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Spring 2011

Magazine of the New Zealand Biosecurity Institute

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Editor's Note

I enjoyed meeting many of you at NETS2011. I was encouraged by the optimism of members and the prospects for the future.

Within just a few sessions I was impressed by the presenters' passion for the work they do.

Since the gathering winter has been cold and white right across the country as well as continually shaky in some parts.

Seems the weather hasn't dampened the enthusiasm members have for their work whether it be field work or knowledge sharing. Christchurch-based Hugh Gourlay and Lynley Hayes, due to conduct a workshop in Wellington with Greater Wellington Regional Council, having been stymied by a closed Christchurch airport battled "closed roads" and snow to get to work in a four-wheel-drive in order to carry out the workshop via the internet instead.

One fine day: Lynley Hayes and Hugh Gourlay mount up to face the weather.

Workshop organiser Richard Grimmett and Lynley worked with IT staff at Greater Wellington to develop a contingency plan prior to the storm arriving. Richard reports that there were a lot of anxious moments while the telecom network was overloaded.

By day's end it was the Wellington members who had to battle the weather to get to their homes in region's far-flung corners. It took workshop organiser Richard until about 10.30pm to battle the weather on his homeward journey to Pahiatua and Harvey Phillips battled back roads north east of Masterton, taking two days to return to work. Apparently the sight of Hugh dancing in front of the video camera with bug samples was very amusing.

I welcome similar stories celebrating the successes and dedication of members. I would also like to hear about projects, newcomers to the job, and tips from long-timers that others would find useful.

I note with sadness the passing on September 25 of life member Arthur Healy at the age of 94. It was my privilege to interview Arthur three years ago to talk about the old days, in particular his early work of assessing the nassella tussock threat in North Canterbury, in 1943. It was this work which led to the first Act of Parliament solely dedicated to controlling a single noxious plant.

Institute member Paul Champion (NIWA) has said of Arthur's passing "a sad day for all us weedies. Arthur broke the ground for all of us to follow." A tribute to Arthur appears in this issue.

Finally I would like leave you with this quote from the animal kingdom:

"It's snowing still," said Eeyore gloomily.

"So it is."

"And freezing."

"Is it?"

"Yes," said Eeyore. "However," he said, brightening up a little, "we haven't had an earthquake lately." (*The House at Pooh Corner* by AA Milne.)

Chris Macann
Editor

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NZBI news

News from the Executive

Kia ora and hello from the Executive.

I am so excited to be writing the first Executive report in my new role as President. I'd like to kick off by acknowledging the huge amount of support I've received from my predecessor, Craig Davey. Craig continued a fine tradition of highly professional NZBI Presidents and I'd like to personally thank him for the energy and leadership he brought to the Executive during his time in the position.

NETS2011

Thank you to Auckland/Northland branch and the NETS2011 organising committee for all the hard work that went on behind the scenes to put together an outstanding programme. The new format for the workshops and the inclusion of the entertaining two-minute biosecurity gems were a breath of fresh air. The variety of quality speakers were all together thought-provoking, innovative and at times truly inspirational. It is a real testament to the quality of the NETS experience every year that in these tough economic times, which make it difficult to send staff to such events, we had such a strong turnout.

"It is a real testament to the quality of the NETS experience every year that in these tough economic times ... we had such a strong turnout.

New Executive members

A warm welcome to the new faces joining the Executive team: Sara Moylan who joins us as our new Vice-President and Lower North Island rep; Ronny Groenteman our new Canterbury branch rep; and Lynne Huggins our new Otago/Southland branch rep. A big thanks to an old face in a new place – Randall Milne who steps down as Otago/Southland rep to take up the mantle as Treasurer. Also, I can happily now report that Rebecca Kemp remains as Vice-President after a special vote by way of email was passed recently. Unfortunately her nomination by the Auckland/Northland branch was overlooked during the AGM and my sincerest apologies to Rebecca for the confusion this caused.

NZBI and NPCA join forces

On August 26, a Memorandum of Understanding was signed by the New Zealand Biosecurity Institute (NZBI) and the National Pest Control Agency (NPCA) in Wellington which officially formalises the inclusion of the NPCA in future NETS events. NETS will now become the one and only biosecurity-focused best practice annual event and follows the desire of both organisations to align their technology transfer seminars. The partnership begins in Taupo on July 18-20, 2012 for NETS2012 Pests in our Dynamic Landscapes: The pressure is on. See Craig Davey's article "Two agencies to pool knowledge" in this issue.

Biosecurity Month 2011

Firstly, it was really great to see MAFBNZ promote Biosecurity Month in all of its media releases during July. My thanks go out to John Sanson and Jackie Bedford at MAFBNZ for helping solidify Biosecurity Month onto the New Zealand calendar.

Another success included even more television, radio and print media interest being generated around NETS2011. This shows the mutual benefits created by holding Biosecurity Month and NETS together in July. This year also saw the creation of a great looking e-banner to build the brand into the future. A Biosecurity Month dedicated page was created on the NZBI website which website manager David Brittain assures me received several hundred unique visits. Since raising awareness of biosecurity issues is one of the NZBI's key aims, I hope this year's success is just the start of things to come. I'd also like to acknowledge Carolyn Lewis for all her help during the promotion.

