

Spring – 2006

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Protect



New Zealand
Biosecurity Institute

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Protect

Spring 2006

Magazine of the New Zealand Biosecurity Institute

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Editor's Note

The position of Editor at *Protect* remains unfilled. Please contact Carolyn on cl.sb@xtra.co.nz if you would like to take up this role within the Institute.



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

The Annual General Meeting at NETS2006 in Paihia must be some sort of record for speed of completion! Thank you to all members who participated, with our membership the size it is now, it is important that the AGM has a good turnout.

Election of Officers:

There is only one new face on the Executive this year – Craig Davey from Horizons Regional Council who fills the gap left by the departure of Andrew Wilke.

Lynley Hayes continues as Immediate Past President. Seconded members who continue their roles are John Gardner (Ministry of Health), Andrew Harrison (Biosecurity New Zealand) and Alistair Fairweather (DOC, representing vertebrate pest interests).

National Executive

Carolyn Lewis	President
Greg Hoskins	Vice-President
Craig Davey	Vice-President
Helen Braithwaite	Treasurer
Gail Cole	Secretary

Financial Forecast

NZBI finances are looking healthy, but there will be extra expenses this year with the decision made at the AGM to take on a paid editor for *Protect* and for a one-day executive workshop in Wellington. Thanks to our Treasurer, Helen Braithwaite, for continuing to keep us on track.

Membership

At the time of the AGM there were 477 members of the NZBI. Some members whose subs have been outstanding for two years will be contacted for immediate payment or removed as members of NZBI.

It is important that all members pay their subs promptly when requested – invoices go out at the start of each year, and you are only eligible for members' rates for NETS registrations if you have paid up by March.

I would like to thank Jane Barton who has done a sterling job of getting the membership database up to date. Melissa Hutchison will take over this role and work with Web Manager David Brittain to put this information on the members' section of the website.

Protect Editorship

I am finally (yes, really!) stepping down from the role of *Protect* editor. As no-one has come forward to do this



NZBI Executive: Back row from left, Greg Hoskins, John Gardner, Alistair Fairweather, Andrew Harrison, Gail Cole, Lynley Hayes, Randall Milne, Tim Senior. Front row from left, Jane Barton, Helen Braithwaite, Craig Davey, Gemma Bradfield, Carolyn Lewis.

job voluntarily, it will be offered — initially to members but further afield if we have no takers there — as a paid role at \$4000 (\$1000/issue). This job was advertised recently through the members' email network and the Executive will select the new editor from those who apply.

Website

David Brittain from Target Pest is doing a great job with the website. Members are encouraged to look at and use this tool. A new password is now operative – “Didymo” (case sensitive, so use a capital ‘D’). Username remains “nzbiosec”.

NETS2007

Craig Davey gave a “call to conference” at NETS2006 encouraging everyone to prepare for “Capital Xposure” at NETS2007 in Wellington. The organising committee is well on its way for this event and is calling for papers – see notice in this issue.

NETS2008

Hamilton is a possibility, but any other regions which might be interested in hosting this should contact me immediately.

Trial Membership

The following people have been offered free trial memberships as a result of NETS2006:

Toni White	Ag Research Ltd
David Hayes	Biosecurity NZ
Melissa Hume	Biosecurity NZ
Daniel Kluza	Biosecurity NZ
Emma Monk	Biosecurity NZ
Marie Bracks-Burns	Dept of Agriculture & Food, WA

Executive news Continued

Malcolm Brennan	DOC	Diederik Meenken	Contractor
Lester Bridson	DOC	Karyn Froud	Biosecurity NZ
Keith Broome	DOC	Kerry Paice	Biosecurity NZ
Kerry Brown	DOC	Dan Real	Auckland Regional Council
Dave Carlton	DOC	Pam Robinson	Auckland Regional Council
Glen Coulston	DOC	Su Sinclair	Auckland Regional Council
Scott Hooson	DOC	Victoria Lamb	Biosecurity NZ
Daniel Hurley	DOC	Fleur Petricevich	Biosecurity NZ
DJ Noho	DOC	John Willmer	Biosecurity NZ
Lou Peters	DOC	Fin Buchanan	DOC
Rod Smillie	DOC	Bruce Harvey	DOC
Donna Stuthridge	DOC	Darren Peters	DOC
Heather Taylor	DOC	Terry Smith	ERMA
Karen Vincent	DOC	Glenice Paine	ERMA
Gina Weldon	DOC	Darcia Solomon	ERMA
Carol West	DOC	Cameron Hay	Otago Polytechnic
Patrick Whaley	DOC	David Morgan	Land Information NZ
Peter Willemse	DOC	Brendan Morgan	Landward Management
Don McLean	DOC	Ross Marbeck	Land Information NZ
Gemma Bradfield	Environment Canterbury	Andrew Styche	DOC
Judy von Rossen	Environment Waikato	Chris Garden	DOC
Brendon Veale	Greater Wellington Regional Council	Joseph Manaute	Government of New Caledonia
Ray Wilman	Horizons Regional Council	Julie Gordon	Northland Conservation Board
Rohan Wells	NIWA	Wayne Beggs	DOC
Don McKenzie	Northland Regional Council	David Lourie	General
Mark Dellow	SMS NZ Biosecure		
Andrew MacDonald	SMS NZ Biosecure		
Kelvin Floyd	Te Ngahere Native Forest Management		

Carolyn Lewis

Call for papers for NETS2007

If you would like to offer a paper or poster at the New Zealand Biosecurity Institute NETS (National Education Training Seminar) 2007 then we want to hear from you! The theme is "Biosecurity Exposed".

The biosecurity industry encompasses work "on the ground" right through to Government policy and international relations. New Zealand industries, communities and the environment are affected by biosecurity issues. It is also vital that we use the best techniques when exposing the message of biosecurity to the media and general public.

The organising team would like delegates to be exposed to the length and breadth of the broad industry that biosecurity encompasses and leave NETS2007 with ideas they can adopt to better expose the



biosecurity message.

