

ABSTRACT

Nadilla Syahkina. 24020121140184. **DNA Barcoding Application and Phylogenetic Analysis for Fish Identification in Alor Waters during Upwelling Events.** Under the supervision of Kariyadi Baskoro and Ni Kadek Dita Cahyani.

*Alor Kecil, a coastal village in the Alor Barat Laut District, East Nusa Tenggara, has high potential for marine park ecosystems and distinct oceanographic phenomena characterized by the rise of cold water temperatures to the surface due to the Earth's rotation, which occurs three times a year, known as upwelling. This study aims to identify what types of fish are found during the upwelling phenomenon, whether deep-sea fish species are encountered, and their relationship to each other. This research uses molecular identification methods with DNA Barcoding techniques targeting the COI gene and neighbor-joining phylogenetic tree analysis. The results of the molecular identification indicate that the most affected species are dominated by reef fish, with 13 samples being reef fish. There are also mesopelagic fish that are carried by currents to the surface, namely the species *Gonostoma atlanticum*. The result of constructing a phylogenetic tree indicates that several fish are closely related to each other based on their family, namely Apogonidae, with related species including *Ostorhinchus aureus*, *Taeniamia macroptera*, and *Pristiapogon kallopterus*.*

Keywords: DNA Barcoding, Upwelling, Phylogenetic Tree