



New Zealand  
Biosecurity Institute

the magazine of the NZBI Autumn 2018

# Protect

ISSN 1175-043X



## inside

|   |       |
|---|-------|
| NZBI Contacts   | 2     |
| Editor's note: It is not easy for everyone to get up and tell     | 3     |
| From the President: The importance of science among other matters | 4     |
| NZBI News   |       |
| Christchurch's mini NETS  | 5-8   |
| The farm gate is the first line of defence                        | 9     |
| Sector news   |       |
| New virus strain released to fight rabbits                        | 10    |
| A third strain of rabbit calicivirus confirmed                    | 11    |
| Mycoplasma bovis eradication                                      | 12    |
| Great Willowherb: a new invasive in Canterbury                    | 13    |
| Surveillance finds exotic mosquito larvae                         | 14    |
| Briefs  | 14-16 |
| Feature   |       |
| Looking for biocontrol agents in Uruguay                          | 17    |
| From the archives   |       |
| Rude bits... and some things don't change                         | 19    |
| The Tail  |       |
| No shore leave for cockatoo                                       | 19    |



New Zealand  
Biosecurity Institute

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



# NZBI Contacts



**Darion Embling**  
President



**Rebecca Kemp**  
Immediate Past  
President & Auckland



**Sara Moylan**  
Vice-President &  
Lower North Island



**Alice McNatty**  
Secretary



**Jono Underwood**  
Vice President &  
Top of The South



**Alfredo Paz**  
Otago/Southland



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



**John Sanson**  
Biosecurity  
New Zealand

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

## Other Officers

|                     |  |             |                         |
|---------------------|--|-------------|-------------------------|
| <b>Chris Macann</b> | Protect Editor & Archives Co-ordinator | 03 349 9660 | chrismacann@hotmail.com |
|---------------------|--|-------------|-------------------------|

## Seconded Members

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

The New Zealand Biosecurity Institute can be  
found on the web at [www.biosecurity.org.nz](http://www.biosecurity.org.nz)





# It is not easy for everyone to get up and tell

I attended a one day mini-NETS in Christchurch recently. The intense single day format with on-site field displays worked well. It covered a lot of territory and it took members away from their valuable work for one day only.

**It is not easy for everyone to get up and tell colleagues how and why we do what we do.** This is why such events are so helpful, as is the annual NETS for presenters. Both are encouraging and enthusiastic confidence builders for all, particularly newcomers.

In this issue we learn that dogs are man’s best friend especially more so now that they are becoming adept a sniffing out pests—animal and plant.

Unmanned aerial vehicles and other clever technology also join the dogs as our best friends in the biosecurity business.

We also learn about ongoing actions at the border and after for repelling the persistent brown marmorated stink bug.

In the matter of old pests, a new strain of rabbit virus RHD has been introduced and a third, unplanned, strain has been detected.

As well, many members have been involved with the management of Mycoplasma bovis, and now it is certain that many more will become involved in a realistic attempt to eradicate it.

At least one of our members is on maternity leave. That wouldn’t get a mention back in the old days, chiefly because the situation wouldn’t occur. A read through early Protect magazines and its predecessor publications will show it was a largely male dominated business and the magazine’s content occasionally reflected that, as this issue’s clip from the archives will show.

Read on.

CHRIS MACANN,  
EDITOR

**X-TREE<sup>®</sup>**  
**WET & DRY**

- ✓ Flexible use with a range of treatment methods.
- ✓ Highly effective, convenient premix of BioDiesel + Herbicide + Penetrant System.
- ✓ Minimal environmental impact and maximum efficacy.
- ✓ A little goes a long way.
- ✓ Can be used on wet tree trunks.

**LOW ODOUR**

**X-TREE WET & DRY TREATED**

**Etec**  
CROP SOLUTIONS

X-Tree Wet & Dry is a trademark of Etec Crop Solutions Ltd.



## The importance of science among other matters

The Executive recently released a media statement in support of all our members working furiously to contain and now eradicate the cattle disease *Mycoplasma bovis*. It was picked up by a number of news outlets, in particular Radio NZ which began its interview with President Darion Embling, with a background story profiling the Institute.

At our last meeting by teleconference on 28th March, President Darion who has been managing the new website since its launch, reported that it is proving to be user friendly and easy to manage. A project to digitise all copies of Protect magazine has begun and we are planning for all these copies to be easily accessible on the new website.

Treasurer and Membership Officer Rebecca Kemp is standing down, and we are seeking expressions of interest for this role. This is a great chance to be a part of the NZBI Executive team. We thanked Rebecca for her invaluable service and for agreeing to remain involved in the meantime, to help a new person become familiar with this important role.

After seven years as the representative on the NZBI Executive for the Canterbury/West Coast branch Ronny Groenteman has stepped down. We thanked her for all of her hard work over the years and acknowledged the valuable contribution she has made to the committee. Her links with the scientific community have been particularly valuable. Mark Hansen who works for Ecology New Zealand Limited will replace Ronny as the Canterbury/West Coast representative.

With Ronny stepping down, President Darion noted that he felt there was no longer a strong link within the Executive with the scientific community. As a result, we are considering seconding a person who could represent the scientific community. A seconded member could be a good opportunity to formally bridge the gap between science practitioners and other members. The Executive already has seconded members representing Biosecurity NZ and the vertebrate pest communities of members.

Darion reported that the Biosecurity 2025 Skills and Assets Working Group is at the tail end of getting the Plan written.



