Winter — 2004

Protect

New Zealand **Biosecurity** Institute

Our mission: "To preserve and protect New Zealand's natural resources from the adverse impacts of invasive pests."

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Protect

Winter 2004

Magazine of the New Zealand Biosecurity Institute

Contents

Editor's Note 4

News from the Executive 5

NETS2004 Biosecurity for biodiversity: forging the links 6

News from the Branches 7

Member Profile: Dave Galloway 10

Member Profile: Michael Urlich 12

Weedbusters' update 13

Exotic fish: Valuable fisheries of pests? Dave Rowe 15

Sounding out submerged plants AlekiTaumoepeau & Rohan Wells 17

Aquatic pest awareness in seven easy steps ...19

Training options for those dealing with pests Interview with Kevin Wafer 21

Training: A personal perspective Tim Senior 22

Review ensures qualification's relavance Jan Crooks 21

Biosecurity Bits 24

Tome for grass enthusiasts Book review by Ian Popay 27

Editor's Note

Well, another issue of *Protect* is about set to hit the email servers and post boxes up and down the country in the run-up to NETS 2004. Thanks to Carolyn Lewis' steady hand, it is again brimful of interesting, and hopefully, useful information for those of you out there at the "pest face".

Along with the important news from within the Institute, its branches and the forthcoming NETS event, there are two profiles of NZBI members and news on community-based events running in conjunction with Weedbusters.

Two important themes fill the rest of the issue: Aquatic pests and training opportunities for those working in the biosecurity at a local government level.

Dealing with introduced fish species in our waterways is becoming more of a problem as koi carp, *Gambusia*, rudd, and the like, spread. Dave Rowe, from NIWA, reviews the situation as it stands now and what impacts invasive species are likely to have.

Aleki Taumoepeau and Rohan Wells, both also from NIWA, report on work they have undertaken in the use and refinement of sonar equipment to locate and survey aquatic plant species.

The final piece on an aquatic theme outlines a programme adopted in Nelson/Marlborough by DOC to get the younger generation on side to help spot introduced species by working with school children, showing them how pest fish and plants change the look and quality of our waterways. It is working to produce an aware group able to spot changes in the environment.

The training available for pest plant officers and others is outlined in the second theme with an interview with LGITO General Manager Kevin Wafer. A personal view of the current training course is given by Tim Senior, while Jan Crooks reports on the review of the Certificate in Pest Plant Control.

Carolyn Lewis' round-up of biosecurity in the media — Biosecurity Bits — followed by Ian Popay's review of a major publication on grasses and turf brings the issue to a close.

With the completion of this issue, I am handing the editorship of *Protect* to Carolyn Lewis who properly deserves it as she knows the field and has the contacts to pull together the material for the magazine.

Carolyn has been performing the job since taking an active part in the Institute's magazine. I will continue to do the layout and the sub-editing.

Thanks and all the best for NETS2004.

Col Pearson
Editor

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New Zealand **Biosecurity** Institute

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

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News from the Executive

NETS2004

By the time you are reading this it won't be long before NETS2004 kicks off in Rotorua. A lot of hard work has gone in behind the scenes to ensure this will be another great conference.

There are a number of things that you yourself can do to help ensure its success:

1. Register as early as possible so the organisers can make the best arrangements for the number expected.
2. If possible stay at the venue. A conference is often enhanced by having everything under one roof, as all those important conversations and introductions are able to go on long into the night and continue over breakfast. Networking can be one of the most useful things to come out of attending conferences. Also if we patronise the hotel well then we get some some free rooms for invited guests (like our international speakers) which helps to keep costs down.
3. Attend the AGM! By rights our constitution requires us to have 20% of our financial members present in order to make up a quorum. So please make every effort to attend and have your say on the running of your organisation.

A fabulous optional weekend programme has also been arranged to allow us to appreciate the unique Rotorua region. On the Saturday you can cruise aboard a Sea Cat to a possum and rat-free haven — Mokoia Island. As well as seeing endangered flora and fauna, there will be an opportunity for a soak in a hot pool. On the Sunday there is trip to the awesome Waimangu Volcanic Valley involving cruises on both Lake Rotomahana and Lake Tarawera. So don't plan to skip off home early on the Friday, stay a bit longer and make the most of this wonderful opportunity to get to know our country and other NZBI members better.

Thanks to Cawthron

After kindly allowing us to use www.biosecurity.org.nz for a number of years (and paying for the privilege as well) Cawthron has now formally handed over this domain to us. We would very much like to thank Graeme Robertson for this wonderful show of support. Interestingly, Cawthron was approached by a US company selling test kits for anthrax which wanted to buy "biosecurity.org"; luckily for us, Cawthron wasn't tempted.

New Members

We would like to warmly welcome the following new members:

Jim Clarkson, **Sarah Crump**, **Andrew Mercer** – Department of Conservation
Dave Bayly – Greater Wellington
Shyama Pagad – Invasive Species Specialist Group
Richard Goldsborough – Royal Society Teaching Fellow (working jointly in 2004 with the Department of Conservation and Landcare Research)
Liza Koshy – Waikato University

NZBI Award Nominations

As you will all have no doubt read in the last issue of *Protect* we would like to instigate some new awards that will be given out at the conference dinner at NETS. This is a chance to honour all those unsung heroes, be they individuals, groups or organisations, who have gone beyond the call of duty and done something special in the name of biosecurity. It's also a chance for the NZBI to raise awareness about how people may be putting New Zealand's, or another country's biosecurity at risk, or highlight any areas needing improvement.

Nominations are not just restricted to members of the NZBI and you can nominate yourself. So please get your thinking caps on and send your nominations to me (**hayesl@landcareresearch.co.nz** or Landcare Research, PO Box 69, Lincoln) no later than June 30.

Peter Ingram Award Nominations

Remember also to get nominations for the Peter Ingram Award to Alison Gianotti (**gianottia@landcare research.co.nz**, or c/- Landcare Research, Private Bag 92170, Auckland) by the end of June. We are looking to acknowledge a person who is either making significant efforts to further their own pest plant education or is enabling others to do so.

NETS2005

Preparations have already begun for NETS2005 which will be held at Christchurch on July 27-29, 2005. A decision was made to move the conference closer to the New Zealand Plant Protection Society Conference (which is always held in the second week of August) to make it more feasible for our two organisations to possibly fund and share an overseas speaker. A booking has been made for Rydges Hotel which is right smack bang in the centre of Christchurch overlooking the Avon River, and is part of the infamous "Strip" — an area known for its restaurants and bars. More on this conference later.

Posters

Now that we have a good number of subs in we will go ahead and get our new poster printed so copies can be handed out at NETS2004. All branch secretaries will also be given a supply to hand out to any members not attending NETS.

Hoping to see as many of you as possible in Rotorua — don't forget to bring your togs!

Lynley Hayes ☺

NETS2004 July 21-23, Rotorua

Biosecurity for Biodiversity: Forging the Links

International speakers, community representatives, field trips, interactive workshops, great food, drink and discussions, and a great venue — NETS2004 has it all!

NETS2004 is all about looking at the "why" of biosecurity — why do we go to such efforts to keep new invasive alien species and organisms out of New Zealand and to manage the ones that are already here?

The short answer for most of us is to protect the biodiversity of this amazing environment. From Kaitaia to the Bluff, projects are under way that demonstrate the importance of plant and animal pest control to the protection of our biodiversity. These are combined efforts involving central and regional government and the communities in which the projects are based.

The programme for NETS2004 reflects this and covers all aspects of biosecurity from the perspective of Institute members who come from all walks of the biosecurity management spectrum.

Once again, the Vertebrate Pest Management Institute of New Zealand (VPMINZ) is joining the NZ Biosecurity Institute (NZBI) for NETS2004 and will be running concurrent sessions.

"Given New Zealand's long experience and high standing in vertebrate pest control on the international stage, the presentations will be made by people who are arguably world leaders in their particular field," says Bill Simmons, VPMINZ President.

The joint themed session on the Thursday morning also has an international flavour, and includes a presentation from Mr Tetsuro Uesugi, the Biodiversity Co-ordinator of Japan's Ministry for the Environment, outlining the biosecurity threats faced by Japan and new measures being introduced at a national level to address the problem of invasive species.

Other speakers with a global flavour include Australia's Dr Mark Lonsdale (Chairman of the Global Invasive Species Programme), Dr Mick Clout (founding chair of the IUCN Invasive Species Specialist Group based in Auckland), and Sarah Russell of the Australian Quarantine Inspection Services.

"A lot of hard work has gone in behind the scenes to ensure this will be another great conference," says Lynley Hayes, NZBI President.

"I strongly urge all members to make the most of the networking and educational opportunities that this three-day event will provide."

