

## ABSTRACT

**Baihaqi Chandra Luqmana, 24020118190147. Comparison Study of Macro-benthic Mollusk Structure Based on Different Anthropogenic Activities at Teluk Awur. Under guidance by Rully Rahadian and Sapto Purnomo Putro.**

Indonesia's vast archipelago is home to diverse aquatic ecosystems, such as Teluk Awur in Jepara, known for its mangrove reclamation. However, human activities such as shipping, industrialization, and unsustainable agriculture pose threats to these environments. This study examines the macro-benthic community, crucial for the food chain and sediment structure, across three sites with varying levels of anthropogenic impact: an untouched mangrove forest, the moderately impacted MSTP pier, and a heavily affected shrimp/prawn farm Shrimp Farm Outlet. By comparing species diversity, evenness, and dominance, the research aims to highlight macro-benthos as bioindicators of environmental health, providing essential data for biodiversity conservation, water quality monitoring, and sustainable resource management. The study conducted in Teluk Awur, Jepara, Indonesia, in May and June 2023, employed purposive sampling to analyze macrozoobenthos species and abiotic parameters across three locations. Measurements of key environmental parameters, such as pH, salinity, electrical conductivity, dissolved oxygen, total dissolved solids, turbidity, and water hardness, were conducted. These factors influence the distribution and health of aquatic species. Despite different levels of human activities, all locations showed similar results in Shannon-Wiener's, Evenness, and Simpson's Dominance indices. *Cerithidea quadrata* was the most dominant species in most locations, except at Harbour 02 where *Cerithidea obtusa* dominated. Fluctuations in abiotic parameters between sampling periods were observed, potentially influenced by weather and human activities. High Sorensen similarity indices between locations suggested similar species compositions, with minor differences possibly due to variations in environmental conditions or anthropogenic impacts. The research revealed significant differences in species diversity and distribution across the three locations. Shrimp Farm Outlet 01 exhibited the highest heterogeneity and evenness, while Mangrove 02 had the lowest values. Abiotic factors, including temperature, dissolved oxygen, and total dissolved solids, influenced species abundance. The study underscores the importance of environmental conditions and human activities in shaping macro-benthic communities, highlighting the need for conservation efforts and sustainable management practices.

Keyword: Bioindicator, Shannon Diversity Index, Evenness Index, Dominance Index