Arthur Healy

Finally I would like to acknowledge the passing of life member Arthur Healy on September 25. Arthur has been an outstanding botanist and has provided unparalleled service, not only to New Zealand botany, but also and more importantly to our plant protection industry. The Institute would like to send its condolences to Arthur's family and acknowledge his enormous contribution to biosecurity in New Zealand over more than half a century.

Pedro Jensen
President
pedro.jensen@boprc.govt.nz

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NZBI news

Agencies agree to pool knowledge

It's official, the NZBI and NPCA have aligned their technology transfer events.

On August 26, NZBI President Pedro Jensen met with Bill Martyn, NPCA (National Pest Control Agencies) Chairperson, and signed a Memorandum of Understanding.

There had been a recent desire from NZBI and NPCA members executives to investigate the possibility of aligning the technology transfer events of both organisations.

NZBI President and Executive met with the NPCA Chairperson and the National Coordinator to work through the issues of such an alignment. Both organisations saw mutual benefits in working together to provide an aligned seminar that would function as New Zealand's one and only biosecurity-focused best practice annual event.

The details of this alignment are described in the new Memorandum of Understanding (MoU) and cover items such as the name, make up of organising committees, and allocation of any financial surplus or deficit, and is open for additions and alterations by agreement.

The MoU will see the NPCA provide a couple of representatives on the organising committees of a NETS. The NPCA has a strong background in vertebrate pest technology transfer and will bolster this stream of the conference with its many contacts and knowledge of current research, best practice and industry matters.

NZBI President Pedro Jensen, left and NPCA Chairperson Bill Martyn shake on the Memorandum of Understanding between the two organisations.

Both organisations saw mutual benefits in working together to provide an aligned seminar that would function as New Zealand's one and only biosecurity-focused best practice annual event.

The NPCA is very keen to maximise the opportunity NETS offers with its local flavour, three-day duration and the potential for industry training to become integrated in what we do.

The first aligned event is going to be NETS2012 – Pests in a Dynamic Landscape, to be held in Wairakei. It's not only the mudpools and geothermal activity that is dynamic, the NZBI and indeed the whole biosecurity sector is dynamic.

Craig Davey
NZBI Immediate Past President
Craig.Davey@horizons.govt.nz

Memorable quotes

"Beetles embody all the talents of the middle classes. They are not aristocratic, vain esoterics, like butterflies or moths, or communists, like ants and bees. They're not filthy, opportunistic carpetbaggers, like flies. They are professionals with a skill. They're built for a job, and get down to it without boastfulness or hysterics. And there is nowhere that doesn't, sooner or later, call in a beetle to set up shop and get things done."

AA Gill in Peter Marren's article, *Darwin's War-horse: Beetle-collecting in 19th-Century England*.

Right: broom seed beetle

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Weedbusters update

Weed handbook launched

Weedbusters NZ's new book, *Weed Control Handbook* is now available. It explains how to identify and control weedy plants with concise instructions on the use of herbicides currently available.

Garden weeds are examined first, before the book moves on to target weeds that threaten native eco-systems. Two and sometimes three photos identify each weedy plant. The book divides weeds into groundcovers, grasses, vines, shrubs and trees.

It is advertised at $30 and is available at commercial outlets and at www.weedbusters.org.nz.

Search on for biosecurity gems

Peter Russell is looking for "good yarns" about biosecurity – humorous stories that may get lost if people don't jot them down.

Peter said he needs some agents on the inside of biosecurity organisations to draw out some of the stories that abound. His email is: peter.russell@ew.govt.nz

Although it is unlikely to be what was envisaged by the Institute's archiving project, here are a few "tall tales and true" that have come to the attention of *Protect* magazine.

- A biosecurity officer was phoned up by the CIA asking for information on surveillance plants. The caller wanted to know about their specifications, the quality of the images, the focal range, who manufactured them and where they could be bought. As well as wanting to meet some biosecurity officers they were also keen to interview some of the country's biological control agents.
- After the February aftershock in Lyttelton, a resident fled to their driveway and came face to face with a very wet and upset possum that had been shaken from its tree into a swimming pool. The resident and the possum stared at each other in shock about what had just happened and what to do next.
- Easter is a popular time for promoting the Easter Bunny's bad side. One local authority promoted a rabbit shoot. Spell check saved the day by correcting a story suggesting that Easter was an ideal time to get out and shoot rabbis with a s*it gun.

Advice for newcomers

Protect asks experienced practioners to share advice with newcomers to biosecurity.

Ray Clarey, Greater Wellington Regional Council Senior Biosecurity Officer Ray Clarey shared his philosophy at NETS2011:

- Always trust people until they give you a reason not to
- Never stifle natural flair and ability
- Always provide a visible ladder of promotion
- Be the boss, but don't be bossy
- Provide opportunities, make the job interesting through variety and challenge
- Be prepared to do what you demand of others

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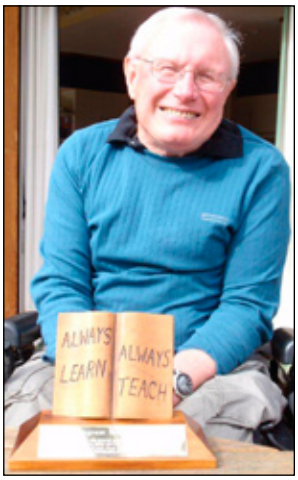
NETS2011

Purveyor of knowledge recognised

Ian Popay is this year's recipient of the Peter Ingram (Book of Knowledge) Award for commitment to spreading knowledge about biosecurity. Long-time colleague Paul Champion prepared this citation for Ian.