By now you should have received your NETS2004 registration pack in the mail, complete with hotel booking forms and weekend programme information. If you haven't, email **info@eventimpressions.co.nz** for one to be sent out to you, or download the forms from **www.biosecurity.org.nz**

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News from the Branches

Lower North Island

A two-day NZBI branch meeting and field trip was organised by the Greater Wellington Regional Council (GWRC) on March 2-3.

Day One started in the GWRC Committee Room with a talk by our wetland expert, Melanie Dixon, who discussed the biodiversity approach of GWRC to wetlands and the main threats, including specific weeds, to their long-term viability.

GWRC has just assessed the majority of the wetlands in the region, scoring them in terms of wetland type and overall health, to prioritise them for management. Melanie emphasised the importance of hydrology in driving wetland processes, and that fluctuating water levels may be useful in controlling some weeds.

Members of the Lower North Island branch hear about the restoration work under way in the Otari Native Plant Sanctuary.

On the afternoon of Day One the group went to Otari Native Plant Museum to hear a talk from Jonathon Kennett, who is employed by Wellington City Council and has been involved in a large restoration project in the weed-infested valleys of the Otari catchment. With a scientific approach, Jonathon's team trialed several native species before settling on robust pittosporums, karamu, five-finger and wineberry. With GWRC assisting in initial weed control, and a large volunteer network, large areas have been planted over the last two to three years.

Jonathon stressed the importance in having very close plantings, even for large areas, which accelerates canopy closure and thus reduces the amount of weed releasing required in later seasons. This is directly related to volunteer enthusiasm; forty plus people turning up for planting days, and less than 10 for weeding days. NZBI members were impressed by the rate of growth of the native plantings.

Living Earth, based at the Happy Valley Landfill was our next port of call. After a solid hour of informative talk by plant manager Tony Flett, the group began to adjust to the strong ammonia smell given off by the decaying vegetation. Tony went through the history of the company and the entire method of production. He explained that over a couple of months, a mixture of vegetation, woodchips, sawdust, and sludge from the Wellington sewage plant, is turned into an odourless (and supposedly edible!) compost. The plant produces over 100,000 tonnes of compost per annum, prolonging the life of the landfill considerably.

Living Earth claims that the composting process they use kills all weed seeds. At the beginning of the treatment process the piles of material are cured for three days at 55-60º, enough to decay all weed seeds, corms and bulbs. Bamboo and flax are the only two plants that do not readily break down in the production process.

Back at the meeting room, Mark McAlpine of GWRC ran through all GWRC's eradication programmes. The GWRC approach is "find 'em and kill 'em ASAP". The council has run an extensive publicity and education programme over the last eight months which has brought in a steady trickle of new eradication species sites.

Next up was the AGM at which all the councils went through issues in their respective regions. Horizons noted that they have been finding increasing amounts of old man's beard (*Clematis vitalba*) and other strategy weed sites unknown at the time of strategy writing. This provoked comment of how important it is to get to know our areas more thoroughly before committing to strategies. Craig Davey brought up the disturbing issue of horsetail (*Equisetum sp.*) in Wanganui being rapidly dispersed throughout the lower North Island in gravel and builders mix. This hard-to-kill plant is right up there with the nastiest pest plants, and something must be done about it.

Darren Underhill spoke for Hawkes Bay Regional Council (HBRC) and said there were 17 plants that were owners' responsibility but eligible for up to $3000 subsidy. Old man's beard becomes a strategy plant for HBRC on July 1, 2004, while currently more and more sites are being discovered. The privet control programme in urban areas of Hawkes Bay has been going well.

One of the general issues discussed was the big question: Are we winning? Most members felt that the war on weeds requires much more and much smarter investment to really make a difference. Moving away from a weed-led approach in areas of low environmental

Branch news Continued

value, whilst concentrating on a wider suite of weeds in high value environmental areas, makes more sense in terms of biodiversity. We should also be hitting outbreaks of new sites of known "bad" species in our areas harder. We believe that the crisis state of pest plants in this country is not getting through to higher management and that this has to change.

On Day Two, the group went to the Karori Wildlife Sanctuary. Although battling regular squalls, the group really enjoyed the tour by noted Wellington botanists Chris Horne and Barbara Mitcalfe. We learnt about the history and current vision of the Sanctuary project along with pest plant issues. With a mostly native cover, weeds such as German ivy (*Senecio mikanoides*), Japanese honeysuckle (*Lonicera japonica*) and blackberry (*Rubus fruticosus* agg.), appear in the light wells and along the pathways. As a bonus many of us were gifted with sightings of rare shags, kaka and the recently released saddleback.

To wind up the two days NZBI members took a journey up to the Kapiti Coast. A large Madeira vine (*Anredera cordifolia*) site was visited in Waikanae where a digger was used to scrape the infestation into a large pile which was subsequently burnt off. This persistent plant will take several years to eradicate from this site.

The Manchurian wild rice (*Zizania latifolia*) site in Waikanae is the most southern infestation of this plant in New Zealand. GWRC has been controlling this site now for five years and has been making steady inroads into its eradication. The issues faced in controlling it have been in getting access to several sites, and the problem of spraying plants in standing water. GWRC have now opted to spray with just Gallant® and crop oil, dropping the other chemicals used in the past.

Mike Urlich

Top of the South

The Top of the South branch held a field day in Marlborough for NZBI members with an interest in weed control. Fourteen people from Department of Conservation, Marlborough District Council, Tasman District Council, Nelmac and Landcare Research attended.

In the morning, the group was taken on a trip in the new Department of Conservation vessel skippered by Pete Brady (Programme Manager — Biodiversity Threats) to visit several of the sites in the Marlborough Sounds where boneseed (*Chrysanthemoides monilifera monilifera*) control work has taken place over the last three seasons.

Top of the South branch organised a visit to a number of sites in the Marlborough Sounds where boneseed control work has been undertaken over the last three seasons such as that shown above where work was undertaken in 2002.

Some background information to the situation was given, describing the progress being made at these sites with photos showing the boneseed infestations both before work began and during the control operations. There was extensive discussion on this control programme and good feedback from visiting participants.

The afternoon session included a trip to the Opawa Loop in Blenheim to view eel grass (*Vallisneria spiralis*) infestations. Control of these infestations began three years ago and control work for the 2004 season was due to start the week after our visit. The infestations have been controlled manually by hand-pulling the weed from boats and using scuba divers from the Blenheim Dive Centre. Progress has been good and again, discussion on the project was extensive.

The field day was considered to be a huge success. The Top of the South branch runs two of these field trips each year. They have proved to be an excellent training forum and feedback from visiting personnel has always been welcomed.

Ben Minehan

Branch news Continued

Canterbury

Canterbury Branch held a lively AGM at a local Indian restaurant recently. Attracted by good wine and Indian curry, we had eight members and a couple of partners present.

Hugh Gourlay has been elected our new branch chairman. Thanks go to Laurence Smith, the outgoing chairman, for the contributions he has made over the past six years, in particular for helping organise the successful 2001 and 2003 METS (mini NETS).

General business for the meeting revolved around NETS2005. A venue has now been booked in the centre of Christchurch. Rob McCaw, fired up on chillies, gave us a very heated run-down on the amount of time we can expect to commit when organising the conference. Surprisingly, there were still volunteers brave enough to form an organising committee!

We look forward to a busy year that will include meetings to organise NETS2005 and Weedbusting at the branch's adopted site at Lyttelton Harbour.

Jenny Williams

Member Profile: Dave Galloway

One of the joys of my time as either branch or national secretary was that I was always able to duck for cover or pass the buck when it came to providing a profile for *Protect*. However, since I stepped down as national secretary last year, it was only a matter of time before I was approached by someone saying I had not done one. For all those members who get a request from Carolyn, my advice is to give in, as you will be hounded until you do; hence the following.

I was born in Dunedin way back when, and lived in David Street in Caversham. However, we soon moved to sunny Central Otago not far from Omakau, where I started school. After my mother died and while my father was trying to get his life back together with two young sons, I went and stayed with relatives at Mount Hutt. This was long before there were any thoughts of building an international ski field on the hill I spent a lot of time exploring. Methven Primary is now a distant memory.

From there it was back to Dunedin and our new home in Galloway Street, Mornington. (How many of you have got the connection yet?)

My schooling continued at Mornington Primary, and it was then on to Kaikorai Valley High School for the next five years. At the time this was the largest co-ed high school in New Zealand. My sporting endeavours (hockey, cricket, athletics, cross country and basketball) meant that I failed School Certificate first time round. This was in the days when 200 marks and a pass in English were required.

What followed was probably the best year of my schooling, in that I went back and repeated the fifth form year basically just copying everything from the previous year, and enjoying my sport even more. School Certificate that year was the first year of single subject passes, and I flew through in my five subjects with A+ marks.

Then followed probably the hardest year when completing University Entrance. Myself and three others were placed with all our mates who had got School Certificate the first time round and then failed UE. They had an easy year, while we were left to struggle through; they all managed to get their UE accredited, while we four had to sit the exams. Needless to say having had all the peer pressure during the year we all managed to pass.

