

Winter – 2014

ISSN 1175-043X

Protect



New Zealand
Biosecurity Institute

PROUDLY SUPPORTING

Biosecurity Month 2014

LIKE NO OTHER



New Zealand
Biosecurity Institute

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

WHAT IS WEED WEAPON™?

Weed Weapon™ is the culmination of years of research and development in New Zealand and around the world. The cutting edge formulation combines a new, world leading active ingredient and some Kiwi magic to create the most effective weedkiller on the market. This new XPI™ Technology has a completely unique mode of action to other weedkillers (glyphosate).

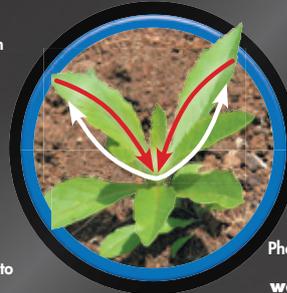
Weed Weapon™ kills:

Grasses and broadleaf weeds like oxalis, dandelion, thistle, dock, clover, fennel, hemlock, onehunga, chickweed, speedwell, daisy, geranium, mallow, ivy, ragwort, bindweed, nettle, plantain, inkweed, willow herb, wild herbs, pennyroyal, henbit, hypericum, vetch, lucerne, lupin, trefoil, milkweed, wild brassica, forget-me-not, borage, groundsel, catsear, oxtongue, wild parsley, wild carrot, hemlock and more.



XPI™ formula moves rapidly up and down the plant causing the membranes of cells in treated weeds to breakdown, allowing water to leak out of cells. The glyphosate can then enter the cells more easily, **killing** the entire weed **faster**.

- ① XPI™ breaks down cells faster, allowing glyphosate to enter.
- ② Special formulation XPI™ rapidly spreads through the weed down to the roots.
- ③ Photosynthesis is inhibited, weed dies.



★ Visit our website for more gardening tips and information | kiwicare.co.nz

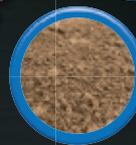
WHERE TO USE



WHAT TO KNOW



Replant in 5 days.



Biodegradable in soil.



Sprayed area safe for children and pets once dry.

KIWICARE®

Kiwicare, PO Box 15050, Christchurch, NZ

Ph: +64 3 389 0778

kiwicare.co.nz

KIWICARE®

WEED WEAPON™

★ DEAD TO THE ROOTS, DEAD QUICK™ ★



Protect

Winter 2014

Magazine of the New Zealand Biosecurity Institute Contents

Click on the item below to jump to the article.

NZBI Contacts4
From the Editor5
NZBI News	
Report from the Executive5
Like No Other: NETS2014 Taranaki6
A bellbird crescendo and other things: Top of the South field trip7
Northland / Auckland Branch update8
Institute trio addresses leaders at Primary Industry Summit9
Sector News	
Spread the message, not the disease: Partnerships raise dieback awareness ~ Rob Mouldey	...10
Call to watch out for myrtle rust	...11
Red-vented bulbul still at large ~ Elizabeth Brooks	...12
Minister backs science to produce Better Border Biosecurity (B3)	...13
Teaming up to help Hamilton Halo tui	...13
New containment lab for Wallaceville	...14
New signs used in nationwide campaign against Chilean needle grass	...14
DOC to strengthen procedures after 1080 dropped on track	...15
Giant rat caught on pest-free island	...15
Progress showcased at wilding summit	...16
DOC deals to wildings more effectively	...16
Biosecurity briefs	...17
Comment	
How long has didymo been in NZ	...18
Research	
Biocontrol research: What's new? ~ Hugh Gourlay	...19
Annual event a bonanza of biosecurity ~ Andrea Airey	...20
Scientists follow up chance mite find in battle against wasps	...22
From the Archives	
Level of non-membership 'amazes'	...23
The Tail	
1080 party proposed	...23



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

NZBI Contacts



Rebecca Kemp
President



Sara Moylan
Vice-President &
Lower North Island



Wendy Mead
Secretary



Randall Milne
Treasurer & New
Members Officer



Pedro Jensen
Immediate Past
President



Darion Embling
Central North
Island



**Lindsay
Vaughan**
Top of the South



**Ronny
Groenteman**
Canterbury/
Westland



Lynne Huggins
Otago/Southland



**Alastair
Fairweather**
Travel/Study Awards
Co-ordinator



David Brittain
Web Manager



John Sanson
Biosecurity
New Zealand

Executive Contacts

Rebecca Kemp	President	(09) 366 2000	rebecca.kemp@aucklandcouncil.govt.nz
Darion Embling	Vice-President & Central North Island	(07) 859 0790	Darion.Embling@waikatoregion.govt.nz
Sara Moylan	Vice-President & Lower North Island		Sara.Moylan@gw.govt.nz
Wendy Mead	Secretary		Wendy.Mead@waikatoregion.govt.nz
Randall Milne	Treasurer & New Members Officer	(03) 211 5115	randall.milne@es.govt.nz
Pedro Jensen	Immediate Past President		pedro@kaitiaki restoration.co.nz
Don McKenzie	Auckland/Northland		
Lindsay Vaughan	Top of the South	(03) 543 8432	lindsay.vaughan@tdc.govt.nz
Ronny Groenteman	Canterbury/Westland		groentemanr@landcareresearch.co.nz
Lynne Huggins	Otago/Southland		lhuggins@doc.govt.nz

Other Officers

Chris Macann	Protect Editor & Archives Co-ordinator	03 349 9660	chrismacann@hotmail.com
David Brittain	Web Manager		david.brittain@kiwicare.co.nz

Seconded Members

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

What does biosecurity mean to you?

Welcome to the winter issue of *Protect* magazine which comes to you at the start of Biosecurity Month. There are some interesting ideas coming from the branches this month for promoting the importance of biosecurity and reminding people about its meaning.

Homework for Biosecurity Month is to occasionally ask a few people this question: "What does biosecurity mean to you?" It will be interesting to find out what people not directly involved in the sector understand the

word to mean. Executive members recently promoted the work of the Institute and the sector at the Primary Industries Summit in Wellington. There is a report on that presentation in this issue.

I am looking forward to seeing many of you at NETS 2014 this month in Taranaki. I am sure, as the theme of Biosecurity Month and this year's conference suggests, it will be "Like no other".

Chris Macann
Editor



Report from the Executive

Kia ora and hello from the Executive

Winter has really set in for many of us after such a dry summer for much of the country. Members of the executive have been busy with a number of projects and as usual at this time of the year membership updates and end of financial year issues are all in the pipeline.

The Executive was invited to speak at the Ministry for Primary Industries Summit in Wellington at the end of May. Sara Moylan, Ronny Groenteman and myself shared a 50-minute slot on the morning of the second day of the summit. Our presentation covered the NZBI, current and future issues we see in biosecurity and the research associated with biosecurity in New Zealand. We did emphasise that the "biosecurity brand" is being lost in amongst other issues and was no longer prominent at a national level. We even featured in a write up in the *Sunday Times*.

As reported last quarter, the NZBI Executive made a submission in opposition to the Tomatoes New Zealand application for the importation and release of *Macrolophus pygmaeus*. The EPA received 34

submissions during the public comment period, 11 of which were in opposition to the application. At the public hearing held on March 17, Nick Waipara acted as the NZBI representative for our submission. I am happy to announce that the Tomatoes New Zealand application was declined. A huge thanks to Ronny Groenteman for the extensive work she put into our submission and to Nick Waipara for representing the NZBI so well.

July is upon us and Biosecurity Month is here. What we need you to do:

- Get out some great stories to the press about the fantastic work you do
- Use the Biosecurity Month banner where you can
- Showcase biosecurity

Our next Executive meeting will be at NETS2014 in Taranaki. The Executive is looking forward to Taranaki "Like No Other" and hope to see you there.