If you work on a local, national or international level in the field of biosecurity and would like to "expose" what you do then send us an abstract. If you have a successful model of public engagement and behavior change then send us an abstract. If your industry or community is tackling biosecurity issues then send us an abstract.

Abstracts can be submitted by following the N.E.T.S link on the NZ Biosecurity Institute website www.biosecurity.org.nz/ anytime until February 17, 2007.

Branch round-up 2005/06

Northland/Auckland Branch

Over the last year, the branch has run smoothly with two meetings which have been informative and educational. The branch membership has grown during the same period from 73 to 91.

A recent meeting was held at Tawharanui Regional Park in November 2005. Training reports were given on the Tawharanui Open Sanctuary Society Inc (TOSSI) which has 267 members. The group works in partnership with the ARC which administers the park.

The volunteers are involved with weed control, baiting, trapping and monitoring of pests and checking the 2.5km of pest exclusion fence every week. An update was also given on bird translocations in the Auckland region. A field trip was taken to Omaha where New Zealand dotterel breed.

More recently, in May this year, we had a meeting at the Wellsford Fire Station, Main Road, Wellsford. The meeting started with our AGM followed by our branch meeting.

After the formalities, Dave Galloway spoke to the group about the new Atiu Creek Regional Park followed by a site visit after lunch. Atiu Creek Farm (848ha property) was gifted to ARC and people of the region by the owners. The property is situated on the Tapora Peninsula, 15kms west of Wellsford.

Our branch has hosted NETS this year and some of our members have been extremely busy all year making sure the conference ran smoothly.

Greg Hoskins
Executive member

Central North Island

The Central North Island Branch managed two meetings during the last year; what we missed out in quantity, we made up for in quality.

The first, attended by about 30 people, was held in Mt Maunganui in October and was planned to have something of interest for all members. It featured a presentation by Graham Inglis from NIWA about marine biosecurity and port surveys, a talk by Grant Weston from MAF about port quarantine service, and a tour around the port looking at inspection and quarantine procedures. Some of the biosecurity procedures raised eyebrows amongst some members.

The May meeting was held at the stunningly beautiful Te Kauri Lodge near Kawhia and was attended by a smaller but select group. We were treated to an in-

depth look at some of the environmental issues facing the district. The main event was a reckless mystery car rally around some of the district's notable weeds, sadly marred by much cheating and dubious navigation.

Some of the issues discussed during the year were the NPPA, the problems surrounding the display of pest plants, how to make meetings worthwhile for everyone, particularly the vertebrate pest folks, the issue of subs and dwindling finances, the difficulty faced by the public knowing who to report unusual organism finds to, and the need to find volunteers to conduct various aspects of NZBI business.

The branch currently has a membership of 71.

Tim Senior
Executive member

Southern North Island Branch

The branch got together once this year, for the AGM/field trip on March 9-10 in Napier. Mike Ulrich stood down as president and was replaced by Craig Davey. The branch would like to thank Mike for his four years of service, and hopes that he continues to contribute in his own unique style.

The AGM saw some good discussion around the need to make the AGM available to all branch members, and what would be the best structure to accommodate this. Following on from this a questionnaire was sent out with the minutes, to which the secretary received five replies. The preferred option was to keep the status quo, although with better advertising to the branch

members and a heavier emphasis on branch members providing presentations as a possible pre-cursor to NETS, was also raised.

An important lesson was learnt during the field trip when our large convoy of slowing vehicles concertinaed, leading to a nose-to-tail between non-participating drivers. A thorough briefing of participating drivers is advisable in areas of high traffic flow.

The branch is looking forward to a busy year with Wellington hosting NETS2007. An organising team has been assembled with representatives from Greater Wellington, Horizons, and Biosecurity New Zealand.

Craig Davey
Branch chairman

Branch round-up 2005/06 Continued

Canterbury Branch

Near Christmas we organised a fantastic meeting that was attended by the Minister for Biosecurity Mr Jim Anderton. Mr Anderton was very entertaining and informative, and was pleased to learn more about the NZBI and what it is and does.

A recent positive communication from the Taukahara

Trustees has re-ignited the possibility of this project going ahead and we welcomed Yvette Couch-Lewis to our AGM to discuss how we might work with the trust on the restoration of Taukahara.

Hugh Gourlay
Branch chairman

Otago/Southland Branch

Branch activity for Otago/Southland this past year was limited to the AGM. Even then, we held a teleconference as opposed to getting together with each other. This reflects the fact that we're a small branch, with an even smaller core of active members. It's not an excuse, but as those in biosecurity are well aware, it's heads down, bums up all year round — get-togethers tend to drop down the priority list. The challenge for our members is to make the time to get

together.

At the national level, the institute seems to have a healthy level of activity. However, at the local branch level there needs to be increased input and activity from branch members, including those of Otago/Southland. In the immortal words of Captain Jean-Luc Picard: "Make it so".

Randall Milne
Executive member

Member Profile: David Brittain

Hello, I am the new webmaster for the NZ Biosecurity Institute. I have been employed by Target Pest for the past two years after coming to New Zealand from the British Isles where I was involved in pest control on and off for 27 years. I am now responsible for the marketing at Target Pest and continuing the development of the Commercial and Domestic division of the company.

In the UK and Ireland I ran my own pest control company after starting my pest control career with Rentokil in 1982.

In 1992 I joined the Department of Agriculture for Northern Ireland to research the epidemiology of bovine tuberculosis in cattle, badgers, deer and other animals in the UK and Ireland.

I was involved in the European standardization of molecular typing of bovine Tb and have authorship of several publications on the epidemiology of Tb and other zoonotic diseases.

New Zealand is in the lucky position of having unique environments and the natural isolation to have some hope of protecting them.

I came to New Zealand in 2004 to marry my wife Carla, a New Zealand citizen. I was excited by the offer to join Target Pest because Target provides such a broad range of pest control and biosecurity expertise, ranging from Tb vector control to eradication of wilding

trees and forest health monitoring, not forgetting the Commercial and Domestic division and its control of rodents and insects in the urban setting. It is great to be part of a company that puts the protection of New Zealand environments into practice.

