Project 13 - Sustainable groundwater management practices in complex coastal settings

Location: The project is to be based at Flinders University, Adelaide, SA

Required area of expertise/background: An Honours or MSc degree in Hydrogeology or related field, some knowledge of groundwater modelling, some familiarity with geophysical data, micro-meteorology, mathematics, and/or hydrochemistry would be advantageous.

Project: Project Description (Max 200 words): Coastal aquifers host the complex mixing of freshwater and seawater, where fluid density variations, geological complexities and temporal fluctuations confound contemporary knowledge of flow and transport behaviour. The investigation of small island freshwater lenses is especially problematic, because tidal effects often traverse the island's width, leading to enhanced mixing and unique distributions of salinity in the aquifer. In many case, groundwater is the sole source of supply on small islands, while sea-level rise, intensification of human stresses, and climate variability threaten fresh groundwater reliability. This project aims to build on the continuing collaboration with Pacific Island partners in studying small island hydrogeology in the Pacific. A number of case studies are proposed, where significant prior investigation offer excellent opportunity to build on extensive data sets while seeking to answer key research questions regarding island water balances, tidal effects, geological controls, optimal management of pumping, and other facets of small island hydrogeology. The project will contribute to the ARC Future Fellowship on coastal groundwater systems of Prof Adrian Werner.

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

Principal Supervisor:
Prof Adrian Werner - Flinders University

Co Supervisors:
Dr Tariq Laattoe - Flinders University

Flinders UNIVERSITY

NATIONAL CENTRE FOR GROUNDWATER RESEARCH AND TRAINING