CASE STUDY – HUNUA 1080 PROJECT

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Mace Ward is General Manager Parks, Sports and Recreation, Auckland Council. The Parks Sport and Recreation department of Auckland Council is responsible for 4000 parks (45,000 hectares), 42 pools and leisure centres, sport and recreation management, and the administration of co-governed land, including the Tupuna Maunga. The department seeks to inspire Aucklanders to be more active, connect to nature, provide outstanding park destinations, conserve natural and cultural heritage and increase Auckland's Maori identity.

TRANSCRIPT

Kia ora mai tatou
Thank you very much for the welcome. You will notice that there is more than one of us. I am very pleased to have one of the real people who led the case study that we will talk about. Rachel Kelleher is the Manager of our Regional Parks in Auckland, all 27 regional parks across 40,000 hectares with 6 million visitors. The Hunua Ranges (Kohukohunui) regional parkland is what this case study focuses on.

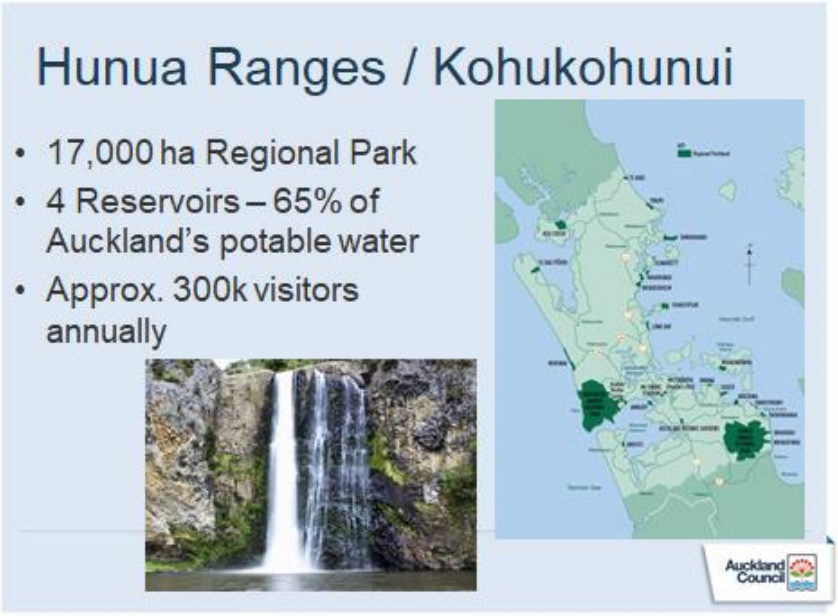
I want to start by acknowledging Dave Hansford who is a hard act to follow. Mayor Goff's vision for Auckland is to be a world class city and the contribution of parks and open spaces and the intrinsic natural and cultural values of parks and open spaces are integral to that vision. It is not all about infrastructure. It is about people and how they feel about their environment and community, a different sort of prose than Dave talked about. Rudyard Kipling said when he came to Auckland in 1891, 'Last loneliest, loveliest, exquisite and apart.' He was talking about Auckland but he could have been talking about anywhere in New Zealand. He described Auckland as 'a very beautiful city, perhaps the most beautiful I have ever seen'.

We had a problem. We had some troublemakers, rats and possum numbers in the Hunua Ranges parkland, an area that is significant ecologically and provides 65% of Auckland's water supply. It is our largest contiguous area of indigenous forest in Auckland with a significant connection to Tikapa Moana, the Hauraki Gulf. How were we going to deal with that? We had a long term programme in place but needed a game changer.

