Department of Conservation
Te Papa Atawhai

Community groups—for your information about the translocation process documents

These documents have been written for Department of Conservation (DOC) staff as well as community groups. As a result, it includes DOC-specific terms (which are usually defined) and references to document numbers (DOCDM-...) for use by DOC staff. The majority of these documents will be available on the DOC website. For further information, please email sop@doc.govt.nz.

Translocation proposal worked example 1:

Shore plovers from captivity to wild (a Department of Conservation (DOC) proposal)

This is a worked example based on a real translocation proposal. Note it has been adapted to match the new requirements of the revised Standard Operating Procedure (SOP) and therefore the content varies slightly from the original proposal.

Community groups—for your information about the translocation process documents

These documents have been written for Department of Conservation (DOC) staff as well as community groups. As a result, it includes DOC-specific terms (which are usually defined) and references to document numbers (DOCDM-...) for use by DOC staff. The majority of these documents will be available on the DOC website. For further information, please email sop@doc.govt.nz.

Useful links

- Return to Translocation Proposal Form (DOCDM-59825, plus website link)
- Explanatory Notes for the Translocation Proposal Form (DOCDM-774881, plus website link)
- Translocation Standard Operating Procedure (SOP)—planning through to reporting for DOC translocations (DOCDM-315121)
- Return to Translocation Guide for Community Groups (DOCDM-363788, plus website link)
- Processing translocation proposals SOP (DOCDM-315123, plus website link)
- Translocation proposal worked example 2—grand and Otago skinks from wild to captivity (a Department of Conservation (DOC) proposal) (DOCDM-176538, plus website link)
- Translocation proposal worked example 3—North Island robins from wild to wild (a community group proposal) (DOCDM-399715, plus website link)

1. Translocation summary

1.1 Translocation	Proposal for transfer of New Zealand shore plovers from captivity

title	(National Wildlife Centre (NWC), Mount Bruce and Isaac Wildlife Trust (IWT), Christchurch) to Mana Island, Wellington annually from February/March 2007 to February/March 2011.
1.2 Species to be translocated	• New Zealand shore plover (*Thinornis novaeseelandiae*) • Threat status Nationally Critical
1. 3 Type of translocation Refer to Chapter 2 (Do not forget all Chapter references relate to Chapters in the Explanatory Notes)	1. Captive to wild 2. Re-introduction (species no longer exists at the release site but is still within its previous range) 3. N/A
1.4 Temporary translocation	N/A
1.5 Translocation overview (maximum 200 words)	This translocation aims to establish a fourth self-sustaining population of shore plovers, to reduce the risk of extinction. The National Wildlife Centre (NWC), Wairarapa and Isaac Wildlife Trust (IWT), Christchurch aim to produce up to 50 chicks annually for release (most years c. 20 chicks would be produced). These juveniles will be available for transfer to Mana once independent at 2–4 months of age, in February/March of each year. They will be housed in a temporary aviary on Mana for a set holding period before being released (soft release methods based on the success of the translocations to X and Y Islands [1] and Mangere Island (Chatham Islands)). All released birds will be individually colour banded and post-release monitoring will be undertaken to determine the success of the project. Releases will occur annually for a minimum of 5 years.
1.6 Project manager	Richard Gill, Programme Manager Biodiversity, Kapiti Area Office, DOC.
1.7 Proposal writer	Shaun O'Connor—Shore Plover Recovery Group Leader, Threatened Species Development Manager, Research and Development Group (R&D), DOC Rose Collen—Shore plover contractor, DOC.

1.8 Project team

- Dick Gill, Kapiti Area Office and Grant Timlin/Sue Caldwell, Mana Island will manage the project and staff on Mana Island. They have experience with all Mana Island logistics and project management.
- Rosemary Vander Lee (DOC), Captive Co-ordinator, NWC will supervise captive breeding and transfer logistics from the captive facilities. She has been managing the shore plover programme at NWC for the past year.
- Anne Richardson, IWT Christchurch, will provide some birds for release and assist transfer logistics. Anne has been providing captive-bred shore plover for releases for over 10 years.

[1] Note that the names of two islands have been changed in this document due to the wishes of the landowners that the translocations to their islands not be publicised.

	• Shaun O'Connor, Shore Plover Recovery Group Leader (DOC), will facilitate technical advice to managers and stakeholders from the recovery group. Shaun has been Recovery Group Leader for 10 years and involved with the programme for 15 years. • Rose Collen, contract worker (DOC), will undertake the release on Mana Island and post-release monitoring. She has been involved with the shore plover programme for 10 years.
1.9 Lead conservancy and lead area (DOC staff to complete) Refer to Chapter 1 for definitions	Wellington Conservancy Kapiti Area (release site)
1.10 Affected conservancy/ies and affected areas (DOC staff to complete) Refer to Chapter 1 for definitions	Kapiti Area (NWC is in this area, captive source) Canterbury Conservancy Mahaanui Area (IWT is in Christchurch, captive source)
1.11 Translocation approver (DOC processing staff to complete)	Alan McKenzie—Wellington Conservator.

2. Reason for the translocation

Refer to Chapters 3 and 4

2.1 Reason	The shore plover is currently ranked as Nationally Critical, the highest possible threat ranking (Hitchmough et al. 2005). Range is restricted to one natural population of c.130 individuals on South East Island (Rangatira) in the Chatham Islands, a small population of 5 breeding pairs on Mangere Island in the Chatham Islands, and a population of c. 100 birds on X Island. With these islands now at carrying capacity there are no alternatives to translocation to improve their threat status. The focus of recovery effort has been on reducing the risk of extinction. This is being achieved by protecting the Chatham Islands populations, establishing new populations on suitable islands in the Chatham Islands (Mangere Island) and maintaining a captive breeding/re-introduction programme to establish new populations on suitable islands around New Zealand. To fulfil the goal of the Shore Plover Recovery Plan 2001–2011 (Aikman et al 2001), which requires self-sustaining populations at a total of five or more locations by 2011; another release site is needed urgently.
2.2 Appropriateness and priority	During the 2006 Shore Plover Recovery Group meeting, the need for a new site for the breed/release programme was identified, and the group carried out a site ranking exercise. Mana Island was ranked as the first

(DOC processing staff to complete) **Refer to Chapter 3** **Also refer to table 1 in 'Cost recovery for translocation proposals' DOCDM-321137**	choice site and the captive programme is in a position to supply birds for release from early 2007, if the site is ready and funding is secured to begin releases. The captive programme is essential for recovery of the species and is the most cost-efficient means of achieving the recovery goals. Any years that shore plover releases do not occur still come at a cost to DOC because the captive programme continues to operate but is not being utilised for its purpose. The captive programme has shore plovers available for this translocation and there are no other translocations currently planned for the captive birds.
2.3 Context	Captive breeding pairs have been established at the National Wildlife Centre (NWC) in the Wairarapa and at Isaac Wildlife Trust (IWT) in Christchurch through an initial transfer of eggs from the Chatham Islands for artificial incubation and hand-rearing. The captive population is self-sustaining and is managed to produce 15–50 juveniles annually for release. Captive-rearing shore plovers is the most practical way to provide birds for release onto island sites around New Zealand. Transfers of adult birds to other islands within the Chatham Islands have failed in the past because the birds have a strong homing instinct and are capable of flying long distances. Three re-introduction programmes have been initiated to date on inshore islands around New Zealand using captive-bred birds: on Motuora Island, X Island and Y Island. The translocations to Motuora Island and Y Island were not successful (refer to section 8.1); however the translocation to X Island has resulted in a self-sustaining population of shore plovers. With the existing three populations on South East Island (Rangatira), Mangere Island and X Island, release efforts need to continue on Y Island and one further location annually for the next 5 years, to achieve the Shore Plover Recovery Plan 10-year goal. Release sites for shore plovers need to meet a number of specific criteria, and Mana Island is one of only a few islands known to meet all of these criteria, and is currently ranked as the first choice.
2.4 Conservation outcomes	This translocation aims to establish a fourth self-sustaining population of shore plovers, to reduce the risk of extinction. Short term—5 years: a population of shore plovers is established on Mana Island, breeding has occurred and the population is well on the way to becoming self-sustaining. Medium term—10 years: The population on Mana Island is self-sustaining by 2012, thereby achieving the goal of a fourth population established and an increase in numbers to reduce the risk of extinction. Long term—30 years: Shore plovers are restored to sites in NZ and the Chatham Islands that cover parts of their former range.
2.5 Operational	4. 15—50 captive-bred shore plovers transferred and released onto Mana Island annually from February/March 2007, for at least a 5-

