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Risk from pinewood nematode
Research into humane traps recognised
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Cover: The wrybill, an endemic species, has been involved in pilot research for wildlife surveillance. Photo: Simon Fordham, NaturePix.
Biosecurity New Zealand to be launched at Biosecurity Summit

The second Biosecurity Summit (18-19 November) provides an opportunity for our stakeholders to review the first year's progress on the Biosecurity Strategy. It is also where I will be launching the new biosecurity agency, Biosecurity New Zealand. There will be two main themes at the Summit: pest management and marine biosecurity.

At the inaugural Biosecurity Summit last year, I listened to many people talk about their responses to the Biosecurity Strategy and their hopes for how MAF would take on the challenges laid in front of it. While there was unanimous support for the Strategy there was also a clear message that we need to be working closely with other stakeholders in its implementation.

The other key messages for me were that biosecurity needed to protect the full range of economic, social and environmental values; that MAF needed to change its personality and win the hearts and minds of New Zealanders; that physical and social science needed to be integrated into the biosecurity system; and that there needed to be more leadership, strategy and direction. We have taken these ideas and turned them into concrete designs and structures.

Reading the Strategy's first ten recommended steps, I am pleased to say that there has been significant progress on all of them in the last 14 months, though I can still see a lot more work is needed.

We can report that the Government has agreed that MAF should become the agency with overall accountability for the biosecurity system. We have built structures and capability within MAF and the other agencies to support us in this role. We have established the Biosecurity Chief Executives' Forum and Central/Regional Government Forum. And we are in the process of setting up the Biosecurity Ministerial Advisory Committee.

There is an integrated risk management framework that explicitly recognises the full range of values that biosecurity needs to protect. And the Government has increased biosecurity funding. We still need to build better links with the public, with Maori, and with science. For the latter, the article on page 16 on the National Centre for Advanced Bio-Protection Technologies at Lincoln shows one exciting way these linkages are developing. In the meantime, the job of assessing risks across the board will take many years.

The summit’s focus on pest management and marine biosecurity represents new territory for MAF. They are areas where we are building new capability and where the Government is investing new money. We need to determine the major issues, the biggest risks and gaps and how the Government can get the best value from its expenditure. I am looking forward to the summit presentations to provide good ideas, clear directions, and a platform from which MAF and the other agencies can work with stakeholders.

The summit will also see the launch of Biosecurity New Zealand – MAF’s restructured Biosecurity Authority. It was just over five years ago that I wrote in this magazine about establishing the MAF Biosecurity Authority (Biosecurity 13, 1 August 1999). During its time, the Biosecurity Authority, along with the Ministry of Health, has eradicated several dangerous pests and mobilised both public and private resources to combat pests in ways that were unprecedented in the world. Biosecurity also gained a higher profile and many more New Zealanders became aware of its importance. I am very proud of what the Biosecurity Authority achieved and the staff that made it possible, but it is time for change and a new era for biosecurity. From November 2004, we will have an organisational structure more aligned to the activities we carry out, rather than to the sectors we are trying to protect. This will improve consistency in the way we carry out those activities, and will help us understand the full range of biosecurity risks that need to be managed. The new structure means that issues and pests should not fall into gaps between MAF’s business groups or between agencies. These are exciting and challenging times for biosecurity and for MAF. I hope many of you can come to this year’s summit and look forward to meeting you and introducing the new members of MAF’s biosecurity executive team.

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www.maf.govt.nz/biosecurity-summit
Whole-of-biosecurity" approach

Many organisations, both government and non-government, are involved in biosecurity activities in New Zealand. Unfortunately, they have not always pulled in the same direction.

The Biosecurity Strategy said system fragmentation was a major problem and contributed to a lack of coordination and integration. There has been no overall view of priorities and performance, individual organisations have sometimes had a narrow view of the values they should be protecting, and capability has been patchy.

The strategy recommended a “whole-of-biosecurity” approach – improving consistency and coordination, and treating the components as an integrated system. It called for MAF to take the lead role for biosecurity and to be “accountable for ensuring the full range of biosecurity activities are delivered effectively and efficiently to meet the outcome expectations of agencies with a biosecurity interest”.

In response, the Government agreed in August 2003 that MAF would indeed become the lead agency for biosecurity and that the MAF chief executive would have end-to-end accountability for the biosecurity system. It also established the Biosecurity Strategic Unit, separate from both MAF’s Biosecurity Authority and its Policy Group, to provide a whole-of-system view.

The Government recently clarified that MAF’s system oversight role will cover all biosecurity activities, including those carried out by central government agencies, regional councils, industry and community organisations. MAF will not directly control these activities, but will actively seek opportunities for collaboration. MAF’s oversight role will be to:

- facilitate a shared sense of strategic direction
- provide commentary and advice to the Minister for Biosecurity
- facilitate cooperation and coordination
- provide national leadership and coordination, including for pest management
- gather information and report to chief executives, ministers and the public.

Accountability boundaries

Four central government agencies receive direct funding from Vote Biosecurity: MAF, the Ministry of Health, the Ministry of Fisheries, and the Department of Conservation. Changes to their accountabilities are described below.

The Environmental Risk Management Authority (ERMA) and Land Information New Zealand (LINZ) also undertake biosecurity activities, but their accountabilities have not changed.

1. Ministry of Agriculture and Forestry (MAF)

MAF will continue to be accountable for:

- ensuring that biosecurity decisions take account of the full range of biosecurity outcomes, including economic, environmental, social and human health values
- enabling New Zealand’s exports by giving assurances about our biosecurity status to meet importing countries’ requirements
- managing biosecurity risks at New Zealand’s borders (except for port sanitation, and surveillance for, and exclusion of, rats and mosquitoes that pose health risks)
- responses to nationally significant incursions of pests and diseases
- national programmes and activities to improve public awareness, community participation and public support for biosecurity
- administering the Biosecurity Act and maintaining the regulatory framework for biosecurity.

In addition to its leadership and oversight role, MAF will take on the following accountabilities:

- the marine biosecurity functions currently performed by the Ministry of Fisheries
- national leadership and coordination of pest management
- responses to nationally significant pests and diseases that are already established (except for animals managed under the Wild Animals Control Act)
- providing information about the potential invasiveness of exported species to importing countries.

2. Ministry of Health (MoH)

The Ministry of Health will continue to be accountable for:

- managing nuisance pests under the Health Act
- port sanitation, surveillance for, and exclusion of, rats and mosquitoes that pose health risks to meet international health obligations (to be reviewed)
- the current southern saltmarsh mosquito eradication programme (until it expires)
- post-border surveillance, investigation and initial response for
mosquitoes that pose health risks (until the southern saltmarsh mosquito eradication programme expires).

The Ministry of Health is currently responsible under the Health Act for keeping ports free of rats and mosquitoes to meet New Zealand’s international health obligations. Officials will review accountability and legislative arrangements for port sanitation, surveillance and exclusion, as part of the review of public health legislation. The Ministry of Health is also responsible for responding to mosquitoes that pose health risks when they are found beyond ports, including an active programme to eradicate southern saltmarsh mosquito from several locations.

Accountabilities for mosquito control will shift to MAF when the current southern saltmarsh mosquito programme has expired (due in 2006).

3. Department of Conservation (DoC)

DoC will continue to be accountable for:

- managing wild animals under the Wild Animal Control Act
- DoC’s freshwater pest fish programmes under the Conservation Act (to be reviewed)
- DoC’s regional-scale pest programmes for conservation pests
- DoC’s wildlife health protection programmes
- managing pests to protect identified conservation values at specific high-value sites (e.g. in national parks and marine reserves)

- authorising the control of damage-causing wildlife under the Wildlife Act.

MAF’s new accountability for nationally significant pest management will see it take responsibility for six of DoC’s current national programmes: pyg grass, hydrilla, hornwort, white bryony, rainbow lorikeet, and blue tongue skink. The programmes are expected to shift to MAF in July 2005.

DoC is currently accountable for freshwater pest fish programmes under the Conservation Act. The Ministry of Fisheries and Fish and Game New Zealand also have some accountability for freshwater aquatic life. Cabinet has previously agreed that freshwater jurisdictions under the Conservation Act will be reviewed through a different process, which may result in specific biosecurity elements being transferred to MAF.

4. Ministry of Fisheries (MFish)

Marine biosecurity accountabilities and functions currently undertaken by the Ministry of Fisheries will shift to Biosecurity New Zealand (MAF). The Ministry of Fisheries will no longer be accountable for delivering biosecurity services but will remain a member of the Biosecurity Chief Executives’ Forum.

“Whole-of-government” approach

The Government recognised the need to keep a “whole-of-government” approach to biosecurity and established the Biosecurity Chief Executives’ Forum as the main coordinating mechanism. Agencies will look for synergies to increase the effectiveness of their activities and will improve coordination so that functions can cross departmental boundaries seamlessly. MAF, DOC, the Ministry of Fisheries, and the Ministry of Health will have equal responsibility for:

- contributing to and supporting the Biosecurity Chief Executives’ Forum
- contributing to strategic policy development
- commenting on overall biosecurity system performance from their perspectives
- reporting on their own biosecurity activities
- contributing scientific expertise when that expertise lies in their agencies
- working with, and contributing to, MAF and other agencies’ public awareness activities.

The other agencies will also play an important role in supporting MAF as it takes on new accountabilities, establishes Biosecurity New Zealand, and develops its capability to deliver on its broader mandate.

Boosting MAF’s capability

The Government has agreed that the recommendations in the Biosecurity Strategy form the basis for improvements to the biosecurity system over the next five years.

