



Poipoia Kia Rere – Māori Internship Programme 2024-25

## Project: Seed banks of cyclone-damaged lowland forest in Te Tairāwhiti

Supervisor	Dr Warwick Allen
Team	Ecosystems and Conservation
Site	Lincoln

### Goal of project

The aim of the project is to *characterise the seed bank communities of lowland floodplain forest in Te Tairāwhiti*, an ecosystem that was heavily impacted by Cyclone Gabrielle. Local communities have observed dieback of mature trees with repeated flooding of lowland podocarp forest, and although species such as kahikatea are disturbance-adapted, there is concern that forest recovery may be restricted by the novel pressures of invasive weeds (e.g. tradescantia, willow, pampas grass) and browsing mammals (e.g. deer and goats).

This intern project will complement work already underway in the region, where we are collaborating with multiple Iwi groups (e.g., Te Aitanga-a-Hauti in Whareponga and Uawa, and Rongowhakaata in Gisborne) to monitor damage to and recovery of lowland forest fragments following Cyclone Gabrielle.

Forest fragments have been selected along gradients of cyclone damage (e.g. undamaged to flooding and sediment deposition) and management intensity (e.g. unfenced to fenced for deer), and sediment/soil samples will be collected as part of the September fieldwork campaign. These will be stored and used for a seed bank experiment, which would be led by the summer intern. The seed bank experiment is a crucial part of the project because it will provide information on the potential plant community stored in the forest seed bank, as well as potential invasive weeds that arrived with sediment deposited in floods. These seed bank communities can be compared to the established (i.e., mature plants) and regenerating plant communities (i.e., seedlings established since the cyclone) in the forest plots.

Because the seed bank experiment will not require the full 25 hours per week, the allocated time will also support broader engagement for the taura across the Ecosystems and Conservation team and opportunities to participate in other projects, such as the DRAGnet experiment at Cass Research Station.

## Location of project

Lincoln

## Programme of work to be carried out

- Set up and maintain a seed bank experiment in the Lincoln glasshouses.
- Work with expert botanists to identify emergent seedlings and collect high quality data.
- Work with supervisor to perform analysis and write short report comparing the seed bank community along gradients of cyclone damage and forest management intensity.
- Participate in other Ecosystems and Conservation projects to develop a diverse skillset and gain a broader understanding of the work conducted by Manaaki Whenua.

## How to apply

Please email your CV, along with a covering letter stating which project you are applying for. Please also include your interest in, and suitability for that project, as well as your aspirations for the future to:

Jo Petrie [petriej@landcareresearch.co.nz](mailto:petriej@landcareresearch.co.nz)