It was during my time with the Department of Agriculture that I taught myself to build websites. Part of my brief was the setting up of a system for sharing the DNA profiles of *Mycobacterium bovis* isolates between laboratories. I set up a central database and website to facilitate comparisons between isolates in different countries.

I was able to use the knowledge of web building to my benefit when I started my own pest control company and attracted business through a well-visited website. When I joined Target Pest one of the first tasks I gave myself was to make the Target website, www.targetpest.co.nz, more informative and I am continuing to develop the site as a major marketing tool.

When a request was made for someone to take on the task of looking after the NZBI website www.biosecurity.org.nz, I was delighted to be of help and Target Pest has been happy for me to use company time and hardware to assist the NZBI.



David Brittain

Marketing Manager for Target Pest



Target Pest, David Brittain's employer, is providing him with time and hardware to manage the NZBI's website, www.biosecurity.org.nz

Member Profile: Melissa Hutchison

I'm currently in the last year of a PhD in ecology at the School of Biological Sciences at the University of Canterbury. I am investigating the linkages between landscape structure and exotic plant invasion into native forest fragments on the West Coast of the South Island.

My study area comprises the alluvial lowlands of the Buller and Grey districts, which have been extensively cleared for pastoral farming. Native forest remaining in these lowland landscapes is highly fragmented and vulnerable to processes occurring in the surrounding landscape, in particular, the spread of exotic species.

Native and exotic plant species have been surveyed at 50 sites using transects running from the edge into the forest interior in order to investigate edge-mediated invasion into fragments. I am exploring the relationship between native and exotic plant diversity and environmental drivers such as fragment attributes, climatic factors and land use in the surrounding landscape. The mechanisms driving invasion into fragments are also being examined using weed propagule addition experiments and measurement of exotic seed rain in different landscapes.

I have previously had short-term contracts working for the Department of Conservation (DOC) in Tongariro-Taupo (1998) and Wanganui (1999-2000) conservancies doing a variety of vegetation surveying and weed control. In 2001 I worked for Landcare Research in Hamilton compiling a biogeographical (geo-referenced) database on the distributions of invertebrates in New Zealand and the world. This formed part of the BIOSECURE project, which aimed to develop spatial indicators of biodiversity in NZ, and to assess potential biosecurity risks to NZ.

In 2003 I was employed by the West Coast



Melissa with a weedbusting "trophy" — a dead Pinus contorta at Craigieburn felled with a mighty Swiss army knife!

Conservancy of DOC, under the expert guidance of Tom Belton (Technical Support, Hokitika), to carry out weed surveillance throughout the West Coast region, and this greatly increased my awareness and interest in invasive plants.

I became a member of the Biosecurity Institute in 2004 and have been involved with the Canterbury Branch of the NZBI and local Weedbusters events in Canterbury, such as old man's beard control at Governors Bay and boneseed "bashing" at Godley Head. I also recently participated in a wilding tree control weekend at Cass organised by Forest and Bird.

I am currently carrying out an invasive plants survey on the University of Canterbury campus and will produce a report for Facilities Management with recommendations about which species are priorities for control.

Melissa Hutchison

NETS2006

Paihia proves popular

NETS2006 was held in the lovely grounds of the Copthorne Paihia, and for those of us who had been suffering a particularly cold, wet and miserable winter, it was a touch of paradise, complete with palm trees, beaches and sunshine.

In spite of the venue's distance from the main centres, NETS2006 attracted more than 250 delegates for the third year running. A wide range of organisations was represented and a variety of excellent speakers present to share their knowledge and experiences. Of particular note were the overseas speakers.

There was also a touch of controversy to stop us getting complacent. Shane Ardern, National's biosecurity spokesperson, questioned the regimes for inspections of containers coming into New Zealand, and I hear that the mangrove session had the potential to become, in the words of its chairperson, "heated". It certainly generated some comments before the conference and some newspaper coverage in the Northland press afterwards!

The field trips this year included Puketiti Forest, Lake Omapere, the Waitangi Treaty Grounds, and clayshooting (see reports on these).

As with every NETS, the networking opportunities were well utilised, with the band at the conference dinner keeping people on the dance floor into the wee hours. The serious and not-so-serious awards had already been taken care of by that stage: the "Heroes and Zeroes" produced another fine crop of notables and incidents best forgotten; Kevin Christie won the "Silver Salver" award for his efforts on the claybird shooting



Scenes from NETS2006:
Above, the band plays after the conference dinner, and left, predinner drinks.

fieldtrip; and Jon Sullivan from Lincoln University was awarded the Peter Ingram Book of Knowledge Award for his work mentoring those studying in the field of invasive plants.

Thanks go to the NETS2006 organising committee

which put on such a great event: Rebecca Kemp and Dave Galloway (Auckland Regional Council), Shane Hona (Landcare Research), Monica Singe (Southern Monitoring Services Ltd), Tony McCluggage and Liz Sherwood (DOC), Brett Miller, Peter Joynt, Carl Cooper and Ken Massey (Northland Regional Council). Thanks also to Mel Miller and Kate Bell of the Shikhinah Event Management team, and their family connections that provided the dance band and sound systems for this NETS.

NETS2006

Puketi Forest field trip

Two bus loads of happy delegates made their way out to Puketi Forest to look at kauri trees and to hear some of what has happened in and around the forest over the years. The trip was divided into three parts.

John Beachman, DOC's area manager for the Bay of Islands, gave a talk on the history of kauri industry in the locality. This started with a description of kauri forests and the relationship of Puketi with other forests. Gum collectors, bleeding the giant trees, spent a number of decades in the forest. Irregularities on the trunks of trees from the bleeding can still be seen throughout. During the time of the gum collectors kauri were also being logged out of the forest. John told an interesting story of how a railway line was laid from a river entering the Hokianga Harbour right into the forest. The area was logged out and the line pulled up. From start to finish, all this happened in two years.