In the 2004 Budget, it provided new biosecurity funding of $46.5 million over four years.

Cabinet has also approved additional resources to ensure MAF can handle its new accountabilities, including new staff for leadership and coordination of pest management and to build systems to assess health risks. These new positions will be filled when Biosecurity New Zealand begins this month.

MAF is also improving its corporate infrastructure across the organisation, including its information systems, financial management and use of technology.

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Group Director Barry O’Neil recently confirmed the appointment of three directors to the soon-to-be-launched new biosecurity agency, Biosecurity New Zealand.

Debbie Pearson started as Director of Pre Clearance on October 4. The position is responsible for the management of biosecurity risks up to the point where they receive biosecurity clearance. Prior to joining MAF, Debbie had worked at Fonterra and its predecessors for more than 10 years. There she held senior executive roles in the areas of strategy, change management and technical operations. Her most recent Fonterra role was as General Manager of the JEDI programme, a major transformational project that saw the implementation of a new business model, re-engineering of end-to-end operational processes and systems, and introduction of a new performance measurement system.

Peter Thomson is the new Director of Post Clearance – a role that has accountability for the design and management of interventions to detect and respond to biosecurity incursions and pest management. Prior to his new role, Peter was MAF’s Director of Forest Biosecurity for two years. His responsibilities included leading and managing major incursion response programmes. Before joining MAF, Peter was Operations Manager (Central) for Carter Holt Harvey from 1999-2002, following a period as Carter Holt Harvey’s Manager of Technical Services.

Douglas Birnie will be the Acting Director of the Policy & Business Directorate, which provides ‘cross-system’ integration through the delivery of policies, information, international co-ordination and business management processes. Douglas is currently on secondment to MAF from the LECG group, where he is a senior managing consultant. Prior to this, Douglas held various management and policy roles in the Ministries of Transport and Forestry, and in the Agriculture and Forestry Minister’s office.

MAF has finalised the organisational structures that will support the implementation of the Biosecurity Strategy. The confirmed structures match those outlined in previous issues of Biosecurity. The design decisions follow consultation with staff and external stakeholders. The decisions are an important milestone in the process of MAF taking on an expanded mandate and responsibilities in the biosecurity arena. MAF plans to have the structures implemented by early November.

For a report outlining the final decisions:

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Biosecurity magazine changing with the times

This is the last issue of Biosecurity in its present format, which was first developed in 2000. Following on from the launch of Biosecurity New Zealand later this month, the 15 December issue of Biosecurity will feature a new look and structure to reflect the “whole of biosecurity” approach underpinning the new organisation.

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Biosecurity Issue 55 • 1 November 2004
Research project for disease surveillance in wildlife

It’s not only farmed animals that suffer from diseases; wildlife are also affected. But disease surveillance in wildlife presents a completely different set of challenges than detecting disease in farmed animals. What species do you test? How do you get samples, and at what sites? And what diseases do you test for?

These are just some of the intriguing problems posed by wildlife disease surveillance. To solve them, MAF, DoC, and the MoH have begun a two-year research project to develop a long term surveillance programme for the early detection of disease in New Zealand wildlife.

Research project

The project will be used to develop a strategic and prioritised surveillance system for the early detection of diseases in New Zealand wildlife. For this research, wildlife has been defined as terrestrial vertebrates native to New Zealand, feral terrestrial vertebrates introduced to New Zealand, marine mammals, freshwater fish, native macro-invertebrates and invertebrate vectors. The recommendations are expected to include high priority pathogens, species and sites that should be monitored as part of a long-term wildlife disease surveillance capability.

In order to make better use of limited resources dedicated to wildlife disease surveillance, MAF, the Department of Conservation and the Ministry of Health jointly commissioned the research. The work is being funded by the Foundation for Research Science and Technology and delivered by a team of veterinary epidemiologists at Massey University’s Institute of Veterinary, Animal and Biomedical Sciences (IVABS).

The project was started in July 2003 and is due to be completed in June 2005. The objectives for year one of the project were to gather existing information on wildlife surveillance in New Zealand, develop a theoretical framework for a New Zealand wildlife surveillance programme, and begin preparations for a pilot surveillance project to test the framework. Year two will see the completion of the pilot project, a report on its results and finalisation of the recommendations for the framework.

Pilot project – water birds in the Firth of Thames

Water birds in the Firth of Thames area were chosen for the pilot study. This area was selected because, as well as being home to endemic water birds for part of the year, it is a preferred location for migratory birds such as the red Knots, turnstones and bar-tailed godwits. The birds arrive in New Zealand from their Northern Hemisphere breeding grounds from September to December.

Migratory birds have been identified as a potential, albeit very low risk, pathway for diseases that can be passed to humans, such as avian influenza, to enter New Zealand.

This pilot study will evaluate faecal sampling as a method for detecting the presence of potential pathogens in wild birds. It will also take the opportunity to provide baseline information on the status of avian influenza viruses in endemic water birds and link closely to a second, MAF funded, study to assess the presence of avian influenza viruses in migratory waders.

The first phase of the pilot study will involve sampling endemic wading birds, such as the wrybill, and water fowl, such as the mallard duck, prior to this season’s arrival of migratory birds. Once the visitors arrive they will also be sampled. The final part of the pilot survey involves re-sampling of the endemic bird species a few months later to determine if there are any new viruses in the population.

The traditional method of sampling birds for disease testing is to take a swab from each bird’s cloacal area which involves catching the birds to be sampled. The birds are released after the swab has been taken, and the process does not harm them. For the purposes of this pilot survey the plan is to capture the birds and use swabs to obtain samples. However, the research team will also be investigating the practicalities of using faeces collected from the birds’ feeding areas. This method of sampling offers considerable advantages, in time and cost, over cloacal swabbing, as the birds do not need to be caught. The results from the testing of cloacal samples will be compared with testing of faecal samples, to measure the degree of correlation between the two different methods for assessing the disease status of water birds.

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Mass carcass disposal a logistical challenge

Certain animal exotic disease responses can involve large scale slaughter of animals. Disposing of them safely presents an enormous challenge.

Rapid disposal of animal carcasses during a disease response is crucial to public health and to biosecurity objectives. The carcasses may be contaminated with exotic disease agents that present a risk for further spread of disease. Enteric diseases and vermin present potential hazards to public health and safety, while the disposal of large numbers of carcasses can leave an undesirable environmental legacy.

A review of New Zealand’s disposal contingency planning began in 2002, in the wake of the 2001 foot and mouth disease outbreak in the UK.

A multi-faceted disposal strategy is being developed. This includes planning for carcass disposal on-farm by burial and incineration (using air curtain incinerators) as well as off-farm mass-burial and rendering. Other technologies such as composting are also being explored. Decision criteria for which option to pursue will also be developed.

On farm and mass burial sites

Rapid, efficient and environmentally safe disposal by burial requires prior planning. MAF is in the midst of a 3-year contingency planning project to:

- develop criteria for burial site selection for both on-farm and mass burial sites
- develop construction specifications, for both on-farm and mass burial sites
- develop site management procedures, including processes for regulatory approvals, construction, operation, environmental monitoring and site restoration
- select prospective sites suitable for mass burial.

MAF contracted consultants to review existing regional landfill capacities. This involved identifying gaps in the existing physical and legal capacity to bury carcasses and provides options for addressing these gaps and designing a national strategy for animal carcass disposal by burial. In addition, site selection and construction specifications for carcass burial facilities have been drafted by contracted engineers.

MAF is now in a position to approach regional authorities and submit these specifications, opening the way for potential mass burial sites to be selected.

Use of existing rendering facilities

A review of the capacities and locations of New Zealand rendering plants was undertaken. There are significant practical, commercial, licensing and trade implications for the use of rendering plants to dispose of animals which die or are slaughtered during a biosecurity event. Only two rendering plants, both of which are in the North Island, are equipped to take entire carcasses. A memorandum of understanding between MAF and one of the two rendering businesses is under development. This document describes the responsibilities of each party during a biosecurity event.

Incineration using air curtain incinerators

Several new technologies have been identified during the disposal review. Air curtain incineration is a feasible option for on-farm disposal of relatively small numbers (i.e. hundreds) of animal carcasses. Particular advantages are portability, rapid deployment and very high temperature incineration. This method could be particularly useful when transportation of dead or infected animals from a property is highly undesirable, as may be the case when dealing with a suspected zoonosis e.g. anthrax. It is MAF’s intention to trial an air curtain incinerator in New Zealand in 2005.

Composting (bioheat treatment)

MAF and AgriQuality staff visited Canada during that country’s recent response to an outbreak of highly pathogenic avian influenza in poultry. Composting was used both on infected premises and at a mass disposal site to reduce both birds and litter into a usable end product.

Composting is very environmentally friendly and the technology already exists in New Zealand. Given its successful use in Canada, composting will be explored further, in particular, identification of key suppliers of the technology in New Zealand, field trials exploring carcass size limits and discussion on how best to draw the technology into current exotic disease disposal planning.

Transportation

The possibility of spreading disease by transporting carcasses is a significant issue. Existing sources of vehicles which are able to transport carcasses in a biosecure fashion are being documented, along with their capacities. Procedures around which transportation can occur have also been developed. Transportation is likely to represent a ‘rate limiting step’ to any off-farm disposal option.

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Programme designed to stop ants in their tracks

The National Invasive Ant Programme coordinates the various invasive ant-related projects that MAF is running. The programme, which has been initially funded until June 2006, aims to minimise exotic invasive ants arriving and establishing in New Zealand. It covers pre-border, border and post-border operations.

