

ABSTRAK

STRUKTUR KOMUNITAS MAKROZOOBENTOS DAN KONDISI PERAIRAN PANTAI TAMAN INDAH SRENGSEM KERETA API (TISKA), KECAMATAN PANJANG, KOTA BANDAR LAMPUNG, PROVINSI LAMPUNG

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Pantai Taman Indah Srengsem Kereta Api (TISKA) merupakan kawasan pesisir yang berada di Kecamatan Panjang, Kota Bandar Lampung. Wilayah ini memiliki potensi sumber daya hayati yang tinggi, namun juga mengalami tekanan akibat aktivitas antropogenik seperti permukiman, wisata, dan industri di sekitarnya. Aktivitas tersebut berpotensi menurunkan kualitas perairan dan memengaruhi komunitas biota bentik yang hidup di dasar perairan. Penelitian ini bertujuan untuk menganalisis struktur komunitas makrozoobentos serta hubungannya dengan parameter kualitas perairan di Pantai TISKA. Penelitian dilakukan pada bulan Mei–Juni 2025 menggunakan metode *purposive sampling*. Parameter fisika-kimia yang diamati meliputi suhu, kecerahan, arus, kedalaman, pH, salinitas, tipe substrat, DO, dan bahan organik total sedimen (BOT). Hasil penelitian menunjukkan terdapat empat kelas makrozoobentos, yaitu gastropoda, bivalvia, malacostraca, dan polychaeta, dengan dominansi tertinggi pada kelas gastropoda. Nilai indeks keanekaragaman (H') berada pada kategori sedang, indeks keseragaman (E) tinggi, dan indeks dominansi (C) rendah, yang menunjukkan komunitas dalam kondisi relatif stabil. Kandungan BOT sedimen berkisar antara 0,38–0,95%, dengan nilai tertinggi di Stasiun 3 yang dipengaruhi aktivitas industri, menunjukkan adanya akumulasi bahan organik serta potensi penurunan kualitas dasar perairan. Berdasarkan kurva *Abundance Biomass Comparison* (ABC), kondisi perairan Pantai TISKA secara umum tergolong tercemar ringan hingga sedang, namun pada Stasiun 3 menunjukkan tercemar berat akibat dominansi organisme oportunistik dan tingginya bahan organik. Analisis *Principal Component Analysis* (PCA) menunjukkan bahwa DO, BOT, pH, dan kecepatan arus berpengaruh besar terhadap distribusi makrozoobentos di setiap stasiun.

Kata Kunci: Bahan Organik Total (BOT) Sedimen, Bioindikator, Kualitas Air, Makrozoobentos, Pantai TISKA

ABSTRACT

MACROZOOBENTHOS COMMUNITY STRUCTURE AND WATER CONDITIONS OF TAMAN INDAH SRENGSEM RAILWAY BEACH (TISKA), PANJANG DISTRICT, BANDAR LAMPUNG CITY, LAMPUNG PROVINCE

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Taman Indah Srengsem Kereta Api Beach (TISKA) is a coastal area located in Panjang District, Bandar Lampung City. This area has high biological resource potential but is also exposed to pressures from anthropogenic activities such as settlements, tourism, and surrounding industries. These activities have the potential to reduce water quality and affect benthic communities living on the seabed. This study aimed to analyze the community structure of macrozoobenthos and its relationship with water quality parameters at TISKA Beach. The research was conducted from May to June 2025 using a purposive sampling method. The observed physicochemical parameters included temperature, water transparency, current velocity, depth, pH, salinity, substrate type, dissolved oxygen (DO), and sediment total organic matter (TOM). The results showed that four classes of macrozoo-benthos were identified, namely Gastropoda, Bivalvia, Malacostraca, and Polychaeta, with Gastropoda as the dominant class. The diversity index (H') was categorized as moderate, the evenness index (E) was high, and the dominance index (C) was low, indicating a relatively stable community condition. Sediment TOM ranged from 0.38–0.95%, with the highest value recorded at Station 3 influenced by industrial activities, indicating organic matter accumulation and potential degradation of benthic environmental quality. Based on the Abundance Biomass Comparison (ABC) curve, the water conditions of TISKA Beach were generally classified as lightly to moderately polluted, while Station 3 indicated heavy pollution due to the dominance of opportunistic organisms and high organic matter input. Principal Component Analysis (PCA) showed that dissolved oxygen, TOM, pH, and current velocity were the main factors influencing the distribution of macrozoobenthos across stations.

Keywords: Bioindicator, Macrozoobenthos, Sediment Total Organic Matter (TOM), TISKA Beach, Water Quality