

**Subject:** Two Fully Funded Invasion Network PhDs in NZ

The Bio-Protection Research Centre, Lincoln University, New Zealand is offering TWO fully funded PhD fellowships through the New Zealand Biological Heritage National Science Challenge. This is truly a fantastic opportunity for a student wanting to learn cutting-edge modelling techniques with real world applications. The student will become an integral member of a national research team undertaking a high profile project.

The aim of these projects is to develop network models for a pests and pathogens under two different types of network and then use these models to evaluate strategies for sampling invasive movement under increasing limits on sampling resources and opportunities for mitigation. This will be achieved by mapping the likely pathways on a map of the resources at risk and the suitability for pest establishment.

PhD 1: Plant nursery network:

The movement of live plants through professional nurseries is known to be an effective means to disseminate plant pathogens, invertebrate pests, and weeds. By working closely with the Nursery and Garden Industry New Zealand and professional forestry nurseries as well as examining the less formal nursery trade, this PhD will initially collate spatial distribution data and trade relationships (directionality, volumes, and character, e.g. native or exotic species) among the live plant trade in New Zealand. This information will be used to describe the live plant trade network in terms of plant producers, retailers, and the middle-tier (wholesalers, both receiving and shipping plant material). This network will be used as the basis for building an invasion model to investigate how the probabilities of organisms with different life-history traits, host-range, and detectability will spread through the network.

PhD 2: Freshwater recreational user network:

New Zealand has 3,820 lakes with a surface area >1 ha, and these are widely recognised as hubs for potential invasion via recreational users moving weeds and invertebrate pests. As a principal vector of dispersal of invasive species in this system is spread on recreational boating equipment, links between water bodies will be derived from a probability of connectivity via road travel. The research will be undertaken jointly with the National Institute of Water and Atmospheric Research who hold extensive data on lake ecology and the student will liaise closely with the New Zealand Ministry of Primary Industries who undertake surveys of boat users across the country.

Further details can be found here:

<http://bioprotection.org.nz/about-us/vacancies>

The scholarships provide an annual stipend of NZD\$27,000 a year tax-free, covers full university fees and includes up to approximately NZD\$5,000 additional support a year towards operating expenses. The duration of the scholarship is three years. It is expected the successful candidates will be based at Lincoln University, Canterbury, New Zealand. Besides their own research, the PhD fellows will attend courses and workshops in relevant transferable skills like scientific writing and project management as well as participate in our biennial Bio-Protection symposium, weekly seminar series and group meetings. Each PhD student receives individual supervision and mentoring and is guided in her/his research work by a PhD advisory committee.

Applicants for this project should hold a first class or high 2A honours degree, or equivalent, in a relevant area, preferably with interest in spatial ecology, modelling and/or plant biosecurity. The position is open to applicants of any nationality, provided they are fluent in English, able to obtain a student visa and eligible for admission to the PhD program at Lincoln University.

<http://www.lincoln.ac.nz/Lincoln-Home/Study/Postgraduate/Entry-requirements/>

Applications should include evidence of qualifications and research experience, together with a curriculum vitae and contact details of two academic referees. Applications should be supported by a cover letter that states why the candidate is interested in the PhD (applicants are welcome to choose one or both) and how their qualifications would map onto the proposed research. Please email complete applications to [philip.hulme@lincoln.ac.nz](mailto:philip.hulme@lincoln.ac.nz). Closing date for applications is 1st March 2016 with the expectation of commencement before July 2016.

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