



NEW ZEALAND'S  
BIOLOGICAL  
HERITAGE

Ngā Koiora  
Tuku Iho

National  
**SCIENCE**  
Challenges

# New Zealand's Biological Heritage

## *Ngā Koiora Tuku Iho*

### National Science Challenge

Andrea Byrom

Challenge Director

RC SIG workshop: July 2017

- 11 Challenges
- Big strategic goals for NZ



# National **SCIENCE** Challenges

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**Landcare Research**  
**Manaaki Whenua**

# NZ's Biological Heritage NSC

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- Established 2014
- \$63m 10 years
- Parties include all NZ's CRIs, universities, MPI and DOC
- Strengthening partnership with Māori
- Working with central and local Government, business, philanthropic organisations, community groups







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## MISSION

Reverse the decline of New Zealand's biological heritage, through a national partnership to deliver step change in research innovation, globally-leading technologies, and community and sector action





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## MISSION

“Doing science in a much wider context”





# Research Programmes

- **Programme 1:**  
Real-time Biological Heritage assessment
- **Programme 2:**  
Reducing risks and threats across landscapes
- **Programme 3:**  
Enhancing and restoring resilient ecosystems



# Our Partners

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Ministry for Primary Industries  
Manatū Ahu Matua



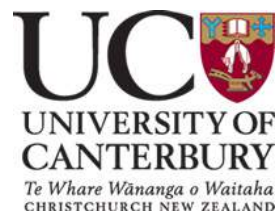
Plant & Food  
RESEARCH  
RANGAHAU AHUMĀRA KAI



