



Australian Government

Department of the Environment, Water, Heritage and the Arts

Marine and Tropical Sciences Research Facility Milestone Report, 31 March 2009

Program 8: Sustainable use and management of marine resources of the Great Barrier Reef

Project 4.8.2: Influence of the GBR Zoning Plan on inshore habitats and biodiversity, of which fish and corals are indicators: reefs and shoals
[Objective (a) Measure the response of biological communities (fish and benthos) to differential zoning of human use on inshore coral reefs]

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Summary

This brief report provides an overview of the status of coral trout (*Plectropomus* spp.) populations in Representative Areas Program (Great Barrier Reef Marine Park) protected and fished zones of the Palm, Whitsunday and Keppel Island groups. The report also provides a summary of the field work conducted during 2008/09 and the proposed field schedule for the remainder of 2009. A summary of communication activities undertaken during 2008 and proposed for 2009 is also provided.

Project Results

1. Status of coral trout populations in Representative Areas Program (RAP) protected and fished zones of the Palm, Whitsunday and Keppel Island groups.

After four years of no-take protection (2004 to 2008) under the Great Barrier Reef Marine Park Representative Areas Program (RAP), coral trout have substantially higher biomass in no-take zones compared to fished zones at all three island groups (Figure 1). The divergence of the biomass trajectories has been most pronounced in the Whitsundays, of an intermediate level in the Keppel group, and least in the Palm Islands. The patterns of densities of coral trout are not as clear as those for biomass. After four years of RAP protection, coral trout densities are much higher in no-take zones than in fished zones in both the Whitsunday and Keppel Islands, but there is virtually no difference in density of coral trout between no-take and fished zones in the Palm Islands. These regional differences in the species' response to no-take protection will be expanded upon in a more extensive report at a later date.

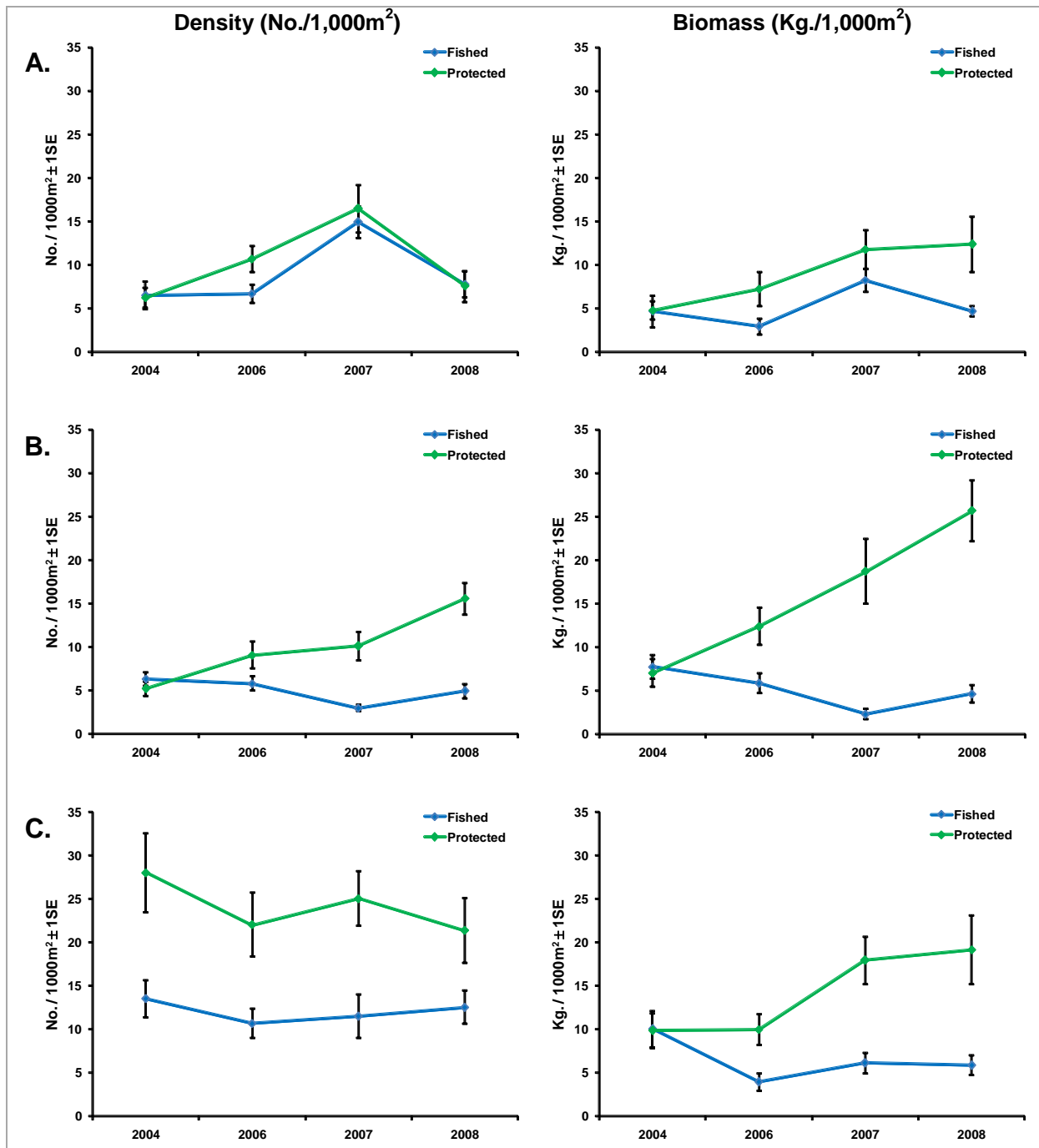


Figure 1: Mean density and biomass (± 1 SE) of coral trout (*Plectropomus* spp.) populations on protected (green zone) and fished (blue zone) reefs of the Palm (A); Whitsunday (B) and Keppel (C) Island groups from 2004 to 2008. No-take protection was implemented in July 2004. Data for 2004 was collected prior to protection status being applied.

2. Summary of field work conducted during 2008/09 and proposed field activities for 2009.

Table 1: Field activities during 2008 and 2009.

Date	Field Activity	No. Field Sites Surveyed
May 2008	Keppel Islands: Four-year post-zoning surveys	8
November 2008	Whitsunday Islands: Four-year post-zoning surveys	18
November 2008	Palm Islands: Four-year post-zoning surveys	6
February 2009	Keppel Islands: Five-year post-zoning and long-term monitoring surveys	20
July 2009	Magnetic Island: Five-year post-zoning surveys	8
October 2009	Palm Islands: Five-year post-zoning and long-term monitoring surveys	30
November 2009	Whitsunday Islands: Five-year post-zoning and long-term monitoring surveys	42

3. Communication activities undertaken during 2008 and proposed for 2009.

April 2008

Garry Russ presented recent findings of long-term monitoring of inshore reefs and preliminary results of second re-survey of the RAP sites at the Annual MTSRF Conference in Cairns.

July 2008

Richard Evans and David Williamson provided presentations at the 11th International Coral Reef Symposium (ICRS) in Fort Lauderdale, USA. Presentations included a summary of findings in the long-term monitoring of inshore reefs and preliminary results of the second re-survey of the RAP monitoring sites.

August 2008

David Williamson provided a presentation at the annual general meeting of the Australian National Sportfishing Association (ANSA) in Rockhampton. The presentation included an overview of data from the inshore reefs monitoring program.

June 2009

David Williamson will provide a presentation at the Indo-Pacific Fish Conference in Fremantle, WA. The presentation will include a brief overview of current findings from the inshore reefs monitoring program.