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# **NZBI Contacts**



Darion Embling President



Mark Hansen Canterbury/ West Coast



**Rebecca Kemp** Immediate Past President & Auckland



**Alfredo Paz** Otago/Southland



Sara Moylan Vice-President & Lower North Island



Alastair Fairweather Travel/Study Awards Co-ordinator



Jono Underwood Vice President & Top of The South



**John Sanson** Biosecurity New Zealand

chrismacann@hotmail.com



Alice McNatty Secretary



**Chris Macann** Protect Editor & Archives Co-ordinator

Darion Embling	President & Central North Island	(07) 859 0790	Darion.Embling@waikatoregion.govt.nz
Rebecca Kemp	Immediate Past President & Auckland	(09) 366 2000	rebecca.kemp@aucklandcouncil.govt.nz
Sara Moylan	Vice-President & Lower North Island		Sara.Moylan@gw.govt.nz
Alice McNatty	Secretary		mcnatty@hbrc.govt.nz
Wendy Mead	Central North Island		wendy.mead@boprc.govt.nz
Jono Underwood	Vice President & Top of The South		jono.underwood@marlborough.govt.nz
Mark Hansen	Canterbury/West Coast		mark.hansen@ecologynz.nz
Alfredo Paz	Otago/Southland	03 211 5412/ 021 784 933	alfredo.paz@es.govt.nz

#### Other Officers

Chris Macann

Seconded Members

John Sanson Alastair Fairweathe

	Ministry for Primary Industries	(04) 894 0836	John.Sanson@mpi.govt.nz
ather	Travel/Study Awards Co-ordinator & Vertebrate Pests secondment	(07) 858 0013	afairweather@doc.govt.nz

Protect Editor & Archives Co-ordinator 03 349 9660

The New Zealand Biosecurity Institute can be found on the web at www.biosecurity.org.nz

# Retaining a strong training network across the country

The battles to prevent the spread of kauri dieback continues and the attempt to eradicate Mycopmasma Bovis is in full force and the attempts to minimise the spread and effects of Myrtle rust continue. Members are battling aquatic pests on several fronts with the victories and disappointments that that involves.

Fruit flies, familiar and not-so-familiar continue to test border security and response capabilities. There's good news for the whio and kiwi. There's also reports of new as well as tried-andtrue approaches to pest management. A look into the past is a reminder of how important it is to retain a strong training network across the country. Read on.

Chris Macann, Editor

FROM THE EXECUTIVE

# **Step onto the ladder**

We are looking forward to NETS2019 in Tauranga and with it the Annual General Meeting, and the opportunity for branches to put forward their candidates for national office.

At the Annual General meeting in 2005 in Christchurch two vice presidents were elected. This was a decision the Executive Committee at the time made to ensure the workload of the President was shared.

The Immediate Past President is also an Executive Committee position, and is in place to enable experience to be shared as may be necessary from time-to- time. **The Institute is** well served by its Past Presidents. The Executive is keen to encourage younger members to step onto the ladder. It is our wish that being an officeholder is as rewarding as possible while at the same time not being onerous. We also hope it as a step toward leadership within the sector.

President Darion Embling and Treasurer and Membership Officer Rebecca Kemp have indicated they will be stepping down from their roles at the next Annual General Meeting.

We encourage as many members as possible to put themselves forward for positions at branch level and at national level.

THE NZBI EXECUTIVE COMMITTEE



Darion Embling, President

# Mycoplasma bovis update

At 22 May there have been 170 confirmed affected properties, 34 in the North Island and 136 in the South Island. 124 are cleared properties and 46 are still active. 62 are dairy farms, 89 are beef. and 19 are described as "other".

The Ministry for Primary Industries (MPI), DairyNZ and Beef + Lamb New Zealand released the 2019 *Mycoplasma bovis* National Plan at a meeting with farmers in Hamilton on April 5.

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The plan sets out to eradicate *M. bovis* from New Zealand, to reduce the impact of the disease and the eradication programme for everyone affected and to leave New Zealand's biosecurity system stronger. We believe maintaining a collaborative approach to eradication is the best option for all farmers." ~ Tim Mackle

*M. bovis* programme director Geoff Gwyn said the eradication effort is on track, but there is still a lot of hard work to get done.

"There will be more farms put under movement restriction, and more farms that need to be depopulated," said Mr Gwyn.

DairyNZ's Chief Executive Dr Tim Mackle said *M. bovis* has created challenges for all farmers that have increased their biosecurity measures on farm.

"We believe maintaining a collaborative approach to eradication is the best option for all farmers."

The eradication of *M. bovis* is no longer a Biosecurity New Zealand response, but a national programme funded, resourced and governed by DairyNZ, Beef + Lamb New Zealand, and MPI.

On the key goal of leaving New Zealand's biosecurity system stronger, the Plan states:

"We've learnt a lot since *Mycoplasma bovis* first arrived in New Zealand – about the disease, its impacts, and about best practice biosecurity. **It is essential that we take these hard-learned lessons, from on the farm, in industry, and at MPI, and apply them** to how we protect our vital primary industries. We will work alongside ongoing initiatives and industry programmes, such as NAIT and Biosecurity 2025, to support the ongoing development of New Zealand's biosecurity system. How will we know we are achieving this goal? We will take the lessons that we've learnt and put them at the centre of government, industries' and stakeholder programmes and proposals for improving our national biosecurity system. This will include traceability systems, farm biosecurity, operational capability and underpinning legislation."

