



















## inside

NZBI Contacts	2
Editors note	3
News from the Executive	3
NZBI News	
Remembering Wendy Mead	4
Top of the South News	5
Sector news	
Fruit fly response	6
Red-vented bulbul response	7
Control helps Kokako	8
Research programme to remove predators	8
Thar control begins	10
Research on 1080 alternatives	11
Poplar sawfly discovered in NZ	11
Fresh look at import facilities	12
Airport biosecurity	13
Myrtle rust identification	14
Broom gall mite success	15
Briefs	16
Opinion	
Marine Biosecurity by Jono Underwood	17
Archives	
How seeds travel	19
The tail	19



Working together to ensure New Zealand is protected from the adverse impacts of invasive species

## **NZBI Contacts**



**Darion Embling** President



Mark Hansen Canterbury/ West Coast



Rebecca Kemp Immediate Past President & Auckland



Alfredo Paz Otago/Southland



Sara Moylan Vice-President & Lower North Island



Alastair Fairweather Travel/Study Awards Co-ordinator



Jono Underwood Vice President & Top of The South



John Sanson Biosecurity New Zealand

chrismacann@hotmail.com

John.Sanson@mpi.govt.nz

(07) 858 0013 afairweather@doc.govt.nz



Alice McNatty Secretary



Chris Macann Protect Editor & Archives Co-ordinator

Darion Embling	President & Central North Island	(07) 859 0790	Darion.Embling@waikatoregion.govt.nz
Rebecca Kemp	Immediate Past President & Auckland	(09) 366 2000	rebecca.kemp@aucklandcouncil.govt.nz
Sara Moylan	Vice-President & Lower North Island		Sara.Moylan@gw.govt.nz
Alice McNatty	Secretary		mcnatty@hbrc.govt.nz
Wendy Mead	Central North Island		wendy.mead@boprc.govt.nz
Jono Underwood	Vice President & Top of The South		jono.underwood@marlborough.govt.nz
Mark Hansen	Canterbury/West Coast		mark.hansen@ecologynz.nz
Alfredo Paz	Otago/Southland	03 211 5412/ 021 784 933	alfredo.paz@es.govt.nz

(04) 894 0836

Protect Editor & Archives Co-ordinator 03 349 9660

Ministry for Primary Industries

Vertebrate Pests secondment

Travel/Study Awards Co-ordinator &

#### Other Officers

Chris Macann

**Seconded Members** John Sanson

Alastair Fairweather

FROM THE EDITOR

## A lot of politics

There's a lot of politics in this issue, but I've tried to stick to the bare bones.

There's more funding allocated for biosecurity through various funding streams which is always good. There's also a couple of directives about how biosecurity research funding should or should not be spent.

As well, we have come through another visit of the Fruit fly. There's a summary of the good work by members during that incursion response. There's also a story about an eagle-eyed citizen who spotted another sometime visitor the red-vented bulbul which prompted a successful incursion response.

There's also a pleasing number of reports of successes in the field of pest plant and animal control.

Read the news and pass it on.

Chris Macann, Editor

From the Executive

## Managing big history files

Organising is going well for the Central Branch for NETS2019 to be held at Trinity Wharf, Tauranga, from 24-26 July, and we understand that planning is well underway by the Canterbury/West Coast Branch, for NETS2020 in Christchurch next year.

Protect editor and Institute archives coordinator, Chris Macann reports that interest is still being shown for the archives project with offers of historic material continuing. Chris said that possibly all issues of Protect Magazine have now been digitised. A list of all digitised copies will appear on the website shortly.

We encourage those of you who are holding existing hard copies of Protect Magazine and its predecessor publications to match them with those on the list to ensure none have been missed. As well we would like to know of any hard copies which members might hold of conference proceedings which also do not appear on the list.

We are presently investigating ways of putting all copies of Protect, and Conference Proceedings on the website in a manageable way. Many of the digital copies are large files and we would like to make them more manageable for members in terms of the time it takes to access them.

#### The files are large because an attempt has been made to reproduce the artwork, advertisements and photos in their best possible format.

It was with sadness that the Executive Committee announced the passing of Wendy Mead in January. Wendy served the Institute as national secretary from 2010 to 2014 and was most recently the Central North Island representative on the Executive Committee. President Darion Embling and Executive Committee member Alastair Fairweather represented the Institute at her farewell.

The executive will next meet by telephone conference on April 10.

THE NZBI EXECUTIVE COMMITTEE



Darion Embling, President

## Wendy Mead: a friend to many who walked her talk

It was with deep sadness that the NZBI Executive announced the passing of NZBI Executive committee member and former Institute secretary, Wendy Mead on January 31, 2019.

Wendy had many roles within the Institute at branch and national level. She was most recently the Central North Island representative on the Executive Committee.

Wendy diligently served the Institute as national secretary from 2010 to 2014. Her enthusiasm for the role was reflected in her positive and encouraging annual Secretary's Reports in which she took special care to name and thank all people who had helped her in the role each year.

She was a member of the organising committee for the Institute's annual conference NETS2008 in Hamilton.

In 2005 Wendy won the highly prized Peter Ingram Memorial Award which honours the NZBI member who has undertaken further study or has enabled others to achieve, relevant to pest plant education, control or management.