Nga mihi

Rebecca Kemp

President, NZBI
rebecca.kemp@aucklandcouncil.govt.nz

NZBI news



Like no other: NETS2014 Taranaki

NZBI Members will converge on Taranaki at the end of this month for NETS2014, July 30 to August 1 in New Plymouth

Speakers will take conference-goers across all fields of the biosecurity sector and field trips will showcase the biosecurity issues as well as the beauties in this large piece of territory on the west of the North Island.

Sessions covering weeds, vertebrates, marine, insects, aquatics pathways and responses will include presentations on camera traps for monitoring pest animals, an urban weeds programme, developing bird repellents to protect kea from 1080 operations, drones and other technological opportunities for biosecurity.

Local items from the host branch will include projects on developing Taranaki's Biodiversity Accord, The East Taranaki Environment Trust's "Purangi Kiwi Project", helicopter gunnera control on coastal cliffs, and an iwi-led project to return kokako to Taranaki.

Field trip opportunities will include visits to Rotokare Scenic Reserve, which is a forested hill-country catchment with extensive wetlands and a natural lake, coastal Taranaki, and Egmont National Park.

An opportunity to take part in a biosecurity incursion simulation is also available.

Keen shooters will again compete for the annual clay bird shooting championship plate.

The first stop for all fieldtrips will be an off-site demonstration of drone technology.

As well, a session on the NZ Biosecurity Institute's unique history will bring together some of the tales from the Institute's Oral History Project.

The conference will also hear about the generous work of the NEXT Foundation and its biosecurity efforts through Project Janszoon Trust and Rotorua Island Trust.

The annual gathering will, as always, be an opportunity to build biosecurity networks.

PGG Wrightson

GENERATION[®]
SMART BAIT FOR RODENTS

FATAL ATTRACTION for RATS and MICE

NEW ACTIVE, MORE ATTRACTIVE

Reggie the Rat™

15g Block Bait Soft Bait

Generation © Registered Trademark of LIPHATECH SAS. Block Bait: HSNO Approval Code: HSR100840. Registered pursuant to the ACVM Act. No V9597
Soft Bait: HSNO Approval Code: HSR100839. Registered pursuant to the ACVM Act. No V9587

Etec
CROP SOLUTIONS

NZBI branch news

A bellbird crescendo and other things: Top of the South field trip

Fourteen members of the NZBI Top of the South branch, which includes members from Marlborough, Motueka, Nelson and Tasman, assembled at the Port Nelson marina for the start of a field trip on June 6. They were guided by Barrie Forrest (Cawthron Institute), who talked about marine biosecurity, hull fouling, and marine pests. Barry is a scientist with a wide range of experience in marine biosecurity. Highlights included viewing a marina straddle crane which can lift out vessels of up to 50 tonnes for water blasting and cleaning, and the use of biocontrol agents to control biofouling using Cook's turban snails, kina and paua.

The second stop was at Tasman District Council in Richmond where Richard Toft (Entecol) provided a presentation on the history and future of biocontrol of wasps. Richard is an entomologist who was involved with wasp research in his early years with DSIR and Landcare Research. One of the more promising biocontrol agents is a newly discovered wasp mite.

The second presentation was by ornithologist Peter Gaze who described the pest control work being undertaken in the Abel Tasman National Park by Project Janszoon. Peter has previously worked for DSIR and DOC. Project Janszoon has been funded by philanthropists Neal and Anne Ploughman, with a contribution of \$3 million a year for the next 30 years. The project's vision is to restore Abel Tasman National Park's biodiversity by 2042, the 100th anniversary of the park and 400th anniversary of Abel Janszoon Tasman's visit. Predator trapping is well under way and the first aerial control operations will occur in a few months. Wildling pine control is also well under way, with funding from the Abel Tasman Birdsong Trust and other agencies. A major goal of Project Janszoon is the reintroduction of regional extinct fauna, commencing with the South Island robin and yellow crown parakeet. The project encourages partnership



Cawthron Institute's Barrie Forrest shows marine pests lurking beneath the marina

with schools which have adopted different parts of the park. There is also a Wi-Fi information service which provides project information to smartphone browsers within the park. The project is enlisting help from public, private and government organisations. Further information is available on the Project Janszoon website: www.janszoon.org/.

The third stop had the group viewing a mobile street spray unit used to spray roadside berms to slow the spread of Argentine ants through the suburbs. Contractor Steve Fryer has fitted a fixed spray jet and



Steve Fryer (in white overalls) shows how urban road berm ants are controlled.

NZBI news

a handheld spray gun to a quad bike with a 200 litre tank on a trailer. Steve is contracted by the council to spray council road reserves adjoining public roads in areas containing Argentine and Darwin's ants.

Stop four involved Will Rickerby, who has been controlling animal and plant pests in Will's Gully in the foothills above Richmond for the last 15 years. He started restoration planting once he removed the banana passionfruit, the old man's beard and the hawthorn. A bellbird crescendo of chatter showed how local biodiversity had been enhanced. This project is part of an extensive local network that provides a contiguous zone of treatment right back to northern Nelson. The recovery of bird life has been remarkable, with weka appearing in urban gardens and in places where they haven't been seen by older landowners. Will also edits a community trapping newsletter which includes articles and results from other conservation groups. The Richmond Hills Conservation Group's Newsletter is emailed to a wide range of recipients and provides valuable networking opportunities for the local conservation groups.

The AGM on the same day confirmed Lindsay Vaughan and Ben Minehan as Chairman and Treasurer respectively.

Ken Wright



Will Rickerby, left, shows Rob Simmons, Ben Minehan and Lindsay Grueber the biodiversity recovery on the boundary edge of Will's Gully.

Northland / Auckland Branch update

The latest Northland Auckland Branch meeting and AGM were held on Wednesday, 4 June 2014, at the Wellsford Fire station. The meeting was a quiet affair owing to the multitude of coughs and colds going around at this time of year.

The meeting opened with an update on the recent application by Tomatoes NZ to the Environmental Protection Authority (EPA) for approval to import and release the mirid bug *Macrolophus pygmaeus*. The bug would be released as a biocontrol agent for white fly in commercial glasshouses. The application was opposed by the NZBI with a verbal submission made by NZBI member Nick Waipara on the Institute's behalf. Other submissions opposing the application were also made by other NZBI members representing their organisations. Some members may recall that MAF (now MPI) successfully prosecuted several people in 2009 for illegally importing and releasing this organism. The EPA declined the application on the basis that *M. pygmaeus* is a generalist feeder and not specific to white flies. Additionally, on the evidence provided, the EPA could not be certain *M. pygmaeus* could not establish in the natural environment and create problems for native insects. The full decision can be read on the EPA website.

At the AGM, Nick Ward was elected branch chair for a second year. Robyn Kannemeyer was elected to be branch secretary for the second year as well. Robyn

would greatly accept any assistance if anyone has time to help out. Mary Stewart was elected to be the branch's Executive member to represent the branch at national executive level. Mary is a biosecurity officer for Auckland Council covering the northern region. She will be an excellent addition to the national executive.

In the absence of NZBI President Rebecca Kemp, Dave Galloway gave an update on recent NZBI Executive activity. This included a recent presentation to the Ministry for Primary Industries. During the presentation the NZBI Exec noted the loss of the "Biosecurity" branding that was prominent in MAF. A national biosecurity brand is considered important by the NZBI. The branch agreed that it would be beneficial if a biosecurity brand could be reinstated and encouraged the national exec to continue discussions with MPI.

The meeting was closed with an impromptu presentation by Nick Ward on the biosecurity risks posed by online trading of seeds. Nick had brought along some examples of seeds MPI had recently investigated including some ordered from a New Zealand-registered website, but sent from Greece, and some bought from overseas websites, but not declared. Nick also showed some other interesting items such as lollipops sold with scorpions in them.

The next branch meeting is due to be held in Northland in November 2014. All are welcome to attend.