It was now time to make the big move into the outside world. As it was a time of relatively full employment, I applied for basically the same job in three different companies each serving the agricultural sector. I landed all three, and then had to make the choice of which company I would work for. As Dalgetys was the farming side of the family's preferred company, it got my vote and I started work in the merchandise section in Dunedin in December 1969.

In January 1971, I was transferred to the merchandise, grain and seed section at the Gisborne branch. During my stint in Gisborne, I had the enviable job of supervising gangs of extremely attractive young ladies on their varsity break who carried out maize de-tasseling in our hybrid maize seed production programmes. Colleagues and friends often asked for my little black book. I also attended Outward Bound at Anakiwa, ostensibly sponsored by the East Coast Maoris (the only white fella so honoured) and this meant that on my return, what started as a three-week secondment in Ruatoria was extended to six months.

From Ruatoria I then transferred to Dalgety Agresearch in Timaru, and became the technician for the agronomists within the company. Most of this time

Member Profile: Dave Galloway continued

was spent travelling around New Zealand carrying out trial work, predominantly with maize, but a lot of varietal work was also undertaken on cereals, peas and grasses at the research farm at Seadown, just north of Timaru.

It was from here that I got the opportunity to attend Lincoln College and gained direct entry into the Diploma of Field Technology course. Having attained what was then a four-year Diploma, (one year practical work, followed by a Dip Ag or Hort, followed by another year practical work, and then Dip Field Tech) in just 10 months (I was one of the privileged few), it was back to Timaru. Things started to change soon after, and having lost some good friends and colleagues to other companies, I looked around for something different but still with a primary production-type role.

July 1977 had me standing at the doors of the MAF Quarantine Service in Auckland awaiting the beginning of my career as a quarantine officer. What followed was 15 years of enjoyment in what was then a very varied role. I was promoted through the ranks, was finally made senior quarantine officer, and then went on to become the manager of the Treatment Technology Centre (for that read Fumigation Station). Whilst there, I spent 30 months doing an overseas aid project with the Ministry of Foreign Affairs helping to upgrade the quarantine service in Papua New Guinea. I was also involved in training staff from overseas, notably the Solomon Islands, Japan, Fiji, Bangladesh, Australia and Canada.

It was during my time at MAF that I also saw the light, settled down and got married. Heather and I have since been blessed with three daughters and a son

After leaving MAF I spent a couple of years in the timber re-manufacturing game as a quality controller for materials destined for Australia and the USA.

In 1994 I fronted up as a noxious plants officer for Waitakere City Council and my subsequent induction into the Institute of Noxious Plants Officers (the forerunner of the NZ Biosecurity Institute). Three years later my job vanished under a restructuring when animal and pest plant control were taken in-house at Auckland Regional Council. I applied for and gained the position of biosecurity officer for Northern Rodney and have progressed on to my current position as Team Leader (North). My team covers Waitakere City, North Shore City and all of Rodney District, dealing with all aspects of our Regional Pest Management Strategy. For all of those that think this might be a cushy number, it is not. Currently I am one officer down due to an internal promotion, and have one officer on leave overseas.

As a result, this week I have the remaining three officers working with our water quality people catching fish (lucky for some) in one of our dune lakes, and I have had to deal with the following:

- Staff management issues,
- Ragwort lea beetle inquiries and releases,
- Spartina control,
- Salvinia control,
- Gorse complaints,
- Follow-up of a purple loosestrife find (thanks Paul)
- Rhamnus investigation,
- Aerial spray drift complaints,
- Inquiries on control of stoats, rats, possums, wasps and rabbits.
- The repatriation of wallabies to Australia
- And write this for Carolyn, and it's only Wednesday lunchtime!

However, please don't take this as sour grapes. Where else can you get a job with such good staff to work with, great variety, and a view from the office window that has no concrete showing — only the bush, native birds and the beach.

See you all in Rotorua
Dave

Member Profile: Michael Urlich

I guess my first experience in weed work was as a seven-year-old boy cutting tracks in blackberry and gorse amongst regenerating native bush slopes in Kingston, Wellington.

Nearly 30 years later, with Greater Wellington (Regional Council), I'm often slashing tracks in blackberry and gorse amongst regenerating bush slopes. The goal today though is usually to kill a rogue outlying boneseed, banana passionfruit, woolly nightshade or other "real" weed, rather than to build a fort or snare a possum. Blackberry and gorse have become no less a nuisance as an adult, but of course in the intervening decades, environmental weeds have increased their nuisance value drastically throughout Wellington and New Zealand in general.

My working career began a builders' labourer in inner-city Wellington, and in the late teens I spent a few years working in both Australia and New Zealand. After the first big OE I decided to get into the "real" New Zealand and went bush alone, ill-equipped and, apart from several years of childhood bushwhacking, totally inexperienced. So over four days, on the peaks of the main range of the Tararuas, I got lost. Several times. Badly. It was there, though, that a deep affinity for the outdoors and New Zealand's environment was reinforced, and I have been a keen tramper ever since.

Over the next five years I worked in Britain, Ireland and Canada in a variety of jobs from fruit picking to salmon fishing, and was fortunate enough to travel in the Middle East, Asia and Central America. In 1995, I returned home, and with the travel bug momentarily suppressed, embarked on a four-year honours degree at Massey University in ecology and botany, commuting from Waikanae on the Kapiti Coast.

Greater Wellington employed me as the Biosecurity Officer (Pest Plants) for Kapiti/Porirua nearly three years ago. We have a great team here, with a large variety of skills and aptitudes. Although a degree gives you a good base to learn from, the time in the field spent looking at, and killing, weeds has been a much more intuitive and instructional education about environmental weeds than any book could provide. Similarily, the training seminars are also brilliant; talking and listening to experts from other agencies and fellow pest plant officers provides a wealth of insights into our field. And then there's the evening sessions...

Mike Urlich: Pest plant work, "very challenging and interesting".

I find pest plant work to be a very challenging and interesting field. There are just so many strange and new plants coming in all the time, and trying to develop a way of combating weeds in our environments is a continually evolving practice. Education is key, both at a public level and within governmental organisations, if we are to win the battle. If we are indeed engaged in a war with weeds, we could always use more reinforcements and resources.

Currently I am living in Otaki and have two children, aged five and eight. My hobbies are reading, live music, running, carpentry, gardening, fishing and, when possible, travel.

Mike Urlich

Weedbusters update

Weedbusters at work

By Amber Bill
National Weedbusters Co-ordinator

The Weedbusters out there seem to be immune to the winter blues; as the days get cooler, they just keep on working. The following is just a handful of examples of Weedbusters at work, representing the kinds of events happening around the country. Participation is the name of the game — and with participation, comes awareness and understanding.

Weedbusters in the community

In early April, the YMCA Dannevirke Conservation Corp, with the assistance of Elaine Iddon (Horizons Regional Council), gave a helping hand in the battle against old man's beard. Local landowner Herb Chase gave the group a lesson in the history of the local area and his iwi, Rangitane, and in return, the group spent the morning treating old man's beard in his regenerating bush remnant.

Wetlands weeds talk at Wherowhero Lagoon.

On the East Coast, World Wetlands Day was celebrated with a Weedbusters theme in an event co-ordinated by Robyn Wilkie (DOC). A number of kids from the local school visited Wherowhero Lagoon where they fossicked in the mud and pulled out a few pink ragwort (*Senecio glastifolius*) weeds. There were also a couple of wetland experts on hand to talk about the issues relating to the area.

Meanwhile, near Invercargill a large green and purple spiky intruder was seen lurking in Kingswood Bush. Identified as "Woody Weed", this critter caused a stir when he strolled through the forest reserve followed by a mob of enthusiastic children whose weedbusting knowledge left Woody and his weedy cousins shaking in their roots. About 20 locals joined Lynne Sheldon-Sayer, Philippa Humm (both DOC), Keith Crothers (Environment Southland) and others at the reserve for the first Woodlands Weedbusters Workday.

And heading back to warmer places, the Hamurana Springs Incorporated Society hosted a Weedbusters day in Rotorua. Staff from DOC and members of the local hapu Ngati Rangiwewehi attended an event, and a full-page feature, supported by Environment Bay of Plenty, amongst others, ran in The Daily Post. The Hamurana Springs are of special significance to Ngati Rangiwewehi, and are also a popular attraction for tourists and locals alike.