# Cargo facilities can now be fined

# Facilities that deal with imported cargo now face fines for breaking biosecurity rules.

From 15 April, Biosecurity New Zealand officers can issue infringement notices to transitional and containment facilities for actions that could allow invasive pests and diseases into New Zealand.

"Any individual or company that operates a facility without a registered operator, or who fails to comply with the operating standards for that facility will now be considered for an infringement notice," said Chris Denny, team manager freight and mail, Biosecurity New Zealand.

"One area we will be paying particular attention to is the movement of uncleared goods, including sea containers, without correct authorisation. This type of non-compliance poses a critical risk to biosecurity."



The infringement fee for each offence is \$400 for an individual and \$800 for a corporation.

"The infringement notices will be primarily used to address relatively minor breaches of the Biosecurity Act. They send a strong message about the importance of biosecurity and will deter people and organisations from breaking the rules

"As in the past, Biosecurity New Zealand can prosecute if our officers find major failings."

Under New Zealand's biosecurity rules, imported cargo must first go to an approved transitional or container facility for inspection, where necessary, and other checks.

# Fruit fly: Controls lifted then put back

On 11 April MPI announced that controls on the movement of fruit and vegetables in the Auckland north shore suburb of Northcote had been lifted, with no further Queensland fruit flies being detected. The initial response was enacted due to the discovery of male fruit flies on the north shore, first spotted on February 14.

However, on May 11 MPI announced that another Queensland fruit fly had been found within the Northcote controlled area, bringing the total to 8 over the past 3 and half months.

Biosecurity New Zealand reported that it is stepping up its on the ground efforts in the suburb, and will begin placing bait on fruit trees to attract and kill adult flies, in particular females.

The current restrictions on the movement of fruit and vegetables remain in place, and trapping and the collection of fallen fruit in some of the controlled area will continue, said Biosecurity New Zealand spokesperson Dr Catherine Duthie.

"While it is concerning there has been another detection, **it still doesn't tell us that there is a breeding population.** What it does is raises the potential that Queensland fruit flies remain in the area, albeit at very low levels."

The latest finds will mean an expansion of the B Zone in Northcote; and the establishment of a new A Zone with a radius of 200m around the new detection, along with the associated restrictions on the movement of fruit, vegetables and green waste. The controlled area of 1.5 km will be expanded toward the west from the latest detection

"Our teams on the ground will continue removing fallen fruit from backyards in the A-zone, and placing bait on fruit trees," said Dr Duthie.

# Fruit fly species stopped at border

In April, Biosecurity New Zealand officers stopped an unwanted fruit fly species from entering the country.

Officers detected spotted wing drosophila larvae in a single fruit from a consignment of oranges from the United States (USA) during a routine inspection.

The fly is a serious pest that could harm a range of fruit crops in New Zealand.

"There is no suggestion the fly is in New Zealand" said Roger Smith, head of Biosecurity New Zealand.

Mr Smith said the ministry's technical experts are assessing the find and any measures that might need to be taken as the fly is not normally associated with citrus.

"As a precautionary measure, we have put a temporary hold on citrus consignments from the USA. This will allow us to investigate further.

#### "We are working with authorities in the United States to identify the source of the contamination and possible treatment options for consignments on

He said the move is unlikely to have an impact on the supply of citrus to New Zealand consumers.

"The bait is made up of a protein to attract adult fruit flies, and a very low concentration of insecticide to kill the flies. It's similar to how people bait wasps in their backyards."

"The baits are toxic to fruit flies. We have taken every precaution to make sure the baits are safe around people and animals."

"We will give people living in the area at least 24 hours' notice that we will place bait in their property and will provide them with detailed information about our programme."



their way to New Zealand."

# Spartina eradication programme

Environment Canterbury, Christchurch City Council and the Department of Conservation have undertaken controlled applications of the herbicide Haloxyfop-R (Gallant) to control the pest plant *Spartina*.

Environment Canterbury reported that the spraying took place in the second half of March at selected sites around the Avon/Heathcote Estuary and McCormacks Bay nearby. This was follow up control works that was undertaken in 2017 and 2018.



Spartina angelica [Photo: ECan]

# The chemical was applied to *Spartina* at low tide to allow the maximum amount of time for the chemical to

take effect. It was mixed and applied at the lowest concentrations to still be effective, and only to a very limited number of plants found in the area. At label rates, Haloxyfop-R is not harmful to birds, pets or humans.

As part of the permission from the Environmental Protection Authority to use this chemical, signage was required to be erected within 100 metres of application sites. This signage warns people to avoid contact with the water, including swimming, for a 24-hour period after spraying, or the taking of shellfish for a period of 10 days.

"The aim of the signage is precautionary only; if a serious risk was posed by application of the spray, the associated restrictions and warnings would be far more severe and numerous," Environment Canterbury reported.

# Public asked to help with beetle surveillance

Towards the end of March Biosecurity New Zealand asked the public to report any sign of the wood-boring granulate ambrosia beetle.

