NETS2025

23-25 July, Palmerston North

New Zealand Biosecurity Institute

Haumaru koiora kia pai āmua

Biosecurity for a better future






CONFERENCE HANDBOOK

Major Sponsors

Greater Wellington
Te Pane Matua Taiao

horizons
REGIONAL COUNCIL

Earth Sciences New Zealand

Biosecurity New Zealand
Ministry for Primary Industries
Manatū Ahu Matua

Boffa Miskell

Trade Displays

Unitec
Te Whare Wānanga o Wairaka

Key Industries
Protecting people, crops and native species

NZ AutoTraps

Wildlands
Ecology and Restoration

Rural Assist

Sabbath Training

Haumaru koiora kia pai āmua - Biosecurity for a Better Future

Haere mai welcome to NETS2025!

It is my pleasure to welcome you to the 74th NZBI National Education and Training Seminar (NETS) held in Palmerston North Te Papaioea. This three-day conference provides a multi-sector and multi-agency forum for discussion and debate on how we can collectively work to protect our native flora and fauna, landscapes, people and culture. NETS provides a fantastic opportunity to share, learn, connect, and get energised.

The theme for this year's NETS is 'Haumaru koiora kia pai āmua - Biosecurity for a Better Future'. This theme recognises the reason why we do biosecurity work, as well as the opportunities to learn from each other to improve and achieve better outcomes.

NETS would not be possible without a dedicated and committed Organising Committee, and this year it was a 'lean team' of five. I would like to thank the NETS2025 Organising Committee for all their hard work pulling this conference together: Craig Davey, Jack Keast, Michael Beech, Daniel Hurley, and Mark McAlpine. I'd also like to thank the many others who have helped make NETS2025 happen, from organising the field trips to offering to give a presentation.

A big thank you as well to this year's sponsors for their generous support: Biosecurity New Zealand, Horizons Regional Council, Greater Wellington Regional Council, Boffa Miskell, NIWA-Earth Sciences New Zealand, Key Industries, Rural Assist, NZ AutoTraps, Unitech and Wildland Consultants.

NETS is as much about learning as it is about networking, and I encourage you all to take advantage of this! Even if you've been to many NETS before, make sure you talk to someone new and learn about the work they do.

Rowan Sprague
NZBI President

Day 1 Wednesday 23 July

8.00 Registration opens

Delegates gather in foyer for welcome into the conference room

9.00 Mihi whakatau and NZBI Welcome

9.40 Welcome to Horizons - overview from Michael McCartney, CEO & Craig Davey, Biodiversity & Biosecurity Partnerships Manager, Horizon's Regional Council

10.10 3-Minute GEMS

10.40 Morning Tea

11.10 Persistence, Accuracy and Timeliness: Managing Non-native plants on South Georgia Island - *M. Lavery, Kaitiaki o te Ngahere*

11.30 On the Front Lines: Biosecurity in the Waiouru Military Training Area - *A. Beath, New Zealand Defence Force*

11.50 Eradication and the invasion curve: from theory to practice - *K. Bodmin, Waikato Regional Council*

12.10 Shifting the needle: moving towards data mobilisation and digital enablement in pest management - *M. Beradozzi, MPI*

12.30 Lunch

	MARINE & AQUATIC	VERTEBRATES	WEEDS
1.30	Tracking changes in invasive gold clam populations within two Waikato hydro lakes *M. Melchior, NIWA*	National Wallaby Eradication Programme five years on *J. Neave, Ministry for Primary Industries*	Prioritizing Thousands of Potential Weeds for Regional Pest Management Plans *C. Buddenhagen, AgResearch Ltd*
1.50	Could the invasive gold clam affect native submerged macrophyte communities? *B. Woodward, NIWA*	Bunny Busting : The Journey to Zero Density *K. Griffiths, The Conservation Company*	Do alligator weed genetics influence weed control outcomes? *D. Hofstra, NIWA*
2.10	Managing Aquatic Weeds: The Past, Present, and Future of Benthic Barriers. *J. Lethbridge, Boffa*	Cape Sanctuary: The Largest Mainland Rabbit Eradication Project in the Southern Hemisphere *K.Christie, Rentokil*	Effective landscape-scale weed management in NZ's braided rivers through partnerships *M. Girvan, Boffa Miskell*
2.30	Freshwater surveillance for high-risk pest species that are not naturalised in NZ. *H, Kinraid & R. Hooks, MPI Biosecurity NZ*	Managing Introduced Wild Deer *C. Wootton, Department of Conservation*	Prioritisation in practice: What it takes to manage invasive plants effectively at a regional scale *R. Johnson, Horizons Regional Council*
2.50	Modelling transport of invasive organisms in lakes *D. Plew, NIWA*	Wainuiomata-Orongorongo Forest Restoration Project - Zero density ungulates *C. Cosslet, Greater Wellington Regional Council*	Plant Pass Group Schemes for Community Nurseries *D. Hancock, Far Sky Consulting*

3.10 Afternoon tea

	PREDATORS	WEED SPECIES	TECHNOLOGY 1
3.40	Exploring Maori perspectives on feral cat management *H. Nathan, Boffa Miskell*	Sea spurge dispersal modelling and population analysis for surveillance prioritisation *B. Faircloth. Biosecurity New Zealand - MPI*	Enhancing pest animal control through data integration and visualisation *D. Fogell, Greater Wellington Regional Council*
4.00	Feral cats: the enigma of the pest world. *S. Reynolds, Boffa Miskell*	Skunkvine: A culinary delight that crept in *T. Greenwood, Ministry for Primary Industries*	Field testing NIWA's automated detection system for submerged invasive weeds *D. Clements, NIWA*
4.20	Predator Free 2050 - Streamlining the Regulatory Landscape for Predator Elimination *H. Palmer, Place Group Ltd*	The identification and spread of the invasive Himalayan wineberry in Albany, Auckland. *A.Gwynne, Unitec*	Beyond water: complementary eDNA substrates for more holistic environmental biomionitoring *A. McGaughran, University of Waikato*
4.40	Predator Free 2050 - Only 25 years to go! So what's happening? *M. Brignall-Theyer, Predator Free 2050*	Tenacious new invader: polypodium fern arrives and thrives on the North Island *C. French, Greater Wellington Regional Council*	Biocontrol in the Coastal Domain: Citizen Science Perspectives *A. Littek*

5.00 New Zealand Biosecurity Institute Annual General Meeting

6.00 Mix 'n' Mingle

Day 2 Thursday 24 July

FIELDTRIP BACKGROUNDERS

8.30 Bushy Park Tarapuruhi
Z. Stone, Horizons Regional Council

8.50 Manawatu Estuary
A. Wightman, Horizons Regional Council

9.10 Pukaha Mt Bruce
R. Fleeson, Horizons Regional Council

9.30 Tōtara Reserve
R. Palmer, Horizons Regional Council & Michael Lavery

9.50 Morning Tea

FIELDTRIP BUSES LEAVE VENUE AT 10.30am

Bushy Park Tarapuruhi

Bushy Park Tarapuruhi, despite its small size at 89 ha, is a predator free sanctuary in the Whanganui district. Installation of a 4.8km predator proof fence, and eradication of mammalian pests in 2005 – except mice – has allowed for impressive recovery of the podocarp-broadleaf forest and reintroduction of a range of species. Bushy Park Tarapuruhi is very accessible, consisting of multiple short public tracks that are flat and do not require a high level of fitness. The field trip will offer the opportunity to explore the public tracks in your own time or provide you with the opportunity to see some of the non-public areas through participating with the bi-weekly volunteer programme.

Manawatū Estuary

Nau mai haere mai ki tātahi!
We will be taking you to the Foxton/Awahou area. The coastline here receives the wild west wind which has created a unique parabolic dune system concealing ephemeral wetlands. In recent years the dunes have also become home to sea spurge, a desert plant which has come here from overseas.
We will be centred on the estuary area of the Manawatū River (Papangaio). The estuary itself is of huge cultural significance and is an internationally known Ramsar site. Near this is an area which has become known as the Dune garden. Protecting the native species within this area are a devoted community of local experts.
Our trip to the Estuary is a show case of many groups, individuals and agencies working together to enhance biodiversity and promote biosecurity.

Pūkaha Mt Bruce

See conservation in action at Pūkaha National Wildlife Centre on the border between Wairarapa and Tararua Districts.
The Mount Bruce reserve is a restored forest and captive breeding site, home to endangered wildlife such as brown kiwi, pāteke (brown duck), whio (blue duck), takahē, kōkako, kākā, orange-fronted parakeet, tuturuatu (shore plover), and tuna (longfin eels).
The field trip will include

- A talk about the captive breeding program at the kiwi house
- Pūkayaikaha overview and rabbit control program presentation
- Tuna feed and talk
- Self-guided walk around the reserve and aviaries
- Kaka feed and talk

Tōtara Reserve

Tōtara Reserve, the only regional park in the Horizons region, is a vital ecological, cultural and recreational treasure. Situated in the Pohangina Valley, it provides a rare opportunity to experience one of the best and most accessible examples of the diverse lowland forest that was once widespread in the Horizons Region. This field trip gives you the chance to discover the reserve's rich biodiversity and understand the crucial conservation work being undertaken to safeguard it.
Through guided activities, you will hear from team members about pest plant and animal control, biodiversity monitoring, and the complexities of managing both the natural environment and visitor facilities, including the campground, to ensure the long-term sustainability of the park.
This field trip has a choice of two separate activities:

- Guided Fern Walk Trek – Join Kaitiaki o Ngahere on a guided walk along the Fern Walk track, an immersive trip through mature native podocarp forest. This walk highlights the diverse plant species found in the reserve and the ongoing efforts to manage invasive pest plants. The trek will take 2.5-3.5hrs, allowing time for discussion and exploration.
- Horizons Work at Tōtara Reserve –Take part in a series of three one-hour sessions led by Horizons Regional Council staff. These interactive sessions cover key efforts within the reserve, including:
  - Trapping Networks – Learn about pest control strategies targeting rats, mustelids, and possums.
  - Campground and Flood Resilience – Explore the management of visitor facilities and strategies to protect the reserve from flooding.
  - Deer and Pest Plant Control – Gain insight into efforts to monitor and manage deer populations and invasive plant species.

6.00 Happy Hour

7.00 Conference Dinner

Day 3 Friday 25 July

	TECHNOLOGY 2	GENERAL	PROJECTS
8.30	4G trail camera and Thermal Drone Integration into Urban Ungulate Control *R. Harland, Greater Wellington Regional Council*	Two sides of the same coin - activating community and council to bust weeds *C. Tregurtha-Nairn, Horizons Regional Council & N.Charman, EcoNet*	The long and wilding road (trip) to a better future *S. Smith, Biosecurity New Zealand (MPI)*
8.50	Remote sensing for invasive weed management *P. Peterson, Manaaki Whenua Landcare Research*	Poipoia te Kākano an Iwi and hapū-led project to preserve the Kaipara *C. Krull, Auckland Council*	Challenges and insights from alligator weed control - Te Awa Kairangi/Hutt River's flood resilience project. *J. Mitford-Taylor, GWRC*
9.10	Aerial Mapping (Uav) Technology and Survey Methods for Supporting Biosecurity Programmes *H. Geddes, Auckland Council*	Mahi Tahi: Working together for kauri ora in Te Ngāherehere o Kohukohunui / Hūnua *S. Killick, Auckland Council*	Phragmites karka: a familiar, sad New Zealand story *B. Nicholls, Awahuri Forest Kitchener Park Trust*
9.30	Eyes in the Sky: Advancing Biosecurity with Drone Technology for a Better Future *K. Adam, Provision Ltd*	On-farm Biosecurity - It's Never Too Late To Integrate *P. Russell, Better Biosecurity Solutions Ltd*	Managing Calafate (Berberis microphylla) in the Falkland Islands: *M. Lavery, Kaitiaki o te Ngahere*
9.50	Virtual Reality technology in environmental education: A case study *A. Lendrum, Waikato Regional Council*	Border Biosecurity - a DOC perspective *G. McCarthy, DOC*	Ruahine Old Mans Beard Joint Project *J. Keast, Horizons Regional Council*

10.10 Morning tea

WRAP UP

10.40 From Policy to Action: Embedding Pathway Management in Biosecurity Strategy - *I.Gunn, BioLink Consulting*

11.00 Biosecurity delivered by the community in the community - *A.Thomas, Waikato Regional Council*

11.20 Biosecurity Taranaki: a regional biosecurity collaboration celebrating a successful first year - *W. Harvey & Abby Lagula, Biosecurity Taranaki*

11.40 Biosecurity Systems Action Plan - *A. Pascoe, MPI*

12.00 Ngā Whenua Rāhui and the importance of indigenous biodiversity and formal protection across Aotearoa - *M. Mullins, Ngā Whenua Rāhui*

12.20 Chasing dreams in biosecurity - *D. Cade, Check, Clean and Dry Advocate*

12.40 Closing

1.00 Lunch

WEDNESDAY 23 JULY 2025

PLENARY

Persistence, Accuracy and Timeliness: Managing Non-native plants on South Georgia Island

Michael Lavery, Indigena Biosecurity International, Kaitiaki o te Ngahere

*Michael is the Operations Manager at Kaitiaki o te Ngahere's Wellington branch with six years of experience working with pest plant control and revegetation services in the lower North Island. Michael is also a Project Leader for Indigena Biosecurity - Kaitiaki's international subsidiary. He has led the implementation of the calafate (*Berberis microphylla*) control programme in the Falkland Islands since 2019, with the project now being extended to include other high priority species. Michael has also spent two field seasons on South Georgia Island conducting non-native flora control and native species distribution recording and actively identifies iNaturalist observations for the island.*

South Georgia, part of the UK Overseas Territory of South Georgia & the South Sandwich Islands, lies approximately 1,450 km southeast of the Falkland Islands. The island's mountainous and glaciated landscape is largely inhospitable, with only the coastal fringes—approximately 8% of the landmass—becoming snow-free in summer, allowing vegetation to thrive. There are 25 vascular plant species native to South Georgia, while 85 non-native plant species have been recorded. Following the eradication of invasive grazing mammals, non-native plants—many introduced during historical whaling and sealing operations—have proliferated, threatening native biodiversity.

