

National Predator Control Programme Annual Report 2024



Department of
Conservation
Te Papa Atawhai

National Predator Control Programme Annual Report 2024

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ISBN: 978-1-0670607-5-6 (online)

ISBN: 978-1-0670607-4-9 (print)

This document is available at

www.doc.govt.nz/predator-control-programme

Published by:

Department of Conservation Te Papa Atawhai, PO Box 10420,
Wellington 6140, New Zealand

Editing and design:

Te Rōpū Ratonga Auaha, Creative Services



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Cover: Fiordland tokoeka. *Photo: Nathaniel Hutchinson-Wong*

Inside cover: Mohua/yellowhead in Fiordland National Park. *Photo: Leon Everett, leonberardphotography.co.nz*



Contents

Introduction	4
Our 2024 work programme	6
Sites under sustained predator control	8
Predator control operations completed in 2024	9
Threatened species protected	10
Whio/blue duck	11
Tuke/pīwauwau/rock wren	12
Kiwi	14
Archey's and Hochstetter's frogs	17
Kākā	18
Mohua/yellowhead	19
Kea	21
North Island kōkako	22
Kākāriki karaka/orange-fronted parakeet	23
<i>Powelliphanta</i> snails	24
Pekapeka/bats	25
2024 – results of monitoring	26

Introduction

**Aotearoa New Zealand
is facing a biodiversity crisis.**

**Each year, an estimated
25 million native birds are killed
by rats, stoats, possums and
other predators.**

**Without predator control,
forest health will decline further
and many more native wildlife
populations will become extinct in
less than two human generations.**



Tuke/pīwauwau/rock wren calling in the alpine tops of Fiordland.

Photo: Sabine Bernert

Predator Free 2050 seeks to solve this problem with an ambitious goal to eradicate rats, stoats and possums from the country by 2050.

We don't yet have the tools and technology to completely eradicate predators, so a number of organisations are investing in research to develop them.

In the meantime, the National Predator Control Programme (NPCP) run by the Department of Conservation Te Papa Atawhai (DOC), is holding the line by using existing tools to suppress predator numbers and prevent the loss of the country's most vulnerable threatened species.

Currently, we control predators on a sustained, rotational basis over about 1.8 million hectares or 20% of public conservation land. We prioritise sites at a national level based on what native species are at risk and the characteristics of the ecosystems at each site.

We use biodegradable 1080 toxin (sodium fluoroacetate), which is the only effective tool for controlling predators across vast, remote and rugged landscapes. Helicopters distribute bait across the forest along pre-determined and monitored flight paths. In addition, we do large-scale trapping and ground-based baiting when needed.

We monitor predator numbers and native species populations carefully throughout the year to ensure our operations are working effectively to protect precious native species.

Our 2024 work programme

We've had some big wins in 2024.

We've turned the tide for Fiordland tokoeka, one of New Zealand's rarest kiwi species. Before predator control, every single kiwi chick we monitored died, meaning this species was facing extinction. After predator control, last year's kiwi chick survival rate climbed to over 60%. This is a massive improvement, and a fitting reward for the local team, who have spent 8 years learning how to protect this unique kiwi.

We're also seeing much better predator control results after changing the timing of some of our operations. Until now, we've struggled to get consistently good results during beech masts. Last year, we experimented with a different approach, following advice from DOC scientists.

A beech mast is a natural event, when New Zealand's beech forests produce a bumper crop of seed every few years. The food glut that follows causes rodent numbers to explode, closely followed by a surge in stoat numbers. A beech mast happened across parts of the South Island and central North Island in 2023.

We took a calculated risk with our response. Previously, we'd hit the beech mast head on, timing all our predator control for the spring bird-breeding season, when rodent numbers were also at their maximum growth rate. Usually this worked, but too often it didn't, with enough rats surviving to quickly recover back to dangerous levels.



