

Winter – 2013

ISSN 1175-043X

Protect



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:

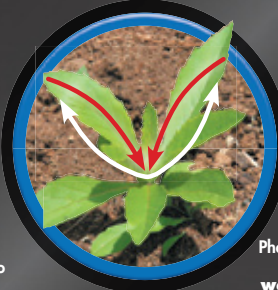
Grasses and broadleaf weeds like oxalis, dandelion, thistle, dock, clover, fennel, hemlock, onehunga, chickweed, speedwell, daisy, geranium, mallow, ivy, ragwort, bindweed, nettle, plantain, inkweed, willow herb, wild herbs, pennyroyal, henbit, hypericum, vetch, lucerne, lupin, trefoil, milkweed, wild 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

GARDEN BEDS

FENCE LINES

DRIVEWAYS & PATHS

AROUND ESTABLISHED TREES

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™ ★

Powered by
XPI™
TECHNOLOGY

Protect

Winter 2013

Magazine of the New Zealand Biosecurity Institute

Contents

Click on the item below to jump to the article.

From the Editor4
NZBI Contacts4
NZBI News	
Report from the Executive5
NETS2013 Update: Registrations promise busy conference5
Branch News: Low down on the Lower North Island6
NZBI Archives Project: Grant application successful7
News from the Ministry for Primary Industries	
Palm kernel rules to be tightened8
New agency to manage bovine TB8
Aucklanders urged to watch for invasive bird species9
Passenger declares horse tail at border	...9
Hornwort eradicated from South Island	...10
New staff boost border biosecurity	...11
Student declined entry after goods found	...11
Nabbed crabs snap back	...11
Industry News	
No fans for marine worms in Nelson	...12
Combined effort pays off in Coromandel	...12
The latest on the giant white butterfly eradication campaign	...13
More rabbits wanted! For the Rabbit Control Initiative, by Janine Duckworth	...14
Scorpion found during investigation into smuggling	...14
Funding boost for Chilean needle grass campaign	...15
Chinchillas not wanted	...15
Kauri deback awareness campaign targets Coromandel Peninsula	...16
Himalayan invader	...16
Public asked to grass on woolly weed's whereabouts	...17
Possum control stepped up Kapiti Coast	...17
Public has say on pest management	...18
The role of artwork in fight to protect kauri, by Jacqui Wairepo	...18
Research	
Feral pigs: Impact and management, by Cheryl Krull	...19
Funding support for NZ falcon research in Waikato forest	...21
Landcare Research work showcased	...22
Weedbusters: Group gets grant for riverside clearance	...23
The Last Word	...23

From the Editor

I look forward to seeing many of you at NETS2013 this year from July 31 to August 2. I am especially looking forward to the mobile conference room aboard the TranzAlpine train.

In this issue you will find stories about scorpions, snakes, chinchillas and crabs as well as the more common biosecurity offenders, old man's beard and possums.

There are also articles on the latest biosecurity research under way involving, among many others, stoat, possum and feral cat control and control of aquatic weeds, plus biosecurity measures for

protection of two iconic natives – the falcon and kauri. There is also mention of some encouraging successes, in particular the battle against Mediterranean fanworm in Waikato and Nelson.

Look out too for the item on mixing art with biosecurity as a means of raising public awareness, in this instance as a tool for acknowledging the plight of the kauri.

Best wishes
Chris Macann
Editor



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

Executive Contacts

Pedro Jensen	President		pedro@kaitiaki restoration.co.nz
Rebecca Kemp	Vice-President & Auckland/Northland	(09) 366 2000	rebecca.kemp@aucklandcouncil.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
Craig Davey	Immediate Past President	(06) 952 2800	Craig.Davey@horizons.govt.nz
Darion Embling	Central North Island	(07) 859 0790	Darion.Embling@waikatoregion.govt.nz
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

NZBI News

Report from the Executive

Kia ora and hello from the Executive.

The Executive is looking forward to another successful NETS this year from July 31 to August 2. I understand the registrations have now well passed the break-even point. It will be an interesting event on the move aboard the TranzAlpine train as well as in a part of the world where many members may not have spent much time before. Thank you very much Canterbury-Westland branch for the work you have put in so far.

I was pleased to report earlier this year that the NZBI was successful in receiving \$14,620, close to the maximum available funding, from The Lotteries Grants Board for our archives project. Well done all who were involved in that. It is a vote of confidence in the NZBI that the funding committee thought that

we have a significant history well worth recording. We look forward to seeing the project proceed over the next two years.

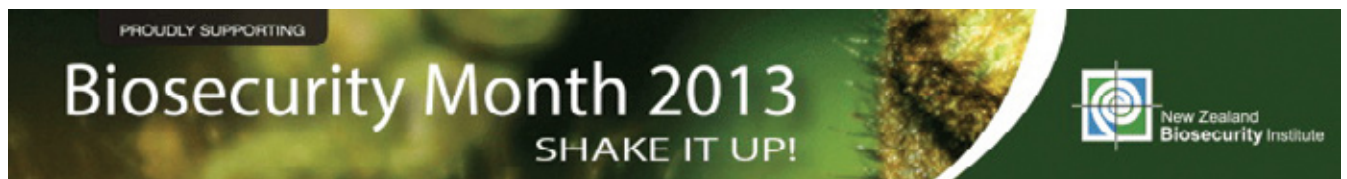
As this is the month of NETS2013, it is also Biosecurity Month. Keep an extra special eye out this month for opportunities to promote biosecurity matters and the NZBI. The NZBI website will have suggestions for highlighting our profession, and information on activities planned around New Zealand.

The Executive will next meet in Christchurch on July 30 on the eve of NETS2013.

Pedro Jensen

President, NZBI

pedro@kaitiaki restoration.co.nz



NETS2013 update

Registrations promise busy conference

The registrations for NETS2013 have been flooding in. In fact, we may have a new record for early bird sign-ups. So far more than 200 members, non-members, committee members, sponsors and guest speakers have registered.

So far we have three carriages on the TranzAlpine almost full, so it looks like it will be a well-attended NETS.

One major change to the programme is that the plenary speakers from Chevron Australia have advised that they are no longer able to present at NETS2013, and they apologise for having to pull out at such a late date.

Fortunately, their place is being taken by Darcy Oishi, Acting Manager for the Plant Pest Control Branch of

the Hawaii Department of Agriculture, who is braving the winter temperatures to fly in from Hawaii to join us for NETS2013.

Darcy will be presenting on island biosecurity of a different sort — that involved in the group of islands that make up Hawaii, which have unique biosecurity and biodiversity issues, but which are subject to the governance and laws of the United States of America as a whole.

If you haven't already, you can register online at <http://biosecurity.org.nz/nets/next-nets/>. Keep an eye on the NZBI website for updates.

Carolyn Lewis

NETS2013

Conference Organiser

Branch news

Low down on the Lower North Island

It's been a busy and interesting year with plenty of fantastic projects starting to show biodiversity benefits. As Campbell Leckie pointed out in his welcome to the branch AGM, we are dealing with rapidly changing technological and political landscapes.

