THE UNIVERSITY of ADELAIDE

UNIVERSITY OF COPENHAGEN

JOINT PHD SCHOLARSHIP: MACROECOLOGY & BIODIVERSITY CONSERVATION

We are currently looking for two enthusiastic PhD students to work on a hot topic in global change ecology: **How do biological mechanisms mediate responses of biodiversity to climate- and human-driven change?**

The successful candidates will be enrolled in a jointly awarded PhD program recently established between the University of Adelaide and University of Copenhagen.

These PhD projects will be part of research funded by the *Australian Research Council* and the *Villum Foundation* (Denmark), involving several senior and postdoctoral scientists. The successful candidate will work closely with this diverse and highly skilled group of international researchers.

Position 1: Unravelling past mammal declines to improve conservation actions.

Australia's terrestrial mammal fauna is among the most distinct in the world. However, among continents it has suffered an extraordinary rate of loss of species since European settlement. This PhD project will improve capacity to halt declines and extinctions of Australian native land mammals by generating rigorously validated spatiotemporal reconstructions of the ecological processes and threats that caused distribution and population collapses of mammals during the 19th and 20th centuries. Specifically, the successful PhD candidate will integrate ecological models with insights of demographic change from *Holocene fossils* and sighting records from *explorers*, *naturalists* and *early settlers* to reconstruct spatiotemporally the range and extinction dynamics of an ecological and evolutionarily diverse group of terrestrial Australian mammals. We expect that the project will establish how ecological lifestyles and biological traits interacted dynamically with environmental change to cause population declines and later extinctions.

The successful candidates will have access to state-of-the art computational facilities, recently compiled fossil records, paleo and historical climatic simulations and genomics data.

Key outcome: a stronger understanding of how the dynamics of extinction threats interact with ecological processes in space and time to cause common species to become rare.

Supervision and mentoring: will be provided by A/Prof. Damien Fordham at the University of Adelaide's School of Biological Sciences and Professor Carsten Rahbek at the Villum Center for Global Tropical Biodiversity hosted at the University of Copenhagen's Globe Institute. Both supervisors and their labs are international leaders in the fields of macroecology, conservation biology, biogeography, movement ecology, population biology, genomics, evolutionary biology, and ecological modelling. The PhD students will spend 1 year in Copenhagen and 2 years in Adelaide.

You should have:

- Master degree in ecology, computational science, mathematics or conservation biology
- A strong interest in ecological modelling, biogeography, macroecology, conservation science or spatial ecology
- Competency in statistical and spatial data analysis
- Excellent time and data management and interpersonal skills
- Evidence of well-developed verbal and written communication skills

Desirable Characteristics

- Publication record in international peer-reviewed journals
- Experience with metapopulation or individual-based demographic models or metacommunity models
- Familiarity with open-source geographic information software
- Knowledge of advanced statistical languages such as R, Python or Matlab
- Familiarity with late natural history records and climate and environmental data

Salary: The scholarship will be for a total of 3 years and has a stipend of AUD $28,854 per annum (tax free 2022 rate, indexed annually) plus a top up scholarship valued between AUD $10,000 in year 1 and AUD $20,000 per annum in years 2 and 3.

Applying:

Your application should:

- include your résumé/Curriculum Vitae and copies of any published papers
- address the selection criteria
- include residency status
- include the names, addresses and/or email details of two referees

Email applications to damien.fordham@adelaide.edu.au.

For further information:

If you have any queries regarding this position, please contact A/Prof. Damien Fordham (damien.fordham@adelaide.edu.au) or Prof. Carsten Rahbek (crahbek@sund.ku.dk)