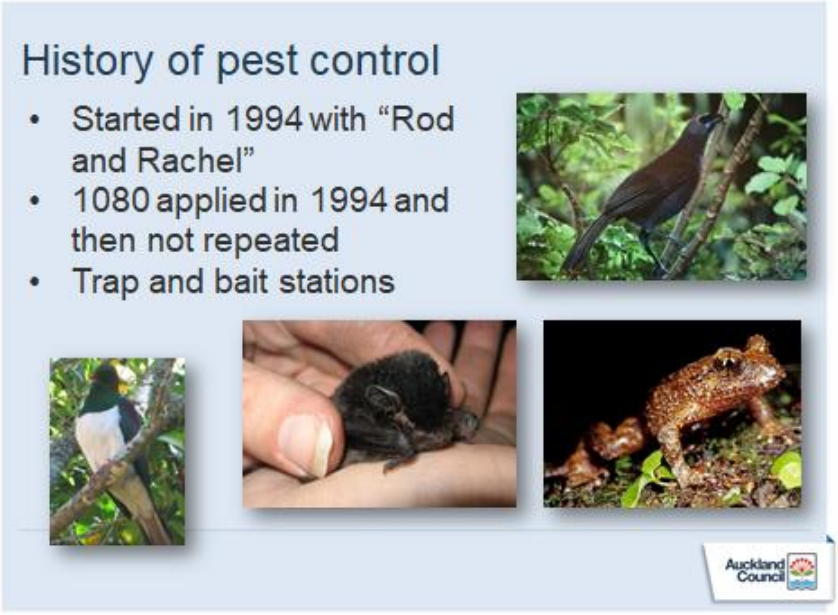
We will talk today about the history, how we took the problem to our elected members, our partners, Iwi and our community. We needed to share our vision and what we were going to do with our community. It was not necessarily about the science. We knew the science. We knew the problem and we knew how to deal with it. There were some options in how to deal with it but we needed to work with the community and to think about the narrative of what was talked about this morning, mokopuna. What was our legacy going to be? Were we happy to see the Hunua Ranges decline to a point where it was an unhealthy environment feeding and nurturing Auckland? Lastly we will talk about measuring success, celebrating those successes together with the community and continue talking to them.

Without further ado I will hand over to Rachel and we will share some of this presentation.

Rachel Kelleher
Picking up on a comment of Dave Hansford, one thing that we did right from the outset when planning this operation was not to talk about it as a pest control operation. We talked about it being a programme to create a 'healthy Hunua', very much focussing our discussions around the outcomes and what we were trying to achieve as opposed to focussing on the methods and the way we were going to get there.



Very briefly, the Hunua Ranges is the dark green dot down there at the very bottom part of the Auckland region on the east coast, a 17,000 hectare regional park. What made this particular operation quite bold from a political perspective was that it contained four reservoirs that supply 65% of Auckland's drinking water. So a decision to use aerial 1080 in a catchment like this is one that has some controversy and requires a really good conversation. There are approximately 300,000 visitors annually undertaking a whole range of activities, mountain biking, walking and tramping. I found out through the operational planning that we have a small bore musket group and a whole range of other things as well as hunting.



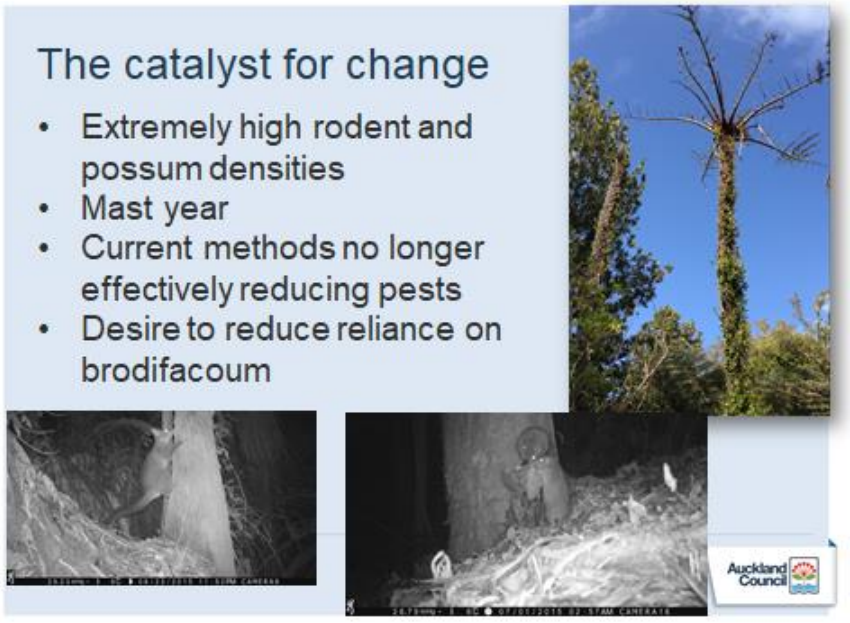
The Hunua Ranges are a fantastic forest ecosystem, in fact a whole range of different ecosystems – coastal, forest, wetlands right up to cloud forest in some of the higher altitudinal areas. There is also our only naturally remaining population of kokako in the mainland Auckland region. The pest control work started with a programme back in 1994. It began with Rod and Rachel, not me, a different Rachel. There were some ornithological surveys carried out in 1994 looking at the kokako and they found a significant decrease in the numbers of birds present.

