

Issue 6 | August 2018

Welcome

Welcome to *Biosecurity 2025: It's already happening.*

Avid readers might notice a slight change in the newsletter title and image. That's because we've shifted up a gear from 'Making it Happen' to 'It's already happening'!

In this issue, we're focusing on how science and technology plays a huge part in protecting our unique environment and or way of life from biosecurity risks.

To help get your sci-tech juices going, [check out this great pilot programme by Plant & Food Research to collapse the population of one of New Zealand's most harmful apple pests, the codling moth.](#)



Sterile Canadian Codling moths ready for release

Changing the way we 'do' biosecurity in New Zealand: A message from the Biosecurity 2025 Steering Group

Imagine a unified biosecurity system where everyone – communities, iwi, hapū, businesses, government and councils – works together to protect our lifestyles, our livelihoods and our unique environment against pests and diseases.

Progress on the Implementation Plan

On 9 July we shared our vision of the Implementation Plan as a living framework, and how we wanted to involve you in



its final development over the next few months.

Nick Maling, Biosecurity 2025 Steering Group (Acting Chair) opened the event saying that fundamentally, Biosecurity 2025 is a programme for the system, by the system. It's not MPI's programme. It's your programme. It's about all the players in the system coming together around a common set of objectives to future proof New Zealand's biosecurity system for the long term.

The Minister for Biosecurity Hon. Damien O'Connor echoed his words.



Minister for Primary Industries Hon. Damien O'Connor addresses the crowd.

"We were delighted to have the Minister for Biosecurity Hon. Damien O'Connor attend the event and share his views on the importance of biosecurity and the challenge for all New Zealanders to play their part," said Nick. "His enthusiasm for the programme and the upcoming Implementation Plan was evident."

For a brief overview of what we're trying to achieve, how we got here, what's underway and how you can get involved. Download [Future proofing New Zealand's Biosecurity System – Strengthening the system together.](#)

We'll be sharing video footage of the main presentations and the panel discussion with you soon. Keep an eye out in your inbox for a special update that will include links to the videos.

Work plans and proposed actions

The work plans

The work plans gave us the base from which the implementation plan is being developed. They reflect the breadth and complexity of the system, and include the perspectives of Māori, scientists, industry and business, NGOs, local government and central government, universities, CRIs, and many others. [Visit our website](#) to download the work plans.

Proposed actions

Out of the work plans came more than 100 actions to be delivered over the next seven years (2025) and beyond. To gather momentum we've compiled a list of these actions that should be started over the first two years. These actions are subject to resources being available, and project leads and project sponsors being identified. [Download the proposed actions.](#)

Next steps

Very soon, we'll be asking for your input and views on how the proposed approach to implementing Biosecurity 2025 can help you identify your role in strengthening New Zealand's biosecurity system.

Get in touch – we're keen to hear from you

We welcome your comments, suggestions, or questions. Please [email us](#) and if there's a specific Steering Group member you'd like to talk to, just let us know in your email and we'll forward it to them directly.

SAVE THE DATE: Biosecurity New Zealand Forum, 12-13 November, Auckland

Lock this date into your calendar so you don't miss out on the opportunity to be engaged, inspired, challenged and connected to delegates from across New Zealand.

The forum will be held on 12 and 13 November 2018 in Auckland.

More details will be shared [here](#) and other channels as they become available.



Understanding how Kiwi's perceive biosecurity

To get an understanding of how the New Zealand public and businesses see biosecurity in their lives or within their work, the Ministry for Primary Industries has undertaken research to provide a baseline to track progress against the targets set out in the Biosecurity 2025 strategy.

Minister for Primary Industries, Hon. Damien O'Connor released the reports on Tuesday 10 July. Here is the [Minister's media release](#).

The two reports can be downloaded from the links below.

- [Biosecurity 2025 public survey report](#)
- [Biosecurity 2025 business survey report](#)

[Download this infographic which gives you a snap shot of the results.](#)



Kōtuitui Kōrero Pūtaiao - Biosecurity Communication Network update

The number of communicators connecting across the biosecurity system continues to grow with 330 communicators a part of the network. Over 70 met for the second time, for a Kōtuitui Kōrero Pūtaiao, forum on 19 June 2018 in Christchurch with the aim of building on and cementing the relationships started in Wellington in March.

