Composition, Abundance and Diversity of Zooplankton in Sarangani Bay, Sarangani Province, Philippines

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***Abstract*—**Zooplankton play a crucial role in aquatic ecosystems and a number of water parameters involved in it. Despite their relevance, there is inadequate information about zooplankton communities in Sarangani bay, Sarangani Province -- one of the most essential waterbody in Mindanao. The aim of the present study was to determine the composition, abundance and diversity of zooplankton as well as to provide more recent data about the physico-chemical characteristics of Sarangani Bay. Zooplankton samples were collected by vertical hauls using a zooplankton net (mouth diameter: 0.5m; mesh size opening: round, 350µm) in three stations in the coastal waters of Alabel, Malapatan and Maasim during November 2018. A total of 74 species of zooplankton belonging mainly to Kingdom Protozoa, Phylum Arthropoda, Chaetognatha and Chordata were identified. Results showed a total zooplankton abundance of 1,984,166 ind/m^3 with the highest count recorded at Malapatan (717,169 ind/m^3) and the lowest at Maasim (624,411 ind/m^3). Among 22 zooplankton groups identified, subclass Copepoda was found to be the most dominant (73.10%), followed by Appendicularia (12.18%) and Vertebrata (3.54%). Diversity analysis revealed an even distribution of species and a diverse ecosystem in all stations sampled. Correlation analysis indicated a strong relationship between zooplankton abundance and physico-chemical parameters. Overall, the physico-chemical profile of Sarangani Bay did not differ from the standards set by DENR, and analysis of the zooplankton communities revealed that Sarangani Bay favorably supports marine organisms to flourish. The findings of this study provide useful knowledge on zooplankton communities and can be used to create management strategies to protect the aquatic biodiversity in Sarangani Bay.

***Keywords*—** aquatic biomonitoring, biodiversity: zooplankton, physicochemical analysis, population survey: zooplankton, Sarangani Bay, Sarangani

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