While change improves our capabilities, capacity and efficacy, the constantly changing landscape with little or no increase in budgets (equating to an effective reduction) has meant that it has become increasingly difficult to make the dollars stretch. It is a credit to committed and passionate people in the industry that we are able to achieve so much for biodiversity in our region to the benefit of all New Zealanders. As you will see a lot of exciting work is being done, proving that just sometimes we may actually win! Here is a round-up from around the region of some of this year's highlights.

- **Hawke's Bay Regional Council** has continued its programme focusing on Argentine ants. As part of this work HBRC surveys all infestations and notifies affected landowners and occupiers providing education and control advice. Last year, a "Property Risk Tool" was created by Dr Richard Toft (Entecol Ltd) to enable HBRC to assess the risk of commercial properties transferring Argentine ants. The tool requires a site visit for visual examination and asking a few simple questions and has proved to be clear, concise, relatively swift, and easy to use with little ambiguity.

- **Pest plant officers in the Hawke's Bay** have been challenged by unique growing conditions resulting from last year's wet summer and this year's drought. Cotton and saffron thistles have been quite rare this season due to pasture not opening up, but next season is predicted to be bad for these weeds. Environmental weeds such as privet, old man's beard and Japanese honeysuckle have been particularly bad this season. A list of more than 300 privet complaints received over the Christmas period is now being steadily worked through this autumn. Taskforce (the new chemical for Chilean needle grass control) has worked reasonably well, apart from not being quite as selective as expected. Over time we will learn the best application timing for local conditions and will be able to get the most out of this chemical.

- **The Greater Wellington Regional Council** pest animal officers have had success with the annual aerial rook control programme. They are now a lot further down the track with their aim of eradicating

A lot of exciting work is being done, proving that just sometimes we may actually win



Hanging out on the job: Aerial application of bait for rook control in Greater Wellington

rooks from the region and had only 44 nests to treat this year, down from 98 nests in 2011 and significantly better than the nest count peak of 881 in 1994 when aerial nest baiting wasn't considered an option. Thanks must also be given to Horizons Regional Council for adopting aerial control after witnessing its effectiveness at controlling breeding rooks. The collaborative work with Horizons along the regional boundary has stemmed the tide of re-invasion southwards.

- **Greater Wellington pest plants department** has been focusing on promoting machine hygiene to stop the spread of aquatic weeds between catchments. The organisation is also engaged in a very active biocontrol programme, including monitoring buddleia leaf weevil damage and preparing for the release and monitoring of several species of dung beetle hopefully next summer.

- **The Conservation Company**, a private conservation company doing contract work in Hawke's Bay has been busy with ongoing restoration projects in Puahanui Bush, Lindsay's Bush, A'Deane's Bush,

Branch news

and weed control in many QEII blocks including Te Mata Peak, Turitea and Kahuterawa catchments, as well as ongoing eradication projects of pypgrass, climbing spindleberry and cathedral bells across the Hawke's Bay region.

- **Agresearch has been working on three projects** that will get some exposure at the 2013 NETS conference:

- First: a project called "**Climate Sentinels**", looking at the naturalisation ability and response to temperature variations of *Buddleia davidii*, *Cytisus scoparius*, *Senecio glastifolius* and *Setaria pumila*. Monitoring sites for these species have been established in different temperature zones across NZ to investigate changes in cover, juvenile establishment and seed viability. Thanks to a number of regional council and DOC staff for their time supporting this.

- Second: the development of a "**Causal Loop**" model of the drivers of weed management at the regional scale. The model incorporates the output from the workshop at the last NETS meeting in Taupo (now you know that the work done in the workshops is put to good use) to identify the key components for successful weed management and demonstrates the dilemma of using the cost-benefit analysis as the key tool to determine appropriate management strategies.

- Third: developing a prototype **weed distribution database** in collaboration with the Australians. This work is in response to the high level of industry



Seek and destroy: A Conservation Company staff member holds a hard-won trophy of old man's beard.

support for such a tool and the difficulty in getting such a system funded. The system will build on an Australian framework and be initially based on a DOC dataset.

Sara Moylan

Archive project update

Grant application successful

The Institute has been granted \$14,620 by the Lotteries Grants Board to carry out an oral history project as part of the ongoing archives project. This is an encouraging boost for the archives project. It shows that the grants panel agree with the importance of preserving the history of the Institute and its forerunner organisations.

The oral history project will involve interviewing six individuals who were active in the early days of plant and vertebrate animal pest control in New Zealand and in the development of the NZBI-forerunner organisations set up in the 1950s and 1960s to represent the interests and work of those involved in the biosecurity sector.

Three interviewees will be from the vertebrate animal pest sector and three from the plant pest side. Wellington-based oral historian Shona McCahon will undertake the interviews and prepare the historical documents which will accompany the interviews.

This project will begin a long-term oral history project

planned to capture the recollections of others who have been involved in the evolution of the biosecurity sector in New Zealand. There is definitely an element of urgency now that early practitioners are in retirement.

Now that we have got off to such a good start please keep in touch with the working group of President Pedro Jensen, Ray Clarey, Peter Russell, Dave Galloway, Lynne Huggins and myself to let us know of suitable candidates to interview and to pass on information about who has historical material and where it is kept. It is important to remember that we don't want the physical material. We just want to document it and copy originals if necessary. When we get a more complete picture of what historical material is out there we can then decide what we want to formally archive and in what form it should be kept or recorded.

Chris Macann
NZBI Archives Project Co-ordinator

News from MPI

Palm kernel rules to be tightened

The Ministry for Primary Industries (MPI) has released two reports from inspectors who made official visits to palm kernel expeller (PKE) meal processing facilities in Malaysia and Indonesia in June this year.

The audit reports show good biosecurity systems are in place in the two main PKE-supplying countries, but some tightening up is recommended to ensure New Zealand's standard is met.

Deputy Director-General, Compliance and Response, Andrew Coleman said the reports concluded that any biosecurity risk from the importation of PKE was very low, but the strengthening of import requirements would be accelerated after a small part of an animal limb was recently discovered in a PKE shipment.

MPI has sent staff to Malaysia and Indonesia to work with authorities there.

"The focus will be on working together to ensure that PKE from unapproved facilities cannot be exported to New Zealand. In addition, a small number of processing facilities will need to improve their systems to keep birds and rodents out of the product in storage," Mr Coleman said.

A further option being considered is a new levy on PKE imports, or an increase to the existing biosecurity levy to increase the level of inspection in these countries.

"This work is timely given the recent discovery of the animal limb which was reported to MPI by a Bay of Plenty farmer. The lower part of an animal leg, approximately 18cm in length, has been identified by a zoologist as most likely from a small deer or goat species not present in New Zealand," Mr Coleman says.

"Our risk assessors have told us that the risk of the introduction of any animal disease posed by this find is very low. However we took the precaution of sending a vet to the property where they found all animals in excellent health.

"A find like this one is rare, given that approximately 1.5 million tonnes of PKE are imported annually."

New Zealand's dairy farmers use PKE for supplementary feed.

Currently every shipment of PKE must meet strict requirements before it can be imported, including heat treatment, fumigation and inspection.

