New Zealand Biosecurity Institute

the magazine of the NZBI Summer 2019-20

Protect

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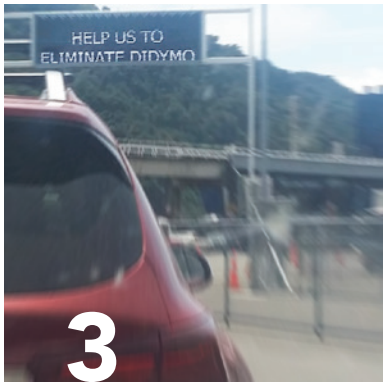

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New Zealand Biosecurity Institute

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

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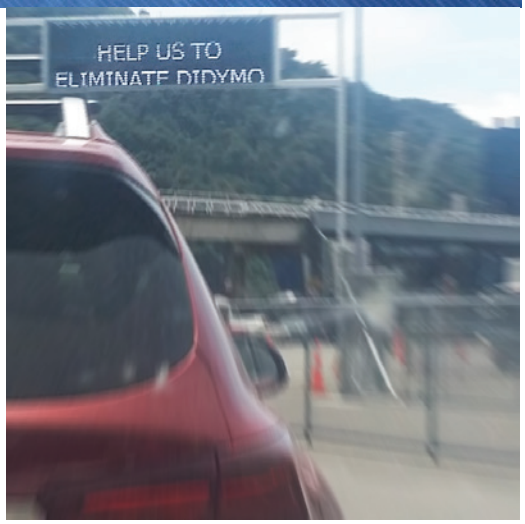


Ever-Alert

Welcome to the Summer Issue of Protect Magazine. Within these pages are celebrations of the good work being done by Institute members on the ground and at the border.

There are tales too about the valuable research which continues to ensure New Zealand remains ever-alert in terms of biosecurity.

There is a story about the success of Northland Institute member Kane McIlrea who was awarded the Emerging Leader Wward in the New Zealand Biosecurity Awards.

There are stories about the good actions of transitional facilities but one tale warns of the need to keep a close eye on a few.

A dip into the Institute Archives looks at historic concerns about the cost of research and development which is perhaps even more relevant now as we enter new fields of research not even thought of way-back-then.

I was pleased to see recently that the Clean, Check, Dry message is still being promoted clearly, and up in lights, at the Picton Ferry terminal. The signs are impossible to miss for vehicle passengers.

Thank you for your contributions to this issue.

Biosecurity-Biosecurity-Biosecurity—spread the good word.

Chris Macann,
Protect Magazine Editor

President's Message

Alice McNatty
President

Supporting our Members

The NZBI Executive Committee recognises the importance of supporting our members and others in the biosecurity space through the NZBI awards, in particular the Professional Development Award and Study Award.

The Executive spent some time at our last meeting in November clarifying the criteria for the awards, and the awards themselves. Additionally, the Study Award has been renamed the NZBI Scholarship. The purpose of this scholarship is to provide funds to assist with an individual's research to improve knowledge in the field of biosecurity. And the Professional Development Award has been renamed the Wendy Mead Professional Development Award in the memory of Wendy who was a past NZBI Secretary and NZBI member who died last year.

Wendy was very strong in this space and also helped others with their professional development. For further information on all of the NZBI awards, please see our website.

Organising for NETS2020 was well underway when the Executive voted to cancel it. NETS2021 will now be held in Christchurch as was planned for this year, in the last week of July. The theme for NETS2021 is still 'Changing Landscapes'

Alice McNatty
President, NZ Biosecurity Institute

KEEPING PESTS IN CHECK

SEVEN SIMPLE ACTIONS THIS SUMMER

The Institute prepared this media statement for use during the summer to encourage people to help members with their work.

People working to prevent the spread of invasive pests in New Zealand are asking holidaymakers for help over the summer.

Key biosecurity sector interest group, the New Zealand Biosecurity Institute says its members' ongoing battle against unwanted animals, plants and diseases will be greatly helped this Summer if Kiwis observe seven simple actions.

Institute president Alice McNatty said "these actions are very simple and yet will make a world of difference for our native species, and our agricultural industry."

Ms McNatty said every year Institute members spend hundreds of hours controlling or managing the risks to the economy and the environment of the effects of introduced pests.

"This is work which costs the country hundreds of millions of dollars each year through control, research and border control budgets. This money is coming out of all New Zealanders' pockets," she said.

The NZ Biosecurity Institute is the professional training and networking organisation for people involved in biosecurity. Its 450 members work for research organisations, educational institutions, regional councils and government departments.

All are involved in protecting NZ from invasive species.

The Simple Seven are:

- clean boots and outdoor equipment thoroughly
- check, clean, and dry equipment that has been in waterways
- stay on tracks particularly around kauri trees
- dispose of garden waste or aquarium contents in the compost or a waste management site
- desex pets
- declare biosecurity-risk items at the border and ask overseas visitors do the same
- keep an eye out for unwanted hitch-hikers on packages from overseas

Gemma—the early years.

GEMMA BOWS-OUT, BUT NOT ENTIRELY

Canterbury Branch Chair Gemma Livingstone is stepping down from the role. Gemma is leaving the biosecurity sector, in the meantime at least, after more than thirteen years in her role as Biosecurity Officer (Information/ Liaison) with Environment Canterbury.

"While I still love all things biosecurity I will not be working in this realm for a while so will step down from my role as Chair.