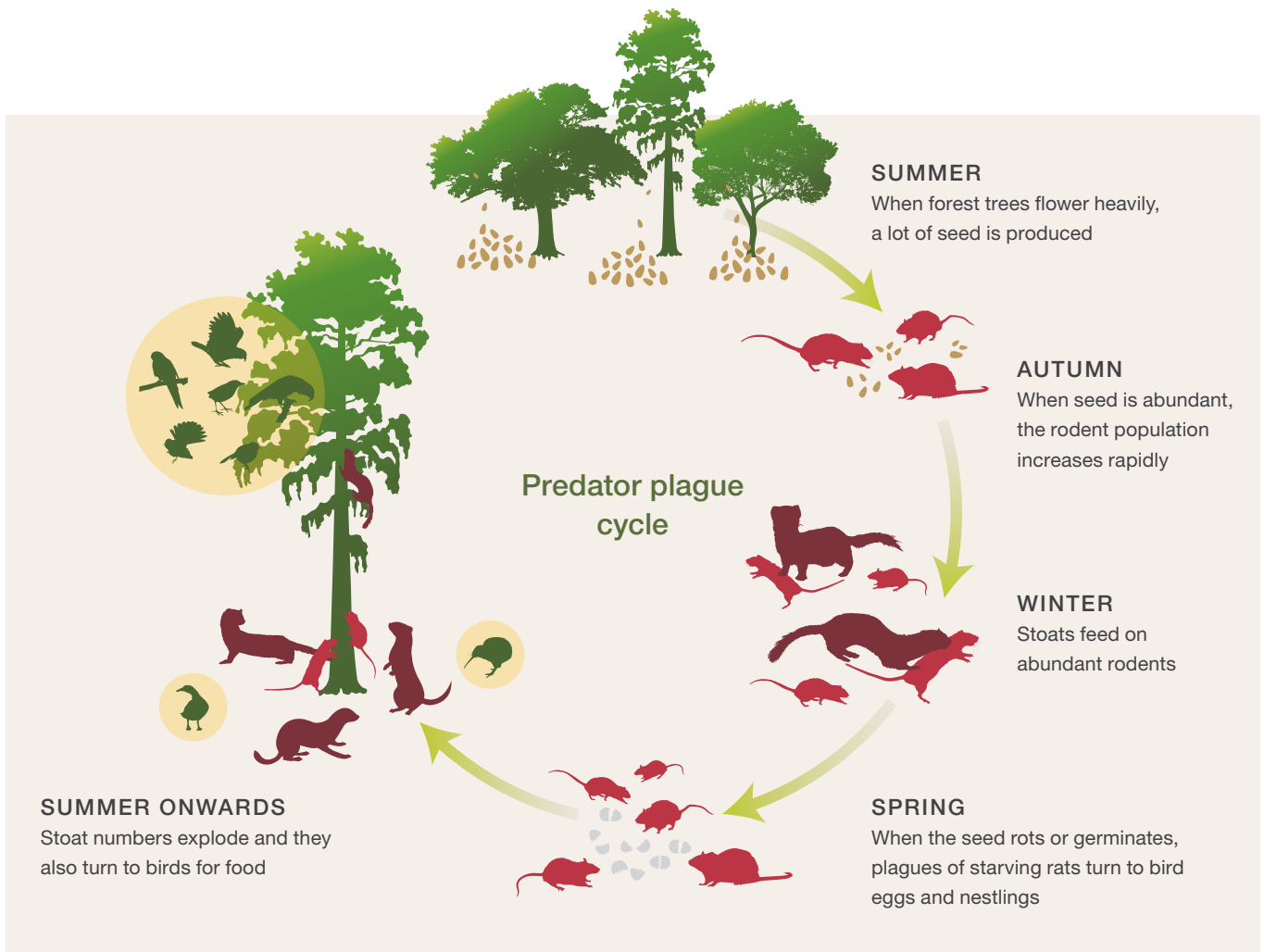
DOC Ranger Chris Dodd with the latest tokoeka chick at Shy Lake.
Photo: Monty Williams

Fiordland tokoeka chick survival rate



0%
without
predator control

Over 60%
with predator control



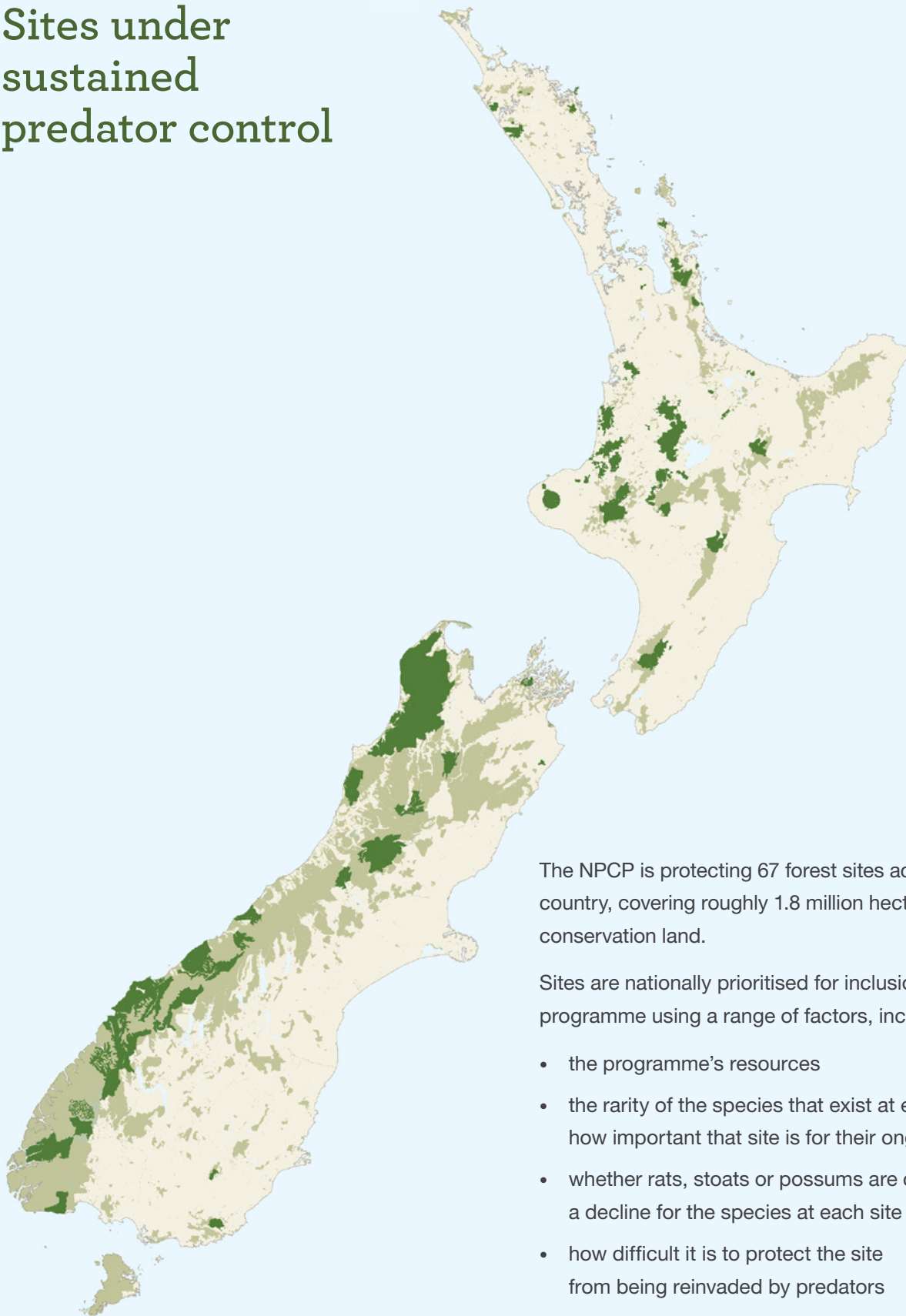
Last year, we changed our tactics, based on the careful review of our results from previous years and good science advice. We hit rats early, before beech seed was produced, or late, after the beech seed had germinated. It was nerve-wracking to deliberately halt our traditional spring predator control timing, but the results have been better than we had hoped.