THE UNIVERSITY OF  
WAIKATO  
Te Whare Wānanga o Waikato



Department of  
Conservation  
Te Papa Atawhai



# Four things

## National Statement of Science Investment

1. Stretch science
2. Alignment / Partnerships
3. Deliver Outcomes / Impacts
4. Profile / Incentivise investment





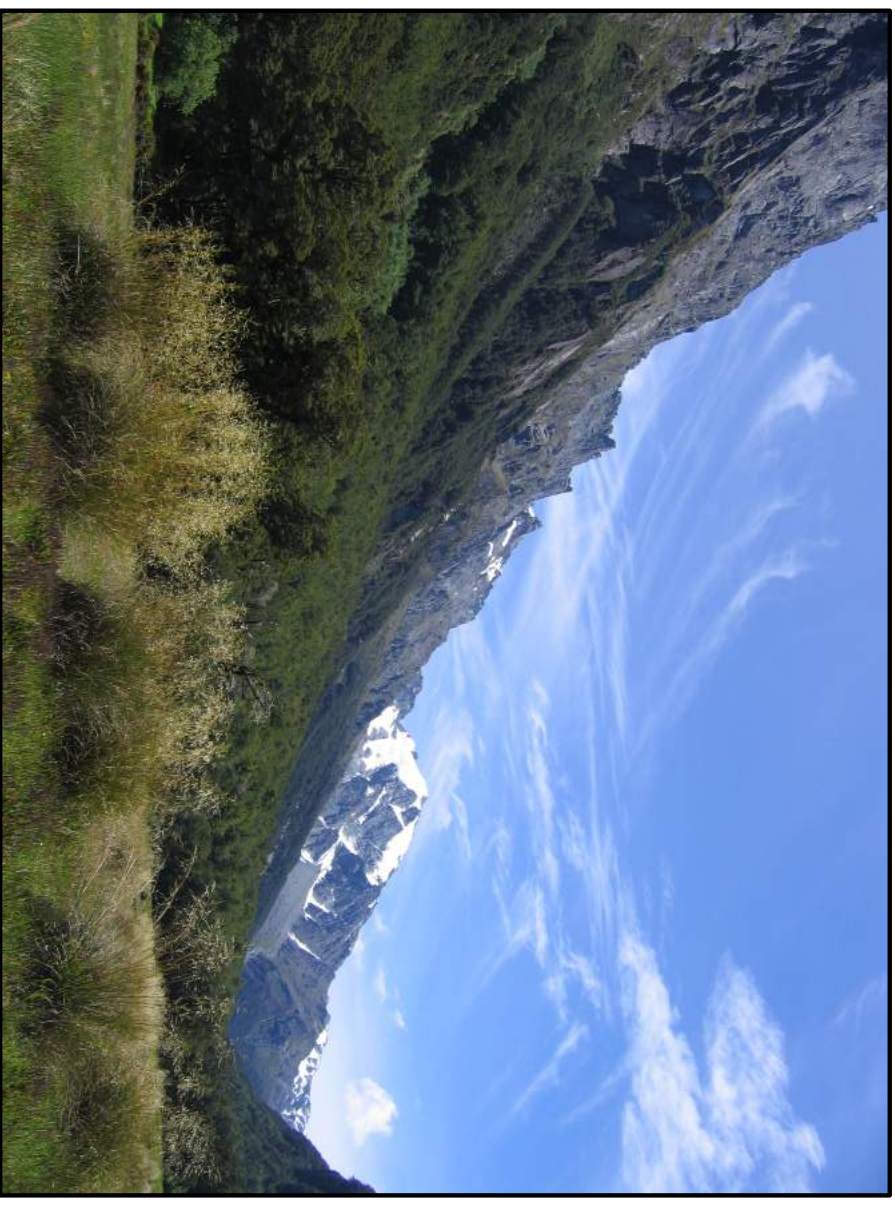
# Production and conservation sectors

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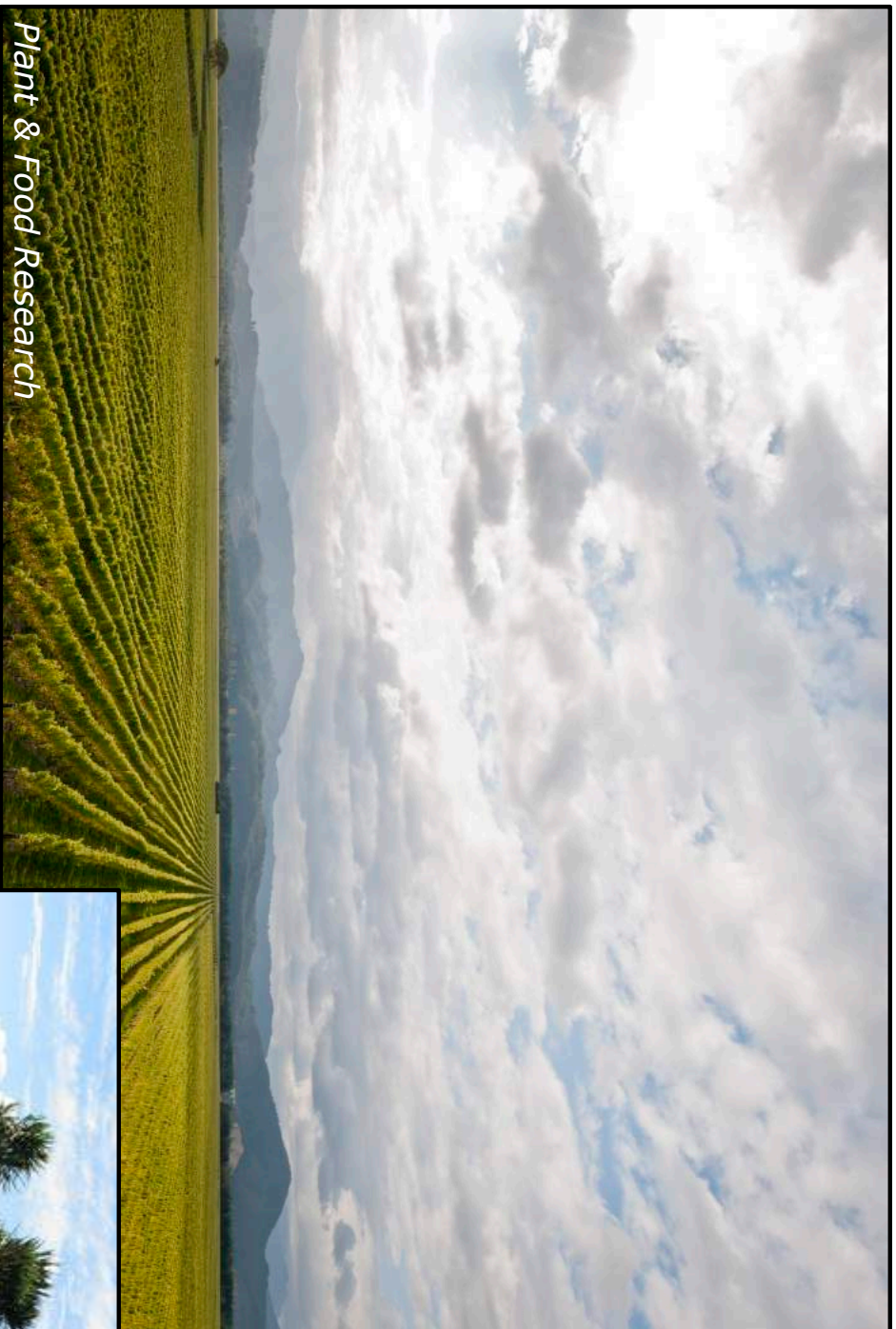




