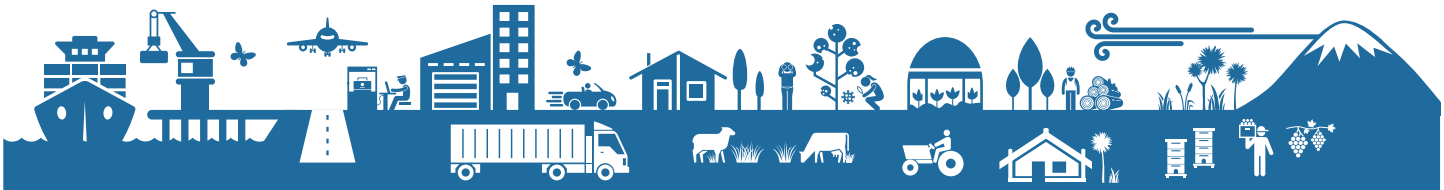
B3 Science Solutions for Better Border Biosecurity AOTEAROA NEW ZEALAND



Better Border Biosecurity (B3)

# Strategic Plan 2020 – 2025

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# SECTION 1. **STRATEGY ON ONE PAGE**

## OUR PURPOSE

**To deliver research that adds measurable value to Aotearoa New Zealand's biosecurity system.**

## OUR VISION

**A world-leading plant border biosecurity system for Aotearoa New Zealand.**

## OUR PRINCIPLES

**Leadership, collaboration, co-innovation, partnership, integration, responsiveness, research excellence, capability development**

## OUR SCOPE

Pre-border, at-border, and immediate post-border research on high impact, harmful pests (arthropods, pathogens and weeds) in productive and natural terrestrial plant systems

## OUR INTENDED IMPACTS

Our research results will minimise the entry and establishment of invasive pests (arthropods, pathogens and weeds) that threaten Aotearoa New Zealand's valued flora including taonga. This will protect the welfare of our environment, retain and build value in our important plant systems, and will underpin investor confidence for sector growth and innovation, at the same time as maintaining market access for plant-based exports.

## OUR IMMEDIATE PRIORITIES 2020-2025

**MEANINGFUL CONNECTION TO TREATY PARTNERS**

**CO-ORDINATED INVESTMENT APPROACH**

**INCREASED PROFILE OF OUTCOMES**

**INCREASED VALUE AND IMPACT FROM ACTIVITIES**

## OUR RESEARCH ACTIVITIES

Centred on five themes that reflect the priority areas of biosecurity activity articulated within current New Zealand biosecurity strategies, the border biosecurity continuum, and a pragmatic way to link to the activities of B3's operational stakeholders

**RISK FROM INTENTIONAL INTRODUCTIONS**

**RISK FROM UNINTENTIONAL INTRODUCTIONS**

**PATHWAY RISK MANAGEMENT**

**DIAGNOSTICS**

**SURVEILLANCE AND ERADICATION**

## OUR CROSS THEME FEATURES

Social engagement, high risk organisms, climate change, new technology, data management, operational support, preparedness

## OUR INPUTS

Cross-sectoral research teams with a range of skills (biologists, ecologists, taxonomists, molecular biologists, statisticians, modellers, technologists, social scientists etc), a clear problem co-developed with stakeholders, sufficient funding, the necessary equipment and methods to tackle it, and established international connections/collaborations

## OUR PARTNERS

Five government science agencies: Plant & Food Research, AgResearch, Scion, Manaaki Whenua Landcare Research, the Bio-Protection Research Centre at Lincoln University – four end-user partners: the Ministry for Primary Industries, the Department of Conservation, the New Zealand Forest Owners Association and Horticulture New Zealand. The Environmental Protection Authority, and Beef+Lamb NZ have observer status.

## OUR OUTPUTS

To provide – through demonstration and communication- improved knowledge, tools and methodologies to Government, industries, iwi, communities and researchers. The delivery of these outputs will come via peer reviewed publications, written reports, presentations, workshops, hui, wānanga, expert advice, and uptake and use of novel tools.

