



KELIMPAHAN MAKROPLASTIK PADA BEBERAPA TEGAKAN MANGROVE DI PANTAI BAROS KABUPATEN BANTUL

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INTISARI

Sampah laut cenderung masuk dan terjatuh ke dalam ekosistem mangrove dikarenakan jarak pohon yang berdekatan dan akar-akar yang dimiliki mangrove. Sampah-sampah plastik memberikan gangguan terhadap ekosistem mangrove berupa mengganggu respirasi akar karena menjerat sampah di pohon terutama akarnya. Penelitian ini dilakukan untuk mengetahui komposisi makroplastik, berat makroplastik, kelimpahan makroplastik, dan mengetahui pengaruh kerapatan mangrove terhadap kelimpahan makroplastik di Pantai Baros, Kabupaten Bantul.

Pengambilan data makroplastik dan kerapatan vegetasi ini dilakukan menggunakan metode *stratified random sampling* dengan membuat 8 petak ukur di setiap tegakan mangrove yaitu *Avicennia marina*, *Rhizophora mucronata*, *Sonneratia alba* dan *Rhizophora apiculata*. Setelah itu, sampel berat ditimbang dan jumlah makroplastik dihitung serta jumlah mangrove dihitung yang dianalisis untuk mendapatkan komposisi makroplastik, berat dan kelimpahan makroplastik di setiap tegakan mangrove menggunakan uji Kruskal-Wallis, dan pengaruh antara kerapatan mangrove terhadap kelimpahan makroplastik menggunakan uji regresi linier.

Komposisi makroplastik di Pantai Baros berjenis fragmen memiliki persentase 9% (6,01 kg/ha), film 47% (31,62 kg/ha), dan styrofoam 44% (29,37 kg/ha). Berat sampah makroplastik antara tegakan mangrove memiliki perbedaan signifikan ($sig = 0,005$) dengan uji lanjut yang menunjukkan bahwa ada perbedaan yaitu antara tegakan *Avicennia marina* dengan *Rhizophora mucronata*, tegakan *Avicennia marina* dengan *Rhizophora apiculata*, dan tegakan *Sonneratia alba* dengan *Rhizophora apiculata*. Kelimpahan makroplastik antara tegakan mangrove tidak berbeda secara signifikan ($sig = 0,135$) dengan rentang kelimpahan antara 8450 item/ha sampai 10115 item/ha. Kerapatan mangrove berpengaruh terhadap kelimpahan makroplastik, semakin rapat suatu mangrove maka kelimpahan makroplastik meningkat; perubahan kelimpahan makroplastik dijelaskan oleh kerapatan mangrove dengan koefisien determinasi (R^2) sebesar 15%.

Kata Kunci: Mangrove, Makroplastik, film, fragmen, styrofoam

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ABUNDANCE OF MACROPLASTICS IN SOME MANGROVE STANDS ON BAROS BEACH, BANTUL DISTRICT

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ABSTRACT

Marine waste tends to enter and become entangled in the mangrove ecosystem due to the close proximity of the trees and the roots of the mangroves. Plastic waste causes disruption to the mangrove ecosystem in the form of disrupting root respiration because it traps waste in trees, especially the roots. This research was conducted to determine macroplastic composition, macroplastic weight, macroplastic abundance, and determine the relationship between macroplastic abundance and mangrove stand density on Baros Beach, Bantul Regency.

Data collection on macroplastics and vegetation density was carried out using the stratified random sampling method by creating 8 measuring plots in each mangrove stand, namely *Avicennia marina*, *Rhizophora mucronata*, *Sonneratia alba* and *Rhizophora apiculata*. After that, the weight sample was weighed and the amount of macroplastics was calculated and the amount of mangroves was calculated which was analyzed to obtain the macroplastic composition, weight and abundance of macroplastics in each mangrove stand using the Kruskal-Wallis test, and the effect of mangrove density on macroplastic abundance using the test linear regression.

The composition of macroplastics on Baros Beach is fragment type with a percentage of 9% (6.01 kg/ha), film 47% (31.62 kg/ha), and styrofoam 44% (29.37 kg/ha). The weight of macroplastic waste between mangrove stands had a significant difference (sig = 0.005) with further tests showing that there were differences, namely between *Avicennia marina* stands and *Rhizophora mucronata*, *Avicennia marina* stands and *Rhizophora apiculata*, and *Sonneratia alba* stands and *Rhizophora apiculata*. The abundance of macroplastics between mangrove stands did not differ significantly (sig = 0.135) with an abundance range between 8450 items/ha to 10115 items/ha. Mangrove density affects the abundance of macroplastics, the denser a mangrove is, the greater the abundance of macroplastics; changes in macroplastic abundance are explained by mangrove density with a coefficient of determination (R^2) of 15%.

Keywords: Mangrove, Macroplastic, film, fragments, styrofoam

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