Te Whānau Toroa

Creating Safe Havens for Seabirds and Shorebirds in Taranaki

WILD FOR TARANAKI
Tō Tātou Taiao – Maranga Papatūānuku

WMIL Wildlife Management International

TOITŪ NET CARBON ZERO ISO 14064-1 ORGANISATION

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Many words and images throughout this document contain hyperlinks which take the reader directly to the source of information.

This document was able to be composed due to the enthusiastic assistance and contribution from many conservation-minded people in the Taranaki region. From those who are just beginning to learn the names of the birds in their neighbourhood, to those who have known and loved the birds for as long as they can remember, thank you for sharing your knowledge and dreams.

CONTENTS

INTRODUCTION

'In the evening there was quite a deafening noise from vast numbers of birds flying about'

- Richard Taylor, Mangaehu Pa, 1846

The Taranaki region encompasses dynamic coastal landscapes, frequently battered by strong westerly winds. Seabirds find homes tucked away amongst cliffs and rockstacks, or in burrows dug into forested slopes. Shorebirds pepper the sandy beaches, mudflats, and rivermouths, raising their camouflaged families alongside a bustle of human activity.

Before the arrival of humans, hundreds of thousands of seabirds nested along the ridgelines of Taranaki Mounga, and in the surrounding forests. Today, many seabird and shorebird species are relegated to the margins of their past distribution, and some are completely absent. Offshore islands now form the stronghold of many seabird species in the Taranaki region. In recent decades, intensive pest control and site management has turned the tide of loss, and enabled some species to establish and maintain mainland colonies. However, most species remain threatened, and will continue to decline without targeted restoration action.

Wildlife Management International Ltd. (WMIL) was contracted by Wild For Taranaki to investigate the possibilities for restoration and protection of seabird and shorebird habitat across the Taranaki region. There is enormous scope for seabird and shorebird restoration across Taranaki, including the re-introduction of seabirds which are currently absent from the landscape. This project started with the goal of identifying ‘safe havens’ or pockets of suitable habitat for these birds, and has burgeoned through a series of conversations with interested groups into a home for aspirations, encompassing many facets of restoration ecology and aiming to safeguard taonga for generations to come.

WHAT IS A SEABIRD?

A seabird is a bird that spends a significant part of its life feeding at sea, either in inshore or offshore waters. This group includes penguins, petrels, shearwaters, albatrosses, gannets, shags, gulls, and terns.

Seabirds are long-lived, colonial, and slow to reproduce. Many seabird species are nocturnal on land, only returning home under the cover of darkness. Seabirds typically return to their natal site to breed, and only produce one or two eggs per year, which means they may take years to establish new colonies. Many species of seabird form breeding colonies on or under the ground. This makes them vulnerable to being eaten by introduced mammalian predators.

As ecosystem engineers, seabirds have a huge impact on the environment around them. They cycle nutrients from the ocean to their home on land through their guano, which alters the chemistry of the soil. They may determine which plant species grow in an area through their burrowing activities.


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Seabirds currently living in Taranaki

These seabird species are known to spend time on land within the Taranaki region for nesting, feeding, moulting, and/or roosting.

species	habitat	status
 karoro black-backed gull	Widespread across coastal and inland habitat types.	not threatened
kāruhiruhi pied shag	Coastal, relatively uncommon. Roost on rocky headlands, around harbours and estuaries.	at risk recovering 
 kawau tūi little black shag	Found at harbours, lakes, estuaries, and coastal inlets.	at risk naturally uncommon
kawaupaka little shag	Widespread, found at marine and freshwater habitats.	at risk relict 
 kororā little blue penguin	Widespread. Coastal, nest in small cavities in rocks, caves, dunes, under artificial structures etc.	at risk declining
kuaka common diving petrel	Burrow in dunes or steep coastal slopes with dense ground cover and shallow soils. Found on predator-free offshore islands. Nest at Motumahanga, Ngā Motu/Sugar Loaf Islands.	at risk relict 
 māpunga black shag	Found in a variety of habitats including coastal waters, estuaries, harbours, rivers, streams, lakes, and ponds.	at risk relict
ōi grey-faced petrel	Prefer forested clifftops near the sea, especially islands, headlands, and peninsulas. Main colony at Rapanui. Taranaki is the southern limit of their west coast range.	not threatened regionally distinctive 

Seabirds currently living in Taranaki

species	habitat	status
 pakahā fluttering shearwater	Mainly found on predator-free offshore islands, burrow under scrub or in forest near coast. Nest at cliffs at Paraninihi and Mimi, previously at rockstack near Urenui.	endemic at risk relict
takahikare moana white-faced storm petrel	Typically breed on small, predator-free offshore islands, burrow under dense vegetation. Nest at Ngā Motu/Sugar Loaf Islands.	at risk relict 
 tara white-fronted tern	Coastal, roost and nest on shingle river beds, sand dunes, rock stacks, and cliffs. Nesting known at Pararaki Island and Motuotamatea, Ngā Motu/Sugar Loaf Islands.	at risk declining 
taranui Caspian tern	Coastal, solitary, widely distributed. Feed at sheltered bays and harbours, nest on coastal shellbanks and sandspits.	threatened nationally vulnerable regionally distinctive
 tarāpunga red-billed gull	Coastal, widespread around NZ. Nesting mainly restricted to offshore rockstacks, islands, and cliffs. Nest at Pararaki Island, Motuotamatea, Paritutu, and Motumahanga in the Ngā Motu/Sugar Loaf Island group. Ngā Motu/Sugar Loaf colonies are significant for their size and position on the west coast.	at risk declining
tītī sooty shearwater	Nesting mainly restricted to offshore islands. Large burrows dug into forested slopes. Nest at Motumahanga, Ngā Motu/Sugar Loaf Islands.	at risk declining 
 toanui flesh-footed shearwater	Nesting mainly restricted to offshore islands. Burrows dug into sandy or clay soils of forested slopes. Nest at Motumahanga, Ngā Motu/Sugar Loaf Islands.	at risk relict