Ian has had an extensive science career in New Zealand since arriving in the 1970s after a five-year stint as a cotton agronomist in Uganda and Kenya. His first NZ publication in 1975 was on barley grass control and was followed with many other papers in the old Weed and Pest Control Conference Proceedings, now known as the *Plant Protection Journal*. Subjects included nodding thistle, gorse, Californian thistle and field horsetail management, organic farming methods – then considered very alternative – urban weeds and even on the first recognised environmental weed, old man's beard, as well as about another dozen papers on barley grass.



Ian Popay, left, with the Peter Ingram (Book of Knowledge) Award.

In absentia: John Mather, below left reads the citation during Ian Popay's award presentation while Paul Champion holds the cellphone relaying the message to Ian at home, and Des Pooley looks on.

He worked for MAF and spent many weeks on weed safaris with colleagues Frank Allen, Jennifer Hartley and Alan Meeklah. Undoubtedly this is where he grounded his extensive knowledge of weeds and their distribution.

His knowledge of pasture and other weeds is well recognised and he served on the Technical Classification Committee of the old Noxious Plants Council.

His dedication was such that he was once supposed to be taking his young wife to the New Zealand Symphony Orchestra, but turned up very late, formally dressed in an old sweater, shorts and reeking of 2, 4-5 T.

New legislation and restructuring saw transfers for Ian to AgResearch, forming a private consultancy, then a stint with DOC in 2001 where he transferred his focus to environmental weeds and designing a weed-monitoring system. Finally he has been appointed a Landcare Research Fellow. He is a member of technical advisory groups for the National Pest Plant Accord and National Interest Pest Response Programmes for MAF. He served on the Plant Protection Society Committee for decades and was President from 2003 to 2005 and gained a Life Membership in 2006. He is also an active member of the Australasian Council of Weeds and has a long history of involvement in our institute and its predecessor, the Institute of Noxious Plants Officers.

But Ian gains the award not just for his long service in weed research, or even for his role in spearheading the *Common Weeds of New Zealand* book, but for the many ways that he has made this knowledge available to others in the weeds field. He has been committed to ensuring that the scientific knowledge that he has accumulated during his research, and other information that passes over his desk from other sources, is disseminated to others in the weeds field in a way that can be of use to them, and in a way that they can understand. He has acted as a mentor to many weeds folk across New Zealand. He has also been unstinting in his willingness to support and encourage work around weeds awareness and community involvement, notably in an advisory role and sounding board for initiatives under the national Weedbusters programme. He's a person who can always be counted on to have the answers, or know who to ask to get them, for any weeds question.

'I want everybody involved in the fight against noxious beauties and alien invaders to keep learning and keep teaching - it's the only way we can continue to improve our performance in weed and pest control.'
Ian Popay

Ian said he was surprised, but very pleased to have received the award.

"I remember Peter very well, and also know all the people who have been awarded it in the past. It's flattering that I can now consider myself among their number. I want everybody involved in the fight against noxious beauties and alien invaders to keep learning and keep teaching – it's the only way we can continue to improve our performance in weed and pest control," Ian said.

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NETS2011

Lifetime of commitment to biosecurity

Bay of Plenty Regional Council biosecurity officer Alby Osborne is the 2011 recipient of the Peter Nelson Memorial Trophy for achievement in vertebrate management.

Alby Osborne has devoted his working life and endless hours of his spare time to the region's animal pest control programme and the award is recognition of his tireless effort.

The annual award recognises valuable work in the biosecurity field, and symbolises the importance of pest animal control and eradication to maintain this country's indigenous biodiversity.

The trophy is a carved kokako standing on a limb above the skulls of small predatory mammals – a rat, a possum and a stoat.

Alby, who works out of the council's Mount Maunganui office, said he was "absolutely gobsmacked" when he was called up to receive the award. He was asked to go to the seminar dinner under the guise that he was replacing someone else unable to attend.

"My goodness, I did not know my colleagues could tell so many lies to get me there, and they only gave me 24 hours' notice … it's a huge honour."

Alby began work with the Meringa Rabbit Board in Turangi in 1964. With the exception of stints in the army and navy, he has worked in the pest destruction industry ever since, including working for the Central Bay of Plenty Pest Destruction Board. He has been involved in the industry at all levels, including as a national training officer for several years.

In the late 1970s during the kiwifruit boom, he gave up his free time to design and introduce feral pest control methods, which were lauded for helping to save landowners from financial ruin.

"It's been a huge challenge over the years and has meant spending many hours working in my own time, but it's work I'm very passionate about," he said.

Alby's manager, Robyn Skelton, who is land resources manager for the Western region, said she was very proud that a key member of the council's biosecurity team had been recognised in this way.

"It is officers like Alby, who work in the background doing some wonderful pest control work, which has made it possible for many of our biosecurity gains. That includes his pest control efforts to save Mauao's [Mt Maunganui] struggling petrel colony."

– Bay of Plenty Times

Bay of Plenty Regional Council biosecurity officer Alby Osborne, left, is presented with the Peter Nelson Memorial Trophy by last year's winner Bill Simmons at NETS2011.