The unwanted pest has been detected in five Auckland areas since 20 February.

#### This is the first time the beetle has been found in New

**Zealand.** While it is unclear how the beetle arrived in New Zealand, the evidence to date suggests it may have been in the country for at least two years.

The beetle is regarded as a serious pest overseas. It is known to damage a wide range of broadleaf trees, including horticultural species such as avocado, and can spread fungal diseases.

Biosecurity New Zealand is currently assessing the potential risk from the beetle to New Zealand, said Brendan Gould, biosecurity surveillance and incursion manager.

"We need to know if New Zealand has a wider population,

which is why we are asking the public to report any possible sightings."

The beetle resides under bark, making it difficult to detect.

Mr Gould said a telltale sign is distinctive protrusions of frass (compacted sawdust) from bark that look like toothpicks. They are caused by the beetles pushing frass out of tunnels bored into the trees. Other symptoms include sap oozing from



Granulate ambrosia beetle [Photo: Lyle J. Buss, University of Florida]

the tunnel entrances and branch dieback.

He sayid officials are working with local authorities to identify the extent of the spread, including inspecting known host trees and placing lured traps around the detection sites.

Biosecurity New Zealand has also directed the removal of infested oak trees at one of the sites.

The beetle is native to tropical and subtropical East Asia. It has been found in many areas in the world, including Africa, the USA, Central America, Europe, some Pacific Islands, and most recently in Queensland.

# World-wide insect modelling

An international working group might be the best way of tracking, understanding and predicting insect invasions, according to researcher Dr Rebecca Turner.

Late last year the Scion Post-Doctoral Fellow was part of the first "Global insect invasions" working group meeting hosted by a United States research organisation known as the National Socio-Environmental Synthesis Centre. It brought together 14 researchers from New Zealand, Australia, Japan, Canada, the USA, Germany and Switzerland.

Rebecca said the scientists pooled their knowledge on insect interceptions and establishments to create a database that is far more informative than records from any individual country.

This working group aligns with Rebecca's research project that aims to develop an establishment risk model to generate early warning alerts for pests that might enter New Zealand.

"Interceptions are records of pests that are detected on cargo, or with passengers, at a country's border and are hence prevented from entering. Consequently, interceptions also provide us with information on insects that are moving around in global trade.



Dr Rebecca Turner

"The pattern of global establishments also indicates the movement of insects, as well as which insects are better than others at invading."

She said this information can be used to inform the public about which species are most likely to invade New Zealand.

Rebecca said the difference between the work of this group and other research so far is that it is using global interception data allowing access to more data for entire groups of insect species rather than individual insects.

"A good example of this system working well are the awareness campaigns MPI has run around the brown marmorated stink bug – which is already a major pest in the US and parts of



# Rabbit virus for Christchurch suburbs

Rabbits have become a problem in previously occupied parts of Christchurch, now abandoned after the September 2011 earthquake.

As a result, the crown agency Land Information New Zealand which manages parts of the zone announced in May that it will release calici virus K5 in some areas of the Residential Red Zone to manage the significant increase in rabbit numbers.

"A survey in the spring by our biosecurity experts found that the rabbit population did not require pest control, but a recent second survey identified an increase that requires pest control measures," said Matt Bradley, Manager Land and Property for LINZ in Christchurch.

Rabbit numbers in the suburbs of Heathcote, Brooklands, Horseshoe Lake, Bexley and Avondale have reached the level which requires pest control measures, according to the Canterbury Regional Pest Control Strategy.

Mr Bradley said independent bio-diversity experts Boffa Miskell suggested a variety of control measures and the introduction of the K5 virus was considered the recommended option, as it only affected the European rabbit.

"Other animals are not affected by this virus," said Mr Bradley.

The virus will not be released until late June to give owners sufficient time to ensure their rabbits are vaccinated appropriately. Mr Bradley emphasised that LINZ had carefully considered all the available options before it decided to follow the advice of its bio-diversity experts.

"It is also important to note that **the K5** strain has been in use for a while by other local and regional authorities in New Zealand."



"We consulted with the New Zealand Veterinary Association before making the decision to release the virus. They have made sure veterinary clinics in Christchurch are aware, so they can remind all owners of pet rabbits to take the appropriate steps to ensure their animals are vaccinated appropriately."

New Zealand Veterinary Association Chief Veterinary Officer Dr Helen Beattie says some pet rabbits in the area will have some immunity from previous vaccinations but others will not have any protection.

"Rabbits vaccinated against previously released strains of the calicivirus are likely to have some immunity but owners should be aware these animals require a booster vaccination every 12 months to ensure they maintain the appropriate levels of immunity. Rabbits that have not been vaccinated will not be protected and owners should have these animals vaccinated as soon as possible," she said.

Dr Beattie said it is important for people to act quickly as a vaccination can take up to 21 days to become effective, which means some pet rabbits could be vulnerable if not vaccinated immediately.

## Sector news

# Hope for Coromandel kauri

A treatment programme now being rolled out on Waikato's Coromandel Peninsula is bringing new hope to trees infected with kauri dieback.

In May Waikato Regional Council began a phosphite treatment trial programme in the Whangapoua area, injecting phosphite into 2000 trees.

