

Publication

A first approach to a faunistic crenon typology based on functional feeding groups

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Author(s) Von Fumetti, Stefanie; Nagel, Peter

Author(s) at UniBasel [von Fumetti, Stefanie](#) ; [Nagel, Peter](#) ;

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Springs are ecomorphologically and faunistically diverse freshwater ecosystems. Their limnological classification has been a

focus of interest since crenic research began. Despite many attempts to include the crenic fauna in the classification of springs, there

is no faunistic crenon typology. Over a three-year period we investigated the macroinvertebrate assemblages and the physical,

chemical and ecomorphological conditions of 82 springs in the Swiss Jura Mountains, north-western Switzerland. Based on these

data we selected the 25 least-disturbed springs to develop a faunistic crenon classification. Based on functional feeding groups we

differentiated three crenon groups. An analysis of similarities and nonmetric multidimensional scaling for the substratum types

supported the crenon groupings. In general we can distinguish between springs that are dominated by scrapers and characterized by

a lotic environment, and those that are mostly inhabited by filtering collectors, associated with a lentic environment. Those two

crenon types are the extremes of a continuum. Particular crenon forms, such as those with extensive carbonate deposits, lie between

these extremes. This third group is characterized by gathering collectors and shredders. Using this approach we can distinguish

faunistic crenon types, based on functional feeding groups, which reflect the abiotic conditions within the springs. We provide a

foundation for a faunistic crenon typology which now can be tested in other landscapes and will then be applicable to other low

mountain ranges in Europe.

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