

## Project 25 – Freshwater recharge and saltwater mobilisation in a saline floodplain

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

**Required area of expertise/background:** An Honours or MSc degree in Hydrochemistry, experience in modelling & fieldwork

**Project:** The ecological health of the River Murray floodplain depends on access to freshwater, but in downstream reaches the groundwater is typically highly saline. Freshwater enters floodplain sediments laterally from the river and vertically from rainfall and inundation. Salt is mobilised due to regional groundwater gradients, evapoconcentration, and flushing of the unsaturated zone during inundation. These processes can interact in unexpected ways and are extremely heterogeneous; for example, vertical recharge rates depend strongly on soil type. Recent modelling of the Pike floodplain has captured some of the dynamics, but not all.

This project will improve understanding of floodplain groundwater processes, through a combination of fieldwork, modelling and possibly laboratory study. For example, a dynamic field site could be studied in detail to determine the physics and then simulated.

Work in this area is ongoing, with various project scopes under development. We would work with an interested student to find a project scope that complements current works without overlap.

**2017 RTP full time RTP Stipend Rates\* (\$26,682). Approximate annual top-up amount:** To be negotiated

### Principal Supervisor:

TBC -

### Co Supervisors:

Juliette Woods – DEWNR

Graham Green – DEWNR

Virginia Riches - DEWNR



**Government of South Australia**

Department of Environment,  
Water and Natural Resources



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