

RINGKASAN

PURNAMA RUMAPEA. *Analisis Hubungan Komunitas Mangrove Dengan Moluska Sésil Benthik di Teluk Riau, Kota Tanjungpinang*. Dibimbing oleh CHANDRA JOEI KOENAWAN dan FALMI YANDRI.

Ekosistem mangrove merupakan ekosistem pesisir yang berperan penting dalam menjaga keseimbangan ekologis, melindungi pantai, serta menyediakan habitat bagi berbagai biota, termasuk moluska benthik. Kondisi struktur komunitas mangrove diduga memengaruhi kelimpahan moluska melalui penyediaan habitat dan sumber makanan. Penelitian ini bertujuan untuk menganalisis struktur komunitas mangrove, struktur komunitas moluska benthik (Gastropoda dan Bivalvia), serta hubungan antara kerapatan mangrove dan kelimpahan moluska benthik di ekosistem mangrove Teluk Riau, Kota Tanjungpinang. Penelitian dilaksanakan pada April 2026 di empat stasiun menggunakan metode *purposive sampling* dengan teknik *line transect-quadrat*. Analisis mangrove meliputi komposisi jenis, kerapatan, frekuensi, dominansi, dan Indeks Nilai Penting (INP), sedangkan analisis moluska meliputi komposisi jenis, kelimpahan, frekuensi relatif, indeks keanekaragaman, keseragaman, dan dominansi. Hubungan antara kedua variabel dianalisis menggunakan uji korelasi Spearman.

Hasil penelitian menunjukkan bahwa ekosistem mangrove Teluk Riau terdiri atas 10 spesies mangrove dari lima famili, dengan *Rhizophora apiculata* sebagai spesies yang memiliki Indeks Nilai Penting (INP) tertinggi. Sebanyak 21 spesies moluska benthik berhasil diidentifikasi. Struktur komunitas moluska menunjukkan tingkat keanekaragaman sedang, keseragaman tinggi, dan dominansi rendah. Hasil uji korelasi Spearman menunjukkan hubungan positif dengan tingkat hubungan lemah antara kerapatan mangrove dan kelimpahan moluska ($r = 0,208$), namun hubungan tersebut tidak signifikan secara statistik ($p = 0,261$). Hal ini menunjukkan bahwa kerapatan mangrove bukan merupakan faktor utama yang menentukan kelimpahan moluska. Faktor lingkungan lain, seperti karakteristik sedimen, kandungan bahan organik, kondisi substrat, serta faktor fisika dan kimia perairan, diduga memiliki pengaruh yang lebih besar. Hasil penelitian ini diharapkan menjadi data dasar dalam mendukung pengelolaan dan konservasi ekosistem mangrove secara berkelanjutan.

Kata kunci: Kerapatan mangrove, Moluska benthik, Struktur komunitas, Teluk Riau.

SUMMARY

PURNAMA RUMAPEA. Analysis of Mangrove Communities and Their Relationship with Benthic Sessile Mollusks in Riau Bay, Tanjungpinang City. Supervised by CHANDRA JOEI KOENAWAN and FALMI YANDRI.

Mangrove ecosystems play an important role in maintaining the ecological balance of coastal areas by protecting shorelines and providing habitat for various organisms, including benthic mollusks. The structure of mangrove communities is presumed to influence mollusk abundance through the provision of suitable habitat and food resources. This study aimed to analyze the mangrove community structure, the benthic mollusk community structure (Gastropoda and Bivalvia), and the relationship between mangrove density and benthic mollusk abundance in the mangrove ecosystem of Teluk Riau, Tanjungpinang City. The research was conducted in April 2026 at four sampling stations using a purposive sampling method with the line transect–quadrat technique. Mangrove community structure was analyzed based on species composition, density, frequency, dominance, and the Important Value Index (IVI), while the mollusk community structure was analyzed using species composition, abundance, relative frequency, diversity index, evenness index, and dominance index. The relationship between the two variables was analyzed using Spearman's rank correlation.

The results showed that the mangrove ecosystem of Teluk Riau consisted of 10 mangrove species belonging to five families, with *Rhizophora apiculata* having the highest Important Value Index (IVI). A total of 21 benthic mollusk species were identified. The mollusk community exhibited moderate diversity, high evenness, and low dominance, indicating a relatively stable community structure. Spearman's rank correlation analysis revealed a weak positive relationship between mangrove density and mollusk abundance ($r = 0.208$), although the relationship was not statistically significant ($p = 0.261$). These findings indicate that mangrove density is not the primary factor determining mollusk abundance. Instead, mollusk abundance is likely influenced by other environmental factors, including sediment characteristics, organic matter content, substrate conditions, and the physical and chemical properties of the water. This study is expected to provide baseline information to support the sustainable management and conservation of mangrove ecosystems.

Keywords: Mangrove density, Benthic mollusks, Community structure, Riau Bay.