Wendy completed her BSc part-time extramurally through Massey University. She maintained high marks throughout, while raising a family and helping to run the family farm.

Wendy has served in various biosecurity roles chiefly with the Waikato Regional Council and recently with the Bay of Plenty Regional Council.

Wendy started working at Waikato Regional Council in February 2004 when she joined the plant pest team in a technical oversight role. She remained part of the biosecurity team for eleven years during which time she was appointed Team Leader Plant Pests.

Wendy left the Waikato Regional Council in 2015 and bought a home in Waihi and a small



avocado orchard. She then took up a job as a plant pest officer with Bay of Plenty Regional Council.

Institute President and close colleague Darion Embling said Wendy walked her talk.

"She was so knowledgeable, hard-working, great at her job and always interested in what the wider NZBI team were doing. She was also a friend to many and will be sadly missed.

"Wendy's passing is a huge loss to the Institute and the wider biosecurity family.

"We have lost a colleague and friend way to soon."

## **NZBI** news

## The good and the bad in Golden Bay:

**Top of the South Branch Field Trip** 

#### BY JONO UNDERWOOD, CHAIR, NZBI TOP OF THE SOUTH BRANCH

Himalayan balsam. From left are Brent Holms, Rob Simons, Kurt Schollum and Lindsay Barber.

The Top of the South Branch we corralled by the team at Tasman District Council for the annual summer field trip on 11 February 2019. There were some lingering wafts from the very unfortunate, and

at the time, continuing bushfires in the Pigeon Valley area but a contingent from Marlborough District Council and Zac Milner from local contracting form Kaitiaki O Ngahere turned-out in Richmond.

With the Hiluxes loaded and under the guidance of "Chemical Ali" aka Ken Wright, it was off to Golden Bay. Stops were made at a sycamore infestation in upper Takaka where Xtree was being used to "nail" trees. It was then to Ken's coffee spot in Takaka itself so Rob Simons and Ken could top-up. Off to Pohara, via a few spots of roadside yellow bristle grass and yellow flag iris, to see how cotoneaster has taken hold of the limestone cliffs behind Pohara. It's now teaming with invasive yellow jasmine (or Italian jasmine). We were told that Ken is up to the task to try and contain these two over time. "Get that chemical out Ken" – definitely the glyphostate/met mix, the go-to mix for the day's adventures.

After a relaxed lunch at the Mussel Inn (can't beat the Captain Cooker Manuka Ale) the crew were shown another target in Golden Bay in Himalayan Balsam. Lindsay Barber gave a very informative run-down of this target and the experience he and the TDC team have gone through managing infestations.



Syamore Upper Takaka. From left are Brent Holms, Zac Milner, Liam Falconer, Kurt Schollum, Ken Wright, Rob Simons, Robin van Zoelen and Lindsay Barber.



Yellow jasmine Pohara. From left are Rob Simons, Robin van Zoelen, Lindsay Barber, Brent Holms and Ken Wright.

It was then on to Collingwood where more foes were found with both climbing asparagus and woolly nightshade on the hit list. Given the MDC crew had just come off a round of intensive woolly nightshade control and surveillance, I think Ken regretted bringing the likes of eagle-eye Kurt Schollum, Liam Falconer and Brent Holms to Collingwood with the number of plants they picked out. At least another 33% more work they reckon.

The day was rounded-out with a tiki tour out to Puponga and Farewell Spit with many having not ventured that far out in Golden Bay.

Thanks must go to the TDC crew of Lindsay Barber, Rob van Zoelen and Ken Wright for hosting

## Two different fruit flies visit

On March 22, the Ministry for Primary Industries announced that controls on the movement of fruit and vegetables in the Auckland suburbs of Devonport and Ōtara have been lifted after no further fruit fly have been found there.

The decision follows several weeks of intensive trapping and inspections of hundreds of kilograms of fruit leading to the conclusion that there are no breeding populations of Queensland fruit fly in the Devonport area, or *Bactrocera facialis* (facialis) fruit fly in Ōtara.

Biosecurity New Zealand placed legal controls on the movement of fruit and vegetables in Devonport after a single male Queensland fruit fly was identified from a national surveillance trap on 14 February. There have been no further finds in Devonport.

Similar controls were placed in Ōtara after a male facialis fruit fly was found there on 18 February. There were two further finds on 21 February and 5 March in separate response surveillance traps nearby where the first detection was.

"To date no further adult fruit flies, eggs, larvae or pupae have been found, "said Biosecurity New Zealand spokesperson Dr Cath Duthie. "As a precautionary measure, we will be keeping in place an enhanced network of fruit fly traps in Devonport and between Devonport and Northcote, as well as in Ōtara, for an extended period. If fruit flies are present, these traps will detect them."

#### "I can't stress enough

how vital this work has been. This particular insect pest is a significant threat to our horticultural export industry and home gardens."

The restrictions in place on the movement of fruit and vegetables and the current baiting programme in Controlled Zones in the North Shore suburb of Northcote remain in place.

The last Queensland fruit fly detection in Northcote was on 14 March and our operational response was stepped up.

"Our teams on the ground have been removing fallen fruit from backyards, inspecting compost bins, and placing bait on fruit trees to attract and kill adult flies, in particular females. The bait is made up of a protein to attract adult fruit flies, and a very low concentration of insecticide to kill the flies. It's similar to how people bait wasps in their backyards."