Well said: Ray Clarey wins the Robb McGuinness Stook

Ray Clarey, right, with the award for Best Conference Presentation about his career in vertebrate pest management. Among a career's worth of useful knowledge he has gained, he said 1080 was and still is the most effective vertebrate control tool. He suggested rebranding it to "Salvation" or "Citation" or "Ovation".

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NETS2011

Much discussed at NETS2011

Chris Macann provides a brief round up of three busy days.

NETS2011 bought together almost 250 Institute members to discuss "Tomorrows Pests Today".

Following welcomes from local iwi and President Craig Davey, Minister of Biosecurity Hon David Carter opened the gathering by reinforcing the importance of biosecurity to the country and in particular our export markets.

Plenary sessions opened with Tim Low from The Invasive Species Council of Australia and author of *Feral Future* emphasising the importance of biosecurity in the face of global warming. He said invasion biologists and climate-change biologists have a lot to gain from a closer relationship, and endorsed a recent New Zealand report which says that in the short term invasive species are a much more serious issue for New Zealand than climate change.

Invasion biologists and climate-change biologists have a lot to gain from a closer relationship.

– Tim Low, above

Nick Waipara (Auckland Council) followed by outlining the battles the host region faced as a major gateway for many invasive species.

Barbara Hayden (NIWA) showed how New Zealand was being protected from invasions through marine gateways. She said the size and complexity of the "vessel vector" presented huge challenges but she showed there has been progress.

Wendy Billingsly (MAFBNZ) in "Measuring Biosecurity Behavioural Change" said awareness or education was not enough because a campaign must show actual behavioural change as a result.

Waitangi Wood (Tangata Whenua Roopu) spoke about kauri dieback as an example of the importance of biosecurity to iwi.

In closing John Innes (Landcare Research) suggested biodiversity sanctuaries were worthwhile endeavours because they offered experimental learning that could be shared, facilitated new stakeholders and offered education and advocacy opportunities to a large number of people.

Andrea Byrom (Landcare Research) showed that New Zealand could scale up pest control from community-led blocks to landscape scales. She said integrated networks of pest management zones could enable native species dispersal through landscapes, as well as reduce the spread among them of invasive species.

Margaret Stanley (University of Auckland) ended the formal sessions saying there was a lot of work ahead but pointed out there had been the many significant achievements.

Amidst the plenary sessions were two-minute gem sessions, workshops, poster and oral presentations colouring the biosecurity spectrum. Among the many presentations were discussions on native alternatives to the aquarium trade, building a national biosecurity capability network, biosecurity for voyaging canoes, the complicated sex life of the invasive marine pest *Styela clava*, the future of animal welfare in pest management, and the biosecurity implications of increased irrigation in Canterbury.

Three areas visited on field trips

On the North Shore visitors saw restoration projects in forest remnants in the midst of a large urban area.

Visitors to Rangitoto Island saw the results of the mammalian pest eradication project and the continuing weed control effort. Sniffer dogs reminded visitors to the island of the importance of internal biosecurity borders.

Visitors to Cascade Kauri Park in the Waitakere Ranges Regional Park learned about the management of kauri dieback, and the Ark in the Park project involving species reintroduction to more than 1000ha of predator-controlled parkland.

In between there was the usual excited buzz when biosecurity friends come together to catch up, or meet and swap ideas for the first time.

The AGM farewelled with thanks outgoing Treasurer Louise Cook, *Protect* magazine Editor Lynne Huggins and President Craig Davey. Welcomed were new President Pedro Jensen, new Treasurer Randall Milne and new Vice-President Sara Moylan.

The Institute honoured Ian Popay with the Peter Ingram Award for pest plant knowledge-sharing, Alby Osborne with the Peter Nelson Memorial Trophy for Vertebrate Pest Management, and Ray Clarey for Best Presentation. Straight shooter Dean Rougton was this year's winner of the Clay Bird Shooting Plate.

The formal dinner was hijacked by one of the venue cleaners who took to the stage to share with the crowd his personal interpretation of biosecurity. Eventually revealing himself to be comedian Mark Wright, the interloper left the stage to The Ricky Morris Band who played the night away.

Looking ahead to next year, NETS2012 Pests in Our Dynamic Landscapes will be organised by the Central North Island Branch and held at Wairakei from July 18-20 when National Pest Control Agencies (NPCA) will take part in NETS for the first time.

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NETS2011

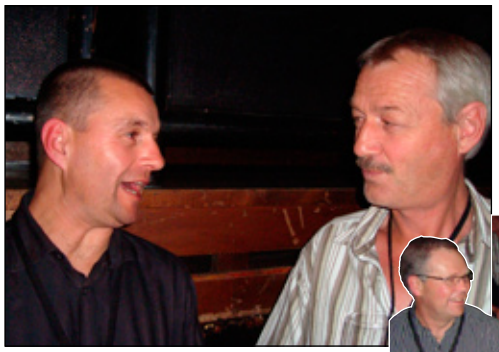
Business & enjoyment at annual event

Handover: Outgoing president Craig Davey, left, congratulates new President Pedro Jensen at the NZBI 2011 AGM.

Nice shot: Dean Roughton, left, receives his clay bird shooting trophy from new Institute president Pedro Jensen.

With thanks: Outgoing treasurer and membership secretary Louise Cook with her thank you bouquet.

