



New Zealand
Biosecurity Institute

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5



8



9



10



11



12



18



19

inside

NZBI Contacts 2

Editor's note & President's message 3

NZBI news

Queen's Birthday Honour for Canterbury Branch member 4

Biosecurity Institute welcomes swelling of its ranks 5

Sector news

A different business as usual: From on-site to on-line at Unitec 5

Landcare's Unstoppable Biosecurity Bonanza 6

Tracking and tracing other unwanted 7

Eradication of the mosquito | Wash weedy waders 8

Plant pests

Pink Ragwort: What the ... ? 9

Covid-19 thwarts wilding conifer control, or maybe not? 10

Animal pests

Hugely rewarding: trapping in Wellington's suburbs 11

Stoat on pest free island | The last rook 12

Strengthened NAIT approach improves compliance 13

Stink bug measures show results 14

Opinion - Let's act on the wake-up call 15

Feature - Raoul Island 16

Profiles

Angus McKenzie & Andy Wills 19

Archives | The Tail

The day of the cat ... or something like it 20



New Zealand
Biosecurity Institute

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



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Lots about adapting

Hello all and welcome to the Winter issue of Protect Magazine. I have received a lot of stimulating and interesting articles about how people have been managing in these trying times.

Thank you all very much for your contributions.

In this issue are a few thoughts about what we can perhaps learn from the Covid 19 response.

One refrain is along the lines of: **"If we can contact trace Covid 19 so doggedly, why can't we do it for other incursions?"**

There are also items on how members have adapted the way they carry-out their work, and their plans for working in the medium-term aftermath of what is the most disruptive period in living memory for most.

Many members have taken the time to jot down a few words on their jobs, and a little about themselves. Keep an eye out for these profiles in upcoming issues.

CHRIS MACANN,
PROTECT MAGAZINE EDITOR

■ PRESIDENT'S MESSAGE

Biosecurity Week:

Business as usual, tell your communities the good work you do

As we approach the week in which we would normally be meeting face-to-face, the Executive has been planning as much as possible via video conference, to keep the affairs of the Institute moving as normal.

We have been planning Biosecurity Week which runs in the same week as NETS would normally do.

Biosecurity Week will run from July 27-31st as usual despite there being no physical gathering. The on-line NZBI Annual General Meeting set for Wednesday 29 July at 3pm will still be the anchor event of the week.

This year the theme is "20-20 Vigilance". The key thrust of the week will be that Covid 19 is a huge reminder of the need to be vigilant for all pests and diseases.

The Institute will promote the week of biosecurity awareness activities. This is an opportunity for organisations to promote their biosecurity role to their communities.



Alice McNatty
President

Please let your communications departments know about Biosecurity Week and work with them to **promote to your communities the good work you all do.**

The Executive will meet in person and by video link on July 21st immediately ahead of what would have been NETS, as usual.

ALICE McNATTY
PRESIDENT, NZ BIOSECURITY INSTITUTE



Queen's Birthday Honour for Canterbury Branch member

Lincoln-based Landcare Research botanist Murray Dawson was awarded a Member of the New Zealand Order of Merit in this year's Queens Birthday honours.

Murray received the honour for his service to horticulture primarily through his work with the Royal New Zealand Institute of Horticulture.

In the past he has also received recognition with a legacy Award from the NZ Biosecurity Institute. In 2015 Murray was awarded the Peter Ingram Award for the work he's done to help those in the field improve their identification skills in the area of weeds, as well as providing the platforms for increased 'citizen science' around invasive plant species.

Murray is a botanist with Manaaki Whenua – Landcare Research and has developed interactive identification applications, including one to identify weeds, which he has used since 2016 as a teaching tool in schools participating in The Great Weeds Hunt Aotearoa. He took a lead role in organising the 2003 'Greening the City: Bringing Biodiversity Back into the Urban Environment' conference for Canterbury. He helped establish the New Zealand Gardens Trust in 2003.



He joined iNaturalist NZ in 2012 and actively contributes to their help desk. Mr Dawson was appointed Registrar of New Zealand native genera for the International Cultivar Registration Authority in 2013."

Murray said it was nice to be recognised in a wider context for volunteer work after a couple of decades and also through his work with Landcare.

"The community recognition is really great," he said.



*Murray Dawson with Kaniere School students.
(Photo Jenny Barrow)*



Rowan Sprague

New Chairpersons and Executive Committee Representatives

Jen McGowan, a pest plants biosecurity officer from Greater Wellington Regional Council will be the new Lower North Island representative on the NZBI Executive Committee. She will be joined by Canterbury-based Coordinator of the NZ Wilding Conifer Group, Rowan Sprague, who will be the new Branch chairperson and new Canterbury-Westland branch representative.

They will be formally welcomed into their roles at this year's Annual General Meeting.

Biosecurity Institute welcomes swelling of its ranks

The NZBI Executive prepared this news item in early June, welcoming newcomers to the biosecurity sector in the light of the government's budget announcement on biosecurity spending.

Key biosecurity sector group, the New Zealand Biosecurity Institute is preparing for a swelling of its ranks as a result of the government's budget package which seeks to put more people into on-the-ground biosecurity projects.

The NZ Biosecurity Institute is the professional training and networking organisation for people involved in biosecurity.

Institute president Alice McNatty said she is expecting to see a lot of new people coming into the biosecurity sector over the next four to five years.

The Institute has welcomed funding initiatives which put more dollars as well as people into projects to control New Zealand's unwanted animal and plant pests.

Ms McNatty said, of the significant amount of money the government has allocated to environmental projects, a lot is going to biosecurity.

As well as specifically targeted biosecurity spending on wilding pines and wallaby control, plus Predator Free New Zealand projects, there are also significant targeted funding biodiversity projects which will have a major pest control component to them as well.

