

Dhimas Afihandarin, 2012, **Diversity of Plankton Community in Sarangan and Wahyu Lake of Magetan Regency, Province of East Java**, This thesis is under advisories by Drs. T. Widyaleksono C.P., M.Si. dan Drs. Noer Moehammadi M.Kes., Departement of Biologi, Faculty of Science and Technology, Airlangga University .

ABSTRACT

Sarangan and Wahyu Lake, located in the Regency of Magetan, Province of East Java. Both Sarangan and Wahyu lakes have important roles for human being dwells around them, providing source of water for farming, drinking water and tourism object. However activities of human around both lakes may have effect to the diversity of plankton as well as having potential to degrade water quality in physical, chemical and biological aspect. The purpose of this research was to measure and compare level of plankton, both zooplankton and phytoplankton diversity between both lakes through application of Shannon-Wiener diversity indices, another purpose is to measure and compare the level of water pollution through application of saprobic quotient. The research consist with measurement of physical and chemical parameters and gathering of plankton samples in the research sites which consist of eight sites, four sites located in Wahyu lake and another four were located in Sarangan lake. These sites, chosen by its applications to surrounding human activities are located in inlet, outlet, area around farm in Sarangan lake and area of fisheries in Wahyu lake and area around tourist boat port. The physical and chemical parameters measured on site were temperatures, Dissolved Oxygen, pH and water transparencies which concurrently measured using thermometer, Winkler titration technique, universal indicator pH strip, and Secchi disc. Gathering of plankton samples were done using plankton net and preserved with formaldehyde solution. The samples were later observed and identified and counted using microscope and Sedgewick-Rafter counting cell, generating raw data which later analyzed with Shannon-Wiener diversity indices, yielding data on plankton diversity and saprobic quotient, which yield data about level of water pollution. Based on the result of the research, it was discovered that Sarangan lake has higher plankton diversity, with score of 1,7630 for phytoplankton and 1,898 for zooplankton, this figure is higher than Wahyu lake which score of 1,4797 and 1,703. The lower value of plankton diversity index in Wahyu lake was suspected to be caused by unrivaled domination of certain plankton species with high abundance in the Wahyu lake, in Sarangan lake, high abundance of a species were compensated by another. The result of saprobic quotient calculation in both lakes, to detect and compare level of possible water pollution by human activities showed that Wahyu lake have lower level of water pollution than Sarangan lake, indicated by higher category of saprobic quotient namely "very lightly polluted" in all research sites located there. Sarangan lake in other hand have two research sites, located in Outlet and Boat port, that categorized as "lightly polluted" caused by higher abundance of saprobic quotient's indicator group thus scored lower in this respect.

Key words : Diversity, saprobic quotient, Sarangan Lake, Wahyu Lake.