

ABSTRACT

Ekitia Reyza Syakal. 24020121120016. **Environmental DNA Analysis with DNA Metabarcoding Method in the Identification of Aquaculture Marine Fish in Mangrove and Seagrass Ecosystems in Sumberkima, Bali.** Ecology and Biosystematics Laboratory, Department of Biology, Faculty of Science and Mathematics, Diponegoro University.

Sumberkima is one of the areas on the island of Bali that has the beauty of tourism in the marine sector so there is much potential for the utilization of marine fisheries in the conservation and commodities, both mangrove and seagrass ecosystems. This potential can be seen from the existence of fish farming in the form of Keramba Jaring Apung (KJA) around the Sumberkima Sea, which will affect the surrounding marine fish species. The genetic material of many fish left in the sea causes the use of environmental DNA to analyze the potential of marine fish in the region that can be used as a community commodity. Therefore, the identification of marine fish with the environmental DNA method was carried out in the form of Sumberkima seawater samples in mangrove and seagrass ecosystems to obtain aquaculture potential. The research location was carried out at two stations (mangrove and seagrass) with each consisting of three random points with the eDNA metabarcoding method using Oxford Nanopore Technology (ONT) MinION and DNA extraction protocol using Zymo Quick-DNA™ Fecal/Soil Microbe Miniprep Kit. The results of the analyzed sample data showed a total of 256 species of marine fish, 17 of which were aquaculture fish. The results also prove that 2 species are the same as those found in Sumberkima KJA and 6 species have the potential to be cultured. The variety of species that mostly appear in seagrass beds also shows the importance of maintaining these ecosystems in terms of conservation.

Keyword: *Mangrove, Seagrass, DNA Metabarcoding, Seawater Fish*