Programme coordinator
Simon O’Connor is the coordinator for the National Invasive Ant Programme. One of his first jobs will be to review the current MAF invasive ant programmes to determine future directions and strategies for getting there. Simon will also act as response coordinator for existing and new invasive ant incursions.

Simon has worked on pest management strategy development and implementation for plant and animal pests, both within New Zealand (for the Department of Conservation) and in Australia (Parks Australia). In his role as Project Officer, Weed and Feral Animal Control and Management at Kakadu National Park in Australia, Simon managed the Big Headed Ant (Pheidole megacephala) eradication programme. In his last role, as Technical Adviser in MAF’s Indigenous Flora and Fauna team, he was involved in a number of invasive ant related projects.

Ant technical advisory group
Simon will work closely with the invasive ant technical advisory group, which includes ant specialists from the Department of Conservation, AgriQuality, Crown research institutes, universities and professional pest controllers. MAF seeks their advice on issues such as the biology, behaviour and impacts of ant species and how to contain and eradicate them. The group also identifies areas for further research.

National invasive ant surveillance
MAF has a highly successful surveillance programme in place for exotic invasive ants. The programme was born out of the 2001 red imported fire ant (RIFA, Solenopsis invicta) incursion at Auckland airport. National invasive ant surveillance has since been carried out every summer and has located numerous exotic incursions. The most notable of these was the RIFA nest found at the port of Napier in February this year.

Auckland, Napier and Tauranga appear to be the primary sites of new invasive ant incursions. MAF is currently reviewing last year’s national invasive ant surveillance high risk sites against previously targeted sites, new incursion information, intercept records and trade and commodity trends. High risk primary sites for this surveillance season will soon be identified, with activity due to start in December or January depending on summer temperatures.

Ant responses
MAF currently has two major invasive ant responses on the go, in Napier and Mount Maunganui.

After routine surveillance turned up the initial find of an established nest of RIFA at the port of Napier, last year, an incursion response was launched. The delimiting survey failed to find any foragers or nests. A second season of RIFA delimiting surveillance at Napier will be completed this summer.

At Mount Maunganui, crazy ants (Paratrechina longicornis), yellow crazy ants (Anoplolepis gracilipes) and tropical fire ant (Solenopsis geminata) were found in 2003. As with the Napier response, last year’s delimiting survey at Mt Maunganui failed to find any further foragers or nests. MAF will complete this response if there are no more finds during this year’s delimiting survey.

There have been other smaller responses – for example, where the species is expected to have few impacts, the climate will prevent them establishing or MAF is confident that the ants were detected and treated before they could establish.

New ant initiatives
MAF has contracted Landcare Research to compile ant risk assessments of species posing the greatest risks to New Zealand. The project is half complete with 80 species having been initially assessed. Eight species have so far been identified for detailed pest risk assessment. The results will be used for the development of import health standards, surveillance and public awareness material.

Another initiative under the programme is the ant surveillance sensitivity trial. The trial was designed to determine the optimum temperature, bait type, microsite placement and density of baits that allow the maximum number of ant species to be sampled in a given surveillance area. This will help MAF to determine whether any improvements need to be made to the current specifications for national invasive ant surveillance. The first season’s data was collected in April 2004 with a follow up due in February 2005. Analysis of all data will be done after the February collection and once the final ant identifications are received. A bait efficacy trial is soon to commence. This trial work will test various multipurpose toxic ant baits against a selection of potentially high impact ant species. Testing the baits under New Zealand climatic conditions will be a significant component of the trial.

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Government moves to ease airport congestion

Prime Minister Helen Clark announced in September that the Government will spend $5.75 million this financial year on extra border control staff and equipment to facilitate arrivals at Auckland and Christchurch international airports.

The funding will increase to $7.7 million in out years.

Helen Clark visited Auckland International Airport to make the announcement, together with Tourism Minister Mark Burton, Customs Minister Rick Barker, and Associate Immigration Minister Damien O’Connor.

“Tourists, business visitors and travelling New Zealanders are experiencing unacceptable delays because of congestion at our main airports. It is important to New Zealand’s image and reputation that we act against unreasonable delays. The problem has grown as New Zealand continues to experience extraordinary growth in visitor arrivals,” Helen Clark said.

“In the 2003/04 year 7.74 million people arrived in or departed from our international airports, a 12 percent increase over the previous year.

“New Zealand tourism is a success story, with New Zealand attracting 2.25 million international visitors in the year to June. The industry’s growth and reputation are of critical importance to New Zealand.

“That’s why we need to have infrastructure in place which can process passengers in a more timely fashion, while still undertaking the checks and clearances which are essential to protecting New Zealand.”

The funding will provide:

- Two new MAF x-ray machines and 17 new staff at Auckland international Airport
- Nine extra Customs officers at Christchurch, as well as five new MAF Quarantine officers and a new MAF x-ray machine
- 96 more customs officers at Auckland International Airport.

“Auckland International Airport, in particular, has been straining at the seams in the peak season, and at peak arrival and departure times,” Helen Clark said.

“Both Auckland and Christchurch airport companies and the border agencies have worked together to find solutions. The airport companies are investing in expanding the space, while the Government is funding the positions to staff the extra space.”

New disease centre for Wallaceville?

MAF and the Institute for Environmental and Scientific Research (ESR) are looking into the possibility of taking over part of the site of the Wallaceville Animal Research Centre in Upper Hutt. If the proposal is successful, a National Centre for Emerging (human and animal) Diseases and Biosecurity would be established. Any decision is still several months away.

MAF’s National Centre for Disease Investigation is already located at Wallaceville. The consolidation could yield a number of benefits, including information exchange, shared use of resources already on site, sharing staff and facilities in emergency situations and developing collaborative opportunities.

The proposal follows the announcement that AgResearch will moving its operations from Wallaceville over the next few years and intends to eventually sell the site.

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Spraying model takes complex variables into account

Conducting aerial spray operations over city blocks is never an easy task. Not only can public opposition be a challenge, but technical difficulties also abound. After having three separate moth incursions over recent years, aerial spray specialists at Forest Research have become well-practised at ensuring that the spray goes where it is supposed to, and does precisely the job intended.

Dr Brian Richardson of Forest Research has been the main driver behind SpraySafe Manager (SSM2), a computer model that simulates aerial spraying. SSM2 has been used extensively in eradication programmes to determine the best approach to urban spray operations.

“For any given spray operation, we need to predict where the spray will fall and the biological consequences of this deposition,” Brian says. “It is virtually impossible to determine these results through experimental methods because there are too many variables, costs are too high, and there is not enough lead-in time. Meteorological conditions, aircraft type, flying height and nozzle types all influence where the spray will land. SSM2 accounts for these complex variables and makes the prediction for us.”

Linked to a Geographic Information System (GIS), the model produces maps that depict what the result of the operation will be.

“SSM2 was particularly useful at the outset of operations when decisions were made on the basic operational parameters. It was also really useful for providing responses to general enquiries such as how far will spray will drift.”

However, data collected during the spraying of painted apple moth (PAM) in Auckland, and Asian gypsy moth in Hamilton, showed that the model was not able to predict precise deposition at any point within the spray area.

Unlike agricultural operations, where the spray is usually applied to relatively uniform crop surfaces, urban landscapes are much more diverse; buildings and complex topography affect air flow in different ways.

“The way the model deals with variability in weather conditions, topography, and ground cover is not complex enough to expect the model to achieve such a high resolution in its predictions,” Brian says.

“This is one reason why the spray programmes were monitored so closely. We learned a lot about patterns of spray deposition through the monitoring programme and the way deposition is influenced by the weather conditions interacting with vegetation and buildings distributed throughout the spray area.

“We also learned a lot about the biological responses of the target pests on different host species. This type of information will be invaluable for improving our performance in future pest eradication programmes.”

SSM2 represents leading-edge decision support technology that was developed with the support of companies from the New Zealand forestry, agricultural aviation and agrichemical industries, and from MAF.

The software is a world-first in its ability to predict both spray deposition, and how potent a dose will be delivered to the target species.

Even so, Brian says there is room for improvement.

“In 2005, we expect to participate in a major international trial collaborating with the USDA Forest Service and the Canadian Forest Service. The purpose of the trial will be to test a new version of the basic spray model that will make it more effective at predicting the fate of spray material in regions with complex topography, typical of the areas we have been spraying to eradicate PAM.”

Forest Research is able to participate in this international work because of their long track record in spray model development.
In May 2003, Environment Southland resolved to lead a consortium of 10 regional councils and two unitary authorities to import the rabbit calicivirus (RCV) from Australia. Currently RCV cannot be purchased legally in New Zealand although it is present in the environment and is killing rabbits.

This decision was made for three reasons:

- It would enable the controlled use of RCV as a rabbit biocide, particularly in and around urban areas. Rabbits can cause acute nuisance problems in residential and high-use public land where it is not possible to use the normal poisoning and shooting control methods.

- The ongoing availability of RCV would provide ‘peace of mind’ to the farming community, which has become reliant on the benefits of rabbit haemorrhagic disease (RHD) since 1997.

- Legal access to RCV would discourage the unhygienic and unsafe ‘kitchen whiz’ practices which were prevalent after its initial release.

RCV was illegally imported and released in New Zealand in July 1997. It was first reported in Central Otago and inland South Canterbury and subsequently appeared in virtually all parts of New Zealand where rabbits were present.

