



Australian Government

Department of the Environment and Water Resources

**Marine and Tropical Sciences Research Facility (MTSRF)
June 2007 Milestone Report**

Project 4.8.3: Evaluation of the resiliency of key inter-reefal fish species

Project Leader: Dr Colin Simpfendorfer, James Cook University

Summary

The laboratory work associated with this project has commenced and planning during the milestone period produced a schedule for the delivery of biological results. Samples for 29 species from four families have been collected and are currently being processed to provide biological data to aid management of reef fishes.

For reference: Milestone extracted from Project Schedule

Description

- Program newsletter article.
- Plan for completion of out year activities including identification of key inter-reefal species targeted for biological parameter estimation, parameters to be estimated and schedule of laboratory work.

Project Results

DESCRIPTION OF THE RESULTS ACHIEVED FOR THIS MILESTONE

1. MTSRF Program 8 Newsletter article

See Communications section below

2. Plan for out year activities, key species to be addressed, parameters to be estimated and schedule of laboratory work.

a) Plan for out year activities and schedule of laboratory work

The plan for out year activities is to work through the stored Effects of Line Fishing Project samples for the “other species” group in on a taxonomic basis. This plan has been included in the ARP2 milestone schedule and is as follows:

Completion of sample processing and analysis for barramundi cod.	1 December 2007
Completion of sample processing and analysis for key species from, the family Lethrinidae.	1 Jun 2008
Completion of sample processing and analysis for key species from, the family Lutjanidae	1 Dec 2008
Completion of sample processing and analysis for key species from, the family Serranidae	1 Jun 2009

Completion of sample processing and analysis for remaining key species.	1 Dec 2009
Final reporting and publication of biological information on key inter-reef species	30 Jun 2010

Laboratory work will be designed to meet these milestone dates. Increasing numbers of species in groups in later deadlines means that species from all families may be worked on in early periods to spread the workload evenly across time.

In addition to the biological sampling that will occur, the report prepared on the harvest patterns of the “other species” group completed in March 2007 will be updated with new data in June 2008 and finalised in June 2010.

b) Key species to be addresses

The Harvest Pattern report prepared for the March 2007 milestone identified a number of key species from commercial, charter and recreational catches.

These species were:

Common name	Species name
Yellow-Tailed Emperor	<i>Lethrinus atkinsoni</i>
Spangled Emperor	<i>Lethrinus nebulosus</i>
Hussar (pink)	<i>Lutjanus adetii</i>
Stripey bass	<i>Lutjanus carponotatus</i>
Small-mouth nannygai	<i>Lutjanus erythropterus</i>
Black-spot snapper	<i>Lutjanus fluviflamma</i>
Common name	Species name
Large-mouth nannygai	<i>Lutjanus malabaricus</i>
Moses perch	<i>Lutjanus russelli</i>
Red emperor	<i>Lutjanus sebae</i>
Rosy jobfish	<i>Pristipomoides filamentosus</i>
Goldband jobfish	<i>Pristipomoides multidens</i>
Blue-spotted rockcod	<i>Cephalopholis cyanostigma</i>
Gold-spot cod	<i>Epinephelus coioides</i>
Black-tipped cod	<i>Epinephelus fasciatus</i>
Flowery cod	<i>Epinephelus fuscoguttatus</i>
Speckle-finned cod	<i>Epinephelus ongus</i>
Longfin rockcod	<i>Epinephelus quoyanus</i>
Maori cod	<i>Epinephelus undulatostratus</i>
Bream coral	<i>Gymnocranius audleyi</i>
Venus tusk fish	<i>Choerodon venustus</i>
Parrotfish	Family Scaridae

Not all of these species will be investigated as samples of some species were not collected as part of the ELF Project. This mostly includes species that occur in deeper water as adults (e.g. nannygais and jobfishes) or in inshore waters (e.g. gold-spot cod). In addition, a number of species not on the above list will be investigated as a second tier priority. The full list of species (key species indicated by greyed areas) to be examined and the current number of samples available for analysis is:

Family	Genus	Species	Otolith samples	Gonad samples
Labridae	<i>Cheilinus</i>	<i>undulatus</i>	71	80
Labridae	<i>Choerodon</i>	<i>venustus</i>	20	20
Lethrinidae	<i>Lethrinus</i>	<i>atkinsoni</i>	1850	727
Lethrinidae	<i>Lethrinus</i>	<i>lentjan</i>	73	74
Lethrinidae	<i>Lethrinus</i>	<i>nebulosus</i>	494	328
Lethrinidae	<i>Lethrinus</i>	<i>olivaceus</i>	70	32
Lutjanidae	<i>Aprion</i>	<i>virescens</i>	108	80
Lutjanidae	<i>Lutjanus</i>	<i>adettii</i>	150	55
Lutjanidae	<i>Lutjanus</i>	<i>bohar</i>	976	279
Lutjanidae	<i>Lutjanus</i>	<i>carponotatus</i>	4183	
Lutjanidae	<i>Lutjanus</i>	<i>fulviflamma</i>	80	51
Lutjanidae	<i>Lutjanus</i>	<i>gibbus</i>	100	67
Lutjanidae	<i>Symphorus</i>	<i>nematophorus</i>	175	63
Serranidae	<i>Aethaloperca</i>	<i>roga</i>	4	3
Serranidae	<i>Anyperodon</i>	<i>leucogrammicus</i>	75	35
Serranidae	<i>Cephalopholis</i>	<i>argus</i>	139	85
Serranidae	<i>Cephalopholis</i>	<i>cyanostigma</i>	2656	727
Serranidae	<i>Cephalopholis</i>	<i>miniata</i>	34	13
Serranidae	<i>Cromileptes</i>	<i>altivelis</i>	128	150
Serranidae	<i>Epinephelus</i>	<i>cyanopodus</i>	81	73
Serranidae	<i>Epinephelus</i>	<i>fasciatus</i>	848	452
Serranidae	<i>Epinephelus</i>	<i>fuscoguttatus</i>	187	213
Serranidae	<i>Epinephelus</i>	<i>maculatus</i>	82	69
Serranidae	<i>Epinephelus</i>	<i>merra</i>	23	250
Serranidae	<i>Epinephelus</i>	<i>ongus</i>	805	434
Serranidae	<i>Epinephelus</i>	<i>polyphekadion</i>	130	101
Serranidae	<i>Epinephelus</i>	<i>quoyanus</i>	183	69
Serranidae	<i>Variola</i>	<i>albimarginata</i>	39	39
Serranidae	<i>Variola</i>	<i>louti</i>	134	99

c) Parameters to be estimated

A range of biological parameters will be estimated based on the otolith and reproductive samples collected. These include von Bertalanffy growth parameters, maximum age, mortality rate (when sufficient samples are present), size and age at maturity (or size at female maturity for protogynous species), size and age at sex change (for protogynous species) and timing of spawning.

This project remains on track to meet future milestones.

Communications, major activities or events

During milestone reporting period

A MTSRF Program 8 Newsletter article has been submitted and will be published in the second issue in June 2007.