targets **Refer to Chapter 4**	year period. 5. Temporary holding (a soft release technique) of each release group for up to 10 days in a pre-release aviary on Mana Island for acclimatisation prior to release. 6. Resident released birds monitored via daily roll call on Mana Island for first 3 weeks post release, then at least monthly each year. Note that intensive monitoring of dispersing birds in adjacent areas is not an expectation. 7. Breeding activity monitored annually from October—March to determine breeding success and survival of offspring.
2.6 Research objectives **(Only applies to research projects)**	N/A
2.7 Advocacy **(If this is a primary reason for the translocation)**	N/A

3. Fit with legal requirements, strategies and plans

Refer to Chapters 5 and 6

DOC staff also refer to Appendix 2, Section A2.1 in 'Translocation SOP' DOCDM-315121

3.1 Legal requirements (DOC staff to complete) Refer to Translocation SOP Appendix 2, Section A2.1	Mana Island is a Scientific Reserve administered by DOC. This purpose allows for the release of shore plovers. The activities associated with this translocation meet the legal requirements in the Conservation General Policy (DOC 2007) and General Policy for National Parks (NZ Conservation Authority 2005).
3.2 Management plans and strategies Refer to Translocation SOP Appendix 2, Section A2.1	**Wellington Conservancy Conservation Management Strategy (CMS) 1996-2005 (DOC 1996)** This proposal meets and supports the Wellington Conservancy CMS objectives for Mana Island (p. 115), including the following objective (p. 118): Objective 2. Provision for use of the island as a sanctuary for national priority threatened species, at the same time protecting threatened indigenous species which survived before the island was protected under the Reserves Act. The implementation of this objective includes: Implementation 4. Allow transfers of threatened species and other indigenous species to and from the island in accordance with relevant recovery plans and other management requirements. Undertake any translocations in accordance with national

	guidelines and in consultation with tangata whenua. This proposal also supports the CMS objectives for indigenous species (p. 144), including: 8. Prevent the extinction of any indigenous species in the conservancy and restore and maintain as far as possible the full diversity of indigenous species and communities in the conservancy. 9. Maintain viable breeding populations of indigenous species in their natural habitat, and in particular improve the status of threatened species or taxa. Prevent common-place species from becoming threatened. 10. Maintain productive captive populations of selected threatened fauna, in accordance with national recovery programmes 11. Increase public awareness of the lesser known threatened species, their conservation requirements and opportunities for community involvement in support and management. The proposal meets the directives listed in the implementation of these objectives (p. 145). **Mana Island Ecological Restoration Plan** This proposal supports the Mana Island Ecological Restoration Plan (Miskelly 1998), in which an introduction of shore plover is recommended (Section 8.8—Action Plan).
3.3 Species recovery plan and recovery group **Refer to Chapter 6, Section 6.1**	This species is covered by the New Zealand Shore Plover Recovery Plan (2001–2011) (Aikman et al. 2001). This proposal is consistent with the Recovery Plan's 10-year goal which is to 'maintain and/or establish wild NZ shore plover at a total of five or more locations with a combined population of 250 or more birds' (by 2011). An established shore plover population on Mana Island would bring the number of sites to four and the number of birds to over 250. The Shore Plover Recovery Group endorses this project and Recovery Group members will be directly involved in implementing this proposal. Mana Island meets all the important criteria established for national site assessment by the Recovery Group and a subsequent ground assessment by Recovery Group Leader Shaun O'Connor in October 2006 confirmed its suitability for a re-introduction attempt subject to: • Reduction of black-backed gulls breeding on the island (adults, eggs, chicks) to zero prior to introduction • Control of pukeko around the vicinity of the pre-release aviary • Tracking the impact of potential predators (harriers, red-billed gulls, other avian predators) and subsequent control if their impact is deemed significant • Appropriate support from the Area Manager and iwi affected by the proposal for this proposal.
3.4 Captive management plan and captive	There is not a captive management plan for the species; however, captive management of shore plovers falls directly under the leadership and instruction of the Recovery Group. The captive coordinator is the

coordinator (captive to wild and wild to captive proposals for animals only) Refer to Chapter 6, Section 6.2	Biodiversity Programme Manager at NWC.

4. Source population

Refer to Chapter 7

4.1 Likely sources Refer to Chapter 7, Section 7.1	Captive population—National Wildlife Centre (NWC), Wairarapa and Isaac Wildlife Trust (IWT), Christchurch. X Island. South East Island (Rangatira) (Chatham Islands).
4.2 Preferred source Refer to Chapter 7, Section 7.1	The wild origin of the captive population is South East Island (Rangatira) in the Chatham Islands. Shore plover eggs were transferred to the captive facilities and hand-reared to establish the captive breeding population. The last remaining adult found on Western Reef in the Chathams was also transferred to captivity in 2003, for breeding at NWC. The captive population has been selected as the source for the following reasons: • The captive population was established for the express purpose of breeding shore plovers for re-introduction in New Zealand, without having to crop birds from the wild populations in the Chatham Islands (which is logistically and politically difficult). • Captive–bred birds will be available for release on Mana Island from February/March 2007. • The captive population is managed to breed two lines. Birds from the South East Island (Rangatira) population will be the main source for Mana Island with the second population from the Western Reef line being the source for reintroductions to Star Keys (Chatham Islands). However in the event that Western Reef birds cannot be transferred to the Chatham Islands due to the release site being not yet ready, these birds would also be appropriate to release on Mana Island (subject to approvals from the Recovery Group, Chatham Island Conservation Board, and Chatham Islands iwi Ngäti Mutunga and the Hokotehi Moriori Trust). X Island juveniles may be cropped for transfer and release onto Y Island in 2007, which is unlikely to have any significant impact on the X Island population. Further cropping for Mana Island however might have an impact, so is not the preferred option.
4.3 Effects of removal	N/A

(N/A when the source is captivity/cultivation) Refer to Chapter 7, Section 7.2	

5. Release site

Indicate whether the translocation is:

Of animals from the wild to captivity	**No**	(if yes, complete section 5.1)
Of plants from wild into cultivation	**No**	(if yes, complete section 5.2)
To establish or supplement a wild population	**Yes**	(if yes, complete section 5.3)

