

## HUBUNGAN ANTARA FAKTOR FISIK KIMIA HABITAT DENGAN KEPADATAN BENTHOS DI KAWASAN MANGROVE PETAK 45 RPH CILACAP KPH BANYUMAS BARAT

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### INTISARI

Kawasan mangrove Petak 45 yang dikelola oleh Perum Perhutani RPH Cilacap merupakan suatu hutan yang terletak dekat dengan aktivitas masyarakat dan kawasan industri, hal tersebut diduga dapat memengaruhi perubahan faktor fisik kimia perairan maupun kehidupan benthos yang akan berdampak terganggunya siklus energi di perairan mangrove. Benthos memiliki peranan penting dalam siklus energi mangrove dan produktivitas mangrove. Penelitian ini bertujuan untuk mengetahui kondisi faktor fisik kimia habitat, kepadatan benthos, dan hubungan antara faktor fisik kimia habitat dengan kepadatan benthos.

Penelitian ini dilaksanakan di Petak 45 hutan mangrove, Sungai Donan, Cilacap dengan luas kawasan 376,8 ha. Metode yang digunakan berupa *systematic random sampling* dengan nilai intensitas sampling 0,2% sehingga diperoleh 75 petak ukur. Pengambilan data berupa vegetasi, ketebalan lumpur, kejernihan air, salinitas, pH, oksigen terlarut, dan benthos. Pengambilan data benthos terdiri dari makrobenthos, meibenthos, dan mikrobenthos. Pengambilan data benthos dilakukan secara visual serta menggunakan *Eikman grab*. Analisis korelasi Pearson dan regresi linear berganda menggunakan software SPSS 20.0.

Hasil penelitian menunjukkan bahwa kondisi faktor fisik kimia habitat pada kawasan mangrove masih dalam batas toleransi untuk kehidupan benthos, yaitu dengan rata-rata ketebalan lumpur: 39,25 cm; salinitas: 23,40‰; kejernihan air: 14,8 cm; pH: 6,84; dan kadar oksigen terlarut: 6,04 mg/L. Nilai rata-rata kepadatan benthos yaitu 5,14 ind/m<sup>2</sup>. Faktor ketebalan lumpur, salinitas, kejernihan air, pH, dan oksigen terlarut memiliki hubungan korelasi yang positif dengan kepadatan benthos, semakin tinggi nilai faktor fisik kimia perairan maka kepadatan benthos juga semakin tinggi. Hasil persamaan regresi linear berganda yaitu  $y = -31,444 + 3,858X_1 + 1,115X_2 + 0,095X_3 + 0,035X_4 + 0,019X_5$  dengan koefisien korelasi sebesar 0,837.

Kata Kunci: benthos, mangrove, kepadatan, hubungan

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## THE CORRELATION BETWEEN HABITAT PHYSICAL CHEMICAL FACTOR WITH BENTHOS DENSITY IN MANGROVE AREA PLOT 45 RPH CILACAP KPH BANYUMAS BARAT

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### ABSTRACT

Mangrove area Plot 45 which is managed by Perum Perhutani RPH Cilacap is a forest located close to industrial area and human activities, those conditions might affect the habitat physical chemical factor and the life of benthos. The changes of habitat physical chemical factor and benthos condition might have impact to the mangrove's energy cycle. Benthos is aquatic biota which has important role for supporting mangrove's energy cycle and mangrove productivity. This research aims to determine the condition of habitat physical chemical factor, benthos density, and relation between habitat physical chemical factor with benthos density.

The research was conducted in Petak 45 Mangrove Forest, Donan River, Cilacap with extent of 376,8 ha. Systematic random sampling method was used with sampling intensity 0,2% therefore there were 75 plots. The data obtained consist of vegetation, mud thickness, water clarity, salinity, pH, dissolved oxygen, and benthos. The benthos obtained consist of macrobenthos, meiobenthos, and microbenthos. Benthos data was taken visually and using Eikman grab. Pearson correlation and multiple linear regression analysis were conducted using software SPSS 20.0

The results showed that the average of physical chemical habitats in mangrove area are still in tolerable limits for benthos life, mud thickness: 39.25 cm; salinity: 23.40‰; water clarity: 14.8 cm; pH: 6.84; and dissolved oxygen: 6.04 mg/L. The average of benthos density is 5.14 ind/m<sup>2</sup>. The results showed that mud thickness, salinity, water clarity, pH, and dissolved oxygen have positive correlation with benthos density, the higher physical chemical factors, the higher benthos density. The result of multiple regression model showed  $y = -31,444 + 3,858X_1 + 1,115X_2 + 0,095X_3 + 0,035X_4 + 0,019X_5$  with coefficient correlation 0.837.

Keywords: benthos, mangrove, density, correlation

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