Analisis Kelimpahan Perifiton pada Substrat Plastik sebagai Indikator Kualitas Air di Situ Agathis dan Situ Mahoni, Universitas Indonesia, Depok, Jawa Barat = Analysis of Periphyton Abundance on Plastic Substrate as an Indicator of Water Quality in Situ Agathis and Situ Mahoni, University of Indonesia, Depok, West Java

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Abstrak

Penelitian ini bertujuan untuk mengkaji jenis dan kelimpahan perifiton pada substrat plastik di Situ Agathis dan Situ Mahoni, menganalisis perbandingan kelimpahan perifiton pada substrat plastik di Situ Agathis dan Mahoni, dan menganalisis kualitas perairan melalui keanekaragaman perifiton pada substrat plastik padat di Situ Agathis dan Situ Mahoni. Penelitian ini menggunakan beberapa parameter diantaranya pH, suhu, oksigen terlarut (dissolved oxygen), kekeruhan (turbidity), kecerahan, arus, dan nitrat (NO3-). Penelitian dilakukan pada bulan September 2022 – Maret 2023 pada 3 stasiun pengambilan sampel di Situ Agathis dan Situ Mahoni. Sampel yang diperoleh dianalisis menggunakan indeks keanekaragaman Shannon-Wiener, Indeks kemerataan, dan indeks Dominansi Simpson. Berdasarkan hasil pengukuran parameter fisika kimia di Situ Agathis dan Situ Mahoni didapatkan kisaran pH, suhu, oksigen terlarut, kekeruhan, kecerahan, arus, nitrat (NO3-) secara berturut-turut yaitu 7,05-7,49; 22,9-30,7 C; 4,7-10,5 mg/l; 3,06-16,2 NTU; 31,8-44 cm; 0,003-0,015 m/s; 2,3-16,8 mg/l. Berdasarkan hasil identifikasi didapatkan 11 kelas perifiton di Situ Agathis dan Situ Mahoni yaitu Bacillariophyceae (13 genus), Chlorophyceae (11 genus), Conjugatophyceae (4 genus), Cyanophyceae (6 genus), Euglenophyceae (3 genus), Klebsormidiophyceae (1 genus), Monogononta (1 genus), Oligohymenophorea (1 genus), Trebouxiophyceae (1 genus), Tubulinea (1 genus), dan Xanthophyceae (1 genus) dengan total 44 genus. Situ Agathis memiliki total kelimpahan perifiton yang lebih tinggi dibandingkan Situ Mahoni dengan niilai berturut-turut 6.219,8 sel/cm2 dan 2.025 sel/cm2. Kelas Bacillariophyceae menjadi kelas dengan nilai kelimpahan perifiton tertinggi di kedua situ. Nilai keaneragaman perifiton di kedua situ menunjukkan bahwa kualitas air Situ Agathis dan Mahoni termasuk dalam kualitas air tercemar sedang.

.....This study aims to examine the types and abundance of periphyton on plastic substrates in Situ Agathis and Situ Mahoni, analyze the comparison of periphyton abundance on plastic substrates in Agathis and Mahoni Situ, and analyze water quality through periphyton diversity on solid plastic substrates in Agathis and Mahoni Situ. This study used several parameters including pH, temperature, dissolved oxygen, turbidity, brightness, current flow, and nitrate (NO3-). The research was conducted in September 2022 – March 2023 at 3 sampling stations in Situ Agathis and Situ Mahoni. The samples obtained were analyzed using the Shannon-Wiener diversity index, evenness index, and Simpson dominance index. Based on the results of measurements of physico-chemical parameters in the Agathis and Mahoni Situ, the range of pH, temperature, dissolved oxygen, turbidity, brightness, nitrate (NO3-) was obtained, respectively, namely 7.05-7.49; 22.9-30.7 C; 4.7-10.5 mg/l; 3.06-16.2 NTUs; 31.8-44cm; 0.003-0.015 m/s; 2.3-16.8 mg/l. Based on the identification results, 11 classes of periphyton were found in Situ Agathis and Situ Mahoni, namely Bacillariophyceae (13 genera), Chlorophyceae (11 genera), Conjugatophyceae (4 genera), Cyanophyceae (6 genera), Euglenophyceae (3 genera), Klebsormidiophyceae (1 genus), Monogononta (1 genus),

Oligohymenophorea (1 genus), Trebouxiophyceae (1 genus), Tubulinea (1 genus), and Xanthophyceae (1 genus) with a total of 44 genera. Agathis Lake has a higher total periphyton abundance than Mahoni Lake with values of 6,219.8 cells/cm2 and 2,025 cells/cm2, respectively. The Bacillariophyceae class was the class with the highest periphyton abundance in both sites. The value of periphyton diversity in both lakes shows that the water quality of Agathis and Mahoni Lakes is classified as moderately polluted water quality.