## OUR OUTCOMES

**Government, industries, iwi and communities are using new knowledge, tools and methodologies…**

… with greater certainty of the economic, environmental, social & cultural risks of introducing new biological control agents

… with greater certainty of the economic, environmental, social & cultural risks from invasive pests, and are able to respond appropriately to manage them within the biosecurity continuum

… to understand the multiplicity of pathways for invasive pests to arrive in New Zealand, and have appropriate scientific solutions to manage them

… to identify and characterise invasive pests at all stages along the biosecurity continuum (pre-, at-, post-border)

… to detect, and where possible eradicate, invasive plant pests during the initial stages of the invasion cycle

**… and new relevant legislation is well founded on scientific and Mātauranga principles**

# SECTION 2. **CONTEMPORARY INFLUENCES**

This Strategy responds to the biosecurity imperatives currently facing Aotearoa, New Zealand's natural and productive plant landscapes.

### IT BUILDS ON:

- Two previous B3 Strategies
  - Better Border Biosecurity Strategic Plan 2010/11 – 2016/17
    - June 2010
  - Better Border Biosecurity (B3) Strategy
    - October 2016

### IT IS INFORMED BY:

- Relevant strategies from related activities
  - Ministry for Primary Industries Science Strategy – Rautaki Putaiao – 2015
  - Conservation and Environment Science Roadmap – 2017
  - Primary Sector Science – Te Ao Tūroa Roadmap – 2017
  - Plant Biosecurity Research Initiative Strategy 2018
  - NZ Biological Heritage NSC Strategy 2019
  - Te Mana O Te Taiao. Aotearoa New Zealand Biodiversity 2020
  - Biosecurity 2025 Biosecurity Research, Science and Technology Priorities (draft)
  - Plant Biosecurity Council Strategy 2020 (draft)

### INCORPORATES PRIORITIES IDENTIFIED AT:

- A B3 Collaboration Council strategy workshop in December 2019
- Virtual B3 theme meetings held in May 2020

*Photo courtesy of Port Nelson*

# SECTION 3. **RELATIONSHIPS**

B3 is Aotearoa, New Zealand's pre-eminent provider of research for science-based terrestrial plant border biosecurity solutions. It provides a valuable and efficient single point of access to the New Zealand science system for plant border biosecurity research. It is an unincorporated joint venture that integrates investment and expertise from five government science agencies – Plant & Food Research, AgResearch, Scion, Manaaki Whenua Landcare Research, the Bio-Protection Research Centre at Lincoln University – and four end-user partners – the Ministry for Primary Industries, the Department of Conservation, the New Zealand Forest Owners Association and Horticulture New Zealand. The Environmental Protection Authority, and Beef+Lamb NZ have observer status.

Māori have strong connections to the biological heritage of Aotearoa/ New Zealand, as intergenerational guardians of significant natural resources and indigenous knowledge, and owners and managers of commercial assets with views and belief systems that can underpin biosecurity decision-making, governance and stewardship. To be able to respond to the aspirations of Māori in this area, the representation of Māori within B3 has become a major priority for this strategy (see below).

B3 pro-actively engages with a range of national biosecurity entities such as the Plant Biosecurity Council, Brown Marmorated Stink Bug Council, Fruit Fly Council, Xylella Action Group, Spotted Wing Drosophila Action Group, Tauranga Moana Biosecurity Capital, and Kiwi Vine Health.

B3 is fully aligned to the Biological Heritage National Science Challenge – Ngā Koiora Tuku Iho

Biosecurity work requires a focus beyond New Zealand's borders and many B3 projects have strategic links to international research. B3 and its parties have also entered into a number of strategic formal and informal relationships to strengthen connections with overseas research and policy work.

**HIGH-LEVEL INTERNATIONAL CONNECTIONS**

# SECTION 4. **SCIENCE**

B3 research is centred on five themes to reflect the priority areas of biosecurity activity articulated within current biosecurity strategies. This approach provides a pragmatic way to link biosecurity research with the activities of B3's operational stakeholders, and maintains important links to work previously carried out.