She congratulated the people this would allow to enter the sector, and welcomed the good work they would continue to do.

"With a new job will come the opportunity to develop new skills, through on-the-job training, and through certification programmes."

She said Institute members' ongoing battle against unwanted animals, plants and diseases will be greatly helped by this increase in funding and on-the -ground staff.

"It will make a world of difference for our native species, and our agricultural industry," Ms McNatty said.

“ I hope this will show the biosecurity sector provides a worthwhile career path.

- Alice McNatty

”

A different business as usual: From on-site to on-line at Unitec

Lockdown provided a challenge for all, beginning in March. It was clear that on-line tools really came into their own and were the salvation of many sectors.

This was the case for Unitec where it was a different business as usual for those studying biosecurity among other subjects. It was also made easier by the goodwill and flexibility of industry partners, as Diane Fraser from the School of Environmental and Animal Sciences explains.

The School of Environmental and Animal Sciences at Unitec delivers a three-year undergraduate degree programme with a strand in biosecurity. With the constraints of the Covid-19 alert level 4 lockdown, teaching of the degree moved from on-site delivery to on-line delivery. The School has significant experience in delivering distance learning programmes, so **the transition to on-line delivery was relatively smooth**. Practical components of courses are the most difficult to provide, but the staff are working hard both within Unitec and industry to ensure that students gain the required practical experience expected of our graduates. In many situations, this will require a delay of completion of practical experience but all efforts are being made to minimise the impact on students and allow them to achieve their educational goals.

For the students in the second year Ecological Risk and Mitigation course, teaching during lockdown focused on the delivery of invasion biology theory. Lectures were delivered via the Zoom platform, which allows staff to share PowerPoint presentations, conduct Kahoot quizzes, demonstrate relevant software tools, and interact with students. Delivery is tailored to providing students with a short lecture supported by research activities either during

continued



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Zoom class time or in a 'flipped learning' format where students are given material before class in preparation for class discussion. Zoom meeting tutorials allow question and answer sessions for clarification of content and assignments. Additional information is being provided to students in the form of an eBook on Invasion Biology, recorded videos of lectures, references and exercises in mapping climate change scenarios using the Echo360 platform.



Diane Fraser teaching on-line.

I would like to give a big shout out to industry representatives; Sarah Carley (MPI Border Clearance Services), Chelsea Neverman (Auckland Council) and Adam Field (NZ Biosecurity Services), who are helping us achieve our teaching delivery. Field visits hosted by these wonderful industry contacts, which are not able to be delivered under lockdown, will now be delivered as a Zoom lecture by these representatives, to our students, to support their learning. We are extremely grateful for their efforts in supporting the students and Unitec.

Despite the huge pressures of lockdown, degree students have responded well to the transfer to on-line learning and are continuing in their study at Unitec.

From a living room near you: Landcare's Unstoppable Biosecurity Bonanza

In mid-May Landcare hosted its annual Biosecurity Bonanza with great success.

It was information sharing as normal for Manaaki Whenua – Landcare Research but in a different manner during the Covid 19 response.

The event was organised and the venue booked, and invitations sent for the national gathering this year to be held in Wellington.

Then arrived the "Covid 19 effect".

This year the event was rather different from what was planned but no less successful than in previous years. The gathering which normally draws at least 100 people to a different Landcare venue around the country each year was held on-line.

Around 850 people signed-up altogether and between 200-500 for each individual presentation with around 100 "attending" each of the eleven separate presentations made throughout the week as webinars.

The sessions covered among other things, weed biological control at home and in the Pacific, biological control in rabbits and wasps, animal pest behaviour, and ready reckoning tools which can help when planning and evaluating large-scale pest management plans. Dung beetles put in an appearance too.

Those "tuned-in" were able to compose questions for the presenters which were asked through a moderator at the end of each session.

Organiser and co-moderator was Landcare's events coordinator Tiffany Day.

"It was worth it," she said

"There was particularly high engagement on the predator control talks. Between 100 and 250 people tuned in and 100 – 200 later watched the recorded sessions which were available from Landcare's website.

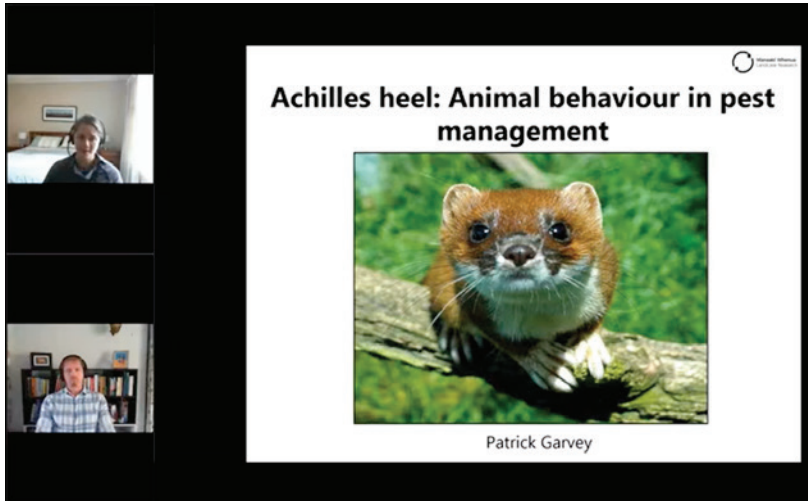
Tiffany said the most popular presentation was by Lincoln-based Patrick Garvey on animal behaviour in pest management, with 440 people registering, 98% of whom attended live.

"We tested a few platforms including Zoom among others and chose the Webinar format which appeared to be the most reliable.

“ We were asking them to open their house to a lot of strangers. I had to remind them to have their living areas and bedrooms neat and tidy.

- Tiffany Day

”



From the living room: A bit of what it looks like: The presenter, the moderator, and the PowerPoint

Staff had never done it before.