*Darion Embling, President*

Among the working group's discussions was the possibility of internships within councils and other agencies, and how to retain such students. Darion represents the practitioners in biosecurity on the group and stressed that practitioners have a lot of knowledge that they would like the opportunity to share.

Registrations are now open for NETS2018 at the Rutherford Hotel in Nelson, 25th – 27th July. Biosecurity Week will be held in the week of the conference and as with past years, we encourage agencies to produce material on Biosecurity Week based on this year's NETS theme: Shining the Light on Innovation.

The Central Branch has begun plans to host NETS2019 in Tauranga. As well, the Canterbury Westland Branch has started considering venues for 2020.

The NZBI Executive Committee will next meet in Nelson on Tuesday 24th July on the eve of NETS2018.

Keep up the good work.

### THE NZBI EXECUTIVE



## Technology the way ahead but plenty of room for man's best friend

### Christchurch's mini NETS

AROUND 75 PEOPLE MET IN CHRISTCHURCH IN MARCH TO SHARE THEIR KNOWLEDGE AND EXPERIENCE.

PROTECT EDITOR CHRIS MACANN SUMMARISES THE EVENTS OF THE DAY.

It was clear early on that technology was definitely the way ahead, both in terms of ease of use and of cost. That the sky is the limit was a real, if not literal theme, with the growing use of aerial imaging and data collecting. As well, remote monitoring technology of traps was also a tool which was clearly the way of the future for bringing down the cost of control programmes. But the way forward lay not only with technology. It also lay with the use of dogs and the new understandings that dogs can pretty well sniff-out anything if trained appropriately.

Dog trainer Geoff Bowers, supported by rescue dog Nala at his feet, explained that dogs can do anything. He said there isn't much that dogs can't be trained to do. The real challenge and time involved is for humans to learn the signals to work with them.

Bridget Zoe Pringle from unmanned aircraft specialists Vector Charlie Charlie promoted the use of remote controlled aerial vehicles. At the moment the use of drones is restricted by the need to have the vehicle within eyesight at all times, although it is hoped that in the not-too-distant future suitably licensed drone pilots may be permitted to operate vehicles beyond line-of-sight. Zoe pointed out that a key factor in using drones for data gathering is managing the data and knowing exactly what you want. "There is lots of data," she said.

Jamie Burrows from technology company Encounter Solutions spoke about landscape scale wireless trap monitoring technology for pest control. He focussed on the cost-effectiveness of new technology with reference to the Hawkes Bay Cape to City predator

free community and landowner project which relied heavily on new technology and landowner support for its success.

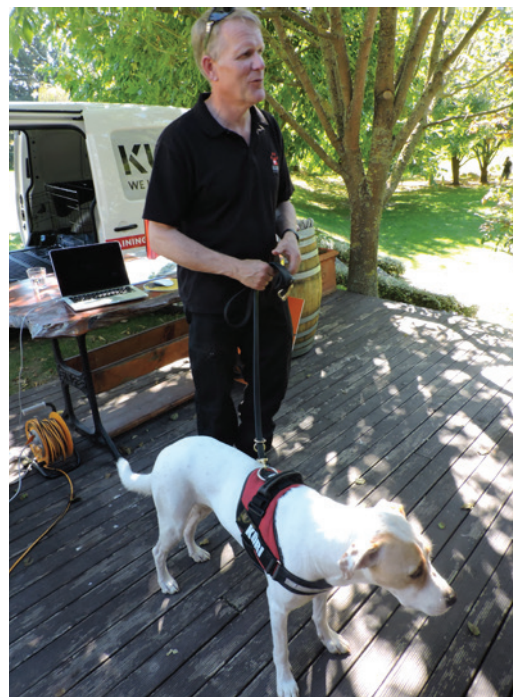
Principal biosecurity officer at Environment Canterbury Laurence Smith gave an overview of the council's pest strategy and the new measures to take pest management into the next ten years. Among the initiatives in the plan is consolidation of the council's pest management committees into about four.

He indicated particular pests of major interest in the region, among them spartina where 76 sites had been

located with control work being carried out with Christchurch City Council and DoC. Other pests of note were yellow bristle grass where there are two known sites in North Canterbury, and Chilean needle grass (CNG) in North Canterbury and West Melton just to the west of Christchurch. He said investigating pathways is the best way to detect CNG. Saffron thistle is also of note, and ever present Canterbury (and Marlborough and Hawks Bay) legacy pest nassella tussock continues to be a priority with searching targeted areas of vulnerable land. Wallaby control is a considerable cost as well as wilding pine control. He said significant maintenance funding will be required for wilding pines in the next two to three years. Velvet leaf is not in the plan as it is regarded as an industry issue.

He said working smarter is the way ahead such as using dogs to detect pests and biocontrol of nassella tussock and Chilean needle grass. He indicated investment in infra red detection was also likely.

At the very moment Laurence was speaking ECan staff were in the field distributing vials of the new strain of RHD.



*Dogs can do anything.  
Geoff Bowers with Nala.*





*Hunter by name, hunter by nature. Dave Hunter shows his wares*

Heather Pearson, Incursion Officer at MPI explained how brown marmorated stink bug was found in a concrete batching plant. Relating to other pests, she gave an example of a contaminated combine threshing machine which was found hosting 1211 seeds representing 19 species. 685 of the seeds were viable representing twelve species. She said although the machine had been cleaned the contamination was found in the componentry. She said a species of nematode was also found in the soil as well but it was one that was already present in NZ.

Di Anderson scientist at MPI contributed a session on post border management of the brown marmorated stink bug, where it seems to be "not if but when" for the persistent border breacher.