The five themes target the following outcomes:

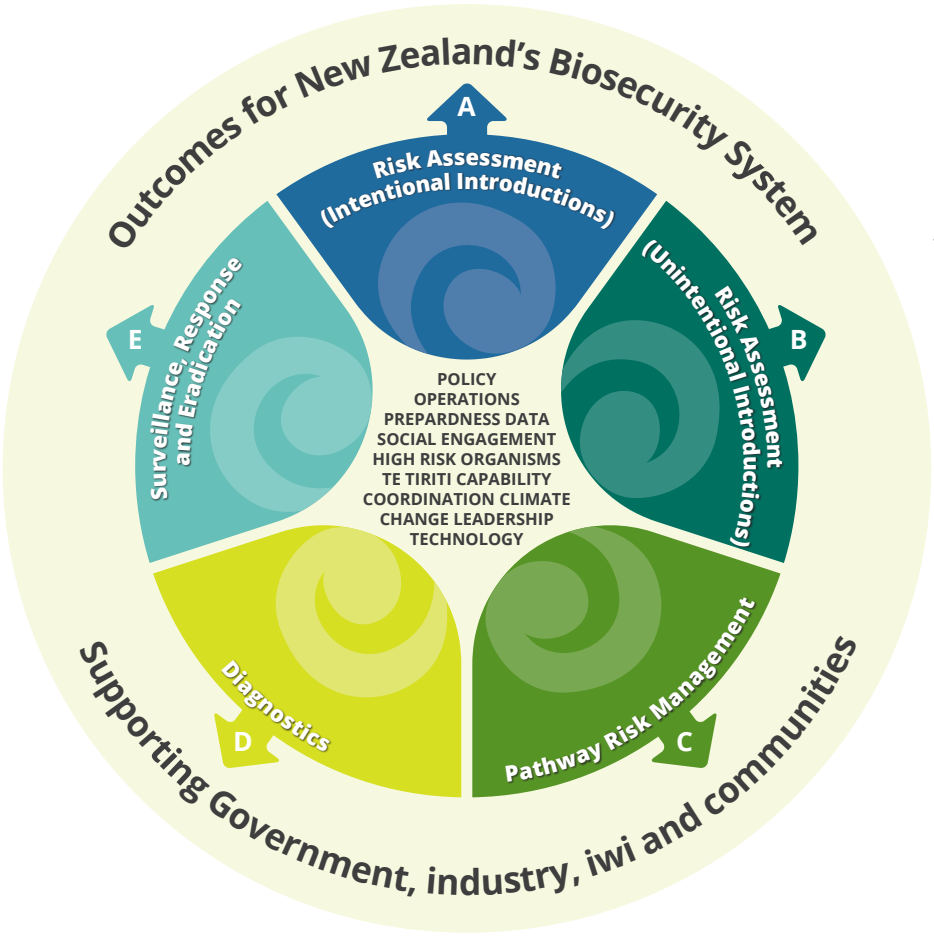
**THEME A**
Improved tools and methodologies for assessing risk and predicting impacts for intentional introductions

**THEME B**
Improved tools and methodologies for identifying hazards, assessing risk, predicting impacts and ascertaining where in the system mitigation measures are best targeted for unintentional introductions

**THEME C**
Fit for purpose tools and methodologies for reducing risks along importation pathways.

**THEME D**
Fast, cost effective, robust and accurate diagnostic methods and tools to enable informed biosecurity decisions

**THEME E**
Tools and strategies for preparedness for and response to incursions of invasive plant pest species, including determining their presence or absence




The links between B3 themes and projects remain paramount as any part of the biosecurity continuum can impact on others. Building on the core five theme focus, a range of cross-theme features also integrate into the B3 science programme. This approach is a major contributor to achieving the biosecurity outcomes and can be found to varying degrees within different projects.

Building on this core, B3 researchers also work co-operatively on related projects funded from a range of sources.

# SECTION 5. **HIGH LEVEL RESEARCH AREAS**

## HIGH LEVEL RESEARCH AREAS

### GLOBAL CHANGE

The world is undergoing major climate, trade, tourism, demographics/social, geopolitical and technological change. We need to anticipate these changes to plan our future biosecurity system.

### TECHNOLOGY PLATFORMS

Development of new socially acceptable and fit-for-purpose tools, including the exploitation of new digital and biotechnological technologies, are required through cross disciplinary teams including biologists and technologists.