It is one of six sites in the Waikato region – all of them on the eastern Coromandel Peninsula – where kauri dieback has been confirmed. Auckland Council has been delivering phosphite to sick kauri

in the Waitakere Ranges for the past two years, as have private landowners through the Kauri Rescue programme.

Council biosecurity officer Kim Parker said: "**The injections aren't a cure**, but it does help support a kauri's defence system to fight back against the disease. Once treated the trees remain alive, buying time for them," said Miss Parker.

In the meantime, **limiting the movement of soil remains the best** way of protecting trees, she said. This can be achieved by ensuring all gear is dirt free before entering the bush, as well as fencing off kauri stands from stock.

Dr Ian Horner from Plant and Food Research has been leading the phosphite research trials since 2011, which have shown it has "great potential" as a tool against kauri dieback.

"Through our initial greenhouse trials and then forest treatment trials in Northland and Auckland we've seen a halt in lesion spread – in most cases, lesions have healed.

"While phosphite injections don't permanently cure kauri of the disease, or remove PA from the surrounding soil, the treatment does temporarily stop or reduce its harmful effects, and give the tree a chance to recover.

"This is great news for our kauri," said Dr Horner.

Phosphite trials on PA-infected kauri of various sizes and ages have explored applications of different concentrations, injection spacing around the trunks and treatment intervals.

## Retreatment is required, with the ideal intervals the subject of ongoing research.

The research results to date have informed a best practice phosphite treatment protocol that Waikato Regional Council is using in Whangapoua.

# <image>

### What causes Kauri Dieback?

Kauri dieback is caused by a microscopic soil-borne organism called Phytophthora agathidicida (PA) that kills infected kauri. The organism can survive in the soil, away from kauri, for many years and can be spread in small amounts of soil.

Trees with kauri dieback can have bleeding at the base of the trunk and thinning canopy that eventually becomes bare as the tree dies in the later stages of the disease.

# What is Phosphite?

Phosphite is a low toxicity, biodegradable chemical that has been used since the 1970s to protect crops like avocado, pineapple and cocoa against diseases caused by other species of Phytophthora.

It has also been trialled and used overseas to control the spread and impact of other similar organism infections by injection of infected trees and aerial application of entire plant communities.

## Sector news

# Stoat collars for tracking

GPS tracking collars on wild stoats in rural Taranaki will provide vital information to help understand these notorious predators.

Earlier this year, stoats in rural Taranaki were trapped, collared and released by Manaaki Whenua Landcare Research, which is collaborating with rural Taranaki landowners, Taranaki Regional Council and Taranaki Mounga Project as part of Towards Predator-Free Taranaki.

Ecologists from Manaaki Whenua Landcare Research captured and collared stoats, weasels, and ferrets on farmland surrounding Egmont National Park.



GPS tracking collar on a wild stoat in rural Taranaki [Photo: Pablo Gracia-Diaz]

The GPS tracking collars will provide insight into stoat movements and behaviour on rural land; revealing how far they travel, their habitat, how their young disperse, and movements between the vast ringplain and Egmont National Park, where the Taranaki Mounga environmental restoration programme, is operating.

"This research is critical to help us efficiently remove predators in Taranaki, as we work towards New Zealand's 2050 predator-free goal. The **support** we've had from rural Taranaki landowners to enable this work has been fantastic, they're right behind it," Towards Predator-Free Taranaki Project Manager Toby Shanley said.

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# Good news for \$10 poster bird

# Fiordland's whio are in the midst of a population comeback thanks to an ongoing programme of predator control.

In April the Department of Conservation reported that following a record breeding season in 2017/18 which saw 107 whio ducklings added to the population, 64 breeding pairs were found when the security site was surveyed in March and April this year.

Department of Conservation Senior Ranger, Max Smart said this means the northern Fiordland site is the first in the South Island to exceed the target of 50 breeding pairs.

"Security sites are the highest priority whio conservation areas in the country, there are four in the North Island and four in the South Island. The target of 50 breeding pairs is set for each security site through the Whio Recovery Plan. A couple of sites on the North Island have reached this target, but we're the first confirmed site on the South Island to do so."

Whio have come a long way since 1999/2000 when only three pairs were found in this security site, Max said.

"This year's number is only a minimum and there could be up to another nine pairs."

Each year whio are monitored using walk-through river surveys using specially trained conservation dogs, a programme supported in partnership with Kiwibank. Two surveys are planned for each river annually. The first survey, in November/December, counts the number of ducklings, as well the number of individual birds and pairs seen. The second survey, generally



undertaken in January/February, counts the number of fledglings.

Exceeding this target is great news for whio, but according to Max, there is still a lot of work to do to secure a future for this species.

"We are only doing work over a relatively small area and this is where we are making a difference. **Predator control has to be kept up** and expanded for whio to have a chance to increase in number and spread over their natural range."

# Further good news for whio on the West Coast

Survival chances are hopefully getting better for whio further up the South Island as well.

In mid-May the Department of Conservation reported that a target of 50 whio pairs had been surpassed at the Oparara Ugly Whio Security Site north of Westport. DOC said 53 pairs and 31 fledglings had been counted in a recent survey of rivers at the site.

