New Zealand Biosecurity Institute

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New Zealand Biosecurity Institute

Working together to ensure New Zealand is protected from the adverse impacts of invasive species

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From the Editor

Understanding and acceptance of our work

It was always a pleasure to meet so many members at NETS2017.

This issue carries an overview of three very busy days in the Capital. It's always difficult to review a conference with concurrent sessions and workshops but I managed to gather as much of the flavour as possible.

Cats and dogs both had a role to play in this conference and there are stories about both in this issue.

I have noticed more sessions on cats at NETS over the years and Wellington among other places is beginning to show results of the work done to control them.

The "cat Issue" has also been a good example of the importance of well planned public information and social marketing programmes. It's important that the work our members do retains the understanding and acceptance of all New Zealand communities.

Chris Macann,
Editor

President's Note

Celebrating success

It was nice to see so many new faces at NETS2017 and to see such a good turn-out. There were around 240 registrations this year.

It was great to hear from local speakers how Wellington communities have embraced the idea of predator free areas and to see first-hand their success, with the number of native birds close to the central city.

Celebrating successes is an important part of NETS.

One important way we do this is through our Institute Legacy Awards. I would like to congratulate all our winners this year. It is important that we treasure these awards.

The Ministry for Primary Industries has this year instigated its own awards, which we commend, however it is important we "own" our legacy awards which honour past members. We also have a shooting trophy which has a noble pedigree through the vertebrate pest stream of the Institute.

Darion Embling, President

The NZBI Executive Committee will next meet on November 22 in Wellington. Among other things we will likely discuss will be relationships with the new Ministers for Biosecurity and Conservation.

Darion Embling,
NZBI President.

NETS2017: It was all about Passion and Community

Protect Editor Chris Macann attempts to capture the flavour of NETS2017.

It was all about passion and community when close to 250 practitioners, planners, researchers and managers turned up for the New Zealand Biosecurity Institute's 67th annual National Education and Training Seminars (NETS) in Wellington this year.

This year's theme was "Birds the Beehive and Biosecurity: Capital Results Working Together.

The emphasis was on collaboration between agencies from local and national government to industry and other organisations and communities.

Over the three days Institute members from the Capital had a lot to share and demonstrated their pride in doing so.

Make what is invisible, visible

President Darion Embling said this year's theme was fantastic considering the fledgling initiative of the Biosecurity 2025 target of making 4.7 million biosecurity officers.

"We are all absolutely key in making this happen," he said.

Darion reminded all present of the mission of the Institute - "Working together to ensure New Zealand is protected from the adverse impacts of invasive species"

"Much of what we do to support this mission is not visible to the general public"

He said through NETS and Biosecurity Month our mission is to make what is invisible, visible to all New Zealanders.

Passion in the Capital

Organising committee member, Davor Bejakovich highlighted the success of the predator-free Wellington movement, with the establishment of pest free areas all over the region.

"It's about passion and the community," he said.

The NZBI Executive 2017-18

Institute President, Darion Embling

"From Wellington apartments and natural areas to agricultural areas". He said the success is evident in the amount of native birds in the Capital.

"We have been so successful that kaka are causing problems in the botanical and private gardens—and how do you stop a tui from making noise—New Zealand falcon attacks—low flying koreros—sleep patterns affected by moreporks."

He said the next aim is for the saddleback to become common.

"All this has been enabled through community cooperation," he said.

A waka for us all to board

Rawhiri Faulkner from Greater Wellington Regional Council introduced proceedings with a dynamic presentation to set the tone for the conference which was about interacting

He said biosecurity requires communities, science and iwi to co-operate. He said there are great opportunities in the post treaty settlement environment.

"Things can move from "credible to incredible," he said.

He said the settlement process allows iwi to set directions in partnership and to set outcomes.

Jacqui Lardner, Chelsee Newman, Sarah Killick.

Alastair Fairweather, Karen Vincent and Ann Thompson.

Marcus Girvan and Hamish Hodgson

"It's a waka to sit on" he said.

He said we need to look at the relationship through an opportunities lens not a compliance lens. He said there is a need to keep evolving different tools as well as a different language.

An agreed strategy is important he said.

"If you don't know where you're going it doesn't matter which road you take," he said evoking "Alice in Wonderland". Another key is to have fun.

"What matters is that communities embrace the ideas we are promoting."

The wide spectrum

Sessions on pest plants covered among many fanwort, wild ginger, wilding conifers, and biological control of *Tradescantia*, horehound, tutsan and Japanese honeysuckle.

A full segment and workshop was dedicated to cat management from a community motivation perspective.

Other workshops covered practical discussions on effective trapping techniques, and reviews and reports on effective plant pest control, generally from a chemical control viewpoint.

