Faculty of Science
Summer Research Scholarships

2026/2027 Projects (School of Environment)

Project code	SCI091
Project title	**Kauri in America: the 19th Century Trans-Pacific timber trade**
Discipline	School of Environment
Supervisor(s)	Gretel Boswjik
Contact details	g.boswijk@auckland.ac.nz
Skills Needed	• An interest in historical geography/archaeology/history • Experience researching primary sources • Good organisational skills and experience using spreadsheets • Report writing

Project description

New Zealand kauri was exported around the world during the 19th century. Although most destinations were in Oceania, social histories of kauri highlight the importance of the trans Pacific timber trade, with San Francisco a key entry port. Kauri timber apparently was used for building settlements and in the California goldfields. Such offshore kauri wood is potentially very valuable for historical and scientific research. For example, tree-ring analysis of kauri doors from an early 20th century house in southern England demonstrates the timber was from a ~1000 year old tree. These wood samples are being used for a current Marsden-funded project in radiocarbon and stable isotope science.

This project will investigate this trans-Pacific timber trade from ~1850 to 1930. It will require desktop searching of archival sources to identify departure ports in New Zealand, destination ports in North America, the number of shipments and/or load quantity, and to determine how kauri was used in the destination markets. The outcomes will (a) contribute to better understanding of the trans-Pacific timber trade and the historical geography of kauri timber, and (b) identify potential sources of kauri wood in North America, useful for future tree-ring based science projects.

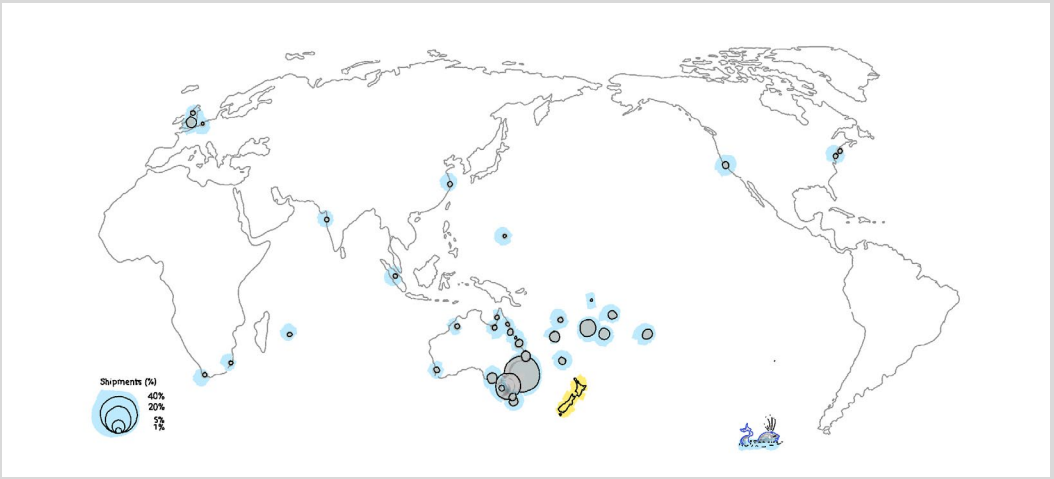

Figure 1: Kauri export destinations by % of shipments, 1850 – 1894.

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2026/2027 Projects (School of Environment)

Project code	SCI092
Project title	**Taking the pulse of Auckland's rivers: building a riverbed monitoring programme**
Discipline	School of Environment
Supervisor(s)	Jon Tunnicliffe Auckland Council – Healthy Waters (partner staff TBC)
Contact details	j.tunnicliffe@auckland.ac.nz
Skills Needed	• Enthusiasm for fieldwork in and around rivers (in all weather!) • Careful, systematic approach to data collection and record-keeping • Basic data handling in Excel, R, or Python • Some GIS experience helpful; full driver's licence an advantage

Project description : How quickly are Auckland's rivers changing, and how would we know? The storms of recent years have delivered major pulses of sediment to the region's stream network, reshaping channels and riverbeds – yet we currently lack the systematic observations needed to track this adjustment. This project, developed with Auckland Council, will establish the foundations of a long-term river monitoring programme. Working alongside Council scientists, you will survey channel cross-sections and longitudinal profiles, and characterise riverbed substrate using a variety of survey techniques. You will help select representative monitoring reaches, design repeatable field protocols, and build the database that future surveys will be measured against. The summer offers outstanding training in field geomorphology and river science, and a direct line of sight into how monitoring data shape regional river management decisions. Your baseline will become the reference point for tracking river change across Tāmaki Makaurau for years to come.