That prompted a census; a survey exercise to determine that there were five breeding pairs still persisting in the range. They thought that was not great but better than nothing. They instituted a ring of steel around those breeding pairs, setting up a trap infrastructure and waited with bated breath to see how pest control using 1080 would help the breeding of those pairs. It did not go too well as they did not successfully breed. That prompted looking at why and they found that of the low numbers there were four male/male pairs and only Rod and Rachel were a female and male pair.

That began a real journey of recovery. A lot of pest control has gone into bringing that population back from the brink to now. It is looking like it is going to achieve, even exceed its projected targets for population recovery. We have had to do a bit of work bringing in new genetics and but that is one of our success stories.

Pest control is largely trap and bait stations. There is an intensively managed area of about 1,700 hectares where we focus on protecting kokako. Outside of that 1,700 hectares, across the broader park, we have an annual programme of pest control focussed on hotspots but never covering the whole range. It has been a moving pattern of pest control using ground based methods.

The catalyst for change was our extremely high rodent and possum densities. We do a lot of monitoring in the Hunua Ranges to inform our management, particularly around the kokako. We had a mast year which people may be aware of as a result of DOC's Battle for the Birds Programme that got a lot of media attention. It was prompted from mast year events that happen in the South Island but similar things happened in the North Island as well.



The current methods were no longer effectively reducing pests in our intensively managed area. We were struggling using methods that had been quite successful up to then to get our pest densities down. This was not surprising because when using anything for a long time there is resilience or resistance from the pests being targeted with those methods. We were also interested in looking at reducing the reliance on brodifacoum which is a commonly used pest control toxin. It is readily available, publicly accessible, but known to have impacts in terms of aggregation through the food chain.

Mace Ward

Process for Change: My job was to provide the leadership to talk to our elected members, iwi and our partners about this real need for change. We did some stakeholder surveys, canvassing our community to find what their interest was. We were able to tell the science story with comprehensive monitoring and technical review from others. We undertook a planning assessment of what we needed to do and ran a workshop with technical experts to share the knowledge with our community and partners including Iwi. Finally it went to the Regional Strategy and Policy committee in October 2014 for them to make a decision on the change of methodology, in a room that was quite hostile which was quite uncomfortable at times, but well worth seeing through. It was about telling the narrative of what we wanted to achieve - a healthy Hunua with kokako, reintroducing kiwi after 50 years, which we did achieve this year.

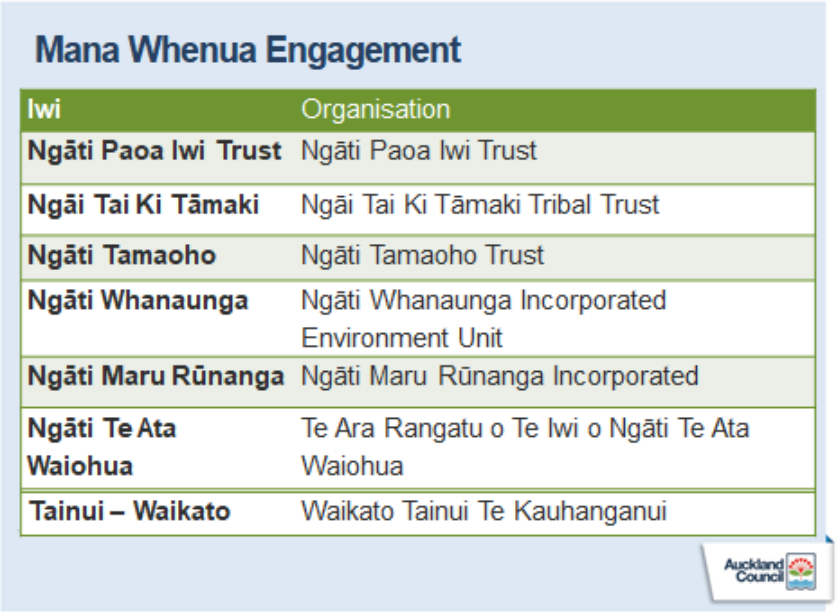
Why we chose 1080? Because 1080 effectively kills the target species we were after on this occasion – possums, rates and stoats. It was applied with minimal disturbance and impact to the natural environment. Unlike other parts of Auckland, the Hunua Ranges are kauri dieback free. For us to do that with a trapping network, which was an important discussion with Iwi in particular, we would have had to cut hundreds of kilometres of tracks, over 600,000 traps, to effectively do the same work. The adverse effects on species of non-target wildlife are known to be outweighed by the benefits of controlling the pests. We had to keep our eye on the prize and the risk to human health and community was minor and managed through strict national guidelines and requirements particularly in the context of the operational area being a water supply catchment. The design of our programme took that into account as well. It was cost effective at the landscape scale of over 20,000 hectares for the same price as partial control. Not only were we able to treat our land, we were able to include 4,000 hectares of other land around the parkland and that was quite important.