Well earned: Former* Protect *magazine editor Lynne Huggins, above, with her thank-you gift.



Bradley Myer, left and Robin van Zoelen chat during dinner

Round table: From left, Keith Briden, Dave Carlton, Matt Hickson, Ewen Kennedy and Thomas Paul catch-up during dinner.

Something amusing: Steve Hix, left, and David Brittain.

Lynley Hayes with Graham La Cock.

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NETS2011

Duncan Kervell discuses Phoenix palm with Holly Cox.

In the frame: Delegates on a field trip to Waitakere Ranges Regional Park. There a few too many people to identify but you get the picture.

Cynthia Roberts, left, pays close attention to aquatic pests, the Mediterranean fanworm in particular.

Michelle Crowell learns a bit more about the hadda beetle from Therese Oliver.

Steve Benham, below right, leads a group during a field trip to Rangitoto Island.

Brian Shields with sniffer dog friend on the Rangitoto Island field trip.

Workshop-goers learn about the Asian paddle crab pest and the native paddle crab.

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NZBI Personal Development Award recipient reports back

Gleanings from Aussie pest conference

Senior Biosecurity Officer (Animals) at Marlborough District Council, **Jono Underwood**, attended the 15th Australasian Vertebrate Pest Conference in Sydney in June with support from the NZBI Personal Development Award. Jono reports on some of the key messages for New Zealand from the conference.

The Australasian Vertebrate Pest Conference is held triennially and is seen as a key platform for both scientists and managers to congregate, share expertise and recent advancements in vertebrate pest management.

I was fortunate to gain financial support from both the Marlborough District Council and the NZBI to attend.

I will outline some key papers that I found raised some thought-provoking issues, and others that could well be directly relevant to New Zealand. There were also papers from New Zealand that raised the profile of New Zealand science and biosecurity issues.

Community engagement vital

Rodent eradication and community engagement on Lord Howe Island

Wilkinson I, Priddel, D

With Lord Howe Island holding World Heritage status, the Department of Environment, Climate Change and Water (NSW) has been planning the eradication of ship rats (*Rattus rattus*) and the house mouse (*Mus musculus*) from the island. A critical component has been gaining support from the permanent population on the island. There has been a concern about the impact a large aerial poisoning programme would have on human health and tourism.

The engagement needs to be driven by a party seen to be independent and trusted by the community.

Even though the planning authorities provided large amounts of information addressing the concerns, strong opposition has continued.

The main force behind the opposition was the large degree of misinformation driven by one or two community members which exacerbated concerns.

A key lesson from this example is the way in which communities are engaged and by whom, is an important part of any management programme. It was clear that communities often hold little trust of "government", and the engagement needs to be driven by a party seen to be independent and trusted by the community.

1080 – why 0.02% for rabbits

A review of the basis for current practice in aerial 1080 poisoning of rabbits in NZ

Nugent G, Warburton B, Fisher P, Twigg L

While I have kept abreast of early findings of Landcare Research through the Rabbit Coordination Group, it was very enlightening hearing the thought processes behind current research by Landcare into the aerial 1080 poisoning of rabbits.

There has been a growing disparity between the aerial baiting of possums and rabbits in New Zealand: for possums, a comparatively higher toxic loading (0.15%) of bait and much smaller amounts of bait, while for rabbits a comparably lower toxic loading (0.02%) and much higher sowing rates are used.

It is apparent that the early basis for 1080 rabbit control was based on lower toxic loadings to reduce the risk to livestock, than for efficacy for rabbits. Also,

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current carrot bait cutting practices appear to produce a large number of sub-lethal bait fragments. As a result the rabbits need to find several carrot pieces to ingest a lethal dose before the stop-feed action of 1080 occurs.

Therefore, it can be fairly confidently said that current sowing rates are compensating for low toxicity and poor bait quality and the need for the rabbits to find multiple baits.

There is then scope to reduce the amount of bait needed while maintaining high levels of efficacy.

It is apparent that the early basis for 1080 rabbit control was based on lower toxic loadings to reduce the risk to livestock, than for efficacy for rabbits.

Monitoring fox control

Remote camera monitoring pest control impact across the Goonoo

Towerton A, Penman T, Kavanagh R, Dickman R, Robinson R, Chaffey C

With greater emphasis on a strategic approach to vertebrate pest management, monitoring is becoming a more crucial component, rather than the historical 'number of pests killed'.

An example of this is a landscape scale fox control programme around the Goonoo Reserve, Dubbo, NSW. A monitoring project was established to tie into a large fox baiting programme that involved NSW Parks and Wildlife Service, Forests NSW and numerous surrounding landholders.

This project looked at the use of remote cameras to monitor fox activity and potential mammalian and avian prey species before and after fox baiting programmes.

The remote cameras proved very successful in detecting fox activity along with 35 other mammal and bird species. However, no significant effect was detected in terms of fox or prey activity after the baiting programme.

As the programme relied on a number of field staff for camera placement and setup, the issue of inconsistent technical experience resulted in a portion of unusable data.

This showed the importance of training in the proper use of new technology available in the field and the role standard operating procedures play in ensuring a consistently high standard of work.