A non-native plant management strategy was developed as part of an ecosystem-based habitat restoration effort, complementing the successful rat and reindeer eradications. Non-native plants are categorised based on species, coverage area, and age class. These indicators, combined with control data, guide long-term management and assess control effectiveness. To date, 40 species are presumed extinct, three are widespread and naturalised, and four are common locally. Thirty-five species (Class One) are managed on a zero-population density basis (i.e., plants are controlled before they set seed), while four species (Class Two) are managed on a site-led basis. Two species remain under study for classification.

By integrating targeted control techniques, spatial data, and a structured restoration framework, the South Georgia program serves as a replicable model for invasive species management on protected islands.

On the Front Lines: Biosecurity in the Waiouru Military Training Area

Alison Beath, Land Management Officer, NZ Defence Force

Alison is a Land management Officer with the New Zealand Defence Force. Her role involves managing the biodiversity and pest control programmes in the large military training areas in the Central North Island. Her background is in threatened species management and pest control, before joining the Defence Force four years ago, she was with the Department of Conservation for 16 years in the Tongariro District.

The NZ Defence Force (NZDF) is generally not equated with biosecurity and biodiversity management. However, as occupiers of more than 81,000 ha of Crown Land, the NZDF is one of the largest land managers in Aotearoa. The biggest of the NZDF training areas is the Waiouru Military Training area (63,000ha), located in the sub-alpine landscape of the central North Island.
Military training requires large and varied areas to conduct exercises in. Equally as important is having a wide representation of the types of environments that soldiers may potentially be deployed to. The Waiouru Military Training Area has forests, wetlands, tussockland, shrublands, waterways… and even a desert.

Land and vegetation are crucial assets to the military and protecting those from damaging plant and animal pest invaders is a major part of NZDF's land management programme. NZDF also has a strong commitment to being a good steward of the land it is entrusted to manage.
Pest species can have a very real impact on military outputs. For example, wilding conifer control work in the Waiouru Military Training Area started in the 1950s when the trees became so dense that they damaged vehicles and inhibited tank manoeuvre training.

A wide variety of animal and plant pests continue to invade and persist in the unique environment of the Waiouru Military Training area. In response, NZDF carries out a large biosecurity programme to defend the values it holds for the land it manages.

Eradication and the invasion curve: from theory to practice

Kerry Bodmin, Waikato Regional Council

Kerry is a Senior Biosecurity Officer at Waikato Regional Council, based in Kirikiriroa/Hamilton. Her new role includes a focus on species eradication, surveillance for pest plants and compliance with the Environmental Protection Agency permission for aquatic herbicide use. Kerry has over 25 years' experience in biosecurity ranging from wetland willow control to leading the MPI didymo incursion response. She has worked in local and central government, NIWA and most recently at DOC where she led their freshwater biosecurity programme for the North Island.

The invasion curve is a classic visual tool used to graph the progress of a pest species from establishment to full niche occupancy and the costs of this in both time and money. The most cost effective pest management options are available when pests are absent, just establishing or in low numbers. It is essential to understand what pest you have (identification), if you can detect it (surveillance), where it occurs (delimitation), methods and tools to remove it (control) and how to measure success (monitoring). But what does this theory look like in practice? Building on the eradication workshop held in 2024, selected case studies will be used to illustrate the process of eradication, the successes, the challenges and the team work behind it all. A consistent, constant effort on eradication species ensures success, provides learnings along the way and eventually enables resources to be redeployed, building a better future for people and the environment we share with our unique plants and animals.

Shifting the needle - moving towards data mobilisation and digital enablement in pest management

Michael Berardozzi, Ministry for Primary Industries

Michael is a principal advisor working in the system and regulation group in the pest management directorate at Biosecurity New Zealand. Michael is working on various improvement initiatives for the pest management system, focusing on more efficient use of information/data and better coordination for chemical control tools. Prior to joining MPI in 2022, Michael worked for the Environmental Protection Authority (EPA) for 5 years overseeing the provision of human health and ecotoxicological risk assessment for hazardous substances evaluations.

A digitally-enabled biosecurity system is fundamental to delivering effective collective evidence-based decision making and management actions. This need is particularly evident for the management of the multitude of pests already established in New Zealand.

This was brought up as a key issue by the PCE November 2021 in their report on environmental weeds with one of the recommendation made being that MPI and DOC work with MBIE, regional councils and relevant Crown Research Institutes to develop, administer and maintain a single authoritative and publicly accessible database of all exotic plants in New Zealand.

As a way to make progress on this issue on all types of pests, MPI has collaborated with our system partners and developed a business intelligence tool that will allow visualisation of existing information related to established pests in New Zealand from currently publicly available sources. The tool will, for instance, facilitate the comparison of current spatial distribution of established pests with their management under Regional Pest Management Plans.

In addition to providing for the first time a one-stop shop to link existing information on all types of established pests, the portal will support data mobilisation and integration for pest management, across both the Biosecurity and Biodiversity sectors. This includes making use of the Global Biodiversity Information Facility (GBIF) as a tool to mobilise pest management information.

We will present the background that led to the development of this new tool, provide a demonstration and explore ways this can support better data mobilisation and further pest management system improvement initiatives (such as alert tools, system performance measurement)

MARINE & AQUATIC

Tracking changes in invasive gold clam (*Corbicula fluminea*) populations within two Waikato hydro lakes

Michele Melchior, NIWA

Co-author: Deborah Hofstra, NIWA

Dr. Michele Melchior is a freshwater ecologist specialising in native and invasive freshwater bivalve species. She holds a PhD in the ecology and reproduction of NZ freshwater mussel species (kaakahi). In her current role at NIWA, she leads and supports multiple research and commercial projects across a range of areas including freshwater mussel ecology, biosecurity (particularly gold clam response and control), fish ecology, fish passage, and eDNA in freshwater systems. She has collaborated with government agencies, regional councils, and community groups to develop monitoring programs and inform conservation and biosecurity initiatives.

The invasive bivalve, *Corbicula fluminea*, has rapidly expanded its global distribution, altering freshwater systems through dense population formation, modifying sediment composition, and competing with native freshwater species for space and resources. In May 2023, *C. fluminea* was first detected in the Waikato River, with established populations in two hydro lakes, Lake Maraetai and Lake Karaapiro. A baseline survey conducted in May 2024, assessed *C. fluminea* densities, population structure, and co-occurrence with native *Echyridella menziesii* (kaakahi) across five sites. *C. fluminea* was found across a range of depths (1- 15 m) and substrates, including areas beneath dense invasive macrophyte beds. Densities generally increased with water depth, peaking at 12 m. Waipuke Park, Lake Karaapiro (1556 clams/m^2), and Lake Maraetai Boat Ramp (1294 clams/m^2) contained the highest densities, with length-frequency distributions suggesting well-established populations at most sites. The most upstream location exhibited the lowest densities and a narrower population structure, indicating a more recent invasion. As *C. fluminea* continues to establish, understanding its population trends over time is critical. A follow-up survey will help determine whether *C. fluminea* populations are expanding, stabilising, or declining and will provide deeper insights into their interaction with kaakahi. Results will be crucial for informing management strategies aimed at mitigating the impacts of this invasive species in Aotearoa-New Zealand freshwater ecosystems.

Could the invasive gold clam affect native submerged macrophyte communities?

Ben Woodward, NIWA

Co-authors: Yu Cau - Wuhan Botanical Garden, The Chinese Academy of Sciences, & Deborah Hofstra - NIWA

Ben is a biogeochemist who has worked in Australia, Germany and New Zealand. His research focusses land and water interaction, lake rehabilitation, greenhouse gas emissions, stream metabolism and the retention of phosphorus in wetland and lake sediments. Ben is also the group manager of the aquatic pollution group in NIWA Hamilton.

The invasive gold clam (*Corbicula fluminea*) can reach extremely high population densities, sufficient to damage freshwater ecosystems. One mechanism through which they impact aquatic ecosystems is their high rate of NH4-N excretion. Once excreted, a proportion of the NH4 is converted into NH3 which can be toxic to invertebrates, fish and submerged macrophytes. The balance between the NH4 and NH3 (together referred to as ammoniacal-N) in aquatic systems is pH dependent, with more NH3 produced as pH increases. To assess this potential impact of the clams on native submerged macrophytes, we exposed two species (*Potamogeton ochreatus* and *Myriophyllum triphyllum*) to 6 different concentrations of ammoniacal-N. Both species were kept in a constant temperature room (20Â°C) with16 hours of light and 8 hours of dark and, with photosynthetically active radiation of either 80 or 500 Î¼mol/mÂ²/s. Macrophyte shoots were exposed to ammoniacal-N for 3 days in dosed water, and whole plants were grown in 2 litre jars and exposed to ammoniacal-N for 21 days. NH4-N was dosed to achieve concentrations of 1, 2, 5, 10 and 20 mg/l and had a control with no added NH4-N. During the 21 day incubation target concentrations were kept relatively constant by exchanging the water every 3 days, and re-dosing with an appropriate amount of NH4-N. During the short-term (3 day) assay we used Pulse-Amplitude-Modulation (PAM) fluorometry to measure photosynthetic yield and potential efficiency. During the longer-term assay, we assessed photosynthetic yield and potential efficiency using PAM, root oxygen release and at the end of the incubation period, plant biomass. Preliminary results suggest that *Potamogeton ochreatus* is more sensitive to ammoniacal-N than *Myriophyllum triphyllum*, with greater declines in potential photosynthetic efficiency and yield.

Managing Aquatic Weeds: The Past, Present, and Future of Benthic Barriers.

Jourdan Lethbridge, Boffa Miskell

Jourdan is a biosecurity project manager at Boffa Miskell, an environmental consultancy based in Christchurch. With 11 years of experience controlling weeds and managing control operations in riverbeds and lakes across New Zealand, Jourdan currently manages the delivery of aquatic weed control operations in eight lakes and waterways nationally.

Through recent innovation, benthic barriers have become a cornerstone tool in the fight against Lagarosiphon, a major in Aotearoa's southern lakes. These barriers, typically made from the natural fibre, jute, are laid over weed beds and secured to the lakebed by divers, where they block sunlight and halt photosynthesis, effectively smothering the invasive plants. The reliability of this method has allowed us to rapidly accelerate lagarosiphon control across multiple waterbodies, at times replacing traditional methods such as suction dredging and herbicide control.

Since jute hessian was first trialled in Lake Wānaka in 2015, operational trials and large-scale installation of this product have necessitated the continuous improvement and redesign of the hessian and the installation techniques. With the mind-set of seeking ways to reduce costs and optimise operational efficiency, we now have a fit-for-purpose product that can be installed in large volumes to expedite effective aquatic weed management that programmes across the country can benefit from.

Our innovation in benthic barrier technology continues with the trialling of a wool-hessian blend sourced from 100% New Zealand wool. This alternative product has been trialled in both Lake Wānaka and Kawarau River, alongside traditional jute hessian, to compare performance, and the results may surprise you. In this presentation, we will discuss how benthic barriers have revolutionised lagarosiphon control, how we have refined its use over the past decade, and what the future may hold for this control method.

Freshwater surveillance for high-risk pest species not naturalised in NZ

Hayden Kinraid & Rachel Hooks, MPI

Hayden works for MPI in the Diagnostic, Readiness and Surveillance Directorate. A key component of his work at MPI has been to lead the development of a national surveillance programme for new to NZ pest species.