NZBI news

Institute trio addresses leaders at Primary Industry Summit

Earlier this year Vice President Sara Moylan received an invitation from the organisers of the Primary Industry Summit, asking NZBI to present a keynote address. The brief was challenging: The Institute was given 45 minutes to speak about controlling New Zealand's biosecurity threats and was asked to cover:

- How detrimental had recent diseases and pests been for New Zealand's agribusiness, and what had we learnt from them?
- What were the biggest threats to biosecurity now?
- The expected impact on biosecurity in the primary industries of Government Industry Agreement for Biodiversity Readiness and Response (GIAs)

The Executive agreed this was an excellent opportunity to send a message to an audience of non-converted, although it was not entirely sure who the audience would be.

The Executive decided to split the presentation between three representatives:

- President Rebecca Kemp opened by explaining what NZBI was, what its joint mission stood for, how diverse the membership was and how well it represented the biosecurity sector. She gave examples of industry-related incursions, and how the co-ordinated approach of biosecurity providers across the membership was instrumental in finding solutions. Finally, Rebecca spoke about the loss of the biosecurity brand, and how primary industries should be worried about it.
- Vice President Sara Moylan described biosecurity in action. She gave examples of post-border biosecurity on the ground, linking its relevance to the primary industries. Sara spoke about future biosecurity

threats that were already here – “sleeper pests”, global warming and a lack of resource investment in education and post-border pest management research and development. She touched on GIAs, and ended with a call for the industry to help biosecurity on the ground.

- Executive member Ronny Groenteman focused on the role of science in biosecurity. Ronny mentioned the main science providers in biosecurity and presented examples of how science and research contributed to controlling existing biosecurity problems, as well as helping decision-making when new incursions were detected. Ronny also explained which important biosecurity research projects required extra funding from the primary industry sector and why. She also discussed how restructuring the governance framework around “de-newing” organisms would better enable management of new species incursions.

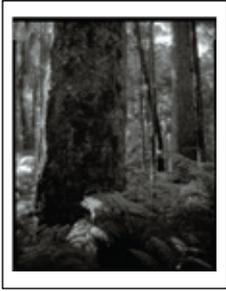
The audience was a group of about 40, mainly CEOs of various primary industries or associated industry representatives such as the CEO of Irrigation NZ, a stockmarket journalist and a university lecturer. Judging from the interest and questions, the NZBI speakers felt they pitched their presentation appropriately.

“It was good to see the message about the loss of the biosecurity branding got picked up by the media [www.stuff.co.nz/business/opinion-analysis/10103440/Primary-sector-confidence-high]. We hope the primary industries representatives in the room also realised the urgency,” Ronny said.

This overview was prepared for *Protect* magazine with the assistance of **Ronny Groenteman**.



Sector news



Trounson Kauri Park, 2002,
by Haruhiko Sameshima



Te Wai o Te Kauri, 2014,
by Charlotte Graham



IHI, 2014,
by Philip Kelly



Kauri Camouflage, 2014,
by Natalie Robertson



Cosmic Tree, 2014,
by Tessa Laird

Spread the message, not the disease: Partnerships raise dieback awareness

Partnering with businesses and community groups with vested interest in the environment and direct links to the public is an effective way to control kauri dieback. Rob Mouldey reports on initiatives of some members of the art community and the outdoor retail sector.

Kauri dieback disease has no known cure. The only way to counter this deadly disease is by containing it and stopping its spread to areas of healthy kauri. This means raising awareness among those who visit kauri forests so they take ownership of the issue and spread the message, not the disease.

The Kauri Dieback Management Programme (KDMP) recently partnered with Bivouac Outdoor stores to help spread the message of kauri dieback among their outdoor enthusiast clientele.

Bivouac's online blog, to which KDMP is a contributor, has an average monthly readership of 6000 outdoor enthusiasts, many of whom live in the kauri land region. Kauri dieback factsheets are also sent out with online purchases of relevant gear and a new initiative is being trialed selling cleaning kits directly to the public from Bivouac's four Auckland stores. The kits include a scrubbing brush, 500ml trigen spray and dirty gear bag. In-store signage will also help raise awareness of the disease.

The art community has also partnered with the KDMP through a new initiative called The Kauri Project, which is an ongoing programme to use art as a vehicle to raise awareness and promote understanding of kauri dieback disease. Co-curators Chris McBride and Ariane Craig-Smith are passionate about raising awareness of environmental concerns, in this case kauri dieback disease.

The first of the art projects is the Poster Series. Contemporary artists and designers Charlotte Graham, Philip Kelly, Tessa Laird, Natalie Robertson and Haruhiko Sameshima were commissioned to produce

new works addressing the social, cultural and historical value of the kauri tree in the face of kauri dieback.

Ongoing dialogue with the community both directly and through such partnerships is an effective way to stop the spread of kauri dieback disease. So let's get out there and spread the message, not the disease!

Visit www.kauridieback.co.nz for more information.

Funding announced

The Government announced in the Budget that it would spend \$15.8 million on operating funding and \$10.7m on capital funding over the next four years to protect New Zealand's kauri forests from the dieback disease.

The Kauri Dieback Management Programme, a partnership between the Ministry for Primary Industries (MPI), the Department of Conservation (DOC), Auckland Council, and the Northland, Waikato and Bay of Plenty regional councils, and northern tangata whenua, was set up with funding from June 2009 through to June 2014.

The 2014 Budget provides \$10.9m for DOC operational costs over four years, \$10.7m for DOC capital costs for tracks, boardwalks and hygiene stations and \$4.9m for MPI over four years for research and management tools, as well as surveillance and co-ordination of the disease response.

The funding will enable DOC to upgrade 100km of high-use tracks through kauri forests, construct 5km of boardwalks, and install more than 300 hygiene stations.

New funding of \$1.2m a year for MPI will go towards its leadership and management of the programme.

Sector news

Call to watch out for myrtle rust

Myrrtle rust is a serious plant disease caused by the fungus *Puccinia psidii* which affects plants in the Myrtaceae family. Myrtle rust cannot be eradicated unless it is seen and reported very early and is confined to a small area. Without your help and vigilance, it is anticipated it will spread through many of our offshore islands and much of New Zealand.

What species does it infect?

Myrtle rust will infect species in the Myrtaceae family, such as pohutukawa, rata, ramarama, rohutu, manuka and kanuka, and eucalyptus, guava and feijoa. It is native to South America, spread from a native species there to eucalypt forests planted in Australia.

The first signs of rust infection are tiny lesions or pustules, usually on young actively growing leaves and shoots. These lesions produce masses of bright yellow spores. Older lesions may produce dark brown spores, or a mixture of the two spore types. The disease can also attack the flowers and fruit of some hosts.

Spread

This rust is easily spread on plants, cuttings, on the wind, and through contact with people, birds, animals and insects. It is readily spread because it produces massive numbers of highly mobile spores – spores in such high numbers that they are considered a public nuisance in Australia as they cover and dirty people's washing! Myrtle rust is present on Australia's east coast and we expect it to arrive via a blustery westerly wind, on birds or insects blown or flown over, via trade items, or people.

Impact

Anything from plant death, to nothing. The impacts vary between species and even within species – we are still learning about this disease. But it has the potential to have devastating impacts on some iconic New Zealand species, not to mention industry.

What to do

If you suspect you have seen myrtle rust, do not touch it! If you can, take a photo and ring MPI's hotline – 0800 80 99 66 – as soon as possible. MPI response teams will collect it and send it to Auckland for genetic identification, and delimit the infected area. Do not be tempted to collect samples. Clean your equipment and gloves with detergent and water as soon as possible and change your clothes before going elsewhere. Wash these clothes and hats before wearing them again. It would also help us if you would regularly inspect myrtaceous plants in your garden or in the field, for signs of myrtle rust.



Red and yellow spores of myrtle rust on pohutukawa in Australia.

Photo: Dr Peter Wilson, National Herbarium of New South Wales



Yellow myrtle rust on Kermadec pohutukawa in Hawaii.

