THE UNIVERSITY OF ADELAIDE
AUSTRALIA

CENTER FOR MACROECOLOGY, EVOLUTION AND CLIMATE
UNIVERSITY OF COPENHAGEN

Danmarks Grundforskningsfond
Danish National Research Foundation

Joint PhD stipends: Global change ecology and biodiversity conservation

We are currently looking for two enthusiast PhD students to work on a hot topic in global change ecology: **how and why species ranges shift in response to global change**.

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

These PhD projects will be part of a recently funded **Australian Research Council Discovery Project**, involving several senior and postdoctoral scientists. The successful candidates will work closely with this diverse and highly skilled group of international researchers. This new project is using fossils, ancient DNA and computational models to determine the ecological processes that (i) drive the structure and dynamics of species ranges and (ii) regulate the risk of extinction from global change. The successful candidates will also have access to state-of-the art computational facilities, recently compiled fossil records, paleoclimatic simulations and paleo genetic data.

Position 1: Drivers of geographical range shifts.

Despite more than twenty years of recent research on species' range dynamics we still know little about the ecological mechanisms that drive geographical ranges to contract. This PhD project aims to develop a stronger understanding of the ecological processes that regulate the severity of threats from climate and land-use change and over-exploitation on species distributions. To do this, the range dynamics of large-to-medium sized vertebrates will be reconstructed using the fossil record, aDNA and spatial models. A key outcome of the project will be a stronger understanding of whether there are general patterns in the spatial dynamics of range collapses of species.

Position 2: Preventing extinctions from global change

Conservation prioritization has historically focused on conserving the viability of populations in the core of a species' range. However, evidence suggests that species ranges are unlikely to consistently contract inwards. This PhD project aims to establish the factors that determine when efforts to avert extinctions of large-to-medium sized vertebrates should be focused on core or peripheral populations. Research findings will be used to inform future conservation strategies to prevent extinctions from global change, by providing better capacity to target conservation management resources more effectively to slow or redirect range contractions.

Supervision and mentoring will be provided by key personnel at the School of Biological Sciences at the University of Adelaide, and the Centre for Marcoecology, Evolution and Climate at the University of Copenhagen. Both institutions are international leaders in the fields of quantitative ecology, macro- and paleo-ecology, climate change science, paleogenomics & evolutionary biology. The PhD students will spend time researching at both institutions during their candidature.

You should have:

- A BSc with First Class Honours or a Masters degree in ecology, climate science, mathematics, conservation biology or population genetics.
- A strong interest in ecological modelling, conservation science, paleoecology or paleogenomics
- Evidence of research excellence
- 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
- Familiarity with geographic information systems
- Knowledge of advanced statistical languages such as *R* or Matlab
- Familiarity with late Quaternary ecological proxies

Salary: Tax free stipend of $26,288/yr (AUD) plus the opportunity of a taxable top-up scholarship of 100,000/yr (DKK) for a total of three years.

Applying:

Your application should:

- include your résumé/Curriculum Vitae
- 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.

If you have any queries regarding this position, please contact A/Prof Damien Fordham (damien.fordham@adelaide.edu.au); A/Prof David Nogués-Bravo (dnogues@snm.ku.dk); Prof. Carsten Rahbek (crahbek@snm.ku.dk) or A/Prof Jeremy Austin (jeremy.austin@adelaide.edu.au).