Seabirds historically found in Taranaki

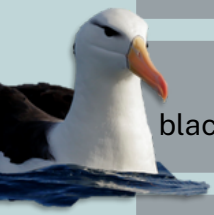
These seabird species are known to have come onshore to breed in the Taranaki region in recent history. Currently they may be seen offshore, but their former breeding colonies have been lost to predation or land use changes.

species	habitat	status
kōrure mottled petrel	Formerly found breeding in inland foothills throughout NZ. Currently only breed on predator-free islands in southern NZ.	endemic at risk relict
 tāiko black petrel	Breeding currently restricted to two Hauraki Gulf islands. Formerly bred at inland forests throughout the north island and northern south island. The last known mainland breeding site for this species was at Goat Rock in the Kaitake range in the late 1950s.	endemic threatened nationally vulnerable
tītī Cook's petrel	Previously nested in large numbers in the inland forests of Taranaki. Known colonies were on the northern slopes of Taranaki Mounga at Mangaoraka, and from Mangaehu to the headwaters of the Waitotara in the mid-19th century. Prefer steep slopes in unmodified forest over 300m elevation and 20-30km inland. Breeding is currently restricted to three islands at the northern and southern extents of their former range, and translocated populations.	endemic at risk relict

Seabirds found offshore in Taranaki

These are some of the seabird species that can be seen at sea around the Taranaki coast, but they do not come onto the land.

species	habitat	status
tākapu Australasian gannet	Mostly coastal. Commonly seen feeding in waters off Taranaki coast.	not threatened
tītī wainui fairy prion	Seen offshore, occur in large flocks.	at risk relict
toroa black-browed albatross	Seen offshore infrequently.	at risk naturally uncommon
toroa white-capped albatross	Seen offshore.	at risk declining



WHAT IS A SHOREBIRD?

A shorebird or wader is a bird that feeds at the margins of bodies of water, such as oceans, lakes, and rivers. This group includes stilts, oystercatchers, dotterels, herons, and plovers.

Shorebirds typically have long legs, used for wading in water, and a long bill, used for probing into the sediment to find small aquatic creatures to eat. Shorebirds may nest in very exposed areas, such as in shallow scrapes on sandy beaches. Although their eggs are well camouflaged, their nests are extremely vulnerable to both predation and human disturbance. Shorebirds are also vulnerable to disturbance when feeding and roosting.

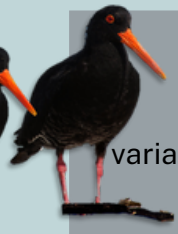
After raising their chicks over the warmer summer months, many shorebirds leave their nesting grounds to spend the winter at productive feeding grounds. Some species move north within New Zealand, such as ngutuparore/wrybill. Other species such as kuaka/bar-tailed godwits breed in the northern hemisphere during the boreal summer, then migrate to New Zealand to feed in our estuaries during the austral summer.

Shorebirds currently living in Taranaki

These shorebird species currently use habitat in the Taranaki region for feeding, nesting, and/or roosting.

species	habitat	status
huahou red knot or lesser knot	Feed at intertidal mudflats during the NZ summer. Migrate to the Arctic to breed.	non-resident native, migratory at risk declining
kōtuku white heron	Feed in estuarine habitat or wetlands. Only known to breed in the South Island in NZ, also in Australia.	threatened nationally critical regionally distinctive
kōtuku ngutupapa royal spoonbill	Breed in coastal colonies. Feed in estuaries and wetlands.	at risk naturally uncommon regionally distinctive
kuaka bar-tailed godwit	Feed at intertidal mudflats during the NZ summer. Migrate to the Arctic to breed.	native, migratory at risk declining
kuriri Pacific golden plover	Feed at intertidal mudflats during the NZ summer. Commonly seen at Waiongana. Migrate to the Arctic to breed.	non-resident native, migratory
matuku moana reef heron	Coastal, feed at rocky shorelines or estuaries.	threatened nationally endangered regionally distinctive
matuku white-faced heron	Feed in almost any aquatic habitat. Widespread throughout NZ.	not threatened

Shorebirds currently living in Taranaki

species	habitat	status
ngutuparore wrybill 	Breed in South Island braided rivers. Migrate north over winter to intertidal mudflats of the northern North Island.	endemic threatened nationally increasing regionally distinctive
pōaka pied stilt	Wetlands and coastal areas throughout NZ. Breeds at estuaries and rivermouths in Taranaki.	not threatened 
 pohowera banded dotterel	Widespread at riverbeds, beaches, and farmland. Post-breeding migration north to estuaries and coastal wetlands. Flocks of up to 100 overwinter at Waiongana.	endemic at risk, declining regionally distinctive
tōrea South Island pied oystercatcher	Breed at inland South Island riverbeds and farmland. Widespread at estuaries outside breeding season.	endemic  at risk, declining
 tōrea pango variable oystercatcher	Widespread, coastal. Feed at beaches and estuaries. Breed mainly at sandy beaches, sand spits, and in dunes.	endemic at risk, recovering regionally distinctive
tūturiwhatu northern NZ dotterel	Sandy beaches, mainly on the east coast of the northern North Island. Thinly spread at beaches along Taranaki coastline. The total population is around 2000 birds, with 25-50 found in Taranaki.	endemic  threatened nationally increasing regionally distinctive - Taranaki population forms an important range extension
 Eurasian whimbrel	Feed at intertidal mudflats during the NZ summer in low numbers. Migrate to the Arctic to breed.	non-resident native, migratory

Prioritising Species for Protection

A species is defined as endemic if it is only found in a particular country or geographical area. For example, pakahā/fluttering shearwaters are endemic to Aotearoa/New Zealand, as this is the only place that they come ashore to breed.

