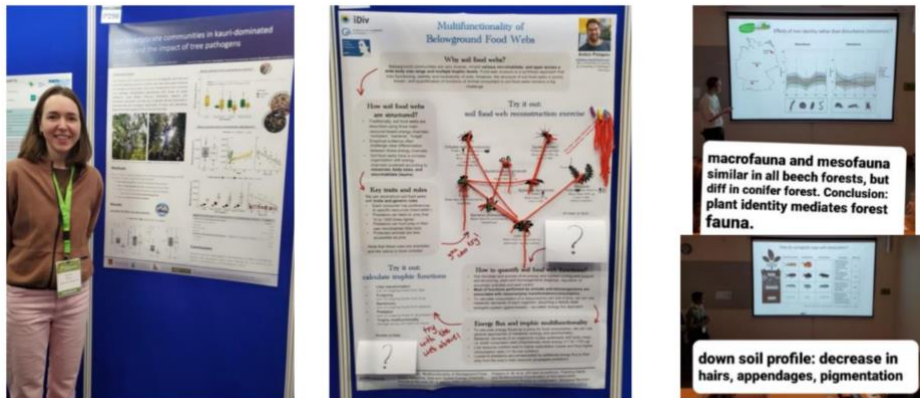


## Ngā Pī Ka Rere Grant Highlights

**Between November 2022 and September 2023, 27 Ngā Pī Ka Rere grants were awarded to support early career people associated with BioHeritage to pursue conference, writing and/or professional development opportunities. The grants were generally between \$2.5K – \$6K NZD and were explicitly designed to be flexible, accessible and support capability-building.**

### Conferences and workshops

University of Waikato postdoc **Marijke Struijk** (NRT3) was funded to present a poster at the 3rd Global Soil Biodiversity (GSB) conference in Dublin in March 2023. After the conference, Marijke travelled to Bristol and Reading (UK) to initiate and strengthen international collaborations with other researchers in the field of forest pathogens and soil biodiversity. While at the University of Reading, Marijke presented an overview of research in the NRT theme during a cross-departmental seminar.



Left: me at my poster. Middle: a poster relevant to my project. Right: two of many annotate pictures to go alongside my notes.

Te Kawa a Māui Research Fellow **Ellie Tapsell** (SO7) was funded to present at her first international conferences. The Native American and Indigenous Studies Association (NAISA) conference was held in Toronto, USA, in May 2023, where Ellie presented on a panel titled *Hot Air: Environmental Ethics, 'Protection', and Rhetoric's*. Ellie's paper titled *A Care Based and Tika Transition: A Tool-Box for better environmental governance relationships in Aotearoa* focused on her Toolbox, and generated engaged questions and conversation, including from Māori attendees who were interested in the toolbox for their own iwi spaces. Ellie then travelled to Costa Rica to present a paper based on her Masters thesis titled *Transitioning Environmental Governance in Aotearoa New Zealand: Tikanga Māori and a Political Ethic of Care* at the Care Network Responds 2023 Global Summit.

'A highlight of NAISA was meeting and learning about other Indigenous cultures and political issues. The care conference was great for meeting scholars working in the area which I had written about', says Ellie.

'At both conferences I was able to also share about Me Tū ā-Uru, our website and hand out copies of our report that the SO7 team had recently launched. This experience was great for growing my confidence in public speaking'.



Related: <https://bioheritage.nz/resonant-guidance-for-environmental-policy-and-decision-makers-who-want-to-do-their-best/>

**Sandy Wakefield**, who was involved in the Crazy & Ambitious Think Tank, was funded to attend the 17th International Conference on Community-based Adaptation to Climate Change (CBA17), in Bangkok, Thailand in May 2023. Sandy joined more than 200 participants in discussions, debates, peer-to-peer skills shares, and knowledge exchange sessions. The conference provided Sandy with opportunities for networking, upskilling and participation in a global decolonising conversation on climate action.

Sandy says, 'The CBA17 provided a platform to share experiences, exchange knowledge, and identify innovative solutions tailored to unique socio-cultural and environmental contexts.'