This created widespread epidemics of RHD which dramatically reduced rabbit populations throughout New Zealand. In particular it brought much needed relief to farmers in the most rabbit-prone areas of the South Island. Its impacts, however, were variable both in space and time. This variability appeared to relate mainly to how the disease had been introduced and spread. Some the practices that were used induced immunity to the disease in rabbit populations. RCV appeared to give the best long-term results where the spread into rabbit populations was entirely natural, without any human intervention.

Since the initial release and spread of RCV, epidemics of the disease have continued to occur sporadically throughout New Zealand normally in spring and/or late summer. Rabbit populations have been reduced significantly. However there are now places, especially in highly rabbit prone areas like Central Otago, where rabbits have returned to levels where 1080 carrot poisoning is required. There are also persistent pockets of rabbits in peri-urban areas that appear to miss out on seasonal disease outbreaks.

The strain of the disease that was illegally released here was the same strain which had been brought to Australia for research purposes. It was also being used routinely there at that time as a legal biocontrol. Following the local release a Dunedin-based company, Zenith Technologies Ltd, obtained approval to manufacture a product containing RCV. This was made widely available and was used extensively with mixed results. There was concern expressed by some pest management agencies that uncontrolled and ineffective use of the product could increase induced immunity to the disease in rabbit populations. In March 2002 its production was stopped, apparently for commercial reasons.

The applicant group of regional councils has now secured approval from the Environmental Risk Management Authority to import RCV from the New South Wales Department of Agriculture. This was obtained through the rapid assessment process after iwi consultation. The applicant group is now seeking registration of the product through the New Zealand Food Safety Authority’s Agricultural Chemicals and Veterinary Medicines Group. It is hoped that the approval processes will be completed in early 2005.

As and when approvals are obtained, the applicant group of regional councils intend to closely control the sale, distribution and use of the imported RCV product. It should be used specifically as a biocide to target small, isolated populations of rabbits, particularly peri-urban and high public use areas where poisoning and shooting are not possible. It should not be used in any way that may potentially interfere with its action as a biocontrol through naturally occurring epidemics of the disease.

It is intended that the sale of the RCV product will be restricted solely to pest management agencies responsible for rabbit control or to users specifically authorised by them. A protocol is currently being developed by the applicant group members to guide its use as a biocide.

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Green light for Varroa National Pest Management Strategy

A National Pest Management Strategy, with the objective of maintaining a varroa-free South Island, is set to proceed.

In April 2004, the Hon Jim Sutton, Minister of Agriculture appointed a Board of Inquiry to inquire into, and report on, the Varroa National Pest Management Strategy Proposal prepared by the Varroa Planning Group (Biosecurity 48:12). Earlier public submissions on the Proposal had indicated some opposition to key elements of the proposal.

The Board of Inquiry delivered its report and recommendations to the Minister on 30 July 2004. As required by the Biosecurity Act, MAF prepared a report on the Board of Inquiry’s report for the Minister’s consideration.

After considering both these reports, the Minister agreed that a National Pest Management Strategy, with the objective of maintaining a varroa-free South Island, should proceed. The proposed strategy incorporates:

- inter-island movement controls
- public awareness measures
- a South Island varroa surveillance programme.

The strategy is to be funded by South Island regional councils and South Island beekeepers. The aim is for the strategy to be operational in time for surveillance in the autumn of 2005.

A critical next step is establishing a management agency to implement the strategy. It is proposed that the responsible management agency will be an incorporated society with a “Board of Directors”. Membership will comprise the South Island regional councils and unitary authorities and the two beekeeping industry associations: the National Beekeepers Association and Federated Farmers as the legal entity representing the New Zealand Bee Industry Group.

MAF will help facilitate the establishment of the agency and is proposing that representatives from these organisations form a focus group to work towards this end. The management agency will be incorporated prior to the strategy coming into force.

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MAF develops new organism enforcement capability

A 2003 amendment to the enforcement responsibilities set out in the Hazardous Substances and New Organisms Act 1996 (HSNO) gave MAF the lead role in new organisms enforcement, on behalf of the Environmental Risk Management Authority (ERMA). To meet these new responsibilities MAF has recruited new staff and has developed a work programme through to 2006.

MAF is has formally added new organisms enforcement action into its current containment facility inspections, incursion response management, and into border clearance of items that are, or may contain, new organisms. MAF already has significant expertise in these areas and the programme will draw on this. The programme will also involve other departments with responsibilities for new organisms, such as the Ministry of Health.

MAF must also develop new capability for the enforcement of controls around new organisms conditionally released by ERMA. Conditional releases are a new category of new organism management and are likely to be used for vaccines that contain living new organisms, bio-controls and for GM products (at such time as any may be approved). ERMA New Zealand’s website (www.ermanz.govt.nz) contains more detailed information on this topic.

Enforcement of controls on conditionally-released organisms is an area where no one has experience. As at September 2004, no approvals under this category had been made. There are some policy issues to be resolved and the programme team is working to address these with colleagues in MAF Policy, ERMA New Zealand and other interested agencies.

Although the programme’s outcome is clear (the new organisms capability must be in place), exactly how this will be done is still being determined. The project team has already begun to deliver some material, such as a draft of a harmonised approach to incursion investigation to be used by MAF staff.

Programme development will be an extensive piece of work and is expected to take until 2006. When completed, MAF will have a well-developed capability for new organisms enforcement that is integrated into its existing biosecurity capability and MAF staff will have the required skills to carry out this role. The new organisms programme team will then take their expert knowledge into their ongoing roles at MAF.

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Quality systems and auditing in Biosecurity New Zealand

Stuart Edwards, a National Assessor within the MAF Biosecurity Authority Special Investigation Group Compliance Team, assesses the compliance of various organisations implementing MAF Standards and Contracts. In this article, Stuart explains why the quality systems audit is at the heart of our biosecurity system.

Quality, consistency, self review and continual improvement are all key concepts of the Biosecurity Strategy and expectations of the current MAF restructure. Where do these concepts originate and how will they affect your involvement with New Zealand’s biosecurity on a day to day basis?

The origins of quality systems

Quality systems have been conceptually recognised since the early 1900s. A 1946 meeting of European Nations in London led to the establishment of the International Organization for Standardization (ISO). The ISO met to agree on the need for standard measures to be used in the reconstruction of post World War Two Europe.

Today, the ISO maintains more than 14,000 internationally recognised standards, mostly in technical fields such as engineering. In 1987, the ISO 9000 suite of standards was released and subsequently reviewed in 2000. ISO 9000 standards provide guidelines for generic quality systems in business.

MAF’s quality requirements

So what are MAF’s quality requirements? Where do they come from, and why or how do they apply to you? The Biosecurity Strategy for New Zealand, published in August 2003 underpins the New Biosecurity Authority’s development by identifying 57 expectations for New Zealand’s biosecurity. The overall expectation is:

That the Biosecurity system is fully integrated, operating efficiently and transparently in an environment of continuous improvement (measure, review and refine).

Implicit in this expectation is that decisions will be made based on measurable (objective) information that must be subject to review and then continual improvement. The New Biosecurity Agency (NBA) organisational structure is designed to increase consistency in writing and implementing MAF technical and quality standards so that organisations implementing these can be certain of what is expected of them. Operators who implement MAF Biosecurity Authority standards are usually met with two primary components:

1. Minimum technical requirements; and
2. Quality system requirements: processes you need to have in place to demonstrate you can deliver the technical requirements to a consistently high standard.

The two components are equally important. Audit and management review are important processes to achieve any businesses objectives, and these processes are usually required within the quality management section of MAF standards or contracts, but are sometimes overlooked when implementing technical requirements.

Audits an essential tool

Although they are sometimes seen as expensive and inconvenient, audits are an essential tool used by MAF to assess risk at all levels within the New Zealand biosecurity system. Similar to financial auditing, ‘systems’ audits seek to provide evidence that an operator with biosecurity responsibilities is implementing a transparent system which complies with the specified standard. Where an operator is found to be non-compliant, corrective actions are required.

A quality system audit compares current or immediate past practice, and approved procedures. Audits can identify whether people responsible for implementing procedures are actually doing so, while helping identify other opportunities for improvement. When auditing, internally or externally, basic statistical methods must be employed to ensure samples taken are truly representative.

Objectivity and consistency vital

MAF uses audits to assess whether it is achieving its obligations under the World Trade Organisation (WTO) Sanitary and Phytosanitary Agreement (SPS), drawing
The Biosecurity (National Bovine Tuberculosis Pest Management Strategy) Amendment Order 2004 came into effect on 30 September 2004. This amends the pest management strategy put in place in 1998 to control bovine tuberculosis (Tb) of cattle and deer. The Animal Health Board is the pest management agency responsible for the strategy.

The new primary objective of the strategy is to achieve official freedom from bovine Tb by 2013. Official freedom is deemed to be achieved when the level of infected herds per thousand uninfected herds is two or less. The current level was 7.7 herds per thousand as at 30 June 2004 and is tracking successfully ahead of strategy targets. A number of progress objectives have also been confirmed:

• preventing the establishment of vector populations (principally ferrets and possums) infected with Tb in areas that are Tb-vector free from 1 July 2004
• increasing the area deemed to be Tb-free to at least 226,000 square kilometres by 30 June 2006 (as at 30 June 2004 the area was 201,750 square kilometres)
• Reducing the mean annual number of infected vector-related break-downs in herds located in Tb-vector risk areas to no more than 12 break-downs to every 1000 uninfected herds.

A new power under section 121A of the Biosecurity Act 1993 has been included in the strategy allowing an inspector or authorised person to apply an article or substance to a place for the purpose of ascertaining the presence or absence of bovine Tb. This power is particularly relevant for wild animal surveys (pigs, ferrets, possums, deer) in areas not currently subject to an ongoing regime of pest control.