Marine pests visited included among others Mediterranean fan worm, and brown bullhead catfish.

Sessions on vertebrate as well as invertebrate management included controlling urban rabbits, wild pigs, rat specific toxins, wasps and ants.

Among the many presentations that caught my eye were: commercial composting as a management tool for moth plant; managing invasive species on South Georgia in the South Atlantic; the Pest Detective online tool for pest identification (for its simplicity); and a session on advances in aerial photography and how it has become more accurate in mapping the spread of plant pests.

Proud Wellingtonians presented entertaining talks about cat management including the catchy "snip 'n chip" programme, and the region-wide predator free possum (among others) trapping programme.

Pest-free communities

Predator-free community groups spoke about spoke of biodiversity outcomes achieved by small nimble teams of community volunteers unencumbered by bureaucracy.

"There's a high risk if you make it top down."

They said these volunteer community groups all over the Wellington region and in other parts of the country want to know who's doing what and where.

"We don't want to invent the wheel."

They commented that it's always important to tell people the bad stories as well as the good, otherwise people will think nothing's wrong.

"Always remind people of outcomes. Keep that last trap set".

Legacy awards

Worthy winners of New Zealand Biosecurity Legacy awards were

Any advertising opportunity - Ilona Keenan

Heidi Pene with the Stook and President Darion Embling

Heidi Pene receives the Dave Galloway Innovation Award on Behalf of Rusty the dog, from Richard Bowman.

Ahoy - Peter Visser grabs the attention of the group on Somes Island

The welcoming archway on Soames Island

Braving the wind - Alice McNatty

announced and the people who they honour were remembered.

Graham Cowan from Landcare Research was the winner of the Peter Nelson Memorial Award for Excellence in Vertebrate Pest Management.

Wayne Cowan from Greater Wellington Regional Council was the winner of the Peter Ingram Memorial Award for Excellence in Enabling Plant Pest Management Teaching and Learning.

John Taylor and his dog Rusty were winners of the Dave Galloway Award for Innovation in Biosecurity.

As President Darion Embling pointed out, it is Important that we acknowledge theses awards with the word legacy.

"Now that the Ministry for Primary Industries has instigated its own awards as well, with many of our own members winning, it is important that we own these special awards given that this is NETS, and they honour former members.

It's also important to appreciate the legacy of the shooting trophy which has a fine pedigree through the vertebrate pest management history of the Institute.

This year's clay bird shoot organiser Gary Sue encouraged as many people as possible to take part. The winner this year was reigning champion Khan Adam.

Heidi Pene won the Stook Award for the best presentation by an Institute member. Heidi's presentation was on Rusty the dog and his handler John Taylor, and their successful efforts at sniffing-out pest plants.

Matiu/Somes Island

Growing up in Wellington I knew about the Alcatraz like island in the middle of the harbour. I knew of its function as working quarantine station as well as its chequered past as an internment camp and one time leper outpost. It was not until 1995 when the quarantine facility closed down that people were able to visit the island. No longer having a purpose for quarantine, its redundant facilities, now a museum, had a slightly sinister air with its disused pens and its carcass disposal facilities. Visitors to Matiu/Somes Island, as well as discovering its history, were able to learn about plans for it to become a predator free island. It is also home of tuatara – 70 having been released there, and giant weta. Visitors had to undergo strict quarantine procedures including bag inspections and footwear scrubbing.

The Halo and Zelandia

As a youngster I used to play in the area of the then functioning Karori Reservoir. It is great to now see how the area has been turned into a haven for native species and is now the world's first fully- fenced urban sanctuary. The first time I saw a tuatara in the wild was right beside the track at Zelandia. It is terrific to be able to see the biodiversity successes extend from under the halo to the entire city. Visitors on the Halo and Zelandia field trip were able to hear about eradication, fence breeches, and the impacts of mice among many other challenges and successes.

A weta apartment on Somes Island

Former quarantine farm, Somes Island.

Greenery aplenty, Somes Island.

Phil O'Leary checks his boots on Somes Island.

Ray Maw, Stephen Brown and Jason Hawker.

Somes Island. Photo Jason Hawker

Somes Island cemetery.

Mountains to the Sea

Those on the Ki Uta ki Tai - Mountains to the Sea field trip were able to follow Te Awakairangi/Hutt River from the sea to its source in the Rimutaka Ranges. The visitors were able to hear about native forest regeneration, and balancing plant and animal pest control with recreational use in Wellington's regional parks. They saw what they described as stunning scenery including places used in "The Hobbit" films.

"It was a great trip for the hardy team that braved the rainforest conditions," reports Richard Bowman.

