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Abundance and diversity of tintinnid ciliates within power plant discharge and marine protected areas in Masinloc-Oyon Bay

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Tintinnids are one of the ubiquitous microzooplankton in marine waters and are recognized as indicator species of water quality. This study is a survey of the composition, diversity and abundance of tintinnids along 8 stations in Masinloc-Oyon Bay (MOB). Tintinnids were collected through plankton net with 20 µm mesh size on July 2017. Temperature, salinity, pH, DO and TDS of the water were measured using YSI 6600 meter. The nine identified tintinnid species in this study are first records for MOB. The warm water species *Helicostomella longa* dominated the tintinnid assemblage. Diversity range of 0-1.9 H' indicates that MOB is moderately to heavily polluted bay. Anthropogenic activities and industrialization such as mining, port construction, oil spills, power plant thermal discharge and fish cages might affect the species diversity index of the bay. Multivariate analysis created a cluster of the stations (2-5) within Marine Protected Areas (MPAs) and a separate cluster of the stations (1, 6-7) far from MPAs. The station within the power plant's outfall had the lowest abundance and diversity. Higher diversity indices were recorded at the station within MPAs. The results can support the notion that MPAs are promoting resilience in MOB. The tintinnid variation in this current work showed the uniqueness and diversity of MOB's marine environment. The present study is the first bay wide assessment of Masinloc-Oyon Bay using biological and environmental parameters.

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