As you will see in this report, all our operations suppressed rats effectively, in most cases down to undetectable levels. That's a huge help for the threatened species populations we're protecting. We also saw greatly improved mouse control results, which opens the door for better lizard and invertebrate protection in the future.

These are our best results ever during a beech mast year. The science advice to avoid predator control during a food glut has paid off. We'll continue to use our new tactics for future beech masts. We're also continuing to look for more innovations to improve our work. For example, DOC is currently developing new meat-based baits that could greatly improve our ability to control stoats and feral cats in a few years' time.

SITES WE'RE PROTECTING

Sites under sustained predator control



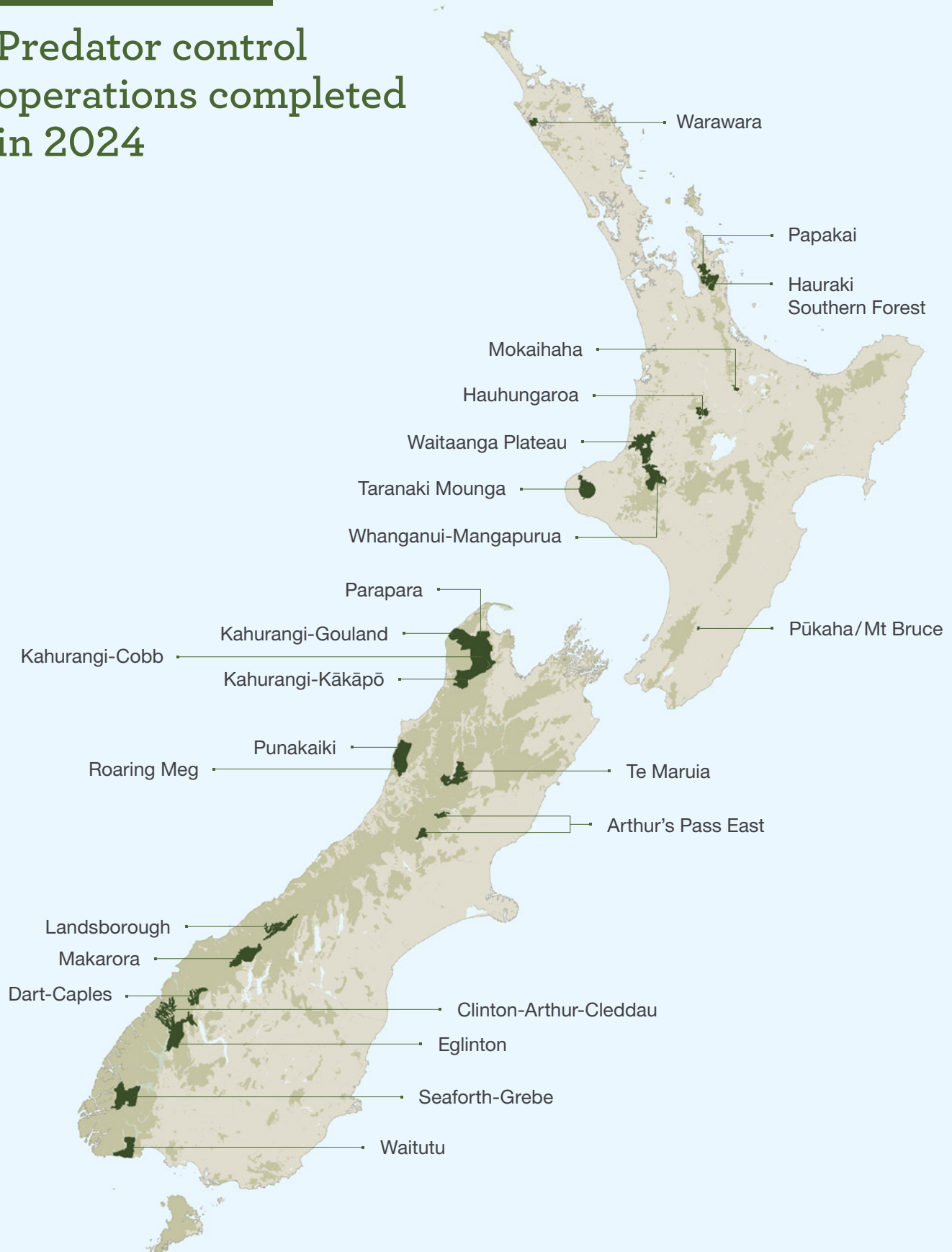
The NPCP is protecting 67 forest sites across the country, covering roughly 1.8 million hectares of public conservation land.

Sites are nationally prioritised for inclusion in the programme using a range of factors, including:

- the programme's resources
- the rarity of the species that exist at each site and how important that site is for their ongoing survival
- whether rats, stoats or possums are causing a decline for the species at each site
- how difficult it is to protect the site from being reinvaded by predators
- the vulnerability of the forest canopy to browsing by possums
- how much protection the forest has had over time, including predator and wild animal (deer and goat) control.