Photo: MPI

For more information contact the Ministry for Primary Industry, or Tony Beauchamp, Technical Advisor-Threats, Department of Conservation. Also see MPI's Myrtle Rust factsheet at: www.mpi.govt.nz/Default.aspx?TabId=126&id=1802

Sector news

Red-vented bulbuls still at large

Department of Conservation Partnerships Ranger Elizabeth Brooks gives an update on the hunt for the unwanted immigrant to Auckland

Ministry for Primary Industries (MPI), Department of Conservation (DOC) and Auckland Council are working together to track and eradicate red-vented bulbuls in the Auckland region, believed to have arrived by ship or yacht. They have been present in Auckland twice before and were successfully eradicated both times.

The response team believes at least five red-vented bulbuls were at large in the Auckland area, but they may now have spread their territory as the birds are quite mobile and have a recorded daily range of up to 15-20km. It is therefore imperative that the image of the bird gets out, and that sightings are reported immediately to the MPI Hotline – 0800 80 99 66. If possible, take a photo.

Our response team believes there are still red-vented bulbuls in Auckland but they've "gone to ground". This is what happened last time these birds were in the city, but we did eradicate them.

We are asking the public to continue to keep an eye out for red-vented bulbuls and to call if they think they see one.

No red-vented bulbuls have been seen for some months in the Auckland region, but having had confirmed sightings in three different Auckland areas, the incursion response partners still believe they are out there. It is unlikely they have died out naturally, as the climatic range of the bird, which originally comes from Asian countries such as Pakistan and India, is well within the New Zealand range.

Therefore, with winter here, it is time for increased vigilance. The red-vented bulbul, with its distinctive red tuft under its tail, is more visible in deciduous trees (where one was caught in Devonport last winter). And as other food sources become scarce, they may frequent garden bird feeders or eat other food – one was caught



Auckland Council and DOC are calling on the public to help track the red-vented bulbul from the Auckland region so the species can be eradicated.

eating from a cat bowl in the last incursion.

Red-vented bulbuls are a serious threat to New Zealand as they can cause significant damage to fruit and vegetable crops and are known to chase and attack other birds, and will compete with our native species for habitat. Orchid crop damage in Hawaii is valued in the millions.

Red-vented bulbuls are easy to spot. They are a medium-sized bird, about 20cm in length, about the size of a starling. They have a black head, a dark back, grey-white belly, and a distinctive crimson-red patch beneath their tail.

Their distinctive call can be heard at: www.biosecurity.govt.nz/pests/red-vented-bulbul

PROUDLY SUPPORTING

Biosecurity Month 2014

LIKE NO OTHER



New Zealand
Biosecurity Institute

Sector news

Minister backs science to produce Better Border Biosecurity (B3)

In May, Primary Industries Minister Nathan Guy addressed the Better Border Biosecurity (B3) conference. The theme was “10 years on – Adding Value to New Zealand’s Plant Biosecurity System through Research”.

In his speech he emphasised the importance of scientific research to back up biosecurity.

“We all have skin in the game” he said.

Below are some of some of his comments.

“Even if we completely stopped all trade to and from New Zealand, even if we halted all movement of people in and out of New Zealand – we still wouldn’t eliminate all risk.”

“We need to manage risks practically, and this requires new scientific knowledge to drive innovation and improvement.”

“New Zealand is a global leader in biosecurity and scientific knowledge is the basis of our biosecurity system.”

He said new technology had greatly improved our border security, and as examples gave X-ray scanners, molecular technology to provide rapid and accurate diagnostics, new methods for detecting fruit flies, and the use of modelling and statistical methods to improve our risk management and risk profiling.

He said B3 research links had already demonstrated their worth such as supporting the post-border fruit fly programme with advice on seasonality and the timing of surveillance, development of fruit fly risk maps, and providing scientific input during responses.

Another achievement of the B3 research programme had been developing DNA barcoding technology for diagnostics, allowing a radical step change in identifying insects, pathogens and other organisms where previously this was very difficult or impossible.

“MPI is now implementing this technology in its investigation and diagnostic centres.

“We are very dependent on science to help develop enhanced tools which can protect New Zealand without generating concern in the community.

“B3 has also helped MPI to explore and apply computer modelling for risk analysis, which has been very valuable.”

Minister Guy highlighted Challenge 5 of 10 national science challenges, in recognition of the crucial role of biosecurity:

“New Zealand’s Biological Heritage Challenge is being established and includes biosecurity outcomes which focus on preserving our unique biological resources.

Teaming up to help Hamilton Halo tui

At the end of May, Waikato Regional Council welcomed Hamilton City Council (HCC) as a partner in the popular Hamilton Halo project, which has been carrying out pest control to increase the number of tui and other native birds visiting and living in the city.

Under a new memorandum of understanding signed between the two councils and Landcare Research, HCC has committed to working with the regional council on control of rats and possums at high-value biodiversity sites around the city, such as parks and gullies.

“Over the past six years, our Hamilton Halo project has had great success in increasing the number of tui visiting the city during winter by controlling ship rats and

possums at eight breeding sites just outside Hamilton,” said regional council chairperson Paula Southgate.

In the early years of Halo, less than 40 tui sightings were reported in Hamilton. Last financial year alone there were nearly 1600 and surveys indicate increasing numbers of native birds generally at the Halo breeding sites.

Under the agreement, the regional council and Landcare Research will provide technical advice and support to the new Hamilton city and regional council pest control operations at the selected new sites, as well as continue their involvement in control at the existing Halo sites outside Hamilton.

Keep up to date with the latest Hamilton Halo news on Facebook: www.facebook.com/HamiltonHalo



Sector news

New containment lab for Wallaceville

Primary Industries Minister Nathan Guy announced in June that a \$65 million high-security biocontainment laboratory will be built at Wallaceville to replace the existing high-security laboratory.

It will continue more than 100 years of animal disease diagnostics at the site, the Minister said. "The existing laboratories and skilled personnel have an essential role in responding to disease outbreaks, protecting public health and providing international trade assurances about New Zealand's animal disease status.

"While these current labs have a good service record, they are now reaching the end of their design life. This new, fit-for-purpose laboratory facility will be equipped to current international standards, and have better capacity to deal with a large-scale emergency

situation, in the unlikely event one should occur."

The laboratory is designed to integrate two separate laboratories if New Zealand has a serious animal disease outbreak and maximum testing capacity is required to help manage the outbreak. Diseases that could be tested at the facility include foot-and-mouth, anthrax, *Brucella*, and avian flu.

"A world-standard diagnostic laboratory such as this is a necessity, not a luxury," Minister Guy said.

There are no live animals held at Wallaceville, and no live animal testing carried out there. This will continue to be the case when the new laboratories are built.

Preparative work is expected to begin on the site next month, with construction planned to begin early next year. International company Merrick will design the facility.

New signs used in nationwide campaign against Chilean needle grass

For the first time, biosecurity warning signs are now available for every farm gate in the country to combat the spread of foreign invaders such as Chilean needle grass.

The new signs, available free from regional councils in Canterbury, Marlborough and Hawke's Bay, are part of a public campaign to raise awareness of Chilean needle grass, which poses a significant threat to arable and pastoral farming.

Chilean needle grass is currently known to affect approximately 3700ha in the three provinces. It could infect an estimated 15 million hectares nationwide if measures to contain it are not carried out by landowners and visitors to rural properties.

As well as signs, the Chilean Needle Grass Awareness Programme campaign has moved online with a Facebook page (www.facebook.com/chileanneedlegrass) encouraging property owners to upload photos of signs nationwide, alongside a YouTube video demonstrating how to identify and eradicate the plant pest.

"We're hoping the campaign will go viral to raise awareness of how easily Chilean needle grass can spread and the measures farmers can take to protect themselves from new pests entering their properties," said Charles Wiffen, Parnassus farmer and Chair of the Chilean Needle Grass Pest Management Liaison Committee in North Canterbury.

