

Forest Biosecurity News

Welcome

This regular newsletter is for people working in plantation forestry, as well as others with an interest in forest biosecurity. We aim to keep readers up-to-date on biosecurity issues, and help those operating in forestry to proactively manage and reduce their biosecurity risk. We will provide insights and updates on forest biosecurity readiness, surveillance, responses, investigations, science and government industry agreements.

What's inside

- P1** Welcome
- P1** Introducing Brendan Gould, Biosecurity Manager, Forest Owners Association
- P2** Priority Pest: Pitch canker
- P2** Seasonal update: summer problems in the Auckland Region
- P3-4** New Zealand's forest biosecurity surveillance system
- P4** Plant Pass – A Nursery Biosecurity Certification Scheme
- P4** New diagnostic tool for red needle cast
- P5** Biosecurity in action: Tortoise beetle detected on eucalypts in Nelson
- P6** The Find-A Pest App
- P6** FOA Forest Biosecurity Committee
- P6** Other news/resources

Introducing Brendan Gould, Biosecurity Manager, Forest Owners Association

Hi, I'm Brendan Gould, FOA Biosecurity Manager. I joined the FOA in February 2020 – just as Covid was becoming a global issue, affecting people and economies across the world.

The pandemic has highlighted the importance of biosecurity – prevention, readiness, surveillance and response preparedness. It has also demonstrated how everyone can play a part in biosecurity.

My main priorities include to:

- lead and coordinate industry biosecurity readiness and response activities
- contribute to maintaining the Government Industry Agreement (GIA) cost sharing and joint decision making relationship with Biosecurity NZ and ensure the forestry sector derives maximum benefit from this arrangement

- oversee the delivery and continual improvement of the Forest Biosecurity Surveillance System
- maintain relationships with other primary industry sector biosecurity managers and other government agencies to ensure the forestry sector benefits from their activities
- provide support to the forest industry on all aspects of biosecurity.

I have a background in marine science, and before starting with the FOA, I was the Biosecurity Surveillance and Incursion Investigation Manager at Biosecurity NZ.

I welcome feedback on this newsletter, so please do get in touch with any suggestions for additional content or improvements.



Priority Pest: Pitch canker

Pitch canker disease (sometimes called *Pine pitch canker*) remains a significant biosecurity threat to production forestry in New Zealand.

Although not currently present in New Zealand, *Pinus radiata* is highly susceptible to pitch canker. The disease is thought to be native to Mexico and has spread to Brazil, Chile, Colombia, Haiti, France, Italy, Japan, Portugal, Spain, South Africa, South Korea, Uruguay and USA.

Under the Government Industry Agreement (<https://www.gia.org.nz/>) for Biosecurity Readiness and Response, the FOA and Biosecurity NZ are developing a readiness manual for *Fusarium circinatum*, the fungal pathogen which causes pitch canker disease. This is now close to being finalised.

The manual provides information on *F. circinatum* and pitch canker disease, how we might respond to an outbreak, and knowledge gaps that might inform future readiness work.

Should there be an incursion, decisions around the response will be made jointly by Biosecurity NZ and the FOA.

The manual will ensure that those involved will have immediately accessible, practical information. The forest industry will also know what to expect if pitch canker is found in New Zealand.

Preventing pitch canker disease from arriving and establishing in New Zealand is our most cost-effective option. If the disease does become established, response options will be very costly and there will be significant implications on areas and properties where the disease is present. Pitch canker is a destructive disease, associated with reduced yields and high levels of tree mortality. Eradication will be very difficult, especially if the disease spreads and becomes widely established.

The manual highlights the importance of basic industry risk reduction and hygiene



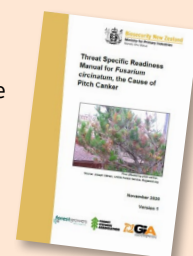
Bleeding caused by this pathogen. Image courtesy of Darryl Herron



Preventing pitch canker disease from arriving and establishing in New Zealand is our most cost-effective option

practices, including measures around footwear, equipment, vehicles, machinery, nursery stock etc. Good industry practices would decrease the chances of the disease spreading and increase the likelihood of successful control or eradication.