SITES WE'RE PROTECTING

Predator control operations completed in 2024



SPECIES WE'RE PROTECTING

Threatened species protected

Our programme provides crucial protection for Aotearoa New Zealand's threatened species at select locations where they are most at risk from introduced predators. These areas are frequently large, inaccessible and remote.

The following pages summarise the main species we work to protect. Without critical control of rats, stoats and possums, these species' populations would not survive in the wild over the long term.

Many other native species also benefit from predator control at these sites, but our programme targets the most vulnerable species highlighted in this report.

Whio / blue duck



Whio family in Katipō Creek, Heaphy Track. Photo: Richard Rossiter

The whio is a threatened native duck found only in Aotearoa New Zealand. It is an ancient species of waterfowl and one of the few worldwide that live year-round on fast-flowing waters. As a result, these birds are uniquely adapted to living in this environment.

With an estimated total population of less than 3,000 birds, whio are rarer than kiwi. They are vulnerable to stoat predation, especially during nesting and when females are in moult and cannot fly.

DOC protects whio populations throughout Kahurangi National Park, using a combination of aerial 1080 and traps. We must often make hard calls about which sites to prioritise for predator control operations each year. In 2024, we completed three aerial 1080 operations at whio sites in Kahurangi National Park. Unfortunately, due to funding constraints, we weren't able to include Wangapeka, where we relied on trapping alone. Since then, we've seen a 250% increase in the stoat catch rate in Wangapeka. We've also recorded a 38% decline in whio counts. This shows that when we don't control predators intensively enough, whio populations

decline. Although the Wangapeka block has traps in place year round, trapping alone wasn't enough to protect whio from their predators. We have been able to fund an aerial 1080 operation in Wangapeka in 2025.



WHIO / BLUE DUCK SITES PROTECTED IN 2024

- Kahurangi-Cobb
- Kahurangi-Goulard
- Kahurangi-Kākāpō
- Arthur's Pass East
- Dart-Caples
- Clinton-Arthur-Cleddau
- Makarora
- Taranaki Mounga
- Roaring Meg
- Whanganui-Mangapurua
- Hauhungaroa
- Landsborough

Tuke / pīwauwau / rock wren



Photo: Kerry Weston

The rock wren is New Zealand's only true alpine bird. These tiny birds live in the harsh alpine environment above the treeline year round, where they are thought to survive by having periods of semi-hibernation in winter. They are weak flyers and nest on the ground, making them easy prey for rats and stoats.

Each year, DOC surveys rock wrens at 25 sites across the country. Our research shows that aerial 1080 operations help rock wren populations recover and grow.



ROCK WREN SITES PROTECTED IN 2024

- Landsborough
- Arthur's Pass East
- Dart-Caples
- Kahurangi-Kākāpō
- Clinton-Arthur-Cleddau
- Makarora
- Seaforth-Grebe
- Te Maruia

CASE STUDY

Future looking brighter for tūke/pīwauwau/rock wren

A monitoring programme to study the effects of predator control on rock wrens is now in its fifth year and showing which techniques work best.

Alpine rock wrens live year round in the Southern Alps/ Kā Tiritiri o te Moana and Kahurangi National Park.

No bigger than a tauhou/silvereye, they hop and flit rather than flying, and nest on the ground, making them easy prey for introduced predators like rats and stoats. They are threatened with extinction.

Since 2019, DOC researchers have surveyed this wee bird at 25 sites from Fiordland to Kahurangi each summer. Predators are controlled at 19 sites, while 6 are left unmanaged.

Results to date have shown that rock wren numbers are mostly increasing where predators are being controlled through aerial 1080 and trapping but gradually declining at unmanaged sites. On average, there are twice as many rock wrens in areas with predator control compared with areas without.

With 5 years of monitoring data, it's now possible to see which predator control methods benefit rock wren most.

We're seeing the best results when aerial 1080 is used in the alpine area above the treeline where rock wrens live year round, and not just in the surrounding forest. Stoats can be common in alpine areas and rats are increasingly seen in this environment too, possibly due to temperatures becoming warmer.

More recently, monitoring is showing that rock wren numbers are growing in Westland podocarp and hardwood forest areas in the 'beech gap', where predators have been controlled since 2022. These forests tend to have fewer predators than beech forests and don't need to be controlled as frequently.

Results also confirm the need to control predators whenever the beech forest seeds, as predator numbers soar in response to more food.

With data confirming positive effects of predator control for rock wren populations, we have been able to scale back the frequency of our monitoring. Sites are now surveyed every two years – half each summer. This is sufficient to measure long-term trends. In 2024 we surveyed rock wren sites from Haast to Kahurangi and in 2025 we will visit the lower South Island sites.



Photo: DOC



Fiordland tokoeka. Photo: © JamesReardon.org

Kiwi, our beloved national icon, rely on ongoing predator control. The biggest threat to kiwi chicks is stoats. In areas without predator control, kiwi are declining by 2% every year.

Aotearoa has five species of kiwi. Brown kiwi live in the North Island and roroa/great spotted kiwi in the top half of the South Island. Kiwi pukupuku/little spotted kiwi are extinct on the mainland and are now found only on predator free islands and in sanctuaries. Only one natural population of rowi remains, near Ōkārito in South Westland. Lastly, the tokoeka has three distinct forms, named after the areas in which they are found, Haast, Fiordland and Rakiura.



KIWI SITES PROTECTED IN 2024

- Arthur's Pass East
- Kahurangi-Kākāpō
- Clinton-Arthur-Cleddau
- Kahurangi-Cobb
- Taranaki Mounga
- Kahurangi-Goulard
- Seaforth-Grebe
- Warawara
- Papakai
- Pūkaha/Mt Bruce
- Punakaiki
- Roaring Meg
- Whanganui-Mangapurua
- Hauhungaroa
- Waitaanga Plateau
- Hauraki-Southern Forest

CASE STUDY

Tokoeka kiwi recover in Fiordland thanks to predator control

An eight-year monitoring programme has shown aerial 1080 predator control reversing the fortunes for Fiordland tokoeka from decline to growth.

DOC has been monitoring the population of Fiordland tokoeka, or southern brown kiwi, at Shy Lake on the remote Wet Jacket peninsula in Fiordland since 2017 when stoats killed most chicks (none of them survived past 62 days old), and the population was declining by more than 2% per year.

Two aerial 1080 predator control operations, in 2020 and 2023, knocked back stoats and all radio-tagged adult tokoeka survived exposure to 1080 in their environment. Over the two summers after the 2020 operation, 21% of the kiwi chicks survived their first year of life.

In the 2023/24 season, chick survival spiked to over 60%, more than reversing the population decline with a growth of about 3% per year.

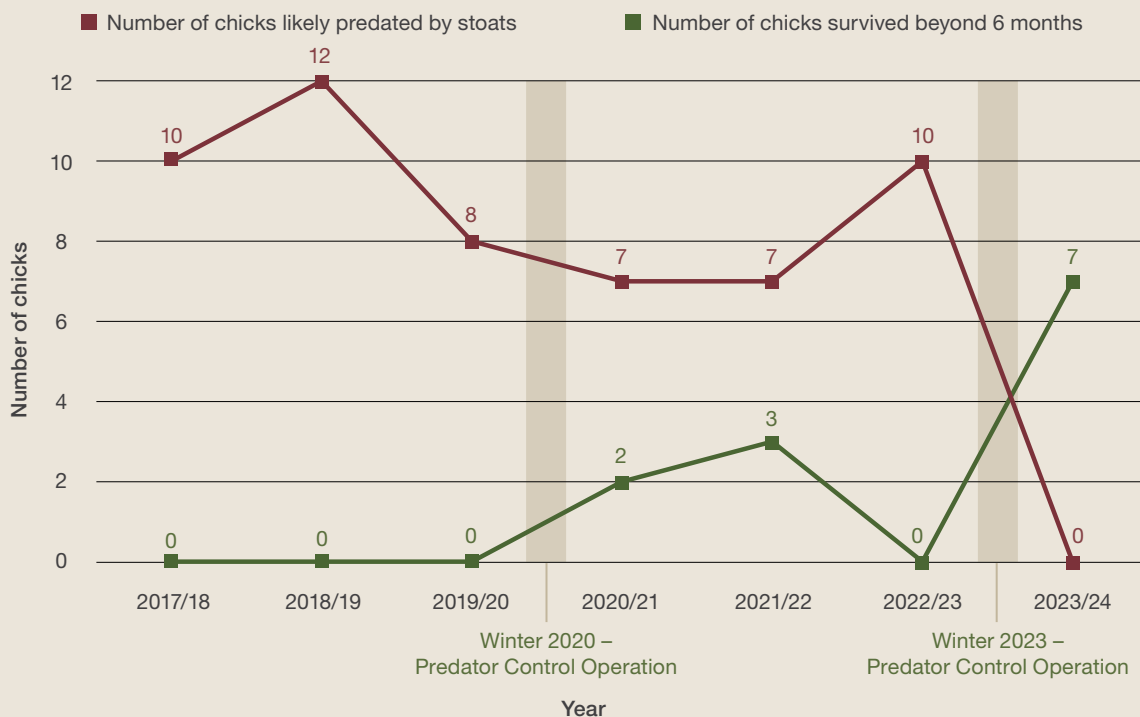
Through this research we have learnt and verified how to stop the extinction of Fiordland tokoeka. We have now committed the resources to protecting this unique kiwi species into the future with the confidence that aerial 1080 makes a huge difference for their population recovery.

Other bird species in the area have benefited from aerial 1080 predator control as well, with increases in species like kakarui/South Island robin and kākāriki/yellow-crowned parakeet, with sightings of kākā, tūke/rock wren and kea.

We're confident that aerial 1080 every three years is enough to grow the kiwi population. However, with such high chick survival rates of more than 60%, less frequent operations could still result in a growing population of tokoeka.

The nearby Seaforth-Grebe area (59,000 ha) was included in the NPCP for the first time in autumn 2024 and will extend the area where we're working to protect Fiordland tokoeka.

Shy Lake chick survival 2017/18–2023/24





DOC Ranger Monty Williams preparing harness change equipment before attaching a transmitter to a tokoeka. *Photo: Troy Watson*



DOC Ranger Chris Dodd with 'Spanners', one of the first monitored tokoeka chicks to survive during the programme, now fully grown. *Photo: Monty Williams*



Camping at Shy Lake. *Photo: Chris Dodd*



DOC Ranger Chris Dodd extracting tokoeka from its burrow. *Photo: Monty Williams*



DOC Ranger Monty Williams tracking tokoeka in the snow. *Photo: Chris Dodd*



A gang of kea hanging out at the Shy Lake bivvies. *Photo: Chris Dodd*

Archey's and Hochstetter's frogs



Archey's frog (left) and Hochstetter's frog (right). Photo: DOC

The land-based Archey's frog is a modern-day dinosaur; the species is almost unchanged from its 150-million-year-old fossilised relatives. Their eggs hatch almost fully-formed frogs rather than tadpoles and the father carries his offspring around on his back. These little amphibians are critically endangered, with only three remaining populations in Whareorino and Pureora forests in Waikato and on the Coromandel Peninsula.