### COMMUNITY EMPOWERMENT

Increasing awareness and knowledge, inspiring and enabling participation and developing socially acceptable tools for domestic and visiting communities is necessary to empower the team of 5m and visitors.

### TOURISM / BIOSECURITY INTERFACE

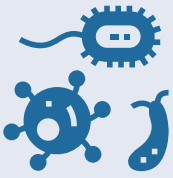
The tourism sector is under continual flux with increasing numbers and changing origins of international visitors year on year. The medium and long term impact of COVID-19 is unclear but the importance of tourism to the biosecurity sector will remain.

### ESTABLISHING AND INTEGRATING BIOSECURITY DATA

Discovering, ordering, cleaning, Interrogating and visualising past, present and predicted data improves our understanding of the changing biosecurity threats at different points on the biosecurity continuim.

### OPTIMISING INTERVENTION

Mitigation of biosecurity threats are undertaken within the biosecurity continuum to maximise their return on investment.



### NATURAL SYSTEMS INTERFACE

The movement of invasive organisms into natural systems is often predicated by their presence in neighbouring productive systems and urban areas. The protection of our indigenous taonga species will depend on our understanding on these interactions.

### HARNESSING THE POTENTIAL OF MĀTAURANGA

The unique knowledge and perspective of Māori is recognised and Māori/iwi actively participate as kaitiaki (custodians) across the biosecurity system.

# SECTION 6. **STRUCTURE**

The B3 research collaboration has a vertically-layered structure with wide representation to maximise science outcomes. Representation is reviewed and adjusted on a regular basis in response to changes within the biosecurity system.

| | |
|---|---|
| **Governance** | The Collaboration Council (CC) provides a governance role for B3 and a link between the executive arms of the parties' organisations and the science programme |
| **Science excellence** | The Science Advisory Group (SAG), made up of high-ranking scientists from the B3 parties, assesses and recommends research projects to the CC |
| **Investment** | The Business Plan, develop by the Director and Theme Leaders, and based on agreed investment from the CRI parties, outlines the planned activities for a given year. |
| **Leadership** | The B3 Director and the group of five Theme Leaders, who are also representatives for the research providers, manage the day to day running of the science portfolio |
| **Research** | Project Leaders and their teams make up the B3 science programme and undertake the research within the B3 programme |
| **Engagement** | Theme Representatives from the stakeholders, provide advice and direction at the twice-yearly Science Partnership Forum (SPF) as well as at a range of formal and informal meetings throughout the year |
| **Implementation** | Government operational agencies, MPI and DOC, and now the members of the Government Industry Agreement (GIA), create the value from B3's science through their co-investment in the form of research uptake and application |

# SECTION 7. **IMMEDIATE PRIORITIES**

## CONNECTION TO TREATY OF WAITANGI PARTNERS

B3 will enhance partnership with Māori in all its activities. It will achieve this by taking a Treaty of Waitangi-based approach for all research investments. B3 will champion the importance of, and inclusion, of Mātauranga Māori in its research programme in a manner that gives effect to Māori conservation and bio economic aspirations.

### MAINTAIN

- Capability development opportunities for young Māori researchers within the B3 programme
- Identification of current B3 projects of relevance to Māori, in particular the protection of taonga

### IMPROVE/INCREASE

- The reflection of Treaty of Waitangi obligations throughout B3 structure: governance, investment, operational, engagement, research, and implementation
- Meaningful consultation and early engagement across the B3 research portfolio
- Participation in relevant wānanga, hui, conferences, forums and workshops
- Research in each of its five themes to mitigate risks to taonga species from invasive species that are likely to invade Aotearoa
- Proportion of B3 investment targeting biosecurity issues for Māori

### INITIATE

- Appointment of CC members
- Appointment of Māori Research Leader
- The development of Māori strategy (reflecting representation across B3 (e.g. SAG))

## CO-ORDINATED RESEARCH INVESTMENT MODEL

B3 is Aotearoa, New Zealand's largest investment in plant border biosecurity research and it serves as the pre-eminent research provider for science-based plant border biosecurity solutions. Because B3 is a single point of access to the NZ science system for plant border biosecurity research, co-ordination - both internally (by project and theme), and externally across the biosecurity investment community is imperative. Strong international connectivity is also an important component in research co-ordination.