"A further option being considered is a new levy on PKE imports, or an increase to the existing biosecurity levy to increase the level of inspection in these countries. Any such proposal would have to be consulted on and have industry support. MPI is now beginning work on various options for consultation."

The audit reports can be viewed at: <http://www.biosecurity.govt.nz/regs/imports/plants/plant-products>

New agency set to manage bovine TB

A new management agency has been appointed for the National Bovine Tuberculosis (TB) Pest Management plan.

In order for this to happen, the following changes will occur: Animal Health Board (AHB) Inc will resign its role as the management agency to take effect at midnight on June 30, 2013. The role will pass to a new limited liability company, TBfree New Zealand Ltd.

From July 1, 2013 TBfree New Zealand Limited and National Animal Identification and Tracing (NAIT) Ltd will become wholly owned subsidiaries of Operational Solutions for Primary Industries (OSPRI) New Zealand Ltd.

The Minister for Primary Industries, Nathan Guy,

has appointed TBfree New Zealand Ltd as the agency responsible for the National Bovine TB Pest Management Plan, with effect from July 1, 2013.

"Bringing together what was formerly the Animal Health Board and NAIT Ltd will enable the more efficient and flexible delivery of the bovine TB management plan and the NAIT scheme," said MPI Director of Preparedness and Partnerships David Hayes.

"It is envisaged that new strategies and services would be developed in areas such as pest and risk management, design and delivery of partnership programmes between Crown and industry, and the delivery of a combined 'farmer facing' contact centre and other outreach services," said Mr Hayes.

News from MPI

Aucklanders urged to watch for invasive bird species

The Ministry for Primary Industries (MPI) is asking Aucklanders to keep an eye out for an unwanted bird species that is thought to be in the wider city area and could harm our native birdlife and damage fruit and vegetable crops.

The bird – red-vented bulbul (*Pycnonotus cafer*) – is aggressive to other bird species and is one of the world's most invasive bird species. The Ministry has credible reports that some of these birds are present in the greater Auckland area.

MPI Response Manager Jaap Kneegtmans says the ministry is concerned that if a population establishes in Auckland it would affect residents' gardens, native vegetation and birdlife.

MPI is working in partnership with the Department of Conservation and Auckland Council to track down any birds present and eradicate them.

"These birds are common in other parts of the Pacific, particularly in Fiji and suburban Sydney. They may have hitched a ride here on a commercial vessel or a recreational yacht," Mr Kneegtmans says.

Red-vented bulbuls are a medium-sized bird about the size of a starling (20cm in length – body and tail). They are generally dark coloured with a lighter chest and rump, a small crest on their head, and significantly, a very distinctive crimson-red patch beneath their tail.

"This red patch is the key identification feature. If people have seen a bird with these bright red feathers

'If people have seen a bird with these bright red feathers beneath the tail, we're very keen to hear from them.'

Jaap Kneegtmans
MPI Response Manager



Red-vented bulbul.

Photo: Anton Croos

beneath the tail, we're very keen to hear from them."

Red-vented bulbuls have been found in Auckland before – in the 1950s and more recently in 2006. In both instances they were eradicated.

Mr Kneegtmans says that while red-vented bulbuls may appear cute, they are anything but, and urgent action is required to locate and capture them before they establish.

Report suspect finds immediately to MPI's Exotic Pest and Disease Hotline – 0800 80 99 66.

Full information, including pictures and an audio track of their unique call is at: www.biosecurity.govt.nz/pests/red-vented-bulbul

Passenger declares horse tail at border

Australian horse hair destined for a Kiwi toy didn't make it any further than Wellington Airport at the beginning of April when a Ministry for Primary Industries (MPI) quarantine inspector seized a horse tail from a passenger arriving from Sydney.

A taxidermist supplied the passenger with the tail which was from a dead horse and still had skin attached. The passenger planned to use the hair for a toy rocking horse.

"They don't come much stranger than this border interception," said Andrew Spelman, MPI Team Manager Central. "The main problem was that the

passenger didn't have documents to prove the hair had been treated to kill any bugs in the skin tissue or any hitchhiking organisms that could harm New Zealand horses or other parts of our primary sector."

The tail, which was very dirty, was to be allowed into New Zealand after fumigation at the passenger's expense.

The passenger was not fined as the tail was declared on arrival.

"We ask all passengers to declare or dispose of any item that has potential biosecurity risk ... and that's what this guy did, so that's great."

News from MPI

Hornwort eradicated from South Island

The Ministry for Primary Industries confirmed in mid-May that the invasive aquatic weed hornwort has been eradicated from the South Island.

"Hornwort is a significant threat to the ecology of freshwater ecosystems and can affect the functioning of hydro power generators and irrigation and drainage systems with major economic consequences," said MPI Senior Adviser Dr Liz Clayton.

"MPI made it a high priority to contain the hornwort and clear it from the South Island."

MPI called on the National Institute of Water and Atmospheric Research (NIWA) to carry out the operation at Timaru's Centennial Park Lake. NIWA had assisted with an earlier eradication of the plant from sites near Motueka.

Hornwort can grow up to 10 metres tall and is well established in North Island waterways. This does pose a risk of re-introduction to the South Island.

Hornwort was found in the Timaru lake in 2006 and was treated with the aquatic herbicide endothall in 2008.

NIWA Aquatic Ecologist Rohan Wells says that since that time his team has monitored Centennial Park Lake but there has been no re-appearance of hornwort and MPI has now been able to declare the pest eradicated from the South Island.



Monitoring has shown that no hornwort is present in Timaru's Centennial Park Lake following control work carried out in 2008.

Fast facts about hornwort

- Scientific name: *Ceratophyllum demersum*.
- Introduced plant first recorded in natural waters near Napier in 1961.
- Can grow to a depth of 15m or more, and up to 10m tall.
- Does not have roots but is well anchored to the lake or stream bottom via buried stems.
- Is presently confined to the North Island only, eradicated from five known South Island sites.



"It was a difficult site and conventional methods of weed removal were not successful. We then tried the new herbicide endothall and only one treatment was needed to successfully eradicate it," said Dr Wells.

Hornwort can grow up to 10m tall and is well established in North Island waterways. This does pose a risk of re-introduction to the South Island.

"For this reason, MPI is seeking pre-approval from South Island regional authorities to use endothall against hornwort, should it be found in their area in future," Dr Clayton said.

Endothall is a very safe aquatic herbicide which is broken down naturally to carbon, hydrogen, oxygen and organic acids. Recent studies have shown it is safe to swim where the water has been treated and fish are safe to eat.

NIWA trials show it is very specific to certain targeted weeds and that native plant species present in the trial treatments are still flourishing one year later.

"However, prevention is better than cure and to stop the spread of freshwater pests people should always Check, Clean, Dry any equipment that has come into contact with river or lake water before moving to another waterway," said Dr Clayton.

News from MPI

New staff boost border biosecurity

Twelve new frontline border staff will help ensure New Zealand's biosecurity defences stay strong, say the Ministry for Primary Industries (MPI).

The new staff received their quarantine inspector warrants at a ceremony in Christchurch in May.