A number of strategy rules relating to disease control have been amended or included in the strategy. These include:

• specifying legal obligations for Tb-declaration cards where cattle and deer are moved. These include responsibilities for completing the form at the start of the movement, ensuring a copy of the declaration accompanies animals throughout the movement, and for retaining declaration records
• requirements to display or announce Tb information on animals offered for sale to aid in the purchase decision
• a move to whole-herd testing rather than sample testing of deer herds in surveillance areas
• herd status changes. Herds may now be infected, suspended or clear. The works monitored status has been discontinued
• procedures for the removal of reactor tags
• amendments to restrictions on the testing and treatment of animals. No animal may be vaccinated or medicated for bovine tuberculosis
• clarifications on responsibilities for various persons at diagnostic laboratories and slaughter premises in submitting specimens of suspect infected carcasses for Tb testing
• increased obligations for providing information to the Animal Health Board for the purpose of monitoring Tb where that information is already held
• prohibiting the release of pigs into a wild state. Other potential vectors of Tb (ferrets, deer and possums) cannot be released into a wild state under the Wild Animal Control Act 1977 and in accordance with the Conservation Act 1987.

Copies of the full amendment may be purchased from Government bookshops or ordered online at:

www.legislationdirect.co.nz  (Reference number 2004/271)

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Photo: Debbie Stowell.
CoRE research in biosecurity

Maintaining New Zealand’s biosecurity under increasing pressure from trade and tourism relies heavily on science-based innovation to invent and develop the necessary tools.

In 2002, researchers at Lincoln University, led by pathologist Professor Alison Stewart, won a competitive multimillion dollar grant through the Royal Society of New Zealand to set up the only Centre of Research Excellence (CoRE) in the South Island. With a mandate to provide world-leading research and a strategy for human capital development, the National Centre for Advanced Bio-Protection Technologies at Lincoln has established a major theme in biosecurity. Together with strong themes in Biocontrol, Agri-Biotechnology and Matauranga Maori Bio-Protection, the Centre is equipped to make significant contributions to New Zealand’s plant-based primary industries and natural ecosystems.

Four partner institutes contributed to the founding of the Centre: Lincoln University, Massey University, Crop and Food Research and AgResearch. There are also significant collaborative links with eight other institutes. The Centre therefore unifies a broad sweep of research and expertise across several agencies and at the same time has established useful connections to MAF.

Strong leadership

Strong leadership and governance is provided from prominent industry and academic board members:

- Mr Alistair Betts (Zespri)
- Mr Michael Andrews (Fletcher Challenge)
- Mr Andrew McKenzie (New Zealand Food Safety Authority)
- Sir Tipene O’Regan (University of Canterbury)
- Professor Roger Field (Lincoln University)
- Professor Sylvia Rumball (Massey University)
- Dr Prue Williams (Crop and Food Research)
- Dr Warren Parker (AgResearch).

Professor Stewart is the Director of the Centre.

The Bio-Protection Centre also partners with Forest Research, the Forest Owners’ Association and MAF (Forestry), in the new Forest Biosecurity Research Council (FBRC). This new steering group has been established to generate funding and define strategic research goals for forest biosecurity and forest health.

Biosecurity, as a Centre theme, is mentored by Professor Stephen Goldson (AgResearch, Sniffertech). Current research focuses on molecular diagnostic tools for rapid identification of biological material intercepted at the border and computational intelligence for assessing the risk of pests pre- and post border. Led by Drs Karen Armstrong and Sue Worner respectively, these programmes build on their past and ongoing associations with MAF, and their understanding of biosecurity issues.

DNA diagnosis supports MAF biosecurity systems development

The DNA diagnostics research continues to expand the utility of insect species identification tools developed by Karen Armstrong. Already this technology is routinely used for the identification of fruit fly and tussock moth eggs and larvae, providing hitherto unavailable but crucial information towards MAF’s development of effective pathway, response and surveillance systems for these insects.

Research at the Centre is now responding to the need to produce a more standardised, broad-species based and anticipatory tool using recent advances in DNA technology. Included in this is collaborative work with Dr Dianne Gleeson (Landcare Research and CoRE) and Professor Allan Rodrigo (University of Auckland and Alan Wilson Centre) to develop the DNA data analysis tool for border interceptions, Bio-Identifier.

The Centre programme also extends to include the development of a microarray-based diagnostic quarantine tool for the identification of plant potyviruses. This is led by Dr Mike Pearson at the University of Auckland and is being carried out by Ms Ting Wei towards her PhD.

New light on invasive potential

How Artificial Neural Networks (ANNs) and computational intelligence can be used to assess the invasive potential of a species is being researched by Dr Susan Worner in partnership with Professor Nikola Kasabov at the Knowledge Engineering and Discovery Research Institute, Auckland Institute of Technology. This is a novel application of methods associated with the development of artificial intelligence.

Using MAF interception data with international databases of climatic and biotic variables and global presence/absence of known pests, this work seeks the development of a new tool to identify potential insect biosecurity threats. Building on many years of work at Lincoln on ecoclimatic assessment of exotic insects this programme is anticipated to contribute in a practical way to the ability to predict the risk of establishment and spread of new incursions under New Zealand conditions.

Coherent, relevant information

The establishment of the Bio-Protection Centre has provided a long-needed opportunity for integrated and effective biosecurity research that aims to provide MAF and other biosecurity agencies with coherent and relevant research information. Details on the people, programmes and organisation of the BioProtection Centre can be viewed at www.bioprotection.org.nz
Biosecurity risk to New Zealand from pinewood nematode

MAF Forest Biosecurity has recently completed an assessment of the risk to New Zealand environment and economy posed by pinewood nematode, *Bursaphelenchus xylophilus* (PWN), the causal agent of pine wilt disease. From the risk assessment a number of recommendations have been made to improve New Zealand’s protection from this important forestry disease.

Pinewood nematode is a major forestry pest in a number of countries including Japan, China, Korea, Taiwan and Portugal. Pine wilt disease (PWD) is a severe hypersensitive response of susceptible pine trees against movement of PWN. This results in the blockage of xylem vessels and tracheids and the release of polyphenols, oleoresins and toxins.

Trees affected by pine wilt characteristically exhibit a rapid wilting and yellowing of the foliage and reduced resin production. Depending on the environmental conditions and susceptibility of the tree species, the disease may progress rapidly causing the tree to wilt and die within 3-4 months.

The nematode is indigenous to North America and in its native range it causes pine wilt to exotic pine species in warmer regions. Once introduced to Japan, China, Korea and Taiwan the disease caused extensive damage to both native and exotic pine species. Other recorded hosts of PWN include Douglas fir (*Pseudotsuga menziesii*), larch and spruce. The severity of the disease has led to the imposition of quarantine restrictions by other countries on the international movement of coniferous logs and forest products from countries known to have PWN.

By far the most common method of transmission of nematodes in the PWN group (*Bursaphelenchus* spp.) is from one tree to another by vectoring on wood boring insects. These vectoring insects are almost exclusively species of *Monochamus* (Cerambycidae) genus, commonly known as longhorn or sawyer beetles. For the nematode to spread, infected wood needs to be in a form that is attractive to the vectoring beetles, such as logs or fire wood. Within a localised area of infection, spread is generally a result of the activities of these vectoring beetles. Long distance spread occurs through the movement of infested wood in trade or travel and subsequent feeding on the infested wood by a vector.

MAF has recently become more concerned about PWN due to the increased global trade in PWN host material, the rapid spread of pine wilt in East Asia, and recent findings of pathogenicity of other *Bursaphelenchus* spp. It has also become evident that mere presence of this disease in New Zealand could impact on our export of New Zealand forest products.

The pest risk analysis of *Bursaphelenchus* nematodes assesses the risk of entry, establishment and spread in New Zealand of *B. xylophilus*, the most significant and intensively studied nematode of this group, and the potential economic and environmental consequences should it become established.

The risk analysis identified the following factors significant to the biosecurity threat of PWN to New Zealand:

- New Zealand has suitable abiotic (temperature and annual precipitation) requirements for the establishment of PWN and host species (principally pine (*Pinus radiata*) and Douglas fir) are distributed throughout New Zealand.

- The establishment of PWN in New Zealand would mainly be dependent on the availability of a suitable insect vector. No species of *Monochamus* beetles are currently established in New Zealand. It is not known to what extent local native and exotic insects could act as a vector of PWN in New Zealand. The most possible candidates are the Cerambycids e.g. *Arhopalus ferus* (pine longhorn beetle) and *Hexatricha pulverulenta* (squeaking longhorn) which are both abundant in New Zealand.

- If PWN becomes established in New Zealand it is unlikely to show extensive pine wilt symptoms under current New Zealand climatic conditions.

- The most likely method of establishment of PWN is via *Monochamus* spp. carried by untreated coniferous wood packaging material. The likelihood of this occurring however is considered low.

Based on the findings of the risk assessment the following measures were recommended:

- All coniferous wood packaging material should be treated before entering New Zealand. Recommended treatments should exceed either fumigation with methyl bromide at 48 g/m³ for more than 24 continuous hours and at a

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MAF Plants Biosecurity staff members Dave Nendick (National Adviser, Plant Imports Team, Grain and Seeds for Processing) and Joanne Wilson (Adviser, Plant Pest Management) attended the American Phytopathological Society’s (APS) annual conference in Anaheim, California, in August 2004.