She explained diagnostic tools with an emphasis on post border control. For example finding out whether the bugs had mated and getting an understanding of the behaviour of the bug in the NZ situation. She said there is a training programme for dogs to sniff out the bugs.

Graeme Bourdôt explained AgResearch's thinking behind its ten year pastoral weed research strategy. In forming the strategy science and

pastoral industry representatives discussed what they viewed as upcoming issues. **Among the many suggestions for necessary future research, high priority areas identified were internal biosecurity, alternatives to herbicides, and herbicide resistance.**

Scion's Steve Pawson explained a new mobile phone app that would enable standardised reporting of weeds across regional councils, and by the public. He said it was a handy tool for surveillance and early detection. He commented that the intention was to drive the detection point as low as possible down the establishment curve to enable eradication.

Rowan Sprague from Lincoln University and Pete Raal from DoC summarised the challenges and opportunities of using remote sensing data to detect weed invasions. They suggested for effective monitoring, areas need to be resurveyed at least every three years.

ECan's Jason Butt and Helen Greenup explained the value of technology on verifying species new to Canterbury. Examples they gave were Landcare's Lucid Interactive Keys and Allan Herbarium. Examples of helpful websites were; NZ Flora, NZ Plant Conservation Network, Nature Watch and the GBIF (Global Biodiversity Information Facility).

Landcare's Ines Schonberger and Murray Dawson explained the Herbarium and the plant identification app. They described the identification service the herbarium provided.

"Were always on the lookout for fresh samples" Ines said.

"The herbarium has samples from Captain Cook's voyage and so **our collection stretches from 250 years ago to just yesterday,**" she said. She commented that the herbarium had velvet leaf samples from 1968.



Banks Peninsula-based pest operator Dave Hunter showed all the range of traps available including the good, the bad, and the banned. It was useful for planners, scientists and others not involved in practical field activities to see the traps in action. He also showed the range of baits and scents used. "I could eat that myself" was one comment from an onlooker.

Laurence Smith demonstrated the practical steps ECan's staff are taking to promote farm gate biosecurity. He said if the council expects landowners and others to practice good farm gate hygiene then it needs to show a good example. He demonstrated the vehicle cleaning kits in council vehicles. He said it was important to walk the talk. The council is also trialling a compound of paint to allow parts of the vehicle to be washed down easily and to discourage material sticking. **"It's pointless telling farmers if we're not doing it ourselves."** He said the council is also promoting the ideas to contractors. "Acting is way stronger than words."

A session each on the Huttons shearwater and endangered grasshopper *Brachaspis robustus* reminded all present why, among other things, we do what we do.

Ted Howard from Hutton's Shearwater Charitable Trust explained the life cycle and incredible story of the Hutton shearwater which only breeds in Kaikoura, and it's only two colonies as well as a man made one, and the difficulty getting to them. Their habitat is incredibly hard to see. The colonies are threatened by predators as well as deer scrambling over their habitat, and most recently by landslides. They are the only seabird to breed in an alpine environment. While there are still around an estimated half a million birds their population is declining fast. They also provide a major source of nutrients to the alpine environment. The birds winter-over in Australia and GPS tracking has shown they can fly the distance in three days.



*Laurence Smith promoting farm gate biosecurity*

Bob Brown from Landcare explained his research on biological control for wasps, using parasites which predominantly prey on similar species to those found in NZ, from Europe and the UK. Bob described in detail the gruesome life cycle and eating habits of parasites. "Not great if you're a wasp," he said. Research has a long way to go. Further study is needed of the insect's life cycle, mating habits and dietary requirements. Host testing will be needed to ensure the parasites won't affect New Zealand's bumblebees or honeybees.

Helen McCaughan from ecological consultancy Wildlands explained her experiences with pest fish particularly rudd in Christchurch's Travis Wetland. Rudd is the only pest fish in the wild in Canterbury. Her key piece of advice was to develop a consistent approach with catching the fish, in order to get the most reliable results of progress. She said the key was a structured five year netting programme to assess what works, rather than "throwing everything at it". She said October and April were key control periods according to rudd activity. Control was by netting in the evening. "Know your enemy, be systematic," she said.





Tara Murray with grasshopper friend

Tara Murray from Canterbury University explained the life challenges faced by the rare grasshopper *Brachaspis robustus* in the Mackenzie country. The grasshoppers, colloquially known as rock hoppers because of their preferred habitat, are endangered by predators and are being monitored (by transmitters fitted to them, complete with aerials) and moved to specially created environments away from the threat of predators. Tara said time will tell if predation from native birds will affect their survival.

Chatham Islands biosecurity officer Kerri Moir spoke of the work being done on the rabbit-free Chatham Islands. She said the Islands have very few predators and pests although gorse is a problem. Pitt Island has no rats but there are mice and Kerri has a rat dog for the Island. The Islands are also broom-free. Control of gunnera is being carried out on the Island. Other pests under various controls are swans, Canada geese, and goats although there is not a lot of them.

Kerri reported that the work associated with the Islands' recent wharf redevelopment was a biosecurity challenge. One aspect was that the barges

Threatened rockhopper  
*Brachaspis robustus*



bringing construction equipment had not been scraped of marine pests such as *Undaria*, club turnicate and Mediterranean fan worm.

The barges were sent back for treatment. Not much aggregate was bought in for biosecurity reasons so producing it locally which was a challenge.

Branch chair Gemma summarised the day.

"It's not easy to stand up in front of 70+ industry professionals to talk about your work, so thank you for volunteering. It wouldn't be much of a conference without you.