Weedbusters gets invited along

A big step in raising the profile of weeds is to synergise weeds awareness and education events by bringing them under one banner to get that "bigger bang for bucks (and biodiversity)". From March 27 to April 24, Weedbusters was proud to be part of the Waitakere "War On Weeds". Weed bins for collection of

Regional Weedbusters Co-ordinators:

Region	Main contact	
Northland	Liz Sherwood (DOC)	lsherwood@doc.govt.nz
Auckland	Richard Gribble (Auckland Regional Council)	richard.gribble@arc.govt.nz
Bay of Plenty	Wendy Baker (Environment Bay of Plenty)	wendy.b@envbop.govt.nz
Waikato	Wendy Mead	wendy.mead@ew.govt.nz
Gisborne/ Hawke's Bay	Robyn Wilkie (DOC)	rjwilkie@doc.govt.nz
Taranaki	Ray Pope (New Plymouth District Council)	parkscape@npdc.govt.nz
Wanganui-Manawatu	Elaine Iddon (Horizons Regional Council)	elaine.iddon@horizons.govt.nz
Wellington	Mike Urlich (Greater Wellington Regional Council)	michael.urlich@gw.govt.nz
West Coast	Tom Belton (DOC)	tbelton@doc.govt.nz
Southland	Keith Crothers (Environment Southland)	keith.crothers@envirosouth.govt.nz

Weedbusters at work continued

environmental weeds were placed at strategic locations around the Waitakere Ranges, and weed identification workshops were run at several libraries. The War on Weeds Campaign is organised by Keep Waitakere Beautiful (KWB), in association with Waitakere City Council, Weedfree Waitakere Trust and the Auckland Regional Council (**www.weedfree.org.nz/**). Thanks to Mike Harre (Auckland Regional Council) for this information.

On top of this, Woody Weed has been scattered throughout New Zealand's field days and shows; it seems that you can't go anywhere without bumping into that darned Woody Weed character and those Weedbusters! In less than a year, Weedbusters has had a presence at GardeNZ, Ellerslie Flower Show, Enviroschools E-Expo, home and garden shows, A&P shows, Waimumu Field Days, and is about to appear at the NZ Agricultural Fieldays at Mystery Creek in the Waikato.

It's all go! Many thanks go to all those who have participated in Weedbusters events and shared their experiences. There are enthusiastic Weedbusters in every region of New Zealand; to learn about their trials and tribulations and to join in the fun, subscribe to the monthly Weedbusters update for weed educators (email **abill@doc.govt.nz** or visit **www.weedbusters.org.nz**). If you would like a glossy version, then ask to be put onto the mailing list for the full-colour quarterly newsletter.

Exotic fish: Valuable fisheries or pests?

By Dave Rowe
NIWA

Invasions of exotic plants and animals have had a negative impact on New Zealand's terrestrial environments and drastically reduced many native species. These exotics now require expensive on-going control. Similarly, the spread of aquatic plants creates problems in rivers and lakes, also requiring expensive on-going control.

But what about exotic fish, such as trout, perch, koi carp, catfish, and so on? Have they, too, reduced the quality of New Zealand's freshwater environments? And do they require control, or do they provide valuable fisheries?

Although the benefits of trout and salmon fisheries are not in dispute, the negative effects of these and of other exotic freshwater fish introductions are much less well known. This is probably because any problems tend to be out of sight beneath the water surface, and therefore out of mind.

As research focuses more on the roles of exotic fish in our aquatic environments, there is growing concern about their negative impacts and the need to balance fishery values with ecological damage. Such concerns are heightened by the recent introduction of brown bullhead catfish to Lake Taupo, the recent finding of koi carp and *Gambusia* in Nelson, and by the even more recent introduction of perch and *Gambusia* into Lake Ototoa, near Auckland. Such events indicate that exotic fish are currently being spread throughout New Zealand waters and that impacts from such actions can be expected to increase.

So, do exotic fish pose a risk to native biodiversity and the health of our freshwater environments? It depends largely on the species and the location.

Gambusia

Gambusia (mosquito fish) have been widely introduced throughout the North Island to control mosquito larvae, but they have a nasty reputation overseas for reducing populations of small native fish. Similar findings are emerging in New Zealand; *Gambusia* have been strongly implicated in the decline of the rare, landlocked dwarf inanga in four Northland dune lakes, as well as inanga's extinction in at least one of these. *Gambusia* also displace common bullies from weedy lake edges and are likely to reduce the distributions of mudfish and whitebait in still waters such as swamps and wetlands. Because of such impacts *Gambusia* are now "unwanted organisms" under the Biosecurity Act.

Koi carp

Koi carp, an ornamental variety of the common carp, is also an "unwanted species" in this country. Common carp have degraded aquatic ecosystems in the USA

Exotic fish: Valuable fisheries or pests? continued

and Australia by uprooting aquatic vegetation and by increasing turbidity. It is feared that the koi carp may do the same here, especially as the natural predators of carp which keep their populations low in Europe and Asia, are lacking in New Zealand. However, such impacts will only arise when high-density koi carp populations occur.

Perch

Perch have been in New Zealand (mainly in the South Island) since the 1870s, but did not attract much interest from anglers until the 1980s. Since then, they have become increasingly popular with coarse fish anglers, especially in the warmer, more northern waters, close to large urban centres. Coarse fisheries are relatively new to New Zealand, but they are very popular in the UK and Europe where high quality trout fisheries are not so readily available. Like trout, perch are carnivores and eat other small fish. It is therefore no surprise to find that they reduce the populations of small native fish in lakes. There is now clear evidence that common bullies, an important food for eels and trout, can be reduced by perch. There is also some evidence that perch may reduce other native fish such as inanga and smelt in some lakes, and reduce some invertebrates, including crayfish. However, their ecological role is still to be fully appreciated, and it is quite possible that they will provide valued fisheries in some waters, while posing a significant threat to native species in others.

Rudd

Rudd are European immigrants and are also keenly sought by coarse fish anglers. Populations of rudd can be very large and composed mainly of small stunted individuals because their natural predators are lacking in many of the lakes where they have been introduced. Impacts can be expected from such high-density populations. For example, the proliferation of rudd in a south Auckland lake ruined the trout fishery there because the rudd prevented anglers from catching trout — the rudd took the anglers' lures well before the trout even saw them, and the anglers could catch nothing but rudd. Being herbivorous, adult rudd feed on aquatic plants and have been implicated in the decline of native plant species. However, when they are young, they feed mainly on invertebrates. At high densities they could significantly reduce the invertebrate foods for native fish. Some researchers have gone so far as to label rudd the "underwater possums" of New Zealand and this may well be true. However, like perch, their role in our waters is still being determined.

Catfish

The recent introduction of catfish to Lake Taupo was of major concern because of this lake's internationally famous trout fishery. As time goes by, this concern is abating somewhat. However, the impacts of exotic fish can sometimes take decades to emerge in large lakes because the fish take time to spread, to build up their numbers, and then to slowly adapt to their new environment. The freshwater crayfish in Lake Taupo are a major prey for the catfish and, in time, populations may be reduced. If catfish also prey mainly on crayfish in our rivers, then large eels may be reduced as crayfish are a very important food for them. Ironically, eel fishermen have already noticed an interaction between eels and catfish. The catfish often replace the eels in favoured fishing areas, but this may be because the large eels are harvested, which allows catfish to move in. Competition for food may well favour the larger, more aggressive eels.

Tench and goldfish

Research into other exotic species such as tench and goldfish is less advanced. However, a major emerging concern is the effect that combinations of exotic fish, including these latter species, may reduce lake water quality. More often than not, several exotic species have been stocked into lakes at the same time, and it is suspected that these fish can combine their effects synergistically to radically alter the food web structure, and thereby reduce water quality. For example, in lakes containing a range of exotic species, the water clarity has been found to be much lower than in comparable lakes containing no exotic fish. Similar findings are emerging in European lakes and underpin the need for a much more careful approach to exotic fish introductions in New Zealand.

While work on the invasion of freshwater by exotic plants started more than 35 years ago in the 1970s and has now progressed to the point where controls have been evaluated and developed, and effective management is now possible for some species, research into the role of exotic fish is just beginning. Thus, while there is still a long way to go with improving management of exotic plants in New Zealand, for exotic fish we have barely even begun.

Nevertheless, it is clear that control of exotic fish species is required in some waters and that their spread must be halted. Rotenone application is the main tool for eradication (where this is possible), but control methods are yet to be developed. There are some exciting possibilities, but I'll leave that topic until next time!

Sounding out submerged plants

By Aleki Taumoepeau & **By Rohan Wells**

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Echo sounders used by recreational boaties can assist lake managers monitor underwater vegetation at minimal cost. Models that provide a printout or store information in a form that can be downloaded to a PC are most suitable, as they provide a permanent record. Recent advances in sonar microprocessor technology, geographic information system (GIS) and differential global positioning system (D-GPS) now also provide an accurate mapping tool.

Aquatic plant management

Lake and waterways managers are often confronted with managing large areas of (potentially) surface-reaching nuisance weed beds, and need to plan control programmes before they become an acute problem. They need to define the location and extent of nuisance weed beds prior to implementing control measures, and follow-up with monitoring to check the outcome and assess the effectiveness of weed control.