'It starts with us' (Ka timata me tātou) was the theme to remind people that as communicators they have their fingers on the pulse of what's happening in their organisation and across their sector. By bringing this to the table through cross-system collaboration they'd be supporting the strategy's goal: a more resilient and future proofed biosecurity system.

Regional council communicators were well represented by their communication special interest group which held its quarterly meeting the day after the forum so as many people as possible could attend. There were representatives from: Māori, tourism, primary industries, NGOs, business organisations, the supply chain, universities, research organisations, government agencies, regional councils, marine and communication agencies.

The communicators immersed themselves in: the baseline survey results into the attitudes and behaviour of people and business to biosecurity; how a unifying idea will help every New Zealander understand why they need to take ownership and action; figuring out what needed to be in a resources toolkit; learned how to stop things before they get here (pre-border), why the rules were so strict at the border; and how the system can deal with pests and disease if they get past the border.

The undoubted highlight of the day was a 'Detector Dog' display. Georgie, the stink bug sniffer, sniffed out dead bugs hidden in unlikely places to show how easily they can hide, while Archie a top-notch detector dog famed for his looks, went through his paces detecting bad stuff. Last but not least, Huia a Harrier/ Beagle cross, detector dog in training from the first litter of a new breeding programme was introduced.

The rest of the forum took attendees through a gambit of ideas, case studies, and discussion sessions to tease out more on how the network can become better connected.

The final forum for 2018 will be held in Auckland to coincide with the Biosecurity New Zealand Forum 12-13 November.

Comments from attendees included:

- *"I have learnt so much today and made great connections that will help me in my work moving forward."*
- *"I didn't realise how complex and how fragile our biosecurity system really was."*
- *"I thought I knew as much as I needed to know, but today has shown me otherwise. I have learnt a tremendous amount, not only about biosecurity but also about collaboration and connecting across the system to support each other."*
- *"This is such a great idea and I am so thankful that my boss saw it as an opportunity to learn and connect with other communicators across the system. I'll be back for the third forum in November."*



New weapons in the battle for urban biosecurity

Article supplied by Lisa Tovey, Senior Communications Advisor, Scion

With over 10,000 reports of suspected new pests and diseases in New Zealand every year¹ it's no surprise that our urban environments are being impacted.

Dr Tara Strand, Dr Steve Pawson, Dr Eckehard Brockerhoff and Dr Brian Richardson from Scion explain how they're finding new ways to manage urban biosecurity incursion responses.

"Managing pests and diseases in a densely populated urban environment presents an array of challenges that will grow as urban migration continues and international movement of cargo and passengers increases," says Dr Tara Strand.

"Our project researchers are developing tools and concepts that could result in faster detection of new organisms, reduced use of pesticide, improved incursion responses and engagement with communities, creating a stronger biosecurity defence network for New Zealand", Tara explains.

Active surveillance using unmanned aerial vehicles

Understanding where a pest has come from and where it's spread to can influence the response to a pest and early detection enables eradication treatments to prevent further spread.

Dr Steve Pawson and the team have been undertaking research trials to see if using UAVs (unmanned aerial vehicles) could detect pests earlier.

"Our trials have proven that UAV's wired with a pheromone sensor-antennae can definitely detect specific pheromones from a target insect. We're working with experts from France to miniaturise the concept and refine it," says Steve.

Tara explains, "This tool is being further developed to pinpoint a pest's location quicker than a human surveillance team. Time saved could reduce the opportunity for the organism to spread, minimise the treatment area and result in less disturbance to urban residents. It'll also increase the chance of eradication; or help us to arrive at a decision point sooner than would otherwise be the case."



¹ <https://www.mpi.govt.nz/protection-and-response/finding-and-reporting-pests-and-diseases/keeping-watch/>



Targeted application for more efficient use of pesticides

Once we know how far a pest has spread, the next step is to eradicate it. For pest insects, current practice is often to treat the host plant, either by pesticide application or host removal, leaving the pest population to decline from loss of useable habitat, or by direct action of the toxicant.

Dr Ecki Brockerhoff and his team have created a model that links the pattern and amount of host plants across a landscape with the population dynamics of pest species. He explains, “The model looks at the distribution of host plants across the landscape and the

effects on the target pest’s population, identifying how many and which host plants will need to be made unavailable to the pest species to drive it towards eradication.”

