David L Nieland

Subject: Funded PhD in Tasmania - climate change & pelagic fish

A funded PhD Scholarship is available at the Institute for Marine and Antarctic Studies in Tasmania Australia, applications are due March 15th but please correspond with Associate Professor Gretta Pecl before applying.

The project is part of a dynamic research group examining a range of climate-driven impacts and responses in marine systems. "Physiological mechanism and consequences of climate-driven range extensions in pelagic fish" will be part of a much larger group of projects and will access a
new state of the art eco-physiology laboratory.

The exact project is flexible and can be tailored to suit the successful applicants interests. However, an outline is as follows:

Waters off the south-east coast of Australia are some of the most rapidly warming waters in the southern hemisphere and marine ecosystems are rapidly responding. More than 70 species have been documented to be shifting their range further south, many thought to be related to this ocean warming. However, variation in the rate and magnitude of species shifts is high with little understanding of the factors governing this variation. The south-east Australia 'hotspot' therefore offers extensive opportunities to investigate some of the driving factors and underlying mechanisms behind species range shifts. This research will use two iconic marine fishes, yellowtail kingfish Seriola lalandi and snapper Chrysophrys auratus, to develop an understanding of contemporary range shifts and associated climate change impacts on marine fishes in south-east Australia. These species exhibit fundamentally different life history characteristics, yet have both recently undertaken apparently large changes in their distributions and may be becoming important components of Tasmanian marine ecosystems. This project examines the effects of temperature on various measures of physiological performance, including predator-prey interactions that arise primarily through effects on escape and attack body velocity. Outcomes of the effect of temperature on direct (individual physiology) and indirect (species
interactions) measures of performance will be integrated in a modelling component to estimate the probability of transitioning between the various stages of range extension, to generate spatial population-level models describing the processes underpinning the recent range shifts.

This project will contribute to a broader research program generating a new understanding of the mechanisms and processes driving species responses to climate change. We need to better understand contemporary responses to climate change so we can improve our capacity to predict future ecological change, to manage proactively for changes in resource- based human livelihoods and ensure we address conservation objectives.

Eligibility:

The following eligibility criteria apply to this scholarship:

The scholarship is open to Australian (domestic) candidates and to International candidates. The PhD must be undertaken on a full-time basis. Applicants must already have been awarded a first class Honours degree or hold equivalent qualifications or relevant and substantial research experience in an appropriate sector. Applicants must be able to demonstrate strong research and analytical skills. Candidates from a variety of disciplinary backgrounds are encouraged to apply. Knowledge and skills that will be ranked highly include applied statistics and experience with R studio.

Funding: This PhD scholarship is funded by the University of Tasmania.
Operational funds are provided by an Australian Research Council Future Fellowship awarded to Associate Professor Gretta Pecl

Application Process: Applicants should in the first instance discuss their interest in the project with Associate Professor Gretta Pecl.
Afterwards, complete the application via the University of Tasmania's admissions system and scholarship section (see How to Apply on the Graduate Research Future Students page) and indicate under Scholarship Support that you wish to be considered for the "Physiological mechanisms and consequences of climate-driven range extensions in pelagic fish living allowance scholarship".

More information:

Please contact Gretta.Pecl@utas.edu.au for more information.