"I just wanted to thank all whom I've have met, talked with and worked alongside over the years. I've enjoyed all our conversations, dining and dancing at NETS and METS events and killing weeds and planting native seedlings at our Sumner/Taylors Mistake/Godley Heads branch project site, followed by bountiful beautiful kai and company thanks to loyal branch supporter Keith Briden.

"I wish the branch the very best for the future and while I may not be working in the world of biosecurity, biosecurity will always remain something I care deeply about."

Gemma said she is still likely to remain involved with the organising committee for NETS2020 in Christchurch.

She said she plans to study how to train scent dogs.

"I might even teach my dog to sniff out weeds and unwanted bugs. I might even wind-up doing biosecurity work with my dog and that would be kind of nice," she said.

A legacy studded with achievements:

Remembering Wayne Cowan

Senior Biosecurity Officer Wayne Cowan is being remembered for so much more than his ability in his chosen field of plant pest management.

Wayne, who only retired from a 30-year career with Greater Wellington in 2018, died in November after a short struggle with cancer.

He leaves behind not just a legacy studded with achievements nationally and within GW, but a host of memories for former colleagues mourning his loss.

Variously described as a "father figure", "life coach", "amazing and patient teacher", and all round "wonderful person", he was not afraid to mix humour and encouragement for people to be the best, with tough love.

His own experiences working with pest plant management and agrichemicals encountered their share of difficulty too, as Senior Environmental Monitoring Officer Sara Moylan recounts.

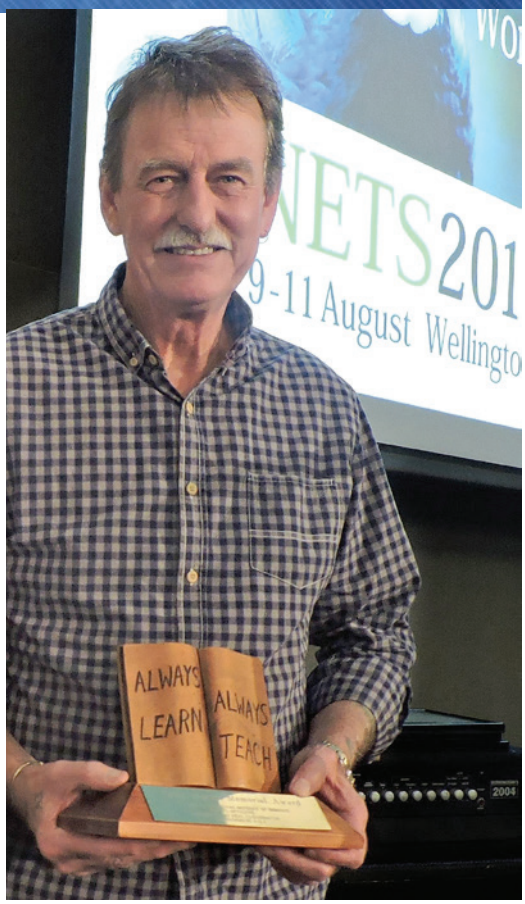
"He had a very eventful life and told many amazing stories from diving off helicopter skids onto the backs of deer to accidently driving a dozer off a cliff. He has narrowly missed low hanging wires while being a passenger in a chopper, has had a gun pointed at the back of his head while on his knees digging out pest plants and stopped a leaping dog attacking him, with a bayonet."

All of this influenced his campaign to firmly embed robust Health and Safety practices at GW as Biosecurity Manager Davor Bejakovich explains.

"Wayne was one of the leaders in establishing meaningful H&S systems in GWRC and ensuring that the system was driven both bottom up and top down. He was a great believer in staff wellbeing and, besides being a technical coach to generations of GWRC staff, he was a life coach to many long before we ever talked about staff wellbeing or mental health."

He began his biosecurity career with the Wellington District Noxious Plants Authority in the early 1980s, before joining the Upper Hutt office when Greater Wellington Regional Council was established in 1989—and where he remained till retirement.

He was recognised for his work producing national training standards and an NZQA approved curriculum for pest plant operators; in 2017 was awarded the Peter Ingram Award for Excellence in Plant Pest Management Teaching and Learning having developed new techniques for applying herbicide, advanced knowledge in aerial spraying and leading the battle against invasive organisms.



Wayne Cowan holding the Peter Ingram Award.

He was also renowned for his knowledge of the intricacies of the Biosecurity Act.

This knowledge proved invaluable for his work on the national *Mycoplasma bovis* eradication programme, while Wayne's advice and empathy for affected landowners also left its mark on the community he served," Sara remembered.

"Countless times I heard him say to an irate client, "I understand you're upset, however this is going to happen. We can do this the easy way or the hard way—your choice' and they would be laughing with him within five minutes."

New Zealand Biosecurity Institute President Alice McNatty acknowledged Wayne's considerable contribution to biosecurity which is reflected in his earning the Peter Ingram Award which was decided by his industry peers.

COMMUNITY CATFISHERS NET TOP PRIZE:

THE 2019 NEW ZEALAND BIOSECURITY AWARDS

Biosecurity New Zealand celebrated the good work of all Kiwis including many NZ Biosecurity Institute members in its third annual Biosecurity Awards announced in November 2019.

Members of Te Arawa Lakes Trust

The supreme award went to Te Arawa Lakes Trust for Te Arawa Catfish Killas

Te Arawa Lakes Trust, of Rotorua, took out the top honour with the trust's initiative dubbed 'Catfish Killas' winning the New Zealand Biosecurity Supreme Award and also receiving the New Zealand Biosecurity Department of Conservation Community Pihinga Award.