“This new knowledge will help to develop new early incursion response strategies and more efficient use of controls like pesticides.”

Turning these targeted strategies into action, researchers are developing tools that deliver pesticides to a single tree at a time. Working with the company HeliResources, Dr Brian Richardson and the team have evaluated a ring-shaped spray boom that is tethered below a helicopter and delivers pesticide to one tree at a time. A working protocol for this new tool has already been delivered to the Ministry for Primary Industries (MPI) and is ready for deployment.



A helicopter delivers pesticide to one tree at a time

UAVs are also undergoing testing for targeted spraying. Machines tested to date are capable of delivering 10-20 litres of spray in a single load.

Brian says, “Broadcast spraying techniques are generally a last resort in urban environments, but the methods we’re developing will focus the control spraying where it’s needed, minimising unneeded disturbance.”

Evaluating engagement

Tools to improve community engagement in urban biosecurity issues are also being investigated by the research team. Together with MPI and Will Allen and Associates, researchers have developed a ‘rubric’ or framework to help biosecurity managers to visualise and measure the performance of their community engagement strategies.

As a tool, the rubric can help users learn and share from differing perspectives, measure social and technical details, quickly identify improvements required and is adaptable across programmes. A detailed rubric has been developed with MPI’s general surveillance team.

Tools for tomorrow

This short (3 year) research programme has contributed new tools that are ready for deployment (vegetation fragmentation modelling, ring boom spraying procedures, general surveillance rubric) and their success has earned the programme a gold rating from funding provider, MBIE.

The research team credits the shared perspectives from industry bodies, Māori, regional councils and government departments for making this programme robust and relevant to the challenges of urban biosecurity, as well as the strength of national and international research collaborations helping to realise these concepts.

“It’s not over yet,” says Brian, “This programme has helped us to test concepts and identify areas that we can improve on. We want to hone in on these next and will continue to develop and refine these tools.”

For more information on urban biosecurity research contact [Dr Tara Strand](#).

Citizens report on myrtle rust

Article supplied by Lisa Tovey, Senior Communications Advisor, Scion

The day myrtle rust was discovered on the mainland, a biosecurity battle erupted.

Biosecurity officials and volunteers have done everything possible to stop the fungus from taking hold, and in April the Ministry for Primary Industries conceded that we need to focus on long-term management options.

Myrtle Rust Reporter: Citizen Scientists on the ground

“We’re now in reconnaissance mode and with that comes the need for data,” says Dr Steve Pawson from Scion. “Data is more important than ever and citizens can play an important role in gathering information.”

The **Myrtle Rust Reporter (MRR)** smartphone app, developed by Dr Pawson is a key weapon in the citizen scientist’s armoury.

Using the app, citizens can help officials monitor how myrtle rust is affecting Myrtaceae across New Zealand and, if very lucky, find plants with a level of natural resistance.



The logic behind the app is simple. Giving the public a channel to report information straight from the source increases the number of eyes on the ground enormously. At its best, the sheer scale of data contributed from volunteers will allow us to cover large geographic areas.

Thanks to Te Tira Whakamātaki the Māori Biosecurity Network for encouraging the development of this initiative. “We always prefer a citizen science-based approach to our work, partly because we find it complementary to the way Māori work anyway, but mostly because citizen science allows for large numbers of volunteers to be out there on the ground, which just isn’t physically possible by individual researchers or research teams,” says Melanie Mark-Shadbolt, Te Tira Whakamātaki, CEO. “Plus, we wanted kaitiaki mapping the myrtle rust spread because they’re the ones most familiar with the ngahere (bush) and able to move through it without causing undue damage.”

MRR is also available in te reo Māori. Mel explains why: “It was vital that this app drew a Māori audience, and one way to do that is via te reo Māori, especially as we aim to reach our kaitiaki out in the regions and out on the land. The other important reason is language protection and capability building.”

Wero: a challenge

As temperatures drop and the number of myrtle rust identifications slow down, there’s still much to be done. Here’s a wero: a challenge from Dr Pawson:

Download

Visit [iNaturalist](#) to see the project, or, [iTunes](#) and for [Android](#)

“Download the Myrtle Rust Reporter app NOW and help us map the disease, with this vital information in our fight against Myrtle Rust in New Zealand.”

