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ANALYZING THE HUMAN IMPACT ON BEGA RIVER'S OVERALL WATER QUALITY CONDITION VIA BENTHIC MACRO INVERTEBRATES IN THE CITY OF TIMIȘOARA AND SURROUNDINGS

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Abstract

Benthic invertebrate communities, through the nature of their life cycle, are particularly sensitive to the stress caused by polluting discharge. Due to this aspect, the characteristics of the living environment act as an effective tool for detecting and reducing stress conditions. The present study was undertaken to investigate the density, numerical abundance and frequency of the benthic macro invertebrates in four different sampling points of the Bega River in the area of Timișoara and its surroundings, in order to indirectly evaluate the overall water quality condition and trends in the aquatic environment. A total of 20 water samples from each location were seasonally collected, processed and screened for the presence of benthic communities using the specific determination keys. Overall, ten groups of invertebrates including *Oligochaeta* subclass, *Diptera* order (larvae of the family *Chironomidae, Ceratopogonidae* and *Tipulidae*), *Lamelibranchiata*, *Hirudinea*, *Nematoda* and *Gastropoda* classes; and *Trichoptera*, *Isopoda*, *Coleoptera* and *Odonata* orders were identified, with differences in the monitored parameters according to sampling points and seasons. The recorded values of the monitored parameters demonstrated different effects in urban towards rural environment, and the resulted consequences can be represented by undesired noticeable changes on the natural environment. The self-purification phenomenon of the Bega River is developing, with quite good results observable at the level of the monitored two sampling points located downstream from Timișoara. However, the overall water quality condition, is still not superior, fact proved by the absence of the most sensitive invertebrate groups.

Key words: Bega River, macro invertebrates, pollution, water quality

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