Biological zonation of the last unbound big river in the West Carpathians: reference scheme based on caddisfly communities

A thorough understanding of biotic communities distribution in predisturbance state is essential for predictions of their future changes related to human activities. In this regard, pre-damming data on spatial distribution of benthic communities are highly valuable. Caddisflies were sampled at 14 sites of the Hron River and analysed in order to establish longitudinal zonation of the river and to determine environmental factors affecting assemblages' distribution in the longitudinal profile. A total of 2600 individuals of caddisflies belonging to 40 taxa of 12 families were recorded. Diversity of caddisflies was found to be higher in the upper (rhithral) part of the river. Major change, with shift to much more uniform caddisfly assemblages, occurred in the middle part of the river. Four zones (subzones) were distinguished using caddisfly communities: epirhithral, metarhithral, hyporhithral and epipotamal. Canonical correspondence analysis demonstrated the determining influence of altitude and conductivity on the caddisflies. Pre-damming zonation patterns presented here could serve as basic information for management of the Hron River as well as a reference scheme for other, previously dammed big rivers in the West Carpathian region.

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