Rachel is an Aquatic Incursion Investigator in the Aquatic Health Team at Biosecurity New Zealand with two and a half years' experience in the role. Having previously worked on biosecurity policy as well as fisheries stock assessments within MPI and having studied marine biology at Te Herenga Waka, Victoria University of Wellington, Rachel brings a well-rounded understanding of marine ecosystems and aquatic biosecurity and a passion for protecting our moana.

Over the past year great progress has been made in the development of a freshwater surveillance programme of work and as a leader for this programme of work, I am continuing to drive this mahi forward. Of particular relevance, a key project within wider programme of work this year will be to enhance the general surveillance of new to NZ freshwater species through the production of a pest ID guide (Essentially a freshwater version of the marine pest ID guide). The biosecurity expertise represented at the NETS conference will be a key target audience for the guide, as they carry out biosecurity fieldwork in places in which an incursion could occur. The guide would ultimately be a tool for increasing the awareness of high-risk pest 'watchlist' species, what to look out for, and therefore improving the probability of early detection.

A biosecurity project that seeks to reduce the likelihood of high-risk freshwater pests establishing in the country certainty fits the conference brief of ‘Haumara koiora kai pai amua – Biosecurity for a Better Future’

Modelling transport of invasive organisms in lakes

David Plew, NIWA

Co-author: Aidin Jabbari, NIWA Christchurch

David is a Hydrodynamics Scientist based in NIWA's Christchurch office for the past 20 years. He has worked on a wide range of observational and modelling studies in lakes, estuaries and coastal waters, with a particular interest in how biological and physical processes interact.

Invasive organisms in lakes can be spread passively by water currents, actively by swimming, or be transported via other vectors such as boats or wildlife. Knowing where invasive aquatic organisms may spread to, where they have come from, and how they may spread, can help control outbreaks. In this project we explore the use of hydrodynamic lake models and particle tracking as a tool for predicting how invasive organisms may be spread by natural water movement. This helps to identify where invasive organisms introduced into a lake are likely to move to, or where they may have spread from within a water body. Where modelling shows no probable hydrodynamic connection between infected sites, management is likely better targeted on managing other transport vectors such as boats. Using Lake Ōkataina as a test case, we investigate the practicalities of using hydrodynamic models as an information source for managing invasive organisms in lakes, and how rapidly such models can be developed and deployed.

VERTEBRATES

National Wallaby Eradication Programme: Five years on

Jacqueline Neave, Ministry for Primary Industries

Jacqueline works for the Ministry for Primary Industries as the Team Manager Pest Management Animals which managers the Tipu Mātoro National Wallaby Eradication Programme. Jacqueline has over 20 years' experience in various Biosecurity-related roles across New Zealand.

Tipu Mātoro National Wallaby Eradication Programme has now been working in partnership with central and local government, iwi, Federated Farmers, Forest and Bird, landowners, and communities for five years. The programme's goal is to eradicate wallabies from Aotearoa New Zealand, with the vision of a wallaby-free Aotearoa.

Wallabies are a difficult pest to control as they are highly mobile, nocturnal and only a limited number of surveillance and control methods are available. Despite these challenges the programme is progressing towards eradication.
Research projects have been critical for the programme, resulting in improved control on the ground and significant reductions in overall wallaby populations, with low reinfestation rates, particularly within the Canterbury area.

There has been a strong focus on partner engagement and wider communication which has increased social licence, resulting in more support from landowners and improved awareness and engagement by the public. Landscape scale wallaby control also involves and empowers local iwi.

Here we present an overview of what we have achieved in the programme over the last five years and the ongoing work to eradicate wallabies from Aotearoa New Zealand.

Bunny Busting : The journey to zero density

Kay Griffiths, The Conservation Company

Affiliations: Gwavas-Puahanui Charitable Trust, Hawke's Bay Regional Council,

Kay has over 30 years' experience in restoration ecology, with Puahanui Bush at the heart of much of the restoration efforts.

In 2023 Puahanui Bush was fenced to exclude all browsers, including rabbits. The damage that rabbits were doing to the forest floor was immense, and the regeneration that is already happening is impressive. However, it hasn't been an easy journey and the challenge to achieve zero density is ongoing!

Cape Sanctuary – The Largest Mainland Rabbit Eradication Project in the Southern Hemisphere

Kevin Christie, Rentokil Rural and Env Services

Kevin has held senior positions throughout the Vertebrate Pest Control Industry for over 40 Years. For over 22 years he owned and managed EcoFX, one of the largest pest control companies in New Zealand. In 2022 purchased the company, with Kevin taking on the role of National Manager. For the past 12 months he has held the roles of National Business Development Manager.

EcoFX (Now part of Rentokil) delivered a nationally significant rabbit eradication programme at the Cape Sanctuary Cape Kidnappers, Hawke's Bay – the largest mainland project of its kind in the Southern Hemisphere. Located within the 2,500-hectare Cape Sanctuary, enclosed by a 10 km predator-proof fence, this operation was launched in response to a rabbit population explosion. Despite years of sustained shooting and poisoning, densities remained at 7–8 on the Modified McLean Scale, reducing farm productivity to less than 20% of normal carrying capacity. Intense grazing also severely impacted native restoration plantings and protected wildlife.

Cape Sanctuary is home to one of New Zealand's most important reintroduction programmes, including Kiwi, Kākā, Kākāriki, Pāteke (Brown Teal), and petrels. The rabbit population posed a direct threat to the long-term success of these efforts. Following a successful 1080 operation in 2013 over 1500ha, reinvasion saw rabbit numbers rebound within a few years. In 2020, EcoFX was commissioned by the sanctuary's landowners and philanthropists to implement a full-area eradication in 2021.

This presentation outlines the operational complexity and biosecurity considerations of executing a high-risk programme within a landscape that includes a luxury lodge, international golf course, and public access zones. It highlights how technical innovation, stakeholder collaboration, and rigorous planning overcame significant logistical challenges to deliver what may be the most successful mainland rabbit eradication project to date, with measurable environmental recovery now underway.

Managing Introduced Wild Deer

Chris Wootton, Department of Conservation

Co-author: Mike Perry, manager Wild Animals, Department of Conservation

Deer, as one of several introduced browser species, significantly impact New Zealand's biodiversity. Their increasing spread and cross boundary impacts necessitate a coordinated response from land managers at national, regional, and local levels. These responses must address not only biodiversity concerns but also economic, social, and cultural values. Hunting is valued for food, business, and sport, making this a complex issue to navigate. The Department of Conservation (DOC) manages wild deer on public conservation land and, under the Wild Animal Control Act 1977, holds a leadership role across the sector. This presentation will cover the key drivers behind DOC's work, including the Aotearoa/New Zealand Biodiversity Strategy, and highlight emerging national collaborative opportunities. Additionally, it will present a local case study in Ruahine Forest Park, where adaptive management and community participation are central to improving deer management.

Wainuiomata-Ōrongorongo Forest Restoration Project: Zero density ungulates

Chris Cosslett, Greater Wellington Regional Council

Co-author: Glen Falconer, Greater Wellington Regional Council

Chris has been involved with the planning, management and practical delivery of ecological restoration, pest animal and pest plant control, and recreational open space, particularly in the Wellington Region for over 30 years. Chris also has skills in the gathering, processing and presentation of information in forms suitable for lay audiences and as policy advice for decision makers, and has been employed by Greater Wellington to plan a zero ungulate control programme.

The Pest Animals Team of Greater Wellington (GW) manages possums, rats, predators and ungulates in Wellington's urban water supply catchments. The Wainuiomata-Ōrongorongo catchment occupies 7,400 hectares in the headwaters of two adjacent rivers. It includes some of the North Island's best native rainforest. Management aims to protect drinking water quality and the forest's special values. Ungulates have been controlled in the catchments for decades, but forest health continues to suffer, particularly understorey diversity and regeneration. The area is surrounded by other forest land where ungulate control is limited, so immigration is constant. Sufficient resources have never before been available to attempt eradication. In the 2023-2034 Long-term Plan, the Council set aside funding for a ten-year elimination programme. GW will attempt to remove all feral deer, pigs and goats from the forest and keep them out. The project has two main components. The first will be a significant increase in hunting effort, including ground and helicopter hunting. The second component, currently a proposal, involves completing the catchment boundary fencing to prevent feral animals from returning and responding to incursions. An existing fence protects the western and northern boundaries. A new, low-impact ungulate fence would follow the eastern boundary - the Remutaka Range crest - before cutting back across the southern boundary, crossing the two valleys. The fence would need regular inspection and maintenance. Monitoring for and responding to incursions will be key to long-term success.

WEEDS

Prioritizing Thousands of Potential Weeds for Regional Pest Management Plans

Chris Buddenhagen, AgResearch Ltd[1]

Co-authors: Graeme Bourdot[2], Shona Lamoureaux[2], Alasdair Noble[2], Murray Dawson[3], Craig B. Phillips[2]
[1]AgResearch, Ruakura Research Centre, Hamilton, New Zealand
[2]AgResearch Ltd, Tuhiraki, Lincoln, New Zealand
[3]Manaaki Whenua Landcare Research, Lincoln, New Zealand

Born in Oregon and raised in Hawaii, Colorado and New Zealand, Chris went to Matamata College in the Waikato and worked in Tongariro, Wellington, Galapagos (Ecuador), Hawaii, Florida and Hamilton. He has a deep interest in human interactions with the natural world: seed systems, biosecurity issues, herbicide resistance, rapid weed risk assessment, network epidemiology, global change, invasive species impacts and management, phylogenetics and evolution.

Traditional weed assessments take much time,
Requiring answers where data are slim.
They focus on plant traits with little worth,
Which makes them costly, hard to scale on earth.
To counter this, we offer here a plan:
An algorithmic 'CPG' design,
For rapid, cost-effective ways to choose
The plants to add to Regional Pest Plans' use.

The model draws on data all can see:
It estimates three key variables - C,
For climate via CLIMEX' guided way;
P, for problem plant works large models weigh;
And G, for counts of global range it finds.
A weed's own past and climate both combined
Predict its likelihood to spread and grow,
While impact assessments need separate work-flow.

In Canterbury, we analysed the lot -
All twenty thousand plants exotic brought.
We found where hazard scores would shift by place
And tracked it through the future's time and space.
High-risk species aligned with what we knew,
While climate change for seventy years due
Would shift the rankings for the worst in store,
And guide us toward protection even more.

This method scales with ease, automated flow;
It cuts down cost and time assessments show.
A tool to rank the weeds by risk and need,
It aids the regions in their urgent deed.

Do alligator weed genetics influence weed control outcomes?

Deborah Hofstra, NIWA

Co-authors: Gray Turnage (Mississippi State University), Dean Williams (Texas Christian University), Sam Schmid (Mississippi State University), Daniel Clements (NIWA)

Dr Hofstra is a principal scientist at NIWA who leads the freshwater biosecurity programme.

Alligator weed, *Alternanthera philoxeroides*, was first recorded from the Northern Wairoa River in 1906. It reproduces readily via stem fragmentation or extension of prostrate stems. The floating fringe of marginal mats is also easily fragmented (eg by stock and people) and dispersed (eg with water flow and by people). At both aquatic and terrestrial sites, alligator weed has rapidly displaced a range of native and crop plant species, altering habitats and impeding water and land use. Alligator weed is now widespread and locally abundant in Northland and Auckland regions. Common on the lower Waikato River and scattered elsewhere in the Waikato and Bay of Plenty regions. In recent years there have been new incursions in other regions of the North Island.

The weed is difficult to control because each node can form a new plant, and fragments generated from mechanical clearance only encourage its spread. Cost effective large scale alligator weed control is reliant on herbicide application. But different weed control outcomes have been achieved in different countries. A recent genetic study examining alligator weed haplotypes including populations from the USA (seven haplotypes detected), Australia (two haplotypes) and New Zealand (three haplotypes), provides an explanation for these different outcomes. For example, the most common haplotype in the USA is not the same as the one found in New Zealand.

Effective landscape-scale weed management in New Zealand's braided rivers through partnerships

Marcus Girvan, Boffa Miskell

Marcus is a biosecurity project manager at Boffa Miskell and is involved in a range of landscape-scale biosecurity programmes. Marcus and his colleagues deliver multi-agency weed control programmes in the upper reaches of some of New Zealand's most iconic high country river catchments, working closely with a range of stakeholders, including agencies, landholders and contractors.

