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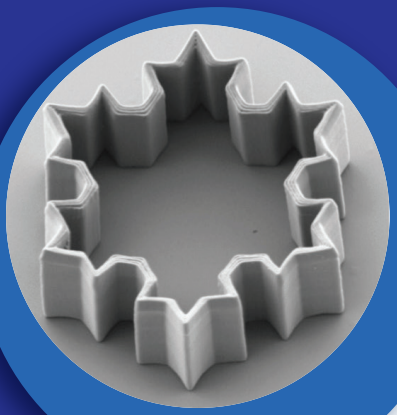

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Aquatic Macroinvertebrate Assemblages in Assessment of Ecological Status - Sutjeska National Park Case Study

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The aim of this study was to assess the ecological status of the River Sutjeska and its tributaries, based on macroinvertebrate assemblages. Alongside fish and algae, in assessment of ecological status of watercourses, macroinvertebrates are the most commonly used group of organisms. This group is characterized by high diversity, relatively long life, and low mobility. Also, these assemblages are constituted of numerous taxa with different tolerance to pollution and other pressures as hydromorphological degradation. These traits make the group favorable bioindicators. Biological and environmental value of watercourses can be assessed with use of biological indices. Nowadays, the Sutjeska basin is under low anthropogenic influence, and the main area of the basin is within borders of the Sutjeska National park. Since Sutjeska tributaries provide high amount of water, especially in spring, there is intention for building small hydropower plants on some of these watercourses. Constructing and putting them into operation would pose a real threat to the biodiversity of the area. For the ecological status of the watercourses assessment following indices were used: Total number of taxa, Diversity Index (H'), Saprobic Index (SI), Biological Monitoring Working Party (BMWP) and Average Score Per Taxon (ASPT). Samples from 10 watercourses (16 localities) were taken using standard benthological hand-net (multihabitat sampling procedure) in summer of 2015. During the investigation, a total of 119 taxa, from 16 main macroinvertebrate groups were recorded. The most diverse and abundant groups were insects belonging to orders Ephemeroptera, Plecoptera, Trichoptera and Diptera. According all indices at the majority of localities water quality was excellent (I class), with following indices values (min-max): Number of taxa (22-54), Diversity (2,28-2,93), Saprobic index (1,22- 1,76), BMWP score (104-164), and ASPT (6,12-7,5). Only two localities at two small tributaries had good to moderate water quality (II-III class), which is due to its location where moderate anthropogenic pressure is present. Significant part of the assemblages are organisms that have xeno and oligo-saprobic valence. Construction of power-plants within borders of a national park is illegitimate. Also, the potential harm of such facilities threatens the recorded diversity and undisputable ecological value of the area, which makes it undesirable.