Chairman of the Puketi Forest Trust, Gary Bramley, talked about how the trust worked. It was formed about three years ago with the purpose of protecting the biodiversity of Puketi. Initially the trust planned to have a seven-year programme of pest control which was estimated to cost \$750,000. In the three years the programme has been operating, \$400,000 has been raised. The funding has all gone into pest control. Although it is early in the programme, there are indications that kiwi chicks are increasing in numbers.

At Manginangina Scenic Reserve, Adrian Walker, programme manager, and Steve McManus, ranger, both from the biodiversity team at DOC's Bay of Islands Area Office, guided the delegates around the boardwalk.



John Beachman talking about the history of Puketi Forest.

This 100ha reserve is one of the small areas in the forest where no logging has taken place. The boardwalk wandered through typical kauri forest with the accompanying range of plant species. In one place the boardwalk was shaped to resemble, between the head and butt that were still there, the size of a log that had been sawn over a pit that was still in evidence.

In another place, in amongst a small grove of kauri, the boards had been constructed in a circular configuration to show the circumference of the largest known kauri to be found in Northland.

Tony McCluggage

NETS2006

Field trip to Lake Omapere



NETS2006 delegates hear about the joint project to develop and implement a voluntary management strategy for Lake Omapere in Northland.

Lake Omapere, Northland's largest lake (1200ha) was vested to the Lake Omapere Trust in 1956.

It has faced many challenges including an infestation of *Egeria densa* in 1970 which caused severe algal blooms. Short-term management decisions were put in place — silver carp were introduced in the 1980s and grass carp in 2000/1.

Now the Northland Regional Council and the trust are jointly working on a project to develop and implement a voluntary lake management strategy to work towards improving the health of the lake in the long term.

The afternoon field trip started with a welcome from two of the trustees, Ani Martin and Colin Rameka. Paul Champion from the National Institute of Water and

Atmosphere talked about his involvement with the lake management team and its the ongoing research. Lisa Forester from Northland Regional Council discussed some of the plants found growing in and around the lake edge; unfortunately the increase in the lake level restricted the number of plants that could be seen.

From the lake the two buses travelled to Ngwha Springs where we heard from Dan O'Halloran of DOC Northland about the geothermal activity in the area. There was then a chance to check out Lake Waiparaheka, a sulphur lake, and Lake Namoukaikai, a smaller peat lake/wetland.

Brett Miller

Northland Regional Council

NETS2006

Claybird shoot contest reinstated as annual event at NETS

As the inaugural claybird shooting event at NETS2005 was such a success, we decided to offer it again in 2006 as a field trip option.

The venue was the Kaeo Gun Club which was a scenic half-hour bus ride through farmland and forest with panoramic coastal vistas.

The "Silver Salver" trophy was reinstated this year, and from now on will be competed for on an annual basis and presented to the shooter with the highest score at the end of the day.

The trophy was originally provided by the NZ Pest Destruction Officers' Institute, and was first contested by members of the 50 to 60 pest boards nationwide in 1975. That first 12-gauge claybird shooting competition was won by Central Canterbury Plains Pest Destruction Board.

As the trophy has not been contested since 1994, and as a number of NZBI members work in the field of pest control and are interested in shooting, it seemed a fitting time to reinstate the trophy at what will hopefully become an annual event at future National Educational and Training Seminars (NETS).

This year's event was a hotly contested and enjoyable affair, and the top three shooters on the day were:

First place — Kevin Christie, EcoFX (shot 37 out of 45 targets);

Second place — Bill Simmons, Animal Control Products (shot 35 out of 45 targets);

Third place — Shane Hona, Landcare Research (shot 33 out of 45 targets).



Kevin Christie, best shot of the day, in action at the Kaeo Gun Club where a number of NZBI members competed in the claybird shoot.



Bill Simmons, former president of Vertebrate Pest Management Institute of NZ, presents Kevin Christie with the Silver Salver Award.

Congratulations to Kevin Christie for winning the Silver Salver, which was presented at the conference dinner. Thanks to Target Pest for sponsoring the event, and to the Kaeo Gun Club for providing a great afternoon of shooting and making us feel most welcome.

Shane Hona

Knowing what's there: Marine biosecurity in New Zealand

By Brendan Gould
Senior Advisor
Marine Surveillance
Biosecurity New Zealand
brendan.gould@maf.govt.nz



Marine biosecurity issues have recently been recognised as one of the four major threats to the world's oceans alongside anthropogenic pollution, over exploitation of living marine resources, and habitat destruction.

New Zealand is predisposed to marine biosecurity risks, being geographically isolated with more than 90% of our trade reliant on shipping.

Internationally and locally, the extent of biological invasions into coastal waters has become increasingly apparent over recent years. Our understanding, however, of the underlying patterns of marine bio-invasions remains very limited. This is largely due to the discipline of marine biosecurity being relatively young compared to its terrestrial counterparts, and also due to poor baselines and a lack of consistency in information-gathering approaches.

The significant information gaps in this area present big challenges for the development of effective management strategies to reduce the risks associated with invasions in marine systems.

Prevention is the best strategy

As with all biosecurity issues, prevention or a reduction in the risk of new introductions is the best strategy. This is especially important in the marine environment, given the lack of borders, the lack of available response tools and the difficulties and costs associated with control, management or eradication of marine species.

We are working in a fluid environment, and given there are no silver bullets for marine biosecurity risks, it is important to understand the borders will remain leaky and it is inevitable that non-indigenous species will continue to arrive.

This means there will always be a need for monitoring and surveillance, post-border pest management, and the development and refinement of response tools.

Marine risk pathways to NZ

It is a very long swim for exotic organisms making their way to settle in New Zealand's marine environment. But since the first canoes pulled ashore some eight centuries ago, humans have given them a more convenient means of passage. Ballast water and the fouling of vessel hulls are the most likely ways for marine invaders to hitchhike here. However, other well-known pathways include importations for the aquarium trade, for aquaculture purposes, and fresh frozen seafood product (i.e. for human consumption or as baitfish).

