

Title of Project: Identifying environmental and biological drivers of the success and failure of coral recruits

Names of supervisors:

Name	Affiliation (AIMS or JCU)
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Brief description of the project

Current restoration and adaptation research at AIMS is focused on identifying thermally tolerant coral stock and to develop aquaculture propagation methods for a diversity of coral species for cost-effective, large-scale field-based restoration. This project will test coral restoration and re-seeding methods across environmental gradients in the Keppel Island group. A range of aquaculture-based coral-reef restoration methods, including coral spawning and fragmentation, will be used to produce corals in the National Sea Simulator at AIMS.

Student 1 (commencing January 2020) will investigate the environmental and biological drivers of post-settlement mortality, by monitoring environmental conditions and evaluating deployed coral juveniles at sites established across an environmental gradient. This student will have a largely field-based and ecologically-focused project that integrates benthic community ecology and environmental science.

Student 2 (commencing January 2021) will address differences in settlement and post-settlement survival dynamics among substrate types and forms, and among species, primarily in the laboratory. Broadly, this student will have a mixed lab and field-based project that draws on highly controlled lab manipulations aimed at accelerating growth and maximizing survival.

This project would suit someone who:

Essential

- A bachelor's degree with Honours and preferably a master's degree in marine biology or a related field
- Experience designing and conducting laboratory and/or field experiments with marine or aquatic species, with a sound understanding of complex experimental design
- Skills in the analysis of statistical data, preferably with R
- Sound oral and written communication skills with the ability to interact effectively with other team members
- An interest in coral aquaculture/husbandry

Desirable

- Experience with scientific publishing
- Experience conducting surveys and collecting census data in the field, preferably in the marine environment
- Knowledge of coral species of the Great Barrier Reef
- Knowledge of, and experience with, the sexual reproduction of corals
- The desire and ability to be registered on the AIMS dive register

Key words: Restoration ecology, coral restoration, coral reproduction, coral reef ecology, outplanting