The most accurate method of gathering information is to deploy divers to record submerged vegetation data. These methods have proven to be reliable and accurate over the years, but can be time-consuming and costly, especially when surveying large areas.

The use of echo-sounding equipment can greatly reduce the amount of scuba diving/snorkeling necessary by rapidly providing information such as a printout of the profile, heights of plants, bottom depth limits, and submerged vegetation distribution over large areas. The development and integration of GPS applications with sounders has made mapping and area calculations possible. Ground-truthing (by scuba, snorkeling or in clear water with a viewing box and a weighted measuring tape) is still required to identify plant species, make cover estimates and interpret echograms (Fig. 1). Echograms are a permanent record of vegetation, and are an objective record (Fig. 2) of a number of vegetation attributes that can be used as a baseline for future comparisons and to validate management actions. They are far more reliable than subjective notes (often made by a sub-contractor with a vested interest) such as, “excellent results were achieved”.

Useful features of an echo sounder

A GPS/echo sounder (with standard 200 kHz transducer) for general boat use can be used to monitor aquatic plants, and sells from about $3000.

Useful extras include D-GPS capability for more accurate positioning and NMEA (national measurement electronic association) input and output, enabling direct data logging if required.

Some of the key features useful for aquatic plant definition include:

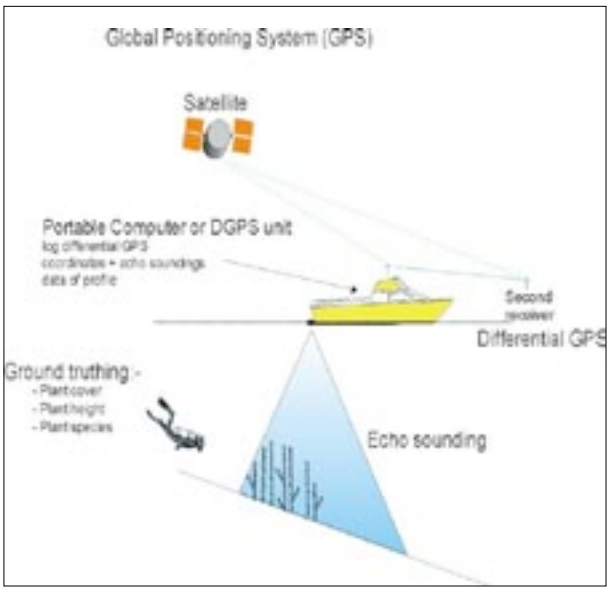


Figure 1: Remote sensing aquatic plants using a GPS/ echo sounder with ground-truthing.

1. Digital storage of recorded profiles to memory cards so that images of vegetation profiles viewed on the unit can be saved and exported to a PC.
2. Sensitivity, gray scale and colour can be adjusted to improve the image on the PC before printing. An echogram of a vegetated profile is shown in Fig.2.
3. Mapping information such as position, depths and real time data can be stored with the digital profile and exported as text if required. The saved information can then be analysed using a GIS application that enables spatial data plots (Fig. 3) to be drawn.
4. For accurate (+1m) mapping, D-GPS can be deployed.
5. The unit can be portable, allowing for difficult field applications. For example, we use a unit to record vegetation data in remote streams and rivers by sealing it in a splash proof box (Fig. 4) that is easily deployed (even in a plastic fish bin) and pushed by a snorkeller (or canoed) across a river or stream.

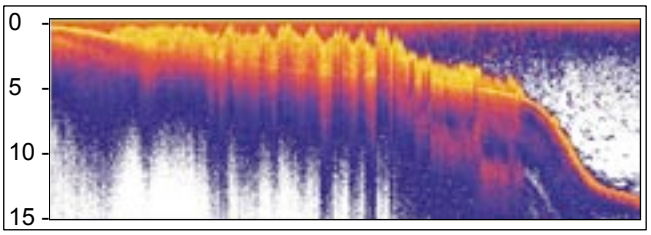


Figure 2: A vegetation profile in Lake Tarawera showing depth range, height and extent of a dense nuisance bed. Ground-truthing established it was hornwort at 100% cover, and confirmed the height and depths.

Sounding out submerged plants Continued

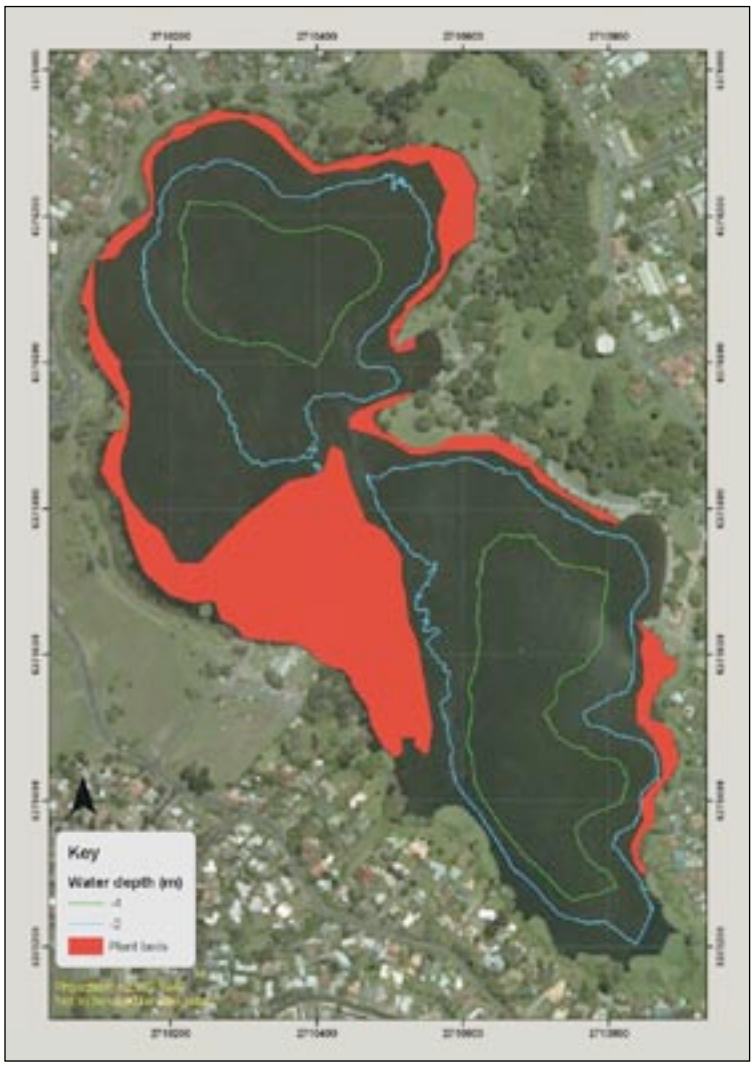


Figure 3: GIS generated submerged vegetation map of Lake Rotoroa, from a GPS/echo sounder.

Figure 4: A GPS/echo sounder in a splash proof box (lid off), showing battery pack, attached GPS (yellow, which also fits inside the box) and the transducer (to be mounted just below the water surface).

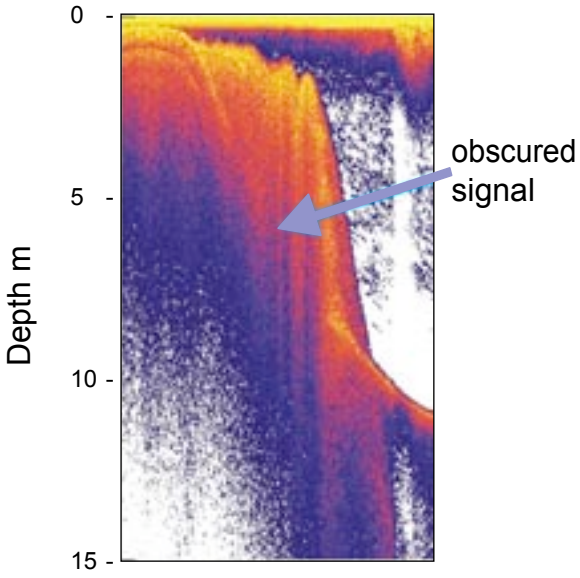


Figure 5: Hydrilla in Lake Waikapiro gives a strong signal and obscures good definition of the lake floor.

Limitations

Sonar signals primarily detect the gas contents of plants so the reflected signal is stronger when more gas is present. Gas content varies between and within species of aquatic plants, so can provide variable signals along a weed bed profile, or for species lacking buoyancy, return a poor signal making them difficult to define.

