

THESIS PROPOSAL:

Structural complexity and damselfish (Family Pomacentridae) recruit abundance during different monsoonal season

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ABSTRACT

The abundance of reef fish recruits is influenced by structural complexity and physical factors driven by the monsoons. Structural complexity affects the distribution of fish recruits within a reef through mediating post-settlement processes like predation and competition. Yet, little is known on what specific benthic attributes affect fish recruit distribution during different monsoonal season at a microhabitat scale. The study aims to contribute to the understanding of fish recruit abundance associations since patterns of recruitment have strong implications on reef fish community structure. Data were collected as part of the Coral Reef Visualization and Assessment Program, Project 3: Reef Fish Resiliency and Productivity (CoRVA Project 3). Surveys on damselfish recruits and structural complexity were conducted on two permanent transects during monthly peak recruitment periods from April 2015 to December 2017 in Mabini, Batangas. Damselfish recruits with sizes ranging from 1-3 centimeters were identified and counted by visual census in a four meter-squared microhabitat scale. Simultaneously, the benthic complexity of the sampled areas was quantified using rugosity, vertical relief and benthic cover. In each transect, additional 2-3 microhabitat plots without fish recruits were also identified and characterized for comparison. A total of 294 microhabitat plots were characterized for the 16-month sampling duration. The plots were pooled according to season (southwest, northeast and inter-monsoon). The relationship between structural complexity and damselfish recruit abundance will be determined using ANOVA, ANOSIM, and non-metric multidimensional scaling. Damselfish recruit abundance is expected to have stronger association with rugosity and live coral cover during southwest monsoon and northeast monsoon, respectively. Information on the relationship between certain microhabitat characteristics and recruit abundance during different monsoons have significant contribution on the understanding of fish recruitment patterns and reef fish community dynamics. It also has applications on fisheries and management.