"The baits are toxic to fruit flies. We have taken every precaution to make sure the baits are safe around people and animals. They are not harmful to bees," said Dr Duthie.





# Thanks for the vigilance:

#### **Red-vented bulbul incursion response in Auckland**

One of the world's top 100 most invasive species was found in Auckland recently, and not for the first time. Biodiversity Supervisor at the Department of Conservation, Dr Art Polkanov tells the story.

A female red-vented bulbul was found and removed from the wild along with her nest and egg at Ports of Auckland in late January.

The bird had built her nest on the top of a big LED light under the roof inside the Engineering Services shed, providing optimal conditions for incubation. The bird was spotted and photographed by a vigilant engineering staff member and reported to the MPI hotline. DOC, working in partnership with MPI, initiated an incursion response operation.

After the nest was located, rangers installed trail cameras to understand the bird's nesting behaviour pattern, and to ensure there were no other birds visiting the nest once the female was captured. The nest containing spotted and blotched with reddish brown egg was removed and has been preserved for the study collection and biosecurity education.

DOC thanks the staff of Ports of Auckland for their biosecurity awareness and assistance which allowed us to complete the operation in less than two weeks and prevent breeding of the unwanted species.

RVB are not considered to be established in the wild in New Zealand. They were liberated, bred and established in Auckland in the mid 1950s but were exterminated. There have been five incursions this century from 2005 to 2019. Four of them occurred in the vicinity of ports (Auckland, Devonport, Onehunga and Tauranga-Te Puke area). It is likely that the RVB either hitches rides on vessels arriving from the Pacific Islands, or is kept by the crew members for entertainment. These birds are frequently kept as caged pets, and for fighting especially in parts of Asia.



The red vented bulbul on her nest



Look at the light top centre.

#### All about the bird

The red-vented bulbul (*Pycnonotus cafer*) is a medium-sized (starling-sized, 19–20 cm; 28–43 g), Asian passerine bird, generally dark brown and scaly-looking, with bushy crest and a small patch of bright red feathers beneath the tail. It is an opportunist and generalist with diet including fruit, nectar, flower buds, invertebrates and occasionally vertebrates (geckos). For example, in New Caledonia they eat 110 plant species.

Native to the Indian subcontinent, Sri Lanka, Nepal, Myanmar and south-western China this species has been introduced widely across the Pacific Islands and is commonly blamed for negative impacts on agriculture and biodiversity via crop damage, dispersal of invasive plant seeds and competition with native fauna. Outside its native range it has now established on 37 islands and in seven continental locations in the Middle East, South Africa and USA. It is currently considered to be a major invasive species and extreme pest in several countries.



The red vented bulbul nest on the LED light.

## Control operation helps a special population of kōkako

In February the Department of Conservation announced that an aerial 1080 operation at Mokaihaha Ecological Area in the Bay of Plenty region in September last year, has achieved a result that will be of immense benefit to native species this breeding season including a special population of kōkako.



#### Monitoring of introduced rats using tracking tunnels following the aerial 1080 operation last year has shown a huge decline from a rat tracking rate of 37% to 0%.

Biodiversity Ranger Maurice Wilke explained that research has shown that a rat tracking index above 5% means that kōkako and other susceptible birds will have a poor breeding season, as most eggs and chicks will be eaten by rats. A 37% index (i.e. 37 tunnels out of every 100 tunnels showed rat tracks) before the breeding season had even started, would have almost certainly meant a complete loss of kōkako nests this year if pest control had not occurred.

"We know that **if kōkako are to have a chance of successfully breeding, rat numbers need to be at 1% or below in early November**" he said. "We were hoping to achieve near zero, and this result will enable our important bird populations to continue to thrive. The reason we have treated just over 2000ha is to give kōkako and other species that live outside the core bait station area the opportunity to nest successfully" said Mr Wilke.

"The success of previous pest control programmes has enabled the endemic kōkako to prosper at Mokaihaha" said Jeff Milham, Operation's Manager.

Other native birds such as North Island robin, North Island kākā, tūī, bellbird and whiteheads will also breed prolifically. A nesting kākā was observed within the reserve soon after the aerial drop last year. Native bats also occur here and should also benefit from the low pest numbers. Rimu are fruiting heavily this year and without pests competing for food, the intermittent breeder's such as kākā and kererū will stand a better chance of rearing young. With such low pest levels at Mokaihaha, both species can also be expected to have a highly productive breeding season.

A bait station operation containing toxins aimed at rats and possums will start again next season over about 40% of the area and continue to be used in conjunction with three-yearly aerial 1080 operations.

#### Research programme to remove predators

In February the Department of Conservation announced it has given permission for Zero Invasive Predators (ZIP) to undertake a predator removal programme over 12,000 ha of conservation land in the Perth River valley in South Westland.

ZIP has been working at several sites in New Zealand to develop new methods and devices that completely clear areas of pests, towards the country's predator free goal.

The programme of work in the Perth River valley aims to completely remove possums and potentially rats, and significantly reduce stoats, from the research area.



[Photo credit: DOC)

It will also establish a network of devices to detect any survivors or invaders, and use 'spot treatments' to remove them before they reestablish a population. The predator removal operation is due to go ahead in March.

