

## Project 7 - Monitoring and modelling ecohydrological states and processes: towards a better understanding of ecosystems responses to climate and human disturbance

**Location:** The project will be based at Flinders University, Adelaide, SA

**Required area of expertise/background:** An Honours degree or MSc degree in Hydrology, Atmospheric Science, Environmental Sciences/Engineering, Biological Sciences, or relevant fields with good understanding of physics or mathematics.

**Project: Project Description (Max 200 words):**

The sensitivity and significance of (Australian) ecosystems in response to drought and wetness has attracted international research attention. We offer PhD training opportunities to tackle ecohydrological issues relevant to (Australian) ecosystems, using remote sensing, modelling and field experiments.

Ecohydrological research has rapidly developed at Flinders in recent years thanks to the investment of National Centre of Groundwater Research and Training (NCGRT) and the Strategic Professorship. Flinders was one of the six participant universities in the NCGRT Program 4 Groundwater-Vegetation-Atmosphere Interactions. We have trained three postdoctoral researchers, graduated three PhDs and hosted half a dozen visiting PhD students. We have established three long-term ecohydrology observation sites, including a coastal mangrove forest site, along a climate gradient in South Australia. One postdoc was awarded ARC DECRA and two were awarded Flinders Vice Chancellor Early Career Researchers.

Potential research subjects include

- (1) Modelling and remote sensing of evapotranspiration
- (2) Tracing water partition and transfer in the critical zone
- (3) Carbon sequestration in semiarid and arid rangelands
- (4) Carbon sequestration in coastal wetlands
- (5) Ecohydrological impacts of extreme climate events
- (6) Groundwater dependent ecosystems and their role in groundwater flow systems

**2017 RTP full time RTP Stipend Rates\* (\$26,682). Approximate annual top-up amount:** Subject to funding availability

**Principal Supervisor:**

This is a collaborative research project

**Co Supervisors:**

[Assoc Prof Huade Guan](#) – Flinders University

[Prof Okke Batelaan](#) – Flinders University

[Prof Craig Simmons](#) – Flinders University

[Assoc Prof Erick Bestland](#) – Flinders University

