Towards Predator-Free Taranaki

Taranaki Taku Tūranga

2018-2019 Annual Report

Summary

Over the first year of the Towards Predator-Free Taranaki project, huge progress has been made towards the goals of the project across the four main workstreams.

Zero Density Possum Programme

The possum eradication in the Kaitake Range and surrounding land is in full swing with ground control and aerial control being aligned with the aim of achieving the goal of zero possums in the later part of 2019. The establishment of a virtual barrier through Pukeiti to protect the Kaitake Range from possum re-infestation is at the leading edge of pest control technologies and a lot has been learnt in the process.

Rural landscape predator control

The first year of the rural landscape predator control programme has been successful in implementing an initial knockdown of the mustelid population over 14,000 ha between New Plymouth and Taranaki Mounga. The initial rural programme is now in the landowner handover phase and planning for the rollout of the second year of the programme is underway.

Urban predator control

The Urban part of the project has gone from strength to strength, initially focusing on New Plymouth and Ōakura. The urban programme was kick-started with a number of public workshops which built profile and gained momentum for the predator-free movement. The addition of schools and retail partners to help distribute trap packs in the urban programme has allowed the number of people participating to grow rapidly towards the target of 1 in 5 households.

Research and monitoring

Research has been initiated to attempt to answer some of the most critical scientific questions involved in the project in partnership with Manaaki Whenua. Baseline monitoring has also been undertaken to allow changes in native biodiversity values to be measured over time.

Project annual summary and outlook

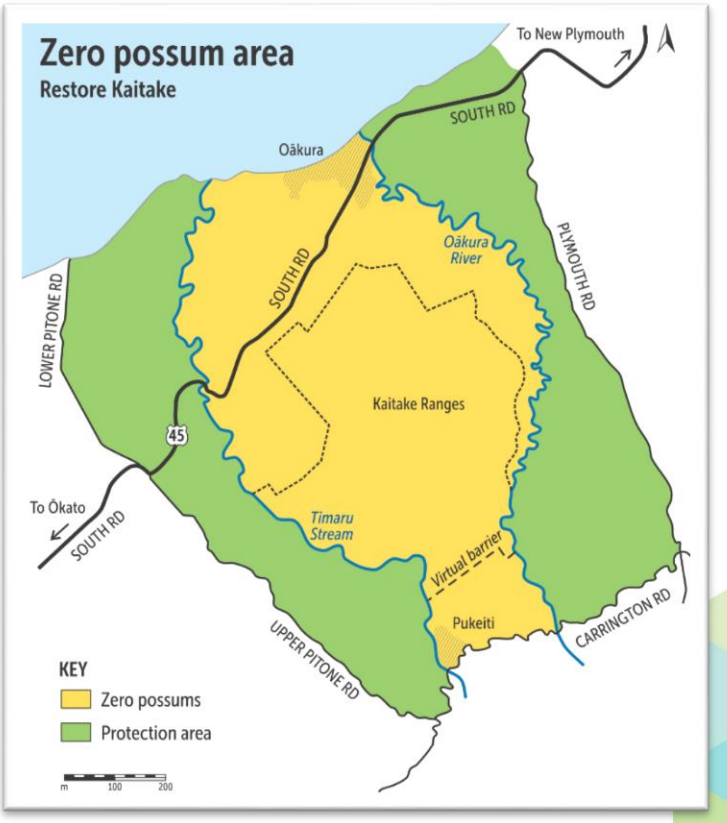
Zero Density Possum Programme

The zero density possum control programme has been incorporated under the wider 'Restore Kaitake' banner which encompasses the agency and community lead effort to restore the biodiversity of the Ōakura and Kaitake area. An intensive ground-based control operation was initiated in October 2018 with the aim of achieving complete possum removal within the zero density possum area in conjunction with an aerial possum control operation within the Kaitake Range. A detection network has been established to provide evidence of freedom from possums and ensure ongoing detection and removal of possum incursion. The main achievements of the 2018/19 year include:

- Ground control to zero density in the initial zero density area (A block).
- Virtual barrier made up of 1,300 remotely-monitored raised leg hold traps installed and technical issues being worked through in partnership with Zero Invasive Predators (ZIP).
- Currently the aerial operation is two thirds of the way through the ZIP 1080 to zero prescription.
- Bait station based ground control in the additional zero density area and surrounding buffer area.

Outlook for 2019/20

- Agreement to install a leg hold trap light detection network in the Kaitake Range.
- Completion of ground control bait station work and aerial control operation.
- Mop-up operation to detect and remove any surviving possums.
- Proof of freedom detection phase based on advice from Manaaki Whenua following completion of control.
- GPS track possum survivors to test detection network in the Kaitake Range.
- Engagement of the community to report possums in the urban and rural area.