5.1 Establishment of captive animal populations

5.1.1 Wild to captive translocations	N/A
5.1.2 Captive facilities	N/A
5.1.3 Existing captive population	N/A

5.2 Establishment of cultivated plant populations

Refer to Chapter 8

5.2.1 Management of plants in cultivation Refer to Chapter 8, Section 8.1	N/A
5.2.2 Cultivation facilities	N/A

5.3 Release site is in the wild

Refer to Chapters 1, 8 and 9

5.3.1 History of the species at the release site Refer to Chapter 1 for definitions. For introductions, refer to Chapter 9, Section 9.1.	This translocation is a re-introduction. Shore plovers were originally distributed along coastlines throughout the North and South Islands. Shore plovers are highly mobile, which makes it quite likely that they were either on Mana Island originally or visited the island. There are likely to be a number of combined factors that would have caused the species' original extirpation. Shore plovers are vulnerable to mammalian predators, and cats and dogs were present on Mana Island

	during the period that it was farmed. Increased numbers of black-backed gulls and red-billed gulls on Mana Island as a result of human-induced habitat change would have caused significant mortality of shore plovers, and that alone may have been enough to prevent their survival. Now that there are no mammalian predators and the gull populations are being managed, Mana Island is suitable for shore plovers.
5.3.2 Description of release site	Conservation Unit Name: Mana Island Scientific Reserve Conservation Unit No.: R26003 Location: Island in Cook Strait, off the west coast of Wellington. Mana Island is 4 km from Titahi Bay; at its closest point it is about 2.5 km from the mainland. Map R26C Grid reference: E2659990 N6011990. Locality maps attached–Chapter 1. Statutory land management purpose: Scientific Reserve. Mana Island is 204.7 hectares in area. Its highest point is 121m asl. Most of the coastline (6.3 km) and the inland wetland and mown grass areas contain suitable habitat for shore plovers. Much of the original vegetation on Mana Island was destroyed during pre-European times and the island was farmed until cattle grazing ceased in 1986. The present vegetation is predominantly grassland with areas of coprosma and muehlenbeckia shrubland on the beach platforms and one small remnant of secondary mixed coastal broadleaf forest. Revegetation is proceeding in the eastern gullies. To date more than 100,000 trees have been planted as part of a restoration programme. The climate is similar to that of nearby Paraparaumu Beach.
5.3.3 Temporary holding area Refer to Chapter 8, Section 8.2	N/A
5.3.4 Suitability of release site for the species (N/A if release site is a temporary holding area) Refer to Chapter 8, Section 8.3	Shore plovers have such specific ecological requirements that very few sites in New Zealand meet their criteria. Mana Island is the preferred site for shore plovers at present because it is one of the few sites that do meet all the criertia. The ecological requirements for shore plovers are shown below. From Miskelly and Aikman (1993) Mana Island has 6.3 km of coastline, with a variety of substrates; the most common being exposed rock, followed by cobbles, boulders and gravel. Suitable feeding habitat for shore plovers includes tide pools and tide wrack, which are found nearly all the way around the coast (tide pools are absent from Shingle Point south to the landing). The most extensive areas of rock and tide pools exposed at low tide are at the western and northeastern ends of the island. During a habitat assessment in 1993, the tide pools and wrack in all the bays were examined to assess food availability–handfuls of decaying seaweed were turned over and samples were taken from tide pools. They were found to provide an abundant

	supply of potential prey items. There are also mown grassy areas behind the landing beach and a restored wetland area, as well as dams at several locations in the centre of the island, which could provide good feeding areas as well as bad weather roost sites. In addition to the more central dams and wetland areas, there are a few small freshwater seeps around the coast. Good nesting habitat is extensive, and potential nest sites exist around the entire coastline. Semi-prostrate taupata (*Coprosma repens*) is common around much of the shore and would provide ideal overhead cover. Other common plant species offering cover around the shore include small-leaved pohuehue (*Muehlenbeckia complexa*), *Coprosma propinqua*, and New Zealand spinach (*Tetragonia trigyna*). Extensive areas of beach wrack offer excellent nesting habitat, especially along the eastern shore line. Brood-rearing habitat is varied, with exposed platform in southeastern, southern and western shoreline and open salt meadow on the point north of the rangers' houses. The 1993 habitat assessment noted that access between potential nest sites and the intertidal zone was totally blocked in some places by large piles of driftwood. Piles of dead boxthorn (the product of weed control) block access to the shoreline in some areas. Feeding cover (i.e. potential hiding places for chicks) is available in many areas, apart from a 500-m strip extending north from the landing and around the tip of Shingle Point. Feeding opportunities are limited at high tide, except in mown grassed areas and in the salt meadow around the shingle point north of the rangers' houses. The carrying capacity was estimated in the 1993 assessment to be 20 pairs, but is likely to be more than this based on the outcomes for X Island, which was originally estimated to be able to support 20 pairs but now has 25 pairs. Mammalian predators Mana island is free of mammalian predators and lies 2.5 km from the closest mainland point, which is well beyond the known swimming distance of stoats (c. 1.5 km). House mice were eradicated from the island in 1989/90 by a combination of aerial and bait station poisoning. The wharf was removed in 1992/93 to reduce the risk of a rodent re-invasion by removing the ability for large boats to land. Quarantine and contingency measures are in place to manage the risk of re-invasion (including a regularly serviced bait station operation) as per the Island Biosecurity Plan for Wellington Conservancy (Brown et al. 2004). Potential avian predators and competitors Ruru (*Ninox novaeseelandiae*) are not known to be present on Mana Island, apart from occasional reports. Black-backed gulls (*Larus dominicanus*) are a known predator of shore plover eggs and chicks in the Chatham Islands, and numbers have

	historically been unnaturally high on Mana Island due to a huge increase in gull numbers in the Wellington region caused by increased food resources of human origin (e.g. rubbish tips). Black-backed gulls (BBGs) at such high densities are identified in the Mana Island Ecological Restoration Plan as having the potential to seriously compromise restoration programmes on Mana Island, and are a threat to a number of species intended for re-introduction to the island, including shore plovers. In the 1990s a control programme on Mana Island reduced the population to c150 pairs. The population of BBGs is currently too high for shore plover releases, and will need to be successfully controlled for at least a 3-year period (to ensure recruiting young are removed), commencing in late 2006/early 2007, prior and concurrent to shore plover releases on Mana Island. Gulls were successfully controlled by regional council operators in a knockdown operation on Island X in November 1997, just prior to the first shore plover releases there. The Waikanae Area Manager confirmed Area and iwi support for a reduction of BBG breeding pairs to zero before release of shore plovers. Red-billed gulls (*Larus novaehollandiae*) (RBGs) are in moderate numbers on Mana Island (approx. 50). RBGs are known predators of shore plover chicks (Fleming 1939); however they are concentrated at one colony at the northern cliffs of the island where the habitat is not good for shore plovers anyway. The Recovery Group recommends no control of RBGs prior to releases, but subsequent control if/when RBGs prove to be a problem for shore plover establishment. Australasian harrier (*Circus approximans*) are common on Mana Island, although not known to breed there (Miskelly 1999). They are often seen flying between Mana Island and the mainland. Monitoring their potential impact would need to be part of a release programme with direct control implemented if necessary. The Restoration Plan allows for this, recommending harriers that are considered to be jeopardising the success of releases be removed or destroyed. Spur-winged plovers (*Vanellus miles*) are noted in the Restoration Plan as frequent visitors. They are an aggressive species and known to have smashed New Zealand dotterel (*Charadrius obscurus*) eggs. Again, monitoring their potential impact would be part of a release programme with direct control implemented if needed. Magpies (*Gymnorhina tibicen*) should be considered in the same vein as Spur-winged plovers. A small breeding population of magpies was eradicated in 1987, when 15 were shot (Phil Todd pers. comm.). Magpies continue to turn up on Mana Island occasionally, and about ten further birds have been shot between 1988 and 1996. The intention is to continue shooting vagrants to ensure that the species does not re-establish (Miskelly 1999). Pukeko control around the temporary aviary area is recommended and subsequent control if/when impacting on shore plover establishment. The shore plover population is likely to need protection from avian predators, at least during the establishment phase of the re-introduction. Once the shore plover population is self-sustaining, it may be