DOC gave ZIP permission in April 2018 to carry out the aerial 1080 component of the predator removal programme, but the operation was cancelled due to poor weather.

continued

### **Sector news**

continued



DOC West Coast Director Mark Davies said ZIP has worked with scientists to research methods involving the use of a bird repellent and tahr carcasses to reduce the risk to kea from 1080 poisoning during the predator removal operation.

"There's no doubt that this operation poses a risk to the kea in the valley, but I'm satisfied that use of the bird repellent to train kea to avoid baits, and tahr carcasses to attract kea away from baits, will help to mitigate these risks.

"These methods performed well in trials over the last few months and their use in the ZIP predator removal operation will enable further testing in the field.

"ZIP's Perth River valley 'remove and protect' programme has enormous potential to advance our knowledge in the quest towards achieving a



[Photo credit DOC]

predator free landscape where native wildlife will be able to thrive," said Mr Davies.

ZIP will monitor 15-18 kea through the 1080 operation using radio transmitters to test the effectiveness of the mitigation measures and will report the results to DOC before commencing the second round of treatment.

#### Kea aversion training

Kea aversion training with repellent-laced non-toxic baits placed next to tahr carcasses and then distributed more widely, will take place prior to 1080 treatment. The repellent baits (using anthraquinone) make kea feel sick and train them to avoid the later sowed toxic baits.

Captive trials showed lacing bait with repellent reduced the level of interaction by kea with bait. The work done with the repellent-laced baits show the majority of kea actively avoid them once they have tried the baits. ZIP field trials have also shown tahr are a preferred food source for kea, which will strip a carcass bare in just a week and ignore bait nearby when given a choice.

The kea population in the Perth River valley is in relatively high numbers with a good mix of juvenile and adult birds. There's strong evidence that the natural barriers provided by the valley's big rivers and the Southern Alps/ Kā Tiritiri o te Moana, in combination with DOC's previous aerial 1080 operations in the area, have benefited kea and other native species in this area.

#### A bit more about ZIP

ZIP was established in February 2015 as a research and development entity focused on developing ways to enable the vision of complete removal of rats, stoats, and possums from large mainland areas.

#### Adapted from information supplied by DOC.

## **Tahr control begins**

The Department of Conservation's Himalayan tahr control work resumed in March.

DOC's Director Community Engagement, Dr Ben Reddiex, said DOC will continue working with the hunting community to reduce tahr on conservation land.



[Photo credit DOC]

"There are reports of numerous tahr herds foraging through tall tussock and other native alpine plants.

#### "Latest population estimates put the tahr population, across approximately 1.7 million ha of land, at nearly 35,000 animals well above the limit of 10,000 tahr set out in control plans years

**animals**, well above the limit of 10,000 tahr set out in control plans years ago.

"Urgent action is needed. It is important we stop the population migrating further than the current feral range.

"DOC's Tahr Control Operational Plan sets to remove 10,000 tahr by the end of August 2019 and we are committed to working with the recreational and commercial hunting sector to achieve this.

"Initial control efforts will focus on tahr exclusion zones and in associated buffer areas."  $\space{-1.5}$ 

Opportunities for the hunting community include:

DOC will leave bulls in the seven Tahr Management Units for recreational and commercial hunters to hunt

organised recreational hunting groups, Wild Animal Recovery Operations (WARO) and Aerially Assisted Trophy Hunting off-sets will be counted

information on the location of any bulls will be provided to the hunting sector.

Approximately \$1 million has been allocated for Himalyan tahr control and further research into tahr abundance and its impacts on the environment until August this year.

"There is no plan to eradicate tahr however we need to ensure that New Zealand alpine ecosystems are protected from the growing tahr population," says Dr Reddiex.

#### More about the Tahr Control Operational Plan

The plan identifies locations where DOC and the hunting sector should focus on controlling tahr.

DOC's control work will initially prioritise the northern and southern 'exclusion zones' and adjacent feeder valleys.

DOC will pause its aerial control operations in the seven management units between May to June 2019 and resume control work until 31 August 2019. This allows for the tahr rut season and the fact that aerial tahr control is more efficient during winter.

DOC will target female and juvenile tahr and it is expected the hunting sector will increase its efforts to target all tahr.

Aerially Assisted Trophy Hunting offsets (where commercial trophy hunting businesses shoot an additional number of female and juvenile tahr based on how many male tahr their clients remove) will contribute to the count for control purposes.

Wild Animal Recovery Operation concession holders may also contribute to tahr control by removing tahr.

## Research on 1080 alternatives

In February the government announced that about \$20 million would be put towards finding alternatives to 1080 to help eradicate pests and predators in the regions.

Economic Development Minister Shane Jones and Conservation Minister Eugenie Sage said any new techniques or methods would augment rather than replace the use of 1080.

Mr Jones said the funding would give conservationists new ways of killing pests that did not attract the heated protests so common before a 1080 drop.

"The reality is, we need every trick in the book, Minister Jones said."

The money will come from the Provincial Growth Fund, which Mr Jones administers,

"This investment will help develop new technology, new traps, new lures, new toxins and go to the places where we're seeing bird populations and our forests declining because of the scourge of possums, rats and stoats," Ms Sage said.

The new funds will be used by the Crownowned company Predator Free 2050 Limited to contract pest eradication projects across tens of thousands of hectares.

