



Maukahuka
PEST FREE AUCKLAND ISLAND

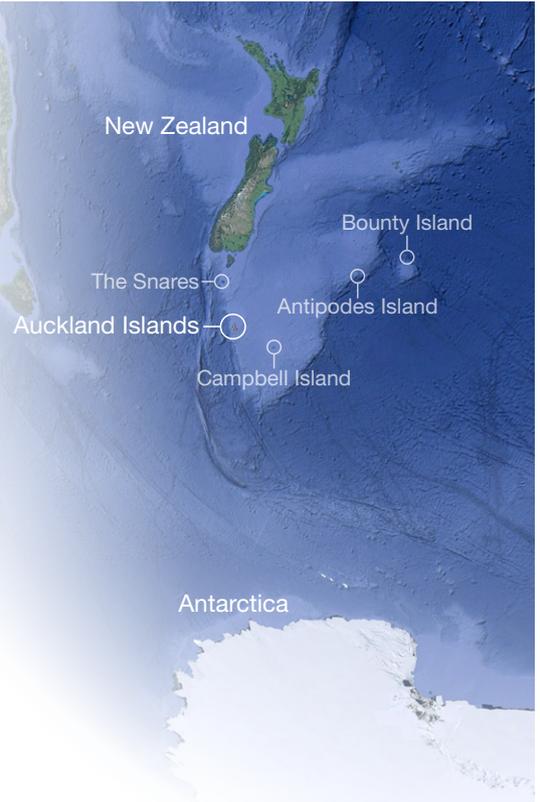
OUTCOME:
ZERØ CATS



Saving our island biodiversity from introduced pests

The Auckland Islands (57,000 ha), in the New Zealand Subantarctic Islands, are a Nature Reserve, World Heritage site, and home to some of the world's most extraordinary natural heritage. There are over 400 plant and animal species here that are restricted to the New Zealand subantarctic region and more than 100 species of endemic flora and fauna.

Auckland Island (46,000 ha) has populations of feral pigs, cats and mice that have inflicted severe ecological damage over the past 150–200 years. After more than 25 years of conservation effort, it is the last island in the New Zealand subantarctic region where mammalian pests remain.



Cats prey extensively on seabirds *Photo: Paul Jacques*

What's the problem?



Cats were brought to Auckland Island by settlers in the 1820s.

- ▶ Cats prey on native land birds, seabirds and invertebrates.
- ▶ They compete with birds for food.
- ▶ They inhibit ground-nesting birds from breeding or recolonising.



Te Rūnanga o NGĀI TAHU

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Work already completed



Leg-hold trapping at six sites to catch cats for GPS collaring.



GPS collars fitted to 16 cats to monitor their movement for next 24 months.



Trialed trail camera network.



Collected 100 scats for population and dietary analysis.



Collected trail camera data for development of artificial intelligence.

Auckland Islands

- Pests remain
- Pest free



Key findings

- ▶ Cats are detectable with trail cameras.
- ▶ Gaining detailed information about habitat use and home range.
- ▶ Trapping data suggests cat densities may vary across the island.
- ▶ Standard trapping across the island is not effective; but focusing on cats detected on cameras is highly efficient.

Estimated population:

500 to 1500



Tracking collars



Leg-hold trap

Where to from here?

Cat toxin development & registration \$200k

DNA Analysis \$15k

Node & sensor trials \$tbc

Home range studies \$10k

Winter 2019 research trip
Cat collars \$13k, cameras \$2-\$5k

Fishmeal polymer bait trials \$20k

Knockdown 1 – Secondary poisoning & reduced food resources

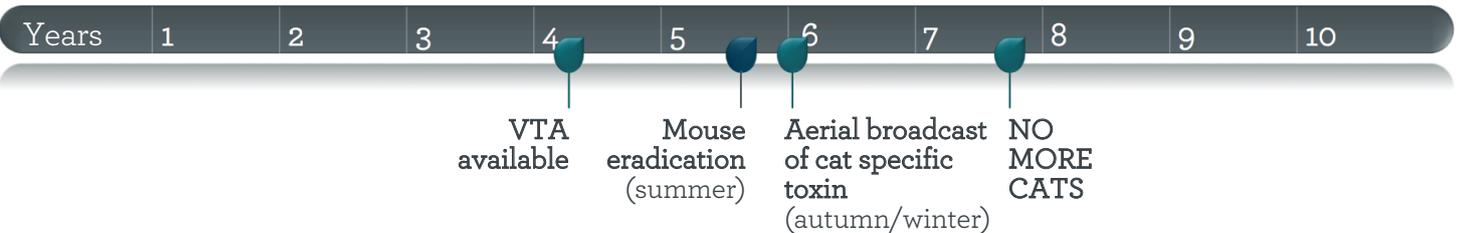
Knockdown 2 – Aerial poisoning (PAPP/1080 in sausage bait)

Mop up – Hand broadcast bait, trail cameras, leg hold traps, dogs, hunting

Validation – Trail cameras, scat dogs, thermal camera

Infrastructure set up

Demobilisation



Marking a cat for the trail camera study Photo: Paul Jacques



Challenges and risks

- ▶ Developing and registering aerially-distributed toxic bait, targeting cats, in New Zealand could take five years.
- ▶ Recruiting and developing enough highly skilled staff for mop-up and validation (~24 people).
- ▶ Running a ground-based operation given topography, vegetation, scale and climate of island.

Remaining uncertainties

- ▶ How to know when cat removal has been achieved.
- ▶ Whether or not a remotely-operated camera network that alerts staff to a cat detection can be developed.
- ▶ Development of artificial intelligence to detect cats in trail-camera photos.
- ▶ How useful aerial thermal imaging and drone technology will be for cat detection.

Benefits



Project developed cat-specific toxin for use in NZ and complementary techniques available for other projects.



Hundreds of native insect and bird species will recover naturally.



Last mammalian predator is likely to be removed from NZ Subantarctic Islands.

Front Cover Map Supplied by:
Google Earth
 Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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Trapping cats to fit GPS collars Photo: Paul Jacques