Operating environment

Marine biosecurity in New Zealand involves the management of the risks posed by non-indigenous or introduced organisms to the marine environment and the value we as New Zealanders obtain from it. Our operating environment can be divided into three broad categories: pre-border (prevention and risk



Hide-out: The seachest of a commercial merchant vessel, an ideal hideaway for a wide range of marine species.

Photo: New Zealand Dive and Salvage Ltd

Marine biosecurity in NZ Continued

assessment); border (detection and interception) and; post-border (response, control, management or eradication). Biosecurity New Zealand is taking a leading role in the development and implementation of an effective marine biosecurity programme for New Zealand.

Biosecurity New Zealand has a number of initiatives under way to attempt to predict and reduce the number of exotic organisms arriving here and to look out for them, should they be here. Below are some examples of initiatives being undertaken by Biosecurity New Zealand to support the development and implementation of the marine biosecurity programme.

Pre-border (prevention & risk assessment)

Hull-fouling vector and pathway profiling: This is a broad-ranging risk analysis project that has multiple outcomes including identifying international trade patterns and relating these to bio-geographical regions and the identification of risk sectors of vessels arriving in New Zealand, for example; commercial merchant vessels, fishing vessels, large passenger vessels, recreational yachts, and slow-moving vessels/barges. The biological component of this project, sampling of hull-fouling species, will allow these pathways and sectors to be linked with potential pest species.

Pest profiling of high-priority species: It is not feasible to monitor for every potential species that may arrive in New Zealand's coastal waters. This project will identify potential pest species and assess their likelihood of arrival and establishment in and around New Zealand waters. It will also relate these pests to bio-geographic regions and will allow the identification of species-specific risk pathways and risk sectors.

Border (detection and interception)

An Import Health Standard governing how ballast water is handled by ocean-going vessels was first issued in 1998 and has recently been revised and reissued. The Ballast Water Import Health Standard now requires vessels to submit their intentions around ballast water at least 48 hours before they arrive in New Zealand. If MAF Quarantine officers are given documented evidence that ballast water tanks have been treated by exchange with mid-ocean water, they can give vessels permission to release ballast water in New Zealand waters before they arrive in port, should they need to. Vessel crews are more likely to comply with this standard if it can be checked by testing the ballast water. To this end, Biosecurity New Zealand is jointly funding research with the US Smithsonian Institute into a probe that can be dropped into a ballast tank to confirm whether it contains coastal or oceanic



Uninvited: Sea squirt *Styela clava* a recently detected non-indigenous marine species.

Photo: Ashley Couatts, Cawthron Institute

water. A prototype of this probe is currently being tested on trans-Tasman merchant vessels.

Another initiative that will ultimately help manage ballast water and bio-fouling is the proposed Vessel Compliance Information System. Work is about to start on a system which will allow records of arriving vessels and their quarantine details (including marine biosecurity aspects) to be kept. This system could be used to target vessels that require in-depth inspections. It will also enable a compliance history to be built up for repeat visitors and shipping companies, so that incentives for good compliance can be developed.

Post-border (response, control, management or eradication)

The post-border area can be further divided into three key areas: (1) surveillance and monitoring; (2) incursion response and preparedness; and (3) post-border (pest) management.

Surveillance and Monitoring: Our system is underpinned by the collection of thorough baseline information about what species currently exist at

Marine biosecurity in NZ Continued

our busiest, and therefore high-risk, entry ports and marinas.

This baseline surveying sets out to:

- Improve our knowledge of our biodiversity and pest status
- Provide baseline information against which the effectiveness of border control or other management practices can be measured
- Allow for the detection of changes in the population distribution of existing pests

Following on from the initial baseline work, a long-term monitoring programme is in place consisting of a series of re-surveys using the same methods as the initial baseline port surveys. These provide a measure of the rate of invasion, a measure of the success of border controls, and a measure of the effectiveness of vector and pest management actions. The port baseline surveys and re-surveys have been, and continue to be, conducted at 13 commercial ports and three marinas through out New Zealand. A further eight locations are currently being, or are planned to be, surveyed in the near future.

The port baseline surveys have identified more than 1300 species in ports around the country. Of these, at least 100 have never previously been identified anywhere in the world. The current *Styela clava* sea squirt incursion was partially detected as a result of this baseline surveying process. NIWA, which was re-surveying the high-risk ports and marinas, detected a specimen of the sea squirt in samples taken from Lyttelton Port in November 2004. The sea squirt was also found, coincidentally, in Auckland's Viaduct Harbour by a visiting marine scientist.

Along with its port and marina surveying, Biosecurity New Zealand has also undertaken further study with a targeted surveillance programme looking for seven unwanted marine organisms. The study was set up to research the best methods and tools to detect the unwanted species. The methodology could ultimately be widely implemented across New Zealand to provide a national active surveillance network.

The initial work in the study was based around seven high-risk points of first entry into New Zealand.

The organisms under surveillance were:

- Chinese mitten crab (*Eriocheir sinensis*)
- Mediterranean fanworm (*Sabella spallanzanii*)
- Northern Pacific seastar (*Asterias amurensis*)
- European shore crab (*Carcinus maenas*)
- Asian clam (*Potamocorbula amurensis*)
- *Caulerpa taxifolia* (a marine aquarium weed)
- *Undaria pinnatifida* (a Japanese seaweed)

Interestingly, of the seven unwanted organisms in the study, only *Undaria pinnatifida* was detected during the



Containment: Pile wrapping as an incursion response tool.

Photo: Ashley Coutts, Cawthron Institute

monitoring activities.

Since that initial study, the sea squirt *Styela clava* (as documented above) has arrived and been declared an unwanted organism. It will feature in ongoing research work in this study. Biosecurity New Zealand is currently reviewing the study and deciding how it will proceed.

Finally, what is known as passive surveillance is also a major component of Biosecurity New Zealand's surveillance activities. Passive surveillance is where the general public and various industries and sectors that use, work in and are familiar with the marine environment and the species that inhabit it, report any suspect discoveries.

Reports from this group are being encouraged through targeted communication activities designed to reach those with marine interests, arming them with information on what to look out for and what to do if they find something suspect.

