

Publication**Macroