

BATTLE FOR OUR BIRDS *in Fiordland National Park*



OUTCOME AND RESULTS

Summary:

In 2016 the Department of Conservation carried out predator control operations in response to potential rodent and stoat plagues at 21 sites throughout the country. The operations were successful with predator numbers reduced at all sites, providing protection to vulnerable native species. Long and short-term outcome monitoring clearly shows that this method of predator control is benefiting native species that would otherwise be at risk of local extinction during predator irruption events. The information below focuses on results and outcomes from Fiordland while also given some comparison with other control sites.

Background:

In 2016 the Department of Conservation responded to a predicted predator irruption resulting from a significant beech seed fall event. This was achieved by controlling predator numbers using aerially applied cereal baits containing 0.15% sodium fluoroacetate (1080) over the following areas within Fiordland National Park:

- Clinton Valley 10,970ha
- Arthur Valley 12,732ha
- Eglinton 26,240ha
- Kepler 20,700ha
- Waitutu 29,250ha

The total area (99,892ha) represents approximately 7.9 % of Fiordland National Park. Vulnerable species in areas without predator control will be taking a significant 'hit' every mast year.

The 2016 beech mast was significant in terms of volume of seed produced, to give an idea of the scale: in a non-mast year the weight per/ha of red beech tree seed is around 10kg/ha. In the 2014 mast year that increased to 150kg/ha. This resulted in rodent irruptions over much of Fiordland. In the 2016 mast year, the seed weight increased to a massive 355kg/ha (information from Kepler seed rain results).



Native species that have benefited from predator control operations in Fiordland: Mōhua (photo: jamesreardon.org), kāka (photo: Toni Ellis), South Island robin (photo: Barry Harcourt)

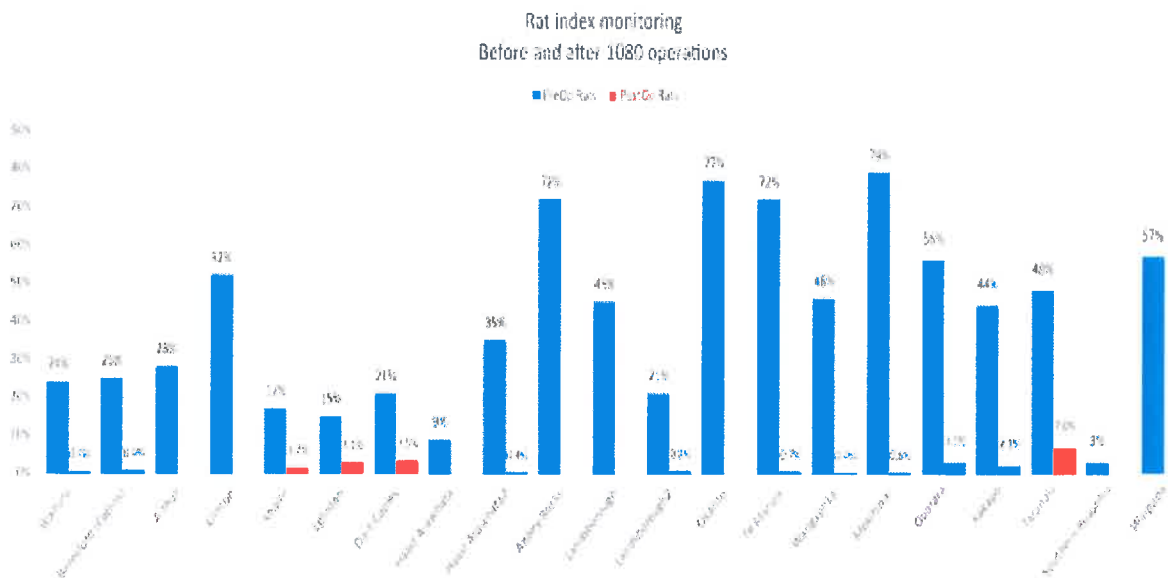


Department of
Conservation
Te Papa Atawhai

Results monitoring:

The Department of Conservation monitors rat numbers quarterly at managed sites using tracking tunnels, which allows a before and after comparison to gauge the success of predator control operations. Possums are also monitored using residual trap catch index method which is a nationally standardised monitoring methodology. The graph below shows rat levels before and after aerial 1080 operations in the 2016 Battle for our Birds programme.

Graph: Rat monitoring results for 2016 Battle for our Birds sites



While rodents will reinvade from surrounding areas, in the beech forest environment rat numbers generally stay low until the next forest mast or seeding.

Fiordland rat and possum results

Rat abundance

	Aug 2016	Pre op estimate	Nov 2016 prediction	Post op result	Feb 2017	Op date
<u>Eglinton</u>	10%	15%	30%	3%	10%	14 th Oct
Waitutu	12%	40%	40%	0	1%	10 th Nov
Clinton	24%	52%	72%	0	0	15 th Oct
Arthur	3%	38%	50%	0	0	18 th Sept
Kepler	13%	20%	35%	2%	15%	21 st Sept

Possum abundance

	Pre op RTC	Post op RTC result
Waitutu	13%	0
Sinbad (Arthur)	12.4%	1%

Outcome monitoring:

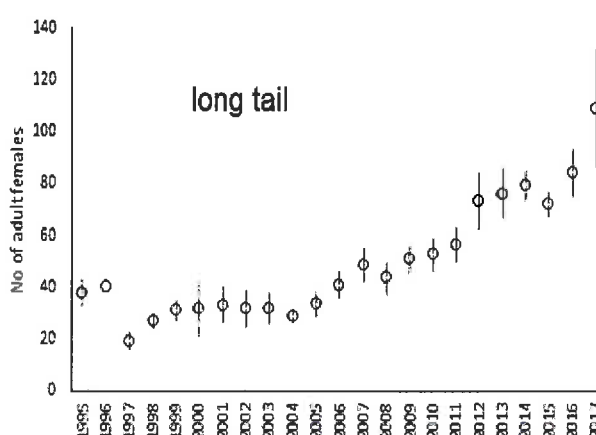
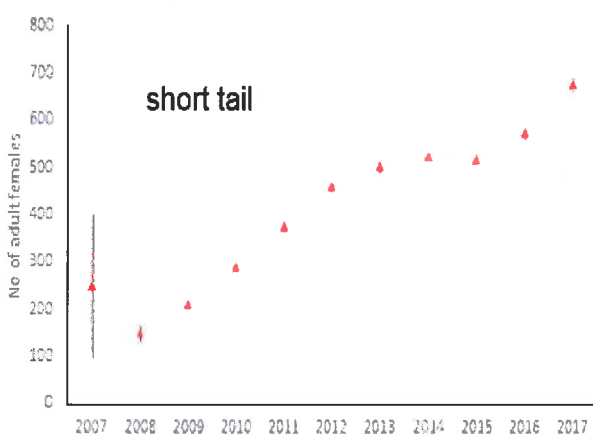
DOC scientists and rangers monitor key bird and bat species to measure the effects of the Battle for our Birds programme. Researchers employ many different monitoring methods over a number of native species in order to measure survival and productivity. A summary of their results is below.

Brown teal/pāteke

In 2012, 80 pāteke were released in the Arthur Valley. 50% were lost to stoat predation within one month and only 17% survived the first year. Following the 2016 Battle for our Birds operation in the Arthur Valley, a further 40 birds were released, the survival rate after 4 months was 95%.

Long and short tailed bats/peka peka

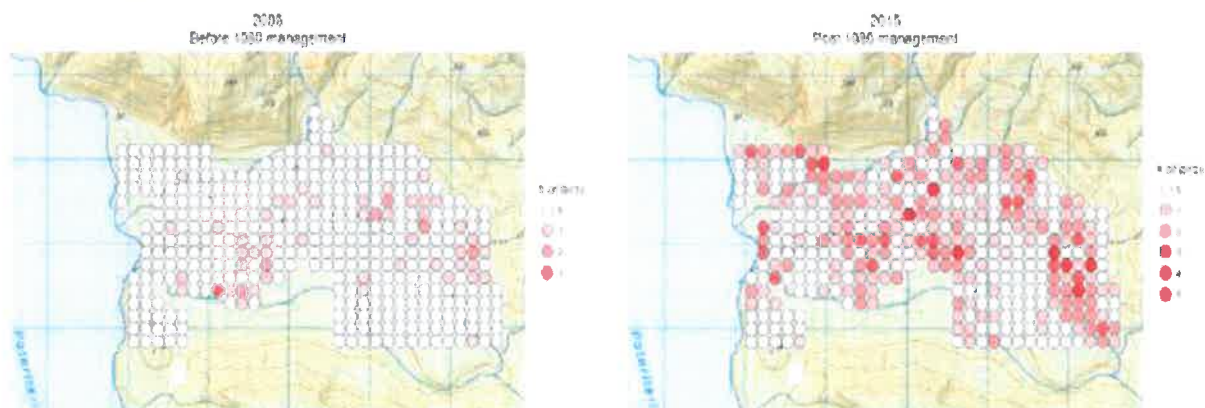
In the Eglinton Valley, both long and short tailed bats are responding to on-going predator control and steadily increasing in numbers. A record 1,731 short tailed bats were counted flying from a single roost tree in the Eglinton Valley.



A similarly encouraging result was recorded in the Iris Burn Valley, Kepler Mountains. This area is home to a population of nationally endangered long tailed bats. Bats are extremely vulnerable to predation. With no successful methods currently established to translocate populations to safer areas, protecting established populations is vital. Aerial 1080 operations were carried out in the Kepler area in response to the 2014 and 2016 beech masts. In 2013, the monitoring team recorded a minimum number of 32 female bats in the Iris Burn Valley, which had been in decline since initial monitoring began in 2011. By 2016 there was a minimum of 57 female bats in the colony. Nearly all females recorded last year were lactating, a good indication of there also being young bats at the female roost sites.

South Island robin/kakaruai

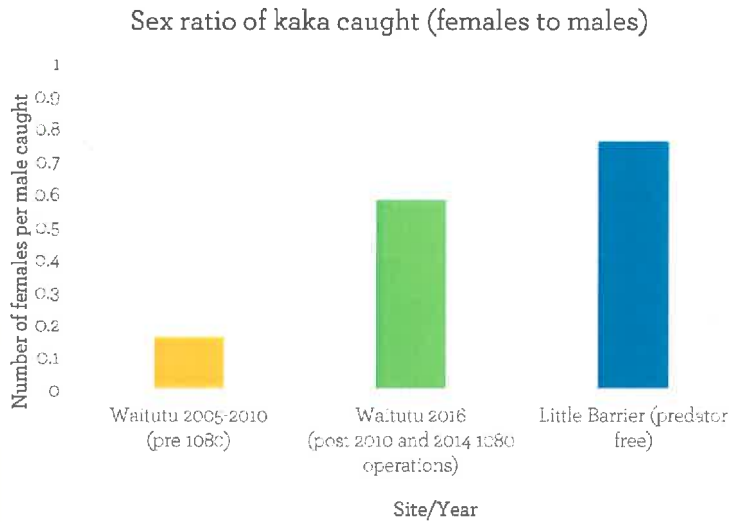
The graphics below show robin abundance (birds seen and heard) at one of our monitoring sites in Waitutu Forest. The graphic on the left shows results from 2006 prior to any predator control. The graphic on the right shows results after two aerial 1080 operations – a significant increase.



Outcome monitoring continued:

Kāka

Prior to 2010 the kāka population in Waitutu Forest was in dire straits with a skewed sex ratio of 7 males to every 1 female and all monitored nests being preyed upon by stoats or possums before chicks could fledge. Effective predator control began in 2010 with the first 1080 operation. The sex ratio has now improved to 1.7 males to every 1 female and chicks are able to fledge successfully.



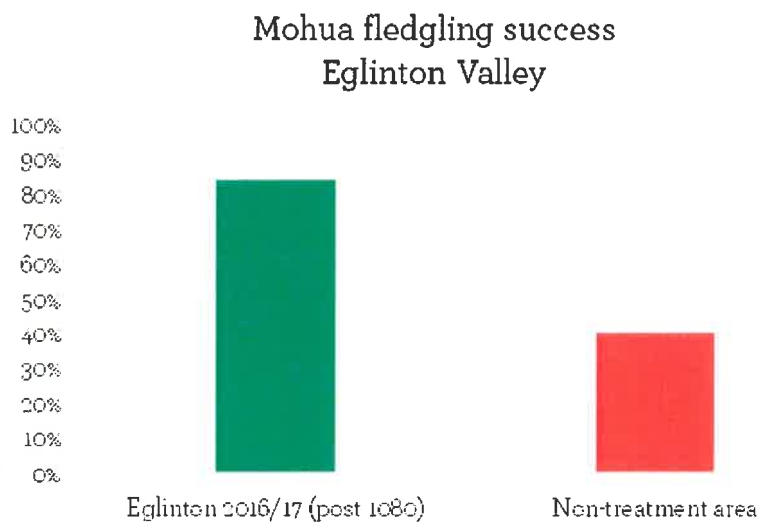
Kāka fledglings in the nest in Waitutu, 2016. The population comeback is phenomenal. (Photo: DOC)

For further information on Waitutu monitoring and outcomes, please go to:

<http://www.doc.govt.nz/documents/conservation/threats-and-impacts/battle-for-our-birds-2016/battle-for-our-birds-june-newsletter.pdf>

Yellowhead/mōhua

Two weeks after the Eglinton Battle for our Birds operation, 101 mōhua were released into the valley to 'top-up' the existing population. Thanks to predator numbers being reduced by this operation, fledging success was high. Productivity also increased with adult pairs producing 2.4 chicks on average compared to 0.9 chicks in areas without predator control.



Outcome monitoring – non Fiordland sites:

- In the Marlborough Sounds monitoring area rifleman/ tītiti-pounamu raised three times more chicks after 1080 predator control than without and robins raised seven times more chicks after 1080 treatment than without.
- Rock wren/pīwauwau raised up to five times more chicks after 1080 treatment than without in Kahurangi National Park.
- Thirty times more kāka chicks were produced in an area after 1080 treatment than in an area where no 1080 was used in South Westland.
- Mōhua nests were twice as successful after 1080 treatment than without in the Dart and Routeburn valleys.

For more information on the outcomes listed above, please go to:

<http://www.doc.govt.nz/our-work/battle-for-our-birds/battle-for-our-birds-monitoring-results/>

The battle continues:

Battle for our Birds is DOC's successful national predator control programme that protects our most vulnerable native species. It is heartening to see vulnerable native species respond to the reduction in predator numbers which is a result of this effective programme. This highlights how quickly some species can recover if given an opportunity, others are slower breeders and recovery for those species will take some time.

What is clear is that we can 'hold the line' for native species in the priority areas where effective predator control is carried out:

- [Our 2016 programme](#) successfully knocked down possums, rats and prevented stoat plagues.
- [Rodent monitoring results](#) show rats were knocked down to very low levels.

This is an on-going battle, it continues. Battle for our Birds is one of many programmes that support DOC's goal of protecting threatened species and making New Zealand predator free by 2050.

Thank you for your support.

Department of Conservation
Fiordland District Office
Te Anau

August 2017

More information:

Department of Conservation
Fiordland District Office
Lakefront Drive
PO Box 29, Te Anau

Phone: (03) 249 0200

<http://www.doc.govt.nz/our-work/battle-for-our-birds/>

DOC-3111472

