

**ABSTRAK**  
**STRUKTUR KOMUNITAS MAKROZOOBENTOS DAN**  
**KONDISI PERAIRAN DI PANTAI PASIR PUTIH,**  
**DESA TARAHAN, KATIBUNG, LAMPUNG SELATAN**

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Pantai Pasir Putih merupakan kawasan wisata bahari yang terletak di Desa Tarahan, Kecamatan Katibung, Kabupaten Lampung Selatan. Tingginya aktivitas di sekitar pantai, seperti industri semen, dan kapal tongkang batu bara dapat memberikan dampak terhadap kualitas perairan. Penelitian ini bertujuan untuk menganalisis keanekaragaman makrozoobentos, menentukan kualitas perairan berdasarkan struktur komunitas makrozoobentos dan parameter fisika-kimia menggunakan metode kurva k-dominansi, serta menganalisis hubungan antar kondisi perairan dengan struktur komunitas makrozoobentos di Pantai Pasir Putih menggunakan metode PCA (*principal component analysis*). Penelitian ini dilakukan pada bulan Mei–Juni 2025 menggunakan metode *purposive sampling*. Sampel diambil pada tiga stasiun dengan tingkat aktivitas antropogenik yang berbeda. Makrozoobentos dikoleksi menggunakan paralon berdiameter 9 cm dan kedalaman 15 cm, lalu diidentifikasi hingga tingkat spesies. Parameter kualitas air yang diukur meliputi suhu, kecerahan, kedalaman, arus, tipe substrat, pH, salinitas, DO, dan bahan organik total (BOT). Data dianalisis menggunakan indeks ekologi, kurva k-dominansi, dan PCA. Hasil penelitian menunjukkan kualitas air bervariasi antar stasiun dan dipengaruhi oleh aktivitas antropogenik. Stasiun 1 dan 2 berada pada kategori terganggu sedang akibat pembuangan limbah domestik dan aktivitas kapal tongkang batu bara, sedangkan Stasiun 3 menunjukkan kondisi ekosistem yang lebih stabil. Makrozoobentos yang ditemukan terdiri atas empat kelas yaitu Gastropoda, Bivalvia, Polychaeta, dan Malacostraca, dengan struktur komunitas menunjukkan keanekaragaman sedang, keseragaman tinggi, dan dominansi rendah. Kurva k-dominansi menunjukkan perairan Pantai Pasir Putih berada dalam kondisi tidak tercemar. Analisis PCA menunjukkan bahwa sebaran makrozoobentos dipengaruhi oleh suhu, arus, pH, dan BOT.

Kata kunci: Bioindikator, Keanekaragaman, Kurva K-Dominansi, Makrozoobentos, Pantai Pasir Putih, PCA.

**ABSTRACT**  
**MACROZOOBENTHOS COMMUNITY STRUCTURE AND**  
**WATER CONDITIONS AT PASIR PUTIH BEACH, TARAHAH**  
**VILLAGE, KATIBUNG, SOUTH LAMPUNG**

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Pasir Putih Beach is a marine tourism area located in Tarahan Village, Katibung Subdistric, South Lampung Regency. Intensive anthropogenic activities surrounding the coastline such as cement industry operations and coal barge transportation pose significant impacts on the water quality of the coastal ecosystem. This study aimed to analyze the diversity of macrozoobenthos, determine water quality based on macrozoobenthic community structure and physicochemical parameters using curve k-dominance, and examine the relationship between water conditions and macrozoobenthic community structure at Pasir Putih Beach, using principal component analysis (PCA). The research was conducted from May to June 2025 using a purposive sampling method. Samples were collected from three stations representing different levels of anthropogenic activity. Macrozoobenthos were collected using PVC corers with a diameter of 9 cm and a depth of 15 cm, and were subsequently identified to the species level. Water quality parameters measured included temperature, water transparency, depth, current velocity, substrate type, pH, salinity, DO, and total organic matter (TOM). Data were analyzed using ecological indices, curve k-dominance, and PCA. The results showed that water quality varied among stations and was influenced by anthropogenic activities. Station 1 and 2 were classified as moderately disturbed due to domestic waste discharge and coal barge traffic, whereas Station 3 exhibited a more stable ecosystem condition. The macrozoobenthos identified belonged to four classes Gastropoda, Bivalvia, Polychaeta, and Malacostraca, with community structure showed moderate diversity, high evenness, and low dominance, suggestion a relatively stable benthic community. Curve k-dominance at showed that the waters of Pasir Putih Beach were in an unpolluted. The PCA analysis revealed that macrozoobenthic distribution was influenced by temperature, current velocity, pH, and TOM.

**Keywords:** Bioindicator, Curve K-Dominance, Diversity, Macrozoobenthos, Pasir Putih Beach, PCA.