	appropriate to trial scaling back the avian predator control, to determine whether a well-established population can persist in the presence of avian predators. Until this happens it is an unknown whether ongoing avian predator control will be required for shore plover to persist, although it is likely that ongoing control of black-backed gulls will be required to keep numbers low. Shore plovers are unlikely to need any other long-term management to persist on Mana Island. It is expected that Mana Island could support a self-sustaining population of shore plovers in the long-term, and there are no uncertainties about the suitability of the site. Mana Island may not be large enough to hold 50 breeding pairs; however there is not the luxury of a larger site available at this stage. The population could be easily topped up with birds from captivity if out-breeding was deemed necessary in the future.
5.3.5 Current management at release site	For details of current site management refer to the Mana Island Ecological Restoration Plan (Miskelly 1999). Current management occurring on the island includes: • Revegetation and threatened plant management • Takahe breeding programme • Weed control • Wetland restoration • Re-introductions of indigenous reptile, invertebrate and bird species • Historic site management • Public use and recreation Due to the ongoing management programme, the island has two full-time resident staff, and frequent contract and volunteer workers. Accommodation is available in the Lockwood, for at least 15 people. Communication by cell phone is reliable, and there is also a landline. The opportunity exists for workers involved in shore plover release effort to add value to other initiatives on the island on a job share basis. These aspects along with the accessibility of Mana Island (regular boat trips to the mainland) will benefit the logistics of the shore plover project. The moderate number of visitors to the island has the potential to impact on shore plovers by causing disturbance to their nesting activities, so this risk will need managing—by close monitoring of shore plover breeding and subsequent restrictions on access to nesting areas during the breeding season. The contingency measures in place to manage the risk of mammal invasion of the island will also benefit the shore plover programme by providing a high level of protection.
5.3.6 Security of habitat	Mana Island is a Scientific Reserve administered by DOC, which provides appropriate security of habitat for the foreseeable future. The Crown purchased the island in 1865.

6. Ecological impacts at release sites in the wild

(N/A for translocations into captivity/cultivation)

Refer to Chapter 9

6.1 Between-species interactions Refer to Chapter 9, Section 9.2	There are no species closely related to shore plovers present on Mana Island or anywhere nearby, therefore no risk of hybridisation. The other shorebird species present on Mana Island are: • Approximately 10–15 pairs of variable oystercatchers (*Haematopus unicolor*) that are spread around the coastline and breeding • Approximately 20 pairs of white-fronted terns (Sterna striata) that breed on two stacks off the northern coast (C. Miskelly pers. obs.) It is unlikely that there will be much interaction between these species and shore plovers. Apart from the need to control BBGs, there are no apparent conflicts between releasing shore plovers and other conservation values on Mana Island (Miskelly 1999).
6.2 Within-species interactions Refer to Chapter 9, Section 9.3	N/A
6.3 Impacts on ecosystem function Refer to Chapter 9, Section 9.4	Shore plovers are unlikely to have a significant impact on Mana Island.
6.4 Additional management requirements for other indigenous species	The introduction of shore plovers will require management of BBGs and, possibly, other indigenous avian predators, because they threaten the shore plovers' establishment. BBGs are known predators of shore plovers and other shorebird eggs and chicks. The population of gulls is currently too high for shore plover releases, and would need to be successfully controlled for at least a 3-year knockdown period (to ensure recruiting young are removed), beginning prior and concurrent to shore plover releases. The control target is reduction to zero breeding birds on the island.
6.5 Additional site management and impacts Refer to Chapter 9, Section 9.5	Staff and visitors to the island will need to be made aware of any shore plover nesting activities during the breeding season and instructed to avoid bays in which nesting is occurring. Signs or tape could be erected at such sites to help deter people from the area. Visitors to the island must land on the front landing area near the woolshed and report to the resident ranger, so it is likely that there will be the opportunity to advise most people of the out-of-bounds areas. There is an element of risk that this will not be enough to prevent disturbance at nesting time, and so visitor behaviour will need to be monitored. Such management would

	not have an impact on the site or other species.
6.6 Restriction of future options	The translocation of shore plovers is unlikely to restrict options for reintroducing other species in the future.
6.7 Weeds and animal pests Refer to Chapter 9, Section 9.6.	The introduction will not interfere with any pest control on Mana Island. Nothing additional is needed to be done to minimise the risk of introducing weeds and animal pests to the release site. Quarantine and contingency measures are already in place to help prevent the introduction of animal pests, and will be followed by all staff visiting the island. The shore plovers themselves could not be a possible vector for the introduction of weeds to the island.

7. Disease management

Refer to Chapter 10

7.1 Disease management requirements for plants Refer to Chapter 10, Section 10.1.1	N/A
7.2 Animal disease management protocol (Excludes invertebrates) Refer to Chapter 10, Section 10.1.2	See Appendix 2a, b for the disease management protocol/worksheets, which was designed in consultation with veterinarian Jerry Pauli.
7.3 Other disease management requirements for animals Refer to Chapter 10, Section 10.1.2	*The hygiene checklist was attached as Appendix 2c in the original proposal.* Both captive facilities have many years experience in best practice for wildlife health management. Strict hygiene and quarantine procedures will be followed as per the Wildlife Health Management SOP. This will include the use of Trigene to disinfect all catching gear, transfer boxes, husbandry equipment and the temporary aviary, before and after use. All shore plovers held for 10 days in the temporary aviary on Mana Island will be carefully observed twice daily to check for signs of illness. They will also be re-captured the day before release for a final health check/examination in the hand, to ensure they are fit for release. If any birds die, they will be sent immediately to Massey University vet clinic (IVABS) for diagnosis.
7.4 Disease management requirements for invertebrates Refer to Chapter 10, Section 10.1.3	N/A

8. Translocation design

Refer to Chapter 10

8.1 Learning from past translocations Refer to Chapter 10, Section 10.2	The first attempts to translocate shore plovers involved direct transfers of adult birds to other islands within the Chatham Islands. These failed when the birds flew back to their island of origin. Shore plovers have a strong homing instinct and are capable of flying long distances. Three re-introduction programmes have been initiated on inshore islands around New Zealand, using captive-bred birds and an aviary soft release technique. In each case, all released birds were colour banded and monitored intensively post-release to determine the success of the projects. The first attempt was on Motuora Island, a DOC island in the Hauraki Gulf, where some 75 birds were released over 5 years in the mid 1990s. The programme was stopped in 1998 when it was clear that ruru and other avian predators were having a significant effect on released birds—both in terms of direct predation and encouraging dispersal from the site. Management (e.g. translocation off the island) of ruru was considered, but not initiated as iwi affected by the proposal were opposed to this, recognising ruru as taonga and kaitiaki. Although the programme was unsuccessful in establishing a population, Motuora Island proved a valuable test-ground for developing and refining release techniques. The second re-introduction was on X Island, a privately owned island. Eight releases of 10–20 birds were undertaken from 1998–2005, with significant success. There were no ruru on the island, and avian predators of shore plovers (BBGs, harriers) were controlled to low levels. The shore plover population is monitored annually and currently there are c. 100 birds, with 26 breeding pairs resident. The population was considered self-sustaining in 2003 (Dowding 2003). The third attempt was on privately owned Y Island. Relationship issues with the landowners stalled the captive breed for release programme; however, agreement was reached to continue releases of shore plovers at the site starting with a trial of the less-intensive method of hard-release of juveniles cropped from X Island. Shore plovers have also been re-introduced to Mangere Island using wild-raised fledglings from South East Island (Rangatira) in the Chatham Islands. 3 years of transfers of between 10–15 birds and using the aviary soft release technique have established a small breeding population of c14 birds on Mangere Island. This proposal incorporates the same transfer design and release techniques that were successful in the Motuora Island, Mangere Island and X Island releases i.e. soft release of captive-reared juveniles using a temporary aviary to acclimatise the birds to the island before their release. Mana Island was chosen partly because of the absence of ruru and mammalian predators, which would have prevented the establishment of shore plover. Other avian predators of concern will be controlled for this translocation.