Ngā Pi Ka Rere supported six early career people to attend the Australasian Myrtle Rust Conference in Sydney in June 2023. The conference was the first of its kind – a multi-day conference dedicated entirely to *Austropuccinia psidii* (the pathogen that causes myrtle rust) and the many plants this disease impacts – with professors, students, scientists, conservation practitioners, Indigenous individuals and groups, and government representatives all in attendance. Ngā Pi Ka Rere funded **four attendees from Ngāti Kuri** to attend the conference.

[Mana whenua represent at the Australasian Myrtle Rust Conference - Biological Heritage NZ](#)

**Michael Bartlett**, a researcher at Scion, presented a talk titled "Seasonal progression of myrtle rust on *Lophomyrtus* trees in New Zealand leading to declining health and reproductive potential". Michael's talk highlighted work funded by Ngā Rākau Taketake and the Beyond Myrtle Rust programme.

The grant also enabled Michael to present an additional talk and paper on myrtle rust; attend a meeting in Sydney for the Australasian Myrtle Rust Working Group; contribute to a two-day workshop on disease resistance breeding programmes; and present a departmental seminar and visit collaborators at the University of Queensland and Queensland Department of Agriculture and Fisheries. Michael's trip was co-funded by the Beyond Myrtle Rust programme and Scion.

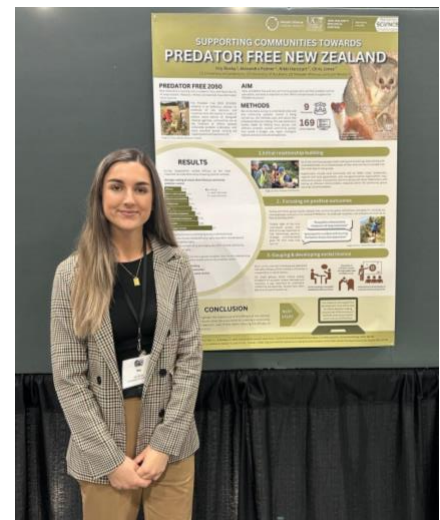
Michael says *'I am very grateful to have received support from Ngā Pi Ka Rere funding to attend and present at the Australasian Myrtle Rust Conference... As we think about next steps here in New Zealand for this pathogen, it was incredibly useful to spend time with colleagues in person discussing myrtle rust science, make new connections and strengthen existing ones, hear about the work that has happened in Australia and Brazil, and share some of the findings from our mahi on this disease here in New Zealand with an international audience.'*

PhD candidate **Vladislav Kholostiakov** from the Beyond Myrtle Rust program was also funded to attend the Australasian Myrtle Rust Conference. At the conference, Vladislav presented the results of their investigation on the seed-associated microbiome of pohutukawa and discussed the findings with experts from diverse research centres such as the Royal Botanic Garden of Sydney, New Zealand Plant and Food Research, Dorena Genetic Resource Center of the USDA Forest Service, and many others.

Vladislav says, *'Their advice and critical response will expand my ideas and contribute to the project's development. I also learned the Australian approach to myrtle rust management and participated in a workshop on resistance breeding.'*

**Izzy Busby** (Research Fellow, University of Canterbury) was funded to travel to Alaska in July 2023 to present the SO5 vertebrate teams' poster on their research to date at the International Mammalogical Congress (IMC-13) in Anchorage, Alaska (USA). The poster was well-received, and attendees were interested in whether the New Zealand public supported PF2050, the methods that community groups use and historical biogeography of invasive mammals. Izzy also attended technical sessions, field trips and networking events, including a workshop on geospatial analysis.

Izzy says, *'The experience has inspired new ideas for research, particularly if I choose to undergo my PhD. The trip has allowed me to share our research on an international scale, learn about new and different research across disciplines, develop new analytical skills, as well as connect with a range of researchers across the globe.'*



**Josie Mainwaring** (NRT5), a PhD candidate at Te Herenga Waka, was funded to present a talk at the Federation of European Microbiological Societies (FEMS) Congress in Hamburg, Germany in July 2023. For Josie, the conference provided an opportunity to receive feedback on her PhD research and next steps, to explore potential post-PhD research topics and career paths, and to network with other researchers.

