



2014 Northland Pest Control Workshop notes

Again a very successful collaborative workshop hosted by Waimate North Landcare, arranged by Kiwis for kiwi and NZ Landcare Trust and funded by the Biodiversity Advice Fund. More than 140 attendees made this a record turnout. Thank you all for organising, catering, providing inspirational addresses and attending.

Following is a brief summary of each presentation.

• **James Russell** from Predator Free NZ

James provided some context describing NZ as an island containing special biodiversity but at risk of facing further extinctions because of introduced mammals. He said that rat invasions are continuing to new islands and death and extinction follows those invasions. He provided three key definitions.

- Control- reduction of a pest which is sustained into perpetuity
- Eradication- one off removal
- Incursion- reinvasion into a pest free area

There have been 44 island eradications in NZ since 1980s. NZ leads the way with this work. Techniques have improved since the early aerial operations in 1990. Now larger areas (10,000ha plus) are doable.

Predator Free NZ is a philanthropic supported programme initially aiming to have 50% of NZs 345 islands predator free within 10 years. Pest focus is possums, stoats, weasels, ferrets, ship rats, Norway rats and field mice. It is anticipated that halo benefits will expand beyond the eradication boundaries.

It is recognised that rodent behaviour changes at low densities. Finding a mate becomes more important than finding food. Rodents will explore greater distances and become harder to kill. Rats are known to swim more than 400m. Research has been underway to identify if the main threat is from reinvasion or from breeding of any rats left behind. This work has included genetic profiling the rats to see where they came from. The automated footprint recognition tools from Connovation have been useful in finding rats at low densities.

There must be clear understanding of the indirect effects of pest eradication. An ecosystem approach considering possible prey switching is recommended.

Predator free NZ considers that on the mainland of NZ it is intending to have species in a 'holding phase' until technology improves and makes eradication of pests on even the largest island of NZ possible.

• **Lee Shapiro:** Research Director Connovation Ltd: "New developments in Pest Control and Monitoring- Toxins and resettable devices"

Need to consider;

- Which toxin is best?
- How do different toxins compare?
- Balancing act- Maximise benefit (efficacy), Minimise primary & secondary exposure risk, Excretion vs bioaccumulation

1st gen anticoagulants gone after 12 weeks

2nd gen unable to be excreted

Understanding toxins

Compound	Half-life values	Likely persistence of residues after sub-lethal exposure
Cyanide	+	12-24 hours
Sodium nitrite	<60 minutes	<12 hours
PAPP	<60 minutes	<12 hours
1080	11 hours	2-4 days
Diphacinone	3 days	4 weeks
Cholecalciferol	10-68 days	3 months
Brodifacoum	130-350 days	24 months or longer

Cholecalciferol

- Effective against possums and rats
- No CSL required
- Doesn't bioaccumulate
- Very low risk of secondary poisoning

Zinc phosphide

- ZP paste bait for possums registered 2012
- Requires CSL
- Registration being extend to rodents
- Solid baits currently being registered possums
- Fast acting and no bioaccumulation
- Low secondary poisoning risk

Resettable toxin delivery devices

This device has been called 'The Spitfire'. Designed for long term suppression of pest species with minimal maintenance. Possum spitfires on trees, stoat spitfires in DOC 200 boxes and rat and stoat spitfires stand-alone units. Has two triggers. When triggered the spitfire delivers approx. 800mg of toxic paste onto an animals abdomen. Toxins used include PAPP, zinc phosphide or 1080. Deployed at 100m intervals

Research results from field trials.