Hochstetter's frog is semi-aquatic, with partially webbed feet. It is wartier and more widespread than Archey's frog. Hochstetter's frog has been sighted at Waipu in the upper North Island, on Aotea/ Great Barrier Island, and in Coromandel, Waikato, the central North Island and Raukūmara Range.

The NPCP protects Archey's and Hochstetter's frog populations with aerial and ground-based predator control across a range of North Island sites. The dynamic between predators and our native amphibians is complex, and we are continuing to learn how to provide the best protection.

FROG SITES PROTECTED IN 2024



- Papakai
- Hauraki-Southern Forest



South Island kākā. Photo: Sarah Stirrup

These boisterous parrots are known for their playful and raucous antics. However, tree-nesting kākā are vulnerable to predation by rats, possums and stoats. Where we control predators, we are seeing recovering kākā populations. Thanks to regular predator control, they're reasonably common in many of our sites, on predator free offshore islands and in and around fenced sanctuaries.

Female kākā are more vulnerable to predation, especially when they're confined to nest cavities during the breeding season. Research that tracks tagged kākā shows that without effective predator control almost all mainland populations have populations where there are more males than females. Studying the ratio of kākā males to females can help us understand the health of a population and its predation pressures.

This year, kākā monitoring in Waipapa Ecological Area in Pureora Forest showed how ongoing predator control can aid populations to have a more balanced sex ratio. Waipapa has received regular and ongoing predator control since the early 2000s. Sampling of kākā populations in Waipapa before 2005 found 2.1 males for every 1 female. Our team sampled populations again in 2024 and found a 1:1 sex ratio, the most even sex ratio achieved for any kākā population nationally since we began this research.



KĀKĀ SITES PROTECTED IN 2024

- | | |
|--------------------------|-------------------|
| • Eglinton | • Waitutu |
| • Arthur's Pass East | • Seaforth-Grebe |
| • Dart-Caples | • Mokaihaha |
| • Kahurangi-Kākāpō | • Hauhungaroa |
| • Clinton-Arthur-Cleddau | • Te Maruia |
| • Kahurangi-Cobb | • Landsborough |
| • Makarora | • Punakaiki |
| • Kahurangi-Gouland | • Roaring Meg |
| | • Pūkaha/Mt Bruce |

Mohua/yellowhead



Mohua on Anchor Island. Photo: Leon Everett, leonberardphotography.co.nz

In the 1800s, the small, yellow, insect-eating mohua/yellowhead was one of Aotearoa New Zealand's most abundant forest birds. But since the introduction of predators, mohua have declined and now only a few isolated populations remain in the South Island and on predator free offshore islands.

Mohua populations naturally go up and down from year to year based on conditions in their environment. The best way to measure how well populations are doing is by looking at the overall population trend across years.

Our monitoring at predator control sites shows that some mohua populations are increasing while others are stable or gradually declining. Even for mohua populations that are slowly declining, they're faring much better than other mohua populations without predator control. When we don't control predators, mohua populations steeply decline and completely disappear from an area.

This year brought good news for mohua in the Eglinton. Before the NPCP existed, mohua populations were in dire straits. The population was struggling to recover even after several bird translocations

from protected islands. Thanks to over 10 years of regular aerial 1080 operations in the Eglinton, the 2024 monitoring showed a large increase in mohua populations – almost doubling the population. However, we'll need to continue predator control and see how the population tracks across years to be confident the population is recovering.



MOHUA SITES PROTECTED IN 2024

- Eglinton
- Landsborough
- Arthur's Pass East
- Dart-Caples
- Makarora
- Seaforth-Grebe

CASE STUDY

Improved timing of mast response

This year the NPCP achieved its best results ever, due in part to improved timing for operations in areas where beech forest seeding or mast caused an upswing in predators.

DOC delivered 24 aerial predator control operations across 736,000 ha in 2024.

Monitoring has revealed exceptionally good results from this work, with rats consistently reduced to undetectable or very low levels and stoats and possums effectively controlled. Mice were also routinely reduced to low levels, giving relief to native insects and lizards.

We're especially pleased with these results, as a moderate beech mast occurred in 2023 affecting large parts of the South Island and Ruapehu. This caused a surge in rodent populations, followed by a spike in stoat numbers the following summer.

Previously, we've struggled to get good results during beech masts. We timed operations for late winter and spring to protect nesting forest birds from predators.

This generally worked well, but we'd get poorer results in times of heavy seeding such as in 2019.