# Terrestrial and freshwater ecosystems

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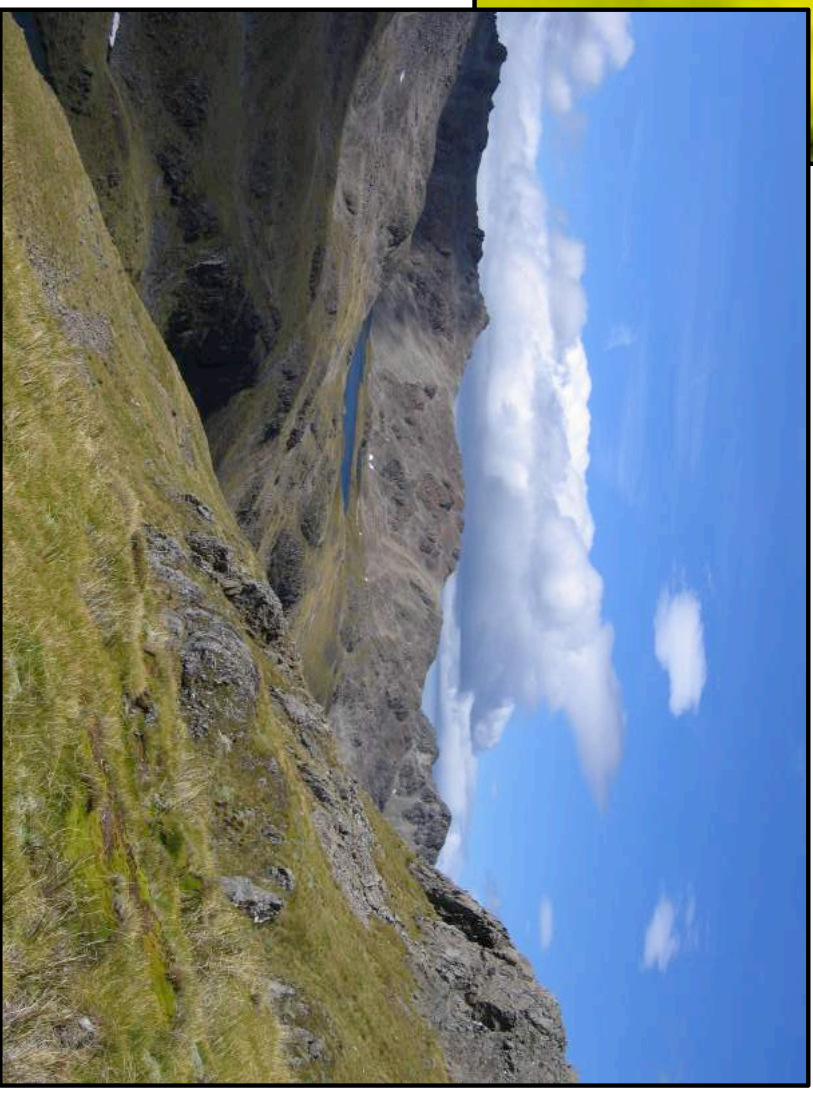


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# Biosecurity and Biodiversity



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# Our Goals

With our partners we will:

- 1 Protect and restore: secure threatened species and resilient ecosystems
- 2 Eliminate threats: weeds, pests, mammal predators, and pathogens
- 3 Detect and eradicate: zero impacts from biosecurity incursions
- 4 Restore healthy freshwater: wai taonga and mahinga kai
- 5 Track our progress: A bioheritage scorecard for Aotearoa