A partnership approach has proven to be a successful model for effective weed management in New Zealand. Investing funding into the highest priorities within a river catchment, despite the complexity of numerous land tenures and weed species, is proving to be more efficient and effective than traditional methods. Marcus Girvan, biosecurity project manager, will compare this with the usual 'siloed' funding allocation approach, and will discuss how an approach that spans across numerous land tenures can expedite progress and save money. Using the Upper Rakitata River catchment as an example, he will touch on decision-making at a landscape scale, how to collaborate effectively with a range of stakeholders, seeking consensus when there are competing priorities and how high-quality data and visualisation may be the key to trusted and functional partnerships.

Prioritisation in practice: What it takes to manage invasive plants effectively at a regional scale

Rory Johnson, Horizons Regional Council

Rory is a Pest Plant Biosecurity officer at Horizons Regional Council covering the Palmerston North, Lower Manawatū and Lower Rangitikei districts.

Effective management of invasive plant species at a regional scale is a complex balancing act - one that requires more than just good data or strong intent. It demands a shared framework that supports a regional council in making clear decisions, allocating resources strategically, and aligning weed management efforts across diverse landscapes, agencies, and community partners. In response to this need, we developed a multi-species prioritisation tool designed to support region-wide strategic invasive plant control in the Manawatū-Whanganui region.

The tool brings together ecological impacts, species characteristics, external influences, and local knowledge across 15 invasive plant species within various allocations of our RPMP. While its core function is to generate prioritised species lists its broader value lies in what it reveals about the ingredients of effective plant management at scale: shared values, species allocations, clarity of purpose, and adaptability to local conditions.

Ultimately, the tool is not a silver bullet - but it's a conversation-starter, a planning aid, and a step towards more transparent and strategic invasive plant management.

Plant Pass Group Schemes for Community Nurseries

Danielle Hancock, Far Sky Consulting

Danielle has been operating in the biosecurity field since 1995 when she worked for the Ministry of Agriculture and Forestry as a Quarantine Officer. Appearing in the first season of Border Patrol, Danielle was part of the Auckland Zones Team and became a specialist in Asian medicines. Spending a number of years at Auckland Council and its predecessors, Danielle managed a range of biosecurity projects and programmes including the controversial Te Henga Wetland Crack Willow Removal project. Now operating Far Sky Consulting, and as a Plant Pass Partner, Far Sky Consulting has been supporting local councils and Plant Pass to build and strengthen the programme, especially Group Schemes. Danielle is passionate about building better biosecurity knowledge and practices in the nursery industry.

Plant Pass is a voluntary biosecurity scheme for the plant nursery industry. As a construct of the Group Industry Agreement between MPI and NZPPI, Plant Pass aims to support plant growers to embed best practice biosecurity into their nurseries. In order for the scheme to be successful, Plant Pass needs 80% uptake from the industry. Even with mandates from buyers, we may only achieve 66% uptake. Plant Pass Group Schemes allow groups of similar-purposed nurseries to come together and achieve Plant Pass Certification as a group. Group Schemes offer lower annual fees and a network of support but come with some limitations. This paper outlines the work completed to date on forming the Group Scheme requirements and how Group Schemes can work in practice.

PREDATORS

Exploring Māori perspectives on feral cat management

Helen Nathan, Boffa Miskell

Co-author: Henare Howard, Boffa Miskell

Helen (Te Roroa) is a Biosecurity Consultant with Boffa Miskell. She is an experienced academic and applied researcher, whose professional experience includes working on landscape-scale predator elimination projects. In her consulting work, Helen enjoys helping clients with a wide range of projects, including developing new pest management plans, reviewing the performance of existing pest management practices, and undertaking novel animal behaviour research.

Despite being one of the most damaging invasive mammals worldwide, feral cats are not currently included in the Predator Free 2050 (PF2050) mission. This may be about to change, however, with the PF2050 strategy undergoing a review process which will include deciding whether feral cats should be added to targeted suite of predators. In the sometimes-contentious public discussion around feral cat management, we often hear from conservationists, animal welfare advocates, and farmers. Conversely, the specific views of Māori on this issue are seldom highlighted. Our research aims to address this critical information gap using three approaches: a literature review, a postal/online survey targeted to Māori respondents, and a series of focused hui with iwi/hapū partners and their communities. Māori feel strongly about biosecurity and the importance of managing pests and diseases. However, iwi and hapū have not always felt adequately consulted in discussions around pest management. This presentation will describe our approach to capturing Māori perspectives on feral cat management, present findings to date, and outline next steps to amplify Māori voices at a critical time for the development of feral cat management policy in Aotearoa.

Feral cats: the enigma of the pest world.

Sian Reynolds, Boffa Miskell

Sian has a diverse array of experience in managing landscape-scale invasive species control programmes and in threatened species recovery. Her knowledge and skills in conservation span the various control tools, technologies and monitoring regimes required for ecosystem management. She regularly works with a wide range of clients and stakeholders to find solutions, strategise, and plan work efficiently as possible. She has worked for Boffa Miskell as a biosecurity consultant since 2020, while previously working for the Department of Conservation.

We all know the destruction feral cats have on our indigenous wildlife in New Zealand. From one cat single-handedly taking out one of the largest black fronted tern/tarapirohe breeding colonies on the Waiau toa / Clarence River in one weekend, to swathes of feral cats causing the population decline of kea in Arthurs Pass, they are still one of our least discussed predators in the country. Unlike rats, stoats, and possums, which have almost become 'famous' in New Zealand through Predator Free 2050, the term 'feral cat' is not embedded in the everyday New Zealanders vocabulary list; and in actual fact, is still so controversial conservationists seem almost scared to raise the topic. There is a surprising amount of feral cat control and research happening across the country - so when do we try and break the barrier with the public so that we can make real gains with protecting our vulnerable wildlife?

This talk aims to highlight some of the gaps between what conservationists know about the destruction feral cats can cause on our threatened native species and the fact the general public still see ferals as their pet moggie. How do we educate the public and bring them along on the journey in a similar fashion to the successful predator free 2050 movement?

Predator Free 2050 - Streamlining the Regulatory Landscape for Predator Elimination

Hannah Palmer, Place Group Ltd

Hannah is an accomplished environmental professional who works across private, local and central government sectors. Specialising in collaborative biosecurity, biodiversity and wider environmental projects, Hannah has particular experience in working on multi-agency projects to deliver shared outcomes. She enjoys finding ways to simplify operating environments, improve effectiveness, and create efficiencies and outputs that make a difference. Career highlights include producing business cases which resulted in simplifying regulation for aerial 1080 under the RMA 1991 and in securing substantial Crown funding for delivery of a national wallaby programme.

With the Predator Free 2050 movement now embedded into the NZ psyche, we're seeing great support for large landscape scale predator elimination using innovative techniques to achieve impressive results. These projects often require flexibility and responsiveness to achieve the best results, and the regulatory landscape plays a crucial role in managing and supporting these efforts.

With more than 21 different approvals potentially required to undertake a predator elimination operation, PF2050 operational staff have noticed that approval processes can be complex, lengthy, costly, and sometimes without certainty of an outcome. This has huge potential to affect the ambitious Predator Free 2050 goal.

Place Group Ltd has been engaged by PF2050 Ltd to deep dive into the root causes of these challenges, with both operational teams and regulatory agencies and collaboratively explore ways to optimise these processes through a systems change strategy. This talk will explore these key challenges and ways that we can collectively move towards a more streamlined future regulatory system.

Predator Free 2050 - Only 25 years to go! So what's happening?

Melissa Brignall-Theyer, Predator Free 2050

Melissa has over 25 years' experience in Ecology and Conservation. She is currently a Project Support Manager for Predator Free 2050 Limited, supporting the Landscape-scale Predator Fee projects in the North Island. Melissa has been with the Company for over four years and prior to that worked for Te Papa Atawhai - Department of Conservation and Manaaki Whenua - Landcare Research on a wide range of projects encompassing social and environmental kaupapa.

2050 is not far away, so what is Predator Free 2050 limited (PF2050 Ltd) doing about it?
PF2050 Ltd is currently supporting:

- 18 landscape-scale projects that are providing a proof of concept across the Country
- Tool development, of which 17 are already on the market; and
- 53 research projects, either completed or underway.

Elimination without fences on the mainland has already been demonstrated. Some of the initial projects are currently defending over 115,000 hectares on the mainland with one or more target species eliminated. A mixture of new and old tools and methods are being used to achieve this, and also defend these areas from reinvasion of target species to re-establish.

Each project is unique, ambitious and utilise leading-edge approaches to help accelerate the national predator free journey. They are agile and adapt to the changing social, economic and environmental landscapes they operate in. Achieving elimination has not been easy and a lot has been learned along the way.

I will discuss what the landscape-scale projects, developers and researchers are learning in more detail, what gaps in knowledge are currently being filled and how this is all helping drive Aotearoa New Zealand towards a better future without predators.

WEED SPECIES

Sea spurge (*Euphorbia paralias*) dispersal modelling and population analysis for surveillance prioritisation

Ben Faircloth, Biosecurity New Zealand - MPI

Co-authors: Malcolm Smeaton, Pablo Saenz & Finnbar Lee, Cawthron;

Ben is a senior advisor in the Pest Management Directorate at Biosecurity New Zealand, and has been the lead for the sea spurge programme since 2021. This programme works to prevent establishment of sea spurge in New Zealand through collaboration with DOC, Regional Councils, Whānau, hapū and iwi.

Sea spurge (*Euphorbia paralias*) is a highly invasive coastal weed that poses a serious threat to the ecological and physical structure of sand dunes in New Zealand. It could have significant long-term negative impacts on our cultural, economic, social and health values. Sea spurge populations can grow extremely quickly, so early detection is key to control.
However, because comprehensive surveillance of New Zealand's ~15,000 km coastline to detect sea spurge is not feasible, we need to be able to prioritise areas most at risk. Unfortunately, due to our lack of understanding of where around New Zealand sea spurge is likely to arrive, or where conditions are or aren't suitable for establishment, we can't effectively prioritise.

To fill this key gap in our knowledge, the Ministry for Primary Industries (MPI) has contracted the Cawthron Institute (Cawthron) to undertake hydrodynamic modelling and habitat suitability modelling to calculate the likelihood of sea spurge establishing at different parts of New Zealand's coastline. This will be coupled with relatedness analysis of existing New Zealand sea spurge populations, both with each other and with Australian populations. The results of this project will reveal how sea spurge is dispersing around New Zealand, where it is most likely to establish next, and where it cannot establish. This will allow us to prioritise high risk areas for surveillance, find new sea spurge populations earlier, and prevent establishment of this species.

Skunkvine: A culinary delight that crept in

Tanya Greenwood, Ministry for Primary Industries

Co-authors: Erin Gillespie, former Incursion Investigator Plant Health Team & Carolyn Bleach, Manager Incursion Investigation Plant Health Team

Tanya grew up skiing and enjoying the great outdoors in Idaho, USA. In 2014, she re-verse immigrated to New Zealand for a one-year OE. One year into her OE she joined MPI as a frontline officer, and relished in the challenges of boarding vessels at sea, inspecting fresh fruits and vegetable, and clearing passengers at the International Airport. In 2019, she became an enthusiastic member of the Incursion Investigation Plant Health Team, where she works to stop the spread of exotic pests and diseases (killing a lot of exotic insects, and some plants along the way!). In her time outside of work, she enjoys spending her time walking her dog, riding her horse, and drinking the odd vino with her husband and friends.

In 2023, the Ministry for Primary Industries (MPI) was notified of a suspect new-to-New Zealand plant growing at two residential properties in Auckland. MPI's botanists identified the exotic skunkvine (*Paederia foetida*). After conducting a risk assessment, MPI confirmed *P. foetida* is invasive and a threat to native ecosystems. To facilitate control of the weed, it was made an unwanted organism under the Biosecurity Act 1993.

A biosecurity service provider was contracted to remove the plants at both Auckland sites. The following year, Auckland Council advised MPI that *P. foetida* was growing in a public reserve and three more residential properties. A site visit by a MPI Incursion Investigator and botanist confirmed the sightings, and that the plants were likely being grown for their culinary properties. Control was undertaken in the reserve, but management and control of *P. foetida* was made the responsibility of property owners. MPI prepared a skunkvine fact sheet for public awareness and worked with the Auckland Council to help stop its spread.

The identification and spread of the invasive Himalayan wineberry (*Rubus ellipticus* var. *obcordatus*) in Albany, Auckland.

Amy Gwynne, Unitec

Co-authors: Peter de Lange[1], Lydia Starr[2], Glenn Aguilar[1], Campbell James[1], Kelly Wooton[2], Jemma Owen[1], Diane Fraser[1]
[1] School of Environmental and Animal Sciences, Unitec, Auckland New Zealand
[2] Environmental Services, Auckland Council, Auckland, New Zealand

Amy is a recent graduate of the new Post-Graduate Diploma in Applied Science from the School of Environmental and Animal Sciences at Unitec, Auckland. Amy was supervised by Professor Peter de Lange and Associate Professor Diane Fraser.