Statement of Priorities for biosecurity research, science and technology in its final stages

The Biosecurity Science Working Group, has been working on developing a Statement of Priorities for biosecurity research, science and technology. The group has developed an initial draft drawing on previously identified research and innovation needs from relevant documents. This draft has been discussed with key people across the across the biosecurity system and the Biosecurity 2025 Steering Group.



Ian Ferguson, chair of the working group, is pleased with progress and the input so far into developing the statement. “It’s important we get this right so it can drive future science funding and align strategies. Despite a number of big response efforts underway we’ve had great input from across the system and we’re in good shape,” he says.

The working group are now preparing a more complete draft and will be looking for wider input from the science and biosecurity systems once this is done.

The Statement will comprehensively cover the research and innovation needs of the system and identify the most important areas to make progress on within the next three to five years.

Watch this space.

PROFILE: Keen student takes on the challenge to spot wilding pines from space

Article supplied by Ashley Campbell, Communications Officer, Bio-Protection Research Centre, Lincoln University

Drive around the beautiful wide landscapes of the Mackenzie Country and you're bound to spot some [wilding pines](#).

Because they mature early and produce a large number of relatively small seeds, wilding pines have invaded an estimated 1.8 million hectares across New Zealand, ranging from tussock grasslands and high-country farmland to native forests.

Rowan Sprague - a student on a mission

[Bio-Protection Research Centre](#) PhD student Rowan Sprague is working on a way to find wilding pine trees in remote areas by using image data collected from satellites and aeroplanes. Known as remote-sensing data, this is a rapidly developing technology and could be a low-cost way to find remote trees, especially in grasslands.

Rowan has written a detection algorithm that lets a computer automatically process the image data and detect where the pines are.

It hasn't all been plain sailing. After trying several software programmes and methods, Rowan wrote her own algorithm. It took her several months to get the algorithm to specifically detect wilding pines, and not other trees. It was also tricky getting it to estimate the number of trees in a dense stand. The fun part was then getting out into the field to see how well it worked!

"When I compared what the computer could detect with what I found and measured in the field, I found that the resolution of imagery affects how accurate the results are. But it does appear to find all adult trees," Rowan says.

"While the method isn't perfect – and it'd be nearly impossible to get it to detect very small seedlings – it adds another tool to more easily and effectively find where the wilding pines are establishing."

"By doing so, we'll be able to control the spread of these trees and save our beautiful indigenous and productive grasslands."

Rowan's method will ensure all bases are covered

New Zealand spends millions of dollars each year trying to remove these trees. [Te Uru Rākau – Forestry New Zealand](#) alone funds a large project to control them, costing \$16 million a year. This project involves regional councils such as Environment Canterbury, Land Information New Zealand (LINZ), the Department of Conservation, and landowners.

The work being undertaken by Rowan is helping to overcome one of the major obstacles to successfully controlling wilding pines, knowing exactly where they are. We can see those near major highways or on easily accessible farmland, but what about those spreading to isolated parts of the high country?

To find and control trees in isolated areas, staff from DOC, regional council, and other control organisations [fly around in helicopters](#) on search-and-destroy missions, or rely on previous knowledge of where the pine trees were. This can be time-consuming and expensive, and there's risk that if they miss trees, they'll continue to grow. Rowan's work will give them assurance that they've got all bases covered.



Rowan Sprague in the field.

Scientists hone in on where pests come from

Article supplied by Ashley Campbell, Communications Officer, Bio-Protection Research Centre, Lincoln University

A team of scientists at the [Bio-Protection Research Centre](#) is working to make Biosecurity New Zealand's (BNZ) pest incursion investigators jobs much easier.

When deciding how to deal with a pest insect that's new to New Zealand, BNZ needs to know where the insect was born.

If the insect was born overseas, BNZ can simply destroy it, check locally that no others arrived with it, and then stay vigilant to make sure no more make it here.

However, if the insect was born in New Zealand it means there's already a breeding population here. The response will be bigger, more expensive, and probably disruptive.