The conference programme included symposia on biosecurity, risk and risk management associated with the international movement of plants for planting, and sampling for plant detection to meet quarantine and certification requirements, as well as biological and chemical control of plant pests, and technical plant disease and nematology papers.

“Defending the United States against bio-terrorists using exotic organisms was a strongly emphasised theme throughout the conference,” says Joanne Wilson.

“Building on this theme was a session on the application of plant pathogenic/forensic science to trace the origin of new plant pathogen outbreaks. This provided useful information from an incursion management perspective for identifying and closing a pathway of entry of an exotic organism.”

Joanne is primarily involved in incursion management for MAF Plants Biosecurity and also attended the last APS conference in North Carolina in 2003.

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minimum temperature of 10°C, or heat treatment to a minimum continuous core temperature of 56°C for more than 30 minutes. These treatments are expected to become mandatory for all imported solid wood packaging material during 2005.

• General imported consignments should be monitored to ensure Monochamus spp. do not hitch a ride into New Zealand on these products.

• Surveillance should be undertaken for the early detection of Monochamus spp. in New Zealand at high-risk sites such as ports, container processing areas, timber yards, parks and nurseries.

• General surveillance should include the testing of dead or dying coniferous trees with wilt symptoms in climatically suitable areas for the presence of Bursaphelenchus spp.

The pest risk analysis also identified a number of areas requiring further research to improve our understanding of the risks of this disease to New Zealand.

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For links to risk analysis:

www.maf.govt.nz/biosecurity/pests-diseases/forests/risk

“Another important theme was the growing awareness of exotic pest associations with the importation of nursery stock,” she notes. “In relation to this was the introduction of a ‘Clean Stock Certification Programme’ developed by the US Animal and Plant Health Inspection Service (APHIS) and the geranium industry to prevent the re-occurrence of a soil-borne pathogen (Ralstonia solanacearum Race 3 Biovar 2) that seriously affects potato production, from entering the United States on geranium cuttings.

“Plant parasitic nematodes occur in New Zealand that can be problematic for exports of plant products, while imported plant material can also vector similar pests into New Zealand. Attending the conference was an excellent opportunity to catch up on current research in this area,” Dave Nendick adds.

The conference also provided the MAF officials with the opportunity to develop new links with United States government scientists, academic researchers and other international attendees.

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Health Ministry investigates preparedness

The Ministry of Health has undertaken a major investigation into health sector preparedness for a large-scale emergency.

Emergency reviews project manager John Boyd says the review has been triggered by increasing threats to human health, either as a result of emerging infectious diseases or the resurgence of old enemies such as influenza. The potential for rapid transmission has been increased by the explosion in international travel, particularly the doubling in visitor numbers to China over the past five years.

There have also been increasing concerns over the threat of terrorism and the continued risk of a major earthquake. “On the basis of these threats, a number of reviews have focused on the health sector’s capability and capacity to deal with large scale emergencies, particularly mass casualty events, infectious diseases and pandemic-type scenarios,” Mr Boyd says. “We’ve undertaken comprehensive research that has included liaison with stakeholders and other government agencies – plus a 100 percent response to our surveys by the District Health Boards. We now have a good handle on the current situation.”

A report to the Minister is expected before Christmas. From here, the emphasis will be on building “robustness” into the response mechanisms. The Ministry already has an influenza pandemic plan. “We need to get into a position where everyone in the health sector understands where they fit in and where they coordinate with other agencies. In that sense, we have a major task of training and education ahead of us.”

www.moh.govt.nz
Bruce Warburton, a member of the National Animal Welfare Advisory Committee (NAWAC) since 1995, has been awarded a Royal Society of New Zealand Bronze Science and Technology Medal for his contribution to animal welfare research. Bruce, who has expertise in pest management and conservation, has been involved nationally and internationally in the development of humane traps and trap-testing guidelines.

He first became involved with animal welfare issues in 1979 when, in response to a request from the RNZSPCA to the Government to ban gin traps, he was asked to test a range of leg-hold traps to assess their relative humaneness. Subsequently he developed and led a research programme on the welfare impacts of traps, which included mechanical, behavioural, and physiological components.

New traps developed

His work on determining the impact and clamping force thresholds required for a trap to kill possums quickly underpinned the development of several new quick-kill traps. Bruce also collaborated with Professor Neville Gregory (AGMARDT Professor of Animal Welfare Science, Massey University, and former member of NAWAC), to complete one of only two studies that have been carried out to assess the physiological stress of animals captured in leg-hold traps.

Bruce’s experience in this area of research was recognised by Canadian scientists and policy makers who were establishing a committee to develop international standards for traps. Consequently, Bruce was invited to become Standards New Zealand’s representative on ISO TC191, a committee established to develop international standards for ‘humane’ trapping. These standards were published in 1997 and have just been approved for a further five years.

Bruce has been invited to attend an IUCN (World Conservation Union) workshop this month, to present his latest research results and to participate in discussions on a resolution to get trap performance standards adopted internationally.

Deficiencies in ‘quick kill’ traps exposed

Since 1999, when the Animal Welfare Act was passed, MAF has supported a range of trap tests that Bruce and his colleagues have carried out to provide information on the killing performance of commercially available traps in New Zealand. The results of 21 tests showed that only six commercially available traps were able to kill the target animal quickly. The traps used for capturing ferrets and stoats were the most ineffective traps.

These results have encouraged the development of a range of new traps, some of which can consistently render the target animals unconscious instantaneously. Such traps have the potential to significantly improve the welfare of animals trapped in New Zealand.

Bruce Warburton,
Senior Scientist and Team Leader,
Manaaki Whenua Landcare Research

MAF joins SPCA inspectors’ conference

MAF Animal Welfare and Special Investigation Group officials were pleased to participate in this year’s national conference for SPCA inspectors.

This was the third Royal New Zealand SPCA inspectors’ conference and the first time that MAF has been invited to participate. Three MAF officials attended the August conference:

- David Bayvel, Director Animal Welfare, commented on past, present and future aspects of the MAF/SPCA relationship
- Joanna Tuckwell, Policy Adviser Animal Welfare, gave a presentation on forfeiture and the disposal of animals seized under the Animal Welfare Act 1999
- Alan Wilson, Animal Welfare Investigator, Special Investigation Group, co-hosted, with SPCA inspector Jim Boyd, a workshop on the SPCA/MAF working relationship.

Other presentations covered strict liability offences under the Animal Welfare Act, dealing with dangerous dogs, and inspectors’ interviewing and recording techniques.

There are 81 SPCA inspectors appointed under the Animal Welfare Act. Together with MAF’s Special Investigation Group investigators and the Police, they manage the enforcement of the Act. In 2003, the SPCA received 11,541 animal welfare complaints. There were 124 charges laid against 44 defendants, with 71 convictions.

This partnership is critical to the enforcement of the Animal Welfare Act, and MAF will continue to work closely with the Royal New Zealand SPCA to consolidate and further develop the relationship.

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More haste, less speed...

• A passenger who attempted to bring a large quantity of undeclared meat, leaves and tamarind pods into New Zealand was fined $1800 at Manukau District Court recently.

The passenger declared to Quarantine Officers that she had no food or plant products in her possession. However, when her luggage was x-rayed, she was found to have a large box of food and leaves, and more in her handbag. She told MAFQS Enforcement Officers that she had not declared the items because she was ‘in a hurry’.

The officers found two cans of home processed meat, ten tamarind pods and five bags of plant material, that was infested with eight types of insect, including leaf miners, spiralling whitefly, bigheaded ant, thrips and citrus mealybug.

The passenger pleaded guilty to two charges – knowingly attempting to possess unauthorised goods (s154(f) Biosecurity Act 1993 and s72 Crimes Act 1961) and knowingly making a false declaration (s154(b)(iii) Biosecurity Act 1993). She was also ordered to pay court costs of $130 and solicitors’ costs of $130 on each charge, a total amount with the fine of $2320.

• In Christchurch, a passenger who tried to carry undeclared horsemeat and other foodstuffs into New Zealand was fined $1250, plus court costs ($130) and solicitors’ fees ($150).

Although she declared no food, she was sent for a full search by the risk assessor. The subsequent search unearthed 25 packets of foodstuffs, including sunflower seeds, dried plums, dried beef, horse meat and venison. She told the Enforcement Officer that she did not declare the food as she ‘thought she would get through the airport faster’.

She pleaded guilty to the charge of attempting to possess unauthorised goods (pursuant to s154(f) Biosecurity Act 1993 & s72 Crimes Act 1961 – the more substantive charge). The charge of knowingly making a false declaration (s154(b)(iii) Biosecurity Act 1993) was withdrawn with leave.

Biosecurity People

Animal Welfare Group

Kate Littin has joined MAF Biosecurity as a Technical Adviser in the Animal Welfare Group. Kate has a background in physiology, animal behaviour, and animal welfare research. She graduated from Massey University with a MSc with first class honours, which was based on social behaviour and stress in laying hens. She has just completed a PhD with Massey University and Landcare Research on the humaneness of two poisons for brushtail possums – 1080 and brodifacoum. Kate worked for the UK Home Office with the Animal Procedures Committee (equivalent to our National Animal Ethics Advisory Committee) last year, and joins MAF after six months off work with her baby daughter.

Kate Littin,
Technical Adviser Animal Welfare,
phone 04 474 4236, fax 04 498 9888,
kate.littin@maf.govt.nz

Update

Amended import health standards issued – Dormant bulbs

The import requirements for dormant bulbs were amended on 21 September 2004. The amendment updated the import requirements by:

• clarifying which genera produce truly dormant bulbs
• removing the requirement for an import permit when post-entry quarantine is not required
• clarifying which overseas bulb propagation schemes are approved by MAF.