Catfish Killas is a collaboration led by Te Arawa Lakes Trust and the Bay of Plenty Regional Council.

Judging panel chair Dr John Hellstrom said the judges were unanimous in choosing Te Arawa Catfish Killas as the supreme award winner.

"Te Arawa Catfish Killas was established in November 2018 in response to an incursion of catfish in Lake Rotoiti. They use nets to rid the ancestral lakes of Te Arawa of catfish, a very unwanted pest—and have now adopted a long-term management plan," he said.

"Catfish prey on small native fish, eat fish eggs, compete with kōura (freshwater native crayfish) and stir up sediment. The Catfish Killers manage the catfish population with the help of 48 fyke nets (long bag nets), catching up to 1,000 catfish a week."

Conrad Marsh, Courtney Davis, Stephen Bron, Snow Tane and Taoho Patuawa celebrate Te Roroa Commercial Development Company's success in the NZ Biosecurity Awards.

Participating volunteers include lakeside residents, holidaymakers, tourists, and students from 16 local schools, Toi Ohomai, and one early childhood centre—putting volunteer participation at more than 450 people.

"The achievements of this trust in collaborating and working with community, iwi, and council to take everyone with them on this fantastic outreach programme makes them the worthy recipient of the supreme award," Dr Hellstrom said.

A field trip as part of NETS2019 in Tauranga highlighted the work of the Trust.

The prestigious Minister's Biosecurity Award went to David Cade

David Cade, commonly known as 'Didymo Dave', is a passionate and long-standing champion and volunteer for freshwater biosecurity, pest control and conservation; and a tireless promoter of the Check, Clean, Dry campaign to stop the transfer of freshwater pests and prevent the introduction of new ones.

Biosecurity Minister Damien O'Connor said, "David is a very worthy winner of this award – he has led from the grass roots.

"He's widely known for being a passionate and long-standing champion and volunteer for freshwater biosecurity, pest control and conservation. He is a tireless promoter of the Check, Clean, Dry campaign to stop the transfer of freshwater pests and prevent the introduction of new ones," O'Connor said.

"David truly illustrates the impact a passionate person can have in making a difference for biosecurity in New Zealand."

David made a memorable presentation at NETS2011 in Auckland.

The Department of Conservation Community Kahiwi Award for established initiatives went to Te Roroa Commercial Development Company for its Kauri Dieback Response Plan

"Ko au te ngahere, Ko te ngahere ko au, I am the forest and the forest is me."

This statement underpins the cultural and historic relationship connection Te Iwi o Te Roroa has with the Ngahere o Waipoua (Waipoua Forest) and is born from its concern, passion and deep-rooted responsibility they feel for the forest.

Te Roroa has shown outstanding leadership in response to the presence of kauri dieback being located close to Tane Mahuta in the forest. Being the kaitiaki of Waipoua ngahere, Te Roroa acted to provide leadership and advocate for a multi-agency approach to respond to this threat.

This threat lead Te Roroa to:

- develop a response plan to undertake biosecurity measures to mitigate further spread of the disease; and
- develop longer-term goals and objectives across the wider forest through implementation of the plan.

This required collaboration, co-ordination and approval of several stakeholders at a time when quick and critical decisions were required.

Te Roroa, being at the forefront of the plan's development, implemented much of the workstreams resulting from the plan, and continue to lead the biosecurity on and around kauri dieback.

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Ngāti Hauā Mahi Trust won the Te Puni Kōkiri Māori Award, for its Tiaki Manaakitia te Tangata, Tiaki Manaakitia te Taiao project.

More than twenty years ago, the Ngāti Hauā Mahi Trust was established by Ngāti Hauā kaumātua of the five marae within Ngāti Hauā at the time to bring iwi, church and community together.

Their kaumatua knew that Māori needed to work in partnership to have any chance of creating change for their people and making a difference for their precious environment.

In 2012, the Trust re-emerged with a vision: "Tiaki manaakitia te tangata, Tiaki manaakitia te Taiao—Looking after our people, Looking after the environment".

As a 'flax roots' organisation, the Trust began in 2012 with a passion to make a difference within the Ngāti Hauā rohe, with a vision of growing native plants and securing sustainable long-term funding.

To achieve biosecurity needs, the eco-sourced native plants need to thrive, which has highlighted the need for all employed to be competent in working within two worlds—Matauranga Māori and Matauranga Pakeha.

The Trust employs 12 kaitiaki who are leading environmentalists.

Its wetland restoration and riparian planting on culturally significant catchments—such as the Karapiro, Mangaonua, and Mangaone – feed directly into our awa tipuna 'Waikato'.

The GIA Industry Award went to Livestock Improvement Corporation for helping to protect the national herd from *Mycoplasma bovis*.

When *Mycoplasma bovis* was confirmed in New Zealand in July 2017, LIC rapidly instigated a massive, company-wide biosecurity response.

New Zealand dairy farmers rely on LIC's artificial breeding programme to get cows in calf every season. LIC felt that if they failed to eliminate the risk of spreading *M. bovis*, they would fail New Zealand dairy farmers.

In the past 18 months, LIC has implemented a comprehensive testing regime for its bulls and introduced rigorous MPI-approved, biosecurity protocols across all its business operations.

They partnered with the Ministry for Primary Industries at farmer meetings to help address questions and invented a method of tonsil swabbing live animals. Tonsils are the most reliable place to detect *M. bovis* in the head of an animal prior to bacteria entering the bloodstream. They performed the test on all their bull calves, along with blood testing.