The format of a single day of presentations with accompanying field information stations on-site was an efficient way to share a maximum amount of information in a single day. It would not have been possible to host the gathering without the resources of Environment Canterbury.

The Canterbury-Westland Branch held its AGM at the end of the day returning Laurence Smith as treasure and Gemma Livingstone as chair. Laurence also agreed to take over the post of secretary until fresh nominations were received. Outgoing secretary Hannah Eastgate is now on maternity leave. The group thanked Hannah for her contribution, and thanked outgoing executive committee member Ronny Groentemann for diligently representing the branch for the past seven years.

It is Canterbury-Westland branch's turn to host the National Education and Training Seminar in 2020. The ball will begin rolling at the first planning meeting proposed for August 9th, 2018.



Pitt Island has no rats but there are mice



## The farm gate is the first line of defence

The New Zealand Biosecurity Institute prepared this article to coincide with the government's announcement on 28th May that it will attempt to eradicate the cattle disease *Mycoplasma bovis*.

The first line of defence against any biosecurity incursion is the farm gate. That's the message from key biosecurity interest organisation the NZ Biosecurity Institute.

Institute president Darion Embling said right now a significant number of his members are working on a variety of aspects relating to the outbreak of *Mycoplasma bovis*.

"The NZ Biosecurity Institute is asking everyone to support its many members involved in eradicating the disease," Mr Embling said.

**"We need everyone to be an ally in this,** particularly farmers and rural contractors."

He said farm gate biosecurity means paying special attention to all biosecurity risks when entering and leaving a farm.

He said every day his members fight to keep all unwanted organisms from harming the country's production sector, and its biodiversity. In most cases this involves controlling pests and diseases which are already here.

"But we can stop their spread," he said.

In relation to the present *Mycoplasma bovis* outbreak, Mr Embling said his **members are "out there" working really hard and doing their jobs extremely well.**

"Everyone has a responsibility to help them, and to ensure we are all heading in the right direction."

His message is: for everyone visiting farms to be aware what they may or may not be harbouring on themselves, their equipment, and their vehicles.

"Pathway is a term used frequently regarding biosecurity. It is just as it suggests—a pathway that pests can use to move about and spread," he said. In many cases pathways are on people or the equipment particularly equipment used outdoors. This is why vigilance is so important. We don't want any unwanted hitchhikers."

Mr Embling said **some of the country's most invasive plant pests have become life sentences for landowners.** Unlike bovine Tb or *Mycoplasma bovis*, which could be eliminated by slaughter if necessary, certain plants are here to stay and require constant control and vigilance. Some of the worst examples he mentioned are Chilean needle grass, velvetleaf, field horsetail and alligator weed.

"There's a large list but our best line of defence in most cases in this the farm gate," he said.

"As a country we have not managed to catch such pests at the border but at least we can manage their spread," he said.

The NZ Biosecurity Institute is the professional training and networking organisation for people involved in all aspects of biosecurity including pest animal and plant management, and border control. Its members work for research organisations, educational institutions, regional councils, government departments and private organisations. All are involved in protecting NZ from invasive species.

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

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



# New virus strain released to fight rabbits

A Korean strain of the rabbit killing virus known as RHD has been released in New Zealand.

In March and April Environment Canterbury released the new rabbit haemorrhagic virus disease strain into areas of the region with heavy rabbit numbers.

Most other regional councils are also participating in the release programme.

Environment Canterbury's regional biosecurity leader, Graham Sullivan said the release would reduce the significant impacts of wild rabbits, particularly in the southern part of the region. Of the 350 release sites, 100 are in Canterbury.

"The controlled release, using a high-quality commercially prepared product, is being undertaken in Canterbury now because research suggests this is the optimal time to increase the effectiveness of the virus," Graham said.

The virus, called RHDV1-K5, is a Korean strain of the lethal calicivirus already present in New Zealand that causes rabbit haemorrhagic disease (RHD).

Dr Janine Duckworth, leader of Landcare Research's rabbit biocontrol initiative, is providing science advice to the parties involved.

Scientists in Australia have tested lots of different strains and K5 is the one that looks the best. It could reduce rabbit numbers between 25 and 30 per cent," she said.

But she cautions K5 isn't a "silver bullet" to New Zealand's rabbit problem.

"It's hard to imagine there will ever be a silver bullet to eradicate rabbits," she said.

"However, the new strain of virus will provide farmers with a more cost-effective and efficient solution than strains currently in the field today.

"The first strain of RHD, which was illegally imported in 1997, had a "huge impact" but unfortunately an increasing proportion of rabbits have become immune to the disease," she said.



Historical reports suggest that had the disease been introduced legally at a better time, there may have been a more effective control of the population.

While K5 is expected to make a dent in rabbit numbers, Dr Duckworth did not believe it would make as big an impact as RHD did when it was first introduced.

"The K5 strain will be a boost to rabbit control by killing some of the immune rabbits," she said.

Dr Duckworth said in early May that it is still too early to tell what the impact of the release will be. "We haven't completed the post-release rabbit counts yet and although we know that the virus is killing rabbits at release sites, there are still a lot of laboratory analysis to be done."



# A third strain of rabbit calicivirus confirmed

In mid-May MPI announced a new strain of the rabbit calicivirus has been confirmed in a single wild rabbit found on a Marlborough farm.

This strain is not related to the one released in March or the strain introduced illegally in 1997.

The strain—called RHDV2—is widespread in Europe and Australia, but this is the first time it has been found in New Zealand, said MPI response manager John Brightwell.

“The virus affects rabbits and the European hare. It has no impact on human health or other animals, but we can’t rule out a potential risk to pet rabbits.

