



PhD position: *Reassembly of soil food web structure, stability and functioning during forest restoration in New Zealand*

Ecological restoration is vital for repairing human impacts on native biota and ecosystem processes. Networks of trophic interactions (food webs) determine the structure and function of communities; yet we know little about food web restoration and almost nothing about how soil food webs reassemble during long-term restoration despite their high biodiversity and importance for many key ecosystem processes. Using more than 80 forest restoration sites spanning the complete latitudinal range of New Zealand's main islands, this funded project will apply recently developed methods for linking food web structure with ecosystem functioning across an unprecedented age-range of restored urban forests to answer the following key questions: 1) Does soil food web complexity increase over restoration time and how does reassembly of soil communities vary at different spatial scales and across environmental gradients? 2) Does forest succession drive shifting energetic structure of soil food webs toward fungal-based energy channels and increased top-down effects on primary consumers? 3) Is there a shift in the distribution and strength of trophic interactions and what affect does this have on food web stability?

The PhD student will conduct field sampling of soil biota (from microbes to macro-fauna) in forest restoration sites throughout nine cities in New Zealand. Lab work will consist of identifying and measuring functional traits of soil invertebrates, measuring microbial respiration and identifying microbial functional groups in order to construct soil food webs and quantify energy flux in regenerating forest ecosystems.

To fill this position, we are seeking an independent and highly motivated applicant with:

- An Honours or MSc degree in ecology
- Experience in ecological field work and/or lab and field experiments
- Strong skills in analysing ecological data (preferably in R)
- Experience in soil community ecology (would be highly advantageous)
- Excellent communication skills in English (spoken and written)
- A general willingness to work in a team

We are offering this exciting position for a PhD candidate to be based at the University of Waikato in Hamilton, New Zealand under the supervision of [Dr Andrew Barnes](#), Dr Chris Lusk, and Dr Kiri Joy Wallace. The successful candidate will also work closely with the [Experimental Interaction Ecology](#) lab at the German Centre for Integrative Biodiversity Research (iDiv) in Leipzig, Germany, and in alignment with the [People, Cities & Nature project](#). The position is fully funded for a fixed term of three years (including a stipend, full tuition fees and research costs) and is to begin as soon as possible. Candidates should send electronic applications as a single PDF document comprising a letter of motivation, curriculum vitae, scientific publications (if applicable), and contact details for two academic references to Dr Barnes (andrew.barnes@waikato.ac.nz). Review of applications will begin on the **18th of December 2018** and will continue until the position is filled.