They overturned its business as usual to implement a stringent daily semen testing regime with results confirmed before any semen was dispatched. *M. bovis* has not been detected in any sample.

As New Zealand continues to grapple with M. bovis, LIC continues to support dairy farmers, protecting the reputation and value of the New Zealand dairy industry through effective, workable, best practice in biosecurity.

Auckland Council's Island Biosecurity Team won the Eagle Technology Local and Central Govt Award

Auckland Council's Island Biosecurity team is responsible for protecting the natural and ecological values of the islands in the Hauraki Gulf. The Gulf is nationally significant for seabird, terrestrial and marine values, and its pest-free islands contribute to many national conservation goals.

These islands provide defendable refugia for vulnerable native biodiversity against invasive species, with generally less pests and higher biosecurity values than the mainland and a natural water barrier to help prevent pest incursions.

The Island Biosecurity team protects these valuable islands through the Hauraki Gulf Controlled Area Notice, advocacy and partnerships.

Two primary initiatives are carried out in partnership with the Department of Conservation.

The first of these initiatives—Pest Free Warrants, seeks to regulate commercial operators in the Hauraki Gulf, particularly those going to pest-free islands. These operators' access to pest-free islands is restricted unless they qualify for a warrant by meeting biosecurity standards.

The second initiative—Pest Free Hauraki Gulf (formerly Treasure Islands), seeks to work towards and maintain the existing pest-free status of Gulf islands by preventing spread and establishment; and controlling, eradicating and promoting public awareness of the threat of rodents, mustelids, possums, Argentine ants, pigs, plague skinks and certain weed species.

Automotive Technologies Ltd won the Mondiale Innovation Award for its Heat treatment system

Automotive Technologies Limited (ATL) is a Japan-based, New Zealand-owned biosecurity inspection and treatment company dedicated to providing the highest level of biosecurity protection for New Zealand.

After the 2018 brown marmorated stink bug issues on vehicles from Japan, **ATL set about designing and building its own specialised heat treatment facilities designed specifically for the effective heat treatment of vehicles.**

It completely designed its heat treatment system from scratch. It built and tested multiple versions, overcame issues and improved its design until it was completely happy with its design and functionality.

The project started in April 2018 and all sites were operational within just five months, successfully running throughout the 2018/2019 season.

Innovation played a huge part in the setup of ATL's heat treatment system. There are no off the shelf heat treatment chambers available in the marketplace specifically designed for the heat treatment of vehicles to kill insects.

While paint drying rooms and kiln units would have done the job, as they were not specifically designed for the heat treatment of vehicles ATL felt that the risk to New Zealand was too high.

To get the best results and fully understand its systems, ATL decided that a fully customised solution was best. Working to a very short time frame, ATL was able to fully design and implement its own heat treatment systems.

The Bio-Protection Research Centre Science Award went to the Myrtle Rust Research Consortium for its Project, Ngā taonga – Safeguarding the mauri of myrtles and dependent ecosystems

The Myrtle Rust Research Consortium which is made up of the Ministry for Primary Industries (MPI), the Ministry for Business, Innovation and Employment (MBIE), the Department of Conservation, the science community, iwi, industry and other organisations, outlined an integrated and rapid research response to myrtle rust.

Myrtle rust (caused by *Austropuccinia psidii*) was found for the first time in New Zealand in March 2017. The disease has devastated ecosystems in Australia and impacts for New Zealand could be similar if there is no intervention.

Since the incursion in Australia, New Zealand's government and science groups had been developing readiness. When the pathogen was detected here, a response was initiated.

Within a short period of time, a comprehensive research programme was assembled and commissioned through the Ministry for Primary Industries (MPI) and Ministry for Business, Innovation and Employment (MBIE).

The group, worked to design and undertake research about myrtle rust biology and how it affects host plants in New Zealand environment.

Outcomes have addressed Te Ao Māori perspectives, building effective community engagement and social license, and identifying methods to survey, treat and control.

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Kane McElrea

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Kane McElrea from Northland Regional Council won the AssureQuality Emerging Leader Award

Kane is an outstanding young man who, over the last nine years, has fully used his farming background and formal environmental education to forge sustainable community and iwi-led biosecurity programmes and help turn the tide on dwindling kiwi populations across Northland.

His training includes gaining a bachelor's degree in applied environmental science and a marine science diploma. He has had previous employment with Auckland Council open sanctuaries and has assisted with pest incursions and farm management. He currently leads a major programme of pest management within Northland Regional Council.

Kane demonstrates great leadership skills and has the ability to realise the potential of others around him in an engaging and positive way. These leadership qualities transfer to his ability to work successfully with communities.

These Awards are not to be confused with the NZ Biosecurity Institute's highly revered Legacy Awards which the Institute presents annually at NETS.

WORLD FIRST ERADICATION OF PEA WEEVIL

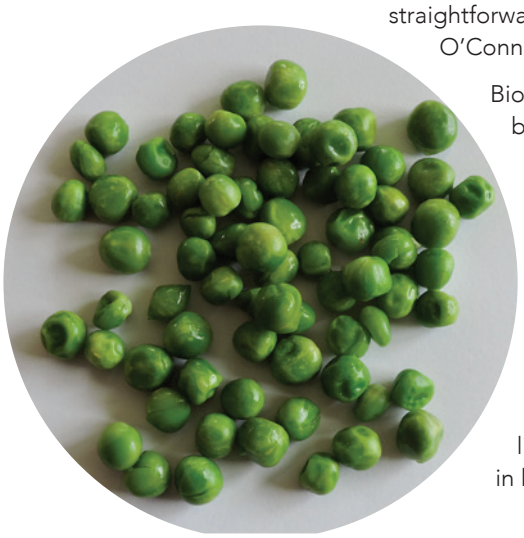
The government programme to wipe out pea weevil has achieved a world first, with Biosecurity Minister Damien O'Connor announcing in mid-February, the successful eradication of the noxious pest from Wairarapa.

