PhD position to study the coastal protection services provided by coastal ecosystems in south eastern Australia

**Background:** Vegetated coastal ecosystems, e.g. mangroves, saltmarsh and seagrass, provide several key ecosystem services to humans, from local to global scales. With an estimated global value of up to ~US$46,000 ha⁻¹ yr⁻¹, these ecosystems are particularly vital in providing coastal protection services: coastal erosion prevention and moderation of extreme climatic events (i.e. storm surge and inundation damage; de Groot et al. 2012). The distribution, configuration and structure of coastal vegetation are the proximal drivers of the ability of these ecosystems to provide protection services. However, detailed data on vegetation structure are rarely incorporated into landscape-scale models to understand, quantify and value the contribution of coastal vegetation to erosion and damage reduction. Forming part of the Australian team of The Nature Conservancy’s Mapping Ocean Wealth project, the objective of this research project is to assess the value of coastal protection services provided by mangroves and saltmarsh and seagrass ecosystems in south eastern Australia (Victoria and New South Wales).

Specifically, this project will: 1) employ field techniques to estimate and monitor wave and erosion reduction through vegetated coastal ecosystems, and 2) incorporate remote sensing and land use data to quantify and map the avoided erosion and storm surge reduction services of these ecosystems in south eastern Australia. This project will provide key information for industry project partners and coastal zone managers in coastal risk assessment and management in south eastern Australia.


**Project partners:** Deakin University, The Nature Conservancy, Department of Environment Land Water and Planning, Parks Victoria, New South Wales Department of Primary Industries

**Value:** AUD$26,681 per annum tax free, project support (incl. computer, travel) plus other benefits: http://www.deakin.edu.au/courses/scholarships/find-a-scholarship/rtp-and-duprs

**Research environment:** Deakin ranks in the top 3% of universities globally and is Australia’s eighth largest university. The project will be hosted by Deakin Universities Centre for Integrative Ecology (CIE, www.cie-deakin.com/) the School of Life and Environmental Sciences, and supported by a multi-disciplinary team including The Nature Conservancy, government agencies, private industry, and community groups. The goal of CIE’s research is to foster new conceptual understanding that advances fundamental science, while also making innovative contributions to applied conservation and natural resource management, particularly through protection of biodiversity and areas of high conservation value.

**Supervisory team:** The project is supervised by academics from Deakin University (A/Prof. Peter Macreadie, Dr Clare Duncan, Dr Paul Carnell, A/Prof. Daniel Ierodiaconou, and Dr Emily Nicholson).

**Closing date:** The position will remain open until filled. A first assessment of applications will be conducted in late December 2017

**Citizenship:** This position is open to domestic and international applicants.
Selection criteria:

A Honours or Masters degree in Ecology, Geography, Environmental Science or Engineering, or similarly relevant degree subjects (e.g. Remote Sensing).

Demonstrable strong quantitative skills, and experience with spatial and statistical analysis in Geographic Information Systems and R. Experience in remote sensing (satellite, airborne) data manipulation is also desired.

Applicants with demonstrable experience in collecting field data and the capacity to undertake independent fieldwork are also desired.

Ability to implement research in collaboration with a range of stakeholders (government agencies, private landholders, conservation groups etc.).

Strong English written communication skills including the capacity to write research results into scientific papers.

A proven track record of academic excellence. Applicants with first-authored publications in quality journals will score highly.

To apply: Email the following information to clare.duncan@deakin.edu.au:

- A letter (2 pages max)
- Addressing each of the selection criteria
- A summary of your research experience
- Your reasons for wanting to do a PhD (also a PhD in this research area, and at Deakin)
- Information on how your skills will be relevant to the project
- A copy of your academic transcript
- An example of your written work as lead author (e.g. paper, manuscript, thesis)