"We were asking them to open their house to a lot of strangers. I had to remind them to have their living areas and bedrooms neat and tidy.

"It's difficult talking to a camera with no feedback from the audience. But the presenters said it was easy to take time in the day to do it.

She said initial concerns about the absence of lunch and tea break interactions were quickly allayed.

"That was not a problem. People have been reaching-out anyway with more than 200 watching the recordings of the presentations after, as well as contacting the presenters.

She said two key advantages were that "you don't have to travel or ask your boss for time-off.

She said it was helpful to have two facilitators to moderate and help with the questions.

As to whether this would become a regular way to share information in the future instead of actual gatherings, she said there was still lots of discussions to be had. But a combination of both in the future was a possibility.

Tracking and tracing other unwanteds

OPINION

For Hamilton-based Biosecurity consultant Peter Russell it has been work as normal throughout the lockdown period because, in his words "I've been home isolating for five years now!" The Covid 19 response has given him some food for thought.



"I have been thinking about velvetleaf (and brown marmorated stink bug in future) regarding tracking and tracing. **There must be handy lessons to learn** from how the Ministry of Health has been tracking patients to discover where the flow of infection is going and coming from. These principles will be exactly the same as tracking where dirty machinery has gone and following up the tracking and tracing discussions with people. Also, it draws on the power to require information from people under the Biosecurity Act (s.43).

"It may be a time and resources thing why the trail often goes cold for tracking pests and pathways of spread, but **there has to be something to learn about how this is done...** on a grander scale."

Peter said he is interested to know more about how these two processes may be better integrated and is this something that the Biosecurity Working Group or Biosecurity Managers, among others could be involved with.



Eradication of the mosquito *Culex sitiens* from New Zealand

The Ministry for Primary Industries announced in early June that a small population of an exotic mosquito species detected near Kaipara harbour has been successfully eradicated.

Larvae of the *Culex sitiens* mosquito were found in March 2018 in the Kawau Parua Inlet during regular surveillance as part of Biosecurity New Zealand's National Saltmarsh Mosquito Surveillance Programme. No adult mosquitoes were ever found.



Culex sitiens (Biosecurity New Zealand)

The mosquito is widespread in Southeast Asia, the South Pacific, and Australia and would pose a real human health issue if it established.

The Biosecurity New Zealand response to stamp out the pest included extensive

ground surveillance and several rounds of aerial spraying – and there have been no further finds of the mosquito for two years since the initial detections.

"It's now been two years since any have been found, and we're confident we can declare them eradicated," said MPI principal response manager David Yard.

Community involvement in the eradication effort has been crucial to the success of the response.

"This is a fantastic achievement to wipe out this unwanted pest in such a short timeframe."

"To our knowledge, **this is only the second time in the world that any saltmarsh mosquito has been eradicated from a country.**"

A world-first successful eradication was also in New Zealand – when the southern saltmarsh mosquito was eliminated in 2010.



Duck hunter Dale Williams removes weed from decoy lines.

Wash weedy waders

Duck hunters across the nation were reminded of the "Clean Check Dry" message as the delayed shooting season got underway.

Bay of Plenty Regional Council was among the many organisations reminding duck shooters to wash their weedy waders and clean their decoy lines when the hunting season eventually opened on the fourth of the month of May's five weekends, instead of the usual first weekend.

In the Bay of Plenty it was the catfish and hornwort threat that was highlighted among all threats.

"Unwanted freshwater pests such as catfish and hornwort are serious threats to the life of our incredible lakes, rivers, and streams," Bay of Plenty Regional Council Biosecurity Officer Lucas MacDonald said.

"Catfish are an unwanted pest that prey on trout, native fish and lower water quality by disturbing sediment. Pest plants like hornwort smother and suffocate aquatic life. These freshwater pest species can have major impacts on waterways and affect the freshwater sports and activities that New Zealanders love."

Mr MacDonald advised **that duck hunters who shoot from spots on different waterways need to be extra vigilant.**

"I know that hunters are especially keen to get out to their favourite spots for a shoot. **This year, more than ever, we are all aware of appreciating and protecting what we've got, and keeping our waterways healthy** for future generations is part of that." Mr MacDonald said.

Pink Ragwort: What the ... ?

By KEN WRIGHT, BIOSECURITY OFFICER, TASMAN DISTRICT COUNCIL

During November 2019 while doing my inspections in Golden Bay, a quick flash out of the corner of my eye as I drove past, I spotted a pink ragwort *Genecio glastifolius*. Yes I had one of those "What the ?" moments.

In our region, we have only three small infestations, now down to the last few. One on the port hills in Nelson and the other two closely associated at the Moutere Bridge and Jacketts Island near Motueka. The Jacketts Island infestation came from the Moutere Bridge, when an Island resident took seed, as they loved the flowers. We have made a priority to get on top of these infestations as some parts of NZ it has taken off and the battle is lost. The Moutere bridge site has been clear for two seasons.

So to see it in Puramahou Golden Bay was a shock. Was I seeing right as I passed a dairy farmers workers house? I called in, met the tenants, and confirmed that it was what I suspected. They were new arrivals to the Bay and the woman of the house had brought bearded irises in pots, from Island Bay Wellington. The **windbourne pink ragwort seed must have settled in the pots** from the surrounding Island Bay hills infestation. She had planted three in the frontage of the house and that was what I spotted. Another two irises still in pots, had pink ragwort flowers too.

This illustrates how some pest plants can easily be transported from other regions. Stay vigilant.



Well spotted. Pink ragwort where it shouldn't be expected.



Self seeded. This pink ragwort sowed itself when windbourne seeds landed in this well travelled pot.



Covid-19 thwarts wilding conifer control, or maybe not?