Minister O'Connor said after two complete seasons of no new finds, Biosecurity New Zealand is confident that there are no pea weevils remaining in Wairarapa, and so New Zealand.

"To our knowledge, this is the first time a pea weevil population has been successfully eradicated anywhere in the world. This just goes to show what can be achieved when Government, industry and communities work together.

"It also shows that eradications can be achieved. In this situation we had a good shot at it because the destructive little insect was detected early and in a region with mountain ranges providing some natural borders.

"But more importantly, we had an outstanding level of awareness and support within the community for our approach to ban the growing of pea plants and pea straw. In doing this we removed the pea weevil's only food source, which caused the population to die out. It was straightforward and effective," Minister O'Connor said.



Biosecurity New Zealand has been working with Wairarapa farmers since March 2016 to contain pea weevil that threatened to put a major dent in the country's $130 million pea industry. A network of trap crops was set up to flush out the pest so it could be destroyed before it completed its life cycle. Its last detection was in late 2017.

END TO FRUIT FLY OPERATION IN AUCKLAND

At the end of January Biosecurity New Zealand ended its Northcote fruit fly operations and lifted restrictions on the movement of fruit and vegetables on Auckland's North Shore.

The move signalled the end of an almost year-long operation, including a massive effort by the community, triggered by the discovery of a Queensland fruit fly in a surveillance trap in the area in February 2019.

"While this is great news, we remind people in the area to still stay vigilant for signs of the fruit fly," said Biosecurity New Zealand spokesperson Dr Cath Duthie.

"It's now been 6 months since a fly was last trapped in the area, and this, along with an intensive baiting programme throughout the spring and the inspection of hundreds of kilos of fruit without a find, has given us confidence there is currently no breeding population of the Queensland fruit fly in Northcote.

Biosecurity minister Damien O'Connor said getting to this point wouldn't have been possible without the support of the North Shore community.

"The 11 months of movement controls were a big disruption for you all, but necessary to contain any potential population of this insect pest."

Dr Duthie said "our nationwide routine surveillance will continue with our system of 7,800 fruit fly traps spread across the country and more than 4,600 of these in the Auckland area. These traps are set for 3 exotic fruit fly species of concern: the Queensland fruit fly, Mediterranean fruit fly and Oriental fruit flies."

The operation was a collaborative effort between Biosecurity New Zealand, horticulture industry partners, AsureQuality (MPI's operations provider), local authorities, and the community.

It's the second fully cost-shared biosecurity response under the Government Industry Agreement and the horticulture industry has been a huge contributor to the effectiveness of the operation.

Dr Duthie said the response is likely to cost around $18 million which she described as a sound investment.

Photo: James Niland

The immensity of the fruit fly response

- The response is likely to cost around $18 million
- Since February 2019, there were 10 separate findings of solitary Queensland fruit flies through surveillance trapping in the Northcote area.
- There are more than 4,600 traps set in the greater Auckland area to find 3 different types of fruit flies. These remain in place and are part of a national fruit fly surveillance programme with over 7,800 traps nationwide.
- While the 10 adult male flies were found (the pheromone traps attract males), no evidence of larvae, pupae, eggs, or female flies was found.
- Approximately 160 people in the field and in Wellington were involved at any given time.
- Altogether, some 800 individual people were involved in the programme.
- 5,766 properties were in the Controlled Area and subject to movement controls on fresh produce and garden waste.
- 1.5 tonnes of fruit was collected from the area and inspected for fruit fly larvae over the response.
- Approximately 145 tonnes of produce was collected and disposed of throughout the operation.

MYCOPLASMA BOVIS RESEARCH ON INFECTED ANIMALS

The *Mycoplasma bovis* Programme (the Ministry for Primary Industries, DairyNZ, and Beef + Lamb New Zealand) has appointed Massey University to undertake research into the direct impacts of the cattle disease as part of efforts to help accelerate its eradication.

"Researchers will investigate the impact of *M. bovis* on individual animals and herds within farms known to be infected with the disease," said Dr John Roche, MPI chief science advisor and chair of the M. bovis Strategic Science Advisory Group (SSAG).

"They will measure how *M. bovis* affects infected animals and herds, including any physical signs, effects on milk yield and composition, and the duration of these effects."

Dr Roche said this will help accelerate eradication of the disease from New Zealand farms and minimise the negative impacts.

"The results of this project will contribute evidence to help in the detection of *M. bovis*, improve our surveillance tools, and increase our understanding of how the disease spreads under different New Zealand farming systems, which is key in terms of eradication. It will also help us to quantify the impacts, which supports some of the recommendations made in a recent Technical Advisory Group report."

The study is expected to take 1 to 2 years. Only properties already known to be positive for *M. bovis* will be used. No cattle will be intentionally infected, and properties will only be studied up until agreed dates for depopulation.

New Zealand is the first country in the world to attempt to eradicate *M. bovis*.

Dr Roche said the direct impacts study was identified as a priority in the *M. bovis* science plan, developed by the SSAG to help accelerate eradication of the disease in New Zealand. The M. bovis Programme has allocated up to $30 million for M. bovis research projects, guided by the science plan.