[Ngā Pi Ka Rere grant funds a conference-going dream - Biological Heritage NZ](#)

Josie reflects, *'I gained valuable experience in science communication and in networking. I also received some useful feedback on my own work. Most valuable for me at this point in my career though, were the insights I gained into my career path options, some clarity around my shifting interests, and some ideas for where to start looking for my next opportunity.'*



**Jennifer Bufford** (Manaaki Whenua Landcare Research) was awarded a grant to attend the 2023 Ecological Society of America (ESA) Conference in Portland, USA to present work funded through BioHeritage. The session, which was co-organized by Jennifer, was titled *Using ecology to future-proof invasive plant management* and brought together five in-person presenters and four virtual presenters working in New Zealand, the USA, Singapore and Chile. Jennifer also presented additional work on herbivore impacts on carbon storage, met with previous and potential collaborators, and participated in a workshop.

[Weed horizon scan completes phase 1 and moves into phase 2 - Biological Heritage NZ](#)

Jennifer says, *'I appreciate the funding from NPKR, which allowed me to attend in person and not only present in and co-organize a highly valuable session which will further my own work and research, but also present my work in another area and explore a range of topics through talks, workshops, and networking.'*



Te Herenga Waka PhD candidates **Matthew Howse** (SO2) and **Rose McGruddy** (SO5) were both awarded grants to present at the Entomological Society of America Conference in Maryland, USA in November 2023. Rose was awarded 1st place for student talks in the Apiculture section, and was approached by researchers in Germany, Canada and the US, who are also trialling the use of RNAi against varroa. They have made plans to collaborate on projects in the future.

Rose says, *'The conference was an amazing opportunity to present my research and meet people in the industry from around the world. ... I learnt so much and it was a real privilege to show what New Zealand research is capable of on the world stage.'*

Matthew says, 'Attending this conference gave me the opportunity to meet, talk and network with other researchers from a variety of backgrounds and perspectives. I also had the opportunity to present my own research on an international stage, the first time I had ever presented my own research at a conference.'

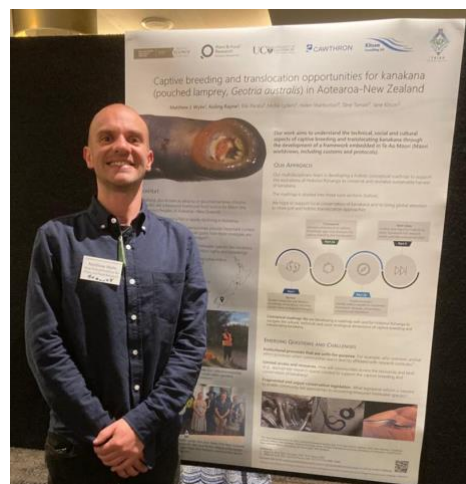
<https://bioheritage.nz/nga-pi-ka-rere-spotlight-phd-candidate-champions-rnai-research-in-washington/>



A grant enabled **Matthew Wylie**, a Senior Scientist at Plant & Food Research, to attend the 3rd International Conservation Translocations Conference in Perth, Australia in November 2023. Alongside colleague Aisling Rayne, Matt presented a research poster from the Freshwater for our Taonga program about exploring the development of artificial propagation and translocation opportunities for kanakana/ pouched lamprey (*Geotria australis*) in partnership with Hokonui Rūnanga.

<https://bioheritage.nz/nga-pi-ka-rere-spotlight-matt-wylie-cares-about-fish-and-about-connecting-with-people/>

Matt says, 'A highlight of this conference was the opportunity to increase the visibility, expertise and participation of indigenous researchers and communities in the field of captive breeding and translocation research to an international audience. We believe this is important for the development of more holistic, inclusive, and just conservation initiatives for culturally significant species such as kanakana and many of our other freshwater species'.