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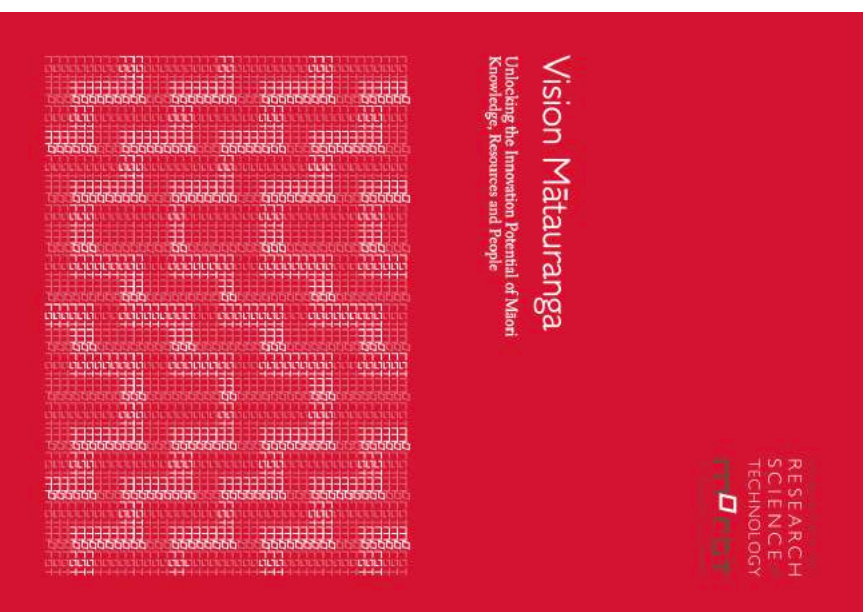


# Partnership with Māori

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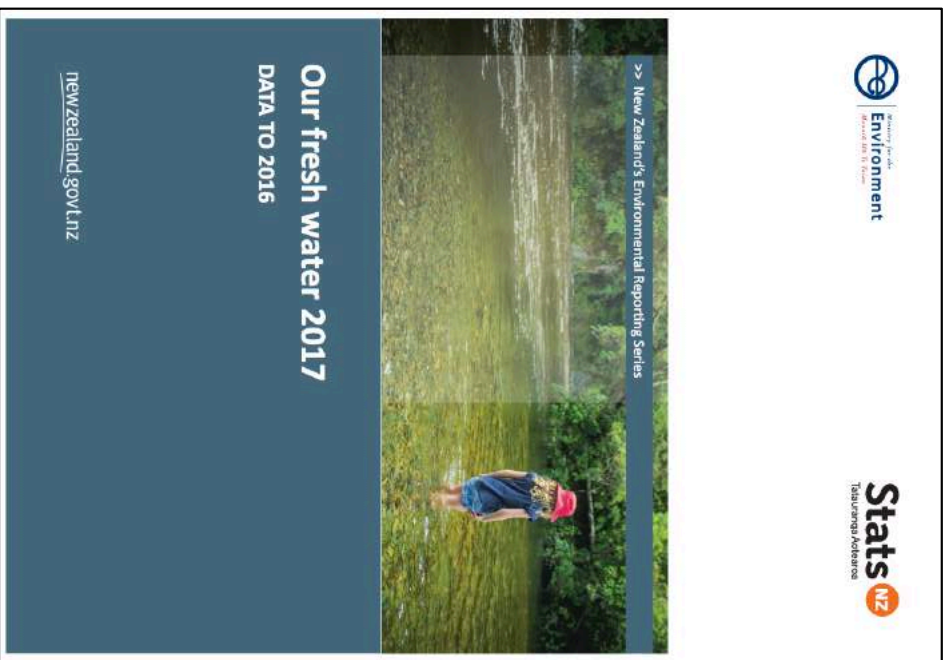
**TE TIRA**  
**WHAKAMĀTAKI**  
Māori Biosecurity Network