Environment Canterbury, Hawke's Bay Regional Council, Marlborough District Council, and the Ministry for Primary Industries are working on the awareness



campaign with support from the Sustainable Farming Fund.

The farm sign asks visitors to contact the land occupier before entering the property and has a space for the land occupier to write their phone number.

This provides the land occupier with an opportunity to ask questions about the biosecurity status of any properties that visitors to their farm have visited and to check that their vehicles, machinery, equipment, clothing, and footwear are clean and free from soil, mud, and manure as well as seeds and other plant matter before allowing them to enter the property.

Sector news

DOC to strengthen control procedures after 1080 dropped on track

The Department of Conservation says it will put in place more rigorous processes for aerial 1080 pest control operations following an internal review of an operation in the Marlborough Sounds last November.

The pest control operation in the Tennyson Inlet area was carried out to protect the area's high-value native forest, at-risk giant snails and native birdlife.

The DOC review followed bait accidentally falling into an area of track that was excluded from the operation.

The review found people should not have been allowed on the track during the bait application given consenting authorities' expectation that the track would be closed to the public.

DOC North and Western South Island Conservation Services Director Mike Slater said DOC would be reviewing and improving its procedures for aerial pest control operations.

The review found staff carrying out the operation

had overlooked the requirement not to allow people on the track in a well-meaning attempt to address the concerns of a local lodge about the impact of closure of the track on its business.

The review concluded the detachment of a bait spreader bucket from a helicopter inside the operational area earlier in the day had contributed to the accidental fall of bait into the track area.

Worsening wind conditions were also a factor. It appeared baits were carried further than expected in the wind during the aerial application.

The pest control was carried out over about 4300ha of mostly DOC-managed reserves around Mt Stanley. Monitoring showed the operation reduced rat and stoat numbers to undetectable levels and possums to low numbers. Preliminary results from DOC research in the area show robin nesting success increased more than three-fold inside the operational area after the operation, from 22 per cent to 78 per cent.

Giant rat caught on pest-free island

A very large male Norway rat was caught and killed at the end of April on private land at the western end of pest-free Motuarohia/Robertson Island, in the eastern Bay of Islands.

Robertson Island is the western-most island of the pest-free archipelago making up Project Island Song.

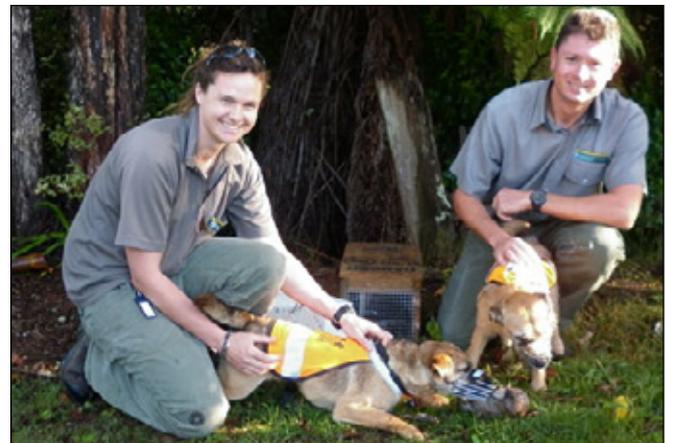
DOC Conservation Services Ranger Andrew Blanshard said: "It was an enormous animal, more than 400 grams. It was so large it couldn't get its body inside the trap tunnel."

Andrew and his rodent dog, Tike, had been hunting this rat for four weeks. "It's a huge relief that it has been caught. Although we don't know for sure, we suspect that the rat swam from the nearby mainland – the Russell Peninsula."

Thirty five rat traps in tunnels and the same number of tracking cards, also in tunnels, baited with peanut butter, were laid out, Andrew said. "Luckily, this rat liked the bait so we were able to lure him into a trap."

He said that the Opast summer had been a really busy pest-catching season with another Norway rat caught on Urupukapuka Island in March and a further rat flushed from bushes in early February. There were also two possible mouse sightings on Urupukapuka in January and February 2014 and mouse tracks seen in early May. "The rapid response team are at this moment tracking a mouse on the Poroporo Islands, just off Urupukapuka Island."

A biannual rodent dog check is carried out on



DOC Bay of Islands rodent dog handlers Ang Newport with Cody, and Andrew Blanshard and Tike, with the giant rat trapped on Motuarohia/Robertson Island.

the Project Island Song islands in May/June and September/October. An annual stoat dog check is also carried out.

Project Island Song is a partnership between Guardians of the Bay of Islands Trust, Te Rawhiti hapu (Ngati Kuta and Patu Keha) and DOC.

Eradication of rats, stoats and mice on Motuarohia, Moturua, Motukiekie, Urupukapuka, Waewaetoria, Poroporo and Okahu islands was carried out by DOC Bay of Islands in June 2009.

Sector news

Progress showcased at wilding summit

Land and managers from all over New Zealand met in the central North Island in April to discuss the control of wilding conifers.

Among them was Horizons Environmental Officer (Plants) Malinda Matthewson who joined members of both the National Wilding Conifer Management Group and Central North Island Wilding Conifer Group at a meeting in Rotorua to discuss the latest control methods, before heading out to look at wilding conifers on the Taupo Napier Road and on New Zealand Defence Force (NZDF) land in Waiouru.

"Many different conifer species were planted in the central plateau area from the 1930s by foresters hoping to find species that could survive the harsh conditions and produce quality wood," Ms Matthewson said.

"A few of these species, while not producing quality timber, grew well and proceeded to invade Tongariro National Park and surrounding private land. These escaping trees were recognised as a problem by the 1950s and by the 1980s control of wilding conifers was in full swing in the central plateau area."

Ms Matthewson said many millions of dollars had been spent on control since the 1980s, with control methods ranging from ground crews and volunteers cutting and pulling small trees, to the wholesale spraying and burning of large stands of trees on NZDF land by contractors.

"We were lucky enough to be escorted onto the

army training area to see the latest work by NZDF contractors controlling wilding conifers on defence land and hear about the unique challenges contractors face in an area where live firing and army exercises are routine," she said.

"Photos of how the army training area was in the 1980s were compared to what it is like now. While the war against wilding conifers has not yet been won there has been a huge reduction in wilding trees."

The group heard that the battle against invading trees has been helped by the development of "basal barking" which involves a contractor, either on the ground or in a helicopter, applying chemical directly to the bark of a tree.

"This method uses less chemical than a foliar spray and is much quicker than cutting a tree by hand or chainsaw. It also means land managers can treat more trees with the same amount of money, and are slowly turning the tide," she said.

"Visiting land managers from other parts of New Zealand were impressed with the scenery of the central plateau area and the work that has been carried out controlling wilding conifers. General consensus was that without the ongoing work of the many people involved in controlling wilding conifers, many unique landscapes in New Zealand will be changed forever by invasive exotic trees."

DOC deals to wildings more effectively

The Department of Conservation (DOC) completed in April, its annual weed control of invasive exotic trees in the Hunter Valley in the Hawea Conservation Park.

Biodiversity Senior Ranger Paul Hondelink has been spraying weeds since the beginning of DOC's wilding tree control operations in the Wanaka region in the early 1990s.

"The big advances in wilding pine control techniques such as boom spraying and basal bark treatment, has enabled us to achieve so much more", Paul said.

"The gains we've made in the headwater catchments of the larger valley systems and high-priority sites, mean we can broaden our wilding tree operations."

The Wanaka region DOC was proactive in the early days with managing wilding pines and other invasive plants. By the 1990s chainsaw teams of up to five people were dropped by helicopter to remove large mature trees. The helicopter would hover while the DOC worker would chainsaw the tree down, then be picked up and moved to the next tree in a method called "skid hopping". It was labour intensive but effective in removing big seeding trees.