First recorded in Albany, Auckland, New Zealand in 2019, the highly invasive Himalayan wineberry (*Rubus ellipticus* var. *obcordatus* (Franch.) Focke), which has caused significant issues in other invasive regions such as Hawaii, is raising concerns about its potential spread and impact in Aotearoa/New Zealand.

Due to the similarity of identification of this species compared with other Rubus species, this study aims to provide clear identification characteristics for the species and survey selected areas in the Albany area to determine the potential growth and spread of this invasive weed. In addition, species geospatial modelling was used to predict the potential invasive range within New Zealand for two contrasting trajectories of global warming (RCP 2.6 and 8.5) by the year 2100. The ground survey was completed on foot using 10 meter-wide spaced transects within bush/scrub areas based on predicted occurrences and presence coordinates recorded in Fieldmaps software.

Himalayan wineberry presence data showed a higher number of seedlings compared to adult plants and as expected, were predominantly in disturbed areas near other invasive plant species. The results from this modelling found that the main areas at risk of potential invasion were Auckland, Bay of Plenty, Christchurch and Nelson regions. Due to the potential national spread of Himalayan wineberry and the current limited spread in the Albany area, eradication is thought to be feasible, however, monitoring in other regions, particularly the identified hotspots, is an important action for the future.

Tenacious new invader: polypodium fern arrives and thrives on the North Island

Cooper French, Greater Wellington Regional Council

Cooper is Kaitohutohu Whakarauora Taiao | Advisor Environment Restoration with Greater Wellington | Te Pane Matua Taiao. He has a MS in Chemistry and in Biology.

Common polypody (*Polypodium vulgare*) is an ecological weed that has been naturalised in New Zealand since at least 1980. While originally confined to the Canterbury region, multiple populations have now been confirmed throughout the southern North Island. There are many challenges associated with control of common polypody.

This presentation will address identification, share the most recent distribution data, and discuss Greater Wellington's experience controlling common polypody within Key Native Ecosystem sites.

TECHNOLOGY 1

Enhancing pest animal control through data integration and visualisation

Debbie Fogell, Greater Wellington Regional Council

Since joining GWRC in 2023, Debbie has been supporting the Environment Operations teams to embrace new data collection tools and harness the power of the insights that can be generated from them. With a background in wildlife disease and endangered avian species recovery, Debbie is a bird nerd and loves identifying ways in which systems and processes can be improved to make our lives in the field easier and more efficient.

Historically, managing and analysing pest control data relied heavily on spreadsheets, requiring extensive manual manipulation and presenting challenges with version control, data accuracy, and accessibility. By leveraging ESRI tools such as QuickCapture and Survey123, alongside Trap.NZ, we have streamlined data collection across all pest control operations within the Greater Wellington Regional Council (GWRC) and Predator Free Wellington (PFW) - from bait station recording to ungulate control. This shift has significantly reduced errors, improved efficiency, and ensured real-time updates to pest management records.

Integrating these datasets into Power BI allows us to generate dynamic visualisations that enhance planning, tracking, and adaptive management while also simplifying reporting. This data-driven approach enables us to assess both the total number of different pest species controlled across projects and the time spent operating in specific control zones, leading to more effective predator control strategies.

Beyond operational improvements, these tools could strengthen relationships with mana whenua and territorial authority (TA) partners by providing transparent, accessible insights into pest management efforts. In this talk, I will demonstrate how integrated digital tools enhance collaboration, improve strategic decision-making, and build collective capability in protecting our native biodiversity.

Field testing NIWA's automated detection system for submerged invasive weeds

Daniel Clements[1], National Institute of Water and Atmospheric Research (NIWA)

Co-authors: Deborah Hofstra[1], Gareth Preston[2], Svenja David[1]
[1] National Institute of Water and Atmospheric Research (NIWA), Freshwater Biosecurity, Gate 10 Silverdale Road, Hillcrest, Hamilton 3216, New Zealand.
[2] National Institute of Water and Atmospheric Research (NIWA), Instrument Systems, 10 Kyle Street, Riccarton, Christchurch 8011, New Zealand.

Dr Daniel Clements is an aquatic plant scientist and group manager for NIWA's Freshwater Biosecurity team. His current research focus is the ecology of invasive aquatic plants, their impacts on aquatic ecosystems, and their management. He leads research projects developing improved detection and control techniques for invasive aquatic weeds in New Zealand and evaluating the effectiveness of control activities and eradication programmes.

NIWA has developed a new tool and capability for the detection of submerged invasive weeds utilising advances in remote sensing, recognition software and machine learning, initially targeting lagarosiphon (*Lagarosiphon major*). NIWA's prototype automated detection module is capable of remotely detecting this high-risk species from underwater video imagery, which will guide the development of the technology for other target invasive and native species. In 2024/25, field testing was conducted in South Island waterbodies to evaluate detection rates and identify current system limitations. Field trials evaluated two lagarosiphon detection algorithms at different boat speeds (1 to 3 knots), camera distance to target (0.5 to 1 m) and plant condition (dirty and clean) at six sites in the Kawarau River (downstream of Lake Whakatipu) and Lake Wānaka. Development of detection algorithms was based on imagery datasets from South Island waterbodies. In February 2025, a demonstration at Lake Ōkataina with Ngāti Tarāwhai Iwi Trust marked the first North Island deployment. The demonstration of automated detection in Lake Ōkataina was successful and will guide operationalisation of the detection system with end-users.

Beyond water: complementary eDNA substrates for more holistic environmental biomionitoring

Ang McGaughran[1], University of Waikato

Co-authors: Starsha Bird[1], Manpreet Dhami[2], Steve Archer[3], Alex Verry[2]
[1]Te Aka Mātuatua School of Science, University of Waikato, Hamilton, New Zealand;
[2]Biocontrol & Molecular Ecology, Manaaki Whenua Landcare Research, Lincoln, Christchurch, New Zealand
[3]Resilient Agriculture Group, AgResearch, Palmerston North, New Zealand

Ang is a Senior Lecturer at the University of Waikato, having returned home in 2020. Prior to that, Ang spent six years in Australia as a postdoc (Commonwealth Scientific and Industrial Research Organisation, CSIRO) and then independent research fellow (Australian National University) - focusing primarily on rapid evolution of an agricultural pest using historical genomes. From 2010-2014, Ang was a postdoc at the Max Planck Institute for Developmental Biology (Tubingen, Germany), where she researched evolutionary questions in a pesty nematode. The common theme underlying Ang's research is to understand how species survive when their environment changes, particularly in the context of biological invasion. Her team (the Invasomics Lab) answers this question using a combination of approaches and tools, including genomic (population, comparative, invasion, and museum genomics, eDNA) and ecological (species crosses, fitness and tolerance traits, urban and rural comparisons).

Methods based on environmental DNA (eDNA) for biomonitoring are increasingly popular among the biosecurity community, with the vast majority of this work employing water as the eDNA substrate. Emergent techniques (such as air, and insect-derived DNA) have the potential to provide biodiversity/biosecurity data that complements water-based methods to gather a more holistic view of the ecosystem that may lend itself well to detecting rare species, such as those newly establishing.

In this talk, I'll tell you about recent research in my group focused on the use of these additional eDNA substrates, showcasing their broader implications for biosecurity detection and monitoring.

Biocontrol in the Coastal Domain: Citizen Science Perspectives

Arnim Littek, Citizen Scientist

A citizen scientist focused on coastal ecology, Arnim has been active at Cape Kidnappers/Ocean Beach Sanctuary and other East Coast beaches for 5+ years, and since 2016, primarily in the dunes, dune wetlands and estuaries along the Manawatu coast, from Otaki Beach, north to Tangimoana, with excursions beyond. His work on biodiversity monitoring, and manual biocontrol is well known to District and Regional Councils and DOC, hence the invitation to Arnim to present at NETS2025. With a significant presence on iNaturalist, Arnim is a de facto member of the regional sea spurge team, and has just been invited to guide some of the tours organised for the conference.

Since the Parliamentary Commissioner for the Environment published his landmark paper on the impact of weed species on native ecosystems, too little has changed. Native coastal ecosystems in particular have low economic impact, and are not mentioned in the PCE recommendations. After more than a decade in coastal dunes research expanding into ephemeral dune wetlands and estuarine ecosystems, the author's experiences and leverage of citizen science platforms provides perspectives on weed species in coastal ecosystems, including learnings from a long running experiment in hand biocontrol. Further, unpublished details of exotic predator impacts on the protected katipo spider are presented, with insights into the role of this in coastal systems restoration. Citizen science impacts on coastal wattle and sea spurge also feed into a plea for coherent unification of data management and access to enable the national volunteer workforce to supplement the overworked agency workforce in achieving common goals.

THURSDAY 24 JULY 2025

Bushy Park Tarapuruhi

Zoe Stone, Horizons Regional Council

Manawatū Estuary

Abi Wightman, Horizons Regional Council

Pūkaha Mt Bruce

Ruth Fleeson, Horizons Regional Council

Tōtara Reserve

Ray Palmer, Horizons Regional Council

FRIDAY 25 JULY 2025

TECHNOLOGY 2

4G trail camera and Thermal Drone Integration into Urban Ungulate Control

Reuben Harland, Greater Wellington Regional Council

Reuben has been a Senior Biosecurity Officer Pest Animals for 7 years, and has led the Urban Deer control Programme for 5 years

Greater Wellington Regional Council (GWRC) has been employing 4G remote viewing trail cameras for three years to enhance urban ungulate control efforts. Building on the success of thermal imaging drones in rural deer management, GWRC has recently expanded their use to urban settings. This approach improves the ability to locate ungulates and support hunters in targeting them safely and effectively. This presentation will share key learnings, challenges, and progress in integrating these technologies into urban deer control programmes.

Remote sensing for invasive weed management

Paul Peterson, Manaaki Whenua - Landcare Research

Co-authors: A. McMillan[1], J. Schindler[2], C. Davey[3], & R. Hill[4].
Manaaki Whenua - Landcare Research, Palmerston North[1] and Wellington[2], Horizons Regional Council[3], Independent Researcher[4].

Paul has 30 years' experience assessing invasive weed biocontrol. He has recently been using high resolution photography to map weed distribution and spread. Paul's presentation shows how this technology can be used to manage and assess weed control operations.

We demonstrate two case studies mapping invasive weeds to assess impacts of control programmes. Firstly, in Rarotonga, land managers are finding it challenging to assess the current distribution of invasive African tulip tree (ATT) (*Spathodea campanulata*) and to evaluate the impact of biocontrol. A multi-scale approach using high-resolution drone/aeroplane imagery with AI (artificial intelligence) allowed us to estimate the area of Rarotonga infested with ATT as 112 ha representing 1.6% of the island. We could also assess the density of galls of a biocontrol agent, the gall mite (*Colomerus spathodeae*), on leaves using drone imagery. Our second case study involves invasive, ecosystem-altering legumes in central North Island, New Zealand. To help counter this threat, the Desert Road Invasive Legume Control Group (DRILCG) was formed in 2012 and includes an unusually diverse range of stakeholders: Department of Conservation, NZ Defence Force, Transpower, Genesis Energy, Horizons Regional Council, Waikato Regional Council and the Lake Rotoaira Forest Trust.

The DRILCG funded high-resolution aeroplane imagery during the flowering of invasive gorse (*Ulex europaeus*), broom (*Cytisus scoparius*), and tree lupin (*Lupinus arboreus*) over a 23,000 ha area. Resulting imagery was cut into 200 x 200 m grids and the target weeds manually scored as zero, low, medium or high density. Change maps, produced from repeat imagery, helped assess the impacts of herbicide operations, enabling recommendations for more targeted and sustainable landscape-scale

management strategies such as focussing on outlying populations. These two case studies demonstrate different remote sensing methods using RGB (visible light) imagery to produce cost-effective weed mapping solutions. LiDAR (Light Detection and Ranging) and hyperspectral data are also being investigated but they add expense and processing complexity.

Aerial Mapping (Uav) Technology and Survey Methods for Supporting Biosecurity Programmes

Hugo Geddes, Auckland Council

Co-author: J. Canete, Bio Information Analyst and Senior Remote pilot, Environmental Services, Auckland Council.

Hugo is a Senior Bio information Analyst and Chief Pilot Auckland Council, Environmental Services, Auckland Council.

Led out of Environmental Services, Auckland Council developed a comprehensive UAV operations exposition and achieved part 102 certification in accordance with the Civil Aviation Authority (CAA) rules in 2023. Since then, UAV have been utilised in a variety of applications to support the planning and delivery of Natural Environment Targeted Rate (NETR) programmes.