DOC said this is the best result for the whio there since intensive trapping work started on 20 km of the Oparara River in 2002. At that time there were four pairs of whio, and juvenile survival was low, meaning the population was aging with very few new breeding pairs.

The Oparara Ugly site has grown considerably, and whio are now protected across 92 km of the Oparara, Ugly, Kākāpō, Huia and Little Wanganui Rivers.

DOC, with the support of Genesis through the Whio Forever Programme maintains nearly 1,500 trap boxes on the river margins, which are cleared monthly. This work helps to keep predator numbers to a minimum between 1080 pest control operations giving vulnerable whio the

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continued

best chance of surviving the nesting season. Whio eggs, ducklings and nesting female ducks are at risk of predation by stoats, which are a major cause of their decline across New Zealand.

The trapping and pest control work takes place alongside intensive captive breeding work to help build the population.

Buller DOC Operations Manager Robert Dickson said the extra pest control in the Oparara and Ugly catchments will be providing benefits to an array of forest species".



Whio are rarer than kiwi. [Photo: Julian Carnot ①]

#### More about whio

The whio is a threatened species of native duck only found in New Zealand's fast flowing waters. With an estimated population of less than 3,000 birds, whio are rarer than kiwi.

The whio are predated by stoats, ferrets and cats with the largest impact during nesting time when eggs, young and females are vulnerable, and also when females are in moult and can't fly. Extensive trapping can manage these predators.

Whio cannot be moved to predator-free islands like other species because of their reliance on fast-flowing rivers. Pairs occupy approximately 1 km of water – so they need a lot of river to sustain a large population and they fiercely defend their territories, which makes it difficult to put them with other ducks in captivity.

Extended trapping efforts and landscape scale predator control have enabled the whio here, and at key sites around New Zealand to make a strong comeback. This work is principally supported by Genesis through the Whio Forever programme, with notable support from Air New Zealand and other community partners such as the Fiordland Wapiti Foundation and Real Journeys at the Northern Fiordland Whio Security Site.

# 1080 tests and the curious kea

Towards the end of April the Department of Conservation released this update on the first stage of Zero Invasive Predator's (ZIP) trial using aerial 1080 to remove predators in the Perth River valley in South Westland.

From the outset the threat to the "curious" kea was always going to be a concern, and so the effect on kea was carefully monitored.

DOC reports that two monitored kea died.

The ZIP research and development trial aims to completely remove possums and potentially rats, and significantly reduce stoats, from the 12,000-ha research area, and to prevent predators from re-establishing. In addition to the use of aerial 1080, the trial also involves the establishment of a network of devices to detect any survivors or invaders, and the use of 'spot treatments' to remove them.

Thirteen kea are being monitored throughout the trial, with 11 alive and two found dead and 1080 poisoning is suspected.

DOC West Coast Operations Director Mark Davies said when the decision was made to give ZIP permission to carry out the aerial 1080 component of the trial, the Department was fully aware of the increased potential risk to kea.

"It's always unfortunate to lose individual kea but our research shows that this level of loss will be offset by significant increases to the kea population from improved nesting success and survival of young birds without predators.

"There is a healthy kea population in the vicinity of the Perth River valley, which is due in part to a long history of predator control in this area, including multiple 1080 predator control operations.



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"Losing two out of 13 monitored kea is in the order of what was expected as an elevated risk to kea from the increased number of prefeed applications and the more intensive use of 1080 in the ZIP trial," says Mark Davies.

"We accepted the increased risk because this is an important research trial that could lead to a breakthrough in New Zealand becoming predator free at a landscape scale.

"In addition, the methods ZIP used to mitigate the risk to kea were very promising in early trials and deserved further testing.

"It's too early to say how effective the bird repellent aversion training and distraction with tahr carcasses has been, but this will be part of the trial results," says Mark Davies.

"The knowledge gained by this work will ultimately lead to a better and more secure future for kea and other threatened native species.

"We are committed to the ongoing protection of this kea population from predators and will maintain the intensive stoat trapping network installed by ZIP at this site once their programme is complete."

#### **Background information**

The method of applying 1080 developed by ZIP to remove predators differs from standard DOC predator control methods with two pre-feeds of nontoxic bait before the application of toxin, which is applied first at double the standard rate, followed by a second treatment a month to six weeks later, applied at the standard rate.

Kea aversion training with repellent-laced non-toxic baits placed next to tahr carcasses and then distributed more widely, took place prior to 1080 treatment. The repellent baits (using anthraquinone) make kea feel sick and potentially train them to avoid the later sowed toxic baits.

The kea population in the Perth River valley is in relatively high numbers with a good mix of juvenile and adult birds. There's strong evidence that the natural barriers provided by the valley's big rivers and the Southern Alps/ Kā Tiritiri o te Moana, in combination with DOC's previous aerial 1080 operations in the area, have benefited kea and other native species in this area

# Aerial drops and the future of kiwi

Kiwi chicks in a North Island forest are more likely to survive following aerial 1080 use to control pests a long-term study shows.

In the first longitudinal study of its kind, DOC researchers tracked hundreds of North Island brown kiwi and their offspring through four large-scale joint OSPRI/DOC 1080 operations in Tongariro Forest over 22 years.

