DR. RON KARL HOEKE

PhD 2006 to 2010
AIMS@JCU Project funds
Supervised by:
Prof. Peter Ridd (JCU)
Dr. Richard Brinkman (AIMS)

An investigation of wave-dominated coral reef hydrodynamic

Ron is now using the skills developed during his PhD candidacy to assist Pacific Island nations develop sea level rise impact mitigation and adaptation strategies with CSIRO Marine and Atmospheric programme. His research interests include the interaction of physics, geomorphology, and ecology in the coastal zone and how climate change may influence these factors and outcomes. Prior to joining CSIRO, Ron completed a masters degree in physical oceanography on barrier island inlet migration, at the Florida Institute of Technology in 2001. He then went on to work for a joint NOAA-University of Hawaii project to establish an inter-disciplinary coral reef monitoring program for all US-flagged islands in the Pacific. Concurrent with his work at NOAA, and through a NOAA, US Geological Survey and Australian Institute of Marine Science partnership,

The focus of his PhD research was the synthesis of in situ oceanographic data and coupled wave-flow numerical modelling to better understand the circulation, flushing mechanisms, water quality and sedimentation of coral reef systems. Ron's current research includes current and future wave climate, sea-level anomalies driven by wave events, and inundation of Pacific islands.

Ron combined oceanographic observations with numerical modelling techniques to elucidate hydrodynamic processes of coral reefs, particularly those connected with small-scale wave-driven flows, water quality, and sediment transport. Such studies form a basis for an integrated understanding of coastal zone processes, a prerequisite for successful management of coastal resources.

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Publications

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