In addition, the requirements of the MAF-approved Dutch plant propagation scheme for Dianthus caryophyllus have been clarified. The new requirements can now be found in the revised version of MAF’s import health standard “155.02.06 Importation of nursery stock”:


Plant Imports, Plants Biosecurity, MAF Biosecurity Authority,
PO Box 2526, Wellington, New Zealand,
phone +64 4 498 9843, fax +64 4 474 4257,
plantimports@maf.govt.nz

Revoked import health standard

Organic based fertilisers from the United States

This import health standard has been withdrawn following the detection of bovine spongiform encephalopathy in the United States late last year. The standard was dated 31 January 2000.
**New import health standards**

**Bovine semen from Canada**
The meaning of the 60 day semen collection period has been clarified and amendments of the testing requirements for infectious bovine rhinotracheitis (IBR) and infectious pustular vulvovaginitis (IPV) virus recognise Canadian Food Inspection Agency approved IBR-free centres. The new standard is dated 23 August 2004 and replaces the standard dated 17 May 2004.

**Cattle, deer, goats and sheep from Australia**
These are the revised standards following the version notified for consultation in Biosecurity 46. The updated standards replace those dated 4 September 2002.

**Alpacas and llamas from Australia**
Clause 3.6.1 of the zoosanitary certificate has been amended regarding endoparasite treatment. The updated standard is now dated 23 August 2004 and replaces the IHS dated 16 July 2004.

**Bovine embryos from the United States**
The changes made to the standard include clarifying the meaning of the 60 day embryo collection period in relation to testing for Q fever and bovine viral diarrhoea virus (BVDV). This standard is now dated 27 August 2004 and replaces the standard dated 24 February 2004.

**Specified animal fibre from all countries: unprocessed, scoured and carded and scoured and uncarded**
Yak fibre has been included and the title changed from animal fibre to specified animal fibre. The standards are now dated 2 September 2004 and replace the standards dated 20 October 2003.

**Chicken hatching eggs from Great Britain**
The option to use an ELISA test for *Mycoplasma gallisepticum* and *M. synoviae* has been added. This standard is now dated 25 September 2004 and replaces that dated 22 July 2004.

**Cattle meat (beef) products for human consumption from Vanuatu**
Annex 1, regarding the requirements under the Animal Products Act 1999, has been replaced with Clause 2.4, the contact details for the New Zealand Food Safety Authority have been updated and the requirement to freeze offal has been removed, as this is no longer considered an effective mitigation measure for hydatids (*Echinococcus granulosus*). This standard is now dated 17 September 2004 and replaces that dated 12 March 2001.

**Fish food, fish bait, Artemia Salinas and Artemia Fransiscana from all countries**
The changes made to this standard reinstate measures for irradiated bloodworms (*Chironomid larvae*) following a review of the scope of this IHS which found that the measures were appropriate. This IHS is now dated 17 September 2004 and replaces that dated 17 June 2003.

**EU accession countries**
The standards listed below have been updated with the latest EU Directives and Assignment Numbers (AN). They were previously notified for consultation in Biosecurity 53 regarding the accession of the 10 new EU member states (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia).
- Heat treated milk and milk products for human consumption from the European Community
- Heat treated milk and milk products NOT for human consumption from the European Community

These IHSs are now dated 23 September 2004 and replace those dated 1 February 2003.

- Fish eggs/roe for human consumption from the European Community
- Commercial consignments of fresh/frozen/processed salmonids for human consumption from the European Community
- Marine fisheries products for human consumption from the European Community

These IHSs are now dated 24 September 2004 and replace those dated 1 February 2003.

- Mammalian game trophies from the European Community

This IHS is now dated 29 September 2004 and replaces that dated 1 February 2004.

- Bovine Meat (Beef) for Human Consumption from the European Community

This IHS is now dated 29 September and replaces that dated 1 December 2004.

Kerry Mulqueen, National Adviser, Animal Imports and Exports, phone 04 489 8624, kerry.mulqueen@maf.govt.nz

www.maf.govt.nz/animal-imports

**Plant Imports Permit Office: closure dates over holiday period**
The Plant Imports Permit Office will be closed from Monday 20 December 2004 until Sunday 9 January 2005, reopening on Monday 10 January 2005. Importers will need to ensure that applications for permits are received at the Permit office by close of business on **Wednesday 15 December 2004**. Importers who wish to renew a permit that expires during the closure period must submit the application for renewal by the 15 December 2004 deadline.

Permit applications received by 15 December will be processed before 24 December 2004 (assuming there are no difficulties with the application). All import permit application information should be returned to MAF Biosecurity Plant Imports (see contact details below) for processing before the import permit is issued. The processing time for import permits is 10 working days.

Plant Import Office, MAF Biosecurity Authority, PO Box 2526, Wellington, ph 04 498 9631, fax 04 474 4257, plantimports@maf.govt.nz
New organism records: 07/08/04 – 17/09/04

Biosecurity is about managing risks – protecting the New Zealand environment and economy from exotic pests and diseases. MAF Biosecurity Authority devotes much of its time to ensuring that new organism records come to its attention, to follow up as appropriate. The information was collated by MAF Forest Biosecurity, MAF Plants Biosecurity and MAF Animal Biosecurity during 07/08/04 – 17/09/04, and held in the Plant Pest Information Network (PPIN) database. Wherever possible, common names have been included.

### PLANTS BIOSECURITY RECORDS 07/08/2004 – 17/09/2004

#### Validated new to New Zealand reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramularia spiraeae (no common name)</td>
<td>Spiraea japonica (no common name)</td>
<td>Auckland</td>
<td>National Plant Pest Reference Laboratory (NPPRL)</td>
<td>This fungus has not previously been recorded on Spiraea japonica and is a new worldwide host record.</td>
</tr>
<tr>
<td>Fusarium oxysporum f. sp. basilici (Fusarium wilt of basil)</td>
<td>Ocimum basilicum (basil)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>The introduction of this pathogen to NZ is currently being investigated by MAF.</td>
</tr>
<tr>
<td>Phyllococcus macleayi (Coleoptera: Scarabaeidae) (chafer beetle)</td>
<td>Inanimate Host (Lamp)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>This beetle is a native of Australia. It is known as a nuisance rather than a damage-causing insect due to adult swarming behaviour during nectar-feeding. MAF is investigating this incursion in NZ.</td>
</tr>
</tbody>
</table>

#### New host reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nepovirus strawberry latent ring spot (SLRSV)</td>
<td>Tibouchina sp. (glory bush, tibouchina)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include plum and Japanese anemone.</td>
</tr>
<tr>
<td>Phomopsis sp. (no common name)</td>
<td>Rosa sp. cv. “Iceberg” (rose)</td>
<td>Mid Canterbury</td>
<td>NPPRL</td>
<td>This fungus has a wide host range</td>
</tr>
<tr>
<td>Botryosphaeria parva (botryosphaeria rot)</td>
<td>Phormium sp. (NZ Flax)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include mandarin, agave, tangerine, avocado, grape, apple, kiwifruit, pear Nashi, Japanese medlar, sansevieria, Sweet chestnut, Rhododendron, Japanese plum, peach, Puka, Papawmu, Feijoa, Blueberry, Tamarillo, Poplar, Black Poplar, Silver tree and Yarrow.</td>
</tr>
<tr>
<td>Pestalotiopsis versicolor (pestalotiopsis)</td>
<td>Dracaena draco (dragon tree)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include kiwifruit, feijoa, passionfruit, avocado, radiata pine, Chile nut, blueberry, black currant, Kaki, grape, olive, Phoenix palm, bangalow palm, scaly Zamia, fishtail palm, crane flower, yellow guava, beech, West Himalayan Fir and Eucalyptus sp.</td>
</tr>
<tr>
<td>Botryotinia fuckeliana (botrytis blight, grey mould, stem blight)</td>
<td>Musa sp. (banana)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>This common fungus has an extremely wide host range.</td>
</tr>
<tr>
<td>Giberella zeae (basal rot, ear blight, fusarium rot)</td>
<td>Braheea sp. (no common name)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>This common fungus has a very wide host range.</td>
</tr>
<tr>
<td>Glomerella cingulata (anthracnose, bitter rot)</td>
<td>Braheea sp. (no common name)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>This common fungus has a very wide host range.</td>
</tr>
<tr>
<td>Phoma exigua var. exigua (blight, gangrene, leaf spot, mouldy core, stem spot)</td>
<td>Solanum muricatum (pepino)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>This common fungus has a very wide host range.</td>
</tr>
<tr>
<td>Fusarium sporotrichioides (no common name)</td>
<td>Yucca sp. (yucca)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include Douglas fir, bangalow palm, crane flower, Verbena, banana and Easter lily cactus.</td>
</tr>
<tr>
<td>Ulocladium chartarum (sooty mould)</td>
<td>Agapanthus praecox (agapanthus)</td>
<td>Dunedin</td>
<td>NPPRL</td>
<td>Other PPIN hosts include broad bean, kiwifruit, tamarillo, strawberry, arrowwood, viburnum and hydrangea.</td>
</tr>
<tr>
<td>Xanthomonas campestris (bacterium)</td>
<td>Paeonia sp. (peony rose, peonia)</td>
<td>Southland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include Chilean nut, snowflake plant, olive and Populus sp.</td>
</tr>
<tr>
<td>Pseudomonas fluorescens (bacterium)</td>
<td>Jasminum sp. (jasmine)</td>
<td>Wellington</td>
<td>NPPRL</td>
<td>Other PPIN hosts include pea, potato, onion, oca, passionfruit, tamarillo, carrot, capsicum, Calla lily, nikau, primrose, black currant, tomato, chicory, prairie gentian, Chinese cabbage, ginseng, hydrangea and feverfew.</td>
</tr>
<tr>
<td>Fusarium compactum (root rot)</td>
<td>Agave attenuata (agave)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include cucumber.</td>
</tr>
<tr>
<td>Fusarium oxysporum (fusarium wilt)</td>
<td>Dracaena draco (dragon tree)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>This common fungus has a very wide host range.</td>
</tr>
<tr>
<td>Alternaria passiflorae (brown spot)</td>
<td>Passiflora caerulea (blue passion flower)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include Passiflora edulis and P. ligularis.</td>
</tr>
<tr>
<td>Potyvirus Tumip mosaic virus (tumip mosaic virus)</td>
<td>Rorippa nasturtium-aquaticum (watercress)</td>
<td>Waikato</td>
<td>NPPRL</td>
<td>Other PPIN hosts include Orocos sativus.</td>
</tr>
</tbody>
</table>