DOC Principal Science Advisor Dr Hugh Robertson, who was part of the research team, says **it shows unequivocally that using aerial 1080 to suppress possums, rats and stoats benefits kiwi.** 

"Stoat attacks are the leading cause of death for kiwi chicks and without pest control as few as 5% of chicks survive to adulthood."

"Our research shows that aerial 1080 pest control significantly improves the survival of kiwi chicks for two years before dropping off when rat and stoat populations begin to recover to pre-control levels."

"The 1080 operations knock down all resident stoats, and likely all ferrets too, which allow kiwi to survive to levels that can build their population."

"We also monitored 142 radio-tagged kiwi through four aerial 1080 operations and none were poisoned."

Results show that just over 50% of kiwi chicks in the 20,000-ha Tongariro Forest survived to six months old in the first breeding season after aerial 1080 treatment and 29% the year after.

In the following three years, before the next five-yearly 1080 operation, kiwi chick survival halved to 15%, well below the 22% survival required to maintain this kiwi population.

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## **Sector news**

Dr Robertson says the **research supported DOC shifting in 2014 to a three-year cycle of aerial 1080 predator control** in Tongariro Forest to help the kiwi population grow.

"Population modelling shows that to get the kiwi population to grow by at least 2%, which is the target in our new Kiwi Recovery Plan, we needed to increase pest control operations to once every three years."

The study began in 1992 and monitored radiotagged adult male brown kiwi as well as 207 kiwi chicks hatched in Tongariro Forest between 1996 and 2014. The kiwi chicks were monitored until six months old when they reach a size where they can fight off stoat attacks.

Researchers also looked at the effects on nesting success of New Zealand fantail/ pīwakawaka over 11 years.

The results followed a similar pattern to kiwi with fantail nest survival highest in the first two years after a 1080 operation (at 25% and 30%) when rat populations were low and dropping significantly after that (to 12% in the third year and 9% in the fourth and fifth years).

#### Breeding success of fantails was significantly better than in untreated areas in nearby forests.

The study was published in March in Notornis, the scientific journal of the Ornithological Society of New Zealand (also called Birds New Zealand).

# Northlands pest fish: eradication or control

DOC and Northland Regional Council are working together in the battle against pest fish, koi carp and rudd, and in mid-April asked for public assistance with surveillance.

"The immediate task is surveillance for koi carp and rudd in Northland, making sure we know where populations of these serious pests are. We will also be getting expert advice on our options for eradicating and controlling these pests and where to focus our efforts," says Amy Macdonald, DOC Freshwater Technical Advisor.

"In Northland we've still got the opportunity to protect our waterways from pest fish and stop their spread. We don't want to end up with koi carp in every pond and river like the Waikato, so now is the time to act."

Pest fish expert Helen McCaughan from Wildland Consultant's has flown in from Christchurch to support the operation.

This survey is funded from Budget 2018 in which DOC was allocated \$76m over four years to invest in targeted biodiversity initiatives across land, freshwater and marine ecosystems to address NZ's biodiversity crisis.

This included \$4.5mil over four years to be directed to successfully contain key aquatic pest species populations to prevent further spread, i.e. to reduce the likelihood of spread of pest species to sites with high biodiversity values, where it is far more difficult and expensive to control

them from. The aim is to contain at least 4 freshwater pests (koi, gambusia, Rudd, hornwort) which are serious freshwater pests that have the potential to expand to other regions of New Zealand.

We don't want to end up with koi carp in every pond and river like the Waikato, so now is the time to act.."

~ Amy MacDonald, DOC

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#### The new fund will also

control invasive aquatic plants that are likely to have a high risk or impact on freshwater biodiversity values, to reduce their impact on river, lake and wetland ecosystems and reduce the likelihood of dispersal to other indigenous habitats. The aim is to increase reduction of invasive aquatic plants to at least 10 sites per year.

To support this work, DOC and Northland Regional Council are seeking new reports of mysterious fish that could be koi carp or rudd. New reports will be added to the regional pest fish dataset, informing the surveillance in April and May as well as future pest fish work.

# More Undaria discovered in Fiordland

In May Southland regional Council announced that a further discovery of the invasive seaweed *Undaria pinnatifida* (Undaria) at a new site in Fiordland was disappointing, but should not be seen as an opportunity to give up trying to control the marine pest within the area.

Divers on a joint agency compliance trip discovered one mature Undaria plant and several juvenile plants on the line of the wreck of boat which is lying on its side on the shore of Chalky Inlet.

Although this the first find in this area, Environment Southland, the Department of Conservation and Biosecurity New Zealand, with support from the Fiordland Marine Guardians, have been working together on an intensive removal programme for Undaria in Breaksea Sound since 2010.



Undaria on a mooring rope in Sunday Cove, Breaksea Sound. [Photo courtesy of K Blakemore, DOC]



Environment Southland biosecurity and biodiversity operations manager Ali Meade said the latest discovery was very disappointing.

"We're absolutely gutted to find more Undaria in Fiordland, **however** it's very important that we don't give up now as there's still a chance to control it. We continue to urge vessel operators to be vigilant. When you come into Fiordland your hull and gear must be clean."

"We will send divers in to find out how much Undaria there is. We'll survey as much of Chalky Inlet as possible, to see if this is an isolated pocket or whether we have a bigger problem."

