

ABSTRACT

This study aimed to determine the diversity and abundance of gastropods and to analyze the relationship between environmental physicochemical parameters and gastropod abundance in the mangrove ecosystem of Gampong Baro Setia Bakti, Aceh Jaya, Aceh. The study employed the quadrat transect method with purposive sampling. At each station, a transect line was laid out perpendicular to the shoreline; three 1×1 m plots were then placed along each transect with a 10-meter interval between plots, resulting in a total of nine observation plots. The results revealed the presence of 10 gastropod species across four families: Pachychilidae, Potamididae, Neritidae, and Littorinidae, totaling 441 individuals (179 at Station I, 142 at Station II, and 120 at Station III). The highest diversity value was observed at Station I, which was dominated by a sandy-mud substrate. In contrast the lowest diversity was observed at Station III, which had a muddy substrate. Spearman correlation analysis indicated varying degrees of relationship between environmental physicochemical parameters and gastropod abundance. Thus, it can be concluded that variations in habitat characteristics, specifically substrate conditions and certain environmental physicochemical parameters, play a role in determining gastropod diversity and abundance in the mangrove ecosystem of Gampong Baro Setia Bakti, Aceh Jaya, Aceh.

Keywords: Abundance, Diversity, Environmental physicochemical parameters, Gastropods, Gampong Baro Setia Bakti Aceh Jaya Aceh, Mangrove ecosystem,