



Department of Zoology Newsletter

Te Tari Mātai Kararehe Pānui

November 2025

From the HOD

Kia ora, welcome to Newsletter #2, purposefully offered in a compact new format to allow for easy printing. Lots of 'stuff' has happened in the last 4-or-so months, as we said goodbye to long-serving Zoology staff and welcomed Uru-Manuka Williams, [Jerusha Bennett](#) and [Graham McCullough](#). With spring underway, the focus is changing to research and conference attendance, including the Zoology Colloquium organised by our graduate students to advertise all the exciting research done in the Department (this Newsletter). Also, please check out the outreach activities and some research specials in this issue.

Special thanks to Blake Lewis for putting this Newsletter together. Feel free to contribute by sending your submissions to zoology.admin@otago.ac.nz.

News and Updates

Mental Health Awareness Week

We had a great week of activities run by the Rainbow Committee throughout the week, and the weather cooperated nicely for an afternoon of outdoor fun on Friday! From yummy treats, self-care bingo, and artistic expression, we thoroughly enjoyed all the different ways to connect and aid our mental health and wellbeing.

ORC and SEA Leith Workshop

We ran a workshop looking at benthic macroinvertebrates in the Water of Leith alongside Student for Environmental Action and the Otago Regional Council! Niña, Newton, Cameron, Anusha, and Connal helped attendees through dichotomous keys to identify collected specimens. This is part of a larger ORC project looking at stream health, especially in urban student areas, and its relation to drain and catchment runoff.

Tūhura Museum

Mark was contacted by the Pasifika Engagement Coordinator of the Tūhura Otago Museum for his technical and cultural expertise and connections to tuna (eel) to advise on an upcoming production of "Sina and the Eel", a Samoan origin story. Connal has been working with key figures hailing from various Māori and Pasifika communities to collate representations of bugs and insects across different Pasifika cultures – which will be debuted at Bug Day 2026 (February 14th) at the museum!

PolyFest

We were graciously invited to host a Zoology and Ecology stall at the 2025 Otago PolyFest Village! Jon, Niña, Prashant, and Connal showed off the growing stable of outreach games and activities produced by Zoo students and staff to over 2,000 visitors!

Lakes District Lepidoptera



Connal was funded by a Catalyst Grant to do outreach on insects with the Moths and Butterflies of New Zealand Trust around the Queenstown, Wānaka, and Glenorchy area. They visited over 25 schools and over 100 classrooms of primary and secondary school tamariki, providing info, resources, and activities to engage classrooms and the next generation of scientists with insects, biodiversity, and science.

Community Talks

Jacqui and Connal gave a slew of talks over September and October on their research, including for the Dunedin Beekeepers' Club, Science Notes Otago Podcast, the Otago Vegetable Growers' Collective, Radio One OAR FM, and Seniors for Climate Action Network!

Tekapo Bumble Bees

In November Connal will be heading to the Canterbury Region to do outreach with primary school tamariki and their teachers regarding introduced and native bees in Te Waipounamu, using a brand spankin' new ID guide created by one our fabulous resident artists, Luna!

Whakawātea for Te Tari Matai Kararehe (Zoology) Whānau Room

A whakawātea was recently held for the Whānau Room to acknowledge and prepare the space as it transitioned from an office into a dedicated whānau space for our taura Māori. The intent of a whakawātea is to clear restrictions, ensuring safe participation in all activity.

The Whānau Room provides a culturally grounded, welcoming, and supportive environment for our taura Māori. It offers a place to connect with one another and with the wider Zoology whānau, fostering a sense of belonging and community. While the space has been established with our taura Māori in mind, it is a place where everyone is welcome.

Our weekly Kai & Kōrero hui, now held in the Whānau Room, has been a meaningful way to begin utilising the space and to support ongoing relationship building and community connection within Te Tari Mātai Kararehe.