Kapiti Coast

Kapiti Coast field trip-goers visited three very different ecosystems – the Paekakariki Escarpment, the Waikanae River, and the Waitohu Dunes. The visitors heard about the lessons learned and the challenges in pest control on the three long-running projects which show landscape-level restoration transformations.

The Miramar Peninsula

The Miramar peninsula outing showed visitors ambitious plans for a pest free area within the city's boundaries in an area reasonably easily defended by the natural barriers of the coast and the airport runway. Plans are underway for rat and mustelid eradication from the Peninsula. This is the first time that this has been attempted for an urban environment. Among other points of interest visitors were able to see the boneseed plant pest containment programme, and habitat restoration efforts to protect the little penguin/ korora.

Unitec contribution

Unitec students, Chelsee Neverman and Jacqui Lardner made a well-received presentation to the conference on the research findings of their project "Biosecurity Advocacy – A gentle Approach"

As well recent Unitec graduate Sarah Killock, spoke on her work with Unitec's Dan Blanchon, on 'Pathogenicity of naturally-occurring fungal associates of African clubmoss in conjunction with low concentrations of glyphosate".

Unitec students have presented at NETS for a number of years. These opportunities are sure to benefit their personal development and their introduction to the industry.

From little things, big things grow

Pestbusters of the future ended the conference on an encouraging note. Students from Kimbolton School in the Manawatu reported on four years of their five-year project to remove weeds form their local native reserve. Together with Neil Gallagher from Horizons Regional Council who helped direct the project the pupils explained how they had removed weeds from the reserve and monitored the return of native plants. Neil said what started as a weedbusting project became a science project, and as a result, grew into a teaching module.

The students said their main observations so far were the reduction in time taken to weed their

Victor Anton and Shane Parata.

Neil Gallagher with staff and pupils from Kimbolton School

Robyn and Hugh Gourlay.

Toni Withers, Paul Champion and Jemma Livingstone.

Stephen Brown and Terry Charles

experimental plots, the appearance of a large variety of native seedlings, evidence of sub-canopy plants growing faster than canopy trees and an improvement in plant health and the absence of diseases and pests.

Shine the light on innovation

Jono Underwood ended the conference with an invitation to "shine the light on innovation" at the Top of the South Island for NETS2018 at the Rutherford Hotel in Nelson 25th–27th July.

The only way in or out. Lynne Huggins leaves through the compulsory shower area on Somes Island.

Jono Underwood welcomes one and all to the top of the South for NETS2018.

Hugh Gourlay studies MPI's video about the brown marmorated stink beetle.

Simon Stevenson, Peter Visser and Nathan Manning

Steve Edwards talking visitors through the Lord of the Rings location for "Rivendell".

Tristan Williams and Les Simpson.

Khan Adam with the shooting trophy which he successfully defended.

Graham Nugent: Peter Nelson Memorial Award for Excellence in Vertebrate Pest Management

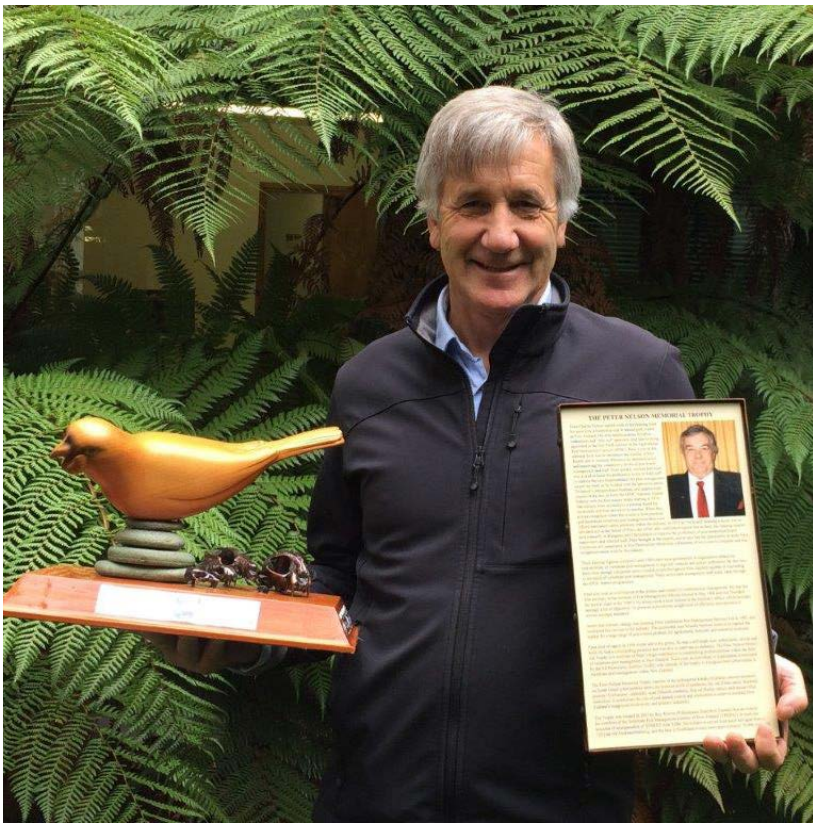
Graham Nugent from Landcare Research won the 2017 Peter Nelson Memorial Award for Excellence in Vertebrate Pest Management.

