

## ABSTRAK

### **Muhammad Fariz, NIM 4211220002 (2021). Keanekaragaman dan Kelimpahan Fitoplankton di Danau Siombak Marelان Medan.**

Fitoplankton memiliki peranan penting sebagai produsen primer, penghasil oksigen yang menjadi sumber makanan utama organisme perairan. Aktivitas antropogenik di sekitar Danau Siombak menyebabkan perubahan kondisi danau yang berpotensi mempengaruhi struktur fitoplankton. Penelitian ini bertujuan untuk mengetahui jenis, tingkat keanekaragaman, nilai kelimpahan serta menguji pengaruh kondisi danau terhadap kelimpahan fitoplankton di Danau Siombak Marelان Medan serta mengukur fisika-kimia perairan. Penelitian dilaksanakan pada Juni–Agustus 2025 di lima stasiun yang mewakili perbedaan aktivitas perairan dengan masing-masing tiga ulangan. Jenis penelitian ini adalah penelitian deskriptif-kuantitatif menggunakan metode purposive sampling. Penelitian ini menggunakan alat Plankton Net nomor 25 dengan ukuran mata jaring/mesh 55  $\mu\text{m}$  dan analisis dilakukan di Laboratorium Biologi Universitas Negeri Medan. Hasil penelitian menunjukkan empat divisi fitoplankton dengan total 28 spesies yang didominasi Bacillariophyta dan Chlorophyta. Tingkat Keanekaragaman fitoplankton tergolong sedang ( $H'$  rata-rata 2,406). Nilai Kelimpahan fitoplankton tergolong oligotrofik bernilai 8.6 sel/L. Parameter fisika-kimia perairan menunjukkan suhu perairan  $22,38^{\circ}\text{C} \pm 0,147$ , kecerahan memiliki nilai  $26 \text{ cm} \pm 1,4142 \text{ cm}$ , pH dengan nilai rata-rata  $6,612 \pm 0,0479$ , DO dengan nilai rata-rata  $5,428 \text{ mg/L} \pm 0,941 \text{ mg/L}$  dan BOD dengan nilai rata-rata  $9,482 \text{ mg/L} \pm 1,185$ . Hasil uji Anova memperoleh nilai signifikansi 0,418 ( $p > 0,05$ ) sehingga tidak terdapat perbedaan kelimpahan fitoplankton antarstasiun, menandakan rona lingkungan relatif homogen.

**Kata kunci:** Fitoplankton, Kelimpahan, Keanekaragaman, Rona Lingkungan, Danau Siombak.



## ABSTRACT

### **Muhammad Fariz, NIM 4211220002 (2021). Abundance and Diversity of Phytoplankton in Lake Siombak, Marelan, Medan.**

*Phytoplankton play an important role as primary producers and oxygen producers that serve as the main food source for aquatic organisms. Anthropogenic activities around Lake Siombak cause changes in lake conditions that have the potential to affect phytoplankton structure. This study aims to determine the types, diversity level, and abundance values, as well as to examine the effect of lake conditions on phytoplankton abundance in Lake Siombak, Marelan, Medan, and to measure the physical and chemical parameters of the waters. The study was conducted from June to August 2025 at five stations representing different aquatic activities, each with three replications. This research is a descriptive-quantitative study using the purposive sampling method. The study used a plankton net number 25 with a mesh size of 55  $\mu\text{m}$ , and the analysis was carried out at the Biology Laboratory of Universitas Negeri Medan. The results showed four phytoplankton divisions with a total of 28 species dominated by Bacillariophyta and Chlorophyta. The phytoplankton diversity level was classified as moderate (average  $H' = 2.406$ ). The phytoplankton abundance value was classified as oligotrophic at 8.6 cells/L. The physical and chemical parameters of the waters showed a water temperature of  $22.38^{\circ}\text{C} \pm 0.147$ , water transparency of  $26 \text{ cm} \pm 1.4142 \text{ cm}$ , pH with an average value of  $6.612 \pm 0.0479$ , DO with an average value of  $5.428 \text{ mg/L} \pm 0.941 \text{ mg/L}$ , and BOD with an average value of  $9.482 \text{ mg/L} \pm 1.185$ . The ANOVA test results obtained a significance value of 0.418 ( $p > 0.05$ ), indicating that there was no difference in phytoplankton abundance among stations, suggesting that the environmental conditions were relatively homogeneous.*

**Keywords:** Phytoplankton, Abundance, Diversity, Environmental Conditions, Lake Siombak.