The FOA Forest Biosecurity Committee will be developing some guidelines to help forestry practitioners implement better biosecurity practices.



Seasonal update: summer problems in the Auckland Region

CONTRIBUTOR: BRENT ROGAN, SPS BIOTA

Long dry spells are common in many regions at this time of year. In exotic conifer plantations this can result in several issues including needle cast, reduced growth, and *Diplodia sapinea* dieback. In certain soil types, trees' access to boron is reduced.

During routine January forest biosecurity and forest health inspections in the Auckland Region, needle cast (caused by dry conditions) was noted in most stands over four years old. In older stands the situation was worst in areas with high

stocking and/or at higher elevations, particularly those with a west or northerly aspect. During dry spells it is also not unusual to see the build-up of insects taking advantage of stressed foliage. In the case of the Auckland forests, localised patches of looper and needle-tying caterpillars were very apparent and causing some damage. Similarly there has been a build-up of both *Heliothrips haemorrhoidalis* (greenhouse thrip) & *Essigella californica* (Monterey pine aphid) on pine foliage, though the impact of the latter is thought to be small.



Pseudocoremia fenerata – a native looper moth larva. Image courtesy of Brent Rogan SPS Biota



Heliothrips damage to foliage. Image courtesy of Brent Rogan SPS Biota

SURVEILLANCE AND DETECTIONS



New Zealand's forest biosecurity surveillance system

The forest industry has long recognised the importance of forest health and biosecurity.

There have been various forms of surveillance programmes for several decades. The forest sector remains the only primary industry sector that funds and delivers its own national biosecurity surveillance system for a wide range of biosecurity threats!

Forest biosecurity surveillance has evolved over the years. Initially the industry used a surveillance approach based on Forest Health Assessments. This approach primarily focused effort on large production forests. This has now changed to a risk-based approach that allocates effort based on a range of risk inputs.

While this shift pulled surveillance effort out of large forests and closer to high-risk areas such as urban environments, ports etc., it broadened the surveillance benefits, particularly early detection of incursions, to cover all forests.

The current Forest Biosecurity Surveillance System comprises the following components, which combine extensive and comprehensive biosecurity surveillance coverage:

Surveillance Programme	Funder	Description
High Risk Site Surveillance Programme (HRSS)	Biosecurity New Zealand	This programme is designed to monitor trees, shrubs and wood in areas (predominantly urban) that are endpoints for significant pathways and/or high-risk establishment sites for exotic organisms. These largely comprise active sea and airports, vegetation-rich urban areas, transitional facilities and tourist sites, but also some industrial and military sites that receive large volumes of imported goods. Surveillance effort is largely allocated using a specifically designed Bayesian risk allocation and resource optimisation model. The main objective of the HRSS programme is to detect new plant pests and diseases that may pose a biosecurity risk, negatively impacting on native forests, urban trees, plantation forests and other trees.
Forest Biosecurity Surveillance programme – model allocated surveillance effort (FBS)	Biosecurity New Zealand / Forest Owners Association on behalf of the Forest Growers Levy Trust	This programme is similar to the HRSS programme, however, it specifically targets commercial plantation forest species in areas (predominantly urban) that are endpoints for significant pathways and/or high-risk establishment sites for exotic organisms that are considered a risk to plantation forests. Surveillance effort is also allocated using a specifically designed Bayesian risk allocation and resource optimisation model. The main objective of the FBS programme is to detect new forest pests and pathogens that may pose a biosecurity risk, negatively impacting on forest production species.
Forest Biosecurity Surveillance programme – non model allocated surveillance effort (NMA)	Forest Owners Association on behalf of the Forest Growers Levy Trust	This is a component of the FBS, which also targets commercial plantation species, but where the FBS focuses primarily on areas that are endpoints for significant pathways and/or high-risk establishment sites for exotic organisms (predominantly urban areas), the NMA focuses effort toward high risk areas and pathways within and around plantation forests. Effort is not allocated using the model used in the FBS but utilises various risk information, experience, invasion biology and knowledge of internal risk pathways as mechanisms for spread. This shares the same objectives as the FBS.
Forest Health Assessments (FHA)	Forest Companies	These surveys fulfil a wide range of outcomes for forest growers, a key one of which is to understand the health of their forests and to provide early detection of any biosecurity threat, or other issues that may affect the health of their forests. These also provide for early detection of biosecurity threats (new or established) as well as monitoring the spread of established pests and pathogens throughout New Zealand. These surveys are undertaken within commercial forest plantations.
New Zealand's general surveillance system	Biosecurity New Zealand	Biosecurity New Zealand maintains a general (passive) surveillance system that comprises a free 24/7 Pest and Disease hotline (0800 80 99 66), specialist incursion investigators, diagnostics laboratories, a notifiable organisms list, an Unwanted Organisms register, legislative requirements to report suspect new to New Zealand organisms (Notifiable Organisms) or unwanted organisms, and an engaged and aware community (comprising industry staff, scientists, government staff, tangata whenua, and members of the public). This system encompasses all sectors and provides for broad geographic coverage and enables anyone in New Zealand to actively participate in the biosecurity surveillance system. All notifications made into this system are triaged by a call centre and allocated to specialist incursion investigators, or laboratory scientists, who follow these up with the aim of rapidly ascertaining or ruling out a potential biosecurity threat.

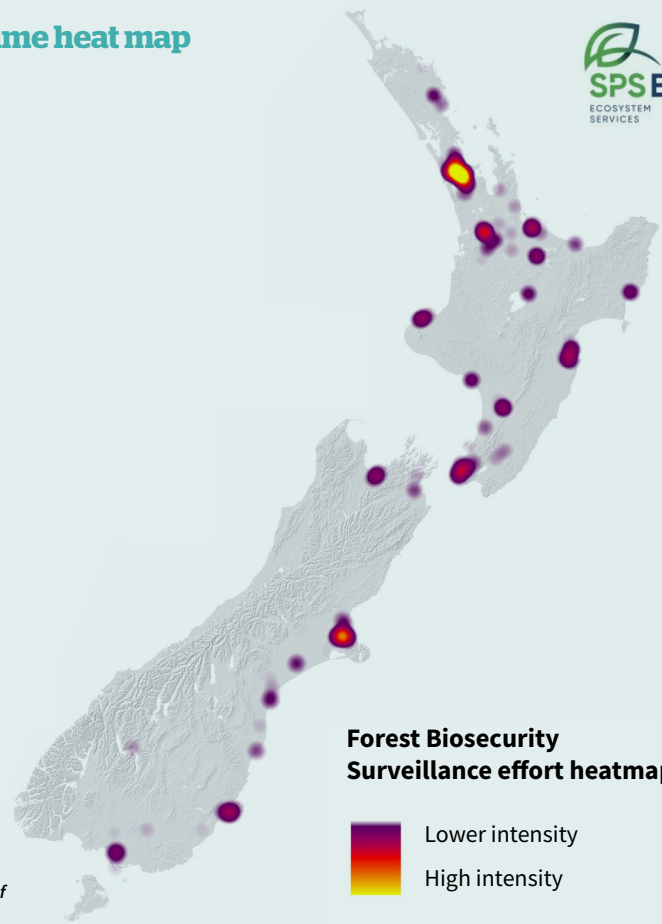
Forest Biosecurity Surveillance programme heat map



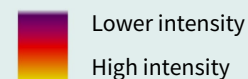
The forest sector remains the only primary industry sector that funds and delivers its own national biosecurity surveillance system



Surveillance effort is allocated to areas of highest biosecurity risk - areas where pests are most likely to arrive and establish first