# Building resilience in freshwater ecosystems



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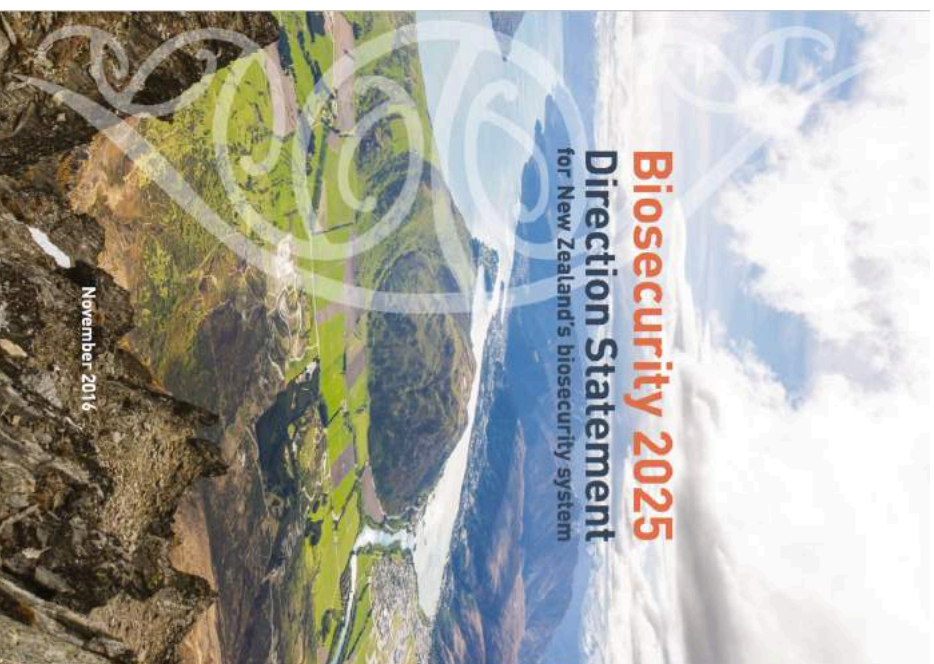


# Biosecurity



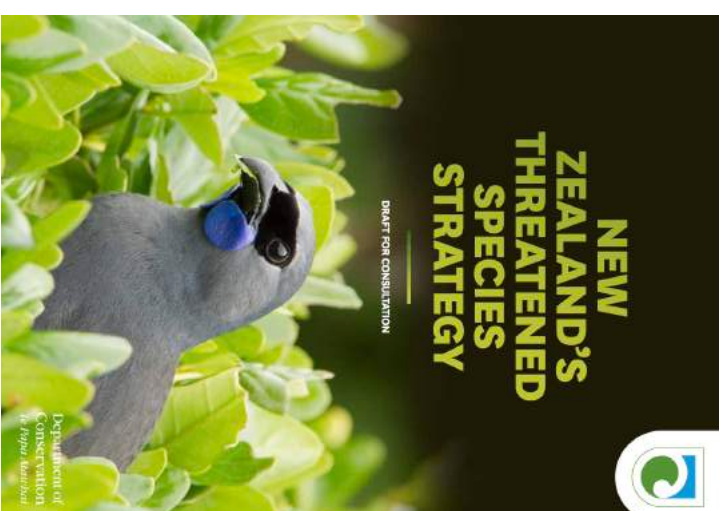
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# Threatened species