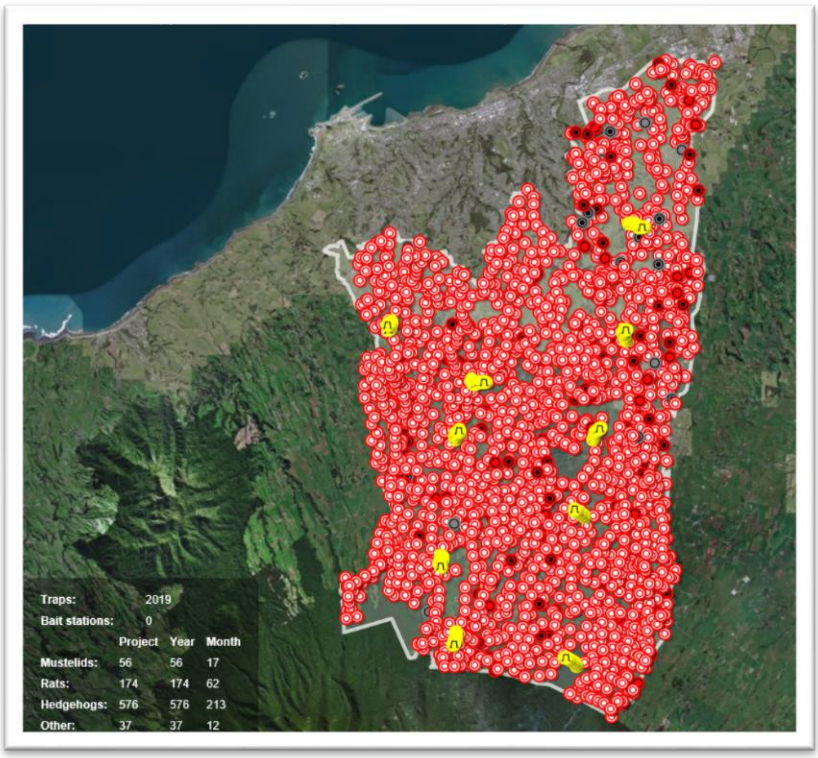
Rural landscape predator control

The first year of the rural landscape predator control programme has involved an initial knockdown of the mustelid population using A24 and DOC250 traps at an overall density of one trap per seven hectares. The initial knockdown phase has been carried out by contractors and is now moving into the landowner handover phase. All traps are fitted with wireless monitoring devices, chirp caps in the case of the A24 traps and econodes in the DOC 250 traps. The main achievements of the 2018/19 year include:

- Over 2,000 traps used in the initial knockdown over 14,000 ha.
- Camera monitoring carried out in conjunction with Manaaki Whenua.
- Four gateway locations established to provide wireless monitoring coverage across the block.
- Approximately 7,300 pest animals have been killed by the nearly 1,300 A24 traps that have been placed so far – that's around 4-5 rats, hedgehogs or stoats per trap. A further 1229 pest animals have been killed so far by the 500 DoC250 traps.

Outlook for 2019/20

- Year two of the programme will roll out over 29,000 ha.
- Camera monitoring will continue to measure reductions in mustelid numbers.
- Year-one block will be combined with the Council's existing possum control programme which will expand to be a wider pest control programme.
- Ongoing maintenance of pest control infrastructure.