Key Partners:

- *Water Care Services*. Their objective is to provide clean, healthy water supply to Aucklanders. The water that comes from the Hunua Ranges does not have a lot of treatment, unlike the water from the Waikato River, and it is gravity fed into Auckland.
- *Department of Conservation*. We treated their adjoining land and private land
- *Waikato Regional Council*. Two thirds of the park, around 8,000 hectares, is in the jurisdiction of Waikato
- *Manawhenua.* Kohukohunui is a significant site. There was significant discussion with seven Iwi and tell the story about what we wanted to achieve. The environment was key and they weighed up the choice of rats or kokako and returning the kiwi to the Hunua Ranges and they chose the latter of returning those treasures and using 1080.

Manawhenua Engagement. In Auckland, like some other regions around the country, we have 19 Iwi and 7 have Manawhenua or Kaitiaki status in the Hunua Ranges. Engagement was really important and had to be open and honest and we needed to

listen. At times we left Iwi alone in the room to make their own decisions. Hui, workshops, site visits with elected members, building trust and confidence and the support given was for kokako in favour of rats.



Mana Whenua Engagement

Iwi	Organisation
Ngāti Paoa Iwi Trust	Ngāti Paoa Iwi Trust
Ngāi Tai Ki Tāmaki	Ngāi Tai Ki Tāmaki Tribal Trust
Ngāti Tamaoho	Ngāti Tamaoho Trust
Ngāti Whanaunga	Ngāti Whanaunga Incorporated Environment Unit
Ngāti Maru Rūnanga	Ngāti Maru Rūnanga Incorporated
Ngāti Te Ata Waiohua	Te Ara Rangatu o Te Iwi o Ngāti Te Ata Waiohua
Tainui – Waikato	Waikato Tainui Te Kauhanganui

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On the morning that we had the first drop, a number of Iwi were up there at dawn with us and they said, 'Last time we were here we were probably chasing each other around with taiaha.' But I have nothing to prove that that was the case.

We developed a cultural awa monitoring plan and since then we have been doing a lot of work to develop a Te Mahere Hononga Māori – Māori Relations Plan, to strengthen the relationship in the Hunua Ranges.

This was guided by two objectives:

a) To sustain the mauri (life force) of taonga within regional parks in ways which enable the significant place of tangata whenua to be acknowledged and their role as kaitiaki recognised.

b) To contribute to the hauora (long-term wellbeing) of tangata whenua, by providing for relationships and activities which enable the intergenerational transfer of tangata whenua knowledge and practices.

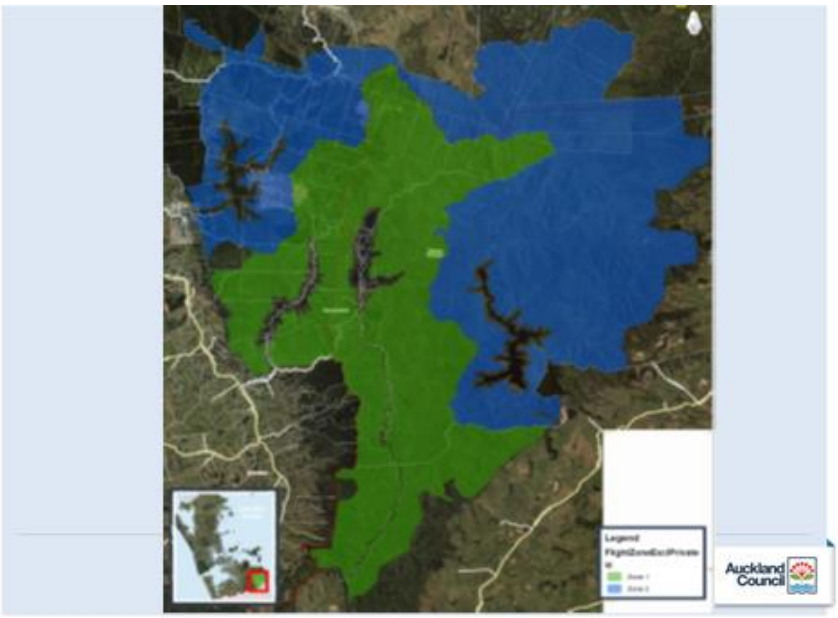
We also have an operational plan for track clearing and water sampling. We took the opportunity to develop a Kaitiaki cadet programme, involving people from Manawhenua and part of the success of the project.