A species that is found in more than one country is considered native to multiple countries. For example, kōtuku/white herons nest in New Zealand and also in Australia and through the South Pacific and Asia, so they are termed 'native' to multiple countries.

A resident bird spends its entire life in Aotearoa/New Zealand, whereas migratory birds move between New Zealand and other countries.

Each endemic and native bird species is assigned a conservation status by the Department of Conservation, and these statuses are regularly reviewed. Conservation statuses follow the New Zealand Threat Classification System criteria, taking into account factors such as overall population sizes, geographical range, and population trends. The most recent (2021) conservation status document can be found here.

Conservation statuses are grouped into categories from most endangered to least endangered: threatened, at risk, and not threatened.

Taranaki Regional Council identifies 'regionally distinctive' species as those that are locally significant to the Taranaki region, and are at their distributional limit in Taranaki; only occur in or are relatively confined to Taranaki; or are particularly uncommon/rare in Taranaki (but are resident).

Conservation managers may use these definitions to prioritise the protection of endemic and threatened species, as this is their only home.

Threat Status of birds found in Taranaki

5
Threatened species

18
At Risk species

WHY CREATE SAFE HAVENS?

Many of the seabird and shorebird species found in Taranaki are classed as being threatened with, or at risk of, extinction. As highly mobile species, seabirds and shorebirds may move through several different habitats through the course of their life cycle. Many species are facing a multitude of threats, ranging from immediate threats such as predation, human disturbance, and entanglement in fishing gear, to longer-term and more pervasive threats such as widespread habitat loss, dwindling food supplies, competition with introduced species, sedimentation, shifting prey abundances, and more severe and frequent storm events.

Birds and the paths they take across the lands and oceans are fundamental to how people connect with the world around them. In centuries gone by, mana whenua used the flight paths of migratory seabirds to navigate forests, oceans and rivers across Taranaki. Oral histories tell of the importance of these birds to people's sense of place in the landscape.

The landscapes of Taranaki encompass vast spaces that could once again be home for seabirds and shorebirds. Creating safe havens to protect feeding, breeding, and roosting sites for these birds, protecting the land in our backyard that these birds also call home, may be the most straightforward and most impactful action we can take to ensure that these species are found in our day-to-day lives, not only in stories from the past.

The following pages describe the process of the creation of a safe haven site, and highlight key established projects in the Taranaki region that will form the cornerstones of the safe haven network.

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How to create a Safe Haven

site selection

Select a site to protect as a safe haven.
Selection criteria may include:

- presence of key species
- location and accessibility of the site
- habitat type(s) encompassed
- cultural and historical significance of the site
- ability to work with landowners and stakeholders

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goals and outcomes

Set SMART goals for the project:

- **S**pecific (what/why/who/where)
- **M**easurable (how will I know when it is accomplished?)
- **A**chievable (how realistic is the goal?)
- **R**elevant (does it align with wider needs?)
- **T**ime-Bound (what is the project time frame?)

- goals can be ecological, social, and/or economic

Record project outcomes:

- have goals been achieved?
- what changes can be observed?

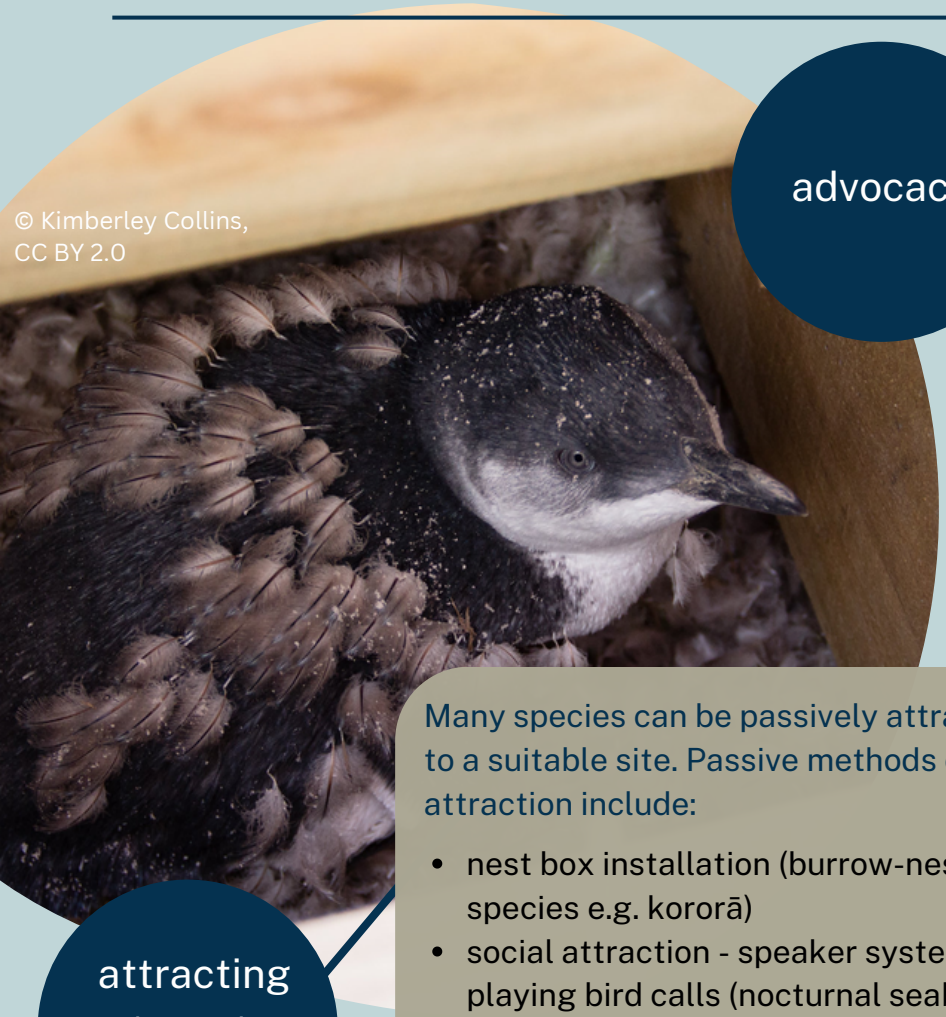

© Rapanui Grey-Faced Petrel Trust

site enhancement

Physically enhance and protect the target site. Actions may include:

