

## ABSTRACT

Dafa Yudiantio Putra. 24020121130064. **Community Structure of Epiphelic Diatom as Bioindicator Water Quality of Lake Rawapening.** Laboratorium Ekologi, Departemen Biologi, Fakultas Sains dan Matematika, Universitas Diponegoro, under supervisor of Tri Retnaningsih Soeprbowati and Riche Hariyati.

Lake Rawapening has been designated one of fifteen priority because of its essential and its vulnerable to pollution contamination, through “Rencana Pengelolaan Danau Prioritas” by Indonesian Government. Diatom can use as monitoring indicators in inland water. This study uses diatoms as water quality indicators to reconstruct the lake's past environmental conditions. Goals of this study is to examine past reconstruction of water quality in lake Rawapening through epiphelic diatom community structure. To achieve this reconstruction, the sediment are drilled from both inlet and outlet lake Rawapening, then the sediment are section by depth. Each 10 cm of depth are processed with HCl 10% and H<sub>2</sub>O<sub>2</sub> 10%, clearing with aquades, prepared with Naphrax, and observed under 100x magnification microscope. The results have diatoms community structure by temporal change can represent as oligo – eutrophic lake. In sampling point RP1 in Zone 1 (75 – 70 cm) can represent as oligotrophic water indicated by dominance of *Luticola goeppertiana*, Zone 2 (60 – 30 cm) as mesotrophic indicated by dominance of *Ctenophora pulchella*, and Zone 3 (20 – 1 cm) as eutrophic indicated by dominance of *Aulacoseira ambigua*, *Aulacoseira granulata*, and *Ulnaria ulna*. In sampling point RP2 in Zone 1 (95 – 70 cm) can represent as oligotrophic water indicated by dominance of *Eunotia minor*, *Eunotia incisa*, and *Pinnularia viridis*, Zone 2 (60 – 40 cm) mesotrophic indicated by dominance of *Aulacoseira distans* and *Aulacoseira granulata*, and Zone 3 (30 – 1 cm) eutrophic indicated by dominance of *Aulacoseira ambigua*, *Aulacoseira granulata*, dan *Ulnaria ulna*.

**Keywords:** Rawapening Lake, Paleontology, Limnology, Diatoms, Water Quality