Forest Biosecurity Surveillance effort heatmap



Heat map showing national Forest Biosecurity Surveillance intensity at high biosecurity risk areas across NZ (intensity in this figure relates to the number of surveys in a geographical area) – Map courtesy of Brent Rogan SPS Biota

Plant Pass - A Nursery Biosecurity Certification Scheme

RESEARCH AND DEVELOPMENT



The FOA has been working with Biosecurity NZ, New Zealand Plant Producers Incorporated (NZPPI), horticulture, viticulture, the Department of Conservation, and regional councils to develop Plant Pass (previously called the Plant Production Biosecurity Scheme).

The scheme emerged because of the Myrtle rust incursion in NZ. During this incursion it was found that nurseries were

a haven for Myrtle rust's establishment and subsequent spread. Nurseries handle and observe plants often, which makes them an ideal surveillance and monitoring point.

Plant Pass is a voluntary certification scheme that recognises plant producers with good biosecurity standards. The scheme is designed to protect producers and plant buyers in both domestic and export markets, and will help lessen the likelihood of a high-risk organism

establishing in a nursery and being inadvertently spread by the domestic plant trade.

There is still some work to do before the scheme can be effectively applied to forest nurseries, but until then, the forest sector will benefit from the improved biosecurity practices that are happening in other nursery sectors participating in the scheme.

See www.plantpass.org.nz/ for full details.

New diagnostic tool for red needle cast

RESEARCH AND DEVELOPMENT

A new diagnostic tool for red needle cast has been developed by Dr Rebecca McDougal and colleagues at Scion.

The original tool was developed in 2012 and has been used widely in both forest health research and diagnostics for the forest industry. Since then, the diagnostic tool has been upgraded by Scion. The new tool is up and running and is ten times more sensitive in detecting *P. pluvialis*.

We are currently integrating it into our diagnostic systems.

A UK team are now using the new tool for detecting *P. pluvialis*, following an outbreak in forests over there. You can read the UK Government's advice notice here:

<https://www.gov.uk/guidance/phytophthora-pluvialis#:~:text=Phytophthora%20pluvialis%20was%20discovered%20in,the%20north%20west%20of%20Scotland>



Dr Rebecca McDougal at work in the Scion lab

Biosecurity in action: Tortoise beetle detected on eucalypts in Nelson

In June 2021, an SPS Biota surveillance specialist undertaking FGLT-funded NMA surveillance in Hira Forest, Nelson, detected an unusual looking beetle on some eucalypts.

Scion quickly identified this as a potential 'new to New Zealand' Tortoise beetle and notified Biosecurity NZ. Identification proved problematic given this complex of beetles has not been fully described in Australia. However, it was confirmed as new to New Zealand, and labelled as *Trachymela* sp., most likely from Western Australia.

The FOA and Biosecurity NZ jointly initiated a survey across Nelson aimed at quickly determining how widely established the beetle was and to inform whether any response action was feasible. The beetle was found to be well-established and spread over 20 km, including several locations within, and around, the Nelson city area.

The options of spraying and tree removal were considered unlikely to be feasible or cost effective, and the beetle had no track record as a significant pest. Therefore control and eradication options were ruled out, and the beetle's spread will be monitored via our surveillance programmes.