“We understand this will be worrying news for many rabbit owners, and we want to give people as many tools as possible to minimise the risk to their animals.

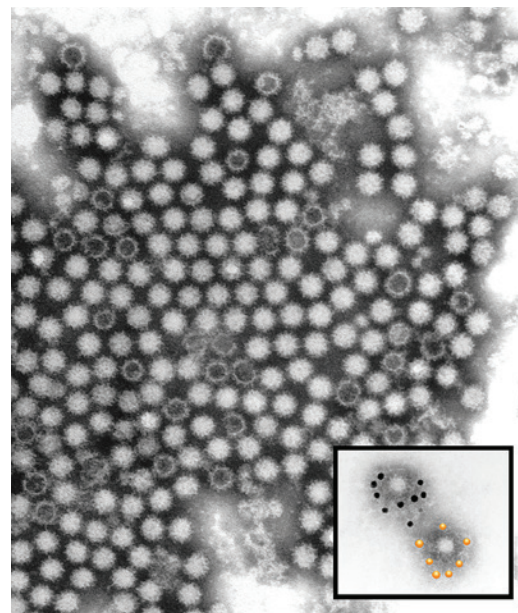
“As a precaution, we began work at the end of last month [April] to import the latest vaccine for the strain from France. We expect the first 1,000 doses to be in the country next week and are working with importers to secure a long-term supply.

“So far our testing programme has only identified a single wild rabbit but we know the virus spreads quickly. At this stage, we don’t yet know how widespread it is, or how long it has been in the country.

“We are working to answer both those questions but our key focus right now is to minimise the risk in front of us and support rabbit owners to take the right precautions, including making a vaccine available.

*“Because of the difficulties involved in pinning down a virus, we may never know exactly how it came into New Zealand and where it came from. However, we know that the strain was not brought in from Australia because it is sufficiently different from the RHDV2 strain prevalent there.*

*“We can also rule out that the new strain came in with the RHDV1-K5 strain which was released nationwide in a planned rollout through March and April because of extensive testing at the time.”*



A transmission electron micrograph showing rabbit calicivirus isolated from the liver of an infected rabbit. Image produced by Electron Microscopy Unit, Australian Animal Health Laboratory.



# Mycoplasma bovis eradication

The Government announced on 28 May that an attempt will be made to eradicate the cattle disease *Mycoplasma bovis* from New Zealand.

“We expect to do most of the eradication work in one to two years,” MPI said.

At this time (28 May 2018), **the disease is still not widespread** (37 infected farms and some 260 suspect farms out of 20,000) and **there is just one strain of the disease here**.

Prime Minister Jacinda Ardern and Agriculture and Biosecurity Minister Damien O’Connor said we have one shot at eradicating a disease that causes painful, untreatable illness in cattle.

The decision was taken collectively by Government and farming sector bodies after months of modelling and analysis to understand the likely impacts of the disease, the potential spread and the costs and benefits of eradication versus other actions.

“We have a real chance of eradication to protect our more than 20,000 dairy and beef farms, but only if we act now.

All decision-makers acknowledge that eradication of *Mycoplasma bovis* – which is possible because it is not widespread, **infected properties are all connected through animal movements** and there is just one strain of the disease out there—will be challenging and require collaboration.

“ We have a real chance of eradication to protect our more than 20,000 dairy and beef farms, but only if we act now.

~ Jacinda Ardern, Prime Minister ”

“It won’t work without farmer support. In particular **farmers need to be meticulous with animal movement records and the way they use NAIT**. We have already begun improvements to make it easier to use.

“*Mycoplasma bovis* is a difficult disease to diagnose and to control. For this reason, it is possible that at some stage we may have to let the fight go and learn to manage it in our herds.

“We have a set of reassessment measures that, if met, would prompt us to re-evaluate the plan. These include finding the disease is more widespread than our surveillance and modelling anticipates or a property is found that pre-dates the earliest known infection of December 2015.

“Spring testing this year will give us the opportunity to reassess the feasibility of eradication when results are in come February, as *Mycoplasma bovis* is at its most detectable after calving,” said Damien O’Connor.

The full cost of phased eradication over ten years is projected at \$886 million.





# Great Willowherb: a new invasive weed in Canterbury

Biosecurity New Zealand confirmed in early May that the invasive weed, great willowherb (*Epilobium hirsutum*), has been found growing in several areas in Canterbury. Great willowherb has not previously been recorded as present in New Zealand.

Initial discoveries occurred in and around the lake at Pegasus township in the Waimakariri District, and near the Kate Valley landfill, approximately 40km north of Lake Pegasus.

A field team is currently searching all likely places in the wider area to determine the extent of the incursion. To date, great willowherb has been positively identified at five sites.

Great willowherb is characterised by its aggressive growth, and there is concern it may crowd out native wetland plants. It can form dense stands, impeding water flow in waterways and wetlands. It may also spread to undisturbed damp areas and invade existing vegetation.

At present there is no risk to freshwater fish or agriculture.

John Brightwell, team manager, response at Biosecurity New Zealand, said that once the extent of the incursion is understood, officials will be in a better position to determine what response actions can be carried out.

"We're in the early stages of determining the severity of this incursion," said Mr Brightwell.

"Once we've determined this, we'll work closely with Environment Canterbury and the Department of Conservation to develop an appropriate response."

"It's extremely important that members of the public do not attempt to remove this weed on their own. They may mistake it for other, similar-looking native plants and, just as importantly, they may risk spreading the seeds."

