

ANALISIS DAYA TAMPUNG BEBAN PENCEMAR SUNGAI BUNTUNG DI KECAMATAN NGAGLIK, KABUPATEN SLEMAN

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INTISARI

Sub-DAS Buntung merupakan salah satu sub-DAS dari DAS Winongo. Sebagian besar aliran Sungai Buntung masuk ke wilayah administrasi Kecamatan Ngaglik, Kabupaten Sleman. Kondisi kualitas air Sungai Buntung dipengaruhi oleh penggunaan lahan disekitarnya. Berdasarkan data Badan Pusat Statistik Kabupaten Sleman, terjadi perubahan penggunaan lahan yang cukup banyak dari lahan pertanian menjadi lahan terbangun. Perubahan ini berpotensi meningkatkan beban pencemar yang masuk ke sungai. Agar tidak tercemar, beban pencemar yang masuk ke sungai harus di bawah daya tampung sungai. Penelitian bertujuan untuk menghitung beban pencemar dan daya tampung Sungai Buntung serta menganalisis kondisi tiap segmen berdasarkan nilai daya tampung dan beban pencemarnya.

Metode yang digunakan merupakan deskriptif kuantitatif. Proses pengambilan sampel dilakukan pada aliran sungai yang dibagi dalam 8 segmen. Uji kualitas air dilakukan pada parameter BOD dan COD. Selain itu, dilakukan pengukuran morfometri sungai dan debit aliran sungai sebagai input pemodelan kualitas air dengan *software* WASP (*Water Quality Analysis Simulation Program*).

Hasil penelitian menunjukkan beban pencemar BOD total sebanyak 44,206 kg/hari, sedangkan beban pencemar COD total sebanyak 657,291 kg/hari. Daya tampung beban pencemar BOD total sebanyak 0,177 kg/hari. Daya tampung beban pencemar COD total sebanyak 17,457 kg/hari. Hanya segmen 3 dan segmen 5 yang mampu menampung beban pencemar BOD dan hanya segmen 1 dan 6 yang mampu menampung beban pencemar COD.

Kata kunci: Beban Pencemar, Daya Tampung, Kualitas Air, Pemodelan WASP, Sumber Pencemar

ANALYSIS OF THE POLLUTANT LOAD CARRYING CAPACITY OF THE BUNTUNG RIVER IN NGAGLIK DISTRICT, SLEMAN REGENCY

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ABSTRACT

The Buntung sub-watershed is one of the sub-watersheds of the Winongo watershed. Most of the Buntung River flows into the administrative area of Ngaglik Sub-district, Sleman Regency. The water quality condition of Buntung River is influenced by the surrounding land use. Based on data from the Sleman Regency Central Bureau of Statistics, there has been considerable land use change from agricultural land to built-up land. This change has the potential to increase the pollutant load entering the river. In order not to be polluted, the pollutant load entering the river must be below the capacity of the river. The research aims to calculate the pollutant load and capacity of Buntung River and analyze the condition of each segment based on the value of its capacity and pollutant load.

The method used in this study is descriptive quantitative. Sampling was conducted by dividing the river flow into 8 segments. Water quality testing focused on the parameters of BOD and COD. Additionally, river morphometry and flow discharge measurements were conducted as inputs for water quality modeling using the WASP (Water Quality Analysis Simulation Program) software.

The results explain that the total BOD pollutant load is 44.206 kg/day, while the total COD pollutant load is 657.291 kg/day. The carrying capacity for the total BOD pollutant load is 0.177 kg/day, and for the total COD pollutant load, it is 17.457 kg/day. Only segment 3 and segment 5 can accommodate the BOD pollutant load, and only segment 1 and segment 6 can accommodate the COD pollutant load.

Keywords: Carrying Capacity, Pollutant Load, Pollution Sources, WASP Modeling, Water Quality.