The graduation follows the warranting of 43 new inspectors in December and a recent announcement by Minister for Primary Industries Nathan Guy that MPI will recruit 30 new quarantine inspectors this year.

"The new inspectors and upcoming recruitment programme will ensure that the biosecurity frontline remains fully staffed and isn't affected by normal resignations and retirement," said Steve Gilbert, MPI

Director, Border Clearance Services.

"Biosecurity is vitally important to New Zealand and its primary industries."

The warranting ceremony was the culmination of more than three months of intensive training for the new recruits. The warrants will allow them to exercise a range of powers under the Biosecurity Act 1993 to check passengers and goods for biosecurity risk items.

Two of the new inspectors will be based in Wellington, one in Queenstown and the rest in Christchurch.

Two of the 12 will undergo further training as detector dog handlers.

Student denied entry after goods found

MPI reported in June that an overseas student was denied entry into New Zealand after failing to declare meat and fish he was carrying in his travel baggage to Ministry for Primary Industries (MPI) officials at Auckland airport.

The student denied carrying any biosecurity risk goods when questioned by a quarantine inspector, but a baggage X-ray machine showed otherwise.

On checking the baggage, officials found fish, beef, duck, chicken and fish roe.

"These items were spread loosely throughout his luggage. When questioned, the student admitted he

had not declared the items as he did not want them seized. He also falsely declared that a duck product was seafood in order to retain it," said MPI Team Leader Brett Hickman.

"All of these products posed biosecurity risk to New Zealand's primary industries and native wildlife.

"This breach of the Biosecurity Act was serious enough for Immigration officials to deny him entry into New Zealand."

The student had arrived from China on a two-year work visa to undertake post doctoral studies at a New Zealand university.

Nabbed crabs snap back

Ministry for Primary Industries staff at Auckland airport avoided both a nasty nipping and a potential biosecurity breach when they seized live crabs from a Vietnamese passenger arriving from Sydney.

MPI reported in mid-May that the five crabs were found in the passenger's luggage after he declared the goods to biosecurity staff.

"They were quite large and gave us a bit of a fright. One actually crushed a pen when we were taking photos," team leader Nick Willis said.

"We get a lot of fish and crustaceans coming through, but live crabs are very unusual."

The unidentified crabs were a potential biosecurity threat to New Zealand, Mr Willis said.

"The crabs themselves could have caused damage

to our marine species and our natural environment, or they could have been carrying unwanted organisms."

The Chinese mitten crab is an example of a pest crab that has caused problems in other countries, he said.

"This crab has invaded Europe and North America from its native region of Asia. It wipes out local invertebrates, its intensive burrowing activity causes erosion, and it costs fisheries and aquaculture hundreds of thousands of dollars each year by eating bait and trapped fish, and by damaging gear."

As the passenger had declared the crabs, he escaped a fine, although he faced a \$20 charge for choosing MPI to euthanise and

then store the crustaceans for collection on his way out of New Zealand.

'They were quite large and gave us a bit of a fright. One actually crushed a pen when we were taking photos.'

Nick Willis
Team leader

Industry News

No fans for marine worm in Nelson

Prompt action has prevented Mediterranean fanworm, an unwanted marine pest, from becoming established in Port Nelson.

In early May, unusual fouling was detected by a Nelson diver with marine biosecurity experience on the hull of a vessel that had recently arrived from Auckland just before it was put on a slipway.

A NIWA staff member collected samples and tentatively identified it as being Mediterranean fanworm (*Sabella spallanzanii*). A NIWA expert confirmed his identification and indicated that the fanworms were too young to be able to breed. The slipway manager oversaw the removal of the biofouling and its disposal into landfill and the sewer. The Ministry for Primary Industries arranged to have the seabed searched around the slipway for any worms that may have been dislodged during slipping.

The fanworm is a tube-dwelling species, native to the Mediterranean and Atlantic coast of Europe and South America. It has become established in Lyttleton and Waitemata harbours where it is too widely established to eradicate. It could become a significant pest in the Top of the South with its rapid growth and ability to compete with mussels and smother native ecosystems.

It was fortunate that early detection and prompt action prevented the establishment of this unwanted marine



Lucky find: Mediterranean fanworm on the hull of the vessel in Nelson.
Photo: D Morrissey NIWA

pest. It highlighted the importance of owners cleaning and anti-fouling their vessels before they arrive in our ports. It also highlighted the need for development of mechanisms to ensure more effective pathway management and prevent the spread of unwanted organisms from infected ports to other regional ports.

Contributed by **Lindsay Vaughan**

Combined effort pays off in Coromandel

Waikato Regional Council confirmed in mid-May that two barges that arrived in Coromandel Harbour infested with Mediterranean fanworm have been cleaned up.

The barges, which came from Auckland, were heavily infested with the organism otherwise known as *Sabella*.

Co-operation like this between agencies and industry is one of the keys to dealing successfully with marine pests.

Authorities in the North Island are keen to prevent the spread of fanworms from their known infestation sites in Auckland as they can damage mussel and oyster farms by crowding out and displacing shellfish. Fanworm is not yet known to have become established in Waikato waters.

At Coromandel, the infestation was discovered by divers sent down by the Coromandel Marine Farm Owners Association.

In a subsequent operation co-funded by the council and the Ministry for Primary Industries, divers went

down and hand plucked the fanworms from the barges, using vacuums to suck up and filter debris.

With the clean-up finished, the barge owner was to take his vessels back to Auckland as soon as possible.

The council's Biosecurity group Manager, John Simmons, said some debris from the fanworms got on to the sea floor during the hand plucking, so there would be ongoing monitoring to prevent any eggs from the fanworms establishing in the area. A delimiting survey of the harbour indicated fanworm was not already established.

Mr Simmons acknowledged the mussel farming industry for its assistance in dealing with the fanworm find.

"The ministry and the local mussel farmers have been really helpful. Co-operation like this between agencies and industry is one of the keys to dealing successfully with marine pests.

"The next step will be for us to work closely with the ministry and our council partners in Auckland and Northland on ways of better ensuring that fanworm is not spread from known infestation areas."

Industry News

The latest on the great white butterfly eradication campaign

The great white butterfly (GWB) is a northern hemisphere butterfly which arrived in Nelson in May 2010. It has not been found anywhere else in New Zealand. It has the potential to cause significant damage to vegetables (brassicas such as cabbage, cauliflower, broccoli, kale and rocket), forage crops (turnip, swede and rape) and has been identified as a threat to the survival of 57 rare native brassicaceae, especially *Lepidium* cresses. It has also been found on other garden plants such as nasturtium, honesty and wallflowers. There is a major multi-agency campaign under way to eradicate it.

The battle continues

The peak time for GWB breeding activity has been autumn with most being found within 6km of Port Nelson. Since November 2012, there have been more than 26,000 property inspections around the greater Nelson area. About 770 properties have been confirmed as having GWB present at some stage, with a number of properties having had multiple finds on them. There is an intensive effort in Nelson city to suppress the population and restrict any further spread.