National beef survey next step in ensuring *M. bovis* eradication

The Ministry for Primary Industry announced in January that the Mycoplasma bovis Programme is starting a National Beef Survey to provide additional assurance that M. bovis is not widespread in the national beef breeding and stud herd.

Over the next 12 months, the *M. bovis* Programme intends to test 2,500 herds that have not previously been part of the programme.

"Results from the ongoing sampling and monitoring of incoming feedlot cattle gives us confidence the infection is not common in beef breeding herds," said MPI's chief science advisor Dr John Roche.

"This national screening of beef cattle will allow us to determine if there is any unexpected infection in the beef industry, and, at a later date, will help provide confidence that we are free from the disease," said Dr Roche.

To minimise the pressure placed on farming operations, additional mustering of stock will not usually be required for this testing as sampling of beef cattle will be conducted at the same time that OSPRI takes samples from animals as part of the TBfree Programme.

FATALLY CURIOUS KEA

The Department of Conservation is investigating the cause of six kea deaths near Wanaka following a recent aerial 1080 operation.

The birds were being monitored by the Kea Conservation Trust, which confirmed they were alive since the predator control operation in the Matukituki valley on February 11.

The department's threats director Amber Bill said DOC was concerned the kea might have been more vulnerable to picking up the 1080 cereal baits after being exposed to human food around valley's tramping huts.

"While we are confident that predator control operations benefit kea populations at large, it's upsetting to lose six birds," Ms Bill said.

The benefits included increased survival and nesting success.

She confirmed DOC's Code of Practice was followed to mitigate the risks to kea from 1080.

"Our work to mitigate the risk to kea from 1080 is based on extensive research and the results of 222 monitored kea through 19 aerial 1080 operations at 12 South Island sites," Ms Bill said.

"This research shows the risk of 1080 to kea in remote areas is low but increases markedly with birds that have learnt to scavenge for human food."

DOC is considering a public campaign to discourage people from feeding kea to minimise scrounging behaviour.

Curious kea. Photo: Daniel Pietzsch.

LAKE SNOW FOUND IN ANOTHER SOUTHLAND LAKE

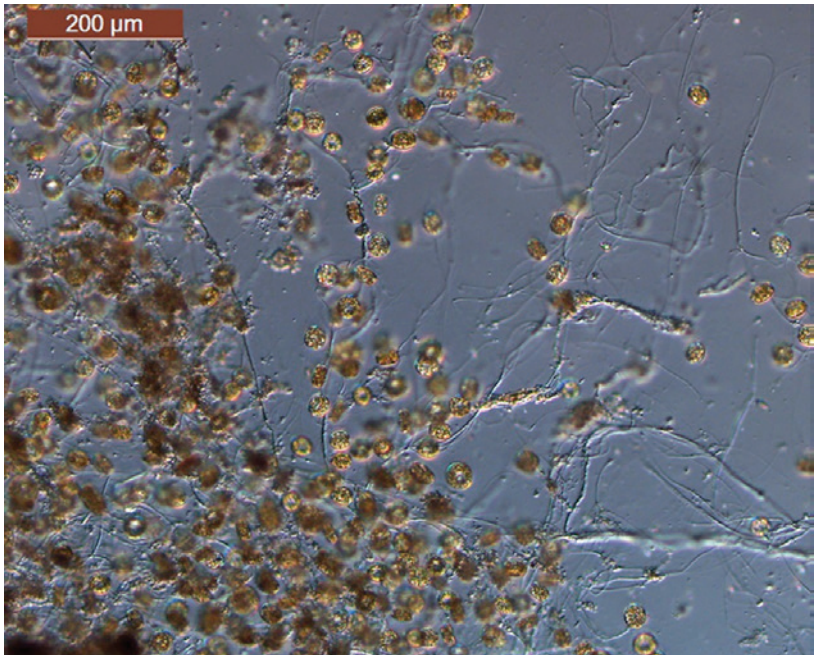
Environment Southland reported in January that recent samples taken from Southlands North and South Mavora Lakes have tested positive for the slimy algae *Lindivia intermedia* (lake snow), which is already present in Southland in Lakes Manapouri and Gunn.

Environment Southland biosecurity team leader Randall Milne said the council doesn't regularly monitor the lakes for lake snow, however there was evidence to suggest lake snow had gotten into the lake.

Although lake snow is not toxic and poses no known human health risk, it can create costly problems for water users. If it gets into residential water supplies, lake snow can cause blockages, clog filters and affect household appliances connected to the water system.

The origins of lake snow are unknown, according to Phil Novis from Landcare Research, one of the leading scientists in NZ for freshwater algae.

"*Lindavia intermedia* is known to be an introduced species that has appeared in New Zealand lakes in the last few decades, and is apparently continuing to spread. Recent investigations of Southland lakes suggest that humans are very important vectors since the lakes where the algae is found are readily accessible by vehicle."



Magnified images of Lindivia intermedia in water samples from North Mavora Lake. Photo: Phil Novis, Landcare Research.

FIGHTING ONE OF NEW ZEALAND'S WORST WEEDS

By Jessica Roche, MPI

In mid-October 2019, Northland Regional Council hosted a Best Practice Day in Dargaville to discuss control measures and progress towards eradication of Manchurian wild rice plants from New Zealand.

Manchurian wild rice rhizome. Photo: Paul Champion, NIWA.

Collaborating for success

The event brought together representatives from Biosecurity New Zealand (a business unit of the Ministry for Primary Industries), Auckland Council, Northland and Waikato Regional Councils, expert scientists from the National Institute of Water and Atmospheric Research (NIWA), and vegetation management professionals. The organisations have been working together in the battle against the invasive weed since 2008.