The population needs to be tracked down and treated to remove the risk. This could involve using pesticides that can affect people – and possibly disrupt trade relationships because our pest-free status has been compromised. It may even mean restrictions that affect people's daily lives – like the disruption that accompanied the painted apple moth in West Auckland in 1999, or the Queensland fruit fly in 2015.

A new way of finding out where an insect has come from

The Bio-Protection Research Centre (BPRC) scientists, with Better Border Biosecurity (B3) funding from Plant & Food Research, plus funding from Australia's Plant Biosecurity CRC, have developed a new way of showing where an individual pest insect has come from.

Called 'stable isotope analysis', it's based on the principle that "you are what you eat" and, in this case, "you are where you ate". It's already used in fields as diverse as archaeology, forensics, and nutrition. But there have been problems using it to find out where insects came from.

Isotopes are nearly identical forms of an element, found naturally in the environment and the food that an insect eats. Some are very unstable but, as the name suggests, stable isotopes don't spontaneously decay or change into other elements



Photo credited to Peter Crisp/South Australian Research and Development Institute



SARDI fly Photo credited to Peter Crisp/South Australian Research and Development Institute

"Stable isotope analysis typically needs quite a bit of tissue and also takes days to weeks to get a result," says Dr Karen Armstrong, a senior researcher with the BPRC.

"In biosecurity, scientists usually only have tiny amounts of tissue to work with, such as the wings of a single fruit fly. And results need to be available quickly in order to stop an incursion and stop the pest from establishing."

BPRC scientists have pushed the limits of the technique and adapted it to work with very small amounts of tissue and aim to deliver results within two days rather than two weeks.

"It's taken several years to get here," says Dr Peter Holder, postdoctoral researcher at the BPRC. "Our goals were way ahead of what the technology could offer,

but with great collaborations at University of Otago and Queensland University of Technology (QUT) we have overcome severe limitations. Now this technique can work on fruit flies – which are about as small as you can get.”

“We also tested it on a hitch-hiking brown marmorated stink bug found in New Zealand – results strongly suggested it was born in the Northern Hemisphere and not part of a local population,” says Peter.

And when a burnt pine longhorn beetle was found on a shipment of logs to Australia, analysis indicated it came from the area around the Port of Auckland, not from forestry areas further north. That meant BNZ could confine its effort to the port.

But there’s more to do. “We’ve made great progress with our collaborators to adapt mass spectrometry methods to work with even smaller samples,” says Dr Armstrong. “Results will be almost instant and the price tag much, much cheaper.”

Summer border statistics show we've been busy

The Ministry of Primary Industries' (MPI) border biosecurity defenders have just been through their busiest summer on record.

MPI biosecurity officers screened some 2 million passenger arrivals for risk goods between December 2017 and February 2018, a 5% increase on last summer.

"It was a hectic few months, but we came into the season well prepared for the rush, including employing more than 70 new officers during the year," says MPI border clearance director Steve Gilbert.

"Officers handed out nearly 4,000 infringements to passengers with undeclared goods that could harbour disease pests or diseases. Most of these were for undeclared fresh produce, which can carry destructive fruit fly species."

"We made 10 fruit fly interceptions during the summer. This proves the worth of our biosecurity defences, given the damage these insects can do to New Zealand horticulture."

He says MPI biosecurity officers also made record seizures of brown marmorated stink bugs with more than 180 interceptions and more than 2,000 individual bugs detected.

MPI has increased its scrutiny of cargo arriving from countries where the pest is established, with the number of consignments targeted for inspection increasing more than 100%.

"There's been a huge spike in stink bug detections on imported vehicles and machinery from Japan that has so far resulted in 4 carriers being turned away from New Zealand this season," says Mr Gilbert.



One stop shop for New Zealand biosecurity information now live!