Predator Free 2050 Limited will seek expressions of interest from local authorities and community-backed entities in Northland, Bay of Plenty, East Cape, Hawke's Bay, Manawatū-Whanganui and the West Coast.

Adapted from an article which first appeared on Radio New Zealand's website.

#### Exotic insect discovered in New Zealand for the first time

Biosecurity New Zealand's gypsy moth surveillance programme announced in early March that it has uncovered a larva of the poplar sawfly, an insect that is new to New Zealand.

The larva was detected in a trap in the suburb of Abbotsford, Dunedin, and testing has confirmed it is the poplar sawfly.

Manager of biosecurity surveillance and incursion, Brendan Gould, said the species is not known to cause significant harm.

"Countries overseas where the poplar sawfly is present have not reported any major concerns about the impact it can cause. At worst, it appears to cause some defoliation of poplar trees."

The poplar sawfly is commonly found in Europe, Asia, and North America.

Mr Gould said Biosecurity New Zealand is assessing the potential risk from the poplar sawfly.

"Once this assessment is complete, we will decide on next steps alongside our industry partners."

Biosecurity New Zealand has undertaken surveillance in the area where the larva was found and has determined there is an established sawfly population in the area.

"We would like to hear from anybody who thinks they might have seen poplar sawfly larvae on poplar trees. This, along with further sampling in the area, will help us identify how far it has spread."



Poplar sawfly larva showing banding

## Fresh look at the country's import facilities

In January Biosecurity Minister Damien O'Connor announced the Government was to take a fresh look at New Zealand's transitional facilities which number more than 4,500.

"I've asked Biosecurity New Zealand to take a fresh look at the facilities where containers of imported goods are initially emptied and checked for biosecurity risks," Damien O'Connor said.



"I've also asked Biosecurity NZ to investigate new ways of dealing with the increasing threat posed by the Brown Marmorated Stink Bug and other emerging biosecurity risks. We must ensure the biosecurity risk is as far off-shore as possible. We will work with industry to ensure every part of the biosecurity system is bolstered so it is agile enough to deal with new threats as they emerge.

"We are doing this after an imported stink bug was found in Tauranga late last year. There were 29 transitional facilities handling imports within two kilometres of where the stink bug was found.

#### "These facilities are dotted around our ports and airports, and are a key component of New Zealand's biosecurity

**infrastructure.** They are on the front-line for keeping out unwanted pests like the stink bug, which could destroy our horticultural crops, cost our economy billions of dollars and literally be a plague on our houses if they become established in New Zealand.

"No further bugs have been found in Tauranga following intensive trapping and detector dog surveillance. However, we can't be too careful or handsoff when it comes to biosecurity.

"That is why I have requested Biosecurity New Zealand to take a fresh look at the country's 4,518 transitional facilities to make sure they have the capacity and expertise to properly handle increasing numbers of imports in a riskier global biosecurity environment.

"This builds on work last year bringing new fines into force for facilities that don't have operators approved by Biosecurity New Zealand," Minister O'Connor said.

## Genetic modification ruled out

Predator Free 2050 is forbidden from carrying out any research which could lead to the use of genetic modification or gene editing, a letter written by Conservation Minister Eugenie Sage shows.

The letter of direction to Predator Free 2050 said its primary tasks were to invest in breakthrough scientific research, but not to research into genetically modified organisms and technologies or gene editing, and to raise funds for coinvestment by other (non-government) parties, in landscape scale projects and breakthrough science, excluding any science involving genetic modification.

Conservation Minister Eugenie Sage said in the letter addressed to the chairwoman of Predator Free 2050 Jane Taylor that "gene editing is an unproven technology for predator control".

It said there should be greater emphasis on looking for solutions that would enable species who cannot be removed entirely to co-exist in the environment instead.

"There are many opportunities for innovation to improve existing technologies such as traps, lures and toxins to make them more effective and better control pests such as possums, rats and stoats and better protect indigenous species, without Predator Free 2050 Ltd being distracted by research into genetic engineering techniques," Minister Sage said.

Adapted from an article on the Stuff website

## Risk items easier to detect at Auckland airport

The most sophisticated X-ray technology available to scrutinise the bags of international travellers for any unwanted pests was unveiled in December last year at Auckland Airport by Biosecurity Minister Damien O'Connor.

The million-dollar scanner features threedimensional imaging (real-time tomography) that will make it easier for quarantine officers to pinpoint risky items that have been difficult to detect in the past such as dried meat, goods hidden behind laptops and stink bugs. "Biosecurity New Zealand is also developing software with Australian counterparts that will allow the scanner to automatically recognise risky items such as fruit that could harbour fruit fly," Minister O'Connor said.

"This is a game changer for biosecurity. It is the most sophisticated piece of X-ray technology we could have in place to support our officers at Auckland Airport and provides another useful tool in our multi-layered biosecurity system, sitting alongside 50 detector dog teams, arrival cards, risk assessment and public awareness campaigns.

"The scanner will check bags before passengers pick them up and images will be sent to quarantine ahead of any searches, similar to how security X-ray screening operates at many major international airports.

"Ultimately we want this technology in place across the passenger, mail and cargo pathways as traveller numbers and trade increases," Damien O'Connor said.

Flexible use with a range of treatment methods.