- Janelle Te Raki

Hands on Science Workshop



From left to right: Nina Bautican (stream food webs), Grace Mai (bee neuroscience), Jay Barton (paleoecology), Alice Gilbert (freshwater fish), Jon Rolfe (herpetofauna).

We recently travelled to Queenstown to deliver a workshop to the *Science Buskers Club* at Wakatipu High School. The club is an after-school science group (Years 9-13) where students explore scientific methods and develop creative showcases to communicate science to the public. A select group of senior biology students also joined the session, bringing total attendance to an impressive 40 students. Together, we explored topics ranging from stream food webs and freshwater fish to extinct avifauna, herpetofauna, and bee neuroscience. After the workshop, we shared a meal with the Wakatipu staff to discuss how these activities could align with and enrich the school's biology curriculum. It was a fantastic opportunity to connect with enthusiastic young scientists and support hands-on science education, and we look forward to returning with another workshop sometime next year.

Zoology Colloquium



On Friday 31st October we had our 2025 edition of the Zoology Postgraduate Colloquium at the Otago Yacht Club. This annual event is our opportunity for postgraduates within the Department to share their research with fellow staff and students, learn about what their peers have been up to, and of course partake in some socialising and good kai. We started the day with an excellent plenary on Early Career Ecology by Jack Mathieson of the Otago Regional Council, and followed with a mix of oral presentations, posters, creative works from staff and students, and, new this year, a number of speed talks. We had an outstanding turn-out, a full-on day of fascinating presentations, and plenty of spooky research-related costumes in the spirit of Halloween – a huge thank you to everyone who took part for making the day such a success!

- Cameron, Zoe, Charlie, Danielle, & Anne: Zoology Colloquium Committee 2025

Undergraduates Explore Lipid Mobilisation in the NZ Short-Finned Eel



Our undergraduate students got an exciting opportunity to take part in ongoing research with PhD student Md. Moudud Islam. Moudud's research focuses on identifying how lipid metabolism is regulated throughout the body of the New Zealand short-finned eel (*Anguilla australis*) and how prolonged fasting affects lipid mobilisation. Students participated in dissections, learnt how to fix and freeze tissues for downstream analyses, and measured blood glucose concentrations. Thanks team!

Paper Highlight

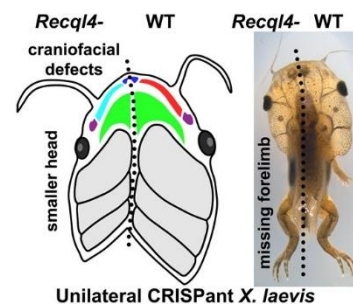
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Unilateral loss of *recql4* function in *Xenopus laevis* tadpoles leads to ipsilateral ablation of the forelimb, hypoplastic Meckel's cartilage, and vascular defects.

The present paper takes advantage of a fascinating feature of *Xenopus* developmental biology: the left/right separation of the *X. laevis* body plan occurs immediately following the first cell division. This early establishment of asymmetry allows gene editing to be targeted to only one side of the embryo. This approach enables researchers to make precise, within-individual comparisons between the edited and unedited sides of the same organism, effectively providing an "internal control".

In this study, researchers explored how defects in the *RECQL4* gene affect *Xenopus* development. The protein encoded by this gene plays an integral role in maintaining the genome. Variations of *RECQL4* in humans are associated with rare developmental complications that result in impaired growth, lower bone density, and skeletal defects of the arms and hands. Here, researchers showed that alterations to *RECQL4* resulted in reduced growth, failed forelimb development, and malformed heads on the edited side of the *Xenopus* body.

This work not only showcases a powerful new way to study developmental biology in *Xenopus* but also sheds light on how *RECQL4* mutations may contribute to developmental defects in humans.



Beck, C. W., Reily-Bell, M., Bicknell, L. S. (2025). Unilateral loss of *recql4* function in *Xenopus laevis* tadpoles leads to ipsilateral ablation of the forelimb, hypoplastic Meckel's cartilage, and vascular defects. *G3 Genes|Genomes|Genetics*, 15(10), jkaf179.

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