BY ROB SIMONS - MARLBOROUGH DISTRICT COUNCIL

People in the biosecurity game are no strangers to the challenges of managing the impacts of unwanted organisms, and sometimes even the best laid plans cannot prepare you for unforeseen events.

This was certainly the case in early February. After all its pre-planning the Marlborough District Biosecurity team finally had the helicopter on standby to boom-spray TDPA (triclopyr, dicamba, picloram, aminopyralid) herbicide over an 18-hectare area of wilding *Pinus contorta* spill-over from one of Marlborough's legacy plantings, known as the Wye Reserve.

The agrichemicals had been purchased, the loader driver was on site, and the land-occupier on hand to ensure a ready supply of water. Now it was just a matter of waiting for the fog to lift! The fog did eventually lift, but unfortunately strong winds forced the operation to be postponed. Ongoing poor weather and resource shortages further delayed the operation. **Father Time was against us, and then came Covid-19**, New Zealand went into lock-down on 26 March 2020.

When New Zealand finally came out of lock-down on 27 April 2020 we were all coming to terms with unprecedented times, and **it certainly wasn't business as usual, as we adjusted to working under level 3 restrictions**. Father Time marched on, and concerns were raised about the aerial application in respect to best-practice guidelines; that the efficacy of TDPA herbicide could be compromised when applied to wilding trees outside the active growing season. A decision had to be made whether to proceed or abandon the aerial operation until 2021, and somehow find adequate long-term storage for a large quantity of expensive agrichemicals.



Helicopter spraying. Photo: landholder Simon Fowler.

Marlborough Helicopters were asked to hold-fire while we sought further technical advice regarding the application of TDPA in the months of April-May. Unfortunately, we found no clear yes or no answers, and the results from TDPA applications in other regions couldn't simply be extrapolated to the Wye Reserve equation.

Given the relatively young age of the trees, and the milder Marlborough climate compared to regions further south, we weighed up the pros and cons, and the decision was made to proceed with the aerial operation to apply TDPA herbicide at 600 litres/ha. The aerial spray was finally carried out on 13 May 2020, and a monitoring programme put in place to determine the level of die-back in the trees over the next 24 months.

After the completion of the aerial work, Godfrey Pest Management commenced ground control operations nearby. At that time Wayne Godfrey and I casually discussed the aerial application of TDPA in May, "May not work" Wayne uttered. As an experienced operator Wayne concurred with best practice that **such herbicide applications are best made in any month with an R in it**. I feared he could be right but I hoped in this case he may be wrong, and that the 13th of May was not necessarily a bad omen. As is often the case in our industry, sometimes you just have to give it a go! Now it's just a waiting game.

Profile

Hugely rewarding: trapping in Wellington's suburbs

Senior Field Officer with Predator Free Wellington Ian Robertson tells a bit about himself and his job, plus how his interesting commercial and fine art photography background proved an asset.

I'm currently employed as a Senior Field Officer with Predator Free Wellington, where for the last eleven months I've been working to eradicate rats, stoats and weasels from the Miramar Peninsula.

I came to the project through my work volunteering with a group trapping in the reserve land of Matairangi/Mount Victoria, Wellington. After volunteering with this group for several years I set up and co-ordinated Predator Free Mt Vic, a backyard trapping group covering all the suburbs surrounding the maunga.

Prior to this trapping work I'd had a 20+ year career as a commercial and fine art photographer. **I felt quite lucky doing the photography work as it gave me the opportunity to see a wide cross section of society, from homeless people through to leaders of industry. I find my current job gives me a similar view, as I look after traps in both the richest and poorest suburbs in Wellington.**

It's heartening how much the work we're doing has been embraced by all the local communities. That engagement has made a massive difference to the project, and I've been blown away by how accommodating people have been, allowing us onto their properties on a weekly basis, and letting us know of any pest or native species that they've encountered.

I regularly visited a preschool and had set them up with tracking tunnels to use on their weekly explorations to the nearby coastline. It was fantastic to see how much they threw themselves into the project, proudly showing off the tracks of the animals that they had found. **They got a real buzz when they found rat tracks that alerted us to a gap in our trapping network, rightly feeling that they'd made a real contribution to the project.** They carried this enthusiasm home with them, and on more than one occasion I was stopped in the street by parents of the children, telling me how passionate the kids were about our work.



Ian Robertson, Predator Free Wellington.

The bulk of my work is outdoors, checking traps and bait stations in people's backyards and bush reserve. The Lockdown period has restricted our field work, but it does give us time to examine the data we've been collecting during the project, looking for any insights into a more effective operation as we look to move into the remaining Wellington suburbs in the near future.

Trapping can be hard, physical work, but I much prefer it to sitting at a desk all day, and the scenery can be spectacular. We often get encouragement from passing residents, and seeing the increase in native fauna and flora since we began has been hugely rewarding.



Stoat on pest free island makes mystery disappearance

It's fair to say reducing the size of pest populations is one thing, but getting the last predator is quite another. In fact the zero target can use up a great deal of time and resources. One sole predator may have decided to control its own fate during lockdown.

A wily stoat that was on the loose on one of Auckland's pest-free islands appears to have either died or swum away.

The stoat was first detected on Motukorea/Browns Island by a conservation dog in mid-March, just before the Covid-19 lockdown.

Teams also spotted footprints in the sand, found stoat poo and discovered where the stoat had been hiding its kills.

Dozens of traps and cameras were set up and hours have been spent scouring the island with dog teams.

Despite that, Auckland Council conservation rangers have not been able to find the pesky mustelid.

Senior ranger Miranda Bennett said the latest search on Friday did not find anything and they were pretty confident the stoat was no longer there.

It is possible the stoat ate one of the baits set out for it and died, or that it swam away.

"It swam to get to the island, so it's more than possible that it decided to leave again," she said.