Great willowherb is a flowering plant also commonly known as the hairy willowherb, or great hairy willowherb. It is a highly invasive weed in parts of North America and in Victoria, Australia. It is closely related to and sometimes mistaken for a rare, endangered native herb (*Epilobium hirtigerum*) that goes by the common name of hairy willowherb.

Overseas, great willowherb typically grows in wet or damp places without dense tree cover, up to 2,500m above sea-level. Common habitats include marshland, ditches, and the banks of rivers and streams. At this time of year, most of the flowers will be gone, and the plant will be partially covered in seed.

Great willowherb reproduces by wind-dispersed seeds and spreads by its thick rhizomes (underground stems). It tends to spread most rapidly in early autumn. The rhizomes can grow submerged in water or water-saturated soils, but can also spread into meadows and other upland areas.

### Other characteristics of great willowherb:

- grows up to 2m tall
- stems are erect and branched
- large, showy pink-purple flowers (3cm diameter) with white centres and notched petals
- leaves are opposite, lance-shaped, tooth-edged, and attach directly on the stem
- long, narrow seed pods split open to release numerous seeds with long white hairs.



Great willowherb found growing in Canterbury.



## Surveillance finds exotic mosquito larvae

In mid-March MPI’s National Saltmarsh Mosquito Surveillance Programme found several larvae from an exotic mosquito species, *Culex sitiens*, near the Kaipara Harbour.

Extensive sampling and trapping in a five-kilometre area around the initial find site found no other signs of the exotic mosquito. However, after returning to the initial find a few days later more larvae were found.

MPI’s incident controller Dr Catherine Duthie said the new find is not definite evidence that there is an established breeding population of the mosquito, but does make it more likely.

“We will conduct further intensive sampling in this area over the weekend in order to identify if there is a breeding population, and if so, how far it has spread,” Dr Duthie said.

“If there is a breeding population, it is likely that MPI will undertake a programme to eradicate the mosquito from New Zealand. MPI has successfully eradicated exotic mosquitoes in the past.”

Dr Duthie says MPI officials will have the necessary permissions to begin spot treatment when suspicious larvae are found as part of the sampling and trapping process.

“As sampling and testing are being conducted our field staff will treat any suspicious larvae with a product called Vektobac, which is an inert bacteria granule,” she said in mid-March

MPI is also investigating how the mosquito may have entered the country.



*Culex sitiens* [Photo MPI]

### Culex sitiens

*Culex sitiens* is widespread in Southeast Asia, the South Pacific and Australia. It is known to transmit diseases such as Ross River virus. However, this is not currently a risk for New Zealand as this disease is not present here. *Culex sitiens* may also be able to transmit Japanese encephalitis, but this has not been observed outside of a laboratory setting.



## Briefs

### Digital biosecurity officer starts at Auckland Airport

In February MPI announced that a digital biosecurity officer will help international visitors arriving at Auckland Airport.

Her name is Vai, which stands for Virtual Assistant Interface.

“The idea is for her to take some of the load off MPI officers during peak times by assisting staff with answering queries,” said MPI detection technology manager Brett Hickman.

“This is about using technology to allow officers to focus on their important role.”

Vai can answer simple biosecurity questions such as what items need to be declared for inspection and can provide help with directions around the airport.

MPI started trialling Vai in February in the airport’s biosecurity arrivals area to see whether she will become a permanent staff member.



“Vai uses a database of queries and answers that is constantly updated through her interactions. The technology behind her human appearance is similar to what is used in the gaming and movie industry.

“MPI is always looking for innovative ways, including emerging technologies, to improve the customer experience for arriving passengers and to increase their biosecurity awareness.”

Westpac’s Innovation Fund has supported the development of Vai.



## Sausage smuggler sent packing

Earlier this year a Belgian air passenger was forced to leave New Zealand after attempting to smuggle three sausages into Auckland.

MPI staff intercepted the sausages on Sunday after the passenger attempted to conceal them in a backpack when passing through biosecurity checks at Auckland Airport.

"One of our x-ray operators spotted the risk items. They turned out to be pork and salami sausages, both of which could have carried diseases with the potential to cause major harm to New Zealand agriculture," said Craig Hughes, MPI's north passenger manager.

The passenger was refused entry to New Zealand after the man admitted he intended to hide the sausages from biosecurity officials.

He confessed he was aware of New Zealand's strict biosecurity requirements," Mr Hughes said.



## Hefty fine for plant smuggler

An air passenger has been fined \$2250 for following his cousin's advice to smuggle plant cuttings and seeds into New Zealand.

MPI biosecurity officers found the plant material at the bottom of a chilly bin containing food. Two of the cuttings were Neem plants. The others were unidentified.

"The defendant told us he knew what he was doing was illegal. He said his cousin put the plants in the bin and told him to just try to get them in," said Craig Hughes, MPI Passenger Manager.

"It was a reckless action that deserved a hefty fine. In the past we have detected pests such as crazy ants, nematodes, taro mite and scale insects on plants from Fiji. We have also found several fungal diseases.

All plants legally imported into New Zealand must at least spend three months in quarantine and be treated with insecticide.

## Fourth bulk carrier ordered to leave New Zealand

Toward the end of February the Ministry for Primary Industries directed a fourth bulk carrier from Japan to leave New Zealand waters following the discovery of brown marmorated stink bug aboard the vessel.

The Glovis Caravel was ordered to leave New Zealand after the crew reported finding nearly 600 stink bugs, 12 of them alive, while the vessel was anchored near Auckland.