**Maria Blanca Ayala** (PhD candidate, University of Canterbury) was funded to present on a BioHeritage panel at the Society for Social Studies of Science (4S) conference in Honolulu in November 2023. Maria presented on the 'Decolonising Knowledge Practices' tool developed by the NRT2 team. Some copies of the toolkit stayed in Hawai'i or travelled to Canada to be tested by local groups there. Another copy travelled back to Te Tai Tokerau with a delegation affiliated to the University of Auckland.

### [Connections made at 4S Conference - Biological Heritage NZ](#)

Maria reflects, *'The fact that different groups found our proposal appropriate and useful for igniting collective discussions about how to transform their working practices to obtain better outcomes for the land and the people was incredibly rewarding... I think our audience was pleasantly impressed not only by the tool but especially by the fact that a government organisation was funding that kind of applied research.'*



## Projects and professional development

A NPKR grant provided co-funding for **Paul Brendan** (SO4), to support his PhD research at the University of Canterbury. Paul's PhD research involves the development and training of Artificial Intelligence models to be used in the early warning detection of disease in urban street trees.

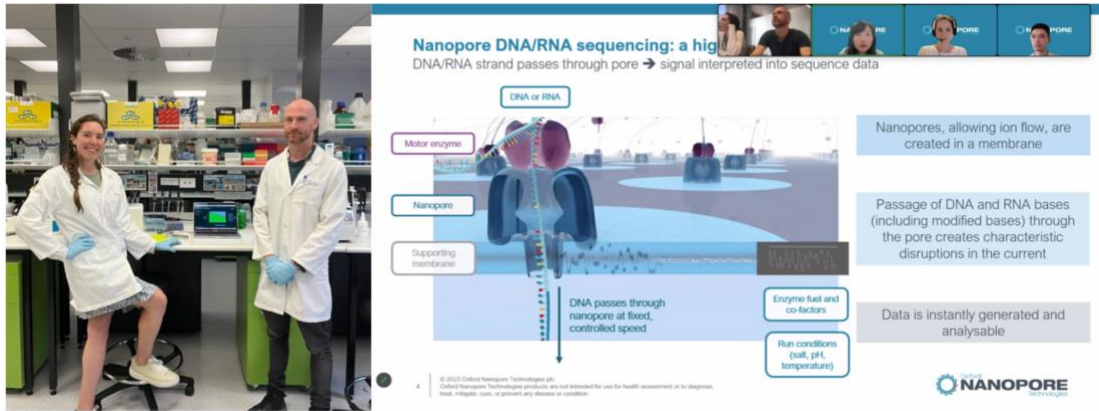
Social scientist **Penny Payne** (SO1, Penny Payne Consulting) was awarded a grant to conduct research regarding end-user perceptions of Eco-index resources. The results were presented to the Eco-index Team in their annual Wānanga in December 2023, and are being prepared as both a short infographic-style summary report and an academic journal article. Penny says, *'I am excited about the article and we have already used the feedback to improve Eco-index resources and communications.'*

**Leane Makey**, a Research Fellow at the University of Auckland, was awarded a grant to create a six-month internship focusing on the social science of Te Whakahononga, Nga Rakau Taketake. The internship was created to assist Leane with meeting the program deliverables within the contracted timeframe. The intern attended a three-day hui, assisted in interviews and survey work in Whangapoua with Ngāti Huarere and Tauranga Moana. The intern also created an annotated bibliography and contributed to writing and copy-editing the final report.

A Ngā Pi Ka Rere grant enabled data scientist **Corey Ruha** (SO1) to continue working within the Eco-index team of data scientists, ecologists, knowledge brokers and networkers. Corey was funded to assist with developing an Eco-index tool for Te Arawa. Corey says, *'It's quite an intensive learning process but it's all in the hopes that we will be able to build our own capacity and capability as an iwi and help grow and make positive steps for Te Ao Māori as a whole.'*

<https://bioheritage.nz/corey-ruha-the-power-of-storytelling-in-data-communication/>

**Antoine Felden** from SO5 was funded to participate (along with PhD student Zoe Smeele) in a two-day tailored training run by Oxford Nanopore Technologies from 31 October to 1 November 2023. Antoine says, 'The training was a success in helping us to get familiar with cutting-edge Nanopore sequencing technology, from bench to data analysis. We are now confident running complex sequencing experiments autonomously, and have a much better understanding of the technology.'