- predator-proof fencing
- predator trapping
- weed removal
- replanting natives
- installing signage
- nest box installation
- track cutting
- temporary fencing around nest sites
- legally protecting the land

How to create a Safe Haven



advocacy

Share information about the project, and get others involved:

- informative signage at the site
- public talks
- media releases
- nest webcams
- social media pages
- community events
- citizen science projects
- conference presentations
- publication of studies in scientific literature

attracting target species

Many species can be passively attracted to a suitable site. Passive methods of attraction include:

- nest box installation (burrow-nesting species e.g. kororā)
- social attraction - speaker system playing bird calls (nocturnal seabirds e.g. ōi/grey-faced petrels)
- social attraction - decoy bird models (colonial surface nesters e.g. terns)

If a target species is not present in an area, and cannot be attracted passively, active restoration may be required. This may involve:

- species translocation

monitoring and research

Systematically record data to determine the outcomes of the project. Methods include:

- bird counts to measure species abundance (e.g. 5MBC)
- recording signs of bird presence (e.g. footprints, feathers, calls heard at night, dead birds found along coast)
- recording nesting attempts and fledging rates
- recording predator trapping effort and trap catches
- recording disturbance events
- species detection via acoustic recording
- marking and recapturing individual birds (e.g. RFID tagging or banding)
- uploading data to relevant platforms (e.g. eBird, iNaturalist, trapNZ, FALCON)
- publication of results in scientific literature

Safe Haven Formation Example

site selection

coastal site close to a source population of ōi/grey-faced petrels including a clifftop slope and a pocket of remnant forest, already covered by an extensive trapping network

goals

- to remove introduced predators from the site, within one year
- to maintain the site in a predator-free state in perpetuity
- to attract ōi/grey-faced petrels to the site, within two years
- to ensure that every school-aged child based within 50km of the site knows what an ōi/grey-faced petrel is, within three years

site enhancement

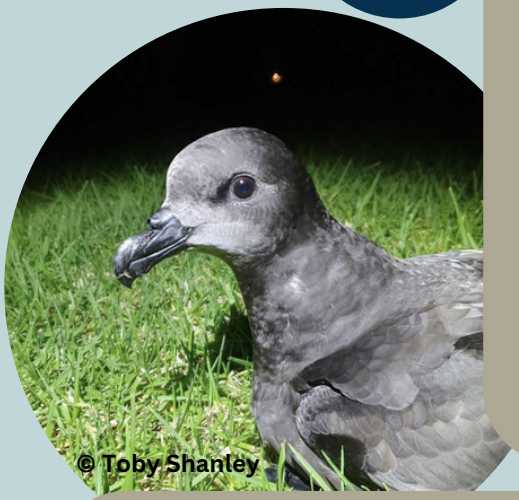
- predator-proof fence built around a section of the site which is suitable nesting habitat for burrowing petrels (forested, coastal clifftop)
- predators eliminated from within the fenced area
- trap network established around the perimeter of the fence, with traps at best-practice densities to target rodents, mustelids, and feral cats
- nest boxes installed to provide accessible nesting sites for ōi

attracting target species

solar-powered speaker system installed to broadcast calls of target species (ōi), and other species which may be prospecting along the coast (kuaka/common diving petrels and pakahā/fluttering shearwaters)

Safe Haven Formation Example

monitoring and research


© Toby Shanley

- predator traps serviced regularly, trap catch data entered into TrapNZ
- daytime and nocturnal five-minute bird counts conducted regularly, results recorded in eBird
- acoustic recorders and motion-triggered trail cameras deployed to record bird presence
- site visited periodically after dark to determine presence of target species, especially during late Autumn when ōi are prospecting for nests
- suitable personnel permitted to handle and band ōi and train local group members are recruited to assist project
- ōi are captured and banded at the site so as to enable individual identification and to track population dynamics
- banding and recapture data is submitted to FALCON

advocacy

- project profile created on social media, regular updates shared
- public site visits and working groups are held
- educational resources to be shared with local schools are compiled

outcomes

- Yr 1 - site identified, fence constructed
- Yr 2 - predator-free status achieved within fence, nest boxes installed, speaker system installed, personnel trained in banding
- Yr 3 - first ōi detected prospecting at the site, education programme rolled out in local schools, publicity events held at site
- Yr 5 - first ōi breeding attempt at site, results shared in popular media and published in scientific journals
- Yr 6 - first chick fledges from site
- Yr 7 - pakahā/fluttering shearwaters detected prospecting
- Yr 10 - first ōi chick from colony returns to site