Surface interference or “noise” (caused by bubbles from waves or surface reaching plants) can also affect detection. Tall, dense, surface-reaching weed beds often make it difficult to determine where the lakebed is, as dense weed beds with a strong signal obscure the return echo (Fig. 5). Reducing sensitivity (a menu function) can improve definition of the lake floor, whereas higher sensitivity settings will show less buoyant vegetation and vegetation further from the surface, and allow profiles to be recorded at greater boat speed. Increasing sensitivity can also make weed beds appear taller and obscure the lake floor providing double images. For this reason it is necessary to ground-truth the water depth and weed bed height (with a shot line or diver observations) to ensure settings are appropriate for each vegetation type. Shallow water (<2 m) usually requires different settings/calibration from deep water (2-10 m deep).

It is difficult or impossible to use an echogram to identify species or determine vegetation cover or density. Within these limitations, the echograms remain useful objective records of lake vegetation as demonstrated in Fig. 1, particularly when supported by scuba or snorkel observations.

Aquatic pest awareness in 7 easy steps

A programme in the Nelson/Marlborough Conservancy to raise awareness about aquatic pests is proving popular with primary schools.

The programme features laminated native and pest fish, plastic waterweed, and *Sesame Street's* Ernie (along with his native blue rubber ducky), all of which are used in an aquarium doubling as a native ecosystem.

1 ***A model of a healthy ecosystem of a stream near the school is created in the aquarium, with native water plants and fish species.***

2 ***Gambusia (mosquito fish) find their way into the stream and start to attack the native fish.***

3 ***When the pest fish rudd gets into the stream, they feed on the native water plants and remove the food and habitat that are important for the survival of native aquatic life.***

4 ***When koi carp are added, the stream becomes a big muddy mess.***

5 ***Pest waterweeds are added to the model to show how quickly exotic waterweeds can take over a waterway.***

6 ***Swimmer in trouble! To demonstrate the problems that water weeds cause for native ecosystems, swimmers and recreational users, Ernie and his native blue rubber ducky are introduced to the aquarium, where they have great difficulty moving around.***

Aquatic pest awareness Continued

7

The presenter facilitates a discussion on how the invasive species are being spread around and the role students can play in ensuring that ornamental pets do not become monumental pests.

Once the demonstration has finished, the class splits into two groups and the presenters use preserved fish and live samples of the weeds to teach the students to identify local freshwater pests. Students are encouraged to become "DOC Detectives" and report pest waterweeds to the regional council (or the local district council, in the case of the Nelson-Marlborough area) and to report pest fish to the Department of Conservation.

If the classroom contains a fishbowl, presenters help the students check the species present, and either award an Environmentally Friendly Fishbowl Certificate, or offer fishbowl restoration with non-invasive species.

The programme has been delivered to 237 classes in 42 schools in the Nelson-Marlborough Conservancy, equating to 6000 trained DOC Detectives in the region. There have been 37 subsequent reports of pest weed and pest fish that are being investigated by pest fish surveyors and council staff.

Five schools have been found to have curly oxygen weed (*Lagarosiphon major*) in their school fish tanks. One teacher had been distributing water weed to her students for their home fishbowls without realising she was passing out a major aquatic pest!

The feedback from teachers, parents and students about this programme has been very positive, with parents commenting that their children knew the names of and could identify pest fish and pest water weeds, and had an understanding of how they affected native species.

As a result of this positive feedback, the Department of Conservation is considering piloting this aquatic pest awareness programme in schools in other South Island conservancies.

For further information please contact Anne Brow, DOC at **abrow@doc.govt.nz**

Training for those dealing with pests

Since 1999, the Local Government Industry Training Organisation has been running courses for both pest plant and vertebrate pest officers. These courses are now up for review.

Protect asked Kevin Wafer, General Manager of the Local Government Industry Training Organisation, for some background information.

Protect: Why were the courses established, and who initiated their development?

Kevin: [The courses] were seen as necessary for a number of reasons for both the employee and the employer.

Firstly, there had been qualifications previously, quite a number of years ago, but for some time there had been no qualifications to formally recognise a person's skills, and there was a gap developing between those people who had obtained the old qualifications and those that had no qualification they could achieve.

Secondly, formal recognition of people's skills to a certain standard is important both for the individual in terms of personal achievement, applying for jobs, and so on, and for an employer, not only in terms of being confident that their employee's work is up to the required standard, but also in supporting a number of management tools or systems. For example, formal recognition that a person is up to the national standard in a certain skill area can support health and safety, quality assurance and performance review systems, as well as helping with human resources decisions such as hiring staff.

The qualifications were therefore initiated as there were benefits to both the employer and employee.

Protect: Who can enrol in the courses?

Kevin: The courses are open to anyone working in the pest plant or vertebrate pest control areas. The qualifications relate to formal recognition of skills learnt mainly on the job, and most of the training is practical on-job training, so that the person needs to be working in the industry. The qualifications are open to both council staff and contractors.

Protect: What does the course cost, and who pays?

Kevin: The cost of the course in generally paid by the employer. The employer pays a subscription to the Local Government Industry Training Organisation (ITO) for the qualification area they are interested in. The amount of the subscription is dependant on the number of people who will be involved, meaning that larger organisations pay more than smaller organisations. The subscriptions are listed on our website. Government funding is available to reduce the cost of the subscriptions by up to 75% where training agreements are signed. Other costs would include NZ Qualifications Authority costs: a hook-on fee of $25, a $1 per credit fee as a learner works through the qualification (normally about $70 in total) and a $15 fee to have the National Certificate printed and sent out to them. Other costs may be incurred if the learner decides to do some of the communications unit standards through a local polytechnic.

Protect: How long should it take to complete a course?

LGITO Pest Plant Officer Qualification Units

This qualification will be awarded to learners who complete the following compulsory unit standards.

Communication skills

- Write in plain English
- Present ideas and information orally to a specified audience in a predictable situation
- Give oral instructions in the workplace
- Apply listening techniques

Compliance and regulatory control skills

- Describe the powers of a compliance officer
- Plan inspections
- Take follow-up action for non-compliance
- Give evidence in a judicial hearing
- Apply Health and Safety in Employment Act 1992 in own workplace
- Communicate with clients in a compliance context
- Identify and inspect a property during an animal control, vertebrate or pest plant investigation
- Identify pest plants
- Recommend a pest plant control programme
- Choose a pest plant control method
- Establish, collect evidence and write a report for a compliance breach
- Represent a compliance and regulatory control authority while an employee

Electives: to complete the qualification the learner must make a choice to complete one of the following assignment groupings:

Agriculture

- Demonstrate knowledge of environmental aspects of agrichemical distribution
- Describe and manage the transportation, storage and disposal requirements for agrichemicals

Rural contracting

- Dispose of surplus agrichemical and empty containers
- Store agrichemicals

Training options continued

Kevin: The qualifications are self-paced and can be completed as fast or slow as work or personal commitments allow. Generally, we would say 2½ to 3 years for a person new to the industry, but it is dependent on the individual, their experience in the industry or related industries, previous training, and so on. Some experienced people can gain large parts of the qualification through a process called 'recognition of prior learning' (RPL). This process recognises the skills they already have so that they are more likely to achieve the qualification in a shorter time.

Protect: How does this structure fit in with staff or companies that are increasingly working on a contract basis for regional councils?

Kevin: The qualifications were developed initially for local authority staff; however, the vertebrate pest qualifications were changed a couple of years ago to make them more suitable for contractors, and the pest plant qualification will be undergoing a review in the next few months.

Protect: Who pays for the vertebrate control course when a contractor does it?

Kevin: The contractor pays the subscription on the same basis as a council.

Protect: Is the same thing likely to happen with the pest plant course?

Kevin: I would say the same would happen for the pest plant qualification although we have no contactors as subscribers at present for pest plants.

Protect: What is the relevance of these courses now that increasing numbers of people are entering the pest plant and animal pest industries with degree backgrounds?

Kevin: While obviously the qualifications contain knowledge of vertebrate and plant pests and their control methods that can probably be gained through degree courses, our qualifications require not only knowledge but practical completion of skills. Also, the qualifications include a number of other skill areas that in most instances are not gained during the completion of a degree. These skills include such things as compliance and regulatory control skills, (knowledge of the legislation and a persons power to act, conducting inspections, and so on), and communications skills (such as dealing with difficult clients, interviewing techniques, and advising on compliance requirements).

Training: A personal perspective

By Tim Senior

Pest Plant Officer,
Opotiki District
Environment Bay of
Plenty
Time in the job: 18 months.

I completed a degree in education fairly late in life (including lots of environmental science papers), taught high school horticulture and science, and ran my own greenhouse operation growing tomatoes and so on commercially. Further back, I worked on kiwifruit orchards and various farms, kept bees, and had a landscaping business.

My rural background is extremely useful in this job and over the years I've picked up a fair bit about plants/ecology/botany from a range of studies and experience.

I have also been deeply involved in the environmental movement since the 1970s (Native Forest Action Council, Maruia Society and Forest and Bird). In that capacity and as a keen tramper, I have developed a good knowledge of native plants.