New host reports continued

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chrysoaphalus aonidum</td>
<td>Peristeria elata</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include neem, Zambac, dragon tree and Pitcairnia andreana.</td>
</tr>
<tr>
<td>(Florida red scale)</td>
<td>Dendrobium sp.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carudovica palmata</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemiberlesia lataniae</td>
<td>Cycles revoluta</td>
<td>Northland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include navel orange, apple, kiwifruit, grape, rose, plum, box, mandarin, NZ Oak, Pukatea, and climbing fig.</td>
</tr>
<tr>
<td>(latania scale)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ctenochiton viridis</td>
<td>Raukaua edgerleyi</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include Whauwhaupaku.</td>
</tr>
<tr>
<td>(sixpenny scale)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudaulacaspis eugeniae</td>
<td>Howea forsteriana</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include Eucalyptus microcorys and Turpentine.</td>
</tr>
<tr>
<td>(white palm scale)</td>
<td>(kentia palm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternaria cineraeae</td>
<td>Ligularia tussilaginea</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include Gravel groundsel and Velvet groundsel.</td>
</tr>
<tr>
<td>(alleminaria spot)</td>
<td></td>
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</tr>
</tbody>
</table>

Extension to distribution reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persospora sp.</td>
<td>Rumex sagittatus</td>
<td>Waikato</td>
<td>NPPRL</td>
<td>No other distributions recorded in PPIN.</td>
</tr>
<tr>
<td>(downy mildew)</td>
<td>(climbing dock)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuscidium scillae</td>
<td>Scala peruviana</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>No other distributions recorded in PPIN.</td>
</tr>
<tr>
<td>(Fuscidium leaf spot of scillia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linchora aberrans</td>
<td>Pachystegia sp.</td>
<td>Wellington</td>
<td>Forest Research</td>
<td>No other distributions recorded in PPIN.</td>
</tr>
<tr>
<td>(fungus)</td>
<td>(rock daisy)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuchadaspis zamiae</td>
<td>Cycles revoluta</td>
<td>Coromandel</td>
<td>NPPRL</td>
<td>Other PPIN distributions include Auckland.</td>
</tr>
<tr>
<td>(cyad scale)</td>
<td>(Japanese fern palm, Japanese sago cyad, sago palm)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Validated new to New Zealand reports: No new to New Zealand records recorded for this period.

New host reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceroplastes destructor</td>
<td>Pittosporum eugenioides</td>
<td>Gisborne</td>
<td>Forest Research</td>
<td>Other PPIN hosts include lemon, tangelo, mandarin, New Zealand grapefruit, Mexican orange blossom, kiwifruit and orange.</td>
</tr>
<tr>
<td>(soft wax scale, white wax scale)</td>
<td>(lemonwood, tarata)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nerium oleander</td>
<td>Oleander (Oleander, Rose-bay)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aulographina eucalypti</td>
<td>Eucalyptus jacksonii</td>
<td>Northland</td>
<td>Forest Research</td>
<td>This fungus has been recorded from a wide range of Eucalyptus species.</td>
</tr>
<tr>
<td>(fungus)</td>
<td>Eucalyptus brevistylis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acrocercops lacinella</td>
<td>Eucalyptus quadrangularis</td>
<td>Northland</td>
<td>Forest Research</td>
<td>This insect has a wide host range.</td>
</tr>
<tr>
<td>(black butt leaf miner)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crepis liturata</td>
<td>Eucalyptus major</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>This insect has been recorded from a wide range of Eucalyptus species.</td>
</tr>
<tr>
<td>(jumping plant lice, lerp insect)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uraba lugens</td>
<td>Tristaniopsis laurina (Kanoka, Water gum)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>This moth has been found on a wide range of Eucalyptus species as well as Angophora costata, pohutakawa, pin oak, brush cherry, apple gum, scarlet oak and ash.</td>
</tr>
<tr>
<td>(gum leaf skeletoniser)</td>
<td>Eucalyptus smithii</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saissetia oleae</td>
<td>Arbutus unedo</td>
<td>Forest Research</td>
<td>NPPRL</td>
<td>This insect has a wide host range.</td>
</tr>
<tr>
<td>(black scale, olive scale)</td>
<td>(strawberry tree)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Extension to distribution reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diplodorus dilophosporum</td>
<td>Callictenon sp.</td>
<td>Taranaki</td>
<td>Forest Research</td>
<td>Other PPIN distributions include Wellington. Also reported from Auckland and Hawke's Bay.</td>
</tr>
<tr>
<td>(fungus) [Teleomorph: Discostromopsis stoneae]</td>
<td>(bottlebrush)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nectria horiziae</td>
<td>Hoheria popolinia</td>
<td>Bay of Plenty</td>
<td>Forest Research</td>
<td>This fungus has previously been reported from Auckland, Waikato, Wellington, Wanganui, Nelson, North Canterbury and Mid Canterbury.</td>
</tr>
<tr>
<td>(no common name)</td>
<td>(Lacebark)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudocercospora corynosae</td>
<td>Coprosma sp.</td>
<td>Bay of Plenty</td>
<td>Forest Research</td>
<td>Other PPIN distributions include Auckland and Coromandel.</td>
</tr>
<tr>
<td>(fungus)</td>
<td>(Karamuu)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Forest records: George Gill, Technical Adviser, Pest Management, MAF Plants Biosecurity, phone 04 470 2742, fax 04 474 4257, george.gill@maf.govt.nz

Forest records: Peter Thomson, Director MAF Forest Biosecurity, phone 04 498 9639, fax 04 498 9888, peter.thomson@maf.govt.nz
Exotic disease and pest emergency hotline: 0800 809 966
Animal welfare complaint hotline: 0800 327 027
www.maf.govt.nz/biosecurity


Validated new to New Zealand reports: No new to New Zealand records reported for this period.

New host reports: No new host records reported for this period.

Extension to distribution reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Tetramorium bicarinatum</em> (ant)</td>
<td>Inanimate Host (bait pottle)</td>
<td>Hawke’s Bay</td>
<td>National Plant Pest Reference Laboratory (NPPRL)</td>
<td>This species has been reported from Auckland, Northland, Bay of Plenty and Taranaki.</td>
</tr>
<tr>
<td><em>Pheidole rugosula</em> (ant)</td>
<td>Inanimate Host (unknown)</td>
<td>Mid Canterbury</td>
<td>NPPRL</td>
<td>Other PPIN distributions include Auckland.</td>
</tr>
<tr>
<td><em>Tetramorium grassii</em> (ant)</td>
<td>Inanimate Host (bait trap)</td>
<td>Hawke’s Bay</td>
<td>NPPRL</td>
<td>Other PPIN distributions include Auckland, Northland and Waikato.</td>
</tr>
<tr>
<td><em>Monomorium sydneyense</em> (ant)</td>
<td>Inanimate Host (bait trap)</td>
<td>Hawke’s Bay</td>
<td>NPPRL</td>
<td>Other PPIN distributions include Bay of Plenty.</td>
</tr>
</tbody>
</table>

Animals records: Amelia Pascoe, Programme Coordinator, Exotic Animal response, Animal Biosecurity, ph 04 470 2785, fax 04 474 4133, amelia.pascoe@maf.govt.nz

CODES OF WELFARE – Animal Welfare Act Update

The table below is a quick guide as to the status of the various codes of welfare as they are developed under the Animal Welfare Act 1999.

<table>
<thead>
<tr>
<th>Code</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broiler Code</td>
<td>Final code issued by Minister of Agriculture on 26 June 2003</td>
</tr>
<tr>
<td>Pig Code</td>
<td>Final code presented to Minister of Agriculture on 25 November 2003</td>
</tr>
<tr>
<td>Rodeo Code</td>
<td>Final code issued by Minister of Agriculture on 4 December 2003</td>
</tr>
<tr>
<td>Layer Hen Code</td>
<td>Final code presented to Minister of Agriculture on 3 September 2004</td>
</tr>
<tr>
<td>Zoo Code</td>
<td>Final code presented to Minister of Agriculture on 26 August 2004</td>
</tr>
<tr>
<td>Circus Code</td>
<td>Final code presented to Minister of Agriculture on 26 August 2004</td>
</tr>
<tr>
<td>Commercial Slaughter Code</td>
<td>Public consultation completed. Final code to be presented to Minister of Agriculture mid-2005</td>
</tr>
</tbody>
</table>

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