



Newsletter

PEOPLE CITIES NATURE

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Research Lead Message

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Kia ora koutou. It was great catching up with everyone in Wellington to engage with all our partners especially about the relevance of Māori research. Within the context of Te Tiriti informed natural resource management, with decades of legal precedent and case law, Mātauranga Māori is increasingly informing approaches toward natural resource management in Aotearoa-NZ. So, what is Mātauranga Māori?

Mātauranga Māori is nothing to be scared of, but ought to be embraced. Mātauranga Māori is not bio-cultural knowledge, nor is it traditional ecological knowledge. Mātauranga Māori is intertwined with people, their history, culture, and ecosystems. It is dynamic, and changes as ecological pressures influence its development. Mātauranga Māori includes belief systems, world views

and values. Mātauranga Māori can be defined as the knowledge, comprehension or understanding of everything visible and invisible existing in the universe.

Whilst urban restoration and conservation management is commonly considered in the context of how to reduce the potential impact of an activity, Māori have a different perspective, thinking instead of how an activity can “enhance the mana” - the intrinsic value of a natural resource in the first instance.

Improving the rights of vulnerable groups and marginalised groups like Māori means acknowledging that their worldviews have a role in the natural resource management decision making processes. The next step for PCaN is to continue to explore further how Mātauranga Māori can inform restoration activities within cities.

HIGHLIGHTS

- People, Cities & Nature Mini Conference



What's next in Urban restoration research?

During the recent People, Cities & Nature conference in Wellington, Danielle Shanahan lead a discussion session exploring next steps in urban restoration research. Participants were split into groups based on their interests in our four research themes – residential design; restoring wildlife; soil health; and matauranga. Each group then brainstormed ideas around valuable existing information and ideas for what would be valuable next steps for research. Each person was then given 10 gold stickers, each representing \$1000 which they could use to 'invest' in future research.

Voting showed the greatest 'investment' in soil health, with key ideas for future research following soil inoculation, carbon sequestration and ways to inform and engage public about soil health. Matauranga followed closely, with an emphasis on building relationships, and weaving matauranga into policy, council processes and regulatory frameworks. Residential design was next in 'investment' value, with policy and planning again featuring heavily. Finally, Restoring Wildlife focused on improving tools for monitoring of pests, cryptic species, and indicator species with greater accuracy, speed, sensitivity, and national integration.

This quick exercise offered interesting insight into the needs of those working in urban restoration around New Zealand. We look forward to working with our partners towards plans to tackle some of these research ideas in coming years.

Mātauranga survey

Do you have a keen interest in Mātauranga Māori, Kaitiakitanga, Forests, Urban spaces and Ecological restoration? This survey might be for you! Dr Erana Walker is looking at how mātauranga Māori and kaitiakitanga knowledge can aid in forest restoration in urban areas. The survey takes around 10-15 minutes to complete and can be done on your phone or laptop. Further information about consent and data protection can be found through the survey link. If you have any questions, please feel free to contact the lead researcher Erana Walker at erana.walker@waikato.ac.nz

https://waikato.qualtrics.com/jfe/form/SV_9zEdrrnmZc7fshg



People, Cities & Nature Mini Conference

In February 2024 People, Cities & Nature hosted a mini conference in Wellington at Zealandia te mara a taane. The purpose of the meeting was to share our research progress and get feedback on future directions from representatives of local councils, central government, community groups, restoration professionals, and iwi. We had 70 participants representing 8 cities across New Zealand and Australia.

The conference programme featured research presentations and discussion from each of the PCaN research themes: Residential design for biodiversity; Restoring urban wildlife; Restoring soil health; and Matauranga Māori in urban restoration. Participants also enjoyed a guided tour through the Zealandia sanctuary and dinner at a local restaurant.

A major highlight of the event was bringing together champions of urban restoration and design from across the country and hearing about their local efforts for restoring nature. It inspired hope to see such a passionate and skilled cohort all working towards more sustainable Cities across Aotearoa NZ.

Many participants expressed interest in seeing more opportunities for leaders of urban restoration to connect and share. One participant said "I think People Cities and Nature works as a great connection pathway for people working across NZ in this space and pushing boundaries." We hope to create another opportunity for connection of urban restoration leaders and practitioners at the University of Waikato in 2025.

UPCOMING EVENTS

Nga Pou Tuata o Kirikiriroa Waananga: Our next in a series of waananga focused on matauranga and maramataka in urban restoration. This waananga will be held at Miropiko Paa, River Road, Hamilton on 17th of April 2024. Registrations are currently full, but please email peoplecitiesnature@gmail.com if you are interested in attending and we will let you know if any spaces open up.



