

PENGARUH KUALITAS FISIK DAN KIMIA HABITAT TERHADAP VEGETASI MANGROVE DI TEPI SUNGAI DONAN CILACAP JAWA TENGAH

INTISARI

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Mangrove memiliki banyak fungsi, salah satunya adalah sebagai *biofilter* polutan. Salah satu kawasan mangrove yang tersisa di Pulau Jawa adalah di kawasan mangrove yang terletak di tepi Sungai Donan, Cilacap. Kawasan industri Cilacap, juga berada di bagian timur sepanjang Sungai Donan. Adanya perkembangan industri tersebut, dapat memberikan dampak negatif bagi kualitas perairan yang menjadi habitat mangrove. Tujuan dari penelitian ini adalah untuk mengetahui kualitas fisik dan kimia habitat mangrove di tepi Sungai Donan, mengetahui struktur dan komposisi vegetasi mangrove, dan mengetahui pengaruh kualitas fisik dan kimia habitat mangrove terhadap struktur vegetasi mangrove.

Penelitian ini dilakukan dengan mengelompokkan kawasan mangrove menjadi tiga bagian berdasarkan jarak dengan sumber pencemar, yaitu bagian I dengan jarak dekat (0 – 350 meter), bagian II dengan jarak sedang (351 – 700 meter), dan bagian III dengan jarak jauh (701 – 1.050 meter) serta dibagi berdasarkan zona barat dan timur sungai. Data yang diambil berupa data struktur dan komposisi vegetasi dan data kualitas fisik dan kimia habitat yang meliputi suhu, ketebalan lumpur, salinitas, kandungan oksigen terlarut, pH, dan kandungan logam berat kadmium (Cd) dan timbal (Pb).

Berdasarkan hasil penelitian, kondisi kualitas fisik dan kimia habitat mangrove berdasarkan jarak dengan sumber pencemar di tiap bagian tidak berbeda signifikan. Hal ini menunjukkan bahwa peran mangrove sebagai *biofilter* polutan tidak dapat berfungsi maksimal. Sementara itu, kondisi kualitas fisik dan kimia habitat berdasarkan zona barat dan timur sungai tiap bagian pengamatan, berbeda signifikan. Hal ini menunjukkan bahwa, masuknya bahan pencemar yang bersumber dari zona timur sungai belum berdampak secara signifikan terhadap kualitas fisik dan kimia habitat mangrove di zona barat Sungai Donan.

Kata kunci: mangrove, kualitas habitat, Sungai Donan, polutan

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**THE EFFECT OF PHYSICAL AND CHEMICAL HABITAT QUALITY
TO MANGROVE VEGETATIONS ON THE RIVERBANK DONAN
CILACAP CENTRAL JAVA**

ABSTRACT

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Mangroves have many functions to the environment; one of them is as biofilter of the pollutants which is come in to the river. One of the remaining mangrove areas in Java located in the banks of the Donan River, Cilacap. There is also an industrial area in it, in the eastern part of the river. The waste of the industrial activities could give a negative effect to the quality of the mangroves habitat. The aims of this research are to identify the physical and chemical habitat quality of mangrove habitat along the banks of the Donan River, to identify the structure and composition of mangrove vegetation, and to determine the influence of physical and chemical water quality in the mangrove habitat to its vegetation structure.

In order to identify the role of mangrove as biofilter, the mangrove areas were classified into three sections; section I, II, and III. The classification is based on the distance from the source of pollutants. Section I is close to the source of the pollutants (0-350 meters), section II, in the medium-range (351-700 meters), and section III is the farthest from the source of the pollutants (701-1050 meters). The area was divided into two zones, the western and the eastern zones parts of the river. The structure and composition of the vegetation as well as the physical and chemical habitat quality which is included temperature, thickness of the mud, salinity, dissolved oxygen content, pH, and heavy metal content of cadmium (Cd) and lead (Pb) were measured.

The results show that based on the distance to the source of the pollutants, the physical and chemical quality of mangrove habitats among the sections was not significantly different. It means that the role of mangroves as a biofilter of pollutants do not function optimally. Meanwhile, the comparison between the habitat quality of the western and eastern zones of the river is significantly different. It shows that the pollutants waste has not impacted significantly to the mangrove habitat in the western zone of the Donan River.

Keywords: mangrove, habitat quality, Donan River, pollutants

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