

Analisis Spasial dan Temporal Konsentrasi dan Beban Pencemar Organik dan Nutrien ke Teluk Jakarta = Spatial and Temporal Analysis of Concentration and Loading of Organic Pollutants and Nutrients to Jakarta Bay

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Abstrak

Variasi kegiatan antropogenik di DKI Jakarta sebagai kota urban yang berkembang pesat menimbulkan limbah yang dilepas ke sungai yang pada akhirnya bermuara di Teluk Jakarta. Di sisi lain, Teluk Jakarta dikenal masih dimanfaatkan sebagai tempat pariwisata, fasilitas transportasi laut, maupun sumber tangkapan. Tujuan penelitian ini adalah guna melihat persebaran konsentrasi serta beban pencemar organik dan nutrien yang dilihat berdasarkan angka konsentrasi dan debit pada titik pantau sungai serta menilai aktivitas antropogenik mana yang paling berpengaruh terhadap besaran beban pencemar. Konsentrasi pencemar organik dan nutrien dilihat dari Data Alam KLHK, sedangkan besaran debit akan diproyeksikan berdasarkan besaran curah hujan, luas sub-DAS, dan morfologi saluran sungai pada periode 2016 – 2019 dengan Hec-HMS. Penelitian memperlihatkan bahwa curah hujan sangat berpengaruh pada besaran beban pencemar yang dinyatakan dalam ton/tahun walau konsentrasi terukur tidak terlalu signifikan. Guna melihat pengaruh aktivitas antropogenik terhadap beban pencemar, dilakukan analisis korelasi antara beban pencemar dengan persentase tutupan lahan yang diperkuat dengan grafik scatter. Penelitian memperlihatkan bahwa korelasi antara jenis lahan aktivitas antropogenik dengan pencemar (kecuali DO atau oksigen terlarut) tidak selalu berkorelasi positif, sebagaimana halnya yang terlihat pada korelasi lahan komersial dan TSS yang justru berkorelasi negatif.

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Variations of anthropogenic issues in DKI Jakarta as urban city produce waste that flows into water bodies that ends up in Jakarta Bay. In fact, Jakarta Bay is known to be still used by local residents as a place of tourism, marine transportation facilities, and a source of marine catch as consumption and ornamental animals. The purpose of this study is to see the distribution of concentrations and the rate or loading of organic and nutrient pollutants seen based on concentration and discharge figures at river monitoring points and assess which anthropogenic activity has the most influence on the amount of beban of pollutant. The concentration of organic and nutrient pollutants is seen from Data Alam by Ministry of Environment and Forestry, while the amount of discharge will be projected based on the amount of rainfall rate, sub-basin area, and morphology of river channels in the period 2016 – 2019. Research shown that rainfall rate greatly affects the amount of pollutant loading expressed in tons/year even though the measured concentration is not too significant. In order to see the influence of anthropogenic activity, a correlation analysis was carried out between the loading of pollutants and the percentage of land cover which was strengthened by a scatter chart. Research also shows that the correlation between anthropogenic activity land types and pollutants (except Dissolved Oxygen) is not always positively correlated, as it is seen in the correlation of commercial land and TSS which is actually negatively correlated.