90% of on-site collared possums killed by spitfires

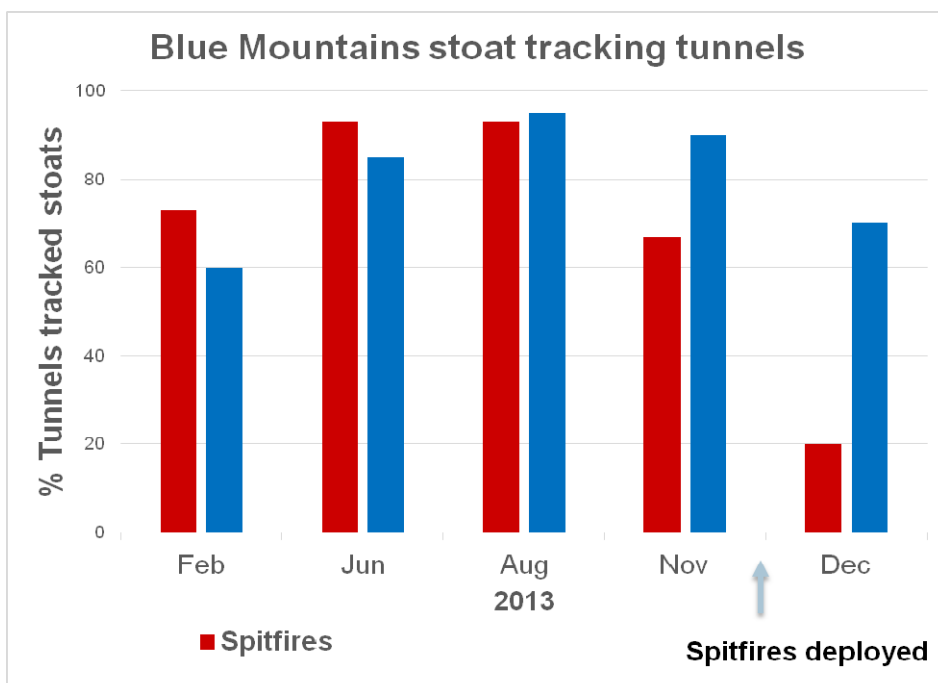
Spitfires for stoat control. PAPP, 1080, Zinc phosphide paste being trailed. Lures still under refinement.

Toxin development for spitfires

Further development of toxins that will not require a CSL

Sodium nitrite and cholecalciferol ideal candidate toxins

Currently being tested in cage trials on possums, rats and stoats



Compound	Symptoms	Mean duration symptoms	Mean time to death
Cyanide	Un-coordination, Mild or moderate hyperpnoea, Loss of response to handling, Convulsions	6.5 min	17.9 min
Sodium nitrite	Pale nose extremities, vomiting, blue tongues, lethargy, ataxia, slight tremors collapse and death.	1 hour	1.5 hours
Zinc phosphide	Changed appearance , Retching, Vomiting Unsteady head movements & walking Prolonged lying, prostrate (>2 hours)	2.5 hours	3.5 hours
1080	Changed appearance , Retching, Vomiting Unsteady head movements & walking Prolonged lying, prostrate (>2 hours)	9.5 hours	11.5 hours
Cholecalciferol	Reduced activity, Rapid breathing, Reduced feeding, weight loss, Mineralisation in organs , Lung pathology Unconsciousness (just prior to death)	7 days	9 days
Coumatetralyl + Cholecalciferol	Reduced feeding, Diarrhoea, minor; abnormal breathing, shivering, tremors spasms, un coordination Haemorrhages, Loss of palpebral reflex	6 days	11 days
Brodifacoum	Reduced feeding, Diarrhoea, minor; abnormal breathing, shivering, tremors spasms, un coordination Haemorrhages, Loss of palpebral reflex	7 days	21 days

- Kane McElrea:** Northland Regional Council (NRC): Regional Pest Control Overview

NRC supports biodiversity protection and pest and predator control programmes by establishing community pest control areas (CCPA's), with communities. 49 CCPAs have been established since 2005. 56,000ha is now under protection. The programme has a five year contract which secures NRC support.

Other funding options include the Biodiversity Fund agreement programme which provides support for three years and the High values area programme. There are more than 5600 traps in situ as a result of the programme.

Council is reviewing two important strategic documents next year. The Long Term Plan and the Regional Pest management Strategy. It is time to begin considering which pests should be listed for control in these documents and how Council could support community work further. Submissions will be invited on draft documents.

Footnote; Kane said at the end of the workshop that NRC is helping people get their CSL licences and that there will be a workshop in early Sept. It will be a one day course at a reduced rate. It seems that it will cost about \$70-80 to get PAPP added onto current licences.