A stoat was detected recently on nearby Motutapu Island and Bennett said it was possible it could be the same animal.

"It's a bit of a coincidence it turned up around the same time."

Bennett said monitoring and trapping for pests would continue on Motukorea/Browns Island to make sure it remained pest-free.

FROM A REPORT ON RADIO NEW ZEALAND BY SARAH ROBSON
JUNE 21 2020.



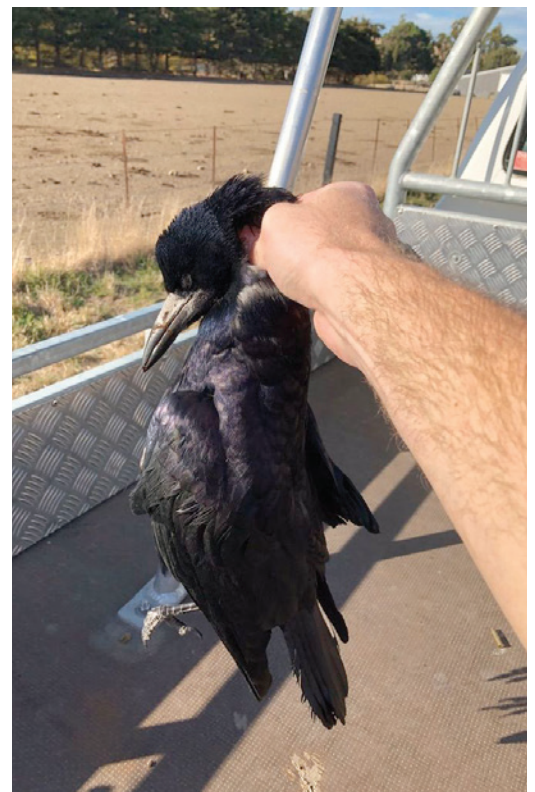
The last rook: great shot

Old-timers will be well aware of how difficult it is to get the last rook. Any opportunity should be seized.

Marlborough District Council Biosecurity Pest Manager Team had an interesting "call-to-duty" over the first two weeks of the March/April 2020 Covid lock-down. Biosecurity Manager Jono Underwood explains.

"An adult single rook turned up in our patch, literally the day after lockdown. I gave the approval for one of my team to safely respond (an essential biosecurity response). After almost two weeks of cat-and-mouse, and hours of waiting, stalking and observing the bird Senior Biosecurity Officer Liam Falconer's perseverance paid off and he shot it.

"Liam realised right when he was going to shoot it, that the landholder and three others were watching from a nearby set of yards. He was glad he didn't miss!"



Strengthened NAIT approach sees significant improvement in compliance

Covid 19 has placed a spotlight on the concept of contact tracing. Here is a June 4, 2020 media release from the Ministry for Primary Industries (MPI) about how it is managing with contract tracing of the bovine kind.

Farmers are lifting their use of animal tracing after changes to strengthen the National Animal Identification and Tracing system (NAIT) and boost compliance, new data shows.

MPI director of compliance, Gary Orr, said this is particularly encouraging at this time of year when dairy farmers are moving cows between farms around the annual Moving Day.

"From January to March this year, 77% of animals were registered correctly – a 24% increase over the same period in 2019. And 75% of animal movements were recorded on time (within 48 hours of the movement) – a jump of 11% over the same time in 2019. And 98.7% of animals slaughtered were tagged – an increase of 0.3% from the previous year.

In late 2019 the fine for NAIT offences increased to \$400 per animal and Mr Orr said that is quite an incentive to do it right.

"While the fines are not the only driver, we believe these, along with significant communication with farmers, have seen some good improvements in NAIT behaviour.

"There is, however, still room for improvement," Mr Orr said.

"Since the beginning of 2020, 436 infringements have been issued for NAIT offences and more than 800 warnings given for 'Failure to Register' offences. **We need to get a lot better at this.**

"Our ability to manage biosecurity threats such as Mycoplasma bovis and other diseases of cattle or deer is heavily dependent on being able to rapidly and accurately trace animal movements.»

While Moving Day itself has just passed, many farmers are still moving herds and are urged to have all animals NAIT tagged and registered, their NAIT accounts updated, new NAIT location numbers set up, and TBfree herd records up-to-date. And when moving livestock, farmers need to complete an Animal Status Declaration form on paper or electronically, and provide it to their transporter.



Following a review in 2018, significant improvements were made to the NAIT system. For example, the NAIT number was assigned to a location, not a person. The NAIT interface itself was improved to make it easier to use and a mobile app was developed.

Then the NAIT Amendment Bill was passed in December last year, tightening the rules around the handling of untagged animals, improving the use of NAIT data and increasing infringement penalties to reflect the seriousness of NAIT non-compliance.

On 14 June new rules will be introduced around the transportation of animals, introducing penalties for transporters moving untagged animals that do not have an exemption. To ensure their compliance with this amendment, transporters will be requiring farmers to provide declaration paperwork that the animals are identified and registered with NAIT.



Stink bug measures show results

In early June Biosecurity NZ announced that strict biosecurity requirements for imported cargo have reduced the threat of brown marmorated stink bug and even tougher rules will be introduced next season.

There were 57 interceptions of live brown marmorated stink bug during the 2019/20 season (September to April) – a reduction of 73% from the previous season. Of these, 28 were detected at the border. The others were largely individual hitchhikers detected after the border with personal effects carried by arriving international passengers.