"It was managed as a high-risk operation involving multiple staff, chainsaws, helicopters, long days and hard work on steep terrain," Paul said. "But it was worth it", as now most of the wildings in the priority sites are reduced to the odd seedlings treated by helicopter spot spraying. This technique is effective and efficient. Large areas can be treated over a short time with only one staff member required.

Fine tuning the treatment has meant a huge reduction in chemical required. Now trees are sprayed only on their stem/trunk instead of "foliage spraying" the entire tree. This new method means that 80 litres of chemical will last three hours of work rather than 30 minutes as was the case when foliage spraying.

The invasive species that are targeted include wilding pines, gorse, broom and buddleia, all of which if left would dominate the ecosystem and displace native flora and fauna. Without control the unique landscape of the Wanaka region would be altered dramatically within our children's lifetime.

The largest of the priority areas that are treated include the Pisa Range, Cardrona Valley, Matukituki Valley, Mt Alta and The Stack conservation areas.

Biosecurity briefs

Cuttings smuggler caught

The Ministry for Primary Industries (MPI) is investigating an air passenger it nabbed carrying two concealed plants in her shirt. Detector dogs sniffed out the plants on the passenger arriving from China at Auckland airport on May 22. The woman had rooted cuttings in a plastic bag hidden in her shirt sleeve and under a coat.

"It appears the cuttings were to be planted and that this was a deliberate attempt to smuggle risk items into New Zealand," said Craig Hughes, MPI's Manager, North, Passenger and Mail.

If prosecuted and convicted, the woman who carried the plants faces up to five years prison and/or a fine up to \$100,000.

Kiwifruit industry signs biosecurity partnership

The kiwifruit industry and MPI in May signed the first Government Industry Agreement (GIA) for Biosecurity Readiness and Response Deed.

The deed commits signatories Kiwifruit Vine Health (KVH) and MPI to work together on preparing for priority pests and diseases and on managing them if an incursion occurs.

MPI Director General Martyn Dunne said the GIA was important as it would give primary production industries a direct say in managing biosecurity risk.

Aucklanders keep an eye out for water hyacinth and salvinia

The Ministry for Primary Industries and Auckland Council asked Aucklanders in May to report any fresh sightings of two highly destructive weeds – water hyacinth and salvinia.

Both weeds are present in the Auckland region.

MPI Response Manager Emmanuel Yamoah said MPI and the Auckland Council have an eradication programme for the plants.

He said many home and farm ponds around Auckland have been cleared of the noxious weeds, thanks to calls from concerned owners and residents.

"Anyone who sees any of these weeds, or suspects they may be present, should report it to us on 0800 80 99 66. MPI contractors will visit the site and remove the weeds free of charge if they find them.

New inspectors and dog handlers

The Ministry for Primary Industries welcomed in June, 24 new quarantine inspectors and five new dog handlers at a ceremony in Auckland.

The new quarantine inspectors will be based at Auckland (15), Wellington (3) and Christchurch (6). Five new biosecurity detector dog teams will be split between Auckland (4) and Christchurch (1).

Primary Industries Minister Nathan Guy said the Ministry has recruited and trained nearly 125 new quarantine inspectors in the last 18 months.

"The new dog handlers put MPI on target to reach 40 dog detector teams this year," Minister Guy said.

MPI reports that it is also training additional dogs to operate in post-border operations.

Canterbury Regional Pest Management Plan expiry extended

Environment Canterbury announced in June that it had extended the Canterbury Regional Pest Management Plan 2011-2015 expiry date by 12 months.

The Plan will now expire on 30 June 2016, in order to permit Environment Canterbury to consider in its current review of the Plan the provisions of the National Policy Direction for Pest Management. The National Policy Direction is proposed to become operative late this year.

A proposed new Canterbury Regional Pest Management Plan will be notified before the June 2016 expiry of the current Plan.

Good pampas is dead pampas

New pampas growth in Taranaki, prompted a reminder in April to land occupiers that they must destroy all pampas on their property.

Both common pampas and purple pampas are classed as "eradication pest plants" in the Taranaki Regional Council's Pest Plant Management Strategy.

Under the strategy, all common and purple pampas must be destroyed by the occupier of land where they are growing.

The council's Environment Services Manager, Steve Ellis, said pampas should not be confused with native toetoe, which has a waxy surface on the leaf base. Unlike toetoe, mature pampas plants have tightly curled dead leaves at their base."

Regional pest plans to be reviewed

Hawke's Bay Regional Council's biosecurity team is planning an early start to a review of the regional pest management plans.

Although the existing plans would have been reviewed by 2018, recent legislation changes have introduced new requirements to be included, such as considering what the council's role in regional leadership of pest management might involve.

HBRC biosecurity staff have already been discussing possible regional initiatives with the local horticulture, pip fruit and wine growing sectors ahead of the review.

New issues for consideration in the preparation of plan include the incursion of Argentine ants in Hawke's Bay over the past 10 years.

HBRC's role in marine biosecurity, a role currently not included in the Hawke's Bay pest management strategies, will also be considered.

Risk analysis conference

The Australian and New Zealand Chapter of the Society of Risk Analysis is hosting its "Risk Beyond the Numbers" conference at Massey University on 26–27 August this year.

A keynote speaker will be Professor Mark Burgman, Director of the Centre for Excellence in Biosecurity Risk Analysis at the University of Melbourne. He will describe the questions that decision makers must ask scientists when reviewing their information.

For information contact Naomi Cogger (N.Cogger@massey.ac.nz) or visit the conference website, www.sraanz.org.nz.

Waikato rates for national TB programme

Waikato Regional Council agreed in May to fund the national bovine tuberculosis (TB) eradication programme for one more year at the existing level of \$650,000.

In May 2012 the council decided to continue collecting the funds for the \$650,000 regional contribution to the programme for a further two years to give TBfree New Zealand time to find alternative funding mechanisms, rather than using the regional council as a collection agency.

Councillors said that rates were the wrong mechanism for funding the TB programme and that they looked forward to the outcome of TBfree New Zealand's review.

Comment

How long has didymo been in NZ?

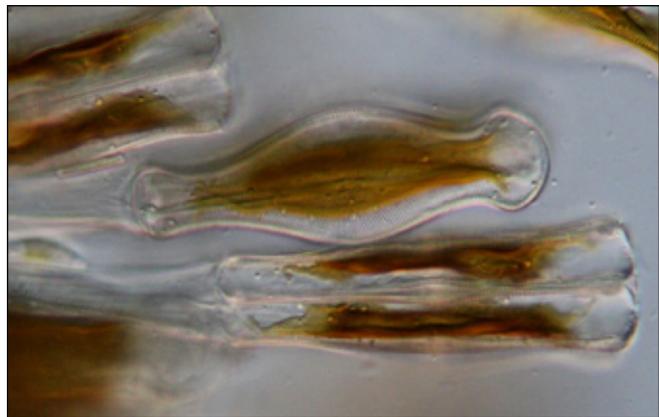


A paper by overseas researchers shows that didymo has been present for some decades (at least) in some overseas sites where it had been regarded as a recent invasion, only coming to prominence when environmental conditions become adequate. The authors stated that this was also probably the case in New Zealand. Phil Novis (pictured left) from Landcare Research at Lincoln explains why he is not so sure.

While the authors of the paper – Dartmouth College's Dr Brad Taylor and Environment Canada's Dr Max Bothwell – raise many sensible points (such as their commentary on response spending on didymo around the world), its historical presence and bloom formation in several continents, the ecology of its bloom formation, the limitations of current molecular evidence, and the potentially unacceptable nature of post-hoc control measures. However, their assertion that didymo is probably not a recent introduction to New Zealand is problematic. In my view, this is vulnerable to two potential errors: treating the dispersal of didymo like that of any other microbe, and treating New Zealand, with its isolation and human history, as a continental country.