The last find in Richmond was on 11 April and a search of a 200m zone around that property failed to find any more specimens. To check the southern extent of the butterfly, several teams were put into southern Richmond (near previous sites) and Brightwater where they searched more than 1300 properties and found no evidence of GWB. The northern limit The Glen, about 10km from the Port Nelson epicentre, where there has been several finds and extensive surveillance over the autumn.

New traps tested

A new trap system for detecting the presence of the great white butterflies is being evaluated. It uses a simple white sticky trap with a packet of an artificial floral odour in the middle. A hundred of these traps have been set out around the Nelson infestation area and are being monitored weekly. So far, mostly small white butterflies have been collected, but there are some good ideas about improving the trap catch

A small wasp (*Cotesia glomerata*) that was originally introduced as a parasite for the common white butterfly has been effective in limiting the number of GWB caterpillars maturing into butterflies.



A cluster of great white butterfly caterpillars feeding on a leaf.

for GWB. There is also work being done on the attractant odours, on different colours and on UV reflectance

Parasite joins campaign

A small wasp (*Cotesia glomerata*) originally introduced as a parasite for the small white butterfly has been effective in limiting the number of GWB caterpillars that mature into butterflies. Recently, a field team noted that a sample of GWB pupae was suddenly crawling with dozens of tiny insects that had hatched from eggs laid by another tiny wasp (*Pteromalus puparum*). This had also been brought to New Zealand as another biocontrol agent for the small white butterfly. The effect on the GWB is likely to be additive to that of the *Cotesia* wasp as they attack different life stages of the butterfly.

Outlook for winter

GWB activity will drop off over winter as most of the population will over-winter as pupae. Some younger caterpillars may continue to grow slowly over the winter months and there may be the odd butterfly seen on sunny days.

Adapted from **Great White Butterfly News**,
Issue 8, 23 May 2013

Industry News

More rabbits wanted! For the Rabbit Biocontrol Initiative

Janine Duckworth
Landcare Research

The Rabbit Biocontrol Initiative (RBI) project team consists of farmers, landowners, land managers, regional councils, government departments and researchers interested in rabbit biocontrol in New Zealand and is partially funded by the Ministry of Primary Industry's Sustainable Farming Fund. One of the aims of the Rabbit Biocontrol Initiative is to identify ways to increase the effectiveness of rabbit control by identifying any high virulence strains of rabbit haemorrhagic disease within New Zealand that will kill rabbits quickly and more effectively.

Over time viruses such as rabbit haemorrhagic disease virus (RHD) undergo changes as they adapt to their local environment. Indeed there is evidence from Australia and Europe that more virulent strains of RHDV are present in some areas. RHD virus has been circulating through rabbit populations in New Zealand for more than 15 years and may also have undergone changes with time. To help us identify any variations in the NZ strains of RHD, we are seeking samples of rabbits that have died from RHD virus from throughout the country for genetic and pathogenicity testing. Can you help us?



RHD Outbreaks – Virus Sample Collection:

- We are very interested in recovering carcasses from rabbits that are thought to have died from RHD virus from anywhere New Zealand.

- We are after one to four carcasses from each site. Fresh carcasses are best but any relatively intact carcass up to seven to 10 days old is acceptable. Please label any carcasses with your contact details and the location where the rabbits were found and freeze them until collection can be arranged.

- RHD outbreaks can occur at any time of the year and may be difficult to detect as rabbits often die underground and above-ground carcasses are quickly scavenged by hawks. Lots of hawks circling can be the indication of an RHD outbreak. The best time to look for rabbit carcasses is early in the morning before they are scavenged and the best place to look is near the entrance to burrows.

So please keep a look out for any RHD-killed rabbits and let me know of any active RHD outbreak, or to arrange collection of any samples.

Email duckworthj@landcareresearch.co.nz or phone 03 321 9999 or 0800 743 246.

Scorpion found during investigation into smuggling

A live scorpion has been found in Queenstown as biosecurity officials investigate a smuggling operation.

The Ministry of Primary Industries is saying little about the discovery of the venomous arachnid, which was made on April 19 in the resort town.

It was an on-going investigation and the ministry could

not say where the scorpion came from, a spokesman said. No one has yet been charged.

Illegally importing new organisms to New Zealand can attract penalties of up to three months in jail or a fine of up to \$500,000.

From an **Australian Allied Press** report, 26 April 2013

PROUDLY SUPPORTING

Biosecurity Month 2013
SHAKE IT UP!



New Zealand
Biosecurity Institute

Industry News

Funding boost for Chilean needle grass campaign

Environment Canterbury welcomed in April the announcement by Primary Industries Minister Nathan Guy that an application to the Sustainable Farming Fund to stop the plant pest, Chilean needle grass, was successful.

The project "Stopping the Chilean Needle Grass Invasion" promoted by the Chilean Needle Grass Pest Management Liaison Committee has been awarded funding of up to \$300,000 over three years, together with \$112,000 of co-funding and an additional \$900,000 of in-kind contributions.

Chilean needle grass is found in Canterbury, Marlborough and Hawke's Bay and currently infests a combined total of 3500 hectares. According to ECan it has the potential to spread to an estimated 15 million hectares, primarily on the east coasts of both islands.

CNG Pest Management Liaison Committee Chair Charles Wiffen said all known Chilean needle grass in Canterbury – some 280 hectares – has been controlled in an attempt to eliminate it and



Chilean needle grass

prevent further spread from known sites.

For more information visit: <http://ecan.govt.nz/advice/your-land/plant-animal-pests/managing-plant-pests/Pages/ChileanNeedlegrass.aspx>

Chinchillas not wanted

Environment Southland has reminded its citizens that chinchillas are not welcome in Southland and cannot be kept in the region as pets or for breeding without a permit.

The council recently heard that a small number of people may be keeping or breeding chinchillas, and Biosecurity Manager Richard Bowman is keen to remind people that the pests are not welcome.

In the Regional Pest Management Strategy, Environment Southland (ES) designates chinchillas as an "Exclusion" pest for the Southland region. Chinchillas may only be kept under a permit which

stipulates that any chinchillas held are not able to breed and are kept in secure facilities to prevent their escape.

ES reports that there are no known feral populations of chinchillas in Southland at present.

There has been recent debate about the pest status of the South American rodents, and the council has received requests from the public asking to remove them from the Pest Management Strategy. The strategy is currently being reviewed, and formal public submissions will be invited early next year.

An information factsheet is available from the Environment Southland website.



Chinchillas are designated an "Exclusion" pest in Southland.

Industry News

Kauri dieback awareness campaign targets Coromandel Peninsula

An education campaign to help prevent the spread of kauri dieback disease to the Coromandel Peninsula has been given a \$12,000 funding boost by Waikato Regional Council.

The Kauri Trust 2000 will use the Environmental Initiatives Fund (EIF) grant to erect billboards at the Kopu Bridge and elsewhere on the peninsula to make visitors aware of the need to clean their footwear and equipment before entering Coromandel Peninsula forests.

Since being set up, the trust has planted more than 36,000 kauri on the Coromandel Peninsula and worked to educate the public on the history and ecology of the forest.

A major focus for the trust in the past year has been kauri dieback.

The Kauri Dieback Joint Agency Programme, Department of Conservation and Waikato Regional

Council have been supporting the trust's work.