This highly invasive grass forms dense long-lived stands on land and water margins, overtopping other riparian species. It was introduced into New Zealand in the early 20th century and resulted in damage to stop banks and drainage channels due to the extensive rhizome system of the plant. The invasive weed also displaces pasture species on low-lying land, reducing land productivity.

Manchurian wild rice. Photo: Trevor James, Agresearch.

"The best practice day offered a fantastic opportunity to share regional updates, problem solve technical issues and discuss the strategic direction of our efforts," said Trevor Bullock, Manchurian wild rice Manager at Northland Regional Council.

Paul Champion, a freshwater ecologist at NIWA, developed most of the scientific literature used to better understand the physiology of Manchurian wild rice and identify appropriate control treatments. "I was really impressed with the visit to Kerry Perreau's farm near Dargaville, as part of the MWR Best Practice Day," Paul said.

"He has optimised his farm practices to deal with Manchurian wild rice and found that a combination of management techniques could turn a dense tall stand of this plant into a productive kumara growing area within two years. These practices could be used more widely within the Containment Zone but may also have merit for reducing eradication times outside of this zone."

The collaborative efforts over the past 11 years are now paying off. Manchurian wild rice sites are declining at treated locations, although eradication in an area is often difficult due to the rhizomatous nature of the plant.

Manchurian wild rice

- grows up to 4m tall
- extensive rhizome system
- harsh and erect leaves, up to 2.5m long with a stout midrib
- looks like raupō but remains green over winter
- is a Notifiable and Unwanted Organism
- one of nine National Interest Pest Response (NIPR) species

Research to improve detection

In 2020, Biosecurity New Zealand will invest in two new research projects to improve detection of Manchurian wild rice.

The first project will investigate the possibility of using detector dogs for surveillance activities on Manchurian Wild Rice, based on the promising results the dogs have shown in other biosecurity operations.

"We want to test if dogs can distinguish between raupō and Manchurian wild rice, and between live foliage and live rhizomes of the plant." said Jessica Roche, MWR programme manager at Biosecurity New Zealand.

The second project will involve a literature review of existing technologies and methods for detecting Manchurian wild rice. It will also include an evaluation of the applicability of these techniques for detecting other National Interest Pest Response species.

For more information, contact Biosecurity New Zealand at Jessica.roche@mpi.govt.nz.

Manchurian wild rice. Photo: R.Wells, NIWA.

INVASIVE WATER HYACINTH FOUND IN WAIKATO RIVER

A joint Biosecurity New Zealand and Waikato Regional Council work programme is underway following the discovery of a small cluster of the pest water hyacinth in the Waikato River near Huntly.

The agencies are working together with local iwi to ensure any water hyacinth present is located and safely removed. The team will then coordinate ongoing checks to make sure it hasn't come back.

Biosecurity New Zealand's manager of pest management, John Sanson, said water hyacinth is a rapidly growing water weed that if left, can form dense mats that reduce water quality, crowd out native water plants and animals, block irrigation systems and alter ecosystems.

"In this instance, we've found just 2 individual plants in the slow waters at the edges of the river and 1 plant in a cluster of willows further out into the stream.

"The plants have clearly come from a container of water hyacinth being kept at a private property in Huntly backing onto the river. This container was close to a drain next to the riverbank and we believe that's how the plants entered the waterway."

Mr Sanson said all known plants have been removed from the water and inspections have found no further sign of the weed.

However, as a precaution, a more comprehensive survey is taking place today, (4 March) using a boat supplied by the council harbour master.

"Two biosecurity inspectors are carrying out the search, accompanied by a person from the Waikato Regional Council and a representative of Waikato-Tainui.

"The team is systematically checking the banks downstream of the site for 15 kilometres, paying attention to stands of willows and backwaters where plants could be harboured. The survey is expected to take all day."

John Sanson said if any water hyacinth plants are found, they will be removed under quarantine for destruction and the site GPS-marked. Following the survey, **the area will be regularly surveyed for 20 years to make sure the plant doesn't come back**, as water hyacinth seeds can survive for a very long time.

"This is a pest weed that is taken very seriously. It is one of the pests being eradicated under the National Interest Pest Response programme led by Biosecurity New Zealand in partnership with regional councils.

"It is illegal to sell, propagate or distribute the plant."

Water hyacinth infestation in full bloom mid summer. Photo: Biosecurity NZ.

The Biosecurity system at work

A BROWN MARMORATED STINK BUG NABBED BY A TEAM OF 4.7MILLION + ONE

By Craig Davey, Horizons Regional Council

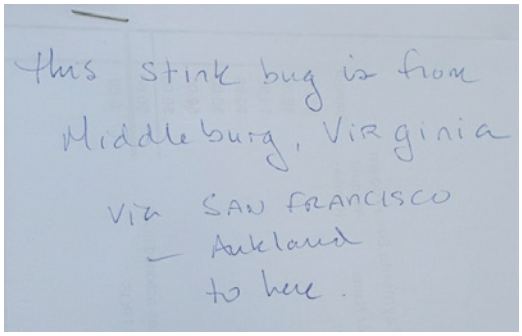
"This Is Us Ko Tatou's" 4.7million eyes needs a plus added.

We forgot to consider when we're successful at biosecurity messaging we grow the numbers of New Zealanders being aware but also include visiting tourists who understand, get motivated, and take action.

