

The Determination of Water Quality by Using Biotic Sediment Index in Kovada Channel and Its Linked Lakes (Lake Eğirdir and Lake Kovada) (Isparta/TURKEY)

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Aim of the study: This study was carried out between July 2010 and June 2011 and aimed to determine the biological water quality in Kovada Channel and its connections including lakes Kovada and Eğirdir.

Material and Methods: Lake Eğirdir is an “A class wetland” according to international criteria and in terms of the protection of biological diversity and it is the fourth largest lake in surface area size in Turkey. The lake connects to Lake Kovada via a regulator and channel system, and water of the lake flows to Lake Kovada which is one of the most important Nature Conservation Areas in Turkey. A total of 9 stations were selected; 3 from the southern part of Eğirdir Lake, 3 from Kovada Channel and 3 from the northern part of Lake Kovada (channel connection area) in this study. Benthic samples were collected monthly, twice from each station, using an Ekman-Birge grab (15×15 cm²), washed through a sieve series and identified to genera and species levels under the stereomicroscope in the laboratory. Biotic sediment index (BSI) was used to determine the biological water quality.

Results: As a result of the examination of the collected organisms, a total of 64 taxa were detected: 23 from Oligochaeta, 20 from Chironomidae, 12 from Mollusca, and 9 from the other groups. When the distributions of the organisms according to their stations are taken into consideration, the dominant groups were determined as Mollusca in Lake Eğirdir, Oligochaeta in the channel and Chironomidae in Lake Kovada. When evaluating dominant species detected during the study, together with their ecological situation, it is seen that Kovada Channel was hypereutrophic and Lake Kovada was eutrophic. Although organisms representing the eutrophic structure were dominant in Lake Eğirdir, organisms that can live in water with low contamination and fresh water with high oxygen content were also detected. The water quality was determined at each station based on benthic invertebrates (Biotic Sediment Index). According to BSI, Lake Eğirdir was determined as moderately polluted, Lake Kovada as polluted and the channel as highly polluted water quality class.

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