More on rabbit diseases

Preliminary characterisation of the non-pathogenic Australian Rabbit Calicivirus RCV: Implication for biocontrol

Strive T, Jahnke M, Holmes E, Kerr P, Liu J, Wright J

It has been noted the Rabbit Haemorrhagic Disease Virus (RHDV) is less effective in more temperate areas of Australia. This is believed to be a result of circulating endemic caliciviruses, related to RHDV, but they are non-pathogenic and could provide some level of cross immuno-protection to lethal RHDV infection. This related calicivirus (RCV A1) has been recently identified by research teams in Australia.

A total of 36 strains of RCV A1 were isolated from 11 different sites. Phylogentic analysis found that the RCV A1 arrived with the very first rabbits introduced into Australia. Of interest was that divergence points of the 36 strains coincided with key points in rabbit invasion history. The first divergence aligned with the introduction of myxomatosis in the 1950s and the second with the escape of RHDV in the mid-1990s. These bottlenecks in the rabbit population resulted in a perfect situation for the RCV A1 to diverge into new strains.

Getting an idea whether there is a benign strain of calicivirus in New Zealand could assist in understanding the rabbit-RHDV relationship.

Also of interest was that the strains of RCV A1 appeared to also be grouped spatially, suggesting there is little or no movement between rabbit populations at larger regional or national scales.

This area of research would be quite valuable in a New Zealand context considering the current high level of rabbit resistance to RHDV. Getting an idea of whether there is a benign strain of calicivirus in New Zealand – and possible protection implications – could assist in understanding the rabbit-RHDV relationship.

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NZBI Personal Development Award recipient reports back

Species specific toxin delivery

New initiatives in predator control tools

Blackie H, Eason C, MacMarron D, Woodhead I, Diegel O, Murphy E

While having a limited exposure to current advancements in toxin delivery systems, it was enlightening getting an update on the work being undertaken by Lincoln University, Connovation and others in developing a species specific toxin delivery system.

An update was given on the development of the Spitfire® delivery system to target stoats. The animal would enter a tunnel triggering a release of a gel laced with para-aminopropiophenone (PAPP) onto its stomach. This gel is then rapidly groomed by the animal and ingested.

During the first field trials in West Otago where the system was deployed in boxes, stoats were shown to readily enter the system and get "sprayed".

A species-specific function is under development whereby species gait and weight-bearing characteristics will be modelled and a touch-screen type tread plate will be used as a trigger.

Another inconvenient truth

How much pest control will it take to halt the decline in biodiversity?

Choquenot D, Clout M

On more of a sobering note, this paper looked at indicator species in terms of New Zealand biodiversity and the impact of current levels of weed and pest management on the indicator species' occupied range.

This was carried out through analytical and modelling processes and clearly showed that expenditure on threat management would have to increase by between 9 and 25 times to plausibly halt the decline in New Zealand's biodiversity.

It was evident that such a modelling approach is always in need of more robust data, especially data relating the impact of threat management to the target indigenous ecosystems or species.

Dogs eating possums

Secondary poisoning risk for dogs eating possums killed with sodium nitrite

Shapiro L, Eason C, Arthur D, MacMorran D

With sodium nitrite progressing through research phases as an alternative toxin for use in vertebrate pest management, secondary poisoning risks are usually at the top of the list.

This paper presented details of a controlled trial looking into the effect of sodium nitrite-killed possums being fed to dogs.

Dogs destined for destruction through the pound were used and segregated into different feed regimes of possum meat, possum vital organs and stomach contents/ intestines.

The very low risk of secondary poisoning with sodium nitrite is a huge positive when it comes to on-ground application.

All the dogs were blood tested to monitor methemoglobin (MetHb) levels. An increase in MetHb would indicate a degree of sodium nitrite poisoning.

None of the dogs tested showed any signs of ill effects as a result of feeding on the varying components of the possum carcasses.

The very low risk of secondary poisoning with sodium nitrite is a huge positive when it comes to on-ground application.

RHDV Boost

The next step in rabbit biocontrol

Read A, Hick P, Kirkland P, Cox T, Land C, Saunders G, Kerr P, Matthaei M, Strive T, Cooke B

A large research programme, titled "The RHD Boost Programme", is under way, looking into variant strains of RHDV for potential future release.

In contrast to the Australian, and probably the New Zealand situation, new variant strains of RHDV have emerged in Europe over the last decade and have continued to suppress rabbit populations.

It is the object of the Australian research programme

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to import and assess a number of these variant strains. They are currently looking at five such strains, some of which occur within a divergent group termed RHDVa.

The assessment of these variant strains will look at the ability to overcome genetic resistance and any prior infection with the benign virus, RCV A1. It is also hoped any new variant strain has the potential to outcompete the current Australian strain of RHDV (Czech strain).

A secondary component that was also discussed is an RHD Accelerate project. This is more aligned to current thinking in New Zealand where endemic strains (either Australian or NZ) can be indentified with the most virulent forms isolated and possibly re-released to try and overcome or out-compete other strains.

The one thing that became clear about such research programmes is the level of long-term financial commitment required to reach the desired outcomes.

The one thing that became clear about such research programmes is the level of long-term financial commitment required to reach the desired outcomes.

Conference a positive experience

Attending this conference proved very positive in terms of my ongoing personal development. I found reporting on attendance to a conference has proved very difficult. The main difficulty was quantifying in words what I gleaned. Being in the early stages of my career in biosecurity, I found simply "sponging" the huge amount of scientific information presented, the best approach to assist my learning. I feel simply being exposed to the vast array of vertebrate pest management science coupled with a background of strategic policy, will assist my ability to contribute to our biosecurity system both here in Marlborough, and New Zealand.