Rachel Kelleher

The Operational Programme. We did a huge amount of work to get the message out. We had a website that received over 5000 dedicated views, press ads, fact sheets, paid advertorials, interpretive signs, and warning signs. At one stage I counted how many pieces of dedicated communication we had, and it was over 23 with landowners adjoining the operation specifically that mention the risk to dogs. We did a lot of work with our adjoining communities and the wider Auckland public.

The operational area was 21,500 hectares and included Council park land, DOC and private land. We ended up developing an operational programme that, in a large part, managed perception of risk rather than actual risk. Listening to Dave Hansford and Alastair Suren's comments, there is a question as to the extent to which we should manage perceptions. However, given that this was the first aerial operation we had undertaken in 20 years, we felt that it was prudent to do a robust operation that would give us good information to present back to the community for future conversations.

There were two treatment blocks and that enabled us to isolate the water supply in one treated block while we work in the area that was being treated. It allowed that water supply isolation. We used pre-feed of 1.5 kilos per hectare; the toxic sowing rate is 2.5 kilos. We had a range of measures to manage risk including exclusion zones, setbacks around the reservoirs, a water monitoring programme, track clearance of forestry roads and amenity areas and infrastructure checks like rooftops, water disconnection and reconnection. Regional parks have a lot of infrastructure.

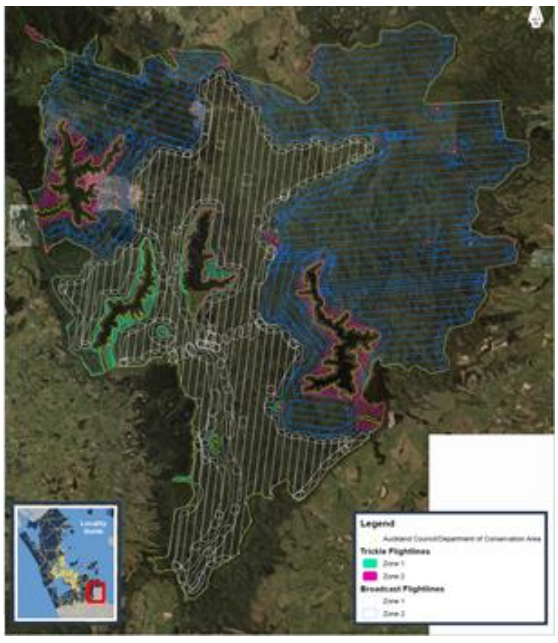


This map gives you an idea of what the operational area looked like. There were two operational blocks from a practitioner perspective, probably not ideal for flying a helicopter around that kind of shape but it was to enable the isolation of the reservoirs pairing up the smaller and the larger reservoirs with each other so that we did not have two small out and two large together.

The photo shows what one of those reservoirs looks like in part of that catchment. The operation was undertaken in two parts and these shots came from the actual operation to give you an idea of what is involved.

This was the Blessing of our first bait application and the photo on the top right was taken from a viewing platform that we have overlooking one of the reservoirs that I showed you.

In our flying sites we had a couple of different helicopters working with two different buckets. One was a trickle bucket which trickles bait out in a very precise way and used to apply bait around the margins of the reservoirs and the perimeter of the operational area. The green buckets was used as a broadcast way of infilling that operational zone.



This is a print out of the operation showing how accurately the information is captured about where bait has gone. The broadcast bands are much wider in white and blue and the trickle lines are in purple and green around the reservoirs and the perimeter of the operational area.

We captured that information in live time down at the operational loading site. As a helicopter came in we would download the track log information. We knew at that point in time exactly where they had been, whether there were any issues with where the helicopter had applied bait and also good information about how to base our track clearance programme and when staff could start to move into the site to collect water samples.

