

RINGKASAN

NURMALA EKA WARDANI. Struktur Komunitas Gastropoda di Pulau Dompok, Kota Tanjungpinang, Kepulauan Riau. Dibimbing oleh RIKA ANGGRAINI dan FALMI YANDRI

Gastropoda merupakan organisme bentik yang berperan penting dalam ekosistem pesisir dan sangat rentan terhadap perubahan lingkungan akibat aktivitas manusia. Bukaan lahan di Pulau Dompok yang ditetapkan sebagai pusat pemerintahan Kota Tanjungpinang berpotensi mengubah kondisi habitat dan memengaruhi keberadaan gastropoda di perairan sekitarnya. Penelitian ini bertujuan untuk menganalisis struktur komunitas gastropoda, mengukur kondisi parameter lingkungan perairan, serta menganalisis hubungan parameter lingkungan dengan struktur komunitas gastropoda di Pulau Dompok, Tanjungpinang, Kepulauan Riau. Penelitian dilaksanakan pada bulan Maret 2026 di Pulau Dompok pada tiga stasiun di kawasan lahan terbuka dengan luasan berbeda, yaitu Stasiun I (51,29 ha), Stasiun II (4,96 ha), dan Stasiun III (0,90 ha). Alat yang digunakan meliputi transek kuadran ($50 \times 50 \text{ cm}^2$), roll meter, GPS, DO meter, pH meter digital, hand refraktometer, kamera, ArcGIS, dan Jamovi. Pengambilan sampel dilakukan secara manual menggunakan plot zig-zag pada transek 100 m. Parameter lingkungan diukur secara in situ, dan substrat dianalisis dengan metode dry sieving. Analisis data meliputi kepadatan spesies, indeks Shannon-Wiener (H'), keseragaman (E), dominansi (C), dan PCA. Ditemukan 15 spesies gastropoda dengan total 445 individu. Stasiun III mencatat kepadatan tertinggi ($2,89 \text{ ind/m}^2$), diikuti Stasiun I ($0,51 \text{ ind/m}^2$) dan Stasiun II terendah ($0,20 \text{ ind/m}^2$). Keanekaragaman tergolong sedang ($H' = 1,291\text{--}1,666$), keseragaman sedang hingga tinggi ($E = 0,621\text{--}0,887$), dan dominansi rendah hingga sedang ($C = 0,232\text{--}0,312$). Parameter lingkungan masih mendukung kehidupan gastropoda. Hasil PCA menunjukkan bahwa parameter lingkungan memiliki hubungan dengan struktur komunitas gastropoda pada setiap stasiun pengamatan.

Kata kunci: Bukaan lahan, Gastropoda, Parameter lingkungan, Pulau Dompok, Struktur komunitas

SUMMARY

NURMALA EKA WARDANI. Community Structure of Gastropods on Dompak Island, Tanjungpinang City, Riau Islands. Supervised by RIKA ANGGRAINI and FALMI YANDRI.

Gastropods are benthic organisms that play an important role in coastal ecosystems and are highly susceptible to environmental changes caused by human activities. Land clearing on Dompak Island, designated as the governmental center of Tanjungpinang City, potentially alters habitat conditions and affects the presence of gastropods in the surrounding waters. This study aimed to analyze the community structure of gastropods, measure the condition of aquatic environmental parameters, and To analyze the relationship between environmental parameters and the gastropod community structure on Dompak Island, Tanjungpinang City, Riau Islands, Indonesia. The study was conducted in March 2026 on Dompak Island at three observation stations in open land areas with different sizes, namely Station I (51,29 ha), Station II (4,96 ha), and Station III (0,90 ha). The equipment used included quadrat transects (50×50 cm²), measuring tape, GPS, DO meter, digital pH meter, hand refractometer, camera, ArcGIS, and Jamovi. Gastropod sampling was carried out manually using plots placed in a zig-zag pattern along 100 m transects. Environmental parameters were measured in situ, and sediment was analyzed using the dry sieving method. Data analysis included species density, Shannon-Wiener diversity index (H'), evenness index (E), dominance index (C), and Principal Component Analysis (PCA). A total of 15 gastropod species were found with 445 individuals. Station III recorded the highest density (2,89 ind/m²), followed by Station I (0,51 ind/m²) and Station II with the lowest density (0.20 ind/m²). Species diversity was moderate ($H' = 1,291-1,666$), evenness was moderate to high ($E = 0,621-0,887$), and dominance was low to moderate ($C = 0,232-0,312$). Environmental parameters still supported gastropod life. PCA results indicated that environmental parameters were associated with the gastropod community structure at each sampling station.

Keywords: Community structure, Dompak Island, Environmental parameters, Gastropod, Land clearing