

Publication

Studies on eucrenal-hypocrenal zonation of springs along the river mainstream: a case study of a karst canyon in Bosnia and Hercegovina

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The canyons in Dinaric karst are known to harbour a diverse aquatic fauna living in springs along the river mainstream. However, the knowledge on the ecology of these springs and also on the springs in mountainous areas of the Balkan Peninsula in general is poor. This study is focused on the macroinvertebrate assemblages of three different types of springs along the Cvrcka River (Republic of Srpska, Bosnia and Herzegovina). The aim of this study was to check whether existing criteria for regional spring zonation in Central Europe are applicable also for riparian springs with short springbrooks bordering high order streams. The macroinvertebrates were collected seasonally for one year at two different distances from the source: at the source, and approximately 2–3 m from the source ("springbrook"). At the spring sources, we found 59 species and higher taxa while in the springbrooks 61 species and higher taxa were recorded. Diptera represented the most abundant taxon, followed by Amphipoda and Trichoptera. No strong trend for the Margalef's index for the spring source and springbrook was detected, while the Shannon's diversity index increased in the springbrook of the studied springs. Our analysis did not prove significant differences between the macroinvertebrate assemblages from the source and springbrook. Based on faunistic data we suggest that small riparian springs with a short outflow likely do not exhibit true spring zonation but may show a "quasi-zonation" defined as a possible hidden differentiation between spring source and springbrook. Our study shows that criteria for spring zonation are not suitable for riparian springs bordering high order streams.

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