

Abstract

The Banjaran River is a tributary of the Logawa River, flows from North to South, and approaches the Serayu River with a water catchment area of 47.16 km². Residents around the river widely use the Banjaran River for activities in agriculture and daily activities such as bathing, washing, and domestic waste disposal. This causes the Banjaran River to be polluted. With the existence of micro hydro activities, it is necessary to monitor and manage the environmental conditions of river waters. The research method uses a survey method and purposive random sampling at five station points based on the surrounding area and human activities. The composition of macroinvertebrates is described in descriptive form based on the percentage of each family in the community. The biotic indices such as LQI, FBI, EPT, and SIGNAL 2 were analyzed by comparing the interpretations of the five stations. Water quality is evaluated based on physical-chemical parameters and compared to PP No.22/2021. The most applicable biotic index is determined based on sensitivity to organic matter addition and constant with chemical parameters. Macroinvertebrates obtained in the Banjaran River consisted of 35 families with the common species Perlodidae, Hydropsychidae, and Oligochaeta families. The biotic indices applied in Banjaran River can detect organic matters based on family scores. The water quality of Banjaran River is still quite good in accordance with the PP No. 22/2021 quality standard but received the organic matters at Stations IV and V. The LQI index was the most applicable and can indicate the organic matters of Banjaran River.

Key words: *Banjaran River, biotic indices, macroinvertebrate, water quality*

Abstrak

Sungai Banjaran merupakan anak Sungai Logawa, mengalir dari Utara ke Selatan, bermuara pada Sungai Serayu dengan luas daerah tangkapan air 47,16 km². Warga sekitar sungai banyak memanfaatkan Sungai Banjaran untuk kegiatan pertanian dan kegiatan sehari-hari seperti mandi, mencuci, dan pembuangan limbah domestik. Hal ini menyebabkan Sungai Banjaran tercemar. Dengan adanya kegiatan mikrohidro, maka diperlukan pemantauan dan pengelolaan kondisi lingkungan perairan sungai. Metode penelitian menggunakan metode survey dan purposive random sampling di lima titik stasiun berdasarkan wilayah sekitar dan aktivitas manusia. Komposisi makroinvertebrata dideskripsikan dalam bentuk deskriptif berdasarkan persentase tiap famili dalam komunitas. Indeks biotik seperti LQI, FBI, EPT, dan SIGNAL 2 dianalisis dengan membandingkan interpretasi kelima stasiun tersebut. Kualitas air dievaluasi berdasarkan parameter fisika-kimia dan dibandingkan dengan PP No.22/2021. Indeks biotik yang paling sesuai ditentukan berdasarkan sensitivitas terhadap penambahan bahan organik dan konstan dengan parameter kimia. Makroinvertebrata yang diperoleh di Sungai Banjaran terdiri dari 35 famili dengan kesamaan spesies Perlodidae, Hydropsychidae, dan Oligochaeta. Indeks biotik yang diterapkan di Sungai Banjaran dapat mendeteksi bahan organik berdasarkan skor famili. Kualitas air Sungai Banjaran masih cukup baik sesuai baku mutu PP No. 22 Tahun 2021 namun mendapat bahan organik di Stasiun IV dan V. Indeks LQI paling aplikatif dan dapat menunjukkan bahan organik Sungai Banjaran.

Kata kunci: *Indeks Biotik, Kualitas Air, Makroinvertebrata, Sungai Banjaran*