

ABSTRAK

ANALISIS STRUKTUR KOMUNITAS PERIFITON PADA SUBSTRAT YANG BERBEDA DI SUNGAI BRONJONG WAY LIMA, KECAMATAN GEDONG TATAAN, KABUPATEN PESAWARAN, LAMPUNG

Oleh

ANNISA WIBOWO

Sungai Bronjong Way Lima Kecamatan Gedong Tataan, Kabupaten Pesawaran, dimanfaatkan untuk berbagai aktivitas manusia karena lokasinya yang dekat dengan permukiman dan dijadikan sebagai tempat wisata. Aktivitas tersebut berpotensi menurunkan kualitas air serta memengaruhi komunitas biota akuatik, termasuk perifiton. Penelitian ini bertujuan untuk menganalisis struktur komunitas perifiton pada substrat alami (batu) dan substrat buatan (bambu), serta mengkaji hubungan faktor fisika-kimia perairan terhadap kelimpahan perifiton di Sungai Bronjong Way Lima. Penelitian dilaksanakan pada Juni 2025 di tiga stasiun dengan dua jenis substrat. Sampel diambil menggunakan metode kerikan dan diidentifikasi di Laboratorium Produktivitas Lingkungan Perairan, Universitas Lampung. Parameter yang diamati meliputi suhu, kecerahan, kedalaman, kecepatan arus, pH, oksigen terlarut (DO), nitrat, dan fosfat. Data dianalisis menggunakan indeks keanekaragaman (H'), keseragaman (E), dominansi (C), serta uji PCA. Hasil penelitian menunjukkan kelimpahan perifiton berkisar 6.672–9.204 individu/cm² dengan nilai H' 1,5–1,9, E 0,6–0,8, dan C 0,2–0,3, yang menandakan komunitas stabil dan perairan tergolong tercemar ringan. Genus dominan yang ditemukan meliputi *Mougeotia*, *Ankistrodesmus*, *Synedra*, *Nitzschia*, dan *Cocconeis*. Parameter lingkungan seperti suhu, kedalaman, arus, DO, pH, dan nitrat dapat memengaruhi keseimbangan ekologis perifiton di perairan Sungai Bronjong Way Lima.

Kata kunci: Kualitas Air, Perifiton, Substrat Alami, Sungai Bronjong Way Lima, Substrat Buatan

ABSTRACT

ANALYSIS OF PERIPHYTON COMMUNITY ON DIFFERENT SUBSTRATES IN THE BRONJONG WAY LIMA RIVER, GEDONG TATAAN DISTRICT, PESAWARAN REGENCY, LAMPUNG PROVINCE (ENGLISH)

By

ANNISA WIBOWO

The Bronjong Way Lima River in Gedong Tataan District, Pesawaran Regency, was utilized for various human activities due to its proximity to residential areas and its function as a tourism site. These activities had the potential to reduce water quality and affect aquatic biota communities, including periphyton. This study aimed to analyze the structure of periphyton communities on natural (stone) and artificial (bamboo) substrates, and to examine the relationship between physico-chemical factors and periphyton abundance in the Bronjong Way Lima River. The research was conducted in June 2025 at three stations with two types of substrates. Samples were collected using the scraping method and were identified at the Aquatic Environmental Productivity Laboratory, University of Lampung. Observed parameters included temperature, transparency, depth, current velocity, pH, dissolved oxygen (DO), nitrate, and phosphate. Data were analyzed using the diversity index (H'), evenness index (E), dominance index (C), and PCA analysis. The results showed that periphyton abundance ranged from 6,672–9,204 with values of 1.5–1.9, of 0.6–0.8, and of 0.2–0.3, which indicated a stable community and slightly polluted waters. Dominant genera found were Mougeotia, Ankistrodesmus, Synedra, Nitzschia, and Cocconeis. Environmental parameters such as temperature, depth, current, DO, pH, and nitrate affected the ecological balance of periphyton in the waters of the Bronjong Way Lima River.

Keywords: Artificial Substrate, Bronjong Way Lima River, Natural Substrate, Periphyton, Water Quality