Ali said the latest discovery reinforces just how important it is for all boaties to abide by the rules of the Fiordland Marine Regional Pathway Management Plan which requires all vessels entering within one nautical mile of the landward boundary of the Fiordland Marine Area to hold a Clean Vessel Pass and to comply with clean vessel, clean gear and residual seawater standards.

# Profile

## **Andrew Blayney**

#### Senior Ecologist with Boffa Miskell in Hamilton

# How long have you been in your job?

I have spent five years at Bay of Plenty Regional Council as a Land Management Officer with a pest plant focus, then two-and-a-half years with Boffa Miskell as a Senior Ecologist.

# What motivates you to be involved in biosecurity?

I am attracted to complex problems, and one of the things biosecurity isn't short on is complex problems. Coming up with control methodologies for hard-to-manage pest plants in unusual and environments is always a good challenge.

# What has been your career path to your current position?

I started my path into biosecurity with a keen interest in biocontrol. I remember a talk on biocontrol by Paul Peterson from Landcare Research, at university, and what that team did, and was fascinated. I then got a summer job at Bay of Plenty Regional Council (then Environment Bay of Plenty) surveying for biocontrol agents all across the region. This stemmed my interest even further. After that summer I started a Master of Science and my research focused on the ecology of the control of heather by the heather beetle in the central plateau which was an intriguing combination of ecology and biosecurity. During this research I worked alongside the Landcare Research team who all have probably forgotten more about biocontrol than I have ever known.

After doing this research I started working at Bay of Plenty Regional Council in the Western Bay which seems to be where most pest plants come to battle amongst each other. My focus was predominately on eradication of pest plants and the numerous large-scale survey and compliance programmes like wild kiwifruit.

From there I moved to Hamilton to work for Boffa Miskell to focus more on the ecology side of my interests (with a healthy side of biosecurity of course).



Ecology and biosecurity are both like big complex puzzles. It's fun to bring all the right pieces together to come up with, hopefully, simple solutions to complex problems. "

~ Andrew Blayney

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# What makes up a normal day for you?

I don't really have normal days. My days are defined by being very different from one another. I might be in the office writing ecological impact assessments and restoration/ mitigation plans, in court giving evidence on consent applications, in the field surveying for all sorts of fauna and flora, onsite managing restoration projects, or advising on planting plans for large scale landscaping projects. Sometimes this might all be going on in one week so a normal day is one that is entirely different from the last.

# What do you enjoy most about your job?

Like what motivates me to be in biosecurity, it is complex problems that drive my enjoyment. Ecology and biosecurity are both like big complex puzzles. It's fun to bring all the right pieces together to come up with, hopefully, simple solutions to complex problems.

# Knowing a bit of history is essential

This paper was presented by Ivan Williams, Strathallan County, and Life and Foundation Member of the Noxious Weeds Inspectors Institute, to the 30th Annual Conference held at the Franklin Hotel, Queenstown, May 1-3, 1979

Wondering just where to start an assignment of this nature, I remembered Mr Milligan saying how little many of our members know about the historical background relating to Local Authorities. Mr R. Milligan, Chief Executive Officer for the Strathallan County Council, told the Noxious Plant Officers' Training and Development Course held at Flock House, Bulls, on 21st July 1978: "It is essential that people entering various fields of employment should have some knowledge of the historical background of their field of employment."

Prior to and in the early 1870's provincial government dealt with all legal and local business and very often it was months before any really contentious issues were resolved.

During this time pockets of urban development scattered throughout the country, established Road Boards who looked after roading systems.

Because of distance and transport problems a system of local government based on the British system had to be introduced. Thus, in the late 1870's the Counties and Municipal Corporations Acts were passed. The Road Boards continued until the 1920's when the counties gradually took over.

This pattern of local governments has continued up to the present day except that during the passage of time we have seen the addition of ad hoc bodies such as hospital, power, harbour, catchment, pest destruction boards and such like.

Originally there were 62 counties constituted under the Counties Act, which subsequently rose to 120

plus all the numerous ad hoc bodies. Now here we are today trying to go back to square one by the amalgamation of many fragmented local authorities. The responsibilities of the Noxious Weeds Inspector of yesteryear were very different from the Noxious Plant Officers of today. The days of the Noxious Weeds Committee of three or four friendly councillors (all with farms growing noxious weeds) will be replaced by a District Noxious Plants Authority and we will no longer owe allegiance to our friendly Noxious Weeds Committees.



I carried my County Warrant which stated I was Noxious Weeds Inspector, Dog Registrar, Pound Keeper, Stock Ranger, Explosive Inspector and, later was appointed Pest Destruction Officer."

~ Ivan Williams

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When I was first appointed to local body work 32 years ago, I was a Traffic and Testing Officer. In those days a county could appoint their own Traffic Officer.

Along with my Government Traffic Officer's Warrant signed by the late Hon. Robert Semple, I carried my County Warrant which stated I was Noxious Weeds Inspector, Dog Registrar, Pound Keeper, Stock Ranger, Explosive Inspector and, later was appointed Pest Destruction Officer.

So that will give you some idea how much importance was placed on noxious weeds, Admittedly, every one of these appointments could be administered every time you were out on patrol, but to give every duty its full attention was virtually impossible. Furthermore, you virtually worked seven days a week, not mentioning the night calls out to accidents.

