

## **Is there congruence between bat succession and state-and-transition models of vegetation succession in restored minesites?**

### BACKGROUND

Restoration is becoming an increasingly important tool in the battle to preserve biodiversity yet, if it is to do so effectively, it will need to support all components of the ecosystem, including fauna. One, often unstated, assumption in restoration is that animals will naturally recolonise restored areas once vegetation establishes, yet this is rarely tested and is unlikely to be the case in many ecosystems. In addition, it is also becoming clear that restored areas need to be managed for decades if they are to reach a state similar to the reference community, yet long-term management techniques are poorly studied.

### PROJECT

An exciting opportunity exists for a PhD student to be part of a dynamic group comprising industry groups (Alcoa World Alumina Australia), government departments (Department of Conservation and Land Management) and tertiary institutions (Murdoch University and University of Western Australia) researching innovative methods for accelerating the return of fauna to restored sites and methods of managing restored sites to achieve restoration objectives. Their project will investigate the return of bats to areas restored after bauxite mining and potential management techniques for accelerating their return. The project will focus on successional processes in bat communities as restoration matures and an assessment of the value of state-and-transition models as a conceptual model to guide management of restored areas for bats, although there will be scope to expand the project into other areas. The project is field-based and will be conducted at Alcoa's minesites, consisting of a mosaic of unmined forest and restored mine-pits of varying ages, all located within 100km of Perth in the northern jarrah forest. The northern jarrah forest is a multiple use area managed for mining, water resources, timber, recreation and conservation, so this project provides a real opportunity to conduct research that will help preserve biodiversity in multiple use landscapes. This study will complement previous research conducted on other faunal groups in restored bauxite mines and addresses an urgent need to understand responses of the south-west Western Australian bat fauna to both restoration and disturbance in general. This research will also contribute greatly to the new WA Centre of Excellence for Climate Change, Woodland & Forest Health State, based at Murdoch and UWA, and there will be additional opportunities to collaborate with researchers from that centre.

### HOW TO APPLY

Interested student should have first-class or upper second-class honours in ecology. Enrolment may be through either University of Western Australia or Murdoch University and the successful applicant will need to hold their own scholarship. Closing dates are 31<sup>st</sup> October for Murdoch scholarships (<http://www.research.murdoch.edu.au/gradcentre/scholar.html>) and 30<sup>th</sup> October for UWA scholarships ([http://www.scholarships.uwa.edu.au/home/postgrad/general/australian\\_post](http://www.scholarships.uwa.edu.au/home/postgrad/general/australian_post)). We will provide both a scholarship top-up of \$4000/annum and research funding of \$5000/annum to the successful applicant. To apply applicant will need send a cover letter, *curriculum vitae* (including contact details for two referees) and a copy of their academic transcript to Michael Craig, School of Biological Sciences and Biotechnology, Murdoch University, Murdoch, WA 6150, Australia by 30<sup>th</sup> September 2009. Both Australian domestic students and international students may apply for this opportunity and applicants will need to be able to start before 30<sup>th</sup> April 2010.

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