"Even though the vessel was sealed, we assessed the risk was too high for it to remain in New Zealand waters. It will now have to be treated off shore before it can return," said Steve Gilbert, MPI Border Clearance Services Director.

MPI has increased its border inspection and verification of bulk carriers arriving from Japan following a recent jump in detections of brown marmorated stink bug.

"We firmly believe our actions to date have prevented stink bugs from getting past the New Zealand border and welcome the support we have been getting from a range of industries."

## Further measures to protect kauri

Three measures that will strengthen efforts to save kauri trees from dieback disease were agreed by the Kauri Dieback Governance Group when they met earlier this year

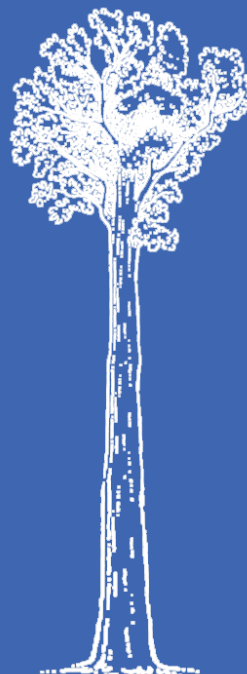
It was agreed to put in place a Controlled Area Notice (CAN) for kauri dieback, a National Pest Management Plan, and a Strategic Science Advisory Group.

"These new measures... are targeted at getting people to do the right thing and will strengthen efforts to manage the spread of kauri dieback," said Roger Smith, the Ministry for Primary Industries' chief operations officer, who chairs the governance group.

"The CAN cannot ban people from going into a particular area but it would put a legal requirement on them to follow the right hygiene standards when entering or leaving areas that have kauri."

The CAN should ultimately be replaced by a National Pest Management Plan (NPMP).

The third measure agreed was to set up a Strategic Science Advisory Group to ensure the fight against kauri dieback is supported by the necessary science and research.



## Pea weevil eradication on track

The Ministry for Primary Industries (MPI) and the pea growing industry are on track to eradicate the pest insect pea weevil from New Zealand.

The pest was first discovered in the Wairarapa in 2016 and has been subject to an eradication programme since then.

"Our trapping programme found only 15 pea weevils from 2 neighbouring sites this season. That is significantly down on the 1,735 pea weevils which were found across 11 sites last season. MPI response manager Nicky Fitzgibbon said.



"It's encouraging progress. We think that is largely due to the Controlled Area Notice currently in place which restricts the growing of peas in the Wairarapa up to Pahiatua. We intend to maintain these restrictions until we are confident that we can eradicate the pest from New Zealand".

"We understand the restrictions have had an impact on the pea growing industry and wider Wairarapa community and MPI would like to recognise their efforts and support.

"Growers have shown a great deal of flexibility by finding alternate crops to plant while we've been working to get rid of this pest and that support has been critical in our success so far."

## Machinery from Japan targeted

In February MPI announced it has introduced new measures to reduce the risk of brown marmorated stink bugs arriving in vehicles and machinery from Japan.

The changes required all used vehicles (cars and trucks) to undergo inspection and cleaning at an MPI-approved facility in Japan prior to export.

In addition, any used machinery or other types of used vehicles from Japan will require certification proving it has undergone cleaning by an appropriate provider, said Paul Hallett, MPI biosecurity and environment manager.

"Nearly 95 percent of used vehicles from Japan already go through approved facilities that are designed to eliminate the risk of biosecurity threats like seeds and hitchhiking organisms such as Asian gypsy moth. The requirement will now be compulsory for all imports. The changes will significantly reduce the chance of transporting dirty vehicles and machinery that could contaminate other cargo.

"The move is the result of an unprecedented spike in the number of stink bugs arriving at the border from Japan in bulk carriers."

MPI has already increased the level of inspection of arriving carriers and their cargo, including the use of fogging with insecticide to flush any insects out of confined spaces.

It directed four bulk carriers to leave New Zealand in February due to excessive contamination.

MPI will work with industry to develop longer-term options for reducing the biosecurity risk, said Mr Hallett.

"We are all keen to work together to consider solutions that avoid the need to turn vessels around at the border. This could include treatment prior to entering New Zealand waters or finding ways of fumigating the vessels here if any detections are made."

## Stink bug treatment for Italian shipping containers

In January the Ministry for Primary Industries (MPI) introduced new treatment requirements to stop brown marmorated stink bugs arriving into New Zealand in sea containers from Italy.

All sea containers from Italy now require treatment for the invasive pest before arriving in New Zealand or on arrival.

"The new measure is a response to the increasing number of stink bug detections MPI officers are making at the border in cargo from Italy," said MPI's biosecurity and environment manager, Paul Hallett.

Imported containers from Italy had previously been subject to auditing and inspection by biosecurity officers but did not require treatment unless they carried vehicles or machinery, or there was evidence of contamination.



So far this season [up to January 2018], MPI officers have intercepted more stink bugs from Italy than any other country (39 out of 80 interceptions). The largest single find involved 118 dead bugs in a container of machinery and parts.

The treatment requirements were due to last until the end February. They will be reviewed prior to the start of next season in September.



## Looking for biocontrol agents in Uruguay

Waikato Regional Council biosecurity officer Hamish Hodgson accompanied Landcare's biological control research technician Hugh Gourlay to Uruguay in search of some helpful allies in battle against the invasive mothplant. Waikato Regional Council is the lead applicant and major funder of Landcare Research's programme for the pest. Hamish reports on his adventure with additional commentary and photos from Hugh.

Travelling to Uruguay was an incredible opportunity. Beyond the fact of having never been to South America before, I was able to get first-hand experience of the process of collecting potential future biocontrols in a foreign country.