8.2 Composition Refer to Chapter 10, Section 10.3	• 15 – 50 juveniles will be transferred per annum for at least 5 years, depending on numbers produced in captivity. 5 years of releases should provide enough birds with a varied genetic base, to establish a self-sustaining population without the need for transfers in later years • The release birds will be recently fledged juveniles from the two captive facilities (NWC and IWT), approximately 60–90 old • The sex ratio will be approximately 50:50, depending on what is produced in captivity • Juveniles (rather than adults) will be transferred and soft-released in an effort to reduce the chances of dispersal The captive population was originally sourced as eggs from South East Island (Rangatira) in the Chatham Islands. The eggs were selected from a variety of nests across the island in an effort to increase the chances of genetic variety. The resulting captive population has been carefully managed so that each of the bloodlines is represented as evenly as possible. An adult male from Western Reef in the Chatham Islands was also brought into captivity to increase the genetic diversity of the captive population. The number of birds transferred per year will vary depending on how many are produced in captivity; however the intention is to only transfer juveniles each year.
8.3 Timing	Each transfer of birds will be timed for February/March 2007–2011. This timing is optimal because the birds will have completed quarantine and will be the optimal age at 60–90 days old. It is thought that the younger the birds are when they are transferred, the less likely they are to disperse from the release site. If more than 20 juveniles are produced in a season for release onto Mana Island, more than one transfer may be required each season to accommodate the larger numbers of birds in the temporary aviary.
8.4 Pre-transfer preparation of captive animals (For captive to wild transfers only) Refer to Chapter 10, Section 10.4	Captive shore plover are offered artificially cultured live food (mealworms) in the aviaries at IWT and NWC, and they also have access to natural streams containing water invertebrates to enable them to forage naturally. Once they are transferred to Mana Island they will be offered piles of seaweed from the beach, so they become accustomed to foraging for locally available invertebrate species before their release. Experience so far shows that captive-bred shore plover immediately adapt to foraging in the wild after release.
8.5 Capture / collection and transport (N/A to plant translocations) Refer to Chapter 10, Section 10.5	Prior to transfer a temporary pre-release holding aviary will be erected on Mana on the grass verge above beach north of the landing, which is sheltered from most weather directions and easy to service and monitor from the adjacent houses and kitchen 'species room'. Birds will be released directly onto good habitat adjacent to the aviary at the end of the holding period. The date of transfer(s) will be coordinated by NWC, IWT and Mana Island staff, and will be timed for a period of fine weather to allow boat crossing to Mana.

	The release birds will be caught from their holding aviaries by experienced staff at NWC and IWT early on the morning of transfer, using noosemats, mistnets and handnets. All will be weighed and checked for injuries, then placed in transport boxes custom made to hold four shore plovers each. Individual case histories will accompany birds to the release site as a reference in the event of problems with specific birds. IWT birds will be driven by car from IWT to Christchurch airport, air freighted to Wellington airport, then driven by car to Mana Marina. NWC birds will be driven by car to Mana Marina. All birds will then be transferred by boat to Mana Island. The transfer time will take in total less than 5 hours. Past shore plover transfers using similar methods of transport (although taking longer due to greater distances) have had no problems.
8.6 Release / planting Refer to Chapter 10, Section 10.6	A staff member from NWC and/or IWT will accompany the birds to Mana Island bringing husbandry equipment and supplies. On arrival on the island, the birds will be released into the temporary aviary, with artificial food and shelters set up to accommodate them for the 10-day holding period. Contractor Rose Collen will feed and look after the birds in the aviary until releasing them. The recommended holding period pre-release is 10 days. The Motuora Island, X Island and Mangere Island release programmes have all started with holding periods of 10 days or longer initially, which is reduced in subsequent years given that resident birds from earlier releases have paired, formed territories and bred at the release site. The presence of 'established residents' appears to encourage site fidelity of newly released birds—shore plovers are a social and colonial species. Extreme weather and/or social aggression within the holding aviary might mean that birds need to be released later or earlier than the 10-day period, so flexibility to allow for this will be built into the project. The holding period should be sufficient to help 'condition' birds to the site, enable them to recover from the stress of transfer and encourage them to put on weight from supplementary food, so that they are in good condition for release. The birds in the temporary aviary will be closely monitored during the 10-day holding period, to ensure all are feeding well. Aggression problems can sometimes be managed by changing the layout of the furnishings or providing extra food bowls for subordinate birds. If any birds become sick or injured in the temporary holding aviary a decision will be made in consultation with NWC and vet Jerry Pauli, whether to hold them back from release and care for them on Mana Island, or to send them back to NWC for treatment, depending on what the problem is. **Release** Previous shore plover release programmes have identified several factors as being optimal for the timing of release of birds from the aviary: • Fine weather • Low tide

	• Morning release • Beginning of a lunar cycle (new moon) These factors will be followed as closely as possible for the release, with the most critical being fine weather and morning release. On the day of release the aviary door will opened, so the birds are free to leave the aviary. Once all have left the door will be closed. The aviary will be removed approximately 3–5 days after the final release of birds.
8.7 Dispersal from the release site (N/A for wild to captive translocations or plant translocations) Refer to Chapter 10, Section 10.7	Dispersal of released birds to habitat on the adjacent mainland is a possibility. The soft release technique is prescribed to encourage acclimatisation and site fidelity immediately post transfer, and reduce dispersal rates. Evidence from the X Island and Mangere Island programmes suggests that residency will increase soon after pairs establish, defend territories and breed at the release site. Shore plovers are a social and colonial species with very high breeding site fidelity. Breeding at the release site is a key step along the path to establishing a population at a particular site. Intensive monitoring of dispersing birds (or capture/return to release site) is not expected in this translocation programme. Recording sightings in adjacent areas should be undertaken whenever possible: however intensive effort dedicated to tracking dispersing birds is not necessary. The important focus is on tracking residency on Mana Island, including intermittent use where birds are moving off, but returning to the island.
8.8 Short-term post-release management (N/A for wild to captive translocations) Refer to Chapter 10, Section 10.8	No short-term management is needed to facilitate the establishment of the transferred shore plover other than the gull control already mentioned. Ongoing 'housekeeping' will be required within the banding programme–replacing plastic colour bands on all birds approximately every 5 years as they wear and increasingly become a risk to birds. Banding operators must be delegated authority (training and competency sign-off) by a banding permit holder.
8.9 Contingency plans for unexpected results (N/A for wild to captive or plant translocations)	It would be possible to remove shore plovers from Mana Island if their effects became unacceptable; however this would be an unlikely option given that they are a higher priority for conservation management than any of the avian predator species. If it was found that shore plovers could not persist on Mana Island, any remaining birds could be captured and returned to the captive facilities, until a more suitable release site was found for them.

9. Justification

Refer to Chapter 11

9.1 Justification Refer to Chapter 11	Potential adverse issues relating to this translocation are: • Additional management requirements for BBGs • The possibly limited carrying capacity of the site for shore

	plovers • The significant risk of dispersal It is likely that there will be a need for ongoing avian predator control, specifically of BBGs, which are a native species. However, BBGs are a common species and this programme will not have an impact on the regional population as a whole. The BBG control operation is not likely to be a significant cost annually, as the island is permanently staffed. It may be possible to scale back avian predator control once shore plovers are well established (as has occurred on X Island), and this will be an experimental management scenario. Mana Island might only be able to support approximately 20 pairs of shore plovers; however the true carrying capacity of the island can only be estimated. Mana Island is currently the best option for establishing a new population, with no suitable larger islands available; sothe Recovery Group does not presently have the luxury of a better option. There is the option of supplementary transfers of birds from captivity in future to allow out-breeding should it be deemed necessary. There is a significant risk of dispersal of shore plover from Mana Island, and this risk will be managed as described in section 8.7. The prescribed transfer techniques are the best currently known. Although there was significant dispersal after translocation to X Island, enough shore plovers bonded at the site and remained there for the population to establish. It is felt that the benefits of establishing new shore plover populations through repeated releases outweigh the losses of the individual birds. All methods used and results will be carefully documented in an effort to find ways to improve site fidelity.