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New legislation reinforces co-ordinated approach

Working together for effective pest management – binding the Crown

Ann Thompson
Department of Conservation

Continuing to improve the ways we manage pests is essential in protecting New Zealand from the adverse impacts of invasive species on our environment, economy and lifestyle. However, improvements need not be limited to tools and techniques. Currently there is a significant development under way that aims to improve pest management in New Zealand – amendments to the Biosecurity Act.

The Biosecurity Law Reform Bill is intended to promote more effective and efficient biosecurity measures, encourage partnerships in the management of biosecurity risks, and provide flexibility to allow future improvements.

One of the changes that will result from the Bill is that the Crown will be bound to "good neighbour" rules under Regional Pest Management Strategies, which will, in future, be named Regional Pest Management Plans.

NETS2011 provided an opportunity for pest managers to consider this change and how it will work in practice. At a workshop led by Keith Briden and myself from the Department of Conservation, pest managers discussed how they could work together when this new requirement becomes law, in light of the extensive demands on the pest management system, compared with the resources that are available.

Three questions were used to focus our group conversations:

1. What are the priorities for pest management?
2. How can we co-ordinate more to achieve better pest management results?
3. We can't do everything – so what are acceptable tradeoffs?

The groups came up with similar themes, including:

- Despite the change in legislation prompting the need for greater co-ordination, everyone was keen to achieve better pest management results anyway. We already work well together, so we have a good basis to work from.
- The belief that there are opportunities for everyone to improve pest management, and that this requires good relationships and a collaborative, transparent process.
- It will be helpful to have some general principles for plan development, and this is the reason for the development of the National Policy Direction that is currently being written.
- The need to balance national and regional priorities and views of communities.
- Regional forums and contacts could be used to build relationships and best practice.
- The need to identify the best interventions and what will achieve the best outcomes.
- The principle that no trade-off should compromise the wider system performance, meaning we should not lose sight of the national perspective where addressing regional problems in that imposing a collective cost on the Crown may hinder other pest management work.

Working together to ensure New Zealand is protected from the adverse impacts of invasive species is why we belong to the New Zealand Biosecurity Institute. The Biosecurity Law Reform Bill will soon reinforce this, but it is the relationships and conversations that will make the difference in pest management results.

Let the conversations continue.

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Australian issues

Australian weed infestations worry biosecurity officer during visit

When Marlborough District Council Senior Biosecurity Officer Ben Minehan visited Australia earlier this year he noticed nassella tussock, also known as serrated tussock, in the town of Goulburn, 200km southwest of Sydney. He responded with a history lesson for the citizens of the town by way of a letter to the editor of the local paper. Here is a selection of his comments.

"While visiting Goulburn, I was astounded when I saw how bad the serrated tussock problem is on the properties around Goulburn.

"We also have infestations of serrated tussock scattered across our region but all infestations are controlled annually to prevent them seeding.

"Unless something changes in the Goulburn area, the serrated tussock infestation will continue to spread until pastoral farming becomes uneconomic.

"This situation occurred in Marlborough in the late 1940s when a farmer walked off and the government had no option but to take over the farm.

"These days landowners in our region have an obligation to control their serrated tussock.

"Landowners spend $780,000 annually controlling serrated tussock in the Marlborough region alone.

"After visiting Goulburn I have no doubt that our money is well spent.

"Another invasive weed, Chilean needle grass is also beginning to spread through the Goulburn area. Despite a huge effort to contain this aggressive weed, we now have an estimated 3500 hectares of this terrible weed in the Marlborough area.

"Every year we find more isolated sites. They are a direct threat to economic pastoral farming.

"Sheep are no longer an option on badly infested properties because of the damage caused to the pelts and meat by the aggressive seed heads. If you don't attempt to contain Chilean needle grass in the Goulburn area soon the long-term impact will be catastrophic.

"It would be a shame to see such beautiful country devoid of cattle and sheep and producing nothing economically for the benefit of Australia. Just an area covered in South American weeds."

'Boat condom' trialed against marine pests

New technology to quarantine foreign vessels is being trialed in Western Australia's north in what is said to be an Australian first.

The Invasive Marine Pest Protector is designed to wrap around the hull of boats that illegally enter Australian waters.

The double-layered sleeve kills off marine growth attached to the hull, containing potentially invasive species.

Department of Fisheries' Rae Burrows said the so-called "boat condom" is part of a renewed focus on keeping marine pests out of Australia.

"The reason for doing this is that the worst factor for bringing in marine pests into Australian waters is bio-fouling, which is the nasties and pests making their home on the hulls," she said.

"Some actually form a reef on the boat hulls, so it's a great habitat for marine pests such as Asian green mussels or bay barnacles.

"This is the first time it's been tried, so it's fairly exciting.

"The risk with these illegal foreign fishing vessels is that their hulls are very dirty with marine pests, so we really want to get into the culture of making sure the hulls are cleaned before they're dragged into state waters."

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Pacific Invasives Initiative

Resource kit developed to aid island pest eradication programmes

Souad Boudjelas
Programme Manager, Pacific Invasives Initiative

The Pacific Invasives Initiative (PII) team has announced the launch of it's new online Resource Kit for Rodent and Cat Eradication. The Cat Kit can be found at: www.pacificinvasivesinitiative.org/rk.

