit, Chatham Island red-crowned and Forbes' parakeets, and CI tui and parea, will also benefit from greater areas of forest on the two islands.

Priority

Moderate

Responsibility

Chatham Island Area Office

Action 1.5 Identify reasons for different productivity rates among the black robin subpopulations

Explanation

Research to determine the reasons for the differences in the rate of population increase between the Rangatira and Mangere populations, and between the woolshed bush and the top bush sub-populations on Rangatira would also be useful. Suggested factors to be investigated include:

- inter-specific competition, e.g. Chatham Island tomtit;
- habitat quality - abundance of mature forest trees;
- introduced predators or competitors, e.g. starlings;
- food availability;
- micro climatic conditions.

Current research on black robin energetics should contribute to our understanding of the differences between sites. This information will be useful when black robins are translocated to other locations and could assist to explain the fates of newly released black robins.

Priority

Moderate

Responsibility

Wellington Conservancy

Science Technology and Information Services

Chatham Island Area Office

OBJECTIVE 2. RESTORE AREAS OF FOREST HABITAT ON MANGERE

Performance measures

(1) Planting of native species undertaken on Mangere, to at least the current level each year, using best practice to ensure a minimum survival rate of 70%.

(2) Changes in forest boundaries recorded, and forest structure and composition measured in selected plots, at five-yearly intervals

Explanation

Black robins are beginning to occupy the edge of the forest patches on Mangere, and it appears as that the entire area of 'optimal' habitat is now fully used. The creation of further forest habitat will provide additional territories for black robins and allow the population to expand.

Actions required

Action 2.1 Implement revegetation programme on Mangere each year

Explanation

The creation of further forest habitat on Mangere will provide black robins with an opportunity to expand their population. A programme of planting native species to restore forest habitat began in the 1970s, and continues today. Around 7000 plants have been planted each year from 1995 to 1999. Planting should continue at the current rate at least, with increased numbers of trees planted if possible. Species planted will create a native cover to facilitate natural forest regeneration. The more sensitive species can now be planted in the recently tracked dense flax areas of Douglas Basin. The harsh environment on Mangere means plantings require considerable maintenance to improve plant survival.

Priority

Essential

Responsibility

Chatham Island Area Office

Action 2.2 Monitor survival rate of plantings using the results to alter revegetation methods as appropriate

Explanation

The harsh climatic conditions on Mangere means the survival of plantings are relatively low, and plants are slow to establish and grow. By monitoring survival rates and the conditions where plants establish and grow best, planting techniques can be modified to achieve optimum success rates. Small-scale experimentation with different planting and maintenance techniques should be undertaken to find the most successful approach.

Priority

Essential

Responsibility

Chatham Island Area Office

Action 2.3 Monitor replacement and expansion of forest habitat on Mangere

Explanation

A five-yearly comparison of photo-points and/or aerial photos should be used to monitor forest expansion. Photos should be taken in 2001 and again in 2005. Plots representative of the forest type on Mangere should be established to measure the cover percentage, height and trunk dimensions of all plants growing within the plot. This will provide information on forest replacement, and the vegetation composition and structure. In the long-term, regeneration of forest on Mangere will provide a greater habitat area for a larger black robin population.

Priority

Moderate

Responsibility

Chatham Island Area Office

OBJECTIVE 3. ESTABLISH A THIRD BLACK ROBIN POPULATION WITHIN THE CHATHAM ISLANDS

Performance measures

- (1) A predator-proof fence, that meets design specifications, constructed at Ellen Elizabeth Preece Conservation Covenant by 2002.
- (2) All cats and weka removed from within the fenced area, a transfer proposal prepared and the first transfer of black robin undertaken within a year of completion of the fence.
- (3) A third population of black robin established on Pitt and, by 2011, the numbers of black robin at the site are stable or increasing without the need for intensive nest manipulation or supplementary transfers.

Explanation

The establishment of a third population of black robin in a new location would greatly improve the black robin's conservation status. Having three populations, each on a separate island, would spread the risk of loss through events such as disease, predator invasion and habitat loss from fire. The Ellen Elizabeth Preece Conservation Covenant on Pitt Island has been selected as the preferred site to establish a third black robin population. Construction of a predator-proof fence is underway at this site.

Actions required

Action 3.1 Prepare site on Pitt Island for the transfer of black robins

Explanation

To establish black robin on Pitt Island it will be essential that they can be protected from cats, weka, and pigs. The most effective means of ensuring transferred black robin are secure from predators is to surround an area of forest habitat with a fence capable of excluding cats, weka and pigs. Research has been undertaken to design a fence that will meet these requirements and construction is under way. Mice are also present on Pitt Island, and their effect on forest regeneration will need to be monitored within the predator-proof enclosure to identify whether control will be required. Monitoring of invertebrate populations may also be required to determine the impact of mice on black robin food supplies. Counts of relative bird densities and predator levels, including weka, cats, and mice, have been undertaken at the Ellen Elizabeth Preece Conservation Covenant since 1996 (S. King unpublished data). The results of these counts can be compared with data collected after construction of the fence and may be used to direct conservation work within the intensively managed site.