The council worked with the trust over the past month to deliver three workshops on the Coromandel Peninsula to educate people on the disease and methods for preventing its spread.

Kauri dieback was formally identified in New Zealand in 2008 and a multi-agency response formed between the Ministry for Primary Industries, DOC, Auckland Council, Waikato and Bay of Plenty regional councils, and local iwi.

The disease has killed kauri in Northland, Auckland and Great Barrier Island but so far has not been found within the Waikato Regional Council's boundary.

The Thames-Coromandel area is home to the biggest stands of kauri in the wider Waikato, and there are also kauri in places such as the Hakarimata Range, south of Huntly. Checks for signs of the disease are ongoing at a range of sites in the Waikato.

Signage to prevent spread, and footwear cleaning stations have been put in place in parts of the Coromandel, the Hakarimata Ranges near Ngaruawahia, Te Kauri Reserve near Kawhia and a private reserve.

More information on kauri dieback is available at www.kauridieback.govt.nz.

The disease has killed kauri in Northland, Auckland and Great Barrier Island but has so far been undetected within the Waikato Regional Council's boundary.

Himalayan invader

Greater Wellington Regional Council is asking Wairarapa residents to watch for Himalayan balsam (*Impatiens glandulifera*), pictured at right.

The pest has been found growing wild along river banks and wetland areas in Wairarapa.

Since its introduction to parts of North America, Europe and New Zealand, Himalayan balsam has successfully escaped cultivation and has got into natural areas.

Overseas, Himalayan balsam is a serious problem along water margins, but in New Zealand there is a chance to stop it before it gets properly established, the council says.



Industry News

Public asked to grass on woolly weed's whereabouts

Fast-growing pest woolly nightshade (*Solanum mauritianum*) has been found on Pahiatua properties and Horizons Regional Council is appealing to the public to report any further sightings.

Horizons environmental management officer pest plants Jack Keast said the weed was discovered on several properties during a recent regional council survey of the Pahiatua township.

Woolly nightshade is classified in Horizons' regional pest plant management strategy for total control.

"We're contacting residents of Pahiatua properties where this weed was found but we're also very keen to hear of any further sightings.

"Total control requires a community effort and we really appreciate people letting us know if they see it or find it on their properties so we can assist with its removal," Mr Keast said.

Key identifiers include large soft light-green leaves, small purple flowers and green and yellow berries.

Tiny hairs covering the plant can cause asthma-like symptoms including coughing and throat irritation. Some parts, including the berries, can also be poisonous, making it important to keep children and stock away from the plant.



Woolly nightshade, *Solanum mauritianum*.

Photo: Peter Greenwell

Possum control stepped up on Kapiti Coast

Kapiti residents can expect fewer possums and more native birdlife as Greater Wellington Regional Council's possum control programme begins on the Kapiti Coast this year.

Regional council chair Fran Wilde says the project will cover as much land as possible to get the best knock-down of possums and the most benefit for Kapiti district and residents. Much of the work will be in rural areas, but there will be work on reserve land and natural areas in and around the towns.

Possum control programmes are already well established throughout the Hutt Valley, Wellington city, Otaki and Wairarapa.

There are a number of small native forest remnants on

the Kapiti Coast which already receive possum control by regional council, Department of Conservation or volunteers. This is a larger project covering some 20,000 hectares, which will support these smaller areas by reducing the number of possum that re-invade them.

"This is a great opportunity to complement the work being done by DOC on Kapiti Island and in adjacent areas of the Tararua Forest Park as part of Project Kaka.

"We have a wildlife sanctuary teeming with native birds just off the coast and mature forest in the hills behind us where DOC is already controlling pests."

Staff will use brodifacoum poison from bait stations.

Industry News

Public has say on pest management

The Ministry for Primary Industries (MPI) has received about 45 submissions on its proposed national policy direction for pest management plans and programmes and on a new process for the Minister for Primary Industries to assign pest management responsibilities. The feedback will be used to produce a national policy direction that will ensure pest management plans and programmes across New Zealand are clear and consistent, and provide the best value, said John Sanson, MPI National Coordination Manager, Preparedness and Partnerships.

"It is very pleasing to get this level of engagement and response on the proposals," Mr Sanson said.

"The process will be used when indecision or excessive debate is holding up taking action on important pest management decisions," he said.

Both the new process and the national policy direction are required as part of the 2012 reforms to the Biosecurity Act.

MPI is due to report its findings and recommendations from the consultation to the Minister for Primary Industries in the second half of this year.

The national policy direction and new regulations setting out a process for assigning pest management responsibilities are estimated to come into force by the end of the year.

The role of artwork in fight to protect kauri

Jacqui Wairepo

New Zealand kauri trees are entrenched in our country's culture and history and are key members of our native forest ecosystem. Unfortunately, maintaining kaitiakitanga of these ancient trees is no easy task: as the fatal kauri dieback disease is spreading its way throughout the Auckland and Northland regions, and encroaching on iconic individuals such as Tane Mahuta.

The recent infection and death of two kauri at McCahon House illustrated the cultural and ecological loss we are facing from kauri dieback disease. These trees were among those that inspired a series of kauri paintings by famous artist Colin McCahon in the 1950s. The significance of their loss was reflected by a small ceremony held at the west Auckland property in their honour. This sombre event highlighted the urgency of raising public awareness and continuing scientific research in order to stop the spread of this disease and save our kauri forests from extinction. The infection of the "McCahon kauri" has further inspired a new approach to biosecurity advocacy, using art as a medium to promote the importance of kauri and the threat it faces from kauri dieback disease.

This novel concept resulted in the organisation of "Kauri & Art: a public seminar on a cultural icon at risk", an event aimed to not only draw public attention to the impact of kauri dieback, but to illustrate it via a collection of cultural and scientific presentations with an artistic perspective. Organised collaboratively by Auckland Council Biosecurity and the McCahon House Trust, the seminar was attended by more than 50 Aucklanders.

In spite of the diverse approach taken by presenters to the topic, the message was clear and effective;



Amongst the Kauri at McCahon House.

Photo: Chris McBride

everybody has a part to play in the protection of this taonga, New Zealand kauri. Simple measures such as cleaning shoes, tyres and equipment before and after entering kauri zones will make a huge contribution to preventing further spread, and community events are ideal to share this information. The event resulted in the formation of firm relationships between scientists, land managers and artists concerned about kauri dieback disease.

Auckland Council Biosecurity plans to continue engagement with the arts community on the kauri dieback issue.

For further information on the Kauri Dieback Management Programme please contact Stacey Hill Stacey.hill@aucklandcouncil.govt.nz or see <http://www.kauridieback.co.nz/>.

Research

Feral pigs: impact and management

Dr Cheryl Krull,

Centre for Biodiversity and Biosecurity,
School of Biological Science,
University of Auckland.

