PhD research opportunity in New Zealand

Peatland ecosystem functioning within a managed landscape

We are looking for a motivated and energetic PhD candidate to undertake an exciting research project within threatened peatland ecosystems in New Zealand.

Project description

New Zealand's lowland peatlands were formed in a warm-temperate climate by members of an unusual Australasian vascular plant family, the Restionaceae. In the Waikato Region of the North Island, 80% of the original 94,000 ha of peat wetlands has been drained for agriculture, and the remnant peatlands range from the 9,000 ha near-intact Kopuatai bog to the remnant 100 ha Moanatuatua bog. This latter site is surrounded by farms developed on deeply drained peat and the absence of buffer zones means that its water table is relatively deep. However, it represents an important refuge for rare species and its peat preserves a valuable palaeoenvironmental record. We have research questions focussed on the functioning and restoration of this ecosystem, such as:

- How do the ecosystem carbon and water balances compare to a more pristine bog, and how sensitive are they to climatic and hydrological variation?
- How have peat accumulation and degradation rates been affected by the history of surrounding land drainage and intensification?
- What restoration strategies might ensure this ecosystem continues to function?

An important aspect of the research will be the maintenance of eddy covariance towers and other measurement infrastructure at Kopuatai (running since 2011) and Moanatuatua (to be established in early 2015).

Award details

Three years of PhD student funding are available at $25,000 (NZD) + enrolment fees per year. The successful candidate will be based at the University of Waikato, within the WaiBER research group. This project is aligned with a NZ-wide wetland restoration research programme, so collaboration with other peatland scientists and land managers will be expected. The candidate's first six months of PhD enrolment will be focussed on developing a formal research proposal, as well as carrying out initial field-based research.

Candidate profile

The successful candidate will have:

- completed the equivalent of a NZ MSc or BSc (hons) qualification with excellent grades;
- a fascination with ecosystem functioning from carbon and water cycle perspectives;
- be able to work independently and as a member of a research team;
- strong writing and oral communication skills;
- training or experience relevant to:
    - peatland ecosystem dynamics
    - peatland biogeochemistry and ecohydrology
- skills including
    - gas exchange measurements and, ideally, familiarity with eddy covariance tower measurements

- familiarity with a programming language (we use Matlab)
- holds a driving license

Application process

Please prepare a brief statement of interest, CV, transcripts and contact information for two referees and send to: Dr Dave Campbell, School of Science, University of Waikato, davec@waikato.ac.nz. The position will remain open until filled.

Our research group

Visit our website, http://waiber.com/, to see the range of research questions investigated, and publications produced, by our students and staff.