© S Larcombe, WMIL

Case study: Ngāti Tara Oaonui Sandy Bay Society

Dotterel Defenders

site selection

- sandy beach with dynamic dune system
- selected due to presence of key species - tūturiwhatu/ northern NZ dotterel
- collaboration between local hapu Ngāti Tara, Taranaki iwi, DOC, landowners, and others

site enhancement

- network of predator traps established and regularly checked
- replanting of sand-binding species to stabilize dunes
- temporary fencing installed around tūturiwhatu nest sites
- submissions on council bylaws to increase protection for shorebirds
- informative signage installed at walkways and nest sites

advocacy

- signage at nesting sites and public accessways
- school and community events
- education programmes
- facebook page

monitoring and research

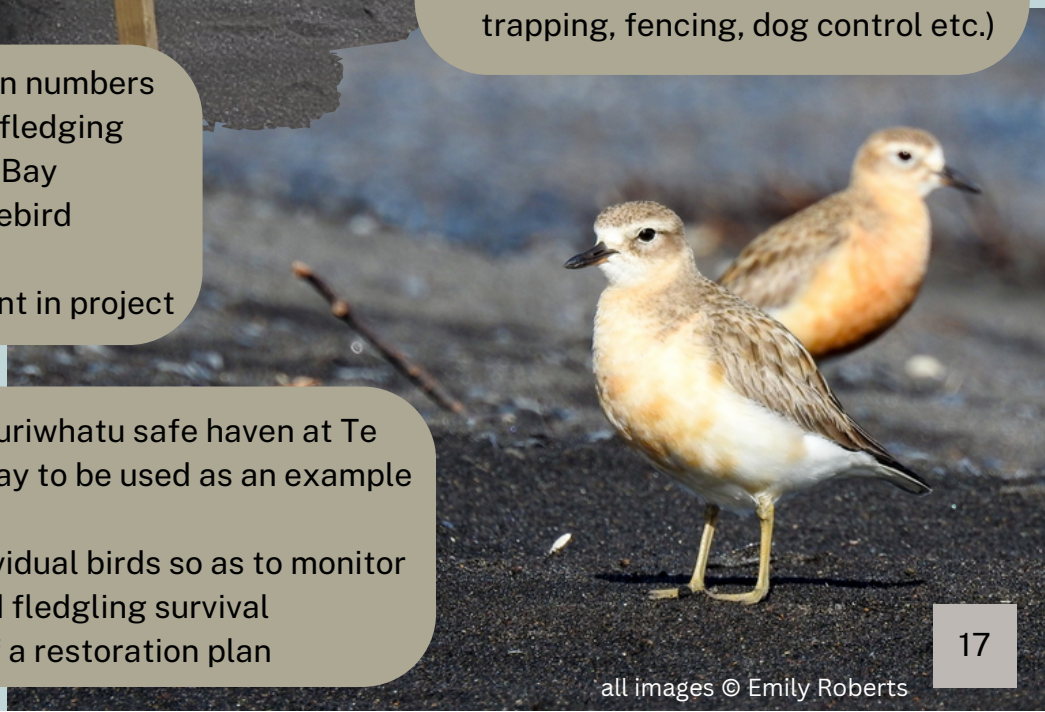
- bird counts to measure species abundance
- recording of nesting attempts and fledging rates
- recording of disturbance events
- monitoring of fledging success in relation to interventions (signage, trapping, fencing, dog control etc.)

outcomes

- significant increases in numbers of tūturiwhatu chicks fledging from Te Tuahu/Sandy Bay
- benefits to other shorebird species
- community involvement in project

next steps

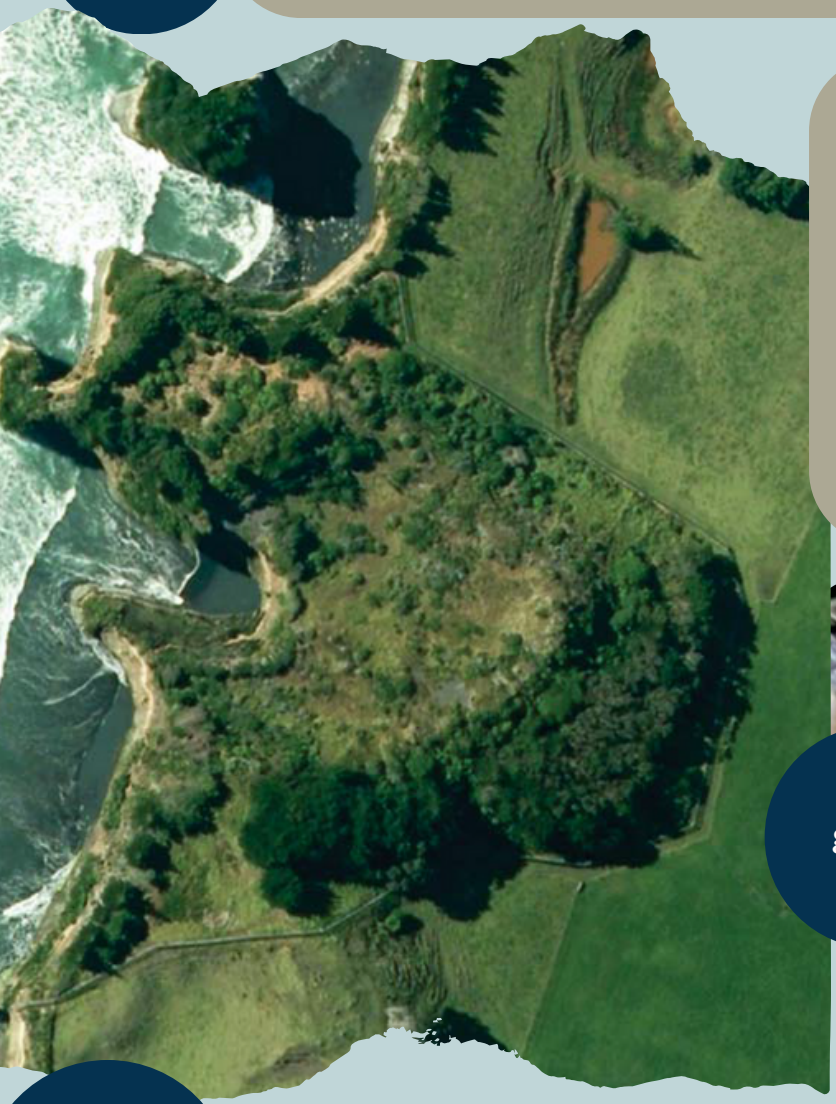
- established tūturiwhatu safe haven at Te Tuahu/Sandy Bay to be used as an example for other sites
- banding of individual birds so as to monitor movements and fledgling survival
- development of a restoration plan