RECENT PUBLICATIONS FROM OUR RESEARCHERS

Booth, M.W.; Sinclair, E.A.; Jung, E.M.U.; Austin, R.; Bayer, P.E.; Krauss, S.L.; **Breed, M.F.**; Kendrick, G.A. 2024. *Comparative gene co-expression networks show enrichment of brassinosteroid and vitamin B processes in a seagrass under simulated ocean warming and extreme climatic events*. *Frontiers in Plant Science* 15.

Brame, J.E.; **Liddicoat, C.**; Abbott, C.A.; Cando-Dumancela, C.; Robinson, J.M.; **Breed, M.F.** 2024a. *Urban greenspace aerobiomes are shaped by soil conditions and land cover type*. Cold Spring Harbor Laboratory.

Brame, J.E.; Warbrick, I.; Heke, D.; **Liddicoat, C.**; **Breed, M.F.** 2024b. *Short-term passive greenspace exposures have little effect on nasal microbiomes: a cross-over exposure study of a Māori cohort*. Cold Spring Harbor Laboratory.

Hewlett, D.G.; Gray, D.; Gunton, R.; Munro, T.; Agarwal, S.; **Breed, M.**; Skelly, C.; Weinstein, P.; Terradillos, A.; Lavrushkina, N.; and Byrne D. 2024. *Significant Spaces: Exploring the Health and Wellbeing Impacts of Natural Environments* In: Finneran, N.; Hewlett, D.; Clarke, R. (Editors), *Managing Protected Areas: People and Places*, p 370. Palgrave Macmillan.

Fickling, N.W.; Abbott, C.A.; Brame, J.E.; Cando-Dumancela, C.; **Liddicoat, C.**; Robinson, J.M.; **Breed, M.F.** 2024. *Light–dark cycles may influence in situ soil bacterial networks and diurnally-sensitive taxa*. *Ecology and Evolution* 14.

Hoffbeck, C.; Middleton, D.M.R.L.; Lamar, S.K.; Keall, S.N.; **Nelson, N.J.**; Taylor, M.W. 2024. *Gut microbiome of the sole surviving member of reptile order Rhynchocephalia reveals biogeographic variation, influence of host body condition and a substantial core microbiota in tuatara across New Zealand*. *Ecology and Evolution* 14.

Lamar, S.K.; Ormsby, D.K.; **Nelson, N.J.** 2024. *Novel mating behaviours in male tuatara (*Sphenodon punctatus*) expand our understanding of reptile courtship*. *Austral Ecology* 49.

Mihaere, S.; Holman-Wharehoka, M.-T.-O.; Mataroa, J.; Kiddle, G.L.; **Pedersen Zari, M.**; Blaschke, P.; Bloomfield, S. 2024. *Centring localised indigenous concepts of wellbeing in urban nature-based solutions for climate change adaptation: case-studies from Aotearoa New Zealand and the Cook Islands*. *Frontiers in Environmental Science* 12.

Patterson, C.R.; Lustig, A.; Seddon, P.J.; Wilson, D.J.; **Van Heezik, Y.** 2024. *Eradicating an invasive mammal requires local elimination and reduced reinvasion from an urban source population*. *Ecological Applications*.

Robinson, J.M.; **Breed, M.F.**; Beckett, R. *Probiotic Cities: microbiome-integrated design for healthy urban ecosystems*. *Trends in Biotechnology*.

Robinson, J.M.; Taylor, A.F.; Fickling, N.W.; Sun, X.; **Breed, M.F.** 2024. *Sounds of the underground reflect soil biodiversity dynamics across a grassy woodland restoration chronosequence*. Cold Spring Harbor Laboratory.

Struijk, M.; Stavert, J.R.; Le Grice, R.J.; Schwendenmann, L.; **Romera, P.J.**; Mitchell, G.; Sünemann, M.; Yang, J.; Hjelm, F.; **Barnes, A.D.** 2024. *The threat of a major tree pathogen to forest soil mesofauna food webs and ecosystem functioning*. *Frontiers in Ecology and Evolution* 12.

Wan, B.; **Barnes, A.D.**; Potapov, A.; Yang, J.; Zhu, M.; Chen, X.; Hu, F.; Liu, M. 2024. *Altered litter stoichiometry drives energy dynamics of food webs through changing multiple facets of soil biodiversity*. *Soil Biology and Biochemistry* 191: 109331.



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