It was my manager at Environment BOP, John Mather, who strongly encouraged me to embark on the LGITO pest plant officers' course and I was more than happy to oblige.

My previous qualifications and experience mean that I can be credited with some of the required unit standards, especially the generic ones such as '1279 Write in Plain English', under the Recognition of Prior Learning (RPL) provisions.

Since I have only just started on the course, I've found it fits in very easily with my work. Much of the assignment work seems to be based on my daily work so, with a few exceptions, it shouldn't be too intrusive.

I expect it to be very useful for my everyday work. As much as anything, I'm expecting the knowledge and skills gained to provide me with a clearer focus on the minutiae of the job as I go about my work. I have no idea where I would go next in terms of a career path but I can only assume that it will be useful. As I'm really enjoying the work, I don't expect any drastic changes in direction.

Whilst I'm already quite capable of carrying out the work satisfactorily, I imagine that my employers would be able to have more faith in my abilities with a relevant qualification such as this,

Training: a personal perspective continued

especially when it comes to the compliance aspect of the job.

However, having said that, the focus of the course leans quite heavily towards the compliance side of things and while this is important, enforcing compliance is a relatively small aspect of the job these days. I feel that there are a number of aspects of the job which consume a large part of my time but are largely neglected by the course: such things as biocontrol; weed ecology (how and why are all these weeds are a problem); weed control science (herbicides — a bit of chemistry might be useful); land management practices (how to avoid getting weed problems in the first place); working with community groups; publicity campaigns; other approaches to weed control (overseas problems, practices and experience); and how it all fits together (Biosecurity Act, Biosecurity Strategy and the various responsibilities of MAF, DOC, Ministry for the Environment, regional councils, and so on).

Review ensures qualification's relevancy

On April 21, a review of the Local Government Training Organisation (LGITO) Certificate in Pest Plant Control began in Rotorua.

The group undertaking the review is made up as follows:

• Peter Joynt (Northland Regional Council) has been involved with the qualification since its inception and was a key player in its development. He continues his involvement as a member of the review panel and as an assessor for the certificate.

• Clyde Edminston (Auckland Regional Council) and Wayne Cowan (Greater Wellington Regional Council) have also been involved with this certificate over a considerable period. Wayne is an assessor for the certificate.

By Jan Crooks, ECan

• Kevin Wafer (General Manager of the LGITO) is leading the review.

• I am representing the NZ Biosecurity Institute on the panel, although Peter, Wayne and Clyde are all long-serving members of the Institute.

The review is being carried out to ensure the qualification is still relevant to the work carried out in the pest plant field, and that changes in work practices, technology and terminology are recognised and adjustments made to the qualification where appropriate.

Two Australian training packages were discussed and compared with the current New Zealand certificate. Similarities between the two Australian packages and their New Zealand counterpart were considerable.

The Australian National Conservation and Land Management Training Package is very lengthy. It covers everything from operating a 4x4 vehicle and maintaining an office, to evaluating a pest management strategy. To relate it to the NZ certificate you need to look at the entire list of study opportunities available through Industry Training Organisations, which have New Zealand Qualification Authority (NZQA) recognition.

The other Australian training package was more specific to pest plant control and legislation but incorporated a number of units from the national package detailed above. This system, enabling the study of units from a variety of qualifications, is very similar to our NZQA system. This latter package has a very useful Skills Record Book, which could be helpful to those studying for the NZ qualification.

Each unit of the NZ pest plant certificate was discussed at length during this initial review meeting, and very few changes have been made as a result.

- A reference to integrated pest management will be added to an existing unit standard ("Recommend a Pest Plant Control Programme") instead of developing a whole new unit standard, as it was seen as part of the process of recommending a control programme.
- Reference to GPS systems to record site position and other relevant information is to be added to one unit standard ("Identify and inspect property during an animal control, vertebrate or pest plant investigation").
- A new unit standard on biological control will be drafted.

All changes or additions will be emailed to the review group before being finalised.

Biosecurity Bits

The media has recently covered a wide range of biosecurity issues — from blood suckers to amphibious invasions of in-flight salads, from quick-thinking responses to incursions, to inexplicable inactivity when specimens are caught — all of which highlight the huge variety of threats to New Zealand's biodiversity from invasive alien species. Carolyn Lewis has kept a weather eye on the media and compiled the following.

A passenger on a Qantas flight to New Zealand got a nasty shock when she found a small browny-green frog in her salad. With great presence of mind, the lady slammed the lid back onto the salad container and passed it to the flight attendants, who put the hitchhiker into cold storage before presenting it to MAF officers at Auckland airport. The frog was subsequently identified as an **Australian whistling tree frog**, commonly found in the area where the salad ingredients are grown.

Photo: MAF

Similar cool thinking and quick actions resulted in the capture of a **cane-toad** who had hitched a ride from Queensland to Masterton in a traveller's shoe. A member of the household in which it was squatting captured it and handed it in to DOC, who humanely destroyed it and notified MAF.

At the other end of the scale, a Raglan insect 'enthusiast' enthusiastically trapped an odd-looking wasp, put it in his freezer and promptly forgot it until two years later. When MAF was finally handed the wasp on ice, its identification as a **median wasp** sparked a search of the area for any other specimens; it is thought that this lone insect must have come from a Japanese iron-sand carrier that had been off the coast of Raglan in 2002.

The appearance of a less sinister trans-Tasman visitor in the Taranaki has been fascinating locals. The attractive **blue-moon butterflies** (known in Australia as common eggflies) seem to have been blown across from Australia, but are unlikely to become permanent features in our skies; it's too cold for them to breed in New Zealand.

Incidents involving uncontrolled pig dogs on conservation land have led to a warning from DOC that, while it appreciates the efforts of pig hunters in culling wild pig populations, more care needs to be take to ensure dogs are properly trained and that lost dogs are reported to DOC immediately. In one case, **kiwi chicks** had been moved to the "safe" island where one of the dogs was found because in their previous habitat they were at risk from an exploding population of stoats.

And in a case of "what was he thinking", a Nelson man ended up in court after his incorrectly placed possum traps proved equally effective against **local wekas**. Because he had previously been warned by DOC to keep the traps 70cm above the ground to prevent any birds being caught, the judge described his actions as 'reckless rather than careless' and fined him accordingly.

Exploding populations of stoats are not the only concern following a season of heavy beech tree seeding down south. Populations of other predators are also expected to go sky-high, triggering the launch of **DOC's Operation Ark pest control programme**. While some species will benefit, funding is not sufficient to cover all of the ones at risk; one Lincoln University ecologist commented that, while the remarkable work of conservation managers has meant that there have been no extinctions of native birds in the last 40 years, our approach is still too 'ad hoc, reactive and at the discretion of political will'. Fifty-eight endemic bird species have become extinct and another 43 endangered since humans arrived in New Zealand.

New **pest-free island** projects seem to be announced almost every week at the moment. The ongoing trend has its critics though — Forest and Bird has raised concerns that some species that are being rescued and placed in sanctuary areas may become 'permanent refugees' that are never able to return to their original mainland habitats.

Any couples wanting to get their wedding photos taken at Auckland's Wintergardens in April were out of luck after a new pest aphid was found in the glasshouses there. The **Florida red scale** is a major pest of citrus crops overseas and could threaten the livelihoods

Biosecurity Bits Continued

of growers in Northland; the citrus industry is worth around $40 million a year to New Zealand.

Kaimanawa's **wild horses** may soon be put onto the Pill if overseas trials prove useful for New Zealand. This method of birth control would involve mares being injected with a protein that prevented eggs from implanting in their wombs; the 'vaccine' would last a year, and would replace the controversial annual culling of the wild horses.

New Zealand scientists braved the cold and sleep-deprivation in an Auckland all-nighter recently. The 24-hour **BioBlitz**, organised by Landcare Research, was to count how many plant, animal, fish, bugs and other life forms could be found in two reserve areas in the city; a total of 925 species were found in Dingle Dell, and 631 from the smaller Meadowbank School site. It is hoped that this information can assist management authorities when they put together biodiversity and biosecurity strategies in urban areas.

New Zealand's one and only **possum meat** processing plant, Exotic Game Processors, has been put out of business by the SARS outbreaks. Apparently Asian countries, the largest export market for possum meat, cancelled orders as they equate possum with wild cats, the suspected carriers of SARS. The closure also meant panic for those providing possum grub for the annual Hokitika Wildfoods Festival; one West Coast restauranteur snapped up the last six tonnes of processed possum meat for use in such popular dishes as What's the Mess?, Road Kill Pizza and Jelly Burgers.

Wellington and Auckland zoo officials say that delays in the finalisation of **MAF importation standards for exotic animals** are threatening the viability of zoo herds and keeping New Zealand from fully participating in international conservation efforts. They are worried that continuing to breed from bloodlines already present in New Zealand could lead to infertile or malformed offspring.