Established and new survey methodologies have demonstrated the effectiveness and value of off-the-shelf UAV technology for pest plant and animal monitoring. Notable techniques and deliverables include the use of thermal and multispectral sensors, ESRI Full Motion Video, 360 photo points, high resolution aerial imagery, Digital Surface Model (DSM) and 3D Point Cloud generation.

With the right framework in place, including certification and training, combined with a bespoke workflow, accessible off-the-shelf technology can be utilised by public sector agency to deliver effective biosecurity surveillance solutions, offering great value for investment and significant health and safety benefits for field staff.

Eyes in the Sky: Advancing Biosecurity with Drone Technology for a Better Future

Khan Adam, Provision Ltd

Khan is the founder and operator of Provision, a specialist drone company at the forefront of conservation and pest eradication operations in New Zealand. With 20 years of experience in pest control and conservation, Khan has led numerous eradication and suppression projects across the country. Provision's team has accumulated over 1,500 hours of drone flight experience, with a strong focus on thermal imaging, aerial surveillance for pest detection, and environmental monitoring. Under his leadership, Provision has pioneered innovative drone techniques for eradication efforts, working closely with government agencies and conservation organisations to develop cutting-edge solutions. Beyond pest control, Khan has been instrumental in using drones for environmental monitoring, including aerial weed surveys, mapping, and targeted spraying operations. Provision utilises advanced drone technology to identify, map, and control invasive weed species, improving efficiency and reducing the environmental impact of traditional ground-based spraying methods. Khan and the Provision team are committed to leveraging cutting-edge drone technology to enhance biosecurity, improve environmental monitoring, and support large-scale conservation projects in remote and challenging landscapes.

New Zealand's unique ecosystems face constant threats from invasive species, requiring innovative solutions to protect biodiversity and ensure a sustainable future. Drones are revolutionising conservation efforts by enhancing pest eradication, weed detection, targeted spraying operations, and logistical support in remote environments with greater precision and efficiency.

Provision has been at the forefront of integrating cutting-edge drone technology into biosecurity operations, developing aerial strategies for thermal pest detection, invasive weed mapping, and precision herbicide application. These technologies improve eradication effectiveness while minimising environmental impact. Additionally, advances in drone capabilities are enabling logistical support for conservation projects, providing safer and more efficient access to difficult terrain.

This presentation will showcase how drones are transforming biosecurity, with real-world examples of aerial surveillance, automated data collection, and targeted intervention strategies reshaping pest control and invasive species management. It will also highlight the opportunities and challenges in scaling drone technology for large-scale conservation efforts.

By leveraging drone innovation, we can create more effective, efficient, and sustainable biosecurity strategies - helping to protect New Zealand's natural heritage for future generations.

Virtual Reality technology in environmental education: A case study

Amy Lendrum, Waikato Regional Council

Amy is the Unit Lead for the Kauri Protection Programme at Waikato Regional Council. Waikato Regional Council leads Kauri Protection activities across the Waikato Region that include working with landowners, community groups, nurseries, and schools through advocacy and education, fencing programmes, mitigation activities, surveillance and monitoring, and dedicated projects.

Finding ways to ensure messages resonate and inspire people to take action in the environmental space can be a challenge for many reasons.
Kauri Pou Kaitiaki is an immersive virtual reality experience launched by Waikato Regional Council in 2023 that has changed the way kauri protection education is delivered to communities, schools, kura, and individuals; and has been nominated for and won national awards. Feedback has been overwhelmingly positive with users inspired and motivated about how as individuals they have a role to play in the protecting the future of kauri forests.

Harnessing new technology to provide an educational and future focussed experience has been crucial for inspiring action in users.

In this case study we will share;
- the unique process that lead to the development of the VR experience,
- why we chose virtual reality technology, & why it works so well
- the impact Kauri Pou Kaitiaki has had on the kauri protection programme
- what users say about it.

GENERAL

Two sides of the same coin - activating community and council to bust weeds

Courtney Tregurtha-Nairn, Horizons Regional Council & Nigel Charman, Old Man's Beard Free Wellington and EcoNet

As the Biodata Information Advisor at Horizons Regional Council, Courtney manages biosecurity and biodiversity data, using tools like iNaturalist to map invasive species such as Woolly Nightshade. Her past achievements include tracking little blue penguins on Mana Island for her master's project, conducting weed control on predator-free Motuihe Island, and contributing to restoration efforts in the Manawatū and Bay of Plenty regions. A key part of her role is leveraging citizen science to bridge council-led efforts with community action.

Nigel is the founder of Old Man's Beard Free Wellington and Developer at EcoNet. He is founder of Old Man's Beard Free Wellington, a volunteer developer building EcoNet's Conservation Activity Management System (CAMS) and is working with DOC to build the Smart Weed Alert Tool. An avid iNaturalist user, he has developed EcoNet's iNaturalist integration and uses iNaturalist to engage the public in weed control. He enjoys combining his IT and GIS skills with his passion for weedbusting.

The Woolly Busters campaign, led by Horizons Regional Council, uses iNaturalist to engage the public in helping to eradicate woolly nightshade, a priority eradication species under the Regional Pest Management Plan (RPMP). Through public events, a website (including an interactive web app tracking observations where Woolly Nightshade has been sighted and busted, and a video tutorial from Mike the Weed Wizard) the campaign encourages detailed reporting of infestations, including plant size, treatment status, and phenology. These observations are updated to a web map via a daily script, which provides the council with real-time data on where woolly is popping up within the community. While the project has successfully identified previously unreported infestations, challenges in activating the community persist.

Old Man's Beard Free Wellington (OMBFW) is a volunteer organisation, bringing together community, council and other organisations to fight Old Man's Beard across Poneke. EcoNet's Conservation Activity Management System (CAMS) has a deep integration with iNaturalist to manage weeds throughout their lifecycle. Utilising iNaturalist with CAMS has created a platform where anyone can report Old Man's Beard in Wellington and be notified when it is controlled or its status is updated in subsequent years.

This talk will explore the lessons learned and outcomes of each campaign, the potential of iNaturalist as a biosecurity tool for councils, and strategies to enhance community involvement, improve reporting practices, and align data with other initiatives.

Poipoia te Kākano an Iwi and hapū-led project to preserve the Kaipara: managing a multi stakeholder partnership.

Cheryl Krull, Auckland Council

Co-author: Victoria Kurupō - Te Uri o Hau Environs will be leading the presentation with support from Cheryl Krull

Ko Pukekaroro te maunga
Ko Ōtamatea te awa
Ko Kaipara te Moana
Ko Mahuhu ki te Rangi te waka
Ko Rongomai te Ariki
Ko Ngāti WhĀtua te Iwi
Ko Te Uri o Hau te Hapū
Ko Ōtamatea toku marae
Ko Victoria Kurupō toku ingoa

Victoria manages the Poipoia te Kākano team in Environs, the environmental subsidiary of Te Uri o Hau settlement trust. She started in 2022 as the Administration executive/ RMA co-ordinator, eventually taking over the management of the Poipoia te Kākano project in 2024, to focus on moving the possum elimination project into operation on Puketōtara penisinsula in the Kaipara Harbour, Auckland.

Cheryl Krull is a Conservation Advisor with Auckland Council supporting the Poipoia te Kākano project.

The Poipoia te Kākano project is an initiative led by Environs Te Uri o Hau, focused on preserving the Kaipara Harbour's ecological integrity. The Kaipara Harbour is the largest harbour in the Southern hemisphere and of global ecological and biological significance. The Poipoia te Kākano project aims to restore the mauri of the catchment by eradicating possums, stoats, rats, and pigs on five peninsulas in the Kaipara Moana. The five peninsulas are Hukatere, Okahukura, Puketotara, Pouto (North Head), and Te Korowai o Tonga (South Head) peninsulas. The project has unique challenges including the landscape scale of 105,000ha, with multiple stakeholders involved spanning the Northland and Auckland boundaries. The project is implemented by Te Uri o Hau Settlement Trust through their environmental arm Environs Holdings Ltd and is a collaborative, multi-stakeholder partnership including Ngā Maunga Whakahii, Te Uri o Hau, Te Roroa, Landcare and community groups, Auckland Council, Northland Regional Council and the Department of Conservation. We will discuss the dynamics of the project partnership and the learnings that have been discovered from both an iwi and council perspective.

Mahi Tahi: Working together for kauri ora in Te Ngāherehere o Kohukohunui / Hūnua

Sarah Killick, Auckland Council

Co-authors: Karyn Froud, Yue Chin Chew, John M. Kean, Jane Meiforth, Hugo Geddes, Alastair Jamieson, Eddie Manukau, Martin Te Moni, Zaelene Maxwell-Butler, Gavin Anderson, Lisa Tolich, Edith Tuhimata, Isabella Penrose, Suliana Teasdale, Jess Le Grice, Miranda Bennett.

Dr Sarah Killick is a Principal Advisor Biosecurity at Auckland Council, and has a background specialising in kauri research and protection.

Understanding the state of kauri health and mapping risks is crucial for managing kauri ora, and by extension, the wellbeing of our ngahere. Although the kauri pathogen *Phytophthora agathidicida* (PA) is now present across most kauri areas, there remain catchments and forest remnants where PA has not been detected.

Auckland Council, Ngāi Tai ki Tāmaki, Ngāti Tamaoho, Ngaati Whanaunga, Ngāti Tamaterā, and the Department of Conservation, worked together to determine whether Te Ngāherehere o Kohukohunui (the Hūnua Ranges) remains free from PA. In January 2025, we released a joint report celebrating the non-detection of PA in this nationally significant ngahere.

Here, we present our collaborative approach to forest surveillance, including the lessons learned, changes made, and recommendations to other local government or agencies undertaking kauri ora surveillance.

On-farm Biosecurity - It's Never too Late to Integrate

Peter Russell, Better Biosecurity Solutions Ltd

Peter is director of Better Biosecurity Solutions Ltd (BBSL), formed in 2015, and a specialist biosecurity strategy and planning consultancy. BBSL has over 35 key clients throughout NZ. Peter is an environmental professional with a 30-year career in wider environmental management, including Waikato Regional Council between 1993 and 2015, and DOC some years prior. Peter has a genuine passion to make better biosecurity connections and develop collaborative and innovative solutions to bio-problems.

There are constant calls for more integrated catchment management to occur between different agencies. However, the ICM focus is always on water quality, nitrogen reduction, riparian planting and biodiversity. 'On farm-biosecurity' is often the 'poor cousin' (and rarely gets a mention) or is absent from discussions. It's not until diseases, pests and pathogens turn up somewhere new that more attention is paid. Biosecurity threats impact catchments in many ways. Why aren't Farm Environmental Plans fully integrated and be more proactive in promoting good biosecurity? Or, is biosecurity simply viewed as someone else's issue (e.g. MPI, DOC, or regional councils)?

The presentation focuses on -why contemplate on-farm biosecurity at all? It discusses the different components, what’s in it for farmers and looks at the top issues to be aware of on-farm. Several case studies demonstrate emerging threats and solutions.

Border Biosecurity - a DOC perspective

Garrick McCarthy, DOC

Garrick is a technical advisor in the national Biosecurity team at DOC, working within the border biosecurity part of the NZ biosecurity system. Previous roles have included 15 years in Animal and Plant pest management for Auckland and Bay of plenty regional councils.

The border biosecurity space is an exciting, challenging and at times frustrating part of the biosecurity system. DOC's role here is varied, often retroactive, work in progress, and essential in the fight against new invasive species. We work closely with MPI, territorial authorities and our treaty partners on various programmes and workstreams, and engagement opportunities such as NETS aims to strengthen these relationships, as the work we do in this space has ramifications for all biosecurity and pest management across Aotearoa New Zealand.

PROJECTS

The long and wilding road (trip) to a better future

Sherman Smith, Biosecurity New Zealand (MPI)

Founded in a passion for ecology, Sherman's career in conservation, biosecurity and pest management spans more than 20 years. Early experience as a conservation officer and DOC Ranger in the North Island, then several years as a council Biosecurity Officer in the South, preceded a shift to central government in 2009, to the then Ministry for Agriculture and Forestry. Sherman led the development of the cross-sector New Zealand Wilding Conifer Management Strategy 2015-2030 and has led the National Wilding Conifer Control Programme since it was established in 2016.

A better future - with the right tree in the right place - is the vision for the New Zealand Wilding Conifer Management Strategy 2015-2030. We know we are not there yet, but it's worth taking stock of where we are on the map, and what's left in the tank. From humble beginnings in 2016 to boosted four-year funding in 2020, the Programme has made huge strides in not only removing trees but improved management practices, policies and contractor capability.

Funding from Budget 2020 showed what can be achieved. Now, as the National Programme approaches a second year of $10 million annual baseline funding, there are some concerns about the impacts of slowing down and a potential loss of momentum.