The resource kit provides project managers with a systematic approach to planning and implementing rodent and cat eradication projects on islands in the Pacific. While focusing on rodents and cats and targeted at the Pacific, the process and many of the supporting tools are readily applicable to eradication of other invasive species and islands in other regions.

The need for the resource kit came from PII's experience working on invasive species capacity development with Pacific agencies. Because invasive species management is a relatively new tool for island restoration in the Pacific, a common constraint for agencies was access to an authoritative and consistent process and a source of information to effectively address the complexity of invasive species management.

To address this need, PII in collaboration with world-leading eradication experts, developed a stepwise process and supporting tools to provide project managers with access to current eradication best practice. Use of the resource kit will give Pacific agencies the ability to embark on their invasive species management projects with greater confidence of achieving their desired island restoration goals.

The resource kit was designed by combining PII's experience working with Pacific agencies with existing eradication best practice. PII has actively involved eradication experts and potential Pacific users throughout the development of the resource kit to ensure the content is both accurate and relevant.

PII has also developed an accompanying training course on "How to eradicate Rodent and Cats on Islands". The purpose of the course is to provide project managers with the knowledge and skills to carry out eradication projects and maximise the benefits of using the resource kit. For more information on the training course, please contact PII at: PII@auckland.ac.nz.

The resource kit is freely available on the web. A CD-ROM version can be obtained from PII on request (PII@auckland.ac.nz).

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Tribute

Farewell and thanks Arthur Healy

NZBI Life Member Arthur Healy died on September 25, aged 94. By way of a tribute to Arthur's remarkable career, here is an extract of his nomination for the 2008 New Zealand Plant Protection Society Plant Protection Medal. The citation was penned by Ian Popay.

Arthur Healy has been an outstanding botanist and, as such, has provided unparalleled service, not only to New Zealand botany, but also and more importantly to our plant protection industry. He was a one-man biosecurity organisation for many years, helping introduce and foster the Noxious Weeds Act of 1950, guiding its administration for many years, and contributing to the birth and early administration of the 1978 Noxious Plants Act.

He also spread the word about the dangers of adventive alien plants by helping those in the field identify many kinds of weeds. Although for all of his career weed administration was about the protection of agricultural industries, he also documented the spread of many species that later came into prominence as environmental weeds. Arthur was the first to recognise the serious spread of *Clematis vitalba* in parts of the South Island.

At the Botany Division of the DSIR, Arthur's first major task was to survey the occurrence of nassella tussock in North Canterbury. This study formed the basis for his M.Ag.Sc. thesis on the "Ecology and economics of nassella tussock (*N. trichotoma*) in North Canterbury and Marlborough".

Achievement of his masterate in 1944 was followed by his DSIR monograph on the subject, still the authoritative work. This bulletin gave impetus to the Nassella Tussock Act of 1946, and the young Arthur advised on this, sitting in the chamber to prompt the Minister during relevant debates. The Act established the Canterbury and Marlborough nassella tussock boards and Arthur was a foundation member of both.

He was largely responsible for drawing up the 1950 Noxious Weeds Act – probably New Zealand's earliest attempt at weed risk assessment.

Arthur was also on the Fitzharris Committee of Enquiry into Noxious Weeds Administration, whose report formed the basis for the 1978 Noxious Weeds Act. He was the leading light on the Technical Classification Committee of the newly established Noxious Plants Council, whose task was to decide which weeds, proposed by district committees, found their way on to official list.

"His career in the Public Service exemplifies 'Botany in the service of Man', and his work still continues,"
– Eric Godley, director Botany Division DSIR in 1978 speaking about Arthur Healy, above.

Arthur was an inveterate collector, not only of plants but of harvestman spiders, aphids, fungi and other organisms, an activity that resulted in him having species named after him – *Rakaia healyi*, and an *Aphis healyi* and at least one other.

He was also mentioned as a collector in papers on rust and smut fungi, plant galls, and lichens.

Between 1942 and 1959 he published a series of papers describing the arrival of new adventive plant species and their spread through the country.

Following on from these papers, he began publishing a series of papers on how best to identify different groups of weeds (and some useful species) – clovers, docks, thistles.

Later, these papers were revised and collected into the book, *Identification of Weeds and Clovers*, published in 1970 by the Weed and Pest Society. This book, for the first time in NZ, introduced keys to help identification based on vegetative characters. Also, in 1969, he was responsible for the book entitled *Standard Common Names for Weeds in New Zealand.*

Between 1974 and 1977 he with colleague Elizabeth Edgar completed *Volume III of the Flora of NZ*. Its focus then was on the weediness of these species in relation to agriculture. This volume of the *Flora* was also the first to integrate native and introduced species.

Arthur was a one-man biosecurity department, and warned of the dangers of importing plants likely to become weedy. He spent time investigating the methods by which seeds and fruit of weeds entered New Zealand by accident. He was also a pioneer in highlighting the dangers of plant imports into the country, reporting on the uncontained spread of environmental weeds, and carrying out informal early weed risk assessments.

Arthur was one of the first to notice the spread of old man's beard in northern South Island in the 1940s.

His skills included those of taxonomist, collector, researcher, author, ecologist.

His influence spreads widely in an area in which accurate identification of plants is of great national importance.

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