

## Hubungan Kelimpahan Nekton dengan Karakteristik Ekosistem Perairan di Beberapa Tahun Tanam Mangrove Pantai Utara Kabupaten Pati Jawa Tengah

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### INTISARI

Ekosistem mangrove di Indonesia terus mengalami penurunan dimana tahun 2010 mencapai 5,2 juta ha dan menurun menjadi 3,3 juta pada tahun 2020. Sedangkan ekosistem mangrove merupakan ekosistem yang kompleks dengan peran pentingnya dalam menyediakan habitat bagi biota perairan serta tempat bertelur dan memijah bagi beberapa jenis biota. Ekosistem mangrove memiliki perairan dengan karakteristik fisik yang berbeda-beda. Hal ini berdampak pada produktivitas biota perairan di dalamnya, terutama pada kelimpahan nekton. Nekton memiliki peran penting dalam menjaga ekosistem mangrove melalui perannya dalam menjaga stabilisasi rantai makanan dan sebagai *bioindicator* ekosistem mangrove. Produktivitas nekton sangat bergantung pada keberadaan ekosistem mangrove sehingga penurunan nilai biotik dan abiotik mangrove akan diikuti oleh penurunan produktivitas nekton. Oleh karena itu, penelitian ini bertujuan untuk mengetahui komposisi dan kerapatan mangrove, karakteristik ekosistem perairan mangrove, kelimpahan nekton, serta hubungan keduanya.

Pengumpulan data meliputi data vegetasi mangrove, karakteristik ekosistem perairan dan kelimpahan nekton. Pengambilan data dilakukan di Kabupaten Pati pada 4 Kecamatan, yakni Juwana, Wedarijaksa, Trangkil, dan Margoyoso. Metode pengambilan data mangrove menggunakan *line transect* dengan *intensitas sampling* 2% sebagai penentuan jumlah sampling. Sedangkan pengumpulan data nekton menggunakan jaring insang berlapis dengan mata jaring berukuran  $\pm 2$  inci dan panjang  $\pm 500$  meter.

Hubungan antara karakteristik ekosistem perairan mangrove meliputi salinitas, derajat keasaman, dan oksigen terlarut dengan kelimpahan nekton memiliki koefisien korelasi 0,922 yang tergolong tinggi serta kemampuannya dalam menjelaskan kelimpahan nekton sebesar 84,9%. Hubungan antar variabel tersebut menghasilkan persamaan regresi  $Y = -401,155 + 10,837X_1 + 38,923X_2 - 2,270X_3$ .

Kata kunci: karakteristik, ekosistem, mangrove, nekton

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## Relationship between Nekton Abundance and Characteristics of Aquatic Ecosystems in Several Years of Mangrove Planting on the North Coast of Pati Regency, Central Java

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### ABSTRACT

Mangrove ecosystems in Indonesia continue to experience a decline; in 2010, they reached 5.2 million ha and decreased to 3.3 million ha in 2020. Meanwhile, mangrove ecosystems are complex ecosystems with an important role in providing habitat for aquatic biota as well as spawning grounds for several types of biotas. Mangrove ecosystems have different physical characteristics. This has an impact on the productivity of the aquatic biota in it, especially on the abundance of nekton. Nekton has an important role in protecting the mangrove ecosystem through its role in maintaining the stability of the food chain and as a mangrove ecosystem bioindicator. Nekton productivity is very dependent on the existence of mangrove ecosystems, so a decrease in the biotic and abiotic values of mangroves will be followed by a decrease in nekton productivity. Therefore, this study aims to determine the composition and density of mangroves, the characteristics of mangrove aquatic ecosystems, the abundance of nekton, and the relationship between the two.

Data collection includes information on mangrove vegetation, aquatic ecosystem characteristics, and nekton abundance. Data collection was carried out in Pati Regency in 4 sub-districts, namely Juwana, Wedarijaksa, Trangkil, and Margoyoso. The number of samplings was determined by using a line transect with a sampling intensity of 2% as a mangrove data collection method. While collecting nekton data using layered gill nets with a mesh size of 2 inches and a length of 500 meters.

The relationship between the characteristics of mangrove aquatic ecosystems, including salinity, degree of acidity, and dissolved oxygen, and the abundance of nekton has a correlation coefficient of 0.922, which is relatively high, and its ability to explain the abundance of nekton is 84.9%. The relationship between these variables results in the following regression equation:  $Y = -401,155 + 10,837X_1 + 38,923X_2 - 2,270X_3$ .

Keywords: characteristics, ecosystem, mangrove, nekton

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