ABSTRAK

PENILAIAN KUALITAS AIR EMBUNG UNIVERSITAS LAMPUNG BERDASARKAN STRUKTUR KOMUNITAS PLANKTON

Oleh

DELA ARMANI RAMADHAN

Embung merupakan bangunan konservasi air buatan yang berfungsi sebagai penampung air hujan dan berperan penting dalam mendukung konservasi lingkungan di Universitas Lampung. Penelitian ini bertujuan untuk mengevaluasi kualitas air Embung Universitas Lampung berdasarkan struktur komunitas plankton sebagai indikator biologis. Penelitian ini dilaksanakan pada bulan Oktober hingga November 2025 di lima embung pengamatan, dengan pengambilan sampel dilakukan pada tiga titik di setiap embung. Parameter kualitas air yang dianalisis meliputi suhu, pH, *dissolved oxygen* (DO), *total Suspended solids* (TSS), *biological oxygen demand* (BOD), dan *chemical oxygen demand* (COD). Struktur komunitas plankton dianalisis meliputi indeks kelimpahan, indeks keanekaragaman (H'), indeks keseragaman (E), dan indeks dominansi (C), serta evaluasi hubungan antara kualitas air dengan struktur komunitas plankton menggunakan *Spearman rank correlation.* Hasil penelitian menunjukkan bahwa komunitas plankton di Embung Universitas Lampung terdapat 13 kelas plankton. Fitoplankton terdiri dari kelas Cyanophyceae, Euglenophyceae, Bacillariophyceae, Zygnematophyceae, Dinophyceae, dan Chlorophyceae. Sedangkan zooplankton terdiri dari Oligotrichea, Ciliata, Copepoda, Monogononta, Tubulinea, Eurotatoria, dan Cladocera. Berdasarkan struktur komunitas plankton, kualitas air di Embung Universitas Lampung tergolong dalam kondisi tercemar sedang, yang ditunjukkan oleh nilai indeks keanekaragaman (H') kategori sedang dengan kisaran 1,915–2,819, indeks keseragaman (E) kategori tinggi dengan kisaran 0,611–0,912, serta indeks dominansi (C) kategori rendah dengan kisaran 0,069–0,084. Berdasarkan hasil analisis korelasi Spearman, parameter kualitas air yang meliputi pH, DO, BOD, COD, dan TSS tidak menunjukkan hubungan yang signifikan secara statistik terhadap struktur komunitas plankton.

Kata kunci: Bioindikator, Embung Universitas Lampung, Kualitas air, Plankton.

ABSTRACT

ASSESSMENT OF THE WATER QUALITY OF THE UNIVERSITY OF LAMPUNG RESERVOIR BASED ON PLANKTON COMMUNITY STRUCTURE

By

DELA ARMANI RAMADHAN

Reservoirs are artificial water conservation structures that function as rainwater reservoirs and play a vital role in supporting environmental conservation at the University of Lampung. This study aims to evaluate the water quality of the University of Lampung Reservoirs based on the plankton community structure as a biological indicator. This study was conducted from October to 2025 in five observation reservoirs, with sampling conducted at three points in November each reservoir. Water quality parameters analyzed included temperature, pH, dissolved oxygen (DO), total suspended solids (TSS), biological oxygen demand (BOD), and chemical oxygen demand (COD). Plankton community structure was analyzed using the abundance index, diversity index (H'), evenness index (E), and dominance index (C). The relationship between water quality and plankton community structure was also evaluated using Spearman rank correlation. The research results show that the plankton community in the University of Lampung Reservoir comprises 13 classes. Phytoplankton comprises the classes Cyanophyceae, Euglenophyceae, Bacillariophyceae, Zygnematophyceae, Dinophyceae, and Chlorophyceae. Zooplankton, on the other hand, comprise Oligotrichea, Ciliata, Copepoda, Monogononta, Tubulinea, Eurotatoria, and Cladocera. Based on the plankton community structure, the water quality in the University of Lampung Reservoir is classified as moderately polluted, as indicated by a diversity index (H') of the moderate category ranging from 1.915 to 2.819, a uniformity index (E) of the high category ranging from 0.611 to 0.912, and a dominance index (C) of the low category ranging from 0.069 to 0.084. Based on the Spearman correlation analysis, water quality parameters including pH, DO, BOD, COD, and TSS did not show a statistically significant relationship with the plankton community structure.

Keywords: Bioindicators, Lampung University Reservoir, Water quality, Plankton.