Graham has worked for Landcare Research and its predecessor (Forest Research Institute) for 36 years as an applied ecological and epidemiological researcher focused on the management, control, and eradication of introduced mammals, particularly deer, pigs, and brushtail possums.

> "It is an exciting time to be involved invertebrate pest management and research in New Zealand."
>
> *- Graeme Nugent*

Since the mid-1990s, Graham has focused his research on protecting NZ's dairy and beef industries from the threat posed by bovine tuberculosis (TB) in wildlife and through his strong science leadership and desire to find pragmatic solutions to management problems he is now recognised nationally and internationally as a leader in the field of wildlife-TB.

Graham has had a huge influence across a wide range of research including ecology, conservation biology, wildlife epidemiology, pest control technology, bioeconomic theory and modeling, sociology, game management, disease management, and eradication surveillance theory and practice. Additionally, in the 1990s Graham worked closely with Maori to assist them in developing pest control systems for the restoration of native pigeon populations.



Graham Nugent with the Peter Nelson Memorial Award

Graham has strong links with management and operational staff of TB control agencies and provided their TB managers and their agricultural stakeholders with strategic analysis, epidemiological and technical expertise of possum control and pig and deer surveillance for TB control and eradication, culminating, in 2015, in being one of the key architects of a new proposal aimed at national eradication of TB that has since been adopted by government and the agricultural industries.

Graham said he was extremely honoured and proud to receive the award. As an applied researcher he has always been focussed on solving practical and immediate problems faced by managers, so he is grateful to get this recognition from the practitioners and pest managers working at the coal face. He said he has been fortunate to be surrounded by amazing "super-techs".

"It is an exciting time to be involved invertebrate pest management and research in New Zealand," he said.

Wayne Cowan: Peter Ingram Award for Excellence in Plant Pest Management Teaching and Learning

Wayne Cowan from Greater Wellington Regional Council has won the 2017 Peter Ingram Memorial Award for Excellence in Plant Pest Management Teaching and Learning.

Wayne has been in the industry for just short of 35 years and has made a significant contribution to educating many of pest plants officers and setting the NZQA pest plant management module as well as constantly looking for better ways to control pest plants while minimising environmental and social impacts of pest management activities.

> "When you look at the other names on the award it's a real who's who, and an honour to be in such company."
>
> *- Wayne Cowan*

A senior biosecurity officer at Greater Wellington Regional Council, Wayne began his biosecurity career with the Wellington District Noxious Plants Authority in 1983, when he did his training through the Institute of Noxious Plant Officers. The Authority became part of the Wellington Regional Council where he has remained ever since. An Upper Hutt boy, Wayne enjoyed the work and never wanted to leave the area or change jobs.

He said during his career he has had a long involvement with aerial spraying and developed new techniques and ways of applying herbicide. He has had to deal with a few major changes in legislation and has had to act accordingly.

Wayne Cowan holding the Peter Neilson Award with Paul Champion who presented it.

He noted the change in focus of biosecurity to reflect the effects on the environment.

He said he didn't want to single out any highlights.

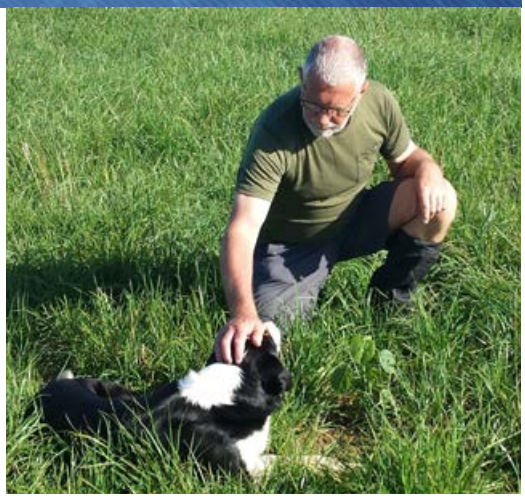
"My whole career has been a highlight really. I do such a variety of things."

"It is an honour to receive the award."