10. Research and monitoring

Refer to Chapter 12

10.1 Research Refer to Chapter 12, Section 12.1	There is an experimental component in all releases, especially at new sites. Each release site has a unique combination of circumstances (size, topography, habitat types, predator guild, etc) and the intention is to learn and improve on release techniques with each release. (See Recovery Plan action 4.4. 'Develop, monitor and document NZ shore plover release techniques.' (Aikman et al. 2001)). The main area of concern for shore plover transfers involves reducing dispersal, and the monitoring programme aims to carefully track and compare the results of each transfer, looking for ways to improve first year survival rates.
10.2 Monitoring programme Refer to Chapter 12, Section 12.2	12. Released birds will be monitored intensively for the first 3 weeks following release with a twice-daily roll call of resident birds. All birds will carry individual colour band combinations to enable identification. A standard record sheet will be used for data recording. A weekly update of monitoring results will be forwarded to the Recovery Group Leader during this 3-week period. This work will be done by an experienced contractor or Mana Island staff. The

	key parameters to determine in each roll call are: • Survival rate of release sample • Residency rate of release sample • Habitat use (map location of individuals twice daily) 13. Following the intensive 3-week monitoring period, a roll call of resident birds will be undertaken at least monthly. Much of this work will be undertaken by members of Friends of Mana Island (FOMI) as part of their regular programme of support work. The key parameters to determine in each roll call are: • Survival rate • Residency rate • ID of pairs • Map territories 14. If 1st release birds pair and breed in the first season (October–March) following release then more intensive monitoring will be required over the breeding season. The aim of breeding season monitoring will be to determine: • Determine ID of pairs • Map territories • Record nesting attempts • Record hatching success • Determine fledging success A concise report will be prepared by the Project Manager detailing results of monitoring and submitted to the Recovery Group Leader by March 15 annually. The Recovery Group will review the results to assess the success of each transfer before the next is carried out. The monitoring regime for out-years will be adapted based on the results returned; however a similar monitoring standard is expected for each subsequent release and breeding season. Recruitment rates will need to be determined from the second season following releases, as shore plovers can breed in their first year.

11. Consultation and community relations

Refer to Chapters 6 and 13

11.1 Specialist advice Refer to Chapter 6	Specialist advice was sought on animal health and quarantine issues from: • Jerry Pauli, veterinary advisor to the Shore Plover Recovery Programme • Kate McInnes, Veterinarian, Threatened Species Section R&D, DOC This translocation proposal is based on current best practice prescriptions for shore plover re-introduction developed by the Shore Plover Recovery Group and DOC staff during previous re-introduction

	programmes on Motuora, X and Mangere Islands.
11.2 Iwi Refer to Chapter 13, Sections 13.1, 13.2 and 13.4	Initial consultation with Ngäti Toa occurred during development of the Mana Island Ecological Restoration Plan. At that time they accepted plans to re-introduce shore plovers to the island, and gave their support for the reduction of BBGs during the establishment phase of the translocation. Since then, consultation has been re-visited for each translocation, with iwi acceptance and support reconfirmed for each project. For the shore plover translocation, Ian Cooksley, Kapiti Area Manager, DOC, confirmed Ngäti Toa support for this re-introduction programme, and for the pre-requisite reduction of BBG breeding pairs on the island to zero in October 2006 (I. Cooksley, DOC, pers. comm.). The translocation was discussed with Tama Cocer of Ngäti Toa. There were no issues raised—all details had been worked through prior, during the consultation for the Restoration Plan. Chatham Islands iwi Ngäti Mutunga and Te Hokotehi Moriori Trust have been kept informed of all shore plover translocations, as the birds originally came from the Chatham Islands. Their agreement is required before any birds of Western Reef lineage are transferred, because of an original understanding that all Western Reef lineage birds would be released in the Chatham Islands. During discussions on the possibility of the birds being transferred to Mana Island instead of the Chatham Islands, the iwi indicated support for the change if the Chatham Islands release site was not ready in time. Ngäti Toa will be advised of each release and invited to attend. They have indicated they do not want to participate further. As kaitiaki of the birds at the captive sites, Ngäi Tahu, Ngäti Kahungunu and Rangitäne and will be informed about the translocation project and invited to participate. *Copies of correspondence were attached as Appendix 3 in the original proposal.*
11.3 Key stakeholders Refer to Chapter 13, Sections 13.1 and 13.3	The translocation of shore plovers to Mana Island was discussed at a Friends of Mana Island (FOMI) meeting. FOMI are supportive of the project (which is part of the island's restoration plan) and are pleased it is happening. FOMI are keen to get involved, by fundraising for future transfers and providing volunteers for the monthly shore plover monitoring. The Chatham Island Conservation Board will be consulted if the translocation of Western Reef lineage shore plovers to the Chatham Islands does not go ahead, due to the prior agreement that these birds would go back to the Chatham Islands. The option for these Western Reef lineage birds would then be to go to Mana Island. During preliminary discussions the Board has indicated support for this change as long as the intention to return birds to the Chatham Islands in the future still stands. The Takahe Recovery Group was consulted regarding issues with shore plovers having had avian pox in captivity, because there are takahe on Mana Island. They were happy for the translocation to proceed as long as

	the Wildlife Health Management SOP was followed and any risks were managed. *Contact details of these parties were attached as Appendix 4 in the original proposal.*
11.4 Communication and community involvement Refer to Chapter 13, Section 13.4	The local newspapers (e.g. Kapiti-Mana news) will be contacted to run news articles. The Ornithological Society of New Zealand (OSNZ) has been notified, as the opportunity to observe shore plovers on the New Zealand mainland will be of great interest to their members. Information will be posted on the Birding NZ website, encouraging people to look out for shore plovers on mainland areas adjacent to the island and report sightings to DOC. Ngäti Toa and FOMI will be invited to participate in the release of shore plovers from the Mana Island aviary. FOMI will be involved in the post-release monitoring of the shore plovers, by undertaking the monthly roll calls. They may also be involved in the breeding season monitoring.
11.5 Public interest issues management Refer to Chapter 13, Section 13.4 and 13.5	There are no negative public relations issues or risks. One positive issue is that people will now have the opportunity to see wild shore plovers in New Zealand for the first time. This will be of particular interest to OSNZ and other birding groups.

12. Budget

Refer to Chapter 14

12.1 Business plan (DOC proposals only)	The project is included in a work plan in DOC's Kapiti Area Office business plan.
12.2 Resources required Refer to Chapter 14	Funds for operational costs are available for transfer to Kapiti Area, Wellington Conservancy once an agreed budget is identified. Captive breeding and quarantine costs will be covered by NWC (DOC Wellington) and IWT. Technical support will be provided by the Shore Plover Recovery Group and Wellington Conservancy.

Item description e.g. equipment, contract workers, freight, transport (animals and people), staff hours, predator control	**Cost ($)**					**Source of funding**
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	
Contractor @ $25 per hour for 4 weeks	4000	4000	4000	4000	4000	Vote Conservation
Builders × 2 for 2 days @ $160 per day	**640**	**640**	**640**	**640**	**640**	
Materials, eyebolts, fastenings	300	0	0	0	0	

Boat trips: 1 for aviary, 4 for contractor, 2 for builder, 1 for iwi, 22 for monitoring, @ $200 per trip	6000	5800	5800	5800	5800	
Gas, power @ Lockwood	100	100	100	100	100	
Ammo for gull control	300	300	300	300	300	
Morning tea for iwi	100	100	100	100	100	
10 % contingency	1144	1144	1144	1144	1144	
Volunteer monitoring 192 hours per year	0	0	0	0	0	
Contractor @25 /h for 3 days to replace shore plover colour bands					600	
TOTAL	12584	12084	12084	12084	12684	Vote Conservation
Costs for years 2–5 will be similar but subject to usual price increases.						