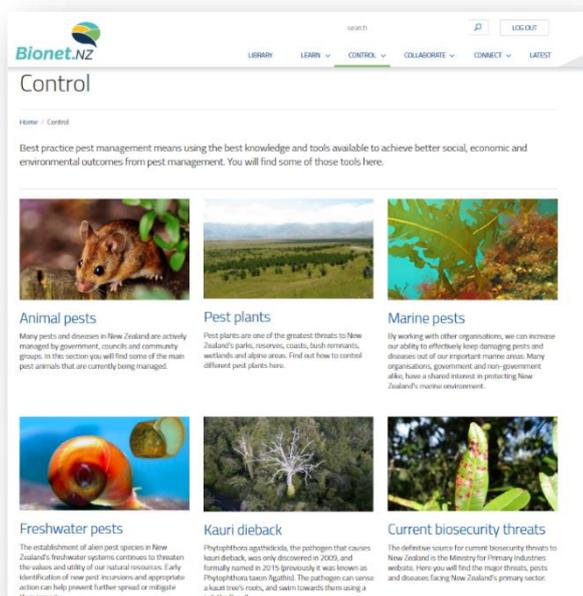
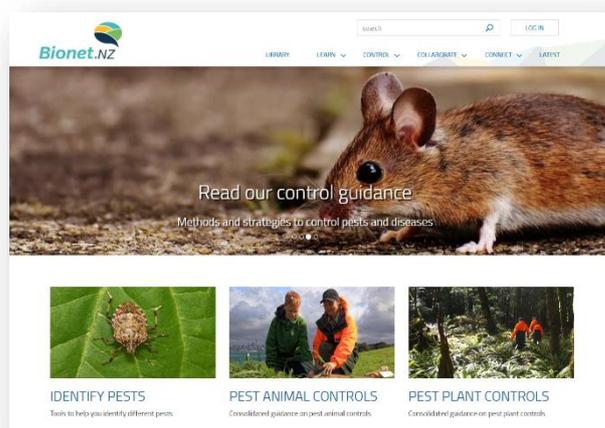
Bionet, the online biosecurity portal, is now live, providing a home for best practice biosecurity information. Head to www.bionet.nz where you'll find resources, links and useful information about biosecurity practices in New Zealand.

In support of Biosecurity 2025, Bionet aims to grow New Zealand's capability in biosecurity, to help protect New Zealand from invasive pests through promoting shared knowledge, and to connect together professionals working in the pest management space.

In alignment with the National Pest Management Plan of Action, the Ministry for Primary Industries has been working with partner agencies and regional councils to make Bionet and bring together biosecurity tools in one place.

The key features of Bionet include:

- Bionet as your one-stop-shop for biosecurity information
- Visitors can join and administer groups to share best practice, research, and promote better collaboration across a series of biosecurity topics
- Higher visibility of the connected biosecurity system with links to Regional Pest Management Plans, control guidance, identification guidance and useful links



Bionet has over 200 biosecurity publications from across the country, searchable through its intuitive search tool in the Resource Library. This library will be updated quarterly with new information, updates and tools. The content on the site is sourced from reputable bodies and partner agencies.

Content and services from the National Pest Control Agencies (NPCA) website will continue to be provided through Bionet. The online tool, Pest Detective, will also be managed alongside Bionet to bring together key tools and information about pests in one place.

A real value add of the website is the ability for biosecurity professionals and broader working groups visitors to connect and collaborate on projects in New Zealand by using Bionet Groups. Groups offer collaboration tools such as blogs, document storage and retrieval, lists of useful links and short messages that members of the group can contribute to.

We'll be adding additional content to Bionet and welcome your contributions. If you have content, materials, links or other information that you'd like to share please let us know. If you have ideas or suggestions for improvements for the site please send them through the [Bionet contact form](#)

Entries now open for the New Zealand Biosecurity Awards

The New Zealand Biosecurity Awards recognise and celebrate people and organisations across New Zealand who are contributing to New Zealand's biosecurity – in our communities, businesses, science organisations, iwi and hapū, and local and central government.

NEW ZEALAND BIOSECURITY AWARDS 2018

Recognising and celebrating our biosecurity team of all New Zealanders

BIOSECURITY 2025

Entries are now open and close on Friday 31 August.

Finalists will be announced on Friday 12 October and winners will be announced on Monday 12 November at a special awards dinner and ceremony in Auckland.

If you have any questions, please email biosecurity.awards@mpi.govt.nz

Award categories

Have you been involved in a school or community group project that supported biosecurity in New Zealand? Has your mahi helped to increase Māori capability and capacity in the biosecurity system? Has your organisation developed new systems, technologies, or practices that focus on improving biosecurity?

This year three new categories have been added: Emerging Leader, Innovation and Science.