I found Uruguay to be a quiet, small and safe country with friendly people, despite the language barrier. It isn't as developed as New Zealand, but I got the feeling it is a place that is moving on an upward trajectory. It has lots of flat to rolling hills and what appears to be very fertile farmland as well as some good beaches.

**One of the curses of being a biosecurity officer is you tend to notice pest plants and it was very interesting to notice a lot of the pests in Uruguay are pests here also.** For example, plants like alligator weed, wild ginger, and lantana. It was also beneficial for me to see water hyacinth (*Eichhornia crassipes*) and salvinia (*Salvinia molesta*) growing. These are uncommon in New Zealand but have the potential to be significant pests.

It was a trip that wasn't without its challenges; the first being the language barrier. My limited, or almost non-existent, Spanish and Hugh's average knowledge of the language could have landed us in some sticky situations. However, with the help of our Argentinian colleague Solodad Villamil, **the unusual antics of inspecting roadside bushes for**



*Hamish searching a nightshade plant*

**beetles, which prompted a great deal of interest from locals, were easily explained.**

In addition to improving my Spanish slightly, I discovered the highs and lows that come with collecting biocontrols. **Firstly getting consent to collect biocontrols in another country and then to get them out of a country like South America and into New Zealand is not an easy process.** Nothing is guaranteed until it's happened.

In the first couple of days we looked at woolly nightshade up the coast from Montevideo near the famous beaches of Punta del Este. I could see just how effective a host of organisms were at attacking woolly nightshade. It was really striking to me how different woolly nightshade was in its natural environment compared to New Zealand. The plants are smaller, with far fewer seeds and much smaller leaves. **I was filled with optimism about the potential for more woolly nightshade biocontrols in future.**

The moth plant *Freudeita cupripennis* beetles and *Toxotrypana australis* fly's however proved slightly more difficult to locate. The first few days of looking for them were unsuccessful and it looked like they were not present which I found very disappointing, because we had travelled so far and knowing what an invasive pest plant moth plant is in New Zealand.





» continued

Therefore finding the beetles and flies present after a few days of looking was exciting and gave me empathy for how collecting biocontrols can be a bit of a roller coaster. The next challenge of keeping them alive until our return fell to Hugh. Eventually we were able to collect about 300 beetles, one female fly and 34 pupae for moth plant.

After all the collecting was done, Hugh and Soledad's flights home were a few hours before mine and I had the responsibility of bringing the collected beetles and fly pupae home. Two weeks work was in my hands and it was a relief when all my bags were checked in and then turned up in Auckland.



The stunning seed fly feeding on moth plant



It was thirsty work of course



A rust infected moth plant

## No place like home

And as is often the case there's usually "no place like home". After searching large swathes of countryside, it happens that some of the best specimens came from the local real estate office directly across the road from the hotel, as this abridged extract from Hugh's diary shows:

"We opened around 100 pods today but not one *Toxotrypana* larva, or anything in them. However, I collected some pods and stem material from my friendly Inmobiliaria (real estate agent) across the road from where I am staying and also picked two pods off the ground.

Two *Toxotrypana* larvae have emerged from one of those pods from across the road and they all look like healthy pods and plants. Anyway they will add to my meagre collection of *Toxotrypana*. They are really hard to find. My previous experience suggests that pods lying on the ground have *Toxotrypana* larvae in them but we can't find any pods on the ground at our sites except across the road from the hotel."



Hugh gets caught up in his work literally - a moth plant growing through a vicious rose hedge. Photo: Hamish Hodgson



## Rude bits... and some things don't change

- “ Some minor complaints arose out of the [previous] edition notably with reference to the funnies and rude bits. My humble apologies to any of you who were offended, but I believe the majority of the readers were not upset by the minor content. I am not a censor and I will continue to publish what I am sent from members...”
- “ And just harking back to Items for protect. I am particularly interested in receiving items from the earlier days of the Institute so if you can oblige I will try to start up a regular column of blasts from the past...”
- “ There is also interest in what the respective branches are doing so how about each executive member or secretary keeping me informed of branch happenings. A year between conferences is a long time to wait to find out what everyone has been doing.”

Editorial

Protect Magazine

Issue 12, October 1989

## No shore leave for cockatoo

A stowaway cockatoo from Brisbane has enjoyed a luxury cruise around New Zealand after biosecurity officials allowed it to stay on the vessel.

The cruise ship alerted the Ministry for Primary Industries (MPI) about the stowaway as it approached Milford in January.

“The only way for the ship to enter New Zealand was to have the bird euthanised or secured and bonded to the vessel,” said Andrew Spelman, MPI’s border clearance services manager.

The bird could have been carrying avian diseases with the potential to harm New Zealand’s native bird population.

Thankfully for the cockatoo (an Australian galah), it was able to be captured and secured in an unoccupied cabin where it was subject to strict conditions.

“We needed photographic evidence of its containment and the name of an officer responsible for looking after the bird. There was also a requirement for MPI officers to check on the bird and its containment facilities at every new port visit in New Zealand.

“The vessel operators have been very particular in following our directive, so we’re satisfied any biosecurity risk has been mitigated.”

The story looks like it will have an even happier ending after the vessel leaves New Zealand this week, said Mr Spelman. An MPI quarantine officer was able to determine the **cockatoo had a microchip that matched the number of a missing bird from Brisbane.**

“We have word from Australian officials that it can be reunited with its owner in Brisbane when it returns home, as long as it passes an examination by a departmental vet.”