#### The Formation of the Original North Island Inspectors' Association

The first man to sponsor any movement in the formation of a Noxious Weeds Inspectors' Association was Dan Watkins who, also, was the founder of the industrial empire known to you all as IWD. Dan Watkins first started formulating plant control chemicals in his homemade workshop in New Plymouth in 1942. The success story of Dan Watkins is of no interest to us here but it will suffice to say that it was Dan's acumen and foresight that he saw fit to make contact with county chairmen, clerks and then inspectors. The first Noxious Weeds Inspectors Dan approached were John Robinson, Alex Sutcliffe, Sam Neill, Ron Eastwood, Fred Lovett, Spike Smith and Wally Ogg. These few inspectors, scattered as they were strategically through the North Island, called fellow inspectors around them to discuss the formation of an association. Some counties were sceptical as to their inspectors' intentions and refused to allow their inspectors to officially join our ranks until some aims and objects were properly drawn up.

Through the years that followed, Dan Watkins and his very capable staff (and Dan appointed only top flight men to his team) did everything possible to nurture the growth of the first North Island Association. If you look at the number of inspectors attending Dan Watkins' refresher courses you will see how quickly we grew from a mere handful of original members. As I have already said, the councils of the day were very cautious regarding our intentions. In the early days of the association, inspectors were told that if we ever showed signs of becoming a pressure group, discussed salaries, or conditions of work, we would never be granted leave of absence to attend any further provincial or annual meetings.

Some inspectors were only permitted to attend annual conferences if they were close enough to travel back and forth every day. This institute has grown to its present strength by the integrity and loyalty the early inspectors have shown to their employing authorities. When the association was formed we administered our noxious weeds control under an Act drafted in 1928. In 1950 a completely new Act was drafted and three of our members were on the committee. Our strongest and most capable member was John Robbie. Where John is today, I would not know, because the last letter I wrote to the members when I finished as treasurer, John's letter was returned "address unknown". Now here we are in 1979 and the whole noxious weeds administration is in for another change.

During the early years of the North Island Association we had a lot of difficulty in standardising council policies. When the association was being recognised by most of the counties as an opportunity to create an overall policy regarding noxious weeds control, we found that in practice it just was not possible. The difference in rainfall, geographically, and a Very limited knowledge of chemical weed control all contributed towards making a uniform policy impossible. As we progressed there was a suggestion of creating a Field Advisory Inspector who would call on all the counties to try and formulate a standard policy over as many counties as geographically possible.

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There was strong opposition and suggestions that somebody was looking for a job as an inspector over the inspectors, so the idea was dropped. Perhaps if somebody had thought of a Public Relations Officer in those days we would have achieved our objective. David Parkes will now know that his position was thought of many years ago, perhaps while he was still at school.

It was not an easy assignment to condense 30 years of the Institute into 20 minutes, but I must mention some of the more humorous sides of our sojourn down through the years. When the association was first formed we called ourselves the North Island Counties Noxious Weeds Inspectors' Association. In 1957 when we joined forces with the South Island inspectors we became known as the New Zealand Noxious Weeds Inspectors' Association (Inc.). Who thought that one up I cannot really remember - no doubt our historian will give us the answer to that. However, later we decided to become known what we are today.

All that was yesteryear... now, what does the future hold? In the past we have heard Noxious Weeds Inspectors say that frustration sometimes gets them down because they cannot administer the Noxious Weeds Act as it is laid down, because of their council's policy. Today, all this is changing. I believe the challenge has already been thrown out to the inspectors in the form of the Farmers' Noxious Plant Subsidy Scheme. This scheme was given to us with a minimum of guidelines. Those councils who accepted the challenge made it work. Those of our members who have not received the certificate of merit in agricultural chemicals must do so now by their own volition, and without delay.

It is of paramount importance to you if you have decided to make being a Noxious Plant Officer your career. By the look of the immediate employment situation in this country and possibly for some time ahead of us, if you have a good appointment capitalise on it and stay put. The training facilities now available through your institute makes the future prospects for Noxious Plants Officers look better than they have ever been.

I was one of the fortunate members who attended the Noxious Plant Officers Training and Development Course held at Flock House in Bulls and my impressions of that course were, I wished I had something like that 10 years ago. When I left home to go to Bulls I wondered however were we going to fill in almost five days. At the end of the course I realised why so many adults from one end of New Zealand to the other are going back to school for adult education. Today, if you don't learn and keep up with our continual technical advances you will be left behind. When the new Noxious Plants District Authorities become fully operational they will demand and expect all their field officers to be qualified and capable men. Any militant groups forming up within the institute to demand extravagant pay or working conditions must always remember that your employing authorities only have to refuse you leave of absence to attend these annual conferences and seminars and the institute will fold up in two years.

## The tail

## So, what constitutes a biosecurity threat?

An Institute member travelling in Australia was asked what they did for a job.

"I'm involved with border biosecurity," the person replied.

"What's that mean?"

"Stopping unwanted pests from getting in."

"You'll be pretty busy at the moment then, with Australia sending Kiwis back home?" was the response.



New Zealand **Biosecurity** Institute

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