New Zealand's Biological Heritage

Ngā koiora tuku iho

A National Science Challenge

NEW ZEALAND'S BIOLOGICAL HERITAGE | Ngā Koiora Tuku Iho

National SCIENCE Challenges

Biological Heritage Challenge

Timeline to date

- Funded August 2014
- Revised research plan submitted to MBIE in April and has now been accepted
- 3 Programme workshops September 2014
- Programme Leaders (x3) confirmed
- Director appointment imminent
- Projects being developed by multi-institutional teams

Biological Heritage Challenge

Development of project briefs

Project proposals are being developed with the following criteria in mind:

- Stick to broad areas set out in the peer reviewed proposal
- Integrate across taxa, sectors, and ecosystems
- Emphasise novelty with explicit links to aligned funding
- Highlight both science excellence and relevance (mission)
- Integration of Vision Mātauranga
  (also stand-alone VM projects)
- Pull in co-funding through time

Biological Heritage Challenge

Distinctive role of new funding

- Use new funds to catalyse innovative research
- Strengthen connections among research and stakeholder communities
- Interdisciplinary approaches
- Align/build on existing research programmes

New Zealand's Biological Heritage

A National Science Challenge

Biological Heritage Challenge

Current state of play

- Project briefs on a continuum: 'good to go' through to 'going nowhere yet’
- 3 projects to be funded by 1 July; 4 more to follow
- Kāhui Māori and End-User Advisory Panel have formed and have developed criteria for project assessment
- Kaihautū providing input to all project briefs
- Māori Manager appointed and oversees all projects

New Zealand's Biological Heritage

A National Science Challenge

Programme 3:
Restoring resilient ecosystems

Reversing the decline of biological heritage

From: Climate change, invasive alien species, habitat loss, land-use change
Sustaining and restoring: Ecological processes and ecosystem connectivity
Involving: People and biological heritage: governance and stewardship

Whakawhānaungatanga

A process of: Establishing relationships - with the world, the people and with life
Optimising outcomes: Social, cultural, environmental, and economic

Programme 1:
Real-time assessment

Characterising biological heritage

1. Genomic characterisation of ecosystem function
2. Real-time surveillance and monitoring tools
3. Early detection of unwanted organisms
4. Citizens as active participants in monitoring and surveillance

Programme 2:
Reducing risks and threats

Protecting biological heritage

1. Next generation tools and technologies to mitigate threats
2. Social license to operate
3. Resilient networks to reduce unwanted organisms
4. Large scale management interventions

Upscaling: Local + Regional + National

- 3 Programmes in the Challenge
- P3 provides framework and context for the Challenge as a whole
- Overarching theme: resilience

NEW ZEALAND'S BIOLOGICAL HERITAGE | Ngā Koiora Tuku Iho | National SCIENCE Challenges

Programme 1

Real-time Bio-Heritage assessment

Outcome

Biological heritage information is available at relevant scales and in real time to enable biodiversity and biosecurity impacts to be considered in management decisions

New Zealand's Biological Heritage

A National Science Challenge

Programme 1

- 1.1 Mātauranga Māori characterisation of NZ's biodiversity *
- 1.2 Genetic characterisation of NZ's terrestrial and freshwater biota
- 1.3 A national framework for biological heritage assessment across natural and production landscapes

New Zealand's Biological Heritage

A National Science Challenge

Programme 2

Managing risks and threats

Outcome

Prevent biosecurity invasions and mitigate damage to indigenous and production ecosystems at landscape scales

New Zealand's Biological Heritage

A National Science Challenge

Programme 2

- 2.1 Biosecurity network interventions
- 2.2 Novel wasp control technologies
- 2.3 High-tech solutions to invasive mammal pests
- 2.4 Māori solutions to biosecurity threats *

New Zealand's Biological Heritage

A National Science Challenge

Programme 3

Enhancing and restoring resilient ecosystems

Outcome

Resilience to vulnerable ecosystems is enhanced, preventing irreversible tipping points resulting from biotic invasion and biodiversity loss compounding stressors such as land-use intensification and climate change

New Zealand's Biological Heritage

A National Science Challenge

Programme 3

- 3.1 Predicting and managing ecosystem tipping points
- 3.2 Customary approaches and practices for optimising cultural and ecological resilience *
- 3.3 Enhanced biodiversity and ecosystem services in production landscapes
- 3.4 Interdependencies within and between ecosystems

Opportunities

- Engagement with you, the stakeholders and end users, is critical to Challenge success
- Additionality / the ‘sweet spot’
- Transferable skills, integrated research opportunities, ‘big picture’ thinking
- ‘Ask not what the Challenge can do for you, but what you can do for the Challenge’

NEW ZEALAND'S BIOLOGICAL HERITAGE | Ngā Koiora Tuku Iho | National SCIENCE Challenges


HERE'S THE PLAN...