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Summer Research Scholarships

2026/2027 Projects (School of Environment)

Project code	SCI093
Project title	**Rewilding our rivers: using wood to kick-start ecological recovery**
Discipline	School of Environment
Supervisor(s)	Jon Tunnicliffe Auckland Council – Healthy Waters (partner staff TBC)
Contact details	j.tunnicliffe@auckland.ac.nz
Skills Needed	• Interest in river ecology, geomorphology, and stream restoration • Willingness to get wet – field measurement of channel form and habitat • Basic data analysis and clear scientific writing • Creative, practical mindset for experimental design

Project description

For more than a century we have pulled wood out of rivers; now, around the world, we are learning to put it back. Large wood is a powerful driver of stream health – it forms pools, traps sediment, creates cover and food resources for native fish and invertebrates, and adds the structural complexity that engineered channels lack. In this project developed in partnership with Auckland Council you will explore how wood can be used as an experimental river enhancement technique in the Auckland region. You will review international best practice in wood reintroduction, survey candidate stream reaches, and help design and monitor pilot installations – documenting the hydraulic, morphological, and ecological response of the channel. The project combines field measurement, experimental design, and a genuine frontier question in river rehabilitation: how do we re-establish natural processes in streams that have been simplified for decades? Your findings will directly inform Council's emerging programme of process-based river restoration.

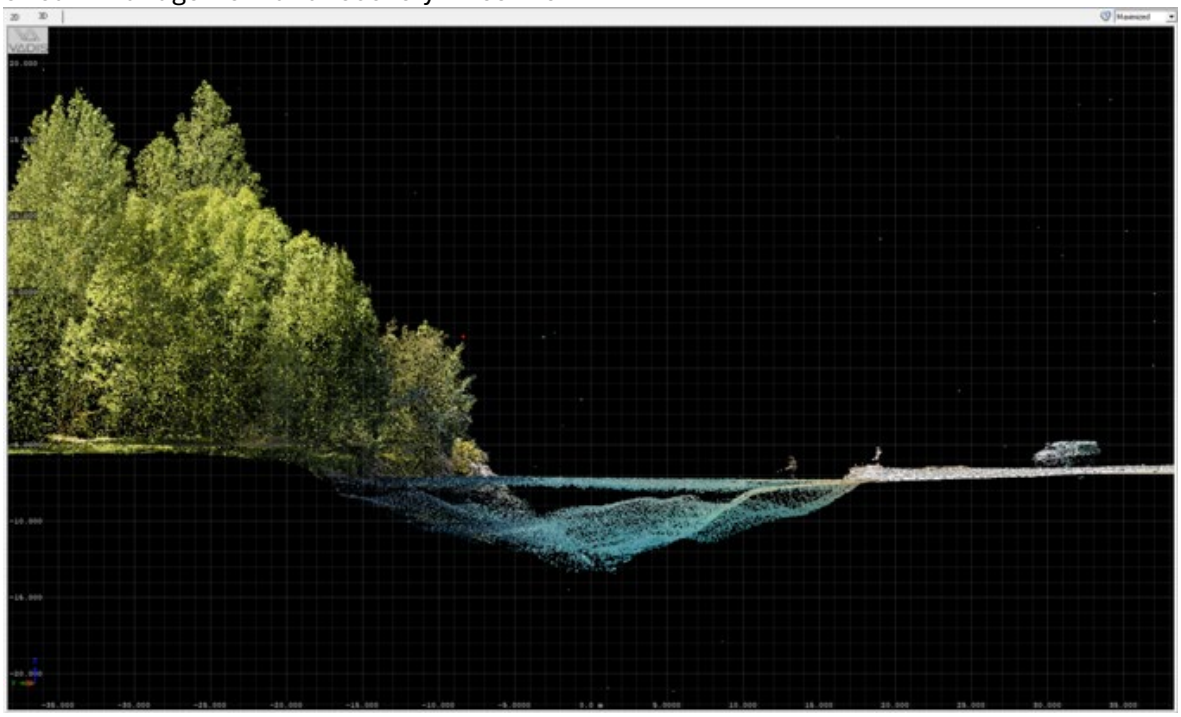
Julia Haliza, WSU

Faculty of Science
Summer Research Scholarships

2026/2027 Projects (School of Environment)

Project code	SCI094
Project title	Rivers from above: detecting geomorphic change with regional LiDAR
Discipline	School of Environment
Supervisor(s)	Jon Tunnicliffe Auckland Council – Healthy Waters (partner staff TBC)
Contact details	j.tunnicliffe@auckland.ac.nz
Skills Needed	• GIS experience (QGIS or ArcGIS) and an interest in remote sensing • Some programming ability (Python or R) helpful, but not essential • An eye for landforms and spatial patterns • Curiosity about how landscapes respond to floods and disturbance

Project description: Repeat LiDAR surveys now give us an extraordinary, centimetre-scale record of Auckland's terrain – and a rare opportunity to watch an entire regional river network respond to disturbance. The 2023 Auckland Anniversary floods and Cyclone Gabrielle triggered widespread bank erosion, landsliding, and sediment movement through the region's streams; the signatures of this response evident in the landscape, waiting to be mapped. In this project developed in partnership with Auckland Council you will use LiDAR-derived elevation models to detect and quantify river change: differencing successive surveys, mapping erosion and deposition, and searching for systematic patterns of geomorphic response across catchments with contrasting land use and geology. Which streams are incising? Where is storm sediment stored, and how long will it take to move through? You will gain advanced skills in terrain analysis, change detection, and geospatial data handling, and produce a regional picture of river adjustment that helps Council prioritise stream management and recovery investment.