The National Programme has continued to deliver more than the sum of its parts: Partner contributions doubled the total spend on wilding control in 2023/24 compared to budget. For 2024/25 the final result may be similarly outstanding. The huge investment of effort from communities continues to build awareness of the issue. And yet significant challenges remain in achieving the Programme's ultimate aims.

Sherman will stocktake the huge progress so far, and discuss the current thinking on a refresh of the Strategy, and the direction for the control programme for the next two years and beyond. The journey of this strategy is quite the road trip - like a drive through the Manawatū Gorge back in the day - a mix of sweeping curves, blind bends, occasional rock fall, and tantalising glimpses of the destination.

Challenges and insights from alligator weed (*Alternanthera philoxeroides*) control within Te Awa Kairangi | Hutt River's flood resilience project

Jim Mitford-Taylor, Greater Wellington Regional Council

Jim is a Kaiwhakahaere Rerenga Rauropi | Biosecurity Officer in the pest plants team at Greater Wellington Regional Council. Jim is a deeply passionate conservationist with over 5 years of technical experience in ecological restoration and biosecurity, project management, education, and community engagement.

In July 2024, Greater Wellington Regional Council's pest plants team discovered the third known site of alligator weed (*Alternanthera philoxeroides*) within the Wellington region. It was found while conducting a pest plant survey of the Melling, Lower Hutt section of the RiverLink flood resilience project, on the edge of an existing stopbank. The infestations small size (<40m2), its location within a flood resilience project managed by GWRC, and the on-site availability of excavators should have enabled manual control to be achieved swiftly. However, with multiple contractors simultaneously delivering work within the same area, strict health and safety restrictions, and a stop work notice from MPI, collaboration became paramount in order to complete alligator weed control while adhering to RiverLink's strict project timelines.

Alligator weed is an herbaceous plant native to South America that aggressively invades and outcompetes vegetation in both aquatic and terrestrial ecosystems. It was first identified in New Zealand from samples taken from Dargaville in 1906. Since then, it has become widely established in the Northland, Auckland, and Waikato regions. Effective control of alligator weed is difficult and often requires expensive long term management strategies lasting up to 10 years. Alligator weed is currently managed under the 'Exclusion Programme' of the 2019 Greater Wellington Regional Pest Management Plan, which is the highest priority for control a species can be given. To prevent alligator weed from establishing in other regions of New Zealand, we must be persistent, and embrace inter disciplinary collaboration to succeed.

This presentation will detail the challenges and victories from the control of a localised infestation of alligator weed achieved in a 6-month timeframe via chemical and mechanical (15T Excavator) means within an active multi-phase flood resilience project.

Phragmites karka: a familiar, sad New Zealand story

Bessie Nicholls, Awahuri Forest Kitchener Park Trust

Bessie is a retired business person with a background in health sciences, creating new businesses, and economic development. She is currently a trustee on the Awahuri Forest Kitchener Park Trust.

This is the story of how a common catch phrase and comment 'we thought it was just bamboo' led to a small forest restoration charitable trust having to learn how to do applied research, and drive outcomes across region wide infestations and beyond. *Phragmites karka* is a weed that has been in New Zealand for at least twenty-five years. No one noticed as it stealthily established itself then exploded down our waterways into our wetlands, estuaries, roadsides paddocks and now more recently our beaches.

This is the fight to save Awahuri Forest Kitchener Park, a Scenic Reserve, the last remnant of a native wetland/lowland forest in the Manawatū area, and by extension our threatened regional waterways and estuaries and wetlands – and the outcomes and the prohibitive costs of the only remedy we have found to date.

Managing Calafate (Berberis microphylla) in the Falkland Islands: A Strategic Approach to Invasive Species Control

Michael Lavery, Indigena Biosecurity International, Kaitiaki o te Ngahere

Michael is the Operations Manager at Kaitiaki o te Ngahere's Wellington branch with six years of experience working with pest plant control and revegetation services in the lower North Island. Michael is also a Project Leader for Indigena Biosecurity - Kaitiaki's international subsidiary. He has led the implementation of the calafate (Berberis microphylla) control programme in the Falkland Islands since 2019, with the project now being extended to include other high priority species. Michael has also spent two field seasons on South Georgia Island conducting non-native flora control and native species distribution recording and actively identifies iNaturalist observations for the island.

Since its introduction to the Falkland Islands nearly a century ago, Magellanic barberry, or calafate (*Berberis microphylla*) has spread, posing both an ecological and economic threat. The shrub reduces available grazing land, and its spines become entangled in wool, creating a nuisance for livestock and handlers, and degrading product quality. The most severe infestation, spanning approximately 1,000 hectares, is spread across Port Sussex and Head of the Bay farms.

The Falkland Islands Calafate Control Programme has been managing calafate since 2016, focusing on private agricultural lands in East Falkland. In 2019, Indigena Biosecurity International was contracted to conduct targeted herbicide control and implemented a tested three-phase Restoration Framework: initial control, follow-up control, and seedbank management. To date, efforts have focused on reducing seed-producing plants in the core infestation and monitoring regrowth. Since 2019, manual searches have covered over 2,800 hectares across the two properties. While initial control has proven effective, sustained management is essential due to the persistent seedbank and potential regrowth.

Future objectives include completing the initial control phase in the remaining management units, expanding follow-up efforts, and increasing local engagement to identify additional calafate infestations around the islands. The programme's continued success relies on sustained government funding, community collaboration, and landowner participation. The projects successes have now opened the door to managing other high-priority invasive species in the Falkland Islands using the Restoration Framework as a scalable model.

Ruahine Old Man’s Beard Joint Project

Jack Keast, Horizons Regional Council

Jack is a Senior Biosecurity Officer working on Pest Plants in the Tararua District and Pohangina Valley.

The Horizons region is ‘ground zero’ for old man's beard, and its devastating impact can be seen across large parts of the region. Horizons is working extremely hard to protect the large intact areas of native forest in the region from this threat, but these high value areas are almost exclusively Crown land. How do we control this plant in very inhospitable terrain, in isolated and remote areas, or within high value native ecosystems, without causing massive damage and creating weed shaped holes ripe for reinvasion? Most importantly, how can we ensure that we are protecting bits of land that we have no jurisdiction over? These are the challenges that the Ruahine Joint Project team are attempting to solve.

PLENARY

From Policy to Action: Embedding Pathway Management in Biosecurity Strategy

Ini-Isabee Gunn, BioLink Consulting

Dr. Ini-Isabee Gunn is a biosecurity strategist and biological sciences specialist with 20 years of experience spanning scientific research, strategic planning, and project management across academia, industry, and government. As the Director and Principal Consultant of BioLink Consulting, she collaborates with regional and central government agencies, runaka, and community groups to develop science-backed biosecurity and biodiversity strategies that translate policy into action. Since 2019, Ini has worked in New Zealand's biosecurity sector, leading government and community-led initiatives across Predator Free, biosecurity, and biodiversity projects. Before founding BioLink Consulting in 2024, she held a senior advisory role in central government, where she led national biosecurity and biodiversity strategy development and oversaw operational programmes nationwide. Before moving to New Zealand, she supported the UN Environment Programme as a consultant, delivering international conservation projects. Ini holds a PhD in cell and molecular biology, and her early career focused on conducting biomedical research, managing biosafety level 2 research facilities, and training scientists at leading institutions in the UK and the Middle East, including New York University Abu Dhabi. Her expertise in applying science to real-world challenges informs her strategic approach to biosecurity, ensuring that research, policy, and implementation align to enhance New Zealand's future biosecurity resilience.

New Zealand's biosecurity future hinges on transitioning from reactive pest control to proactive prevention, with Pathway Management Plans (PMPs) serving as a pivotal yet underutilised tool. As Regional Pest Management Plans (RPMPs) approach their review periods, there lies a timely opportunity to integrate coordinated, enforceable pathway management strategies, thereby strengthening biosecurity at both local and national levels.

This session will delve into the legislative framework enabling PMPs, highlight existing implementations, and examine opportunities for cross-regional collaboration. Through real-world case studies, we will uncover lessons learned, common challenges, and practical steps for embedding pathway management into regional and national biosecurity strategies. By aligning research, policy, and implementation, councils and agencies can build more resilient biosecurity systems, safeguarding Aotearoa against future pest threats.

Biosecurity delivered by the community in the community

Andrew Thomas, Waikato Regional Council

Andrew works at Waikato Regional Council as the Senior Biodiversity Officer. In his role he works with the largest of our community groups across the Waikato Region who are receiving funding from Council, and he provides technical advice and support to these groups.

Community groups are delivering biosecurity operations at increasingly large landscape scales. This presentation aims to showcase some of the work that these groups are doing in the Waikato region and to generate some discussion on how we can support these intiatives with our existing biosecurity programmes and how we can take learnings from these innovative projects. Some examples include, the use of eDNA to identify the predation of native frogs by pigs and the use of biocontrols to assist Tradescantia control in lowland kahikatea forest fragments.

Biosecurity Taranaki - a regional biosecurity collaboration celebrating a successful first year

Willy Harvey, Chair, Biosecurity Taranaki & Abby Lagula - Biosecurity Advocate, Biosecurity Taranaki.

Co-author: Shelley Ashton, MPI- Biosecurity NZ

Willy is chair of Biosecurity Taranaki. He is a community leader with many years of commercial, sporting and community experience. He retired from his role as Manager at Team Global Express (formerly Toll Logistics) in 2024.

Alongside her role as Biosecurity Advocate at Taranaki Regional Council, Abby plays a guiding role on the leadership team of Biosecurity Taranaki.

Biosecurity Taranaki is a regional biosecurity initiative established to safeguard Taranaki's unique environment, economy and way of life from the threat of pests and diseases. It is a multi-stakeholder engagement initiative that is about leading and taking collaborative action towards regional biosecurity excellence. This coalition is an exemplar for regional collaboration and partnership.

Developed by the region for the region, the initiative envisions a thriving Taranaki where the community and organisations connect to biosecurity, know its importance and are motivated to take action.

Biosecurity NZ supports regional collaborations as part of building biosecurity readiness, resilience, and understanding of the impact and decisions needed in a response environment. Biosecurity Taranaki's success lies in fostering a collaborative approach to biosecurity awareness and risk management and has laid a strong foundation for future advancements. It is a testament to the effectiveness of regional biosecurity efforts.

In this first year, key activities undertaken include community engagement, awareness campaigns, support for member-led events, workshops, webinars and the use of media and social media to spread important biosecurity messages. These efforts have engaged a wide range of stakeholders and increased regional awareness of biosecurity risks and actions to mitigate and manage risk. With a growing network of around thirty organisations and a dedicated leadership team, Biosecurity Taranaki is committed to expanding its membership and increasing involvement from all sectors. The initiative is guided by three pou (pillars):

- Raise awareness
- Build capability
- Protect for generations to come

Biosecurity Taranaki encourage all regions to bring together a coalition of the willing to support better biosecurity outcomes for their regions.

A new Biosecurity System Action Plan

Amelia Pascoe, Biosecurity New Zealand

Amelia is Principal Adviser Conservation at Biosecurity New Zealand where she has worked for over 20 years – in roles spanning biosecurity imports, surveillance, readiness, response, and long-term pest management. Facilitating connections across the biosecurity and biodiversity systems, and supporting the relationships between Biosecurity New Zealand, Department of Conservation, Regional Council and others is a core part of her current role.

New Zealand faces increasing biosecurity risks due to pressures including growth and diversity in trade and tourism, increases in the number of packages arriving in New Zealand through online purchasing, the impacts of climate change, and pressure from established pests. In this challenging and changing environment, we need to make sure our biosecurity system is resilient and can adapt to keep pace with emerging threats.

A new **Biosecurity System Action Plan** creates a shared direction for people and organisations committed to strengthening New Zealand's biosecurity system. Actions are expected to drive change where it is needed most, using collective effort and resource. The development of the Plan has been collaborative, involving a wide range of biosecurity system participants over several years. It builds on and replaces previous biosecurity strategies Tiakina Aotearoa – Protect New Zealand (2003) and Biosecurity 2025. The launch of the Plan will come with a 'call to action' - to confirm commitment from those who have already expressed an interest in supporting delivery, and to encourage others to get involved. To keep informed of developments or to get involved visit: www.biosecurity.govt.nz/biosecurityactionplan

Ngā Whenua Rāhui and the importance of indigenous biodiversity and formal protection across Aotearoa

M. Mullins, Ngā Whenua Rāhui

Mavis Mullins (Rangitāne, Te Atihaunui-a-Paparangi, Ngāti Ranginui) is an inductee into the New Zealand Business Hall of Fame, named as an Outstanding Māori Business Leader, a Rural Woman of Influence (2016) and a Member of the Order of Merit for services to the wool industry.