Biosecurity New Zealand cannot look everywhere, which is why we target high-risk sites and rely on passive surveillance to broaden the geographic coverage of the surveillance network.

Incursion response and preparedness

Biosecurity New Zealand is currently developing incursion response preparedness through the development of marine response capability with AgriQuality, a contractor that can provide operational incursion response services. In addition, research is

Marine biosecurity in NZ Continued

being undertaken to test and develop incursion response tools for port environments, steam sterilization, and in-water hull cleaning tools.

Post-border management

Partnership arrangements are being developed by Biosecurity New Zealand, regional councils and other interested parties such as marine and aquaculture industries for a wide range of marine biosecurity issues. These include the development of regional biosecurity plans (eg Fiordland Biosecurity Plan) and codes of practice (eg Subantarctic and Chatham islands code of practice).

Biosecurity New Zealand has also been heavily involved in the development of environmental risk management guidelines for vessel maintenance facilities with the Auckland Regional Council. These provide a consistent set of standards for the mitigation of marine biosecurity risks as well as other environmental risks. These guidelines have been endorsed by the Ministry of the Environment, Department of Conservation, Ministry of Fisheries and Biosecurity New Zealand, which all encourage other regional councils to develop similar guidelines.

The future

To ensure New Zealand's marine biosecurity programme continues to develop and increase in effectiveness, Biosecurity New Zealand will continue to develop and implement a wide range of initiatives such as the baseline survey/resurvey programme, the development and implementation of an effective national surveillance system, finalising and analysing a hull-fouling risk assessment, undertaking species risk profiling to identify high-priority pests, developing management tools for ballast water and biofouling, and continuing to support marine biosecurity research and operational development.



Diver using the steam subsurface steriliser developed by DOC.

Photo: Kingett Mitchell Ltd

Marine biosecurity management in New Zealand and globally is still in its infancy, however, New Zealand has developed and implemented an effective programme that delivers across the invasion process (pre-border, border and post-border). Our programme is one of the most extensive marine biosecurity programmes in the world. Ensuring that this programme continues to develop and increase in effectiveness will rely on the development of partnerships and support between all government agencies (central, regional and local) and stakeholders.

Island biosecurity in NZ Nature Reserves – fire prevention more than fire fighting

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The Department of Conservation manages hundreds of islands, a large number of them for their natural values where public entry may be restricted in some way. Some islands provide benchmarks of 'least human impact' on natural systems while others are used as predator free habitat for managing threatened species. Many islands are undergoing restoration programmes which often include removing introduced species such as rats through eradication projects.

The Department has a good track record of successful eradications of invasive alien species, and has always recognised the need to be vigilant about keeping pests off islands. It is viewed as a basic principle of eradication planning that reinvasion risk is manageable.



Rigorous preparation: Checking equipment before departure for an island Nature Reserve is an essential step in the prevention of introducing new pests to these environments.

Island biosecurity past and present

Past efforts have emphasised a "fire fighting readiness" approach where staff prepare to respond to an incursion when detected. While this capability is still required we have recently increased the focus on prevention or quarantine measures and improved surveillance to detect incoming pests. The term 'Island Biosecurity' is used to refer to all three aspects; quarantine, surveillance and contingency response.

There has also been a broadening in focus on target invasive species to cover not just rodents but other forms of pest, including weeds, invertebrates and disease transmission through poor hygiene.

There are several opportunities to detect and prevent pests from establishing on islands and for an island expedition by DOC staff, the first is at the source of supplies. For example fresh vegetables are no longer bought from home gardens or roadside stalls, they are sourced from supermarkets which have good quality control over their suppliers regarding invertebrate infestation. Checking stores and equipment through a

quarantine store gives a good level of protection.

Further opportunities arise at departure points, in transit and even upon arrival where often resident DOC rangers will require everyone to check through their gear in a sealed room. Surveillance and contingencies for likely pests is also required to cover unauthorised landings and shipwrecks

As each opportunity to detect and eliminate pests is passed the risk of pests establishing gets higher for many organisms. By the time organisms have actually got to the island the chances of finding and eradicating them before they reproduce is much reduced (Fig 1).

The DOC Island Biosecurity System

Since 2003 the Department has worked on establishing an island biosecurity system to improve the practices of people visiting natural heritage islands. At the national level the key components are:

- A Standard Operating Procedure providing the overall structure and standards.
- A best practice manual which provides the basis for