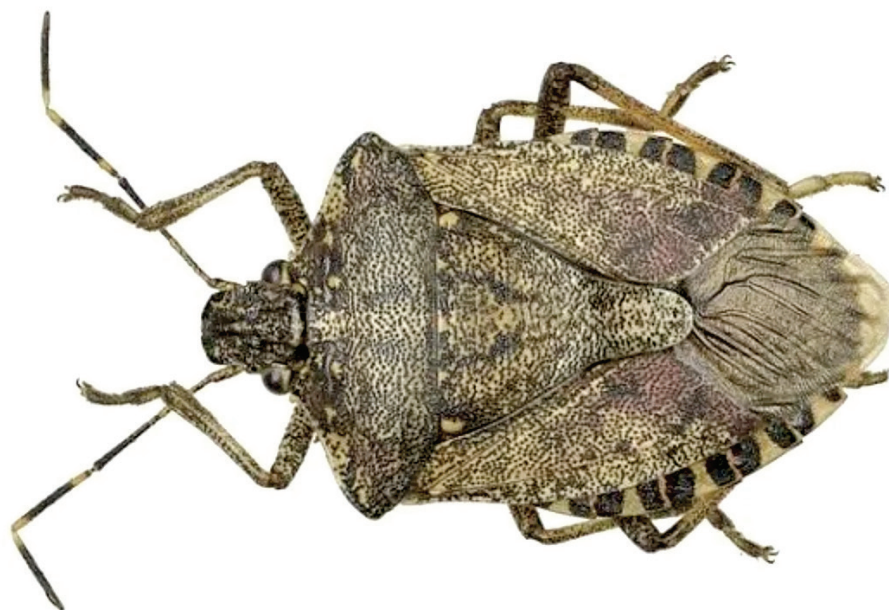
"The reduction shows the success of introducing offshore treatment requirements to ensure high-risk goods arrive clean from countries with established populations of this destructive pest," said Biosecurity New Zealand spokesman Paul Hallett.

The import rules targeted vehicles, machinery, and parts from 33 identified risk countries, and all sea containers from Italy during the stink bug season.

Biosecurity New Zealand worked closely with Australian officials during the season to develop the offshore treatment programme and to ensure overseas-based facilities met biosecurity requirements.

"We are very grateful to the Australian Department of Agriculture, Water and Environment for undertaking a large part of the administrative work involved with running this programme.

"There will be more collaboration with Australia in the lead-up to next season, particularly around what we can do to ensure cargo arrives stink bug-free from European treatment providers. Many are operating with reduced staff as a result of the COVID-19 pandemic."



Mr Hallett said Biosecurity New Zealand is looking at adding three new countries to the list of those requiring special measures to send vehicles, machinery, and parts to New Zealand.

"Officials are also consulting with industry on plans to extend the current treatment requirements for sea containers from Italy to cover at least another two stink bug seasons."

He said Biosecurity New Zealand will continue to operate rigorous border checks and post-border surveillance to intercept any hitchhiking bugs.

"During the last season, Biosecurity New Zealand worked with industry to develop a sophisticated surveillance programme that increased the number of stink bug trapping sites from 25 to 80. Biosecurity New Zealand and industry also jointly funded a public awareness campaign that attracted a record number of calls about possible sightings."

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Let's act on the wake-up call

BY PHILIP HULME

New Zealand's actions to halt Covid-19 represent the most dramatic biosecurity response ever undertaken in this country.

So why are we making remarkable progress towards eliminating a pandemic disease, when attempts to prevent epidemics in our livestock, crops, and native species have failed? **The obvious answer is that human lives are more important than plant and animal health.**

But this is not the whole story. **Our Covid-19 response highlights fundamental limitations in our biosecurity system that we must address.**

In responding to Covid-19 we have benefited from considerable international data to estimate the likely impacts of the epidemic and the costs of doing nothing. Unfortunately, **there is seldom such shared and extensive international knowledge in biosecurity incursions**, so our responses rely heavily on the domestic workforce.

Consequently, the research required to underpin a major biosecurity response is unavailable for all but a handful of well-established industries and legacy threats such as fruit flies or foot-and-mouth disease.

Even where incursions appear likely, we often fall short. Examples include PSA almost destroying the kiwifruit industry, and myrtle rust now threatening many taonga trees. In both cases, research to support an adequate response ramped up only after the diseases arrived.

Too often, the lack of funding coordination, partisan politics of research providers, and convoluted contracting processes cause delays, meaning we miss the opportunity to eradicate. We must address the inertia of a research funding system that isn't fit to tackle emergencies.

Contact **tracing has been pivotal to the Covid-19 response, and has been far superior to the way we track the movement of livestock** or horticultural produce.

Failures in the National Animal Identification and Tracing system severely limited the current response to *Mycoplasma bovis* in cattle, and poor record keeping by horticultural nurseries stymied the tracing of stock infected with myrtle rust.

“ One important lesson is that biosecurity requires all parties to “go hard and go early”, but this is best achieved when government, industry, and the research community recognise and address their own impediments to swift action before any emergency.

- Professor Philip Hulme

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These industries are improving their record keeping, but other sectors still have a long way to go. Establishing a national tracing standard for all primary industries should be a national priority.

The success of New Zealand's science-led Covid-19 response reflects the quality of the science and data that have supported decision-making, as well as the rapid allocation of government funds to accelerate research and information gathering.

This shows we can overcome the stumbling blocks that have limited biosecurity responses in the past.

One important lesson is that biosecurity requires all parties to “go hard and go early”, but this is best achieved when government, industry, and the research community recognise and address their own impediments to swift action before any emergency.

We need a unified, non-partisan approach to biosecurity research that is fit-for-purpose, to ensure New Zealand is better prepared for potential incursions. We need the same sort of unified focus as we have brought to Covid-19.

We have had a wake-up call. Let's act on it.

PROFESSOR PHILIP HULME IS A PROJECT LEADER AT THE BIO-PROTECTION RESEARCH CENTRE, AND DISTINGUISHED PROFESSOR OF PLANT BIOSECURITY AT LINCOLN UNIVERSITY.



Raoul Island

A magical playground for those who want to live close to nature and experience a pristine natural landscape.