In November 2019, a visitor from Middleburg, Virgina dropped-off a double-bagged brown marmorated stink bug to the Information Centre at DoC Whakapapa, National Park.

The apprehended brown marmorated stink bug

Having arrived in the country the day before via San Francisco, the visitor discovered the very much alive critter in her sleeping bag. Either from USA campaigns or the excellent posters and material at International Arrivals, she took the appropriate action. DoC staff jumped on the phone to Horizons Regional Council who passed the details on to MPI's incursion team who contacted DoC directly and wrapped the investigation. MPI confirmed the ID was positive.



The stink bug note. It was also signed with a phone number.

GUN DEALER CHARGED OVER UNLOADING OF SEA CONTAINERS

Ministry of Primary Industries has laid charges against Christchurch gun retailer David Tipple and his company Gun City relating to the alleged unlawful unloading of sea containers.

According to the charging documents the offences occurred between May and December 2017 and in June 2018.

The allegations against Tipple include him consenting to Gun City employees opening and unloading sea containers without an inspector or accredited person present, permitting employees of Gun City disposing of wood packaging material knowing this was unauthorised goods, as well as authorising employees to breach the Biosecurity Act by having a sea container delivered to the company's transitional facility without being checked by an accredited person.

Gun City Limited is charged with failing to comply with the Biosecurity Act, providing an inspector with false or misleading information about uncleared goods, disposing of unauthorised goods and failing to comply with the operating standards of a transitional facility.

Adapted from an article published in The Christchurch Press, March 2, 2020

MONKEY IN SHIPPING CONTAINER

A dead monkey in a shipping container saw biosecurity officers swing into action in Whāngārei at the end of December.

A staff member at BBS Timbers found the dehydrated monkey body squeezed between sawn timber packs upon opening the container.

The fumigated container had arrived from Guyana.

The facility quickly alerted Biosecurity New Zealand, which advised how to remove the monkey. A biosecurity officer followed up with an inspection and picked up the body for disposal.

"The whole response worked extremely well. We were contacted by the business very early and our officers quickly jumped into gear," said Biosecurity New Zealand spokesperson Stu Rawnsley.

"This was definitely one of our more unusual interceptions, but we need to remember the dead animal could have been harbouring diseases or hitchhiker pests with the potential to damage New Zealand's economy and environment."

The monkey body was in a poor condition. The species has not been identified.

BBS Timbers is a registered transitional facility with trained biosecurity staff to check arriving cargo.

There are currently more than 4,300 transitional facilities in New Zealand.

UNWANTED FRUIT DISEASE DETECTED

Biosecurity New Zealand suspended fresh melon imports from Queensland in mid-December following a border detection of an unwanted fruit disease.

Biosecurity New Zealand detected cucumber green mottle mosaic virus (CGMMV) following routine border testing of a consignment of watermelons from Queensland, said Peter Thomson, Biosecurity New Zealand's plants and pathways director.

CGMMV does not pose a risk to human health. It affects cucurbit fruit, including watermelon, cucumber, honeydew melon, rock melon, scallopini, zucchini, and pumpkin.

"There is no suggestion the disease is in New Zealand. As a precautionary measure, Biosecurity New Zealand suspended imports of fresh cucurbit fruit from Queensland."

"We are also working closely with Australian authorities who have agreed to not issue export certificates for any new consignments until they have investigated the situation and taken corrective measures," Mr Thomson said.

The suspension did not affect imports of fresh cucurbit species from other Australian states.

Scallopini are among many cucurbit fruits threatened by cucumber green mottle mosaic virus.

From the archives

IT'S ALL ABOUT THE RESEARCH AND THE SAFETY

This article from 1973 notes the high risk and high cost of research and development. It is relevant now as the biosecurity sector enters an era of new technology and embarks on research paths not envisioned back then.

COST, TIME, AND PESTICIDE SAFETY

The Research and Development costs of a new agricultural chemical were $1,196,000 (not including pilot, plants, process development and such studies as waste controls, and environmental factors.)

By 1964 the cost had doubled, and by 1969 it had tripled.

It is estimated that today, one new pesticide emerges for every 10,000 compounds tested; the time from discovery to market is 8-10 years, and the cost is greater than 10 million dollars. A "winner" is a project that lasts on the market for 9 years or more at an annual sales of $10-20 million, and a pre-tax return on investment of 40%.

But the winners must support the "losers", each of which can cost from $500,000 to $4.4 million, depending on the stage at which the project is abandoned.

A rapidly increasing aspect of pesticide R and D is safety - toxicology, metabolism, analytical and ecology studies. The safety evaluation minimum registration requirements for a chemical have greatly increased since 1950, and with expected additional safety requirements soon to come into force, the "losers" may have to be abandoned at later stages of development and will cost the company concerned or its stockholders many more millions of dollars.

It all adds up to one thing - pesticides are not going to get any cheaper.

From T. Norton, Rodney C.C.

Noxious weeds inspectors Magazine Vol 5 No 1, 1 February 1975

From an article in "Chemical Technology" Vol 2 No.11 1973 by J.E. Jones and E.H. Blair (Dow Chemical Co.)

The Tail

A man took his small son to a hospital for his first look at the family's latest arrival.

The boy stood at the large window staring in at the nursery.

There were 15 bassinettes, but only 13 were occupied.

The boy registered excitement, "Hey Dad:" he piped. "They have two more traps set:"

Noxious weeds inspectors Magazine Vol 5 No 1, 1 February 1975.

New Zealand Biosecurity Institute

Find us on the web at www.biosecurity.org.nz