Case study:
Rapanui Grey-Faced Petrel Trust

site selection

- coastal shrub and flaxland cliff landscape
- selected due to presence of key species - ōi/grey-faced petrels



site enhancement

- predator-proof fence constructed in 2002 protecting 2.4ha
- QEII covenant put in place covering fenced area in 2007
- nest boxes installed for ōi/grey-faced petrels
- predator trapping network around perimeter of fenceline and surrounding area
- native species planted
- boardwalk accessway to viewpoint installed

goal

'*To preserve the Rapanui Grey-Faced Petrel Covenant as a predator-free sanctuary for the long-term protection of the grey-faced petrel breeding colony and other indigenous species.*'

monitoring and research

- burrow occupancy counts
- TRC Biodiversity Plan

outcomes

- site protection achieved
- petrel burrow numbers significantly increased inside fenced area
- petrels attempting to nest outside fence

advocacy

- signage at the site
- boardwalk accessway to viewpoint
- media releases

next steps

- regular monitoring of nest boxes during breeding season
- population estimate
- banding of adults and chicks
- development of a restoration plan

Case study:
Kororā Kōrero

Ngā Motu Marine Reserve Society

site selection

- sandy beach and artificial rock wall adjacent to Port Taranaki
- selected due to presence of key species - kororā/little blue penguins - and accessibility of site

site enhancement

- nest box installation
- restoration planting
- predator trapping
- fencing to discourage dog walkers

all images © Emily Roberts

monitoring and research

- year-round weekly monitoring of birds in nest boxes
- monthly 'catch and release' monitoring sessions around the nest box area during breeding season
- RFID tagging
- video camera monitoring
- automated RFID readers on nest boxes
- GPS tracking

Project Hotspot

advocacy

- citizen science project
- short film 'The Secret Life of Kororā'
- signage at sites used by kororā
- livestream of nest from 'burrow cam'
- geostory displaying GPS tracking data
- school education sessions
- social media pages
- hands-on activities e.g. with the Kiwi Conservation Club

outcomes

- 100+ kororā microchipped
- understanding gained of kororā foraging trips, behaviour, and population dynamics
- community awareness and support

next steps

- greater use of automated RFID monitoring
- publication of research
- development of a restoration plan

Stakeholders and Community Groups

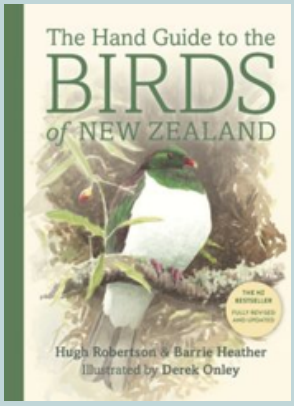
Te Whānau Toroa has been discussed with representatives from each of the following groups. This engagement strategy is open-ended, and discussions will continue with everyone willing to be involved.

group	activities and interests	aspirations
BirdsNZ	• supporting eBird use and the NZ Bird Atlas • locating and interpreting relevant historical records • potential source of funding through grants	• providing mentorship for novice birders • being utilised as a repository of knowledge on bird populations within Taranaki
Curious Minds Thermal Imagery	• developing drone techniques to remotely ID burrowing seabird species	• the technology developed is used to monitor remote/inaccessible seabird populations
DOC	• contributing staff support to monitoring projects • facilitating at-sea bird ID training through boat use	• local DOC staff are empowered to conduct bird counts and share their knowledge with others
Ngā Motu Marine Reserve Society	• kororā monitoring in the Port Taranaki area • upskilling and training others in monitoring techniques • better connections to community of bird groups • educational resources	• a network of skilled kororā practitioners is developed in Taranaki • high-quality research is conducted and shared in peer-reviewed journals • further development of remote electronic monitoring
Ngāti Mutunga	• kororā monitoring • ōi at Paraninihi - use of acoustic recorders to detect presence • upskilling whānau	• establishment of a fenced clifftop site for burrowing petrels • the use of an acoustic speaker system to attract petrels to the fenced site
Ngāti Tara Oaonui Sandy Bay Society	• predator eradication and restoration of biodiversity at Te Tuahu/Sandy Bay • increased community and financial support for project • use of technology to monitor dotterels • educational resources	• Te Tuahu/Sandy Bay is a safe haven for tūturiwhatu • Other key tūturiwhatu breeding sites are modelled on Te Tuahu/Sandy Bay

Stakeholders and Community Groups

group	activities and interests	aspirations
Ngāti Tawhirikura	• upskilling in bird ID and data recording • establishment of kororā nest boxes at restoration site	• familiarity with the bird species found at restoration site • bird counts regularly undertaken by confident and capable group members
Rapanui Grey Faced Petrel Trust	• ōi protection and monitoring at Rapanui • upskilling in monitoring techniques • exemplary site for advocacy and to educate and train others	• Rapanui is used as a training ground for other ōi-focussed restoration projects throughout Taranaki
South Taranaki District Council	• coastal sites potentially suitable for protection and restoration	• safe havens are established in South Taranaki
Taranaki Mounga Project	• intensive predator control in the Kaitake Ranges	• seabirds are re-introduced to the Kaitake Ranges
Taranaki Regional Council	• providing technical advice to restoration projects e.g. habitat condition assessments, biodiversity plans	• TRC utilized as key resource for enacting biodiversity plans
Te Kaahui o Rauru	• catchment restoration focus	• to be involved in biodiversity management • to develop their own biodiversity indicators which become a recognised and valuable part of biodiversity management
Te Kāhui o Taranaki	• education programmes • upskilling in bird ID and use of bird monitoring tools	• familiarity with the bird species found at restoration sites • bird counts regularly undertaken by confident and capable group members
Te Korowai o Ngāruahine Trust	• exploration of seabirds recorded in oral histories	• the status of indigenous species within the Ngāruahine Kaitiaki area is monitored, evaluated, and reported by Ngāruahine Uri.

