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MANAGEMENT OF KUIN RIVER USING THE ECO-HYDRAULIC APPROACHParida Angriani¹, Akhmad Munaya Rahman², Karunia Puji Hastuti³

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ABSTRAK

Pengelolaan sungai dengan pendekatan eko-hidrolik bertujuan untuk melestarikan komponen ekologi di lingkungan sungai melalui rekayasa hidrolik. Penelitian ini bertujuan untuk mengidentifikasi kondisi eksisting di perbatasan Sungai Kuin, menganalisis hubungan dan pengaruh aktivitas masyarakat di bantaran Sungai Kuin terhadap kualitas air Sungai Kuin, dan mempelajari pola perkembangan sungai dengan konsep eko-hidrolik di Sungai Kuin. Sungai. Pengumpulan data dilakukan berdasarkan hasil survei lapangan dan uji laboratorium untuk air dan tanah. Hasil penelitian menunjukkan bahwa kondisi bantaran sungai Sungai Kuin saat ini belum memenuhi fungsinya sebagai penyangga antara sungai dan daratan, karena banyaknya pemukiman masyarakat dan bukan vegetasi yang berfungsi sebagai pelindung sungai. Sungai Kuin tercemar karena beberapa indikator ekologi seperti pH, Fe, BOD, dan COD telah melebihi batas maksimum yang diperbolehkan. Hal ini terjadi karena aktivitas sosial dan perkembangan di sepanjang sungai yang berdampak pada aspek biotik dan abiotik sungai. Jenis tanah di bantaran Sungai Kuin adalah lanau bercampur tanah liat dengan plastisitas sedang sampai tinggi. Berdasarkan kondisi tersebut, terdapat asumsi bahwa tebing di tepian Sungai Kuin berpotensi longsor. Oleh karena itu, direkomendasikan pola pengembangan perlindungan tebing dengan menggunakan komponen vegetasi tepi sungai.

ABSTRACT

River management using the eco-hydraulic approach is aimed at preserving the ecological components in the river environment through hydraulic engineering. This study aims to identify the existing conditions on Kuin River border, analyze the relationship and influence of community activities on the banks of Kuin River on the water quality of Kuin River, and study the river development pattern with the concept of eco-hydraulic on Kuin River. Data were collected based on the results of field surveys and laboratory tests for water and soil. The results showed that the current condition of the riverbank of Kuin River has not fulfilled its function as a buffer space between the river and the mainland, due to the large number of community settlements rather than vegetation that functions to protect the river. Kuin River is polluted because several ecological indicators such as pH, Fe, BOD, and COD have exceeded the maximum allowable limits. This occurs due to social activities and development along the river, which have an impact on biotic and abiotic aspects of the river. The type of soil on the banks of the Kuin River is silt mixed with clay with moderate to high plasticity. Based on this condition, there is an assumption that the cliffs on the banks of Kuin River have the potential for landslides. Therefore, a pattern for developing cliff protection using riverbank vegetation components is recommended.

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