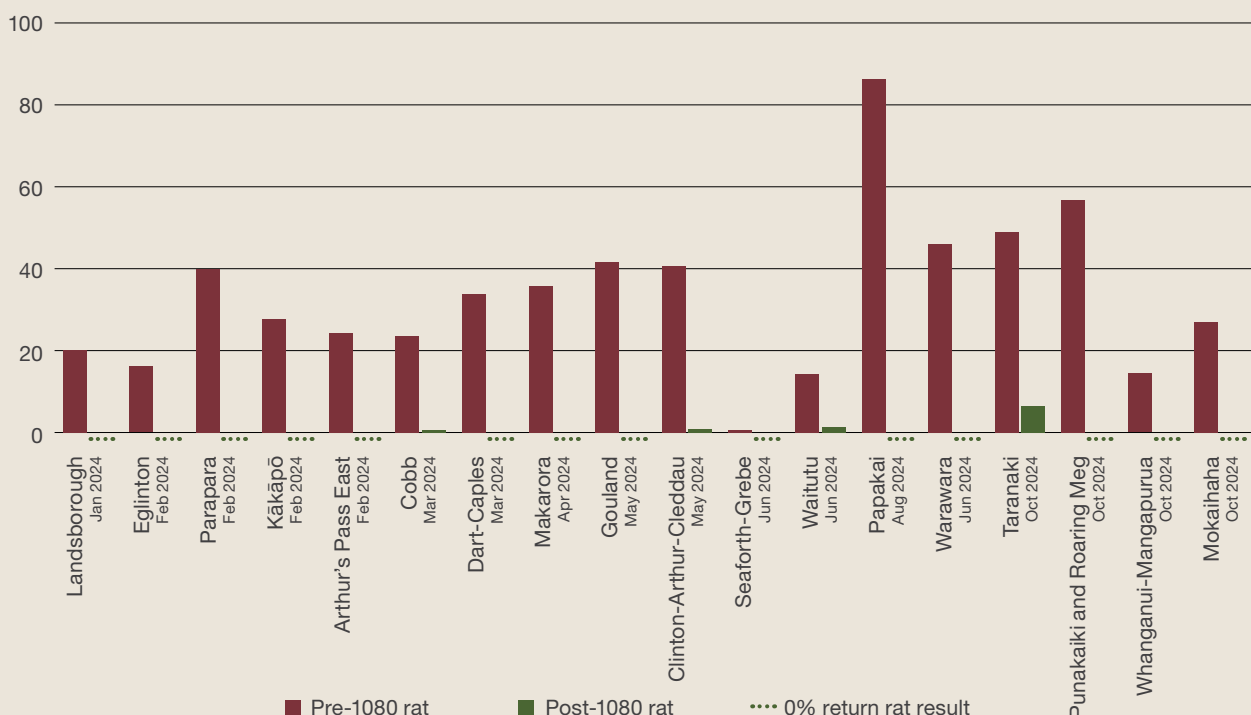
Last year, we tested new timings to avoid the 'food glut' when beech seed is on the ground and rodents have plenty to eat. This meant running operations either before the seed hit the ground or after it had gone, when rodents were hungry.

In 2023, predator control operations were run in summer, before the beech seed fell. Further operations were then run in summer and autumn 2024, after the seed had been eaten or germinated.

We took a measured risk trialling this different approach, but it proved highly successful with consistently good results – giving our vulnerable native birds, bats and other wildlife the best chance to thrive.

Regular reviews using the latest research is an important part of the drive for continual improvement in predator control work. This new approach will stand us in good stead for the next big beech mast when predator numbers surge again.

Rat monitoring results for 2024 before and after predator control operations



Kea



Kea feeding on harakeke. Photo: Sarah Weber

Clever kea are parrots that live from alpine tops to coastal forests. They're well-known for their antics with road cones, cars and camping equipment. But this iconic parrot is nationally endangered, due to introduced predators and human activity. Their numbers are in greatest decline in eastern areas of the South Island. Aerial 1080 is the only effective predator control option in the vast, remote and rugged terrain they inhabit, and it can significantly improve kea survival and breeding success.

Despite the benefits to kea from the use of aerial 1080 at a population level, unfortunately the toxin can pose a risk to individual kea. Kea are curious and tend to explore new objects and foods – which can lead them to try eating 1080 bait. Research has shown that the risk of 1080 to kea is likely increased near places where kea have learnt to scrounge food from humans.

We are continually working to reduce the risks to kea from the use of 1080 and improve the benefits from predator control. We are testing bird repellents, to see if they will stop kea from eating 1080 baits, without also deterring the predators we are targeting. We are also testing a new toxin

(para-aminopropiophenone or PAPP), and developing new meat-based baits, which may be lower risk for kea, but still effective at controlling their predators. Finally, we ask people not to feed kea, as this places them at greater risk.

DOC's Code of Practice for aerial 1080 use in kea habitat contains operational standards to protect kea. It is based on the best available research to date, including a dataset of 358 kea monitored across 29 operations.



KEA SITES PROTECTED IN 2024

- | | |
|--------------------------|----------------------|
| • Kahurangi-Goulard | • Waitutu |
| • Kahurangi-Cobb | • Landsborough |
| • Makarora | • Te Maruia |
| • Roaring Meg | • Seaforth-Grebe |
| • Dart-Caples | • Arthur's Pass East |
| • Clinton-Arthur-Cleddau | • Kahurangi-Kākāpō |
| • Eglinton | • Roaring Meg |
| | • Punakaiki |

North Island kōkako



Juvenile North Island kōkako in Te Hauturu-o-Toi/Little Barrier Island Nature Reserve. *Photo: Paul Jansen*

In the early 1900s, kōkako were common in forests throughout New Zealand. Sadly, the South Island kōkako is now presumed extinct. By the 1990s, North Island kōkako declined to fewer than 400, but through management, predator control and huge efforts by community groups, the number of kōkako pairs exceeded 2,000 in 2020.



NORTH ISLAND KŌKAKO SITES PROTECTED IN 2024

- Pūkaha/Mt Bruce
- Mokaihaha
- Hauhungaroa
- Waitaanga Plateau

Kākāriki karaka/orange-fronted parakeet



Kākāriki karaka, our country's rarest mainland forest bird, in a captive breeding facility. *Photo: Sabine Bernert*

With fewer than 450 individuals in the wild, the kākāriki karaka is Aotearoa New Zealand's rarest mainland forest bird. Kākāriki karaka are currently found in the wild in Hurunui South Branch in Lake Sumner Forest Park and the Hawdon valley in Arthur's Pass National Park. A boom-and-bust species, kākāriki karaka numbers can naturally increase rapidly when environmental conditions are good but can also decline rapidly when they are not.