Mavis is highly experienced in governance roles and is currently chair of Ngā Whenua Rāhui, co-chair of Rangitāne o Tamaki nui-ā-Rua, Patron of the AgriWomen's Development Trust, Chair of Aohanga Incorporation and a board member on Moana Fisheries.

Mavis will korero on the work of Ngā Whenua Rāhui and how intergenerational indigenous biodiversity and formal protection can interlock effectively with economic endeavour.

Chasing dreams in biosecurity

Dave Cade, Check, Clean and Dry Advocate

3-Minute GEMS

Barriers that are stopping people from applying for a Controlled Substances License, and some solutions

Dai Morgan, Northland Regional Council

Dai is the Biosecurity Manager at Northland Regional Council.

The use of controlled VTAs, such as cyanide and 1080, requires the operator to hold a CSL, which is issued by Worksafe. While it is important to ensure that operators have appropriate training to deploy controlled VTAs, the process of becoming a CSL holder is convoluted, protracted, and expensive. Furthermore, certification only lasts for five years. Due to these barriers, there has been a noticeable decline in the number of large landowners holding CSLs in Northland, which is reducing the amount of pest control being done on private land. In addition, these barriers are also stopping members of community-led conservation projects from applying for CSLs. As central and local governmental agency resources become stretched, greater partnerships with the community will be needed in order to maintain the conservation gains that have been made in recent years through controlling mammalian pests. This 3-minute GEM presentation will explore some pragmatic modifications that could be made to the CSL process and ask if other agencies would like to collaborate with the Northland Regional Council to action these changes.

Protecting Australasian Bittern/matuku-hūrepo from Predators in Wairarapa Moana

Glen Falconer, Greater Wellington Regional Council

Glen is the Team Leader of the Pest Animals team at Greater Wellington Regional Council and been involved for 30 years in planning and implementing pest control operations across the Wellington Region.

Australasian Bittern/matuku-hūrepo numbers at Wairarapa Moana were declining due to predation and wetlands degradation. This was highlighted when predators were drawn to Spotless Crake recorders when played by wetland bird monitoring contractors back in 2012. This was the catalyst for getting predator trapping started at Boggy Pond wetlands in July 2013. GW installed 110 trapping sites around Boggy Pond, and the adjacent Mathews Lagoon and Wairio Restoration Block Wetlands, totalling 670ha, plus other important wetlands surrounding Wairarapa Moana. After 11 years of intensive trapping at Boggy Pond wetlands we have seen a lift in Bittern numbers. This was very encouraging news for all staff involved in the big effort to enhance the breeding success of this iconic, critically endangered species. We are now hopeful that this trend will continue as we focus our efforts into other areas of Bittern habitat that currently receive no predator control and focus on pathways which predators are using to immigrate these areas.

Are recreational users of Tīkapa Moana/Hauraki Gulf biosecurity risk savvy?

Jie Huang, Unitec

Co-authors: Chelsee Neverman[2], Toby Smith[1], Nigel Adams[1], Diane Fraser[1].
[1]School of Environmental & Animal Sciences, Unitec New Zealand
[2]Pathways & Marine Team, Infrastructure & Environment Services, Auckland Council, Auckland

Jiecheng (Jay) Huang is a third-year student at Te Pūkenga (Unitec) studying conservation and biodiversity management in 2025. Jay is working in partnership with Auckland Council Biosecurity and Behaviour Change Team who provided funding for this project to conduct surveys on biosecurity awareness of marine users of the Hauraki Gulf, with a focus on the efficacy of 'Check, Clean, Close' messaging. The students were supervised by Associate Professors Diane Fraser and Nigel Adams.

The Hauraki Gulf / Tīkapa Moana is home to many islands of conservation importance, with programmes in place to manage pests and creating sanctuaries for New Zealand native species. Boats, including leisure craft, are potential vectors for pest invasion to these islands. Community engagement plays a key role in the success of island biosecurity efforts, and an understanding of motivations and barriers to behaviour change is crucial for governing bodies who seek to protect all islands in the Hauraki Gulf. Biosecurity education in ferry passengers of the inner Hauraki Gulf is well covered but a gap exists in knowledge and education within the boating community. 'Check, Clean, Close' is an Auckland Council biosecurity awareness campaign aimed at encouraging marine park users to implement biosecurity measures before heading out to sea. This study will focus on recreational boat users in the Hauraki Gulf, using an anonymous survey to assess participant understanding of the 'Check, Clean, Close' messaging and their motivation to act on this message in response to an Auckland Council 'commitment form'. Preliminary findings from this survey conducted at boat ramps/ marinas, and at the two Boat Shows held in Auckland in March and May will be presented. These findings will assist Auckland Council for the future development of effective tools to spread awareness of biosecurity issues in the Hauraki Gulf and promote positive behaviour change.

Eradicating Cape Tulip: Help Spread the Word

Jane Le Guay, Biosecurity New Zealand

Jane is an experienced engagement and communications specialist at Biosecurity New Zealand, where she plays a pivotal role in supporting the Pest Plants team. As part of her work, she collaborates closely with the team leading the National Interest Pest Response Programme. Jane focuses on the integration of engagement, behaviour change, and communication strategies, ensuring these are aligned to achieve key programme outcomes and support the Pest Plants team's objectives in managing biosecurity risks effectively.

Cape tulip (*Moraea flaccida* syn *Homeria flaccida*), once a popular garden plant introduced to New Zealand, is a highly invasive and poisonous species that threatens our environment, agriculture, and human and animal health. Declared a noxious weed in the 1950s, this plant has been the target of ongoing eradication efforts by Biosecurity New Zealand under the National Interest Pest Responses Programme. These efforts have seen Cape tulip eradicated from over 500 sites nationwide, leaving only 28 known infestations currently.

In 2024, Biosecurity New Zealand raised public awareness of Cape tulip's toxicity through media outlets, prompting numerous sightings and confirming its presence at three new locations. This highlights the continued need for ongoing education and vigilance.

Cape tulip has been banned from import and sale for decades. However, it continues to be found in older gardens, particularly around historical homesteads and their surrounding pastures. As a notifiable plant under the Biosecurity Act 1993, Biosecurity New Zealand encourages everyone to remain vigilant and report sightings of this weed to us.

Biosecurity New Zealand is dedicated to seeing Cape tulip's complete eradication. In partnership with regional councils, we have developed engaging public-facing materials, including flyers for community events, a set of FAQs and eye-catching social media tiles, to encourage awareness, detection, and reporting.

Spread the word to your networks: let's work together to protect New Zealand's unique environment from this dangerous invader.

Lilly pilly beetle: should we be concerned for the New Zealand native maire tawake?

Jemma Owen, Unitec

Co-authors: Ben Goodwin, Wesley Webb, Toby Smith, Nigel Adams, and Diane Fraser,
School of Environmental and Animal Sciences, Unitec, New Zealand

Jemma is a recent graduate of the Bachelor of Applied Science (Biodiversity Management) from the School of Environmental and Animal Sciences at Unitec, Auckland. The student was supervised by Associate Professor Diane Fraser, Lecturer Wesley Webb and Senior Technician Ben Goodwin.

The lilly pilly beetle (*Paropsides calypso*) originates from the subtropical rainforests in northern New South Wales, Australia and the coastal regions of south eastern Australia, has established in the Auckland region, New Zealand. It is a voracious foliage consumer of at least three Australian Syzygium species, which are commonly used as garden hedges in New Zealand. Maire tawake or swamp maire (*Syzygium maire*) is a threatened New Zealand endemic swamp forest tree species.

We tested whether *S. maire* was a suitable host plant for *P. calypso*. We starved beetles or larvae for 24 h before exposing then to mature leaves of the New Zealand Swap maire (30 leaves) or the Australian native *S. australe* (30 leaves) for 48 hours. Each leaf was traced on 2mm x 2mm grid paper before and after exposure to the beetles or larvae and the extent of leaf damage around the margins was determined. No damage was seen in any of the *S. maire* leaves with either *P. calypso* adult or larvae. The average percentage of damaged perimeter of *S. australe* by adults was 20% (SE 2.32) and larvae 18% (SE 2.70). The lack of herbivory by *P. calypso* on the endemic *S. marie* suggests this introduced insect may not impact this native endemic species. Further research could consider whether young growth of swamp maire (*S. maire*) is potentially palatable.

Using iNaturalist to contribute to the Smart Weed Alert Tool (SWAT)

Nigel Charman, Two Ten Consulting Ltd, speaking for Kate McAlpine, Department of Conservation

Kate is a Senior Science Advisor at the New Zealand Department of Conservation, with more than 23 years of experience researching environmental weeds. Kate has studied a broad range of environmental weed issues, including the dispersal and impacts of weeds, seedling shade tolerance of weeds, and native succession in woody weed stands. In 2024, Kate led the update of the list of environmental weeds in New Zealand, adding 112 new species. Currently, Kate is leading a team to develop a digital 'Smart Weed Alert Tool' that will improve our ability to detect new weed incursions early. See Kate's weedy work stories on Instagram: @katemcweedatwork.

New Zealand has a huge pool of current and potential weeds but doesn't have an effective surveillance system to detect new weed incursions early. Typically, we only pick up new weed invasions when we get lucky, i.e., someone knowledgeable just happens to notice. This means that most new weed incursions are not detected until the weed has become widespread and thus difficult (and expensive) to control. The Smart Weed Alert Tool (SWAT) will be a game changer for national weed surveillance and will significantly improve our chances of detecting new weed incursions early. SWAT will be freely available and will allow users to set up their own weed alerts based on highly specific criteria of interest. SWAT will download plant records from the Global Biodiversity Information Facility (GBIF) on a daily basis, analysing each record against the current distribution map for that species to detect significant new invasions. One of the main data sources that feeds into GBIF is iNaturalist (along with herbarium data and National Vegetation Survey data). This means that anyone can contribute to this national weed surveillance tool simply by posting plant observations to iNaturalist. Each new record adds another 'dot' to the distribution map for that species, and the more dots we have on the map, the more accurate and powerful SWAT will be. In this talk, we'll give an update on where SWAT is at, and how you can get involved.

Eradicating Taiwan Cherry Trees: Challenges in Managing an Invasive Amenity Species

Lindsay Barber, Tasman District Council

Lindsay is a Senior Biosecurity Officer at the Tasman District Council, a position he has held for the past two years. With nine years of experience at the Council, Lindsay began his career as a Biosecurity Officer and has played a key role in implementing and overseeing the region's pest management strategies. His work focuses on the control of Regional Pest Management Plan species and the application of biocontrol methods to support long-term ecological health.

Since its introduction to New Zealand in the 1960s as an ornamental species, Taiwan cherry (*Prunus campanulata*) has rapidly naturalised and become a highly invasive tree in many regions. Its vibrant early-spring blossoms attract large numbers of pollinators such as tūī, bellbirds and bees, creating a visually striking and significant annual event. This appeal often leads to resistance from property owners when told their tree is required to be destroyed, complicating eradication efforts. This presentation explores the social and ecological challenges posed by Taiwan cherry management, and highlights the variable characteristics among cultivar trees that further hinders control measures.

3 MINUTE GEM

Biosecurity alert: Spotted Lanternfly

Taylor Devonshire & Diane Fraser
School of Environmental and Animal Sciences, Unitec, New Zealand

Taylor is a current second year student in the Bachelor of Applied Science (Biodiversity Management) from the School of Environmental and Animal Sciences at Unitec, Auckland. This work is an output of an assessment in her Ecological Risk & Mitigation course in her degree under the tuition of Associate Professor Diane Fraser.

The spotted lanternfly (SLF) (*Lycorma delicatula*), native to the northern provinces of China, is a highly invasive pest now established in parts of the United States, Korea, and Japan. It is a polyphagous sap-sucker of vascular plants, with a preference for the tree of heaven (*Ailanthus altissima*). Its excretion of honeydew promotes the growth of sooty mould, which impairs photosynthesis and reduces both plant growth and fruit set. This honeydew production also attracts ants, bees, hornets, and wasps, contributing to its status as a significant nuisance in urban and agricultural environments.

With a wide range of host species, including economically important horticultural and ornamental plants, SLF poses a biosecurity threat to New Zealand. This work investigates the likelihood of the establishment and potential impact of the spotted lanternfly within New Zealand.

Thank you to all our NETS2025 sponsors

Major Sponsors

Greater Wellington
Te Pane Matua Taiao

horizons
REGIONAL COUNCIL

Earth Sciences New Zealand

Biosecurity New Zealand
Ministry for Primary Industries
Manatū Ahu Matua

Boffa Miskell

Trade Displays

Key Industries
Protecting people, crops and native species

Wildlands
Ecology and Restoration

Unitec
Te Whare Wānanga o Wairaka

NZ AutoTraps

Rural Assist

Learn & Grow
Sabbath
Training