DEPARTMENT OF CONSERVATION
OPERATIONS RANGER ON RAOUL ISLAND,
KEITH TOWNSEND OFFERS A PROFILE ON
BEHALF OF THE RAOUL ISLAND WEED TEAM,
OF HIS ROLE AND EXPERIENCE LIVING AND
WORKING ON RAOUL ISLAND.

Roughly half way between East Cape and Tonga, although a little closer to Tonga, Rangitahua/Raoul Island is in the Kermadec group of islands, part of New Zealand. Raoul Island it is the largest and northernmost of the main Kermadec Islands, and since this profile was written, is now closed for the first time in DOC's history with extra security measures in place while staff are absent, during the response to Covid 19.

How long have you been in your job?

I spent three months training in Whangarei, quarantining all gear and equipment, and preparing for departure in September 2019. Followed by 6 months on Raoul island as a member of 6-person weeding team. Our aim was to eradicate the island's invasive plants and maintain the its pest-free status.

What motivates you to be involved in biosecurity?

Knowing that my work contributes to preserving the fragile ecosystem on Raoul Island. There is high biodiversity value on Raoul, and the unique fauna can thrive in the absence of mammalian predators and the flora has less competition with exotic weed species due to our work. The island was made pest-free in 2006 and **the rare sea birds that inhabit the Kermadecs region have once again returned to Raoul to breed.**



A successful breeding season for this white tern and its chick.

Raoul Island has a long history of periodic settlement beginning with early Polynesian migration in the 13th century, and attempted European settlements in the 1800s, market gardens supplying whaling vessels and pioneering families like the Bells, through till the establishment of the meteorological station in 1940 and DOC's involvement from the 1990's to present. This led to many human induced species introductions that drastically altered the Raoul island ecosystem.

My role with DOC has been to work towards eradication or containment of these plant species that have the potential to negatively impact the biodiversity on Raoul island. Much progress been made before me during the 20 years the



The 'hostel' built in 1940 for the meteorological station nestled amongst pohutukawa.

weeding programme has been operating. **The passion and hard work of all the people previously involved in the programme gives me motivation that we can make a positive difference to the health of the Raoul Island environment.**

What has been your career path to your current position?

I have spent the last 5 years doing summer field jobs for DOC across the North Island. Firstly, as a hut warden in the Tararua Ranges for two seasons. Then as an operations ranger in the Wairarapa region. I was involved with the biodiversity monitoring team for a season based in Palmerston North in both the animal and vegetation teams. Then finally the Raoul Island weed programme, which has been an incredible experience to date.

My colleague on Raoul, Allen Parsons, had a different career path becoming involved in conservation later and more recently. Prior to Raoul he spent a season as a ranger, ecological restoration, with Goodwood Aotearoa working on Waiheke Island and Auckland's regional parks.

Living and working on a remote sub-tropical island has been a dream come true with many strong nature connections and close friendships forged. But island life is not always easy, you get woken up at dawn by the song of the tui and kept awake at night by nesting shearwater and starlight streaming in through your windows. It's hot and humid during the day but post-work swims in the ocean provide some relief. Whale and bird watching from the front porch made for an excellent alternative to television, and a nutritious meal cooked with produce from the garden is washed down with a bottle of home brewed golden ale.

With beautiful trails to explore and huts to stay in for a weekend getaway, and pristine snorkelling, there is no shortage of adventures. Although the isolation factor is a challenge, it's also a reason I was attracted to this job.

What makes up a normal day for you?

A normal day might entail grid-searching one of the many weed plots on the island for species such as Black Passionfruit, Purple Guava, and Brazilian Buttercup.



Laura Parks with a trophy mature Brazilian buttercup.

Spaced up to 5m apart, we walk in a line together actively scanning the ground and canopy for pest plants. Mostly we find only seedling and adolescent plants at known infestations, but sometimes we find mature flowering and fruiting plants at previously unrecorded weed sites. Using GPS, we can accurately grid-search through thick vegetation on steep terrain and cover-off large areas of the island's forest.

During and after resupplies, and whenever there is a passing vessel, we also set and check rat/mouse traps and tracking tunnels around



Whale watching during a September 2019 resupply visit by the NZ Navy.

the base and landing sites to catch any rodents that may have been on-board and tried to come ashore. There is always one team member at base who is responsible for releasing the daily weather balloon for MetService, and other maintenance tasks.

In 2017 myrtle rust was found on Pohutukawa trees across Raoul island. **This is believed to be a different strain from the myrtle rust found on mainland New Zealand. We are monitoring the impact this is having on the growth and development of the predominantly Pohutukawa dominated forest canopy.** We follow strict quarantine protocols for any gear or personnel coming to and from the island to ensure this pathogen is not transported to the mainland.

We also quarantine everything for rodents, insects, soil and plant material in purpose-built facilities on Raoul Island and at the Whangarei DOC office. All visitors must comply with our biosecurity procedures to prevent a possible incursion. It is essential that we keep Raoul Island pest-free if our many rare birds and other unique species are to thrive in this remote island habitat.

In addition, to maintain the island's pest free status as well as prevent the spread of this Myrtle Rust strain, boats cannot just stop in. To come on land at Raoul they must have met quarantine requirements and obtained a permit from DOC before leaving New Zealand.

continued



▼ continued

What do you enjoy the most about your job?

The chance to see more deeply into the lives of the rare species that live on Raoul island, New Zealand's most northern territory. You can really notice the devastating impact mammalian predators and pest plants have on an ecosystem when the wildlife can thrive in their absence.

To observe a dozen Kakariki feeding on the front lawn of the hostel like common starling is a curious sight. But this is common on Raoul, a lot of the birds are not afraid of us. These beautiful creatures are seemingly always laughing and having a good time.