Check out this year's Award categories:

- Community Award
- Māori Award
- Industry Award
- Local & Central Government Award
- Science Award
- Innovation Award
- Emerging Leader Award
- The Minister's Biosecurity Award

Find out more, visit mpi.govt.nz/biosecurityawards

World class National Biocontainment Laboratory opening 2019

The Ministry for Primary Industries (MPI) is currently building the new National Biocontainment Laboratory at Wallaceville in Upper Hutt. This will replace the existing high level biocontainment laboratory which is reaching the end of its intended design life. It's been designed by North American based specialists Merrick & Company and built by Fletcher Construction and is due to become fully operational in 2019.

The new laboratory will provide scientists with the highest level biocontainment facilities in New Zealand, operating at enhanced Physical Containment Level 3 (PC3+) to ensure samples can be handled safely and remain fully contained. This will allow MPI - and Crown Research Institute ESR who will lease part of the building - to carry out world-class biosecurity and health diagnostic work to protect New Zealanders and our primary industries from high risk pathogens.

Work at Wallaceville includes surveillance, rapid organism identification and providing information to assist with targeted vaccines or treatments. Molecular work like whole-genome sequencing of bacteria and viruses helps to identify where pathogens come from. MPI scientists are carrying out this type of work right now to inform decision making during the Mycoplasma Bovis response, which demonstrates how critically important this facility is.



Ducting and piping suspended from the first floor above the steel framing which form the ground floor rooms

To meet the required level of containment and operating safety the building will use a range of complex engineering systems. For example, all rooms will be air tight and held at relative negative pressure to keep microorganisms within the lab. The associated air handling system is designed to filter more than one million cubic metres of air each day via airtight stainless steel ductwork and 150 high efficiency filters. All waste water from showers, hand basins and lab areas will be sterilised by heating in a specialist treatment plant before being discharged.

The building is base isolated and designed to be operational immediately after a one in 500 year earthquake and to be repairable after a one in 2,500 year seismic event. The base isolators reduce the impact of tremors on the building's containment systems and in large events allow the whole building to move up to 900mm in any direction.

Laboratory suites are arranged over two floors providing both medium and high level biocontainment (PC2 and PC3). The lower floor will also be able to operate at the more stringent PC3 containment level in the event of a significant health emergency or biosecurity threat such as foot-and-mouth disease. Entry and exit from the PC3 containment areas is highly controlled and uses rigorous procedures, including the requirement for staff to shower before exiting the PC3 area.

The project is making significant progress and the outside of the building is now weathertight. Construction progress inside includes installation of steel wall framing, building services and the critical airtight laboratory walling system. These latest developments are giving those involved the first physical impressions of what the interior will eventually look like when finished.



Wide angle shot of the National Biocontainment Laboratory (30th May 2018)

B3: Better Border Biosecurity



B3 | Science Solutions for
BETTER BORDER BIOSECURITY
www.b3nz.org

B3: Better Border Biosecurity aims to develop approaches and tools to ensure harmful organisms are kept out of New Zealand, or, if they do manage to enter, are eradicated before establishing permanent populations. B3 members have been fully engaged at various forum and working groups to ensure the success of Biosecurity 2025.

Here are a couple of science and technology snippets taken from their recent [annual report](#).

Samurai wasps to combat BMSB

A variety of research is being undertaken to prevent the establishment of brown marmorated stink bug (BMSB) in New Zealand and to reduce its impact if it does establish. One of the strategies being developed by B3 and USDA researchers, in close partnership with industry and government, is a novel pre-emptive approach to biological control. This entails getting everything in place for the introduction of the tiny Samurai wasp, a biological control agent for BMSB, before BMSB establishes in New Zealand.



