

## **Composition and Abundance of Plankton Communities in Mangrove Estuary of Tubajon, Philippines**

**Charity May L. Dacayana<sup>1</sup>, Tom Gerald T. Genovia<sup>2</sup>, RenelynM. Balagot<sup>2</sup>**

<sup>1</sup>Natural Sciences Department, College of Arts and Sciences,  
Misamis University, Ozamiz City, Philippines

<sup>2</sup>School of Graduate Studies, Mindanao State University- Naawan,  
Misamis Oriental, Philippines

Corresponding author: Charity May L. Dacayana, email: [ching\\_13@yahoo.com](mailto:ching_13@yahoo.com)

### **Abstract**

Tubajon has a semi-enclosed estuary characterized by shallow depth and slow water exchange being disrupted by a mangrove barrier. In an attempt to assess the environmental condition of the mangrove estuary of Tubajon, this study aimed to determine the composition and abundance of plankton as a bioindicator in the aquatic environment along with the physicochemical parameters. The data of water depth obtained with a sinker were processed using the Surfer software to generate the bathymetric profile of the area. The sensor data logger was used to determine the temperature, salinity, pH, and dissolved oxygen of water. The spectrophotometric method determined the chlorophyll-*a* content of water, and the cadmium copper method measured the nitrate concentration. Plankton was identified up to the generic level using the taxonomic keys. Results showed a total of 18 taxa of phytoplankton belonging to dinoflagellates and diatoms that were able to adapt the lower light conditions and nutrient-impooverished water. Dinoflagellates were the most numbered phytoplankton. Among the nine taxa of zooplankton enumerated, copepodswere the dominant group. Chlorophyll-*a* content (<0.05µg/L), dissolved oxygen (<4mg/L) and nitrate concentration (<0.1 ppm) were relatively small indicating less productivity and oligotrophic condition. The composition and abundance of plankton in the area along with the physicochemical condition might be due to less water exchange, high water retention resulting from the presence of a mangrove barrier, and the anthropogenic activities by the adjacent settlers. This study may provide relevant information for any conservation effort in the area.

**Keywords:** bathymetric, bioindicator, chlorophyll-*a*, oligotrophic, zooplankton

