

ABSTRACT

Phytoplankton is marine organisms that can be used as bioindicators to determine the quality of waters. Water levels can be measured based on the phytoplankton composition. The Pusong Fish Landing Base is a fishing port with dense activity. In addition, the Pusong Fish Landing Base location is also close to residential areas and there are floating net cages managed by the local community. Various activities carried out by the community and fishermen can cause problems such as sea air pollution originating. The purpose of this research was to determine the types and report phytoplankton, analyze water quality, and calculate the saprobity index and calculate the level of pollution in the Pusong Fish Landing Base area of Lhokseumawe City. This research was conducted from June to July 2025 in the waters of the Pusong Fish Landing Base, Lhokseumawe City. The method used in this research was the purposive sampling method. The phytoplankton obtained in this research amounted to 20 species consisting of 7 classes found and dominated by the class Bacillariophyceae. The abundance of phytoplankton obtained ranged from 1008,33 ind/L - 1300 ind/L. The highest abundance was found at station 2, and the lowest abundance was obtained at station 1. The results of quality measurements including pH, DO, salinity, brightness, and current speed still meet the quality standards for marine biota. While the temperature parameter has exceeded the quality standards, but can still be tolerated by phytoplankton. The results of the phytoplankton saprobity index calculation show values ranging from 0.50 – 0.89. Thus, it can be concluded that the waters of the Pusong Fish Landing Base of Lhokseumawe City are included in the β/α - Mesosaprobic to β - Mesosaprobic group with a moderate to light pollution level category.

Keywords: phytoplankton, phytoplankton abundance, Pusong fish landing base, saprobity index, water quality