Island biosecurity in NZ Nature Reserves Continued

sharing current knowledge on the subject,

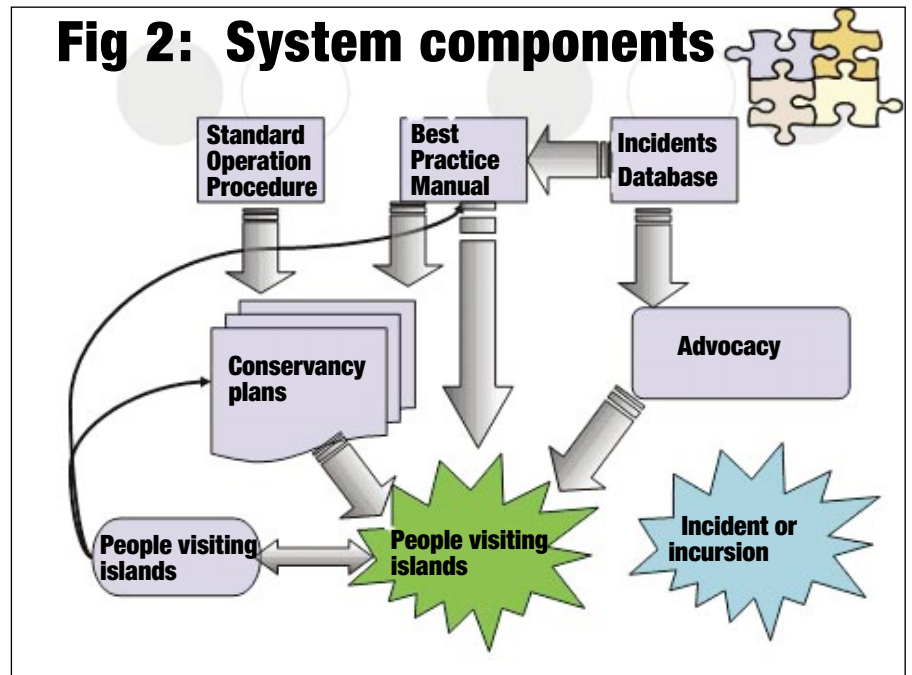
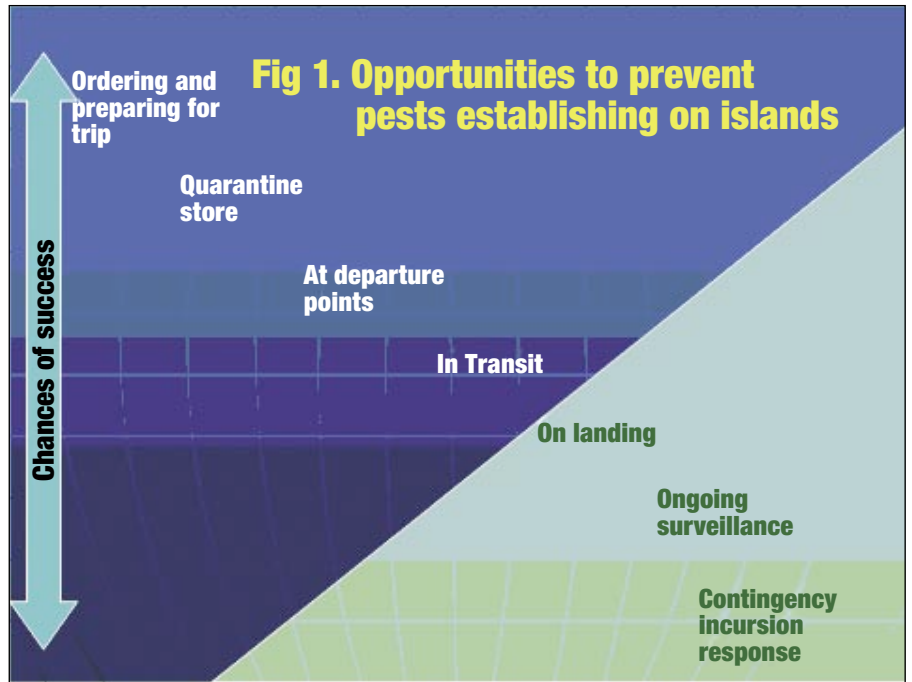
- An incidents database for capturing data on events and near misses which is useful for improving the system and for advocacy – showing people that incursions really do happen.

The SOP and Best Practice Manual are used as the basis for writing island biosecurity plans in each conservancy and these plans set the standards expected of people visiting islands (see appendix 1 for an example of quarantine standards). The system is audited to look at actual practices in the field compared with the plan and tries to resolve differences. Audits also identify new best practice which can be shared with other Conservancies (Fig.2).

Conservancy plans provide an incursion response procedure to allow information to be gathered and appropriate action planned with help from the best practice manual. Every incident, be it an incursion or a near miss is logged into the database, and there is some inquiry into how well the system worked and what could be improved.

Summary

DOC now has a more comprehensive system in place for preventing, detecting and dealing with invasive species on islands but good implementation of the system is the key to success because it comes down to what care is taken by people visiting islands. Follow up audit of island biosecurity practice has so far been very helpful in getting the implementation right.



Island biosecurity in NZ Nature Reserves Continued

Appendix 1: Example of standards from conservancy island biosecurity plan.
Standards for preparing for an island visit

Relevant Standards

Arrange sequence of island visits to minimise risk

- When a number of islands are being visited, islands that are most pest-free should be visited before visiting islands where pest species are present.
 - Responsibility: **Trip leader and Programme Manager**
-

Information about pest invasion risks to islands provided for visitors

- All island visitors and transport providers must be informed of requirement to adhere to entry permit conditions and biosecurity procedures.
 - The following pamphlets are to be issued to each trip leader (e.g. Pest and Disease Quarantine.)
 - The following pamphlets are to be issued to each expedition member (e.g. Minimum Impact Code pamphlet, "Help protect New Zealand's offshore islands" pamphlet).
 - The trip leader may be asked to carry out instructions from an Incident Controller (under CIMS structure) until a pest invasion response team arrives.
 - Make sure that all trip leaders know that they could be called on to carry out some contingency responses.
 - Responsibility: **Programme Manager**
-

Cleaning and checking of equipment and stores

- All equipment and supplies (as practicable) for islands must be stored, inspected and packed in a quarantine store.
 - All personnel travelling to an island must travel via the quarantine store for a biosecurity check using the [Self-Audit Check Sheet](#).
 - A suitably qualified and experienced DOC staff person must visually inspect all equipment and supplies for soil, seeds and plant material, invertebrates and rodents, etc.
 - Where possible, all food, supplies, equipment, and personal gear will be packed into containers supplied by Hauraki Area. No bags or packs will be accepted unless they are in the supplied containers
 - Persons unable to travel via a quarantine store must have this approved by the Programme Manager but must still use the [Check list for island travel](#).
 - Responsibility: **Trip Leader and Island Work Plan Manager**
-

Island biosecurity in NZ Nature Reserves Continued

Cleaning and checking of high risk items

- Personal luggage and gear (e.g. boots, packs, bags, socks, jackets, trousers, and all pockets etc) must be clean and free of soil, seeds, etc.
- All footwear must be thoroughly scrubbed prior to travel to an island.
- All tents must be supplied by Hauraki Area, and must be cleaned, exposed to sunlight and dried and be thoroughly checked for soil, seeds and plant material, invertebrates and rodents, etc.
- Any equipment and materials considered to be high-risk may be subjected to fumigation.
- All equipment used for aquatic work (e.g., nets) is free from any fragments of weed as well as any other aquatic organisms.
- Responsibility: **Island Work Plan Manager**