He said he knew Peter Ingram well and respected him and the knowledge he shared with others, which is what this Award acknowledges.

"When you look at the other names on the award it's a real who's who, and an honour to be in such company."

Dave Galloway Innovation Award: John Taylor and Rusty



John with Rusty. [Photo Marijn Roberts]

John Taylor and his dog Rusty have won this year's Dave Galloway Award for Innovation in Biosecurity.

John and Rusty have well and truly innovated in the field of pest plant surveillance and deserve this award for their work detecting velvetleaf.

When John read about the velvetleaf incursion he thought his wonder dog trained for Search and Rescue could be put to good use for the Southland farmers who innocently received this devastating threat.

Funded by MPI to provide a proof of concept in only a few months, New Zealand now has a superior tool for crop and paddock inspection of known and potential velvetleaf infection zones.

John and Rusty work pasture and low growing crops to find velvetleaf plants. Depending on the wind and rain their abilities are well proven. With seventy-five meter swath widths, plants down to two leaves sub-canopy have been picked up. Ranging across paddocks at up to four hectares per hour the duo have found plants unfindable by previous human efforts and have proven invaluable to confirm the current number of infected paddocks in Southland, Waikato and the Horizons region.

This has proven the worth of thinking outside the box.

MPI and John have created a valuable tool for councils and others needing to find velvetleaf to enable early intervention and removal of plants before they seed.

Getting on top of wilding conifers

If their spread isn't stopped, it's estimated that 20% of New Zealand would be affected by unwanted conifers within 20 years.

The first year of a National Wilding Conifer Control Programme has seen their spread checked across around 1.2 million hectares. The Ministry for Primary industries provides this report on progress.

In May 2016, the government pledged an extra $16 million over four years for the first phase of a national control programme. About $11 million was already being spent each year on wilding conifer control nationwide. This Programme is a coordinated effort to control these weeds, and **its success so far has come through strong support and commitment of local wilding tree management groups, landholders and central and local government.**

"Preventing conifer spread is, like a lot of pest control, an issue that involves long term collective effort—which means everyone working together for success today and being committed to maintain this success together into the future," said Programme coordinator Sherman Smith.

"Everyone I've spoken with is rapt with what we've achieved over the 2016/17 control season. Everyone also says that much of this has been due to the cooperation of all parties, including landholders demonstrating commitment to the programme and contributing their share of the cost."

Last year's control programme involved $6.35 million contribution from government and $1.8 million from landholders and others.

Through this, control was carried out across 14 areas, of which eight have now had most of their problematic seed sources removed and conifer spread halted. This has protected over a million hectares of land, including High Country farmland and conservation land, in the Lewis, Craigieburn, Porter, Godley, Four Peaks, St Mary-Ida and Dunstan areas. Follow-up in these areas is planned for three years' time.

Control work in 2017/18 will continue for the other six identified priority areas, including the Molesworth, Hakatere, Kawerau, Remarkables, Northern Eyre and Five Rivers areas, as well as in the Kaimanawa area of the North Island. In addition to these, another five areas covering around 400,000 hectares of affected land in Canterbury, Otago and Southland have been added to this year's Programme. These are:

*Tekapo East and West and Ohau in Canterbury's McKenzie Country, Lammermoor in Otago, and Mid-Dome in Northern Southland.

Preventing the spread of wilding conifers is supported by many of the organisations and individuals involved in the Biosecurity Institute and the wider community as a whole.

Lake Pukaki wilding conifers

Walking the talk: Environment Canterbury's Internal Biosecurity Programme

Gemma Livingstone reports on her and her colleagues' project to walk the talk on internal biosecurity.

The ball started rolling in Biosecurity Month. Hannah Eastgate and I decided to highlight biosecurity and our regional pathway management programmes 'On-farm Biosecurity' and 'Check Clean Dry' to Environment Canterbury colleagues who work in the field.

Environment Canterbury's Regional Biosecurity Team is encouraging landowners to implement 'on-farm' biosecurity practices to reduce the likelihood of introducing pests and diseases. We are also advocating to freshwater users in Canterbury that they Check Clean Dry between waterways.

Brushing off mud or dirt

We knew the biosecurity section was "cleaning down" between properties but Hannah and I wanted to check how we were performing as an organisation in this area, as we view our organisation as a high-risk pathway for pest spread. We also believe our organisation should be leading the way and following best biosecurity practice as part of protecting our region's biodiversity and economy.

Cleaning kit

Kits contain:

- Large fish bin
- 5L water container
- 'Check Clean Dry' 250ml spray bottle (for dishwashing liquid mixture)
- 500ml spray bottle (for disinfectant mixture)
- Dishwashing liquid
- Disinfectant tablets
- Disinfectant instruction sheets
- Cleaning procedure for between properties
- Cleaning procedure for between waterways
- Large plastic bags
- Gloves
- Hand towels
- Large stiff brush

Our community views us as a whole not as individual sections.