Wet & DRY

- Highly effective, convenient premix of BioDiesel
  - + Herbicide + Penetrant System.
- Minimal environmental impact and maximum efficacy.

XTREE

- New formulation low odour
  - Can be used on wet tree trunks.



X-TREE WET & DRY TREATED

WWW.ARYSTALIFESCIENCE.NZ

© 2018 Arysta LifeScience Group Company. © X-TREE WET & DRY is a Trademark of an Arysta LifeScience Group Company. Arysta LifeScience and the Arysta LifeScience logo are registered trademarks of Arysta LifeScience Corporation.

## Myrtle Rust identification on-line

Biosecurity New Zealand and the Department of Conservation have launched an online training programme to help New Zealanders identify suspected myrtle rust infections.

The plant fungus can be hard to identify without training and can look different during seasonal changes. The training modules provide resources to help people better understand the fungus and its symptoms.

"The courses are available to everyone and cover how it spreads, what to do if you find it and climatic factors that influence myrtle rust," said Biosecurity New Zealand's Manager for Recovery and Pest Management, John Sanson.



Ramarama with bright yellow powdery eruptions on the underside. Image: MPI

"We are trying to understand the spread of the disease so are asking staff and the public to keep an eye out for myrtle rust over the autumn months," Mr Sanson said.

The fungus, which is mainly spread by wind, generally infects shoots, buds, and young leaves of myrtle plants which include pōhutukawa, rātā, mānuka, kānuka and ramarama. Infected plants show typical symptoms including bright yellow powdery spots on the underside of leaves but can also show other symptoms such as grey powdery spots during the cooler months.

Anyone seeing symptoms of myrtle rust, especially in areas where it has not yet been found, is asked not to touch the plant or collect samples, but to take pictures and report it to Biosecurity New Zealand's Exotic Pest and Disease Hotline on: 0800 80 99 66 or visit the Biosecurity NZ website for more information.

#### The story so far

At 4 March 2019, myrtle rust had been confirmed on 937 properties across most of the North Island and upper areas of the South Island.

Taranaki, Auckland and Bay of Plenty are the most seriously affected areas. Moderate levels of infection are recorded in Northland, Waikato, Manawatu-Whanganui, and Wellington. Lower levels of infection have been confirmed in Tasman, Nelson, Marlborough and Gisborne.

Most infections so far have been found on garden cultivars of native ramarama (from the genus *Lophomyrtus*). Ramarama is often planted in domestic gardens as a hedge.



Over time the pustules darken and become brown-grey.



Ramarama with myrtle rust raised yellow pustules on upper surface of leaf. Images: MPI

## Winning the war on broom with miniscule mites

Broom gall mites, released and monitored by the Otago Regional Council, have proven an effective weapon for combatting broom and restricting its invasion of unique environments.

The mites have been found in the Strath Taieri area in Otago up to 30 kilometres from release points, indicating a good spread and a strong infestation among broom plants.

Team Leader Biosecurity Compliance, Richard Lord, said the mites were having a "real impact" in some areas.

"What's exciting is we're finding the mites popping up in so many locations now. They're finding their way into new areas of their own accord, travelling for kilometres on the wind."

Mr Lord said the mites prove that sometimes the best results require a patient and consistent strategy.

"There's still a long way to go—and there are no silver bullets in pest management—but we're quietly hopeful about the long-term effectiveness of the broom gall mites."



Broom plants infested with white galls produced by the broom gall mite in Otago.



A closer look at a gall formed by the broom gall mite.

Introduced into Otago in 2012, the mite colonises and feeds on broom, gradually forming white galls on the plants which can stunt their growth and eventually kill them.

"We're certainly keen to make new establishments of the mites in areas where's it not present.

"It's important that people who only have a few broom plants on their properties don't rely on the mites as a control method," Mr Lord said.

53% of Otago is currently designated gorse and broom free.

This successful establishment in Otago of broom gall mites is echoed across many other sites all over New Zealand.

### **Briefs**

#### Waging war on Russell lupin

A collective volunteer effort this summer saw 78 hectares of Arthur's Pass in Canterbury covered on a mission to cull Russell lupin.

'Let's Lose the Lupins' is an annual event bringing groups together to remove the plant, the presence of which makes the environment uninhabitable for many native plants.

Lupins have been sown in the area to attract tourists, which poses a challenge to those who are trying to eradicate it.

The manual method of hand-pulling lupins is effective as the remains of the plant rot quickly, allowing the land to recover quicker. However, due to the scale of the problem, chemical is being used to reduce further spread.

Lupin seed only remains viable in the Arthur's Pass area for 4-5 years due to the harsh conditions, whereas in other areas the seed can remain viable for as many as 15 years. With a sustained effort, helped greatly by the annual 'Let's Lose the Lupins' working bees, it is hoped that lupins can be eradicated from Arthur's Pass.

#### Funding to save wildlife

New Government funding will see the Department of Conservation invest an extra \$76 million over the next four years to address New Zealand's biodiversity crisis.

"On land the main threats to native species and their habitats are introduced predators such as possums, rats and stoats," said Conservation Minister Eugenie Sage.

Amongst the biodiversity funding, is new funding specifically involving biosecurity such as:

An additional six islands protected from pest incursions.

Recovery of fragile alpine ecosystems through the control of Himalayan tahr.