Minimising the risk of disease introduction on clothing and equipment

- All equipment used with animals, plants, or soil to be cleaned and disinfected prior being taken to islands.
- No equipment, footwear or clothing allowed which has been used at captive institutions to be brought to islands unless specific cleaning is undertaken, including the scrubbing with Jeyes™ or Virkon™ biocide for footwear.
- No equipment, footwear or clothing allowed which has been in contact with domestic poultry or cage-birds, or has been used on farms etc to be brought to islands.
- On no occasion should there be travel from a known disease outbreak area (or visitors from overseas) to an island without seeking specific advice from a recognised expert or a veterinarian.
- When travelling to or from areas where native frogs are known, follow the recommendations of the Native Frog Recovery Group to reduce risk of spreading the Chytrid fungus.
- Responsibility: **Trip leader and Island Work Plan Manager**

Cleaning footwear and using sniffer-dogs for of high risk items

- Footwear to be thoroughly scrubbed and washed in disinfectant (e.g. Jeyes™, TriGene™, or Virkon™ biocide foot baths).
- Dogs may be used to check for the presence of rodents or mustelids in all equipment and goods prior to departure.
- Responsibility: **Island Work Plan Manager**

Supplying sealable plastic containers

- Every person visiting islands in Waikato Conservancy will be supplied with sealable plastic containers for their transporting their gear
- Responsibility: **Trip leader and Island Work Plan Manager**



Weedbusters update

By Carolyn Lewis

Acting National Weedbusters Co-ordinator

It's been a busy few months for Weedbusters, both at national level and regionally.

Hamilton and Gisborne both held "Dirty Weekends" in October to highlight the wise disposal of weed waste in a month that is traditionally when gardeners start giving their properties a spring clean in preparation for the growing season. It is likely that the Dirty Weekend concept will be launched nationally in 2007 with councils, communities and groups invited to take part with weed waste disposal activities in their own areas.

Waikato, Canterbury, Nelson/Marlborough and East Cape/Hawkes Bay started work on their own regional "Plant Me Instead" books based around the concept pioneered in Auckland/Northland and developed further in the Wellington region recently.

The first stage involved canvassing parks and reserves departments of local city and district councils, DOC offices and local conservation groups to find out what "garden escape" species were causing concern in local reserves. The next step was to work with garden centres and weed experts to find suitable "friendly alternative" species that were available for sale locally.

Another Weedbusters publication that has just been launched is the new children's book, *When the Jones Kids Came to Town*. This book grew out of an idea for a resource that weeds staff could use when visiting primary schools to introduce the idea of weed issues at a level the kids could understand and enjoy – and which would also make it easier for the weeds staff to present! The books, which are retailing at \$10,

have been made available to councils, DOC offices, libraries and schools at a reduced price.



One of Janet Hodgetts' illustrations from the new Weedbusters' resource aimed, called *When the Jones Kids Came To Town*, which aims to get the weed message out to primary school children.

And in the background, regions are starting to gear up for another busy spring and summer of weedbusting events and shows. Remember to support Weedbusters co-ordinators in your areas as much as you can — they are doing a great job in keeping the weedbusting message and on-the-ground efforts going in the communities in which they are involved.

Member's view

Brickbats & bouquets for the NPPA, by Randall Milne, an NPPA foot soldier

So Biosecurity New Zealand (BNZ) believed the most important thing wrong with the National Pest Plant Accord (NPPA) has been the compliance checking by regional councils (see *Protect* Winter 2006). Well this may well be the word around the tearoom at BNZ, but I believe there are a whole suite of issues that are equally, if not more important than the compliance inspections of plant nurseries and shops by NPPA foot soldiers.

The launch of the NPPA in 2002 heralded a new era of co-operation between central and local government, and the Nursery and Garden Industry Association (NGIA). Max the Beagle was launched with great fanfare and distributed far and wide throughout the country with identification manuals, NPPA species lists and fridge magnets. Then what? Well, it was left to the foot soldiers to run with it and all would be well with the world. And in some cases it was. Plant nurseries and shops were inspected in most regions, owners/managers informed of their responsibilities and given an opportunity to comply, or further action was taken if necessary.

However, there have been concerns regarding the NPPA since its inception. These concerns have involved an absence of a Standard Operating Procedure (SOP) for inspections and compliance, and a centralised recording system for the inspections. Surely if BNZ's greatest concern has been compliance checking, then a national SOP and a single repository to record the inspections should have been a priority. Other concerns raised by the NZBI include the lack of plant identification training for those carrying out inspections and the need for consistency in its implementation across regions. The status of cultivars of listed species on the NPPA has been an issue,

as well as the length of time taken for enforceable rulings from BNZ. Acceptable timeframes for correct identification, and to a level required should a case reach the prosecution stage, have also being problematic for those carrying out inspections and compliance activities.

The concerns above have largely been addressed through the review of the NPPA, and BNZ do deserve a bouquet for their efforts in this. There appears to be a new mind-set of responsibility and action from BNZ in relation to the NPPA. The Biosecurity Central Regional Government Forum has also taken an interest in it, and this may explain the willingness of BNZ to be seen to be acting in partnership with local government.

In spite of these efforts, the recent training workshop for the NPPA raised a number of issues that indicate the NPPA is not ready to fully implement. These concerns have been passed onto BNZ, which has listened to them. Its recommendation now is that the initial visits to plant nurseries and shops is to distribute information about the new NPPA and establish a relationship with the owners and staff, rather than go in boots and all with the compliance component of the NPPA.

The foot soldiers for the accord have an important role to play during this lead-in period for the new NPPA. Our focus should not be to undermine the value of it by taking pot shots at BNZ or other parties. This is an opportunity to create one of those rare win/win situations. A win for the plant industry to grow and sell plants that are appropriate for New Zealand, and a win for those charged with protecting New Zealand's environment from invasive plant species. By working together on the NPPA, we may achieve the desired outcome of preventing the human-assisted spread of invasive plants throughout the country.