

## ABSTRACT

Pramono. Yudo. H. 2011. **Studies of Phytoplankton Abundance and Diversity in Aquatic Ranu Pani and Ranu Regulo Bromo Tengger Semeru National Park.** Skripsi, Biology Department, Faculty of Science and Technology, State Islamic University (UIN) of Maulana Malik Ibrahim Malang. Advisor I: Suyono, M.P Advisor II: Umaiatus Syarifah M.A.

Key words: Abundance, Diversity, Phytoplankton, Ranu Pani, Ranu Regulo

Ranu Pani and Ranu Regulo Aquatic freshwaters there was in Bromo Tengger Semeru National Park (TN.BTS). The existence of two sources of clean water is increasingly threatened to people of community activities, agricultural waste, household waste and tourist activities. Water quality of both these waters need to be monitored sustainable that water conditions could be maintained. Therefore, It is necessary to study the abundance and diversity of Phytoplankton in the waters of Ranu Pani and Ranu Regulo TN.BTS. The purpose of this experiment was to determine the abundance, diversity, dominance and water quality based on factors of chemical and physics in the waters of Ranu Pani and Ranu Regulo.

This research used descriptive quantitative method, was implemented in May until June 2011 in the waters of Ranu Pani and Ranu Regulo TN.BTS. The sampling is done on limnetic zone at 5 observation stations. Water samples are filtered by 25 ml formalin and preserved use 4% as much as 5 drops and as many as 4 drops of CuSO<sub>4</sub> added. Physical and chemical factors had observed are the temperature, TDS, TSS, brightness, pH, BOD, COD, DO, phosphate and nitrate. Analysis of data are the abundance, diversity and dominance index.

According to the results of this research, showed that genus of phytoplankton in the waters of Ranu Pani and Ranu Regulo was found *Dictyosphaerium*, *Selenastrum*, *Closterium*, *Staurastrum*, *Cosmarium*, *Staurodesmus*, *Crucigeniella*, *Spirogyra*, *Chroococcus*, *Microcystis*, *Oscillatoria*, *Anabaena*, *Pinnularia*, *Frustulia*, *Navicula*, *Diatomella*, *Cymbella*, *Fragillaria*, *Cylindrotheca* and *Peridinum*. Genus *Selenastrum*, *Crucigeniella*, *Microcystis* and *Cylindrotheca* only found in the waters of Ranu Pani. While the genus *Closterium* and *Peridinum*, *Diatomella* only found in the waters of Ranu Regulo. Phytoplankton abundance in the waters of Ranu Pani average was 2.420 individuals/l and Ranu Regulo are 188 individuals/l. The highest abundance is of the genus *Dictyosphaerium*. Based on diversity, including polluted waters Ranu Pani weight with an index of 0,535, while Ranu Regulo classified are being contaminated with a diversity index of 1,872. Based on the analysis of dominance, these of index of aquatic Ranu Pani is 0,814, while in the waters of Ranu Regulo dominance does not occur was indicated by an index of 0,27. Based on the value of diversity index, the waters of Ranu Pani and Ranu Regulo being classified as polluted and based on raw water quality of government regulation No. 82 of 2001 belong to class II and III that the waters are design for recreational water facilities, fresh water fish farming, livestock and to irrigate crops.