Bird Identification



When learning to identify bird species, nothing beats spending time outisde looking at birds with more experienced birders. In addition, there are numerous guidebooks and electronic resources readily available to assist with bird identification. For the identification of unknown bird species, the New Zealand Birds Online website and the Merlin Bird ID app are both free and user-friendly. The eBird app provides a list of species likely to be seen based on the user's location. Photos can be submitted to the citizen science platform iNaturalist, where other users will happily assist with identification.

The ability to identify signs that a bird species is present in an area enables more information to be gathered. Once someone knows where and how to look, the presence of signs such as feathers, footprints, and faeces may be used to identify birds.

New Zealand Birds Online
The digital encyclopaedia of New Zealand birds

Five Minute Bird Counts

Conducting a five-minute bird count (5MBC) is an effective way to comprehensively record species abundance at a given location, and to determine changes in abundance over time. This method involves recording all bird species seen and heard within a five-minute period. Data can easily be recorded through the eBird app in the form of a checklist, from which it becomes part of a national open-source dataset.

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Bird Handling and Banding

Bird handling is often an important aspect of monitoring bird populations. In order to handle live birds, authorisation must be granted under the Wildlife Act. DOC oversee the authorisation process. Guidelines can be found here.

Banding involves marking individual birds by attaching unique numbered and/or coloured bands to their legs. Monitoring individually marked animals enables people to gain an understanding of population dynamics and individual movements. DOC outlines the process for gaining a banding certification on their website. Some bird groups such as penguins are commonly identified through microchips rather than bands.

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Beach Patrols

Birds New Zealand has been running a beach patrol scheme to identify dead seabirds washed up along the country's coastlines since 1971. The data collected through this scheme helps to establish the distribution of seabird species. Taking part in beach patrols is a great way to learn species identification.
Anyone can conduct a beach patrol. The Birds New Zealand website provides instructions and guidelines for the beach patrol process.

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Best-Practice Predator Trapping

It is important that trap networks follow best-practice guidelines, so that mammalian predators are targeted effectively.

- DOC has published a practical guide to trapping mustelids, rats, and possums
- Bionet.nz hosts a preliminary guideline towards best practice control of feral and stray cats
- Cat trap placement is clearly outlined in the Northland Pest Control Guidelines

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Acoustic Attraction

The use of a solar-powered speaker system to broadcast the calls of seabirds during the night at times of year when the birds are active is an established method of attracting birds to suitable locations. Pakahā/fluttering shearwaters and ōi/grey-faced petrels are known to be receptive to this technique, with effectiveness increasing with increasing proximity to an established colony.

Species Translocations

Translocations involve physically relocating animals from one site to another, in order to establish a new population or breeding colony. Translocations are used to reintroduce species to an area from which they are absent, and where they are highly unlikely to self-establish. DOC provides guidelines for groups wanting to conduct translocations.

Following the successful translocation of tītī/Cook's petrels to Maungaharuru/Boundary Stream Mainland Island, tītī are considered to be a good candidate for translocation to suitable sites in the Taranaki region. The DOC Best Practice Guide and Field Guide for petrel translocations provide detailed instructions for this process.

SELECTING SAFE HAVEN SITES

Sites to be designated as safe havens can be selected based on whichever key attributes a group is interested in preserving and enhancing, whether it be a local beach or landform, or a particular bird species of interest. Sites may be prioritized by factors including their proximity to the interested party and their accessibility. The legal ownership of a site must be determined, and suitable permissions sought, before any actions are taken. Cultural and historical significance of a site must be considered, particularly the importance of the location to mana whenua.

The potential safe haven site list contained in this document has been shaped by conversations with stakeholders, as well as through records of the presence of key seabird and shorebird species. Information has been gathered from eBird and iNaturalist records, Taranaki Regional Council reports, and in-person discussions with many dedicated birdwatchers and conservationists.

Potential safe haven sites are listed from north to south in the following pages. The list of sites contained in this document is by no means an exhaustive or definitive list. Information contained in oral histories, in people's minds, and in journals piled away in garages may yet be brought to light and contribute to the shaping of this project.

The current absence of sites in South Taranaki is not a reflection of a lack of suitable habitat or key species in this area; rather it is an artefact of a lower human population resulting in fewer recordings of key species. Suitable sites will be added to this region as they become apparent.

Potential Safe Haven Sites

location	habitat type(s)	key species present
Mōhakatino Estuary	intertidal mudflats cliffs	tūturiwhatu | NZ dotterel kororā | little blue penguin taranui | Caspian tern tōrea pango | variable oystercatcher possible petrel burrows in cliffs
Te Kawau Pā and Te Puia	island pā site - cliffs, offshore rockstacks mainland pā site - cliffs	kororā | little blue penguin possible petrel burrows in cliffs
Rapanui	coastal cliffs rivermouth estuary	ōi | grey-faced petrel kororā | little blue penguin matuku moana | reef heron tōrea pango | variable oystercatcher possibly kuaka | common diving petrel and pakahā | fluttering shearwater
Tongaporutu Estuary	intertidal mudflats offshore rockstacks caves	kororā | little blue penguin taranui | Caspian tern tōrea pango | variable oystercatcher matuku moana | reef heron
Tongaporutu Coast	cliffs offshore rockstacks small sand dunes	tūturiwhatu | NZ dotterel ōi | grey-faced petrel pakahā | fluttering shearwater tara | white-fronted tern
Parininihi (Whitecliffs)	cliffs sand dune	pakahā | fluttering shearwater possibly ōi | grey-faced petrel kororā | little blue penguin
Wai-iti Beach	sandy beach, sand dunes cliffs and rockstacks	kororā | little blue penguin pakahā | fluttering shearwater ōi | grey-faced petrel
Mimi Estuary	intertidal mudflats sand dunes	kororā | little blue penguin
Urenui	intertidal mudflats sandy beach rock wall	tūturiwhatu | NZ dotterel kororā | little blue penguin tōrea pango | variable oystercatcher