Part of our presentation included discussion around what was already occurring or not occurring regarding cleaning down between properties and waterways. In general, we found that an individual would clean down using a landholder's equipment if that was the landholder's requirement or request, but not between every property if there was no request to do so.

After the first presentation, by chance, the very next day there was a media release about the cattle disease Mycoplasma bovis. This new 'outbreak' brought home the message to Environment Canterbury's zone teams. Many of the zone team members visit five to six properties a day.

As a result of the talk, our cleaning procedures were requested from the zone teams. I created some biosecurity cleaning procedures for between properties, and between fresh waterways, for the organisation. Nineteen zone vehicles now have biosecurity cleaning kits and procedures in place so cleaning down can occur.

Update: Predator free in Hawke's Bay

The Cape to City Project team in Hawks Bay provided this update on a new tool the team has developed that could help to enable a permanent, cost effective network of kill traps.

Cape to City is an ecological restoration programme covering 26,000 hectares of mainly primary productive farmland. The project extends from Havelock North to Cape Kidnappers and encompasses Waimarama and forest remenants at Kahuranaki.

Cape to City project leader Wendy Rakete-Stones said in terms of the predator control part of the project, whilst one of the main objectives was to get predator numbers really low, a low-cost template for maintaining this in the long term was really important.

"What we wanted to do was look at a different way of doing things," she said.

"Because we are not winning the war against biodiversity loss, we have to change what we are doing. If we can reduce the number of traps in an area without compromising the benefits, we will reduce the ongoing maintenance costs, which means **in the long run we could cover more area for the same cost.**"

So, after some careful thought, Andrew Gormley and Bruce Warburton from Landcare Research, along with Hawkes Bay Regional Council, developed TrapSim—a simulation tool that can be run from any web browser.

The main objective was to provide an online decision-support tool to simulate the trapping of target predators—stoats, ferrets and feral cats - in the Cape to City footprint.

The team wanted to provide people with a tool that explores how different trap network designs can affect the relative effectiveness of predator trapping outcomes.

"Permanent networks of kill traps have the potential to provide long-term, cost-effective control of vertebrate pests over large scales," Bruce. Warburton said.

"Often these kill-trap networks are established initially with a large number of devices in order to substantially reduce the pest population to low levels. However, it is likely that after the population has been reduced, the initial number of traps in the landscape is higher than that required for long-term maintenance of a low-density pest population.

"This means that r**emoving a proportion of devices will reduce the cost of checking and maintaining the network without reducing its effectiveness.**

Cape-to-city-native-bush. [Photo DOC]

"The optimal number of devices in the landscape for maintenance control depends on a number of factors in addition to the population size of the target species." he said.

"For example, the size of the home range of the individuals has a significant bearing on the density and spacing of traps required, such as rats which range over areas of around 3ha, whereas mustelids range over areas of around 300ha.

If trap lines are spaced too far apart, then populations of rats could easily live between trap lines and never be exposed to capture, whereas ferrets and stoats are likely to encounter multiple traps. The density of traps therefore depends on the target species.

Bruce said another factor that can affect the number of traps required for an effective network is the time interval for checking and resetting traps. Checking traps too often when populations are low can waste resources, as there are only very few traps to clear and reset.

Right now, a network of predator traps is being implemented across the City to Cape landscape in stages. The aim of this trapping network is to maintain target predators—ferrets, stoats and feral cats—at low densities within the Cape to City footprint.

The vast expanse that is the Cape to City project produced unique challenges but huge rewards.

TrapSim can help users explore the effects of various trapping regimes on the potential trap capture rates, thereby providing a guide for management decisions.

The simulations also highlight that species will respond differently to a trapping regime due to factors such as home range size, trappability and reproductive rates.

Andrew Gormley made it clear that the results of this simulation are conditional on the parameter values specified by the user.

He said there are a large number of parameters in TrapSim that affect the outcomes of the trapping simulations such as predator carrying capacity and dispersal distances.

"The default parameter values in TrapSim are a starting point and should not be treated as reflecting the real situation," Andrew said.

Basically the information any user will get out of it is only as good as the information they put into it.

TrapSim also simulates the concurrent capture of multiple predator species.

Looking to the future, there are a number of developments that could benefit TrapSim. These include simulating immigration from outside the Cape to City boundary, altering animal parameters such as carrying capacity, and relaxing the assumption that all species reproduce once per year and during the same season.