• **Ngairie Tyson:** Quick Kiwi Coast update

Kiwi Coast is a pilot project for the Tindall/ASB community Trust funded programme “Reconnecting Northland”. About \$115,000 is made available annually to support and connect community led kiwi recovery initiatives in Northland (particularly on the East Coast). There are about 35 community, iwi and agencies involved. The project spans 175km up the coast from Whangarei and covers 270,000ha.

Impressively to date;

8997 possums	11,999 rats	384 feral cats	657 rabbits
647 stoats	1 ferret	456 weasels	1751 hedgehogs

have been caught.

Monitoring kiwi distribution and abundance is underway and gaps where there is no contiguous management are being identified and filled. The momentum is growing and the project is expanding into the Bay of Islands and more iwi, community and agencies are becoming involved.

• **Nigel Miller:** DOC: Toxins and how best to use them

Discussions around 1080 still show the diverse attitudes and understanding of people. 1080 is a synthesised version of a naturally occurring compound. It has been used for many years and initially about 18kg of carrots with 1080 were spread per ha. Now it is in the form of a green pellet which repels birds and is sown at less than 1.5kg/ha. Benefits are being recorded around NZ. It breaks down in damp conditions and many thousands of water samples been analysed following aerial operations and only minute concentrations have been found in one or two samples. It creates heart failure in rats and possums and sub lethal doses are excreted in less than 10 days. A big benefit compared to brodifacoum. It is considerably more cost effective than trapping alone. Trapping in remote and steep terrain is not practical or efficient. MFE and ERMA now in support of the safe use of 1080. Alternatives are being trialled and assessed. To find out more go to www.1080facts.co.nz. Department of Conservation is carrying out operations on conservation land and some private land adjacent. MOH applications are required and public consultation is important.

• **Dean Baigent-Mercer:** Otangaroa Landcare: 1080 – A Case Study

Seeing major forest collapse on his land due to possums and rats motivated Dean to carry out pest and predator control. He is aware of ecological impact of these pests;

- Rata no longer thriving in the Ruahine ranges
- Trees species like kohekohe being targeted
- Kakariki gone from Northland
- Rats living on the forest floor eating seed, and invertebrates but also living in the canopy eating eggs, chicks.

He carried out research. Identified spring timing would provide best benefits.

He chose to use cereal 1080, cinnamon lured. The goals included having secondary kill benefits.

His property is 65ha adjoining conservation land where no pest control is carried out. No resource consent was required but he did have the approval of the HAZNO officer, EPA, Northland Regional Council, and the local hapu. He also informed his neighbours. Dean set up baitstations in rows 50m apart with the rows 150m apart. He carried out two prefeeds (needing 4-5 fine clear nights to avoid bait swelling and deterioration). Then put 1080 in baitstations. The prefeed cost \$250 and 1080 cost \$215. Unused 1080 was cleared out of baitstations. He tested the length of time it took for possums to decompose so he could state when the forest was safe to 'open'. He stated you must be fastidious, signage is important, dealing with people's concerns is a big part of the control work.

Wendy Sporle: Kiwis for Kiwi Trust: Using Toxins Safely Around Kiwi

Pest control- an essential task to ensure kiwi survive. Without it less than 6% of kiwi chicks survive. Dogs are adjacent to most kiwi areas in Northland but thankfully ferrets less common. Landscape protection gives longer lasting benefits. But it is important to stay focused on what you are trying to protect and not in fact threaten them.