It hasn't been a good few months for anyone involved with **pigs** or **bees**. While beekeepers continue to wrestle with what to do about varroa bee mite, post-weaning multisystemic wasting disease is affecting more and more pig farms around the North Island. In both cases the industries are in discussions with MAF about what to do, and are worried about the time and cost involved in putting an effective and enforceable pest management strategy in place themselves. The delay has led one internationally recognised animal disease expert to dub our legislation the Bio-insecurity Act.

Meanwhile, one beekeeper has finally won his 10-year battle to i**ntroduce varroa-resistant bee strains** into New Zealand; the national beekeepers association does not support this as this strain is more prone to swarming than the Italian strain that currently makes up the bulk of bee populations in this country. All this, and Kaitaia now has to worry about an outbreak of the contagious bee disease, American foul brood as well.

The good news for South Island farmers is that the **Great Easter Bunny Hunt** figures this year show that the number of rabbits shot per hunter during this event have halved since 1997 when the RHD virus (previously known as RCD) was illegally imported into New Zealand and released; the bad news is that hares, possums and weeds are moving in and invading the areas that rabbits once infested, and that some populations of rabbits are becoming immune to the RHD virus.

Eagled-eyed MAF-accredited stevedores discovered **Giant African snails and eggs** on board a container ship coming into Auckland from the Pacific Islands. The giant African snail can grow up to 20cm and can weigh up to 1kg; they can produce up to 1200 eggs a year, and can live up to nine years. The main concern is that they eat almost any vegetation, and also carry a form of meningitis that can be passed to humans.

On the other side of the world, a **native NZ mud snail** is threatening California's commercial trout hatcheries. This tiny gastropod infests rivers and displaces native species; it can also clone itself and populations can reach up to 750,000 per square metre, often making up 95% of the biomass of infested rivers. In New Zealand the mudsnail populations are regulated by a small worm parasite; American authorities are looking at the possibility of importing these worms as biocontrol agents.

In the wake of significant cuts in Auckland City Council's **weed control budget**, one community board is urging residents to get out there and do the work themselves. They say that the council is losing the battle and needs the help of residents in the war against weeds. Auckland City Council management, on the other hand, are not so keen as they fear that the public might use sprays that will contravene their bio-friendly policies. They recommend that people call council contractors in to do the work instead; however, they haven't explained how their severely pruned budgets will cope with the demand for this service.

Biosecurity Bits Continued

Meanwhile, visitors to Chelsea Flower Show in England are being introduced to the **concept of invasive weed species** in one of the key displays in the Great Pavillion. The display will feature 10 flowers, aquatic species and landscape plants that are wreaking havoc on the countryside including *gunnera*, montbretia, and dead nettle (known to New Zealand gardeners as *Galeobdolum luteum*, or artillery plant). One British ecologist identified the main cause of the problem as dumping of garden waste; the trend to 'instant gardens', he said, meant that people were growing these rapidly spreading plants instead of having to wait for slower growing but less invasive plants to establish.

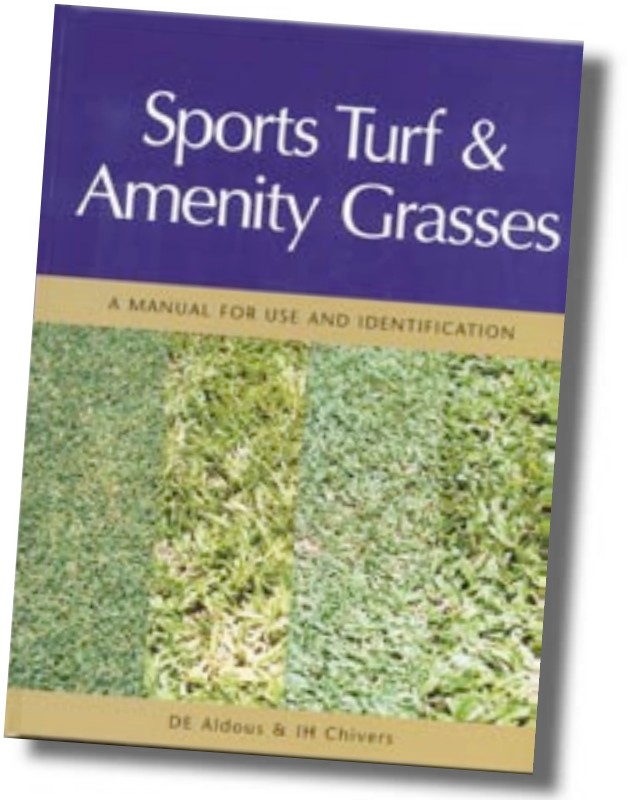
A Marlborough Fish and Game officer trying to catch 40 winks between bouts of duck shooting found himself being 'eaten alive' by swarms of aggressive mozzies that bit him through his clothing. The Ministry of Health positively identified them as **southern saltmarsh mosquitos**; as this is the first time these Aussie invaders have been found in the South Island, a full-scale survey was launched to find out how far they had spread. DOC, NZ Biosecure and MOH are working together on a containment plan for the area. The big question is whether these mozzies have spread by themselves or whether this is a new incursion; technology does not yet exist that would determine if the mozzies in various areas are related.

An expert mathematicians' group based at Massey's Albany campus is now applying the model it developed to predict the spread of SARS and smallpox to mapping the **possible spread of wilding pines** across New Zealand farmland. The results will help provide guidelines that could assist in management strategies for these pest plants that have now invaded up to a quarter to a third of Canterbury's regional landmass.

This columnist was thrilled to hear on a radio breakfast show that we finally had international celebrity recognition of biosecurity issues: actress Gwenyth Paltrow and her partner, Chris Martin, had called their **new baby girl, Apple Blight**. It could be the start of a new trend, we thought. What was next: Varroa Joseph? Melanie Ginger? Tinctoria Jane? Imagine the disappointment when it turned out that the announcer was having a bad eyesight morning, and that the little petal's name was actually Apple Blythe.

Tome for grass enthusiasts

Sports Turf and Amenity Grasses: A manual for use and identification by D E Aldous and I H Chivers, Landlinks Press, Collingwood, Australia. Available from Manaaki Whenua Press, Lincoln. NZ$95.65.



This is a great book if you're interested in grasses, and especially in sports turf. It's hard-covered in a soft-back world, with an attractive front cover. Inside it's full of useful, practical information on turf grasses. Its sensible pictorial keys help readers identify the species of grass, excellent coloured drawings demonstrate the main vegetative features, and its text highlights the uses, advantages and disadvantages of each species. There are also useful diagrams, for each of the more important grass species, showing its tolerance for temperature, drought, close mowing, shade, and so on.

Weed grasses like poa annua and paspalum are included, and the book points out that such grasses, although often unavoidable components of some turfs, can also have their advantages in some circumstances.

The entries are classified into major and minor grasses, major grasses being those most commonly found in turf, and minor the less common ones, or those often appearing as volunteers in sown turf. Each of the two main groups is sub-divided into warm season, summer-active grasses and cool season, winter-active ones. The common names used in this book are those used in the United States, but a table near the beginning cross-references to common names used in Australia, Europe and Asia/ Africa.

The book, by Australian authors and produced in Australia, is expensive in New Zealand, at $95.65. It does carry a recommendation on the back cover, by Keith McAuliffe, head of the NZ Sports Turf Institute, but some of the grasses described would be unlikely to thrive in New Zealand. Indeed, ERMA might not even allow them entry, because some are not known to occur here and several, including *Paspalum vaginatum*, are already making their presence felt as invasive weeds.

Each "major" grass has a two-page spread, with excellent coloured drawings of vegetative structure, a photograph of a turf made up of the grass and another showing the general nature of isolated individuals of the grass. The former photograph, almost always featuring a golf ball, shows the general appearance of the turf and the fineness of the grass leaves, but little else: the latter is more useful showing, as it does, the general form of the grass. Each "minor" grass features a single page and a photograph that sometimes shows the general appearance of a turf, and sometimes a single plant.

The text for major species is clearly divided into description, common and other uses, positive and negative features, general comments and diagnostic features. Minor species merit slightly less detail. Major species feature a "Sowing, growing and mowing" box showing suggested sowing rates and mowing heights, and also charts of tolerance of conditions like high temperature, drought, close mowing, low fertility, frost, shade, wet soil, wear and salinity — useful indeed as a general guide to the sort of conditions in which each grass can thrive or survive.

The pictorial and easy-to-use keys are special feature of this book. The keys are dichotomous, each step giving two (or occassionally three) alternatives, but words are few and clear line drawings show the route through the key. The coloured line drawings of each major species were also a highlight for me, and help identification of species from their vegetative characters.

Because of New Zealand's cooler climate, this book is useful here for the cool season grasses, but of mixed value for warm season ones. The book is still useful to grass enthusiasts, though, all of whom would find something of interest to them within its pages.

Ian Popay