



Australian Government

Department of the Environment, Water, Heritage and the Arts

## Marine and Tropical Sciences Research Facility (MTSRF) October 2008 Milestone Report

### Project 1.1.4 – Dating and Mapping Historical Changes in GBR Coral Communities

**Project Leader:** Dr Jian-xin Zhao, University of Queensland.

#### Summary

This report provides a plan for conduct of year three activities including laboratory and field sample collection schedule, and a plan for communication outputs and products

#### For reference: Milestone extracted from Project Schedule

Report 1 submission October 2008:

- Plan for conduct of year three activities including planned laboratory and field sample collection schedule [UQ]
- Plan of communication outputs and products for Year 3 and summary of any communication activities undertaken to date, including minutes of meetings/workshops if applicable [UQ]

## Project Results

### *Description of the results achieved for this milestone*

#### Fieldwork schedule

- Tara Clark will participate in the AIMS expedition to the Princess Charlotte Bay region in Nov-Dec 2008 and will collect surface death assemblages.
- Fieldwork and sample collection on Heron Island will be conducted between the 8-15 November 2008, targeting surface death assemblages, cyclone-transported coral blocks, and lagoon sediment cores.

#### Laboratory Schedule

- Laboratory analyses are being carried out, with new interesting data produced.
- Additional laboratory work will be carried out throughout the year.
- A cleaning procedure has been developed to clean sediment-contaminated coral samples for high-precision U-series dating.

- A compilation of all available  $^{230}\text{Th}$  age data for both surface rubbles and dead massive corals from Palms and Keswick Islands show two major episodes of coral mortality occurred during 1920-1940 and 1980-2000 AD, respectively, which appears to correlate well with the warm phases of the Pacific Decadal Oscillation. This suggests climate variability does play a significant role in coral mortality and reef development in the GBR.

### **Other issues**

Mr Rodriguez has just received an IPRS scholarship to begin his Ph.D at UQ from February 2009.

### **Communications, major activities or events**

#### **During milestone reporting period**

- Tara Clark's confirmation seminar was held at UQ on the 31<sup>st</sup> October, 2008.
- Jez Roff presented data from the project at the ICRS conference in Florida in July, 2008
- Two papers are being drafted, one on the dating method and methodology, one on the findings.

#### **During next milestone reporting period**

Two papers, one on the dating method and methodology and one on the findings, will be submitted.