

## ABSTRACT

Nur Maulidia. 24020118140064. **Epipellic Diatom Diversity and Potential of Diatoms as Bioindicators of Coastal Waters Quality of Bengkulu City.** Under the guidance of Tri Retnaningsih Soeprbowati and Jumari.

The coastal waters of Bengkulu City, as a strategic area with diverse community activities, often experience a decline in water quality due to the pressure of these activities. Epipellic diatoms, which live attached to sediments, can be an important indicator of the quality of these water habitats. This study aimed to identify epipellic diatom diversity and assess the quality of Bengkulu coastal waters using physical, chemical and biological parameters. Research samples in the form of sediments were taken from 11 locations representing 4 areas of coastal area utilization by the surrounding community, namely as tourism areas, residential areas, power plants, and industries. Sediment sampling was done with a shovel, then stored in zipper plastic. Furthermore, diatoms were analyzed in three stages, namely digestion, preparation, then diatom identification and diatom enumeration. As a result of the observation, 47 species from 28 diatom genera were identified. *Tryblionella lanceolata* emerged as the dominant species with an abundance of 12%. The Shannon-Wiener diversity index ranged from 2.60-2.86, indicating low diversity or a less stable ecosystem. The dominance index was between 0.07-0.10, indicating low dominance. *Tryblionella lanceolata* and *Navicula tripunctata* species dominate the Bengkulu mangrove ecosystem, indicating the waters experienced significant changes in salinity levels. The uniformity index ranged from 0.60-0.78, indicating high species uniformity. However, diatoms were not found in two locations, namely the waters of the waste water power plant and Water Tourism Park (TWA) 2 due to higher temperatures. The results of this analysis provide a comprehensive picture of the condition of Bengkulu's coastal waters, where human activities have a significant impact on diatom diversity and overall water quality.

Keywords: *Epipellic diatoms, Coastal Bengkulu City, Water Quality.*