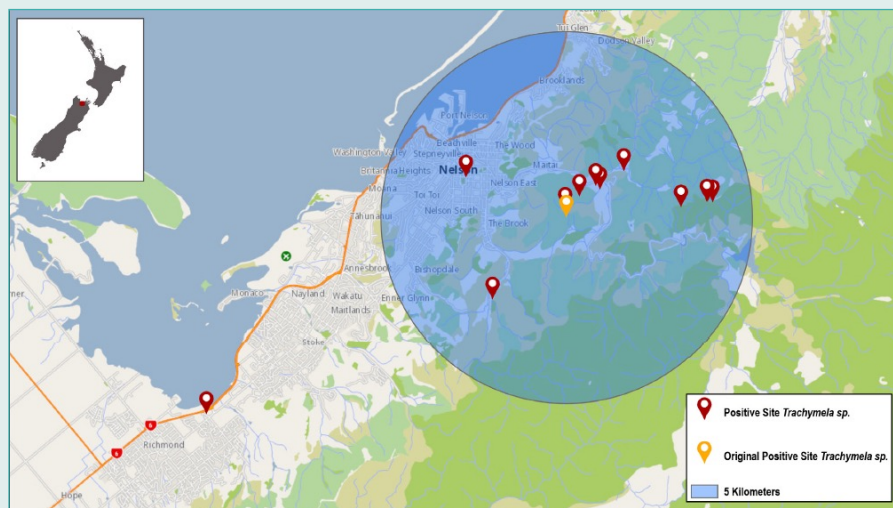
Despite this unfortunate incursion, the detection, subsequent investigation, and consideration of response options was a model example of how government and industry can work together to tackle new incursions. There was early engagement, active participation, information sharing and joined-up communication, cost-sharing and joint decision making.

This detection also highlighted the benefit of a broader surveillance system rather than relying on any one approach. The beetle was able to evade Biosecurity NZ's High Risk Site Surveillance (HRSS) programme and the FBS programme.



Trachymela sp (RHS), *T. sloanei* (LHS) is already present in NZ (Image courtesy of Biosecurity NZ Plant Health and Environment Laboratory).

Fortunately, it was picked up by the NMA programme which applies a slightly different approach to allocation of surveillance effort. There are significant challenges in detecting what are effectively rare species in newly invaded environments; in this instance the overall Forest Biosecurity Surveillance System did what it is designed to do.



Trachymela sp. - Nelson 2021 delimiting survey

Date: 9/10/2021
Produced by: Spatial Intelligence
Reference: 210228
Coordinate System: NZGD 2000 New Zealand Transverse Mercator

0 1.25 2.5 km
1:87,500
Data Attribution: This map uses data sourced from LINZ under CC-BY

New to NZ ladybird found on Scots pine in Christchurch

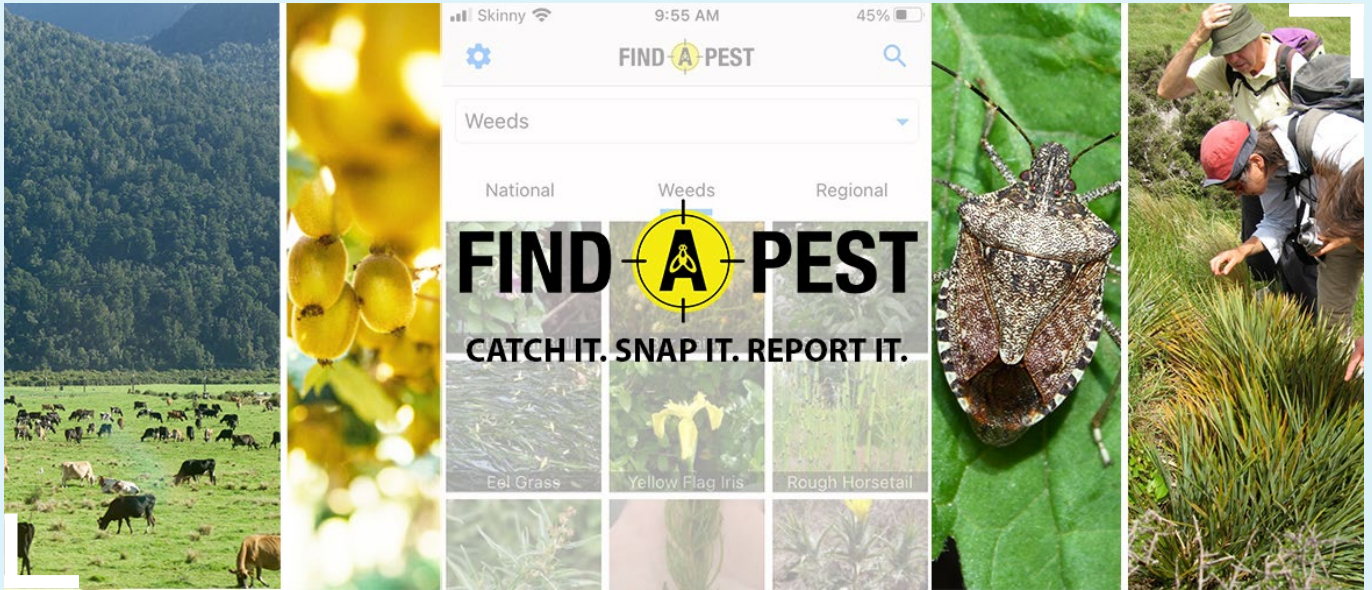
In mid-2021 MPI received a report to the 0800 Pest and Disease hotline (0800 80 99 66) of a potential new to New Zealand organism on a Scots pine. The person who reported it was concerned that it might be the giant pine scale (present in Australia). Biosecurity NZ found it to be a new to NZ ladybird, *Scymnus suturalis*. This ladybird has a wide distribution from Europe/North Africa to Siberia and is also present in North and South America. In Europe it is mostly reported from *Pinus* species, primarily *P. sylvestris*. It predares on aphids and other small invertebrates and could therefore have a beneficial impact in NZ by predares on needle feeding aphids and other pests.