Potential Safe Haven Sites

location	habitat type(s)	key species present
Onaero Beach	sandy beach	kororā | little blue penguin
Waitara Estuary	intertidal mudflats	kōtuku ngutupapa | royal spoonbill taranui | Caspian tern tōrea pango | variable oystercatcher
Waiongana Estuary	intertidal mudflats	tūturiwhatu | NZ dotterel pohowera | banded dotterel tōrea pango | variable oystercatcher ngutuparore | wrybill kuriri | Pacific golden plover kuaka | bar-tailed godwit matuku moana | reef heron kōtuku | white heron pōaka | pied stilt taranui | Caspian tern
Bell Block	boulder beach cliffs sand dunes	kororā | little blue penguin tarāpunga | red-billed gull tōrea pango | variable oystercatcher
Waiwhakaiho Estuary	intertidal mudflats rivermouth sand dunes	kororā | little blue penguin tūturiwhatu | NZ dotterel matuku moana | reef heron tōrea pango | variable oystercatcher pōaka | pied stilt taranui | Caspian tern
Fitzroy & East End beaches	sandy beach	kororā | little blue penguin
Ngamotu Beach - coastal walkway	sandy beach rock wall at Port Taranaki	kororā | little blue penguin tōrea pango | variable oystercatcher matuku moana | reef heron
Ngā Motu/Sugar Loaf Islands: Motumahanga, Motuotamatea, Pararaki, Paritutu	rockstacks, cliffs, forested coastal slopes	toanui | flesh-footed shearwater tītī | sooty shearwater kuaka | common diving petrel takahikare moana | white-faced storm petrel ōi | grey-faced petrel pakahā | fluttering shearwater tara | white-fronted tern tarāpunga | red-billed gull

Potential Safe Haven Sites

location	habitat type(s)	key species present
Ahu Ahu Beach	cliffs sandy beach	kororā | little blue penguin ōi | grey-faced petrel tōrea pango | variable oystercatcher
Kaitake Range	inland forested ridges	important historical breeding site for burrowing petrels, especially tāiko | black petrel
Kaihihi	sandy beach	tūturiwhatu | NZ dotterel tōrea pango | variable oystercatcher pōaka | pied stilt
Komene Beach	sandy beach	tūturiwhatu | NZ dotterel pohowera | banded dotterel ngutuparore | wrybill kuriri | Pacific golden plover
Rahotu	sandy beach	tūturiwhatu | NZ dotterel pohowera | banded dotterel tōrea pango | variable oystercatcher
Manihi	sandy beach	tūturiwhatu | NZ dotterel tōrea pango | variable oystercatcher
Te Tuahu Sandy Bay	sandy beach	tūturiwhatu | NZ dotterel pohowera | banded dotterel kuaka | bar-tailed godwit tōrea pango | variable oystercatcher

Potential Safe Haven Site Map

Mōhakatino
Te Kawau
Rapanui
Tongaporutu
Paraninihi
Wai-iti
Mimi
Urenui
Onaero
Waitara
Waiongana
Bell Block
Waiwhakaiho
Fitzroy & East End
Ngā Motu/Sugar Loaf Islands
Ngāmotu Beach
Ahu Ahu
Kaitake Range
Komene
Kahihi
Rahotu
Manihi
Oaonui

map produced in qGIS
topographic layers sourced from LINZ

TEN YEAR PROJECT PHASING

Year 1

- determine initial sites for safe haven designation
- develop specific restoration plans for each site
- secure funding
- provide training in bird ID and data collection

Year 2

- focus on upskilling group members to empower group to conduct scientifically robust monitoring actions, e.g. bird/nest counts, banding birds
- install short-term site enhancement measures such as trap networks, predator-proof fences, acoustic attraction systems, and nest boxes depending on site and target species

Years 3-5

- focus on monitoring what is occurring at the site, such as bird numbers, nesting success, and trap catch data
- determine which factors are having an impact on the success of the site as a safe haven
- re-visit the project goals and update them if necessary

Years 6-10

- investigate if further enhancement actions are necessary, such as species translocation
- facilitate research into key population parameters such as GPS tracking to determine core areas of habitat use
- use learnings to support and encourage similar projects throughout the region

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Summary and Next Steps

The Taranaki region is abundant in the two main ingredients for creating safe havens: people with a keen interest in birds, and places where these birds could live. Several sites in the region are well-established as safe havens for a range of threatened seabirds and shorebirds, and many more sites have enormous potential for protection and restoration.

To continue growing this project, the following actions should be undertaken as a priority:

- A continuation of the upskilling and education of local people in bird identification, handling, banding, data recording, and restoration techniques. Accredited trainers will be needed to lead bird handling and banding sessions, so as to develop capacity in-region.
- Expert guidance should be recruited for the development of site-specific restoration and management plans, and for restoration techniques such as the construction of predator-proof fences and seabird speaker systems, and the development of translocation plans.
- Further research should be conducted into the identification of potential safe haven sites, especially in South Taranaki.

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