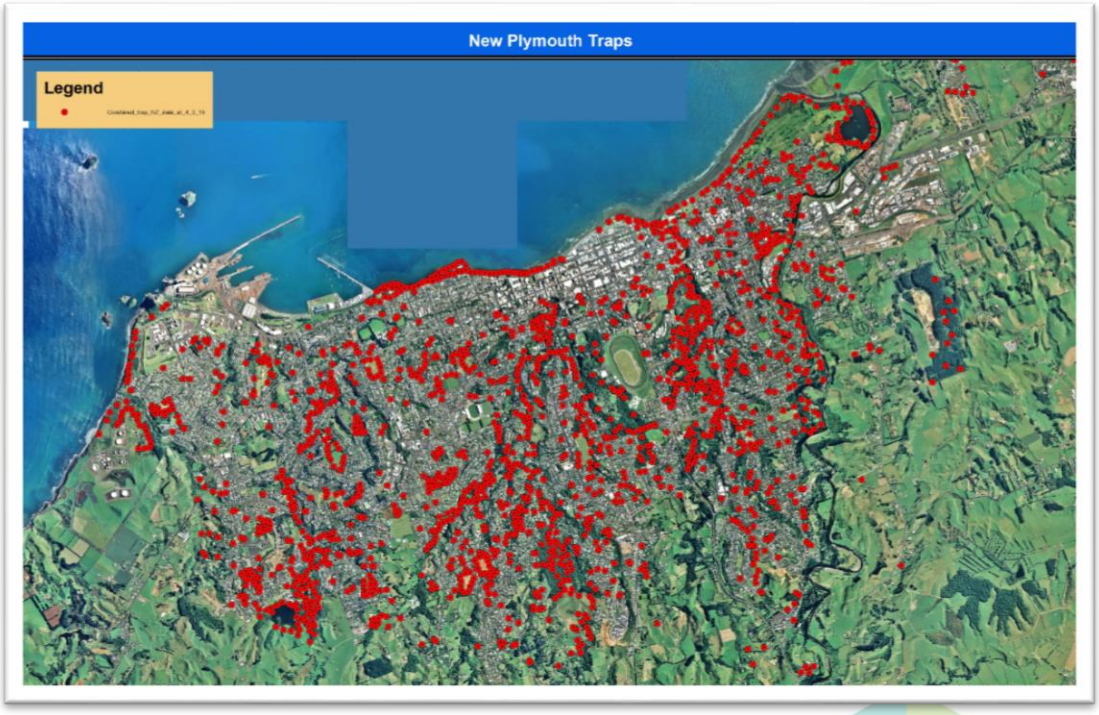
Urban predator control

The first year of the urban predator control programme has moved through a number of phases to continue to reach a wider section of the urban community and continue to gain momentum in the predator-free movement. Initially the focus was on running community workshops across New Plymouth which proved to be a fantastic method to distribute traps and build the profile of the project. Once the workshops had been held across the city the focus shifted to existing markets and events which provided another spike in trap kit sales. The involvement of schools in distributing trap kits has been a major breakthrough for the programme. The Council provides the materials so that the schools can put together the trap packs and then sell them as a fundraiser for the school. Trap kits are also now available at three retail outlets in New Plymouth also. The main achievements of the 2018/19 year include:

- Households engaged in the project continues to grow with over 6,000 traps distributed.
- Two new volunteer coordinators, one employed by the project and another employed by the New Plymouth District Council.
- New Plymouth District Council reserves trap network installed across the city and checked with combination of volunteers and contractors.
- 'Restore communities' established across the city and Ōakura following suburb boundaries.

Outlook for 2019/20

- Expand project into Waitara, Inglewood and Ōkato.
- Continue to work towards having 1 in 5 urban households engaged in the project.
- Grow the profile and participation in 'Restore Communities'.
- Continue to encourage use of Trap.nz for recording trap catch data.



Research and monitoring

A partnership with Manaaki Whenua has been established to attempt to address some of the major research questions involved in the project. A monitoring plan has also been established to track changes in predator abundance and also measure positive outcomes for native biodiversity. The main achievements of the 2018/19 year include:

- Possum monitoring in New Plymouth has continued to show declines. The pre-control result of 25.6% BMI has continued to decline to the 2019 result of 1.4% BMI.
- Rat tracking rates in urban New Plymouth are also showing a positive trend failing from 34% in 2018 to 19% in 2019.
- Baseline five minute bird counts and lizard occupancy monitoring has been completed.
- Model the probability of possum eradication in the zero-possum block based on surveillance data from the possum detection network.
- Simulate trapping scenarios to optimise predator kill rates in Stage 1 of the rural landscape programme.
- Determine the distribution and abundance of predators in relation to three habitat types in the rural landscape using camera traps (pasture, riparian, remnant forest) to enable strategic deployment of predator traps.

- Initiate research to understand extent to which control buffers of various widths and control intensities protect the Mounga from predator inflow (or protects the surrounding farmland from predator outflow), using a combination of modelling and measuring behavioural parameters of resident and dispersing predators
- Undertake power analyses of biodiversity response data to design a statistically robust monitoring programme to detect levels of change resulting from the predator trapping programme.
- Initiate social research to understand the barriers and enablers of urban and rural people's involvement in the 'Towards Predator-Free Taranaki' project, and to help develop communication strategies tailored to urban and rural communities

Outlook for 2019/20

- Continue monitoring changes in predator abundance pre and post-control by measuring post-control abundance in Zone one and two, and pre-treatment abundance in Zone three.
- Continue research on mustelid dispersal and reinvasion to understand the extent to which control buffers of various widths and control intensities protect the Mounga from predator inflow (or protect the surrounding farmland from predator outflow), using a combination of modelling and measuring behavioural parameters of resident and dispersing predators.
- Complete proof-of-eradication modelling of possums on the Kaitake Range.
- Quantify the factors influencing support and participation in rat control in urban New Plymouth.
- Initiate research to estimate key model parameters that allow software to optimise pest control/eradication and declaration of success.
- Validate trap simulation models with real data to test the accuracy of the models for predicting optimised trapping regimes.