“It is true that microbial biogeography – the study of distribution patterns of microbial species – is a minefield, because it is impossible to prove conclusively that a microscopic species is not present in a given country. However, didymo is unusual. It is a very large, easily recognised diatom, and paradoxically, given its nominally invasive status, it is known to be very sensitive to drying. This sensitivity precludes the long-distance dispersal that would have been required to transfer the species to New Zealand in pre-human times. Taylor and Bothwell concede that didymo has been known for some time in areas where it does not bloom. If it was not overlooked in those areas, why so in New Zealand, when widespread and extensive sampling of river periphyton has taken place here for decades?”

In response to Taylor and Bothwell's commentary on the apparent length of time for didymo to arrive in New Zealand, I suggest that it was (again paradoxically) a



For Phil Novis, Taylor and Bothwell's assertion that didymo (a magnification of which is pictured above) is probably not a recent introduction to New Zealand, is problematic.

reasonably difficult thing to achieve, thanks to its drying sensitivity: an exceptional event. Once here, it was able to rapidly transfer between adjacent catchments, probably using a variety of vectors.

“Finally, Taylor and Bothwell's argument relies on South Island rivers having only recently attained the low levels of phosphorous needed to support didymo blooms. I think it's unlikely, and other New Zealand scientists also made this last point with some authority. What is referred to as a 'bloom' of didymo is different to the phenomenon that 'bloom' usually refers to. In didymo, it is massive stalk production rather than cell division. This stalk production is thought to be triggered by low phosphorous (although some remain unconvinced about this).”

References

Taylor, B.W. and Bothwell, M.L.; *The Origin of Invasive Microorganisms Matters for Science, Policy, and Management: The Case of Didymosphenia geminata*

BioScience (2014) doi: 10.1093/biosci/biu060 First published online: May 7, 2014

<http://bioscience.oxfordjournals.org/content/early/2014/05/08/biosci.biu060>

Research

Biocontrol research: What's new?

Hugh Gourlay does a round-up of weed biocontrol projects at Landcare Research



Left, *Dolerus aericeps*, and above, *D. pratensis*

Field horsetail (*Equisetum arvense*): We are expecting a new shipment of insects from CABI UK in mid-June. This will include the sawfly, *Dolerus aericeps*, and more shipments of other potential insect agents are expected later this year.



Limenitis glorifica

Japanese honeysuckle (*Lonicera japonica*): We are continuing to try and rear the longhorn beetle, *Oberea shirahatai*, on artificial diet in our containment facility at Lincoln. Once we are sure we can rear this beetle successfully, and funds permit, an application for release will be prepared. Our colleagues in Japan are going to collect white admiral butterflies, *Limenitis glorifica*, from the field and attempt to hand pair them there in the hope of obtaining lots of eggs to send to us later in the year. If this is unsuccessful we will travel to Japan in September and field collect eggs and adult butterflies to bring back into containment with the aim of direct releasing pupae



Oberea shirahatai



Allotalata sp.

and/or adults into the field if they are disease-free. The shoot-tip-feeding moth, *Allotalata sp.*, still needs further host testing. We will do more work on this species when funds permit.

Old man's beard (*Clematis vitalba*): I will be travelling to the UK in July and will visit the site on the Isle of Wight where our New Zealand native *Clematis* plants are growing as part of a field trial to assess the suitability of the bark beetle, *Xylocleptes bispinus* for NZ.



Xylocleptes bispinus

There was some concern that winter storms in the UK had destroyed the *Clematis* plantings but they appear to have survived after all. Host testing of the gall mite (*Aceria vitalbae*) is under way at the University of Belgrade in Serbia.

Privet (*Ligustrum sinense*): Routine testing has shown that the leaf-mining flea beetle, *Argopistes tsekooni*, in our Auckland containment facility is infected with a microsporidian disease. It is not yet clear whether we will be able to rid the beetles of the disease or will need to attempt to import a clean colony when funds permit. An application to release the lace bug (*Leptopypha hospita*) will be prepared soon.



Argopistes tsekooni

Tutsan (*Hypericum androsaemum*):

The biocontrol of tutsan project has had a further three years of funding confirmed from the MPI Sustainable Farming Fund, Landcare Research and the Tutsan Action Group. I will visit Switzerland and Georgia in June to collect two potential biocontrol insects for host testing in containment in New Zealand. Field work to look for additional strains of tutsan rust, *Melampsora hypericum*, capable of infecting New Zealand material will continue in the UK over the next couple of years including virulence testing of isolates from Georgia.



Melampsora hypericum

Research

Annual event a bonanza of biosecurity

More than 100 people from about 40 organisations attended the Annual Biosecurity Bonanza in Auckland at which Landcare Research presented its latest biosecurity research to stakeholders. Andrea Airey summarises the day's presentations.

To set the scene, Andrea Byrom, the portfolio leader for Managing Invasive Weeds, Pests and Diseases, highlighted the increasing emphasis on national collaboration through the National Science Challenges.

Andrea also outlined recent achievements such as developing biocontrol for aquatic weeds, discovery of a bat *aphacoronavirus* and a mite attacking wasps, ongoing support for the Predator Free NZ concept, new forms of science extension such as the *Ora!* and *Possum Stomp!* games as well as the more traditional newsletters, gaining a better understanding of community engagement in relation to issues like aerial poisoning, achieving TB-free status over a larger area faster than expected, improved ability to predict mast events and understand impacts of climate change, plus new funding for *Phytophthora* research announced in the Government Budget.

Concurrent sessions covered a wide range of topics:

Safety of weed biocontrol agents

Quentin Paynter kicked off the weed biocontrol talks and demonstrated the prototype risk assessment tool he has developed to assess the safety of weed biocontrol agents that show potential to attack some non-target plants during safety testing.

Tradescantia biocontrol promising

Simon Fowler gave an overview of the *Tradescantia* biocontrol programme, explaining that three promising species of beetle have now been released and appear to be establishing.

Broom gall mite

Zhi-Qiang Zhang spoke about the food web inside broom galls formed by the broom gall mite. A suite of pathogens, fungus-feeding mites and predatory mites can be found inside the galls. Fortunately the predators do not seem to significantly impact broom gall mites, which are beginning to heavily damage broom at some release sites.

Privet biocontrol

Chris Winks explained progress in the privet biocontrol programme with the first agent, a lacebug, ready to be put forward to the EPA for approval to release.

Tutsan agents

Hugh Gourlay talked about biocontrol for tutsan, and plans for the second phase of this project now that funding has been secured. Two agents will be shipped to New Zealand for safety testing shortly, and further efforts made to look for isolates of a rust that is effective against North Island tutsan populations.

Unknown plant pathogens

Bevan Weir spoke about the difficulties faced when unknown plant pathogens were discovered in NZ and need to be identified. He explained how LCR assisted in this regard when PSA was found on kiwifruit, and how he has used our collections to search for possible biocontrol agents for PSA.

Bioherbicide for willows

Stan Bellgard shared progress towards developing a bioherbicide for willows based on silver leaf fungus in areas where there are sensitivities about the use of chemical herbicides, such as beside drinking water reservoirs. Both "cut stump" application and "drill and inject" methods work for fungal products and it is hoped funds can be found to undertake the remaining work required to get this product to the market.

Pre-emptive biocontrol

Ronny Groenteman explained pre-emptive biocontrol against insect pests that are likely to reach New Zealand, such as the glassy-winged sharpshooter. It is possible and more cost effective to develop agents and have them ready to go once an incursion is detected and deemed un-eradicable.

Wasp control

Darren Ward spoke about options for improving wasp control, a hated pest that is likely to get worse with the establishment of the giant willow aphid. Darren said biocontrol was the only option for widespread suppression of wasps, with several options to explore, supported by rapid knockdown through poison baiting in key areas.

Molecular tools

Gary Houlston outlined how molecular tools could be used to accurately identify organisms, determine

Research

if managers are dealing with one or more individuals (as in the case of rodents and island eradications), determine the origin of organisms, what killed them, what were they eating before they died, and to quantify which populations of valued native biota should be prioritised for restoration.