13. Permits and approvals

Refer to Chapter 5

13.1 Permits and approvals Refer to Chapter 5, Section 5.2	Once this translocation proposal has been approved the translocation is an approved action of the Department and does not require a permit. Animal Ethics Committee Approval is not required as this transfer is an existing documented best practice activity carried out by skilled staff with the appropriate competencies. Banding will be undertaken by operators with delegated authority from the shore plover banding permit holder (Shaun O'Connor).
13.2 Collection of samples	• Will any samples be collected from animals or plants for purposes other than disease screening? **No**

13.3 Effects of the translocation	**Will your proposal have any direct or indirect effects on the following conservation values at the source and release sites in the wild:**	**Source site** (tick)			**Release site** (tick)		
		Yes	**No**	**N/A**	**Yes**	**No**	**N/A**
Natural waterways or bodies of water?				√		√	
Any disturbance of native vegetation?				√		√	
Disturbance to soils, wetlands or any other natural feature?				√		√	
Wildlife species (other than those being transferred) either				√	√		

13.3 Effects of the translocation	Will your proposal have any direct or indirect effects on the following conservation values at the source and release sites in the wild:	Source site (tick)			Release site (tick)		
		Yes	No	N/A	Yes	No	N/A
within or near the area where you want to operate?							
Historic or archaeological sites?				√		√	
Other people using the site?				√		√	
Will your activity affect the visual amenity of the site (i.e. will there be any aviaries etc. visible at the site or from areas adjoining the site)?				√	√		
Is it possible that your activity will introduce weeds, including lake weeds, or seeds of weeds into the area?				√		√	
Is there a risk of fire from your activity?				√		√	
Will significant noise be caused by your activity?				√		√	
Is there any aspect of your activity that will affect current or future public access to the area?				√	√		
Will your activity affect plants, animals or sites of traditional importance to Mäori and who have you consulted over this matter?				√		√	
Will your activity have any positive effects on natural or historic values?				√	√		
Will your activity promote understanding of conservation?		√			√		

13.4 Beneficial effects	The translocation will have a positive effect for shore plovers by creating a new population, and also the release site by contributing to the island's biodiversity. Understanding of conservation will be promoted and public awareness raised at both source and release sites as volunteers get involved and learn about the recovery programme and what they can do to help.
13.5 Measures to avoid, remedy or mitigate adverse effects of the translocation Refer to Chapter 5, Section 5.3	Black-backed gulls will need to be controlled–see section 5.3.4. A temporary aviary will be set up at the release site to house the birds before their release. This is temporary and not a major visual impact. The establishment of shore plovers at the release site will result in breeding, and as shore plovers are easily disturbed during incubation, access to the area directly near nest sites might need to be restricted during these times. This is unlikely to have an impact on people's activities.

Note: all permits and approvals must be obtained prior to the transfer occurring.

14. References

Aikman, H.; Davis, A.; Miskelly, C.; O'Connor, S.; Taylor, G. June 2001: New Zealand shore plover recovery plan 2001–2011. Threatened Species Recovery Plan 44. Department of Conservation, Wellington. http://www.doc.govt.nz/publications/science-and-technical/online-catalogue/ under Chatham Islands threatened birds: recovery and management plans (Viewed 5 July 2011).

Brown, K.; Giddy, C.; Stone, R. 2004: Island Biosecurity Plan: Wellington Conservancy (excluding Chatham Islands) October 2004. Department of Conservation, Wellington.

DOC (Department of Conservation). 1996: Wellington Conservancy Conservation Management Strategy 1996–2005. Wellington Conservancy Conservation Management Planning Series No. 2. http://www.doc.govt.nz/upload/documents/about-doc/role/policies-and-plans/wellington-cms/wn-cons-management-strategy.pdf (Viewed 5 July 2011).

DOC (Department of Conservation). 2007: Conservation General Policy. Policy Group, Department of Conservation, Wellington. http://www.doc.govt.nz/publications/about-doc/role/policies-and-plans/ (Viewed 5 July 2011).

Dowding, J.E 1998: The impact of predation on New Zealand dotterels. Unpublished report on Investigation Number 2051 to Science & Research Unit, Department of Conservation, Wellington.

Dowding. J.E. 2003: Review of the X Island shore plover programme 1998–2003. Report prepared for DOC's Shore Plover Recovery Group (unpublished).

Fleming, C.A. 1939: Birds of the Chatham Islands, Part III. Emu 3: 1–15.

Gartrell, B.; Alley, M.; Pauli, J.; Collen, R.; Barlow, K. 2004: An outbreak of Poxvirus infection in captive shore plovers.

Hitchmough, R.; Bull, L.; Cromarty, P. 2007: New Zealand Threat Classification System Lists—2005. Department of Conservation. http://www.doc.govt.nz/upload/documents/science-and-technical/sap236.pdf (Viewed 5 July 2011) DOCDM-34119 (Excel spreadsheet).

MacKereth, B. 1992: Avian pox in variable oystercatcher chick. Notornis 39: 248

Miskelly, C. 1998: Mana Island Ecological Restoration Plan. Department of Conservation, Wellington. http://www.doc.govt.nz/publications/science-and-technical/online-catalogue/ (Viewed 5 July 2011).

Miskelly, C.; Aikman, H. 1993: Assessment of Mana Island as habitat for shore plover: a preliminary report to the Department of Conservation, Wellington Conservancy (unpublished).

Mississippi State University Extension Service. n.d.: Viral diseases of poultry–avian pox. http://msucares.com/poultry/diseases/disviral.htm (Viewed 14 July 2011).

New Zealand Conservation Authority. 2005: General Policy for National Parks. Department of Conservation for the New Zealand Conservation Authority. Department of Conservation Library, Wellington. http://www.doc.govt.nz/templates/summary.aspx?id=41118 (Viewed 5 July 2011).

15. Applicant's confirmation

The applicant (Non–DOC proposals only)	Applicant (Chairperson / Chief Executive Officer / individual - in full) and organisation name	N/A
	Legal status (strike out or specify Other)	Individual / Company / Trust / Incorporated Society / Other:

	Contact person	
	Postal address and street address	
	Phone	
	Cell phone	
	E-mail	

Confirmation (~~Applicant~~ / DOC project manager)	'I confirm that the person completing this application form has read the instructions in sections 1–15 of the proposal form and answered all of the questions before they deleted the instructions.' Signature of ~~applicant~~ / DOC project manager: Dick Gill Dated: December 2006
(Chairperson /Chief Executive Officer / Individual–non-DOC proposals only)	N/A

DOC is responsible for completing sections 16 and 17 when assessing the proposal

16. Approval of translocation proposal

Refer to Chapters 6–8 and Appendix 1 in 'Processing Translocation Proposals SOP' (DOCDM-315123)

16.1 Recovery group	The Shore Plover Recovery Group has developed and fully support this proposal.
16.2 Introductions expert group	N/A
16.3 Legal	Proposal has not been reviewed by the office solicitor.
16.4 Area manager(s) concurrence	Kapiti and Wairarapa Area Managers both support the proposal being approved. Mahaanui Area Manager has no issues with the proposal.
16.5 Concurrence of affected conservator(s)	Canterbury Conservator concurrence obtained 10th February 2007. No dissenting views.
16.6 Inform deputy director-general operations	The deputy director-general operations will be informed because this is a re-introduction–NZ shore plovers no longer exist on Mana, but Mana is still within their historical range. Deputy Director-General Operations Name: Sue Tucker Date informed: 10th / February / 2007
16.7 Lead conservancy/deputy director-general operations sign off	This translocation proposal is **Approved** Lead Conservator's Name: Alan McKenzie Signature: _____ Date: 20th / February / 2007