Auckland Council (2025)

Faculty of Science
Summer Research Scholarships

2026/2027 Projects (School of Environment)

Project code	SCI095
Project title	**What makes people choose e-scooters for first/last mile during rush hours?**
Discipline	School of Environment
Supervisor(s)	Dr Hyesop Shin
Contact details	hyesop.shin@auckland.ac.nz
Skills Needed	• Python (above intermediate level) • Urban analytics and GIS • Have experience in creating Shiny dashboards or Python packages • Read and critique journal articles

Project description

We are seeking a motivated undergraduate student to join a summer research project examining the role of e-scooters as a first and last mile solution for peak-hour congestion in Auckland. Given that fuel costs and parking fees continue to rise, understanding how micromobility integrates with public transport sits at the core of that conversation.

Working in partnership with Flamingo, the successful candidate will contribute to a collaborative, data-driven research environment and gain hands-on experience in transportation GIS.

Key responsibilities include:

- Reviewing and synthesising academic literature on micromobility, first/last mile behaviour, and urban transport policy
- Processing and cleaning Flamingo e-scooter trip data, including origin/destination parsing, temporal filtering, and handling of spatial anomalies
- Conducting spatial analysis in Python and GIS environments, including trip density mapping, hotspot identification, and proximity analysis to public transport stops and stations
- Producing maps, figures, and summary tables to support research outputs and reporting

Faculty of Science
Summer Research Scholarships

2026/2027 Projects (School of Environment)

Project code	SCI096
Project title	**Food sovereignty beyond borders: exploring food sovereignty practices among Vietnamese diasporic communities in New Zealand**
Discipline	School of Environment
Supervisor(s)	JC Gaillard Hang Thai
Contact details	jc.gaillard@auckland.ac.nz
Skills Needed	• Completion of year two of an undergraduate degree in human geography • Completion of GEOG325 and GEOG250. • A minimum A- average grade equivalent to a GPA of 7 • Ability to read French and work with historical and archival materials from French collections including Gallica. • Ability to communicate in Chinese (Mandarin and/or Cantonese) is desirable for conducting interviews with Chinese Vietnamese migrants in Auckland. • Familiarity with Vietnamese culture, language, or history is desirable but not essential.

Project description

Little is known about food sovereignty in diasporic context. This summer research project thus aims to document and analyse food sovereignty practices among Vietnamese diasporic communities in Aotearoa. The specific objectives are:

1. To examine how Vietnamese diasporic communities maintain, adapt, and embody Vietnamese foodways through sourcing ingredients, preparing food, sharing meals, and transmitting culinary knowledge.
2. To investigate how food sovereignty practices vary across different groups within the Vietnamese diaspora, including across generations and migration backgrounds.
3. To identify the social, cultural, economic, and environmental factors that enable or constrain food sovereignty practices in diasporic contexts.

The project will rely on:

- A review of scholarly literature on food sovereignty, migration, diaspora, and foodways related to Vietnamese migrants.
- Semi-structured interviews with members of Vietnamese communities in Aotearoa across different generations.
- Participant observation at selected community food-related events, markets, cultural gatherings, or family food practices (where appropriate).
- Thematic analysis of interview transcripts and field notes to identify key themes relating to diasporic food sovereignty.

Expected outputs include:

- A structured dataset articulating different themes emerging from interviews and participant observations.
- A 3000-word written research report summarising key debates on diasporic food sovereignty and key findings.

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2026/2027 Projects (School of Environment)

Project code	SCI167
Project title	**Constructing a land narrative**
Discipline	Environmental geography
Supervisor(s)	Emma Sharp Supported by: Java Grant Anjuli Clare
Contact details	el.sharp@auckland.ac.nz
Skills Needed	• Literature review experience • Understanding of visual methodologies/ geographical theory or ability to quickly get up to speed on learning about methods/theory • Some knowledge of LLMs • Experience of using databases to code information.

Project description

This project uniquely brings together a longitudinal audiovisual dataset of *Country Calendar,* new visual methodologies and methods (text and image coding and analysis + use of a novel database that enables LLM approaches), and landscape narration.

This Summer Research project will develop literature reviews on: 1) longitudinal audiovisual datasets in film and TV (film and TV studies); 2) the use of LLMs in text and image analysis (visual methodologies); 3) reading landscapes (geography + landscape studies).

Faculty of Science
Summer Research Scholarships

2026/2027 Projects (School of Environment)

Project code	SCI168
Project title	**Soil countermapping**
Discipline	Environmental geography
Supervisor(s)	Emma Sharp Supported by: Dan Exeter
Contact details	el.sharp@auckland.ac.nz
Skills Needed	• Literature review experience • Some experience in GIS • Understanding of cartographic history (and its politics) • A creative approach!

Project description

This project explores the thinking behind how soil and land are, and might be, 'mapped'. It will explore how representational regimes shape environmental governance and knowledge politics. In short, it asks: how are 'mapping' approaches constructing ecological knowledge, and to what effects?

This Summer Research project will develop literature reviews on: 1) histories of soil/land mapping ('conventional cartography'); 2) the use of 'alternative' datasets for mapping soil and land; 3) alternative ways of 'mapping' that may not be cartographic.