Cameras and ship rats

Auckland University PhD student Helen Nathan, (co-supervised by Bruce Warburton and James Russell) spoke of using cameras to monitor encounter and interaction rates by ship rats with tracking tunnels, snap traps, and bait stations. Her video footage kept the audience spellbound.

Forecasting ‘mega masts’

Roger Pech explained our ability to forecast masts and “mega masts” that will generate rodent outbreaks in beech forests. Working with colleagues from NIWA, Roger and Mandy Barron predict that mega-masts – highly synchronised seeding events occurring across a large portion of South Island beech forest – will occur more frequently in the next 100 years under IPCC scenarios. This has major implications for DOC’s expenditure in mega-mast years: the 2014 “Battle for Our Birds” is a case in point, with an extra \$21 million expenditure by DOC to combat the problem.

Stoats in the presence of larger predators

Patrick Garvey, a PhD student at Auckland University co-supervised by Roger Pech and Al Glen, spoke about the importance of understanding the behaviour of predators such as stoats in the presence of larger predators such as feral cats and ferrets. When the larger predators are removed during control operations, stoats become more active, potentially posing a bigger risk to native biota than when cats and ferrets are present.

Camera traps

Al Glen shifted the focus to tools for monitoring invasive mammals. He presented the results of a trial comparing different types of trail cameras (“camera traps”) used routinely in wildlife studies to determine the presence or abundance of invasive mammals. These cameras are popular and are used by staff in DOC and regional councils because they are cost effective, but he said factors such as trigger speed, use of infra-red or white-light flash, and other features all needed to be taken into consideration when buying cameras.

More virulent RHD

Janine Duckworth shared recent progress in rabbit biocontrol, with the search for more virulent strains of rabbit haemorrhagic disease (RHD) that is occurring on both sides of the Tasman via a joint CRC project with CSIRO. Janine and colleagues have discovered several potential strains of the virus that may be worth further investigation, but the presence of benign strains of the virus also poses some challenges for its use in “re-seeding” the disease into wild rabbit populations.

Possums in drylands

Carlos Rouco updated us on his work investigating the movements and habitat preferences of possums in drylands, which is helpful for spatially targeted control of possums in the vast landscapes.

‘Ghost Hosts’ of bovine TB

Graham Nugent spoke about ‘Ghost Hosts’ of bovine TB – species such as long-lived feral pigs and deer that can potentially carry the disease around with them for up to 15 years even if TB has been eradicated from possums in the same area. When an infected individual finally dies, it can be scavenged by possums and the cycle begins again. Graham highlighted the need for continued vigilance and surveillance of the disease status of Ghost Hosts.

Virtual Herbarium and other new tools

Murray Dawson demonstrated new tools such as the Virtual Herbarium, where all New Zealand’s digitised plant data can now be found; the merits of Naturewatch; eFlora online; and interactive plant keys which are being turned into phone apps.

Engaging communities

Bruce Warburton, speaking on behalf of Alison Greenaway, explained progress in Alison’s social research engaging stakeholders and communities in controversial pest control activities such as aerial poisoning.

Social possums

Carlos Rouco returned to present work by himself and Dan Tompkins investigating rates of social contact among possums and the effect this has on TB transmission. This information is crucial for understanding disease transmission among individuals, yet surprisingly for such a well-studied beast, no information has previously been collected. They found some possums were very social and some were not, but being social did not increase the rate of TB transmission.

Thermal imaging of possums

Bruce Warburton presented results of a review of using thermal imaging for detecting possums and other vertebrate pests. Bruce showed that the latest technology can effectively detect possums and now, with digital data capture, software can be developed to electronically scan the video images to find the frames that have animals present.

Species-specific toxins

Brian Hopkins, who showed that novel, species-specific toxins hold definite promise as pest control tools of the future, with rat trials looking promising. Brian highlighted the potential of “genome mining” to discover genetic receptors for other such novel compounds, a platform that could be used for a range of pest mammal species worldwide.

Research

Scientists follow up chance mite find in battle against wasps

Researchers have begun investigating a promising new biocontrol agent that could affect European wasps.

Two species of European wasps, *Vespula germanica* and *Vespula vulgaris*, are significant environmental and economic pests in New Zealand. The wasps have a direct effect on industries such as beekeeping (by raiding bee hives, robbing honey and preying on bees) and wine growing (through feeding on the grapes). Wasps also affect birdlife by eating honey dew and insects that native bird species rely on and of course, they also pose a serious health and safety hazard.

Pest wasps are widespread throughout the country and in some areas nest densities can reach 30 nests/ha, with many thousands of wasps per nest.

During a study on the chemical ecology of European wasps, researcher Bob Brown serendipitously discovered mites on the wasps. The mites appeared to attach to wasps with their mouthparts and were located in areas difficult for the wasps to groom. Wing deformation was apparent in infected wasps, and heavily infected wasp colonies collapsed.

"These findings encouraged us to reinvestigate a biocontrol programme for wasps in New Zealand, and pursue this potentially promising mite-agent," said Ronny Groenteman, a Landcare Research scientist.

A community-led group was formed which, in April received Sustainable Farming Fund (SFF) support to start the research project.

Ronny said the first step of the project was to identify

why the mite was not already providing biocontrol and develop methods to ensure it can.

Further steps will ensure the mite is damaging to both the German and the common wasps, and that it is not going to pose risk to honeybees, bumblebees and native bees.

"If we find that the mite is not a good biocontrol candidate, this is equally valuable information and will allow further research to focus on identifying potential biocontrol solutions from the wasps' native range," Ronny said.

The wasp problem in New Zealand is now too large for a single control method to resolve. The methods currently available can provide temporary relief across small areas. Current methods are not suitable for providing ongoing control of wasps across very large areas because they require repeat applications across difficult terrain.

Biocontrol is a highly desirable option for wasps because it is a long-term, self-sustaining and highly cost-effective solution, and because agents are active over large areas and in inaccessible terrains.

"While biocontrol agents introduced to New Zealand 30 years ago failed to control wasps, this mite could be playing a different game, and it is already here and established. We are convinced that investigating its potential is the prudent thing to do," Ronny said.

Chairman of the *Vespula* Biocontrol Action Group, Bryce Buckland, is optimistic about the project.

"It's certainly a promising lead that we'd be prudent to chase, he said.

Continued from p21

Moving biosecurity to the next level

A panel discussion considered "What science, information and tools do we need to take biosecurity in New Zealand to the next level?" Themes that emerged were: that people are both the problem and the solution, and that we need to work together to build stronger relationships and collaborations throughout the biosecurity sector. New tools are needed, along with increased emphasis on best practice. We need to be clear about outcomes, prioritise better, determine when management actions are not working and when to cease control.

Holistic focus

Our recent emphasis on a more holistic focus on landscapes/ecosystems in many of our research programmes was endorsed, rather than the historic approach of tackling single pests in any particular location. There was robust debate about how best to influence politicians to support funding for biosecurity research, and about the role of scientists in advocacy. And there was widespread agreement that we needed to get better at telling biosecurity stories to the wider public via a range of traditional and social media.

From the Archives

Level of non-membership ‘amazes’

“I was amazed at the number of noxious weeds inspectors ... who are not members of the Institute...

Don't forget that the knowledge we have gained over the years through our own experiences would be quite an asset to any new inspector who has a big, problem area... Well, the chance is here now to grab these guys

and help them to control noxious weeds the same way as you do and perhaps educate them into the ways of the Institute.”

Editors Note

Noxious Weeds Inspectors Magazine

February 2, 1975

The Tail...

1080 party proposed

A political party is planned to try to have 1080 poison banned. Organisers are attempting to get 500 paid-up members in order to register as a political party. The Ban 1080 Party's website lists Nelson-based man Dave Hector as the party secretary.

PROUDLY SUPPORTING

Biosecurity Month 2014

LIKE NO OTHER



New Zealand
Biosecurity Institute