

Coral reef fish population in the western extremity of the Coral Triangle

ABSTRACT

The central and north west coast of Sabah lies along the western extremity of the Coral Triangle, within which are situated several marine protected areas (MPAs). In the present study we determined in situ coral reef fish populations in several localities along the west coast of Sabah, by exploring species abundance, richness and diversity of ten economically important fish species. The underwater surveys were conducted from May to December 2015. During this eight- month period, surveys at each site were undertaken once every two months. Dives were conducted during the daylight hours. A total of 171 individuals from the targeted fish species were enumerated from the 349 still images and 220 minutes of video footage. Abundance was observed mainly in the semi-protected MPA (n=110) with only one fish species recorded with more than 2 individuals at protected MPA and unprotected sites. We observed a correlation between fish species richness and coral topographic complexity, with study sites at the semi-protected MPA having the most complex topography landscape, and accordingly recording the highest Shannon-Wiener index ($H= 2.85$). Higher abundance recorded at study sites in the unprotected sites and semi-protected MPA indicate that such areas could potentially become de facto MPAs. A long-term monitoring, assessment and evaluation of the multiple degrees of variables involved such as length-weight relationship, type of habitat, variation in depth, and species behaviour are recommended in order to understand better the relationship and dynamics between these variables.