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 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 2: Establishing ecological processes of persistence in Andean birds.

The high altitudinal Polylepis forest of the Andes are today characterized by isolated fragments. However, evidence from pollen records indicates that these forests were much more widespread and continuous in the past. This PhD project will establish the ecological processes and community dynamics that have allowed birds to persist at extremely low densities for centuries in very small forest fragments, typically smaller than 1 km^2. According to conventional knowledge, persistence at these low population sizes should not be possible due to stochastic factors. Specifically, the successful PhD candidate will integrate ecological process-based models with field and satellite data to detect and disentangle the mechanisms responsible for bird abundance and diversity in *Andean Polylepis* forest fragments. We expect that the project will establish how metapopulation and metacommunity dynamics promote persistence at small population sizes.

The successful candidates will have access to state-of-the art computational facilities, decade-long field surveys, population genomics and radiotracking data.

Key outcome: a stronger understanding of how the spatial dynamics of small populations and communities effects persistence in a changing world.

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, computer science, mathematics, conservation biology or population genetics
- A strong interest in ecological modelling, macroecology, population biology, community ecology or conservation science
- 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 natural history records and movement 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)