## Writing grants and publication fees

**Kara Allen** from NRT3 was funded to prepare a paper on kauri enzymes for submission to *Functional Ecology*, an international peer-reviewed journal. Kara was granted additional co-funding from MWLR to complete the paper. In addition to contributing to the research team's international leadership in the field, the grant assisted in establishing Kara 'as an early career scientist in New Zealand after an extended break (for parental leave) ... and provide[d] the opportunity for MSc students, who shared background data for the report, to take part in the peer review process as co-authors on this publication.'

**Aspen Berry** (Masters graduate, University of Waikato) was awarded a grant to write a paper based on her Masters research entitled 'Understanding values within biosecurity: A myrtle rust case study'. Aspen, whose research was situated in the Beyond Myrtle Rust program, has submitted the paper to the journal *New Zealand Plant Protection* for peer-review.

**Kevan Cote** from SO1 was funded to work on developing an open-source ecosystem detector for the Eco-index programme. The grant has supported Kevan to create a repository on GitHub to allow easy sharing and visibility, develop a lead author article on the process, including partner engagement, and share the work through public engagement talks.

**Ann McElvein** (NRT3; University of Auckland) was awarded a grant to write up her Masters research for an academic journal publication from March to July 2023. Ann reflects, 'For recent graduates like myself, it's uncomfortable to give up on academic research with nothing formally published to commemorate it. ... I am so glad to be able to leave my mark on the field and to have (hopefully) contributed to the well of knowledge that I drew from.'

**Haileigh Patterson** (SO2) was awarded a grant to write up the findings from her Honours thesis, focused on the impact of phosphite on arbuscular mycorrhizal fungi (AMF) in the root systems of kauri trees in the Waitakere Ranges. The funding provided Haileigh with additional time to gather more data for the paper and develop it into an article for publication.

**Isaar Sharma** (NRT3) was awarded funding to develop a manuscript for publication based on his Honours thesis *Effect of kauri dieback on leaf litter nutrient concentrations*. The funding also allowed Isaar to reanalyse the thesis dataset with additional data and using more advanced statistical approaches.

<https://bioheritage.nz/nga-pi-ka-rere-grants-supports-the-publication-of-important-kauri-dieback-research/>

**Karin van der Walt** (Ōtari Native Botanic Garden, Wellington City Council) was awarded a grant to cover open-access fees for the publication of two papers associated with NRT7. One paper titled *Seed storage physiology of Lophomyrtus and Neomyrtus, two threatened Myrtaceae genera endemic to New Zealand* was published in *Plants*. The other paper was published in *Frontiers in Conservation Science*, titled *Advances in cryopreservation of Syzygium maire (swamp maire, maire tawake) zygotic embryos, a critically endangered tree species endemic to New Zealand*.

**Zhi (Nicole) Xu** was awarded a grant to support the completion of her PhD thesis titled *Discovery and characterisation of viral-like sequences and viruses associated with Phytophthora pluvialis in New Zealand*. Nicole successfully submitted her thesis to the University of Auckland for examination in July 2023. As part of her PhD, Nicole has presented a poster, three conference presentations (one of which won an Emerging Speaker Award) at conferences, and published a paper titled *Characterization of a Novel Double-Stranded RNA Virus from Phytophthora pluvialis in New Zealand*.

**Jaynie Yang** (NRT3) received funding to develop a paper that expands on their Masters research on fine root characteristics of kauri forests affected by kauri dieback. The grant covered Jaynie's time to work on sample analysis, data analysis and writing as a Research Assistant at the University of Auckland. The funding supported Jaynie to 'develop important skills in laboratory work and formal scientific writing and gain invaluable experience as an early career researcher.'