Australian Government
Department of the Environment, Water, Heritage and the Arts

# Marine and Tropical Sciences Research Facility Milestone Report, March 2009

**Program 7:** **Halting and Reversing the Decline of Water Quality**

**Project 3.7.1:** **Marine and estuarine indicators and thresholds of concern [Objective (a)]**

**Project Leader:** **Dr Andrew Negri, Australian Institute of Marine Science**

## Summary

**Note:** This document addresses the agreed March 2009 milestone for Project 3.7.1 Objective (a). A report on the results of laboratory analyses and data processing is due in June 2009 and will be made available on the Project 3.7.1 webpage shortly thereafter.

The climate-dosing facility is now completed. Experiments have revealed the toxic threshold concentrations of a range of commonly used photosystem II herbicides to crustose coralline algae (CCA). Experiments on the interactive effects of herbicides and light and herbicides and temperature are about to commence.

## Project Outputs / Milestones

| Targeted Activity | Due Date |
|---|---|
| • Submit progress report on preliminary experiements. | 1 March 2009 |

## Project Results

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

The thermal tolerance of the CCA species *Neogoniolithon fosliei* has been determined (this species exhibits photoinhibition and bleaching at 31℃). Methods, including image analysis and HPLC were developed to quantitatively measure bleaching in CCA. Experiments have also revealed that CCA is more sensitive to diuron than atrazine and hexazinone. The CCA was less sensitive to each of these herbicides than the coral species *Acropora millepora*.

Despite delays (see below) this project is on track.

### *Problems and Opportunities*

Persistently low salinity due to flooding events has delayed the start of experiments that rely on flow-through aquaria. Static experiments have been undertaken in the meantime.

### *Communications, Major Activities and Events – During next milestone reporting period*

All flow-through and pesticide-climate interaction experiments will be undertaken during the next reporting period.