The open stands of Nikau trees with their striking flowers attract many bees in the summer time and smooth trunks that intersperse the dense Pohutukawa forest.

Bodysurfing in the waves off Oneraki Beach and seeing fluorescent fish and friendly sharks in the crystal-clear waters. Swimming, snorkelling, surfing in a dynamic aquatic environment, learning the currents and observing the tides.



Kermadec red-fronted Kakariki, a main vector for seed-dispersal, seen here eating-seed of the endangered Kermadec Senecio.

Standing at the top of Moumoukai and gazing into the desert like caldera, still crater lakes reflecting the clouds on their surface. Resting but very much an active volcano.

Raoul island, a magical playground for those who want to live close to nature and experience a pristine natural landscape. Truly a once in a lifetime experience!



A view from Mt Moumoukai.



Christmas lunch on Raoul Island. From left: Allen Parsons (team leader) Keith Townsend, Hamish McInnes, Aidan Moyle, Laura-Parks.

P.S. What about Covid 19

The Royal New Zealand Navy ship HMNZS Canterbury and crew collected six DOC rangers from Raoul Island, where they had been carrying-out important pest control and maintenance work on the remote Kermadec Islands for the past 12 months.

The workers were in good spirits after their quick journey home, returning to Auckland's Devonport Naval Base on April 12 after COVID-19 Alert level 4.

Profile

Angus McKenzie

COMPANY DIRECTOR AT WAIKATO AND BAY OF PLENTY-BASED
PLACE GROUP LIMITED

I co-founded Place Group Limited in 2015 with the aim of providing consultancy services to the natural resource management sector throughout New Zealand. Today, Place Group is a boutique environmental company of seven staff based in the Waikato and Bay of Plenty regions.

We provide specialist services to a range of clients in project management, operational delivery, business cases, strategic policy and regulatory consenting. I am proud of the high-quality team that we have built over the last five years.

I trained as an environmental planner through Massey University and have been a consultant for the past 15 years having worked in local government at the start of my career. I am a professional project manager with expertise in, policy analysis and development, regulatory planning, business case development, stakeholder engagement and communications. I work across the natural resource management sector with a particular focus on biosecurity, biodiversity, water quality management and local government operational delivery.

I am also a trained facilitator and provide these services to a wide range of clients in the natural resource management sector using Technology of Participation (ToP) Facilitation Methods.



Angus McKenzie.

I enjoy variety in my work and delivering projects that will result in real improvements to social, cultural, economic and environmental outcomes for Aotearoa.

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Protect Winter 2020



Profile | Marine

Andy Wills

MARINE BIOSECURITY OFFICER AT BAY OF
PLENTY REGIONAL COUNCIL

How long have you been in your job?

Five years

What motivates you to be involved in biosecurity?

I trained in Marine Biology and I am passionate about protecting the marine environment.

What has been your career path to your current position?

I have previously worked as a skipper, dive instructor and on super yachts overseas. I used to live out at Motiti Island where I owned an avocado orchard, and was a part time beef farmer. I then worked for DOC and Waikato Regional Council up in Whitianga before moving back home to the BOP.

What makes up a normal day for you?

Around half my time is spent out Diving looking for Marine or Aquatic Pests and the other half is spent in the Office.

What do you enjoy the most about your job?

I really enjoy being part of the BOPRC Dive team and getting to dive in a number of different sites around New Zealand.



Andy Wills.

A bit about one of Andy's projects: Asian paddle crab surveillance

The Bay of Plenty Regional Council marine dive team recently [at April 2020] completed a trapping programme for Asian paddle crab (*Charybdis*) across the Bay of Plenty. Within Tauranga Moana the number of crabs caught has jumped from five in 2018/19 to a total of 45 in 2019/20. Unfortunately, four *Charybdis* were caught in the Ōhiwa harbour which represents a range extension of this species.



Noxious Plants Officer is a Rare Breed

New Hokianga County Noxious Plants Officer Rebecca MacIntosh has joined a unique group – she is one of only four women in charge weed control throughout New Zealand's 221 municipalities.

Ms MacIntosh, of Kohukohu, took over the position after Mr Graeme Dempsey quit the post recently. She had formerly worked for 12 months under his direction making maps of weed infestations in the county.

Coinciding with the new appointments the Hokianga County Council has decided to set up a district noxious plants authority with five council representatives and four other local community representatives selected from Federated Farmers, marae committees and trusts, Government departments or other appropriate organisations.

Card system

Before taking up her new duties Ms MacIntosh spent 10 days on a training course in the Rodney County where **she spotted a few administrative methods which she brought to her council's attention.**

In a report on the training course, she said she was shown a card system listing full details of Rodney weed control work, including data on individual farms and the amount of subsidies they collected.

"The possible utilisation of such a card system in Hokianga encompassing data collected on previously done physical weed surveys as well as other information collected could be a valuable idea", Ms MacIntosh said.

The training course took her to Auckland, where she was shown a patch of *Clematis vitalba*, a vine that can stifle growth of native seedlings.

"It was of special interest to me as I had never seen it and believe there to be sites in Hokianga", she said.

In the Huapai district Ms MacIntosh was shown biological weed controls with rhinocellus beetles eating nodding and winged thistles, and her report pointed out that ragwort was also being control

PROTECT VOL 5 No 6, DECEMBER 1984



The day of the cat ... or something like it

Landcare Research - Maanaki Whenua recently held a series of successful webinars over a week, in lieu of its annual Biosecurity Bonanza gathering.

One star-of-the-show was a cat who made occasional cameo appearances in the background during one presentation. This would have been delightfully poetic had the talk been on predator control. Alas it was not. The benefit of the webinar platform is that it allows cyberspace attendees to ask difficult technical and scientific questions of the presenter.

The winner of best question among many pithy enquiries was: What's the name of your cat?

For the record the answer was Magnus.



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