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# Plant pathogens

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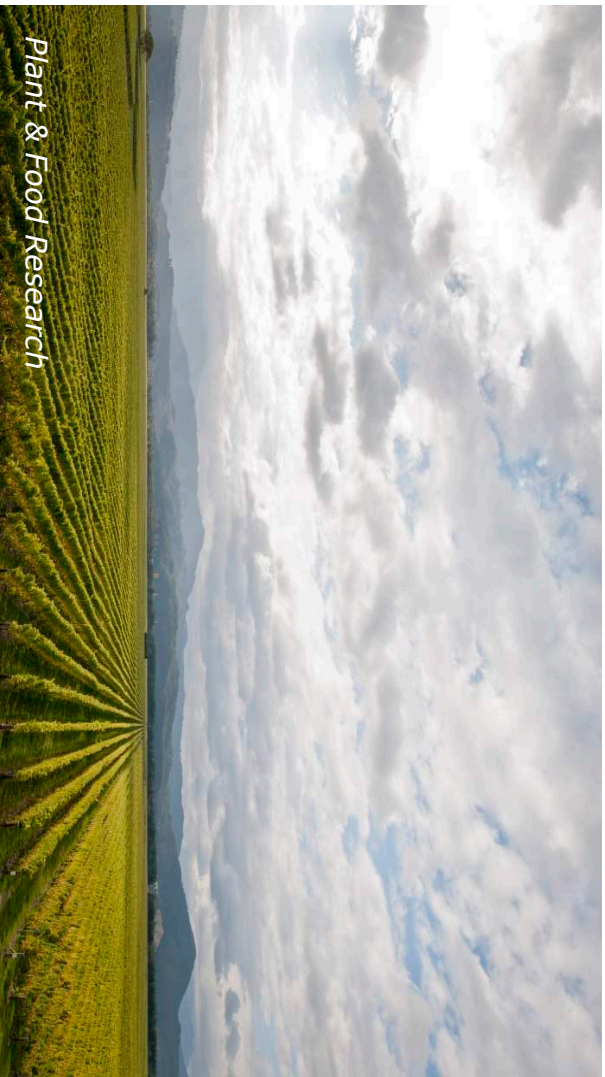
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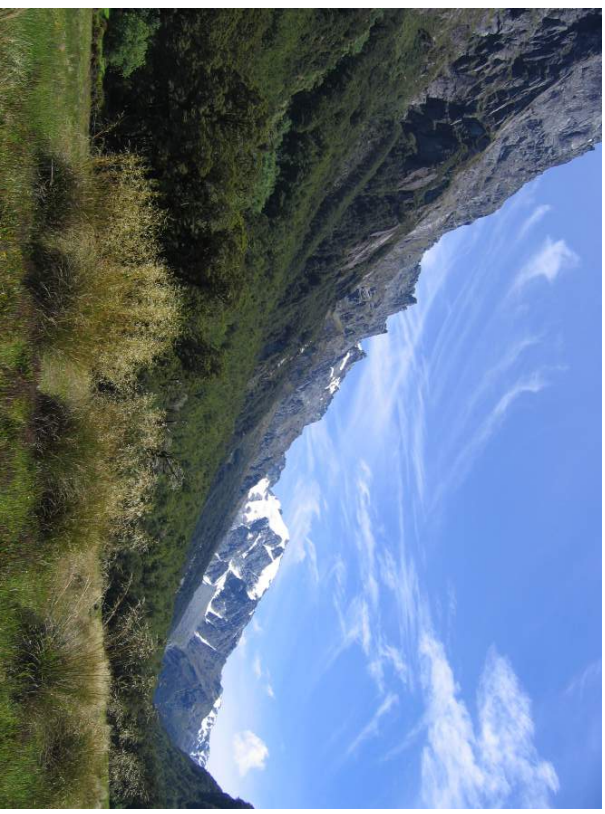
# Ecosystem resilience and restoration Connectivity across landscapes Ecosystem tipping points

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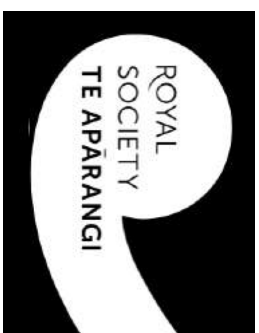


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# Novel technologies for wasp control