Some key points;

- Mustelid traps
 - Have in a boxes kiwi or kiwi bills can not enter
 - If using Fenn covers beware of pigs they can expose the traps. Having them on a base is safer
 - Don't open baffles holes of DOC200 or 250 traps. The 250 traps should be mounted on 100mm boards so they are elevated and safer for chicks
- Cat or possum traps
 - Elevate traps at least 70cm
 - Ramps must be secure and steady
 - Ramps can provide luring opportunities
 - Stumps can be effective trap stands

Toxin use

- Optimising the timing of toxin use to benefit kiwi where possible
- Kiwi and cyanide- paste has killed kiwi
- Kiwi and brodifacoum- eggs, chicks and adults have been found with brodifacoum. It has been confirmed as cause of death for kiwi.
- Kiwi and 1080. As at 2011, 485 kiwi tracked -none killed. Populations have been boosted

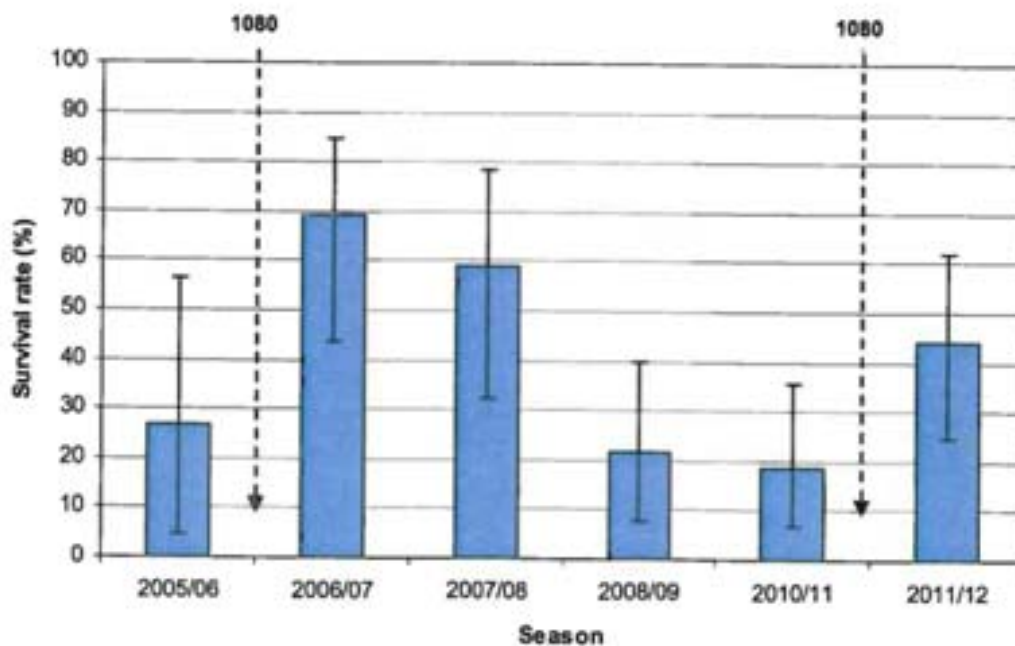
1080 has benefited kiwi throughout NZ

Whangarei Kiwi Sanctuary 1080 experiment

Comparison of chick survival in sanctuary blocks. Some trapped some not.

Period	Rarewarewa	Riponui	Purua
2001 - 2003	57%	74%	35%
2004 - 2008	58%	6% 1080 applied winter 2009	38% 1080 applied winter 2009
2009 - 2010	43% 1080 applied winter 2010	56%	50%
2010 - 2011	62%	33%	20%

Tongariro Kiwi Sanctuary



New toxins and ideas

- PAPP (stoats and cats)- low toxicity to birds
- Zinc phosphide- limited experience and research on birds

General care

- Keep kiwi in mind when doing pest control
- Place gear out of reach of kiwi
- Do research and follow best practice
- Clean up residues of toxin

Practical/Innovation Sessions and displays:

Informative displays were provided by;

- Mike Camm & Clayton McInnes, Tutukaka Landcare Coalition with their wooden rat box
- Steve Allan: SA Feral Cat trap refinements and also refined possum trap
- Ian Wilson, Puketi Forest Trust – pig proofing trap boxes
- Shane Hyde of Ecoland – automated bait and prefeed dispenser he designed
- Frank Visser – from Key Industries, showed a presentation on one of their traps
- Simon Browne – Hupara Landcare – Raised Timms trap using a ramp and two pieces of wood
- Connovation- a trade stand of their gear and information

Notes taken by Wendy Sporle. Kiwis for kiwi