

ABSTRAK

KAJIAN PENGENDALIAN PENCEMARAN AIR DI DAERAH ALIRAN SUNGAI MESUJI, KABUPATEN MESUJI

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Sungai Mesuji memiliki peranan penting bagi masyarakat di sekitarnya, baik sebagai sumber air minum, irigasi, maupun aktivitas domestik lainnya. Namun, peningkatan aktivitas masyarakat di sekitar sungai menyebabkan penurunan kualitas air akibat pencemaran dari limbah domestik, pertanian, serta aktivitas lainnya. Penelitian ini bertujuan untuk menganalisis tingkat pencemaran Sungai Mesuji berdasarkan parameter fisika, kimia, dan biologi, mengidentifikasi faktor penyebab pencemaran, serta merancang model pengendalian pencemaran yang tepat. Hasil penelitian menunjukkan bahwa kualitas air Sungai Mesuji pada periode pertama berada dalam kondisi tercemar sedang di semua stasiun pengambilan sampel. Pada periode kedua, kualitas air berkisar antara tercemar sedang hingga tercemar berat, dengan tingkat pencemaran tertinggi ditemukan di beberapa desa, seperti Keangungan Dalam, Sri Tanjung, dan Sungai Badak. Analisis faktor penyebab pencemaran mengungkapkan bahwa pencemaran air Sungai Mesuji dipengaruhi oleh faktor kimia (MBAS, Nitrogen, Nitrat, dan Amonia), fisika (*Total Suspended Solid*), biologi (*Fecal Coliform* dan *Total Coliform*), serta faktor lingkungan, perilaku, dan demografi masyarakat. Untuk mereduksi pencemaran, diperlukan langkah-langkah strategis, seperti pengelolaan limbah domestik melalui peningkatan infrastruktur sanitasi, edukasi masyarakat, serta penerapan praktik pertanian berkelanjutan. Selain itu, pemantauan berkala dan penerapan kebijakan pengelolaan sungai yang lebih ketat juga diperlukan

untuk menjaga kualitas air Sungai Mesuji. Penelitian ini merekomendasikan perlunya kajian lebih lanjut terkait model perilaku masyarakat serta pengendalian kawasan pemukiman guna meningkatkan efektivitas pengendalian pencemaran air sungai.

Kata kunci: Sungai Mesuji, Pencemaran air, Kualitas air, Pengendalian pencemaran, Model pengelolaan sungai.

ABSTRACT

STUDY OF WATER POLLUTION CONTROL IN THE MESUJI RIVER BASIN, MESUJI REGENCY

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The Mesuji River plays an important role for the surrounding community, both as a source of drinking water, irrigation, and other domestic activities. However, the increase in community activities around the river has caused a decrease in water quality due to pollution from domestic waste, agriculture, and other activities. This study aims to analyze the level of pollution of the Mesuji River based on physical, chemical, and biological parameters, identify the factors causing pollution, and design an appropriate pollution control model. The results of the study showed that the water quality of the Mesuji River in the first period was in a moderately polluted condition at all sampling stations. In the second period, the water quality ranged from moderately polluted to heavily polluted, with the highest levels of pollution found in several villages, such as Keangungan Dalam, Sri Tanjung, and Sungai Badak. Analysis of pollution-causing factors revealed that water pollution in the Mesuji River was influenced by chemical factors (MBAS, Nitrogen, Nitrate, and Ammonia), physical (Total Suspended Solid), biological (Fecal Coliform and Total Coliform), as well as environmental, behavioral, and demographic factors. To reduce pollution, strategic steps are needed, such as domestic waste management through improving sanitation infrastructure, public education, and implementing sustainable agricultural practices. In addition, regular monitoring and implementing stricter river management policies are also needed to maintain the water quality of the Mesuji

River. This study recommends the need for further studies related to community behavior models and control of residential areas in order to increase the effectiveness of river water pollution control.

Keywords: Mesuji River, Water pollution, Water quality, Pollution control, River management