17. Permissions database references and due dates for reports

Refer to Chapter 9 in 'Processing Translocation Proposals SOP' (DOCDM-315123)

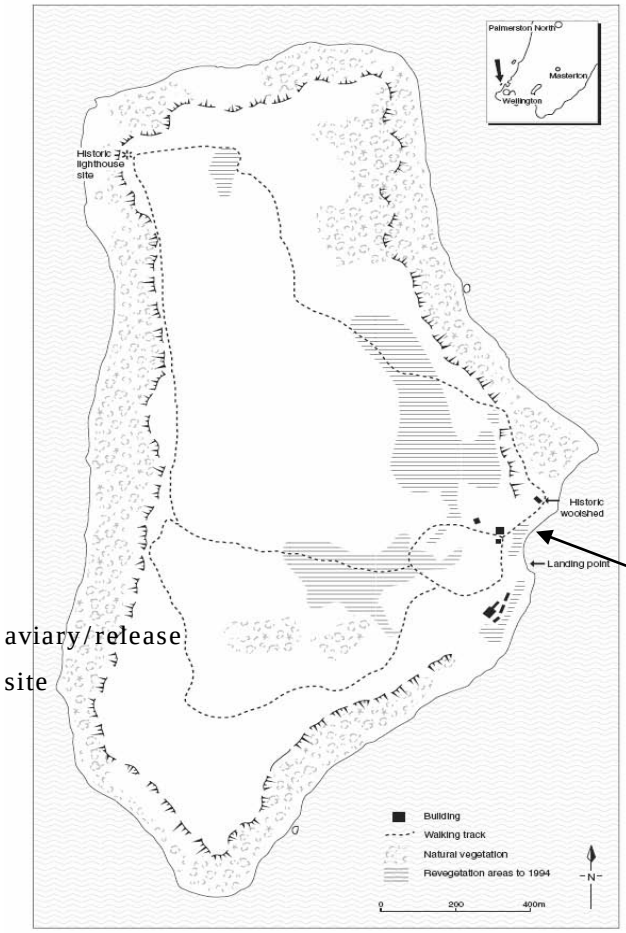
17.1 Permissions data base references		
	Permissions number	**Permissions type**
Translocation proposal		
Permit to .....(*description*)		

17.2 Reports required	**Due dates**
Transfer reports	Combined reports: May 2007 May 2008
Monitoring reports	

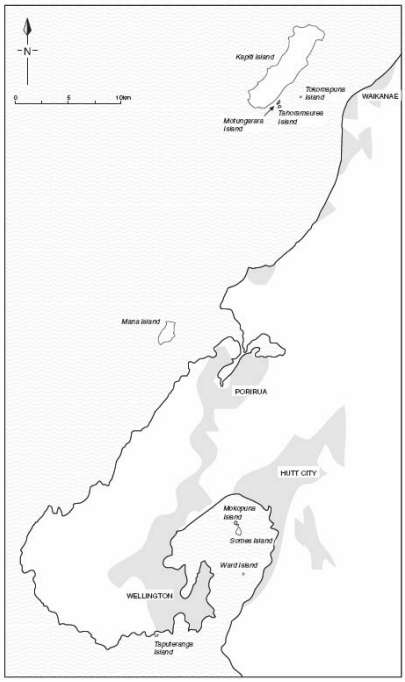
	May 2009 May 2010 May 2011 May 2012

Appendix 1

Maps of Mana Island and its location.



Temporary aviary/release site



Appendix 2

A.–Disease management protocol

Designed in consultation with wildlife health veterinarian Jerry Pauli after identifying that a disease risk was present.

Disease screening and quarantine

Accepted health management practises, regular veterinary and pathology advice and documented quarantine protocols have been an integral part of the shore plover captive breeding/ release programme for over 10 years. Current best practice protocols are outlined below.

The following protocol will apply to this translocation:

- All release birds will be in quarantine at their captive origin for one month prior to the transfer.
- All release birds will receive two disease screens, two weeks apart during the quarantine period, testing for: intestinal parasites (coccidia, worm eggs), salmonella and yersinia.
- All release birds will be weighed and general condition/ fitness for release assessed
- All release birds will be examined for external parasites (mites/ticks), and any signs of bumblefoot and pox lesions.

- The contingency plan for any positive returns from the above tests is to delay the transfer and retain the birds at the captive facilities while they receive the appropriate treatment prescribed by the veterinary advisor (Jerry Pauli) to the recovery programme. Subsequent re-screening will be undertaken to ensure treatment has been effective.
- A clean bill of health for each bird is a pre-requisite for release.

Diseases of concern

Avian pox virus has occurred in captive juvenile shore plovers at NWC almost annually since 2002, and has been successfully treated with no long-term impairment or injury to the birds. Juveniles treated and recovered from pox lesions have subsequently been released onto X Island, with no reoccurrence of the disease in the affected individuals or the resident population on X Island. At NWC, the disease has so far only affected juveniles, and once they recover from it (develop immunity) they do not get it as adults. See Gartrell et al. 2004 for an outline of the shore plover pox issue.

It is not known how common pox is in wild shore bird populations. It has not been recorded in wild birds in the Chatham Islands. It is not known to have occurred in shorebirds on Mana Island (e.g. with variable oystercatcher).

Avian pox has been recorded in a number of endemic shorebird species in New Zealand. There is one known case of a wild variable oystercatcher chick (Mackereth 1992), and one known and one probable case in wild wrybills (*Anarhynchus frontalis*) (P. Battley & S. Moore, pers. comm.; J.E. Dowding, pers. obs.). In captivity, avian pox has been recorded in northern New Zealand dotterels at Auckland and Otorohanga Zoos (Dowding 1998). The virus is normally transferred by biting insects or directly through abraded skin. It appears to occur in wild shorebirds at very low frequency in New Zealand. The higher frequency seen in captive populations (northern New Zealand dotterel and shore plover) is presumably due to the much higher density of birds at these institutions and the resulting ease of transfer. Juveniles are normally more susceptible to infection than adults (R. Jakob-Hoff, pers. comm.).

The risk of transfer from captive-bred shore plover to wild shorebirds on Mana Island appears to be very low because:

(a) Pox lesions are clearly visible, and all birds will be carefully screened before transfer

(b) Birds that have been infected and recovered do not remain carriers (Mississippi State University 2004)

(c) Transfer rates appear to be low in the wild in New Zealand

(d) There are very few shorebirds on Mana for shore plover to come into contact with

B.–Translocation disease management workbook worksheets

Attached to the original proposal

C.–Hygiene checklist

Attached to the original proposal

Appendix 3

Letters to iwi and their responses

Attached to the original proposal

Appendix 4

Contact details of interested and affected parties

Attached to the original proposal

Go to:

- Return to Translocation Proposal Form (DOCDM-59825, plus website link)
- Explanatory Notes for the Translocation Proposal Form (DOCDM-774881, plus website link)
- Translocation Standard Operating Procedure (SOP)–planning through to reporting for DOC translocations (DOCDM-315121)
- Return to Translocation Guide for Community Groups (DOCDM-363788, plus website link)
- Processing translocation proposals SOP (DOCDM-315123, plus website link)
- Translocation proposal worked example 2—grand and Otago skinks from wild to captivity (a Department of Conservation (DOC) proposal) (DOCDM-176538, plus website link)
- Translocation proposal worked example 3—North Island robins from wild to wild (a community group proposal) (DOCDM-399715, plus website link)