Despite the presence of feral pigs in New Zealand for more than 200 years, the impact of this invasive species on New Zealand ecosystems has not been adequately quantified. Consequently this species has generally not been considered a high priority for eradication or control efforts. Although there is a lack of scientific evidence for impacts, the perceived environmental impacts of feral pigs are often high. However, many New Zealanders now view pigs as a resource rather than a pest and regard pigs as an important food source. Therefore, to mitigate conflict with communities, land managers require evidence of the negative impacts of feral pigs to justify their decision to manage feral pigs as a pest in high value conservation areas. My PhD study (Krull 2012) aimed to quantify feral pig impacts and recommend appropriate management strategies.

My PhD research encompassed investigating the impacts of feral pigs on vegetation, ecosystem processes and plant pathogen transmission, assessing current management regimes and the use of simulation modeling to make future management recommendations.

Ground disturbance

I evaluated the impacts associated with ground disturbance by pigs, by excluding pigs from previously disturbed areas. This research showed that feral pig ground disturbance directly affects plant communities through direct removal of vegetation, but also has indirect effects via modification of soil characteristics and increasing decomposition rates. Seedling abundance and species richness can recover if allowed, although pigs are known to repeatedly return to previously disturbed areas, causing prolonged disturbance. If left unprotected, these areas may remain in a constantly disturbed state (Krull et al. 2013)

Invasive soil-borne pathogens are a major threat to forest ecosystems worldwide. The newly discovered soil pathogen, *Phytophthora* 'taxon *Agathis*' (PTA) is a serious threat to endemic kauri (*Agathis australis*: Araucariaceae) in New Zealand and my research examined the potential for feral pigs to act as vectors of PTA. I detected 19 species of plant pathogens in the soil vectored by pig trotters and snouts, including a different *Phytophthora* species (*P. cinnamomi*). Although no PTA was isolated from the samples, this is likely to be due to difficulties with the ability to detect PTA methodologically, rather than an absence of PTA



Dr Cheryl Krull with a culled pig.

itself (Krull et al. 2012).

Culling effects

Another part of my research determined the effects of a three-year culling programme on pig density and the extent of pig ground disturbance (impact) in the Waitakere Ranges, Auckland, and this data was used to parameterise a model created by Choquenot and Parkes (2005). The model links pig ground disturbance rates to pig density and was used to simulate different management scenarios and predict their effect on reducing ground disturbance. The model was used to provide management recommendations for pig control in the Waitakere Ranges by identifying the management scenarios that would be most effective and efficient in reducing pig ground disturbance.

Kill densities

From the modelling I determined that the success of the fixed frequency culling scenarios (e.g. culling every three months) depended on maintaining kill densities with each cull. Any decline in kill density could lead to a recovery in pig populations and a continuing increase in pig ground disturbance levels. The likelihood of maintaining the required kill density long term was low and the lack of outcome monitoring in this scenario could lead to increasing disturbance levels despite maintaining a regular culling regime. Therefore, despite higher costs, a monitor-based

Research

culling regime (triggered when ground disturbance monitoring hit a 5% threshold) was recommended for the continued management of feral pigs in the Waitakere Ranges as this guaranteed a reduction in ground disturbance, which would consequently reduce vegetation and ecosystem impacts and also the probability of pigs vectoring plant disease.

My results also indicated that increasing the kill effectiveness could theoretically drive the pig population in the Waitakere Ranges to extinction and provide a more cost effective solution. Whilst it may be possible to achieve this increase with additional hunting teams or increased culling frequency, this would dramatically increase the cost of pig control. Increasing kill effectiveness through the use of a toxin would be less costly than making incremental increases in hunting effectiveness. However, there are currently no toxins approved for use on feral pigs in New Zealand, although sodium monofluoroacetate (1080), warfarin and other toxins are being explored.

Recommendations

A monitor-based culling regime is recommended for the Waitakere Ranges. Fixed frequency culling was determined to be the less expensive option, but this regime does not account for any reductions in culling effectiveness, which would result in an increase feral pig ground disturbance (ecosystem impacts and potential increase in pathogen vectoring). Therefore, implementing a monitor-based culling regime (which manages pigs based on disturbance monitoring) would ensure the maintenance of ground disturbance at an acceptable threshold level (below 10%), thereby reducing the impacts on biodiversity. An Environment Court challenge from the Tokoroa Pig Hunting Club resulted in the recent removal of feral pigs and deer from Waikato Regional Council's (Environment Waikato) Regional Pest Management Strategy (RPMS) where they were previously listed as a biosecurity pest (E.W 2007). The pig hunting club argued that Environment Waikato had failed to undertake outcome monitoring to demonstrate the negative effects of feral pigs and deer. Therefore, although the monitor-



**Above: A feral pig enclosure.
Left: A trotter sample being
swabbed for infected soil.**



based culling regime would be more costly than fixed frequency culling, it would provide data on outcomes for biodiversity and enable informed management decisions, reducing the risk of legal challenges.

Many pig control programmes in Australia have successfully used a variety of pig toxins to achieve population reductions (Hone and Pedersen 1980, Choquenot et al. 1996, Cowled et al. 2006) and toxins are consistently reported to be the cheapest form of control per hectare (Choquenot et al. 1996). There are currently no toxins approved for use on feral pigs in New Zealand, although sodium monofluoroacetate (1080), warfarin and other toxins are being explored (S. Hix, Pers. Comm.). There are problems with the use of toxins associated with non-specificity, but also animal welfare implications. Strong public adversity to toxin use requires any decision to control pigs with toxin be thoroughly researched.

Fencing areas to exclude feral pigs may be an option to protect areas of special significance (e.g. areas currently free of PTA disease). Fences are expensive and require a high level of maintenance to reduce breaches. However, Day and MacGibbon (Day and MacGibbon 2007) report the development of the Xcluder™ fence, which successfully excluded all invasive species tested (including feral pigs).

Literature cited

- Choquenot, D., and Parkes J., (2005). Ground disturbance by feral pigs: ecosystem engineering or just rooting around. in 13th Australasian Vertebrate Pest Conference, Wellington, New Zealand.
- Krull, C.R., (2012). *Feral pigs in a temperate rainforest ecosystem: ecological impacts and management*. PhD Thesis. School of Biological Sciences, University of Auckland.
- Krull, C.R, Waipara, N.W., Choquenot, D., Burns, B.R., Gormley, A.M., and Stanley, M.C. (2012). Absence of evidence is not evidence of absence: Feral pigs as vectors of soil-borne pathogens. *Austral Ecology*. doi:10.1111/j.1442-9993.2012.02444.x
- Krull, C.R., Choquenot, D., Burns, B.R., and Stanley, M.C. (2013). Feral pigs in a temperate rainforest ecosystem: disturbance and ecological impacts. *Biological Invasions* doi: 10.1007/s10530-013-0444-9

Research

Funding support for NZ falcon research in Waikato forest

Waikato Regional Council is helping fund a Massey University student's research on the possible effect of poisons on threatened native falcons.

The three-year study by Chifuyu Hawksby will look at what impact there might be from 1080 on the threatened and nationally vulnerable New Zealand falcon living in the Kaingaroa pine plantation.

The council, at the end of May, awarded \$7000 from the environmental initiatives fund (EIF) for the project.

The council heard that many aspects of 1080 used for pest control have been well-studied and a recent report by the Parliamentary Commissioner for the Environment concluded that it is an essential tool in protecting New Zealand's biodiversity.

