ABSTRAK

Sungai Pelus berperan penting sebagai penyangga ekosistem dan penopang aktivitas masyarakat, sehingga vegetasi riparian dan biota perairan rentan dipengaruhi faktor lingkungan. Penelitian ini bertujuan menganalisis keanekaragaman vegetasi riparian dan makrozoobentos serta hubungannya dengan parameter abiotik di Sungai Pelus, Purwokerto. Penelitian dilakukan pada enam stasiun dengan metode purposive sampling. Vegetasi diamati menggunakan transek kuadrat pada tingkat semai, tiang, dan pohon, sedangkan makrozoobentos dikoleksi menggunakan *Surber net*. Parameter lingkungan yang diukur meliputi suhu, pH, DO, BOD, kecerahan, dan kecepatan arus. Keanekaragaman dianalisis dengan indeks *Shannon-Wiener* (H'), sedangkan hubungannya dengan faktor lingkungan dianalisis melalui *Canonical Correlation Analysis* (CCA) dengan software PAST. Hasil penelitian menunjukkan vegetasi riparian terdiri atas 87 spesies, didominasi *Fabaceae* dan *Poaceae* pada semai, *Moraceae* dan *Lamiaceae* pada tiang, serta *Artocarpus heterophyllus* pada pohon. Nilai keanekaragaman berkisar dari rendah hingga sedang. Makrozoobentos ditemukan 16 famili dengan total 189 individu dan keanekaragaman lebih tinggi pada stasiun dengan kualitas air lebih baik. Kualitas air masih memenuhi baku mutu kelas II, meskipun terdapat tren penurunan dari hulu ke hilir. Vegetasi lebih dipengaruhi suhu dan BOD, sedangkan makrozoobentos berkorelasi dengan pH, DO, dan kecepatan arus.

Kata kunci: Sungai Pelus, Vegetasi Riparian, Makrozoobentos, CCA.

ABSTRACT

The Pelus River functions as an ecological buffer and community resource, making riparian vegetation and aquatic biota vulnerable to environmental factors. This study aimed to examine the diversity of riparian vegetation and macrozoobenthos and their relationship with abiotic parameters in the Pelus River, Purwokerto. Research was conducted at six stations using purposive sampling. Vegetation was recorded with quadrat transects at seedling, sapling, and tree levels, while macrozoobenthos were collected using a Surber net. Environmental parameters measured included temperature, pH, dissolved oxygen (DO), biological oxygen demand (BOD), brightness, and current velocity. Diversity was analyzed using the Shannon-Wiener index (H'), and relationships with environmental factors were tested using Canonical Correlation Analysis (CCA) in PAST software. Results identified 87 riparian plant species, dominated by Fabaceae and Poaceae at the seedling level, Moraceae and Lamiaceae at the sapling level, and Artocarpus heterophyllus at the tree level. Diversity values ranged from low to moderate. Macrozoobenthos comprised 16 families with 189 individuals, showing higher diversity at stations with better water quality. Water quality still met class II standards, though a declining trend was observed downstream. Riparian vegetation was primarily influenced by temperature and BOD, whereas macrozoobenthos were more closely associated with pH, DO, and current velocity.

Keywords: *Pelus River, Riparian Vegetation, Makrozoobenthos, CCA*