

MSc Scholarship Available

Modelling the Impacts of Climate Change on Mahinga Kai Habitats within Te Arawa Lakes

Te Arawa Lakes Trust alongside NIWA and the University of Waikato are seeking applicants for the Whakahohetia Ngā Wai Kāinga focus study as part of the Toitū Ngā Taonga Waimāori research programme.

Whakahohetia Ngā Wai Kāinga is a focus study that aims to support Te Arawa's place-based prioritisation and implementation of adaptation interventions that will support the resilience of taonga species and iwi/hapū communities under a changing climate.

Project Overview

This MSc study will focus on simulating the effects of climate change on mahinga kai habitats within Te Arawa Lakes by utilising existing lake ecosystem models for Lake Rotorua (and potentially additional lakes). A prototype Mahinga Kai Habitat Suitability Index was previously developed to assess habitat suitability of kōura and kākahi. This study will refine and expand on the index using species-specific thresholds for temperature and oxygen from literature and the mātauranga of mana whenua. Additionally, the study will explore the feasibility of including other environmental factors, such as invasive macrophytes, that could further impact mahinga kai habitats.

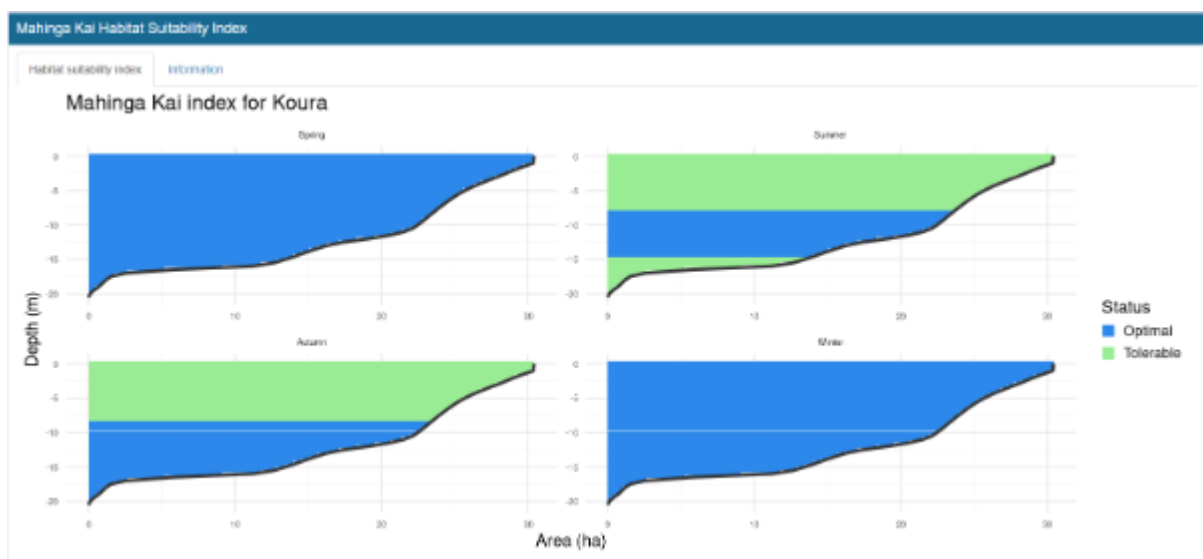


Figure 1: Example of habitat suitability for kōura based on model output

Key research objectives

1. Refinement of the Mahinga Kai Habitat Suitability Index

- o Improve the existing habitat indicator by incorporating updated species-specific habitat preferences for mahinga kai.
- o Incorporate mātauranga Māori to improve habitat assessment criteria.
- o Compare and validate the refined index against available observational datasets (where available).

2. Expansion of habitat constraints

- o Investigate additional factors influencing mahinga kai habitat suitability, such as:

3. Climate change scenario testing

- o Run simulations using lake ecosystem models to explore how projected climate change scenarios (e.g., increasing temperatures, prolonged stratification, reduced oxygen availability) impact habitat availability.
- o Assess the extent and duration of suitable habitat under different climate projections.
- o Identify potential climate adaptation strategies for improving mahinga kai resilience in Lake Rotorua and similar lakes.

About this MSc opportunity

Our team is seeking a highly motivated and skilled MSc candidate to work on this collaborative project with the University of Waikato and Te Arawa Lakes Trust.

The successful candidate will have an undergraduate degree in ecology or environmental science. Good written communication skills are desired. You will be conscientious, detail oriented, hard-working, eager to do field work, and have a positive attitude.

MSc supervision will be provided by Associate Professor Deniz Ozkundakci, with support from Te Arawa Lakes Trust where needed.

Entry Requirements

To be eligible, you need to meet the [enrolment requirements](#) of the University of Waikato. Ideally you will be ready to commence study as soon as possible. At Te Whare Wānanga o Waikato, the University of Waikato, we embrace equity and diversity; therefore, we strongly encourage applicants with the relevant capabilities from all backgrounds to apply.

Scholarship details

Value & direction

To provide financial support throughout this MSc journey the successful candidate will receive a stipend of NZ\$20,000 per year (over 2 years), plus tuition fees fully covered.

Te Whare Wānanga o Waikato will provide access to world-class research facilities and opportunities for professional development.

Location

The successful candidate will be based at Te Whare Wānanga o Waikato in Hamilton.

Application process

To apply for this opportunity, please submit the following documents to Deniz Ozkundakci (deniz.ozkundakci@waikato.ac.nz):

- A letter outlining your motivation for applying for this MSc opportunity (maximum 2 pages).
- Your comprehensive CV, highlighting your achievements and relevant experience.
- Contact details for at least two referees.
- Academic transcripts may be requested to demonstrate your educational background and eligibility for this opportunity.

Review of applicants begins as soon as possible and will continue until the vacancy is filled. Deniz Ozkundakci will let you know whether you have been shortlisted for this vacancy and will advise you of the next steps.

Interviews will be conducted either in person or via video conferencing from a selection committee. The successful applicant will be guided through the full Masters enrolment application at the University of Waikato.

Key contacts

Deniz Ozkundakci – deniz.ozkundakci@waikato.ac.nz