However, this specific research question has not been studied, so the information provided would make a useful contribution to the understanding of 1080.

Falcons are generally known to prey primarily on live animals, such as exotic small birds like the chaffinch and yellow hammer. The study will look at how much falcons are exposed to 1080 when feeding on live prey that may have ingested it.

The research project is part of a larger Massey programme to understand falcon habitat requirements in pine plantations and to promote their sustainability by providing information to forestry management and local stakeholders.

The New Zealand falcon is the only living native bird



Quite at home: A New Zealand falcon perches in a post-harvest pine plantation forestry block. Photo: K Holder

of prey that is active during the day and it's thought there are just 8000 left in New Zealand.

Reduction of native forests is the largest contributor to the falcon's declining population.

Recent studies confirm that they now also breed in the exotic pine plantation forests, such as Waikato's Kaingaroa Forest. Pine plantations potentially play an important role as a surrogate habitat for this significant example of New Zealand biodiversity.

PROUDLY SUPPORTING

Biosecurity Month 2013
SHAKE IT UP!



New Zealand
Biosecurity Institute

Research

Biosecurity research showcased

About 140 guests representing 40 organisations heard presentations from a wide range of Landcare Research speakers at the organisation's annual Biosecurity Bonanza, this year hosted in Christchurch. Andrea Airey from Landcare Research, Lincoln prepared this reflection on the day.

This popular annual event involving many of our science staff is an opportunity for land and pest managers, farmers and other stakeholders to find out about Landcare Research's biosecurity work under way. Parallel sessions provided a choice of research presentations on weeds, disease and animal pests.

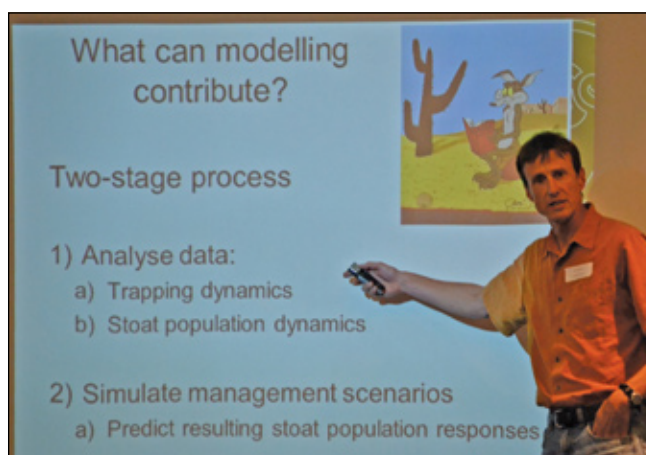
Animal pests

Carlos Rouco began the pest animal session with the invasive triad – wasps, briar and possums – in Central Otago. Hazel Bradshaw (University of Canterbury), who works with Pen Holland and Bruce Warburton, showed how computer games can make the science of possum population dynamics and impacts, including the work presented by Andrew Gormley, readily accessible to non-specialists.

Other presentations on pest management covered feral cat predation on black-fronted terns (Jen Cruz), pest re-invasion of DOC's intensively controlled site, Project Kaka, in the Tararua Range (Mandy Barron), and eradication of stoats from Resolution Island (Dean Anderson). New strategies for pest and disease management were outlined by Frank Cross and Bruce Warburton. Other new research included findings of pesticide residues in wildlife (Penny Fisher), the use of pheromones as lures (Janine Duckworth), and the application of "slow" data transmission for remote monitoring of traps and animal detection devices (Kelvin Barnsdale, University of Canterbury, working with Bruce Warburton). The day finished with a lively discussion, facilitated by Andrea Byrom, on "Predator Free New Zealand", a recent initiative to achieve eradication of possums, rodents and mustelids across very large areas. This goal will require substantial research, especially on control technology and pest surveillance, as well as sustained public support.

Plant pests

Quentin Paynter, of Landcare Research, kicked off the weeds sessions with a talk about the prospects for developing biocontrol for aquatic weeds in New Zealand. This included details of a new tool helpful for predicting the likely success of weed biocontrol projects, which suggests aquatic weeds should be good biocontrol targets. This session then moved on to three talks from Dagmar Goeke, Dan Tompkins and Chantal Probst, all from Landcare Research, about how molecular techniques are being used to understand interactions between diseases and invertebrate weed



Dean Anderson makes a presentation on the eradication of stoats from Resolution Island.

biocontrol agents, and also to identify emerging wildlife diseases. Toni Withers from SCION then updated us on the buddleia biocontrol project, showing photos of impressive damage caused by the buddleia weevil.

After lunch, Kate McAlpine, representing AgResearch and the Department of Conservation, talked about a project to identify the best methods for controlling groundcover weeds, such as tradescantia, in terms of improving native biodiversity outcomes. Shaun Forgie, of Landcare Research, gave an update on the introduction and release of dung beetles into New Zealand, including information about caged field trials. Lindsay Smith, also of Landcare Research, outlined some new biocontrol agents for Darwin's barberry, and Paul Champion, NIWA Hamilton, explained a new web-based resource NIWA has developed for managing all aquatic pests in New Zealand.

Our final presentation was from molecular guru Gary Houlston, of Landcare Research, on issues with applying species names to plants. He gave an example of mouse-ear hawkweed, called *Pilosella officinarum*, despite it having various forms with different numbers of chromosomes and breeding systems which can impact on how they behave. He explained how molecular techniques allow us to better understand this complexity in order to achieve better outcomes.

Once again the Biosecurity Bonanza was a hit with many of our end-users and research colleagues, with them keen for it to continue next year.

Weedbusters

Group gets grant for riverside clearance

Natural Heritage Mangaweka has received \$1000 to tackle old man's beard along a 5km stretch of the Rangitikei River, thanks to a grant from Weedbusters and Horizons Regional Council.

Natural Heritage Mangaweka member Paul Eames said the area that the group wished to address contained two scenic reserves, one recreational reserve and approximately 2½km of private land between the Mangaweka and Mangarere bridges.

"Our initial focus is to bring old man's beard

under control, followed by other exotic species such as wild pine, blackberry, elder and willow," Mr Eames said.

"We've chosen this area as it's achievable compared to the rest of the river. In most parts it's up in trees where we can get to it, unlike other areas where you would need to complete aerial spraying," he said.

Horizons environmental management officer Malinda Matthewson said the grant was jointly funded by Weedbusters small scale initiative programme and Horizons. The grant will go towards pruning

saws, secateurs and herbicide.



The Last Word

'We use alcohol on the job now which makes it so much easier.'

A senior botanist comparing alcohol for preserving field samples versus the age-old pressing method.

THE X-TREEMINATOR

- ✓ Ready to Use for chemical ring barking and cut stump treatment.
- ✓ Highly effective, convenient premix of BioDiesel + Herbicide + Penetrants.
- ✓ Minimal environmental impact and maximum efficacy.
- ✓ A little goes a long way.

www.etec.co.nz

Bottom of trunk treated with X-Tree Basal

X-Tree Basal treated

X-Tree-Basal is a trademark of Etec Crop Solutions Ltd.