

## Community Assemblages of Reef Fishes in Marine Sanctuary and Non-Marine Sanctuary Areas in Sogod Bay, Southern Leyte, Philippines

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**Abstract :** The community assemblages of reef fishes was conducted in ten marine sanctuaries and ten non-marine sanctuary areas in Sogod Bay, Southern Leyte, Philippines from 2014-2015. A total of 223 species belonging to 39 families of reef fishes in Sogod Bay were recorded. Family Pomacentridae (e.g. damsel fishes) has the highest number of species (42), followed by Labridae or wrasses (27), Chaetodontidae or butterfly fish (22), Scaridae or parrotfishes (17), and Acanthuridae (surgeonfishes) and Pomacanthidae (angelfishes) both with 10 species. Two of the recorded fish species were included in the IUCN Red List, wherein one is near threatened (*Chlorurus bowersi*) and the other is endangered species (*Cheilinus undulatus*). The mean total fish biomass (target + indicator + major or other fish) in MPA was significantly higher (13,468 g/500m<sup>2</sup> or equivalent to 26.94 mt/km<sup>2</sup>) than Non-MPA with 7,408 g/500m<sup>2</sup> or 15,216mt/km<sup>2</sup> in Non-MPA. The mean total fish biomass in MPAs in Sogod Bay can be categorized as high (21-40 mt/km<sup>2</sup>) with minimal fishing and medium or slightly moderately fished (11-20 mt/km<sup>2</sup>) in Non-MPAs. The mean ( $\pm$ SE) biomass of target fishes was significantly higher in MPA than Non-MPA and differ significantly across two depths. The target fish biomass was significantly higher in Limasawa Marine Sanctuary (13,569 g/500m<sup>2</sup>) followed by Lungsodaan Marine Sanctuary in Padre Burgos (11,884 g/500m<sup>2</sup>) and the lowest was found in San Isidro (735 g/500m<sup>2</sup>). The mean total fish density (target + indicator + major or other fish) did not differ between Marine Protected area (607.912 fishes/500m<sup>2</sup> or 1215.824 fishes/1000m<sup>2</sup>) and 525.937 fishes/500m<sup>2</sup> in non-Marine Protected Area and can be categorized as moderate (667-2267mt/km<sup>2</sup>). The mean density of target fishes was significantly ( $p=0.022$ ) higher in deeper areas (12-15m) than in shallow areas but did not differ significantly between MPAs and Non-MPA. No significant difference of the biomass and density for indicator and other fishes in MPAs and Non-MPAs.

**Keywords :** abundance, density, species richness, target fish, coral reef management

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