

## **PhD Scholarship**

### **Australian Research Council - Australian Postgraduate Award (Industry)**

#### ***Impacts of deforestation and afforestation on greenhouse gas emissions, and carbon and water resources in north Australian savanna***

An exciting research program aimed at understanding the implications of land use change upon the greenhouse gas balance and water resources of tropical savannas in northern Australia has been funded by the Australia Research Council's Linkage program. We are looking for a suitable candidate to undertake key elements of this research program as part of an Australian Postgraduate Award.

Over the last decade, north Australia have been viewed as a potentially exploitable resource, given issues of salinisation, soil acidification, over-allocation of water resources and rainfall declines in south Australian agricultural regions. Improved pastures and plantation forestry are two land uses that may expand in the NT. Clearing of savanna vegetation would be required, with implications for greenhouse gas emissions, soil health, water resources and dry season environmental flows. This project will track greenhouse emissions and water use from uncleared and cleared savanna that has been converted to pasture and timber plantations, providing critical understanding of the environmental implication of such land use change in savanna.

This ARC Linkage grant (2010–2012) is administered by Assoc. Prof. Lindsay Hutley of Charles Darwin University (CDU) in the Northern Territory, but also involves Assoc. Prof. Jason Beringer (Monash University), Assoc. Prof. Stefan Arndt (University of Melbourne), Dr Stephen Livesley (University of Melbourne ) and Dr Guy Boggs (CDU). The program has strong industry relevance with the Commonwealth Government Department of Climate Change, the Northern Territory Government NT Department of Business and Employment, NT Department of Natural Resources Environment, the Arts and Sport, NT Department of Regional Development, Primary Industries, Fisheries and Resources all contributing to the project.

Two elements of the wider ARC project are available as research topics for the APAI candidate depending upon student background and interest.

- Project 1 will examine CO<sub>2</sub> and non-CO<sub>2</sub> trace gas fluxes as a function of afforestation and deforestation.

- Project 2 will examine differences in stand water use of savanna and exotic plantation timber species.

Modelling of greenhouse gas exchange or tree water use can be incorporated depending on student skills and interests. The PhD project will be supervised by appropriate members of the research team.

The scholarship is available through any of the partner Universities (CDU, Monash and Melbourne), however, the successful candidate will be expected to undertake extended periods of field research within the NT.

#### *Selection criteria*

Applicants need a relevant honours or postgraduate qualification at a standard that meets the University's PhD and scholarship entry requirements (minimum H2A average). Relevant previous study for the PhD scholarship would include environmental science, biology, chemistry, climatology, agricultural science or equivalent.

We are looking for people who have a demonstrated ability to work and think independently, but who are also excited by working within a cross-disciplinary team. The successful candidates need excellent communication skills and a demonstrated capacity to work in the field and in remote areas.

For further project and application information, please contact Lindsay Hutley, email [lindsay.hutley@cdu.edu.au](mailto:lindsay.hutley@cdu.edu.au)

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