One of the biggest challenges we had was the track clearance programme. From a public health perspective the largest concern our Medical Officer of Health had was about exposure of young children to bait on track. We had an extensive track clearance programme with multiple staff going out. On one day we had up to 70 staff out on site clearing tracks. We also had assistance from our neighbouring Waikato Council, which we were very pleased to have, volunteers and members of the Manawhenua came and helped as well.

These are examples of what we saw out on the day. There were also a lot of animals out the next day showing signs of lethargy having consumed the bait. The fact that we saw so many possums out the next day was testimony that there were a lot of possums out there. I have done a lot of these operations and you do not usually see heaps of animals out the next day but we did in this instance. Searching for bait the next day was like looking for a needle in the haystack, but once you get your eye in they are quite obvious, particularly in open track environments.

Water monitoring. We had four reservoirs of about 500 hectares in size. We also developed a programme of monitoring across 14 streams and rivers of variable size, some quite small to those much wider. A criticism of water sampling programmes is that often samples are collected around a 24 hour timeframe. Those who have concerns about these types of operations say that is not soon enough to detect 1080 if it is present. I am not sure what the benefit would be. If you get to 24 hours not detecting 1080 then you are not detecting it! So we did collect samples right from 4 hours after the operation through to 4 weeks. We did have one heavy rainfall event after our first operation and that constituted a whole new testing regime.

Over 300 samples were collected. It was the largest sampling programme that has ever been carried out for any single 1080 operation and not a single detection of 1080 from any of those 300 samples.

Post control pest monitoring results

Result Target	Treatment Block	Result	Monitoring line details
Less than 5% Residual Trap Catch (possums) for treatment area	Block One	0.25% ((-0.04% - 0.54%) +/- 0.29%)	40 monitoring lines 400 traps 1200 trap nights
Less than 5% Residual Trap Catch (possums) for treatment area	Block Two	1.00% ((0.45% - 1.55%) +/- 0.55%)	50 monitoring lines 500 traps 1500 trap nights
Less than 5% Tracking Tunnel Index (rats) in Kokako Management Areas (KMA and Piggots)	Traversed both blocks	0%	10 monitoring lines 100 tracking tunnels
Significant reduction in Tracking Tunnel Index (rats) across wider treatment area (pre-operational result 91.6%)	Both Blocks	1.03%	29 monitoring lines 290 tracking tunnels

These are our results. We did extremely well achieving well below our targets for all the pests we focused on. Possums and rats were both below 5%.

We did an extensive programme of breakdown monitoring, monitoring both carcass and bait breakdown in real time to inform the reopening of the park for dogs in particular. We were able to say with confidence that there was no risk posed to dogs at the time that we declared the site free of any issue. When we lifted the caution period it was based on practical information rather than theoretical information. This gives you an idea of what that looks like.

We had a range of different outcome monitoring - kokako nesting success, general forest bird monitoring, vegetation photo points, Hochstetter's frog and the long-tailed bats. The six pairs of kokako are monitored annually. In 2014, before the operation, no eggs hatched and adult birds were predated. In the 2015 and most recent 2016 breeding season we have had 13 chicks of each of the six monitored pairs which is the best output that we have had.

The challenges - Park closures, vandalism, protests by a small dedicated group of about six people, one confirmed dog death that happened despite those 20 plus pieces of communication, offers of emetics and also free muzzles that staff were available to help fit, which were declined in that instance. We also had graffiti around the place but all in all a fairly minor impact.

A few facts and figures

- *8: the number of signs/barriers ignored by one tramper* the day after bait application. We closed the park and had a whole range of different ways of closing it. This person decided it was a good time to go for a tramp because it would be nice and quiet and he felt like a bit of solitude and knew he would not meet anyone on the day. He had gone past eight different barriers to get where we found him.

- *5: the number of dogs caught by staff inside the operational area* unaccompanied by owners, Lucky for those dogs, staff were able to catch them and they were safely moved outside the operation. But in all instances the owners knew the operation was happening, thought their dogs were secure but they were not.

- *>1100km: covered by track clearance teams across a number of days*.

- *0: the number of rats and mice detected following three successive monitoring periods* of our kokako management area after the operation. We got over six months of no detection of rats, mice and possums in that area.

- *1: the first nest and fledged chick outside the intensively managed areas*

- *5390: dedicated website views*

Thank you.