Bruce said TrapSim can be used to examine the relative effects of various trap networks and trapping regimes but it is not, however, a predictive tool and cannot be used to make predictions about trap catch."

Right now the current iteration of the tool allows people to simulate maintenance control, to alter trap densities and to check intervals as well as the density of the target species.

When integrated with another Cape to City project—wireless trap monitoring—this should significantly reduce the cost of controlling predators over large areas.

For more information on the Cape to City project visit www.capetocity.co.nz.

Science central to Kauri Dieback management

Traditional Maori medicines, cultural indicators and remote sensing tools may all have a role to play in the management of Kauri Dieback. Planning and Intelligence Leader for the Kauri Dieback Programme, Travis Ashcroft from MPI, highlights the latest science and research initiatives in the battle against the disease.

Traditional Maori medicines (rongoa)

Researchers from charitable trust Nga Tirairaka o Ngati Hine are investigating the use of traditional Maori medicines (rongoa) to improve kauri health and reduce the impact of Kauri Dieback.

The first stage of the research suggests a number of rongoa like ash and manuka extracts could be suitable for field trials. Planning is underway to incorporate these rongoa into existing projects.

This is the first ever study into using traditional Maori medicines to improve native forest health in New Zealand.

Phosphite trials

Five years of research by Plant & Food looking at the efficiency of phosphite injections into infected juvenile kauri has finished. The results are currently being reviewed and the next steps determined.

Trials determining the efficacy of phosphite sprays on disease lesions on kauri trunks, and injecting phosphite into larger mature trees are in their early stages and will be completed in 2019 and 2021.

A two-year project using natural products any examples of natural products and biological

» *continued*

» *continued*

control agents to control the Kauri Dieback pathogen has been completed and the final report on the outcomes is presently being reviewed.

Surveillance and detection

A relatively cost-effective way of using remote sensing tools to detect Kauri trees and the dieback disease is progressing through the University of Canterbury with the collection of field data now completed. Assessment of the results is well underway, and if this technique works it will aid in the early detection of potentially infected trees. The project is expected to be completed in November next year.

A report on the role historic forestry operations have played in the introduction and spread of Kauri Dieback is complete and will be released soon through the Kauri Dieback website.

A pilot study to introduce a cultural health indicator framework has been completed. The use of Māori knowledge—matauranga—in developing environmental indicators has been used for freshwater and coastal management, but this will be the first time it is used in a forest ecosystem.

A three to five-year monitoring period will determine how to use cultural indicators to measure the health of Kauri forests, the disease status of an area, and to identify Kauri that are resilient to the disease. There are many cultural indicators ranging from native plants to birdlife for example karo, kowhai, karaka and tui.

The future

A six-year programme of research looking to address the threat of the disease to New Zealand's agriculture, horticulture and natural and urban forests is more than half completed.

The Healthy Trees, Healthy Future Programme has a large component looking at the genetic resistance of Kauri to the pathogen that causes Kauri Dieback. A panel of scientists from the UK, Europe and the United States is reviewing the progress.

A new research project starts shortly to look at the use of temperature to kill the pathogen in soil, potting mix and kauri seedlings.

A plan that will outline the strategic direction of the science for the next seven years is a priority project that is being worked on this year.

For more information on Kauri Dieback research contact travis.ashcroft@mpi.govt.nz.

For more information on the Kauri Dieback programme visit www.kauridieback.co.nz

STOP PRESS
MPI to be four ministries

The incoming Labour–led government has announced its intention to split MPI into four ministries – Biosecurity, Agriculture, Fisheries and Forestry. Damien O'Connor will be the Minister of Biosecurity as well as Agriculture. Eugene Sage will be the new Minister for Conservation.

White Admiral first Wellington release

In June the Greater Wellington Regional Council reported that biocontrol agents showcased at its recent 'Restoration Day' held in Porirua attracted significant interest from the public. The white admiral butterfly was released along the Akatarawa Road as a control agent for Japanese honeysuckle. It is the first such release in our region.

Hologram trial at Auckland Airport

The Ministry for Primary Industries is trialling new hologram technology to educate international travellers about the importance of biosecurity at the border.

A prototype hologram will now greet visitors to Auckland International Airport.

The hologram will give a 3D display of biosecurity risk items and explain why we don't want them in New Zealand.

"This is an experiment to test if new technology can be used as a communications tool," the Ministry said.

Trophy Stoat

A control programme in the Wellington region earlier this year trapped a trophy size stoat which weighed in at 450g, with an approximate length of 45cm. The average weight of a stoat is only 324g. The stoat was caught in the Wainuiomata Mainland Island area.