Searching for native stink bugs in Central Otago

The Samurai wasp, which originates from Asia, is considered to be the most promising natural enemy for BMSB and is likely to provide an important means for controlling this pest. B3 researchers, with Brian Patrick (Wildlands Ltd.), have been scouring NZ's countryside for the few but rare native and indigenous stink bugs and then examining the impact of the Samurai wasp on them in containment. B3 researchers have provided input into a cost/benefit analysis and risk assessment and have assisted in consultation with Māori and other key stakeholders. An application has been made with the Environmental Protection Authority (EPA) for release of the Samurai wasp in NZ. [Find out more.](#)

Plant biosecurity risks of pastoral systems

In close association with DairyNZ, a new B3 project assessing the biosecurity risks to pasture (New Zealand's largest 'crop') has been initiated. The goal is to produce prioritised lists of weeds and invertebrate pests that are biosecurity risks to both pasture and other important forage plants such as Lucerne, chicory, plantain and maize. Potential New Zealand distributions, spread rates and economic impacts are being estimated for all the short-listed species. Two workshops involving industry biosecurity managers and researchers have been undertaken. Short lists comprising 37 insect species and 24 weeds not present in NZ, but likely to harm ryegrass or clover production have been produced and their potential NZ distributions have been estimated; their potential spread rates are currently being modelled. Long lists of biosecurity hazards to a range of other forage plants have been compiled, and are currently being analysed. Such 'plant' risk assessments compliment the traditional focus on the important animal biosecurity diseases such as foot and mouth. "This project is of high importance to DairyNZ as its outputs will support, and inform GIA activities and help to prioritise DairyNZ's wider investment in biosecurity readiness, response and R&D" said Dave Hodges (DairyNZ).

Biosecurity New Zealand launched



Biosecurity New Zealand

Ministry for Primary Industries

Manatū Ahu Matua

The end of April saw the Minister for Biosecurity Damien O'Connor launch Biosecurity New Zealand at the Zealandia Eco-Sanctuary in Wellington.

Biosecurity New Zealand is one of four new business units created within the Ministry for Primary Industries to create a stronger focus on key areas of work, along with Fisheries New Zealand, Te Uru Rākau | Forestry New Zealand and New Zealand Food Safety.

Read the [Minister's press release](#).

Event calendar

August 2018

[NZPPS Conference \(NZ Plant Protection Society\)](#), 14-16 August, Rutherford Hotel, 27 Nile Street, Nelson

[Freight Futures 2040](#), 27-28 August 2018, Pulman, Auckland

[New Zealand Avocado International Industry Conference 2018](#), 29-31 August, ASB Baypark, Tauranaga

[The New Zealand Wine Growers Romeo Bragoto Conference](#), 29-30 August, Westpac Stadium, Wellington

October 2018

[New Zealand Grain & Seed Trade Association](#), 17–18th October, Centenary Conference – New Crowne Plaza hotel, Christchurch

Do you know of any relevant events not listed here? We'd love to hear from you, please [email us](#).

COOL STUFF...

[Save Ugly – Wilderness Society \(feat. Rosario Dawson\)](#)

It's not just about the cuddly creatures – it's the ugly stuff that makes our living world go round. [Check out this awesome video from The Wilderness Society Australia.](#)

[Gourmet peanut butter a favourite for Wellington rats](#)

When Predator Free Wellington told peanut butter artisans Fix & Fogg that their peanut butter was a hit with rats, they came to the party. [Read more](#)

[Crack squad of Hens to eradicate Aussies](#)

Auckland Council has unleashed a crack squad of 200 biosecurity-warranted chickens to help get rid of Aussie rainbow skinks. [Chickens vs Skinks](#)

[Using drones to tackle trees with a chainsaw!](#)

Check out these crazy Finnish farmers using a [chainsaw drone](#) to tackle trees on their land.

[Pest Detective interactive website helps identify pests](#)

If you'd like to be able to identify pests in your garden, this website is the place to go. <http://www.pestdetective.org.nz/>

[Plant & Food Research five-part podcast series](#)

The series explores how innovative science is pushing boundaries to protect borders, getting pests to push off, and dealing with disease. Check it out at: <https://www.plantandfood.co.nz/page/news/podcast-index/biosecurity/>

[Bioheritage Science Challenge Update](#)

The [National Science Challenge 2017 Highlights Report](#) is now available. This report outlines the Challenge's progress towards enhancing and restoring New Zealand's natural and primary production environments.

Take a look. It's a great read.

[KVH's Annual Update 2017/18](#)

The [KVH Annual Update 2017/18](#) is out now and it's full of cool infographics and information.

[Bug-busting board game teaches kids how to keep pests out of NZ](#)

[Invasion Busters](#) is a new board game designed to teach kiwi kids about biosecurity.

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