Four priority freshwater pests, such as koi carp, being contained at 30% of priority sites.

A reduction of invasive aquatic plants at more sites.

The funding was allocated as part of last year's Budget 2018 but depended on a detailed business case being completed and approved by the Ministers of Conservation and Finance.



Russell lupin in the foreground, with its distinctive purple flowers.



#### **Cruise ship fines enabled**

Biosecurity officers now have the ability to fine cruise ship passengers who bring ashore foods or other items that could carry dangerous pests or diseases.

The new fines came into place in December last year, allowing biosecurity officers to issue infringement notices of \$400 to cruise ship passengers who unintentionally break New Zealand's biosecurity rules.

Biosecurity New Zealand already has the power to prosecute passengers who intentionally smuggle risk goods ashore.



## Agreement to protect fresh tomato industry

In December 2018 Biosecurity New Zealand announced that it and Tomatoes New Zealand have signed a Sector Readiness Operational Agreement.

"The agreement demonstrates both organisations' commitment to strengthen readiness for incursions of specific pests and pathogens," says

Under the agreement, Biosecurity New Zealand and TomatoesNZ will jointly agree and fund readiness activities to improve preparedness for incursions of pests and pathogens that are considered a major concern to the fresh tomato industry.

The agreement will initially focus on preparing for incursions of tomato leafminer (Tuta absoluta) and the tomato strain of pepino mosaic virus. These have been identified as high priority by TomatoesNZ and Biosecurity New Zealand. More pests and pathogens will be added over time. Tomato leafminer and pepino mosaic virus are not currently present in New Zealand.

## Old Man's Beard scholarships

In January the Otago regional Council announced that two botany students, from the University of Otago, have been given three-month scholarships to help carry out inspections in order to help ORC and the public identify Old Man's Beard in the region. In return, the students get hands-on experience while assisting ORC to protect Otago's biodiversity.

## From the land to the sea - 'getting into' marine biosecurity

Jono Underwood shares his thoughts on the future of marine biosecurity, based on experiences in the top of the South Island, which show the importance of immediate action and intelligent budget flexibility.

The Marlborough Sounds, the Jewel in the Crown of Te Wai Pounamu, heart of the aquaculture industry. The threat of marine pests and diseases, master hitchhikers of the open seas, and an environment of constant flux. Overlay this with a small unitary authority with a team of six biosecurity staff who have been chasing invasive grasses around the dry South Marlborough landscape for decades. Sounds like a recipe for disaster!

It began with the flurry of activity that surrounded the introduction of Didemnum vexillum into Marlborough waters in the early 2000's. After what turned out to be two years of toing and froing, a working group was established to deliver a joint response. By 2008, it was clear the invasive sea squirt was widespread and targeted management ceased.

This experience, coupled with a similar scenario with Undaria pinnatifida in Nelson, spawned the Top of the South Marine Biosecurity Partnership. It was clear that it didn't make sense for the three small unitary authorities in the Top of the South to try and figure out how to approach marine biosecurity on their own. Instead, teaming-up together alongside MAF Biosecurity NZ, as it was then, seemed a better option. The ensuing years were all about strategising and building an understanding within the community and marine industries of where everyone fitted in this complex area of the biosecurity system. All-the-while, a close eye was kept on what was happening in Lyttleton, Auckland, Fiordland and Northland with high profile incursions of marine pests.

continued



© 2018 Arysta LifeScience Group Company. ® X-IT GRASS is a Trademark of an Arysta LifeScience Group Company. Arysta LifeScience and the Arysta LifeScience logo are registered trademarks of Arysta LifeScience Corporation.

CONSERVATION ESTATE

WWW.ARYSTALIFESCIENCE.NZ

continued



Through the RPMP process, it was openly recognised that the risk of the programme not meeting its objective were a magnitude higher than comparable terrestrial programmes - just look at the history of marine pest responses. However, the risk to the values out there in Marlborough's waters, and the early intervention, meant 'having a go' was a no-brainer.

When Styela turned up, Marlborough District Council managed to squeeze a budget of \$10,000, plus non-existent staff time, alongside other contributions, to undertake delimiting surveys. In 2019 the budget for the wider marine biosecurity programme, largely aimed at preventing the establishment of Sabella, has a touch over \$135,000 going into surveillance activities and contributing to contract work being delivered via the TOS Partnership. Each year Biosecurity New Zealand also contributes to work targeting Sabella, which lowers the bill a bit.

Granted, Marlborough has plenty to lose if marine pest and diseases bite. This does make decisions somewhat easier to make. What has been a great help all the way through is the ground work and relationships developed via the Top of the South Marine Biosecurity Partnership. This has slowly but surely clarified roles and given the small individual Councils a sense that they're not battling away individually. Well, we know we always are but what's the saying? – a problem shared is a problem halved.

Who knows? We might have caught Sabella early enough. But the question always looms – what's next? The focus has to move away from pinning energy on the nasty pests themselves. By all means use them—but as justification for managing pathways of transfer.

New Zealand is small enough and has simple governance compared to international counterparts. We also now have great border protection through the Craft Risk Management Standard for Biofouling. Linking us all together domestically under a national pathways system (which has to be regulated) is the next no-brainer for managing marine pests both now and into the future.

