

Title:

Biodiversity change in Australia over the Last 130,000 Years, and implications for conservation

Type:

Living allowance, operational/logistical project funds, and scholarship top-up (competitive)

Value & Duration:

TGRS or APA scholarships provide AUD \$26,288 per annum (2016 rate) living allowance for 3 years, with a possible 6-month extension. This rate is indexed annually. The Ph.D. research project includes substantial operational funds and logistical support, funded by a 7-year ARC *Centre of Excellence for Australian Biodiversity and Heritage*, on which the project supervisors Prof. BW Brook (ARC Australian Laureate Fellow) and Prof. Chris Johnson are Chief Investigators. Some support for the costs of relocation exist, judged on merit and need. Two scholarships are on offer.

Closing date:

Applications close on 7th August 2017. (For a 2017 or later commencement.)

The Research Project:

This project will explore the causes and consequences of environmental change, human occupation and climatic shifts on the biodiversity and environments in Australia over the last 130,000 years. This will include exploration of the timing of initial human presence in Greater Australia, routes of colonisation and subsequent dispersal, the timing or extent of major changes in climate and fire regimes, and how landscapes and biota responded to changing conditions. It will highlight how improved understanding of past environmental change can help contemporary society manage and conserve Australia's future ecological and sustainability challenges.

The research projects will involve a combination of fieldwork (sample collection, spatial mapping) and compilation of existing data (e.g., historical databases, digital archives). There will also be an emphasis on synthesis and model-based forecasting, to examine the structural factors underpinning the capacity to capture past (and future) variability and change, including the impact of human arrival and drivers and impacts of changing populations through time.

Key questions might include:

- Testing ideas on the causes and consequences of palaeoecological change in Australia (both plants and animals)
- What were the consequences of initial human expansion?
- Development of coupled niche-population models of the extinct Australian megafauna, with a goal of determining the anthropogenic and/or climatic drivers of their extinction
- Exploring the drivers of ecological transformation of Australia during Holocene intensification
- The context, causes and magnitude of Australia's Holocene demographic shift
- Methods of communication, education and outreach of Australia's biodiversity and heritage

All of these research questions, or combinations thereof, are potential PhD projects.

Due to the projects' interdisciplinary nature, there will be substantial collaboration with members of the *Centre of Excellence for Australian Biodiversity and Heritage* (CABAH), with researchers from the School of Biological Sciences actively involved in the Centre's activities. Headquartered at the University of Wollongong, CABAH brings together eight Australian universities (UOW, James Cook University, University of New South Wales, Australian National University, University of Adelaide, Flinders University, Monash University and University of Tasmania), with a range of partner organisations, including major public education and engagement institutions in Australia (Australian Museum, Queensland Museum, South Australian Museum and State Library of New South Wales) and overseas (Papua New Guinea, Indonesia, France, Germany, Denmark, the UK and the USA). The CABAH team consists of 27 researchers based in Australian and international universities and research institutions, as well as a range of other Australian and international

leaders in research, science communication, and education and engagement. The Centre will commence in June 2017, with significant funding from the Australian Research Council, the NSW Government and participating universities, museums, and other organisations. CABAH will support around 40 new research positions and more than 50 research students over its 7-year life.

Eligibility:

The following eligibility criteria apply to these scholarships:

- The scholarships are open to domestic and international candidates.
- The PhD must be undertaken on a full-time basis.
- Applicants must already have been awarded a first class Honours degree or hold equivalent qualifications or relevant and substantial research experience in an appropriate sector.
- Applicants must be able to demonstrate strong research and analytical skills.

Candidates from a variety of disciplinary backgrounds are encouraged to apply. Knowledge and skills that are particularly desirable, and will be ranked highly, include:

- An interest in ecological, evolutionary or conservation biology theory and practice (including fieldwork), and/or paleontology with a focus on Quaternary records
- Experience in ecological modelling, and statistical packages
- Database management and high-level computer skills
- Experience with preparation and/or analysis of fossil data
- Work well in a team environment
- Experience and/or interest in demonstrating, tutoring or teaching
- Have an interest in palaeoecological or global-change research, and Australia's long-term environmental history within a biological and human context

Funding:

This PhD scholarship is funded by the University of Tasmania and the new *ARC Centre of Excellence for Australian Biodiversity and Heritage* (CABAH) – ARC Australian Laureate Prof. BW Brook and Professor CN Johnson are the chief investigators of the UTas node.

Application Process:

Applicants should first contact the nominated staff member below to discuss their suitability for the project. Applicants should then visit the [Apply Now](#) website and complete an application via the University of Tasmania's Online Application System. Please indicate **under Scholarship Support** that you wish to be considered for a living allowance scholarship.

More information:

Contact Prof. Barry Brook (e: barry.brook@utas.edu.au; p: 0420 958 400) and visit <http://cabah.org> and <http://ecological-dynamics.org> for more information.