Briefs

Dog joins stink bug fight

A bug-sniffing detector dog introduced by the Ministry for Primary Industries will help stop the potentially devastating brown marmorated stink bug from making a home in New Zealand.

MPI will have two trained dogs ready to sniff out stink bugs this summer, including a specialist dog to assist with detecting the pest in the event of an incursion, MPI said.

Studies in the United States and our own trials show that dogs have huge potential to help detect stink bugs when they cluster in groups, MPI said.

No sign of bonamia in wild oysters

The latest testing of the Bluff wild oyster fishery shows no sign of the invasive parasite *Bonamia ostreae*, the Ministry for Primary Industries announced at the end of October.

Bonamia ostreae was discovered in Stewart Island waters in May, resulting in MPI's decision to remove all farmed flat oysters in Big Glory Bay and Marlborough to prevent further spread.

Moves to contain cattle disease

Mycoplasma bovis

The Ministry for Primary Industries is moving forward with control measures to prevent further spread of the cattle disease *Mycoplasma bovis*, with plans being developed with farmers to cull animals from the known infected farms.

"The only positive results for the disease have been on seven infected properties, leading us to be cautiously optimistic that we are dealing with a localised area of infection around Oamaru," the Ministry said in mid-October..

DairyNZ, Federated Farmers and Beef+Lamb New Zealand support the actions. New Zealand is one of the few countries in the world where *Mycoplasma bovis* is not endemic.

Profile

The challenge of making success visible:

Jono Underwood

NZ Biosecurity Institute Vice President

Protect asked Vice President Jono Underwood a few questions about his work and why he enjoys it.

Name: Jono Underwood

Organisation: Marlborough District Council

Job Title: Biosecurity Coordinator

Time in the job: 5 years.

What motivates you to be involved in biosecurity?

The challenge of working in amongst biological systems that are constantly changing and throwing new challenges at you. That includes the people too!

What has been your career path to your current position?

I studied at Lincoln University majoring in Conservation and Ecology. However, it was always the 'threats' that took my interest. I spent a stint in Australia post university managing vertebrate pest management contracts for a private consultancy. This involved a very different suite of pests. I was involved in conducting trapping/poisoning programmes for wild dogs/foxes und undertaking permitted culls of wallabies and kangaroos.

I came back 'home' to Marlborough in 2009 and started as a Senior Biosecurity Officer at Marlborough District Council. Then followed rapid familiarisation with the post-border/local government end of the biosecurity system in NZ.

What makes up a normal day for you?

I spend plenty of time at my desk, on the phone and in meetings. There is plenty of back and forth with the team discussing what's going well and what isn't. Most of the time recently I have been analysing projects and programmes to make sure the investment by Council and the community is going to provide the best long term, sustainable outcomes.

What do you enjoy the most about your job?

The constant challenge of making success visible. Even when it means seeing no change.

Inaugural NZ Biosecurity Awards

The inaugural NZ Biosecurity Awards were presented to their winners in August at an awards ceremony at Parliament.

And the winners were …

Don Mackenzie (right) with the former Minister for Primary Industries Nathan Guy.

Community Award

Banks Peninsula Conservation Trust
The Wildside Project

The Banks Peninsula Conservation Trust has been successfully running predator control programmes for over 30 years. Most of the support comes from land owners and the wider community.

Highly Commended
Motutapu Restoration Trust

Industry Award

Port of Tauranga Limited
Biosecurity Excellence

The Port of Tauranga has built a port community that's committed to biosecurity excellence. Their aim – to have no biosecurity incursions coming through the port of Tauranga. Their programme is a partnership with industry and government.

Highly Commended
New Zealand Plant Producers Incorporated

Government Award

Department of Conservation
The Great White Butterfly Eradication Project

The Department of Conservation eliminated a pest butterfly from New Zealand. This is the first time anywhere in the world that an unwanted butterfly population has been eradicated.

Highly Commended
The Northland Regional Council's and the Top of the South Island's Marine Biosecurity Project

Maori Award

Te Tira Whakamātaki
Māori Biosecurity Network

The Māori Biosecurity Network was established in 2015 to look at how Māori knowledge, interests, and values can be embedded in New Zealand's biosecurity system.

Highly Commended
The Karioi Project, Te Whaanga 2B3B2 and 2B1 Ahu Whenua Trust

Supreme Award

Department of Conservation
The Great White Butterfly Eradication Project

Minister's Award

Don McKenzie (Northland Regional Council)

For an individual who's made at least ten years of continuous, outstanding contribution to biosecurity in New Zealand.

Former MPI minister Nathan Guy said Don is a leader in regional biosecurity who has worked tirelessly for over two decades for better biosecurity in Northland, delivering some world leading programmes.

New Zealand **Biosecurity** Institute