Scymnus suturalis adult (Image courtesy of Biosecurity NZ Plant Health and Environment Laboratory)

The Find-A Pest App

CONTRIBUTOR: ABIGAIL EVANS



Early detection of pest incursions is to everyone's advantage.

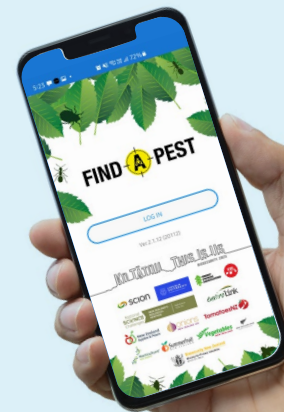
The Find-A-Pest app is a great tool enabling instant reporting and rapid assessment of a potential pest spotted *in situ* in a range of habitats and crop types, be it an insect, weed or plant disease.

The app is free to download on Android and Apple. The app uses iNaturalist's powerful machine-learning technology and citizen science community to help you identify what you saw. Within the app you can set your region and sectors of interest and there are factsheets of all the top pests in your region.

When you see a potential pest, it's easy to record your observation within the app.

If you see something that you think might be a pest, send in a photo and this will be sent to Find-A-Pest experts who will assess if it is a serious new to New Zealand biosecurity threat or not. If so, it will be forwarded to Biosecurity NZ for follow-up, if not, or if it is unknown, then it will be forwarded to iNaturalist NZ for further identification.

For further information simply download the app and have a play, or check out <http://findapest.nz>



FOA Forest Biosecurity Committee

The FOA Forest Biosecurity Committee is made up of representatives from FOA, forest companies, the NZ Farm Forestry Association, MPI, Scion and TUR.

The Committee aims to provide the forest industry with strategic leadership and oversight for all aspects of forest biosecurity.

We also want to foster cohesion across industry, government, and the science community to improve forest biosecurity outcomes. The Committee's vision is a resilient and thriving forest industry protected from biosecurity threats.

We will introduce readers to our committee members in future editions of this newsletter, and update you on major issues or significant outputs from us.

Other news /resources

Surveillance Magazine, Biosecurity NZ

Biosecurity NZ has released its latest issue of the Surveillance Magazine. This publication is MPI's authoritative source of information on biosecurity surveillance activity from both local and international environments. [Read the newsletter](#)

Border Space

The Border Space newsletter is a regular update about what Biosecurity NZ is doing to keep New Zealand's borders secure from pests and diseases. [Read the newsletter](#)