The NPCP includes predator control operations in Arthur's Pass National Park to protect remaining populations of kākāriki karaka against their key threats – rats and stoats. Since kākāriki karaka chicks were translocated to the Hawdon valley in 2022, this population has had an upward trend. The field team reported spotting 8 nests this breeding season and limited signs of predators.

Other populations at nearby sites like the Hurunui South Branch have had less promising results. Population estimates for kākāriki karaka in the area show a downward trend over the last few years. Although predator control operations help reduce the threat of invasive predators on these birds, they continue to face threats and have dramatic population fluctuations.

NPCP aerial 1080 operations are a part of a greater collaborative effort to protect these birds. DOC, volunteers, and community groups carry out ground-based predator control throughout the year, helping to hold the line for kākāriki karaka.



KĀKĀRIKI KARAKA SITES PROTECTED IN 2024

- Arthur's Pass East



Photo: Alfonso Siciliano

The carnivorous *Powelliphanta* are among the largest snails in the world, but are in danger of extinction. The latest threat classification report on Aotearoa New Zealand's carnivorous land snails shows that, of the 109 species assessed, 48 have declined in status while only six have improved.

On a brighter note, the threat status of two types of *Powelliphanta* in western Golden Bay has improved from Nationally Endangered to Nationally Vulnerable thanks to predator control. Their numbers are higher following the initiation of possum and rat control programmes, although predation by feral pigs has compromised their resurgence.

The report highlighted the urgent need for action to control exotic browsers and predators, protect habitat and address climate change to enable our giant land snails to survive. *Powelliphanta* are vulnerable to predation not only by rats and possums but also pigs, thrushes, hedgehogs and native weka.

Possum and rat control is a useful start but is unlikely to be enough to fully protect them. The ecology of *Powelliphanta* is complex and we are still working to understand the impacts of our predator control operations on these species.



POWELLIPHANTA SITES PROTECTED IN 2024

- Landsborough
- Kahurangi-Kākāpō
- Kahurangi-Cobb
- Taranaki Mounga
- Kahurangi-Goulard
- Seaforth-Grebe
- Punakaiki
- Roaring Meg



Pekapeka/New Zealand short-tailed bat. Photo: David Mudge, Ngā Manu

Aotearoa New Zealand is unusual for having only one type of native land mammal – bats. One bat species is extinct, and we have just two bat species remaining, both of which are vulnerable to predation. Both species are very small, about the length of your thumb or smaller, use echolocation to hunt for insects and roost in crevices like hollow trunks and caves.

Long-tailed bats have the highest threat ranking of Nationally Critical. They are distributed throughout Aotearoa New Zealand. Short-tailed bats are less threatened but also less widespread, found only in scattered forest sites in the North Island, Fiordland and on Codfish Island/Whenua Hou.

DOC rangers recently discovered a possible record-breaking roost of threatened long-tailed bats in Whirinaki Te Pua-a-Tāne Conservation Park, while monitoring the results of our predator control. The tree roost included a staggering 275 individual pekapeka – the largest tree roost recorded.

The typical pekapeka roost holds up to 100 individuals. The record of 358 bats was from a roost in a cave in the Te Kuiti-Waitomo area, monitored in the 1990s. But this latest find is the largest recorded for a tree roost.

We have completed intensive predator control operations in Whirinaki for more than 20 years. Large bat roosts like this one demonstrate that predator control benefits our critically endangered pekapeka.



PEKAPEKA SITES PROTECTED IN 2024

- | | |
|--------------------------|---------------------------|
| • Eglinton | • Papakai |
| • Landsborough | • Mokaihaha |
| • Dart-Caples | • Whanganui-Mangapurua |
| • Kahurangi-Kākāpō | • Hauhungaroa |
| • Clinton-Arthur-Cleddau | • Waitaanga Plateau |
| • Kahurangi-Cobb | • Hauraki-Southern Forest |
| • Makarora | • Te Maruia |
| • Seaforth-Grebe | |
| • Warawara | |

RESULT MONITORING

2024 – results of monitoring

Pre- and post-operation rat and possum monitoring results, 2024

We monitor predator numbers before and after predator control operations to measure the effectiveness of the operation. Most commonly we measure rat populations, because their numbers are the single-biggest driver for the NPCP.

DOC monitors rat numbers using tracking tunnels that contain ink pads. The tracking tunnel index is the percentage of tracking tunnels containing rat prints.

In 2024, NPCP operations often achieved a post-operational rat monitoring result of 0% (indicated by a dotted line on the graph on page 20). This means that predator control successfully reduced rats to undetectable or very low levels.

The 2024 rat monitoring results were very encouraging.

Ultimately, however, the success of an operation is measured by long-term monitoring of the native species we are aiming to protect.

Long-term monitoring of native and introduced predator species is expensive and labour-intensive. The NPCP has invested in technology to more efficiently measure long-term trends in multiple species across our sites.

We use digital audio recorders to record daytime birds and bats in the spring, and night-time birds such as kiwi in the summer. A wide range of mammals, such as stoats, possums, hedgehogs, feral cats and ungulates are monitored using trail cameras. While our dataset is only a few years old and it's going to take time to see trends, the trail cameras also give us a fantastic snapshot of what is happening in our forests.



Acoustic recorder set up to capture bird and bat audio. *Photo: DOC*



Camera set up on a tree. *Photo: DOC*



Camera set up on a tree with a measuring tape to get the height and angle correct. *Photo: DOC*



Tuke/pīwauwau/rock wren. Photo: Craig McKenzie



**Te Kāwanatanga
o Aotearoa**
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