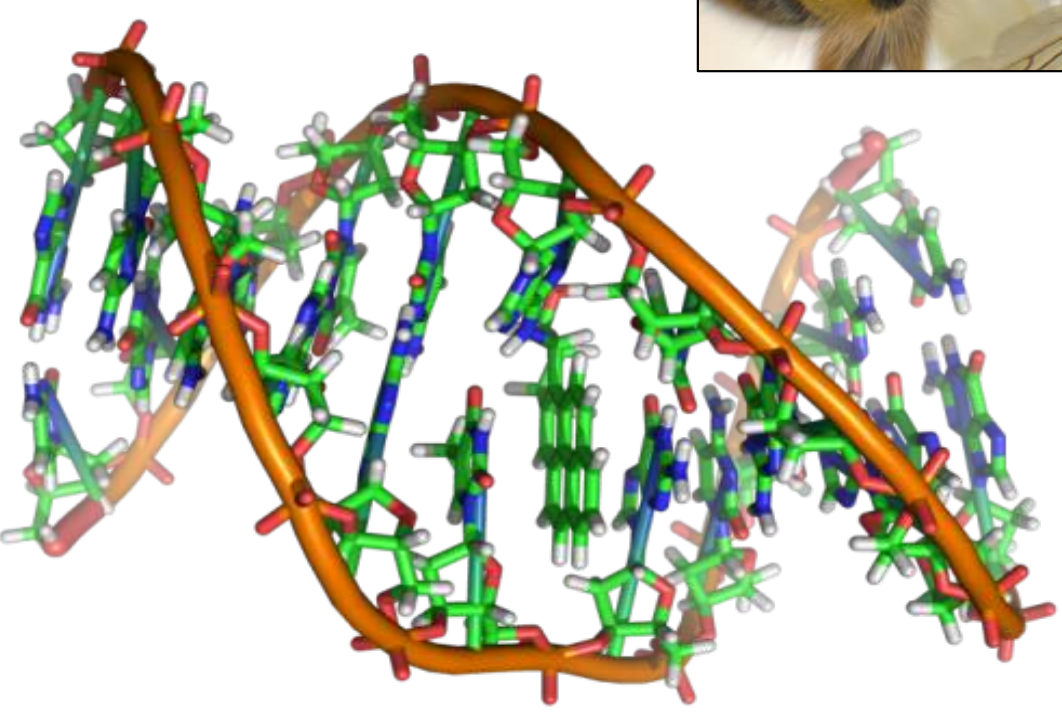
## Gene editing

2016: The revolution in gene editing technologies is making it easier to change genetic material with huge potential benefits in many sectors including healthcare, agriculture and conservation.

### Understanding gene editing

Browse the topics below to learn more about gene editing

<p><b>What is a genome?</b></p> 	<p><b>History of genetic engineering</b></p> 
<p><b>New gene editing technologies</b></p> 	<p><b>Current gene editing uses</b></p> 



VIEWPOINT

# IS THIS OUR MOON SHOT?

Ten years ago, even the most visionary conservationists thought ridding New Zealand of predators was a pipe dream. Now the PM says, "Let's do it."

WRITTEN BY KENNEDY WARNE



**PREDATOR  
FREE**

2050

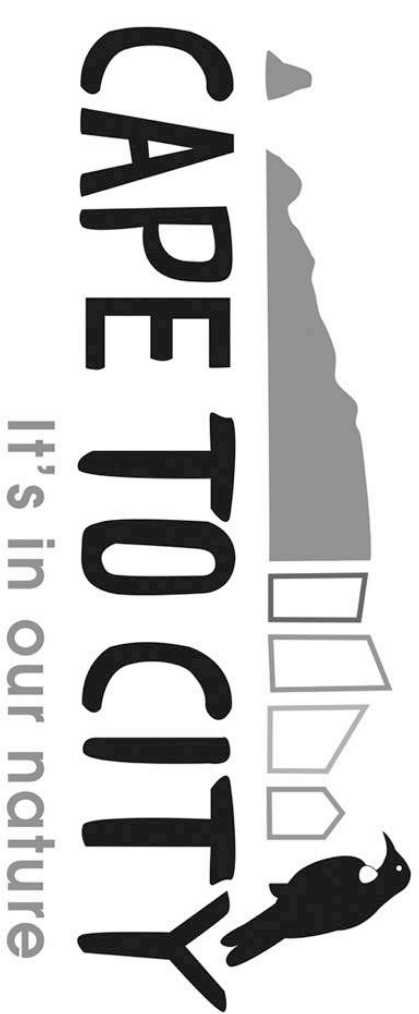


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# Flagship Sites



- Transformational vision
- Multiple outcomes (economic, social, cultural, environmental)



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# Planning for Tranche 2 funding

- MBE mid-Term review April 2018
- TOR for review
- Process not yet known
- Continued focus on big goals
- Interdisciplinary research
- Transformational
- Aligned research
- Perfect timing for SIGs





# How to connect to the Biological Heritage Science Challenge

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[www.biologicalheritage.nz](http://www.biologicalheritage.nz)

@BioHeritage\_NZ



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