### MAINTAIN

- The current five themes structure to provide continuity with past activities, a framework for science leadership and management, and a transparent integration of New Zealand research and operational activities
- A balance of research projects across themes, organisms (invertebrates, pathogens, weeds), and research outcome matrices that reflect national priorities, sector priorities, alternative funding sources, and accessible capabilities.
- Alignment with the Biological Heritage NSC and contribution to the Challenge's mission and objectives
- Identification of gaps and opportunities for greater impact across the biosecurity system
- A dynamic response to the current and future needs of New Zealand's biosecurity system

### IMPROVE

- Cross-project and cross-theme mapping to identify relevant interactions
- The connection between related B3 projects, for example through combined workshops, to optimise investment in key biosecurity outcomes
- Co-ordination of investment from aligned research (e.g. Co-Investment Committee, Plant Biosecurity Council and sectors)
- International connectivity through, Euphresco, International BioEconomy Forum
- MOU with Plant Biosecurity Research Initiative to reflect a more strategic collaboration

### INSTIGATE

- Industry theme representation to create greater awareness and co-ordinate-with industry interests
- An all-of -B3 virtual meeting to exploit links between project and themes
- Development of an MOU with CEBRA to optimise regional risk assessment
- A focus on aligned research to compliment B3 investment through the Theme Leader Group

## GROW THE PROFILE OF B3

Knowledge about the benefit and impact to Aotearoa, New Zealand of B3 research activities will improve among stakeholders and the wider public under this strategy. Enhancing the profile of B3 and its outcomes will contribute to better plant border biosecurity outcomes for the country.

B3's profile with its stakeholders, both nationally and internationally, needs to grow. This awareness will develop through advocacy and communication directed vertically and horizontally within strategically-identified organisations and key contacts within the biosecurity system. This includes the New Zealand Team of 5 million.

Communication initiatives to amplify and share stories of impact, influence and innovation, will need to be efficient, targeted and fully aligned to the strategic objectives outlined in the broader B3 Strategy.

### MAINTAIN

- A national gathering for plant border biosecurity research practitioners through the biennial B3 Conference
- A vital outward-focussed B3 website
- Pro-active and strategic engagement with national and international committees, organisations and events
- Leadership in international plant border biosecurity conferences and workshops

### INCREASE/IMPROVE

- The co-ordination of communication across B3 parties
- The quality and relevance of the B3 Annual Report
- The strategic targeting of information to key biosecurity leaders and influencers
- The number and quality of news stories in social, government and industry media including the promotion of excellent science and significant impact
- Increase the impact rating of journals for B3 publications

### INITIATE

- Additional efforts to support growth of the B3 profile among parties and stakeholders, and where practical and relevant into the wider public domain
- The development of a consistent narrative, supported by up-to-date key messages that speak to the research contributions and impact of B3 work.
- Support for the communication efforts of B3 "champions" to help build the B3 brand
- An annual feedback loop to identify where improvement and enhancements can be made in the operationalisation of the communication strategy moving forward.
- The addition of communication targets in the Annual B3 Business Plan

## LIFT VALUE AND IMPACT

B3 will lift the value and impact of its investment in the form of research uptake and application at the border by operational agencies MPI and DOC, and now the members of the Government Industry Agreement (GIA). This approach will require frequent and effective communication among the various parties.

B3 will:

### MAINTAIN

- A process of project co-innovation with all stakeholders
- Management of the B3 portfolio to allow for changing research priorities
- A balanced investment that recognises the layered nature of the biosecurity system
- A win/win approach that includes high impact species and high priority science
- Investment that spans differing risk/return profiles, horizon based models and science and operational complexities

### IMPROVE/INCREASE

- Integration of B3, MPI and industry investments
- Co-investment with international parties
- Technology, data and innovation focus (including the development of new capability) to enable new and novel applications of tools and technologies
- Investment into science to understand uptake (including social license to operate)
- Mapping of investments across research profiles to better understand research gaps
- Management of perceptions of B3 outcomes through improved communication

### INITIATE

- A formalised biosecurity foresight initiative within B3 for NZ with Australian collaborators
- A range of activities to co-ordinate research investment (see above)
- A plan for committed and long term funding from partners