It's great keeping new pests out of New Zealand waters but if we're slowly burning from the inside, the value of what is being protected at the border is slowly being eroded.

JONO UNDERWOOD

Biosecurity Manager, Marlborough District Council Vice-President NZ Biosecurity Institute Chair – NZ Biosecurity Institute Top of the South Branch.

It was a matter of when not if, and in June 2013, the invasive clubbed tunicate Styela clava was found in Picton Marina for the first time during MPIss Marine High Risk Site Surveillance Programme. All-of-a-sudden, the tussock jumpers had to learn all about a very unfortunate looking sea squirt, oversee dive contractors and talk mussel farming. Thankfully the work via the TOS Partnership meant links had been made prior and the ground work prepared. This meant the investigation and response ran smoothly, and all the right parties came together guickly, coordinated by Marlborough District Council. While looking promising early on, it ultimately went the way of many marine responses before - that is an intervention too late with wide establishment discovered in the next two to three years. The decision to cease targeting Styela was jointly made, but made easier when a new more threatening target turned up...

Later in 2013, Sabella spallanzanii turned up for the first time in the Top of the South within Nelson Marina, then subsequently on vessels in Marlborough from February 2014 onward. November 2014 saw Sabella found on substrates for the first time in Marlborough at the head of the newly renovated in Picton Marina. It was a case of here we go again, but this pest really puts the wind up everyone - especially the mussel farming industry with its immense filtering capacity.

The response clicked into gear even faster than in 2013 - we were unfortunately getting good at this. Response mode morphed into an ongoing intensive surveillance and removal programme, believing we might just have caught this one early enough to prevent establishment. This programme is continuing and has since been incorporated into the Council's Regional Pest Management Plan (RPMP). This has both helped secure funding and enabled some regulatory mechanisms such as Rules to be used as part of the programme.

### From the Archives

## How seeds travel

by Stan Dulieu

Many and varied are the ways by which weeds can be spread from property to property, district to district, and even country to country. Often the offence is committed by innocent agents. Man is probably the biggest offender.

County councils and local bodies assist unintentionally in the spread of weeds due to their roading projects where soil and metal, along with weed seeds, are shifted from place to place. Where once only grass grew along the berm of a road, unwanted plants such as lupin and broom now flourish.

There have been instances of weed seeds being found in discarded straw used as packing. Much of this material came into the country around crockery and wine bottles. The common sack, used for many purposes during its life, can also become a carrier of unwanted weed species, especially those provided by nature with hooks or awls.

Rivers, streams and irrigation races are known means of transport for weed seeds and have assisted in the distribution of nasella tussock seed in Northern Canterbury. The spread of weeds such as ragwort and blackberry along the banks of rivers, annually requires a large portion of the Government Grant to bring under check.

Farm implements, bull-dozers, haybalers, tractors, etc. all play their part in the distribution of seeds. This is due to the fact that such machinery is very seldom thoroughly cleaned before being moved onto the next property.

With heavy trucks playing an ever-increasing part in the transporting of fertilizer, stock and other farm produce, it is inevitable that they help to spread weeds. They travel long distances, operate from farm to farm, and their many wheels are ideal carriers of weed seeds.

Some-one else who operates from farm to farm is the Noxious Plants Officer. He too can be guilty of providing transport for weed seeds. It could be by means of his vehicle, motorcycle, footwear or trouser cuffs. One Officer was embarrassed to say the least when a farmer brought to his attention some barley grass seedheads lodged under the lace-flaps of his boots. He'd apparently picked them up while driving his motorcycle over a property previously inspected that day.

Following a day of wandering around roadsides, Arthur Healy, toward the end of the last decade, collected from his own footwear and trouser cuffs, seeds of 52 weed species. In another case, from the boots of a friend who had been in New Caledonia, he scraped half a matchbox of mud and from this grew 353 plants of some 40 different weed species. Several of these were dangerous tropical weeds which could easily establish in this country. Weed seeds are often well-equipped for travelling: i.e. barley grass and storksbill with their hooks. Bathurst bur would be another.

Unlike N.A. C. [National Airways Corporation – now Air NZ – Editor] with high freight rates, birds with a liking for berries, provide free transport for many weed seeds.



Whereas Noxious Plants Officers are limited as to what they can do to restrict the spread of weeds by the majority of means mentioned in this article, they can certainly ensure that they themselves are not guilty of providing transport for seeds. Regular checks should be made of vehicle, motorcycles and clothing, particularly after inspecting infested areas. By doing so we will be doing our part toward getting the barn door shut before the horse has bolted.

(Acknowledgement: Proceedings of the Noxious Weeds Inspectors Institutes 20th Annual Conference, 1969. "How Weeds Spread" by Arthur Healy.)

[Stan (SR) Dulieu was an executive member of the NZ Noxious Plants Institute and Protect Magazine editor in March 1977 – Editor]

PROTECT MARCH 1977

## The tail

## I can't wait to be with all my wonderful colleagues?

So keen was an Institute member to attend a branch gathering recently that they left their vehicle in a carpark unlocked with the engine running. Anonymity was not an option when the meeting was interrupted by an important "fuel-saving" announcement mid-way through the opening session, at which point the overeager member temporarily left the building. The person was either keen to be with their colleagues or intent on a swift escape from them.



Find us on the web at www.biosecurity.org.nz