Priority

High

Responsibility

Chatham Island Area Office

Action 3.2 Translocate black robin from Rangatira or Mangere to Pitt Island

Explanation

Black robins required to form the nucleus of a new population on Pitt Island may be moved from either or both Rangatira or Mangere. A transfer proposal will be drawn up covering aspects such as the most suitable population to obtain birds from, the time of the year for transfer, and the number and the sex ratio and age make-up of the birds to be transferred. Criteria for determining the success of the transfer and the need for follow-up transfers will also be required. With less intensive monitoring of black robin being undertaken on Rangatira and Mangere it may be necessary to follow a sample of birds in the source population the year preceding the translocation to determine the birds' ages and breeding status. Intensive monitoring will be required of birds released at the Pitt Island site. A monitoring protocol will be developed covering monitoring of the survival, dispersal and productivity of birds released. This will provide valuable information for future black robin transfers to the Pitt Island site, and future sites.

Priority

High

Responsibility

Chatham Island Area Office

OBJECTIVE 4. RE-INTRODUCE BLACK ROBIN TO TAPUAENUKU IF SUPPORTED BY LANDOWNERS

Performance measures

Proposal to transfer black robins to Tapuaenuku presented to landowners by 2005 and, if supported, a transfer of black robins undertaken in accordance with agreed transfer and monitoring guidelines.

Explanation

Tapuaenuku represents the icon habitat of black robin, being the location where the last tiny remnant population survived, and from which black robins were recovered from near extinction. To return black robins to Tapuaenuku would be a symbolic statement, as well as providing an additional small robin population, adding to the species' security. The island is privately owned and the full support and permission of the owners is necessary for this objective to be undertaken. Revegetation of the hut peninsula on Mangere, which is the closest part of Mangere from Tapuaenuku, could eventually facilitate black robins re-establishing on Tapuaenuku of their own accord.

Actions required

Action 4.1 Prepare a proposal for the transfer of black robins to Tapuaenuku for consideration by landowners

Explanation

The habitat on Tapuaenuku is small in area and, in the 1980s, was in a very degraded condition. By the 1990s the habitat had improved in quality (M. Bell pers. comm.). It is now likely to be able to support a small robin population as it did for at least 150 years prior to black robins being transferred to Mangere. A transfer proposal needs to be presented to landowners for their consideration and for their input if supportive of the concept. The proposal should provide details of the source population, number and ages of birds and time of year recommended for release. It should include an estimate of the number of black robins that might be supported by the habitat on Tapuaenuku and of the number of follow-up releases likely to be required to establish black robins there. Ongoing monitoring requirements will also need to be outlined in the proposal.

Priority

Moderate

Responsibility

Chatham Island Area Office

OBJECTIVE 5. PROMOTE OPPORTUNITIES TO ESTABLISH ADDITIONAL BLACK ROBIN POPULATIONS ON CHATHAM AND PITT ISLANDS

Performance measures

A list of potential sites for release of black robins prepared by 2005, which includes an assessment of management requirements at each site to enable black robin to establish.

Explanation

Other locations on Chatham and Pitt Islands (such as Nikau Bush Conservation Area or Henga Scenic Reserve) may, with appropriate management, be suitable black robin habitat. Release of black robins into further secure sites will improve their conservation status, reinstate them to parts of their former range and provide advocacy opportunities. These sites could potentially be used as emergency transfer sites if both the Rangatira and Mangere black robin populations become seriously threatened.

Actions required

Action 5.1 Selection of suitable sites on Chatham and Pitt Islands for additional black robin populations

Explanation

Criteria to select suitable black robin habitat would include the ability to remove or control predators and browsing animals, the presence of nest trees, suitable forest structure and invertebrate abundance. Assessment of management requirements will highlight which sites will provide the best opportunity in relation to the management resources required. When selecting sites, consideration should also be given to each sites' suitability for integrated management to benefit a range of forest species.

Priority

Moderate

Responsibility

Chatham Island Area Office

Wellington Conservancy

Action 5.2 Support efforts to improve forest habitat on Chatham and Pitt Islands

Explanation

Management efforts to improve forest habitat on Chatham and Pitt Islands are currently being undertaken for the benefit of a suite of forest bird species, as well as seabirds. There is currently an active programme to fence stock out of reserves and covenants. Predator control would be essential to establish black robin on Pitt and Chatham Island, given current predator populations. While there is widespread possum control in bush areas on Chatham Island, control of introduced predators is targeted only in CI oystercatcher, parea, and taiko breeding areas. Cats, weka, rats, and possibly possums will need to be excluded from black robin habitat. The construction of predator-proof fences will be one mechanism for achieving this in small areas of forest. The possum- and rat-free status of Pitt Island makes it of outstanding importance for conservation. The removal of cats and weka in the future would provide a large area of predator-free habitat for black robin and other bird species. If supported by the Pitt Island community, this would be the ideal long-term outcome for black robin on Pitt Island.

Priority

Moderate

Responsibility

Chatham Island Area Office

Wellington Conservancy

10. Review date

This plan will be reviewed after ten years, or sooner if new information leads to proposals for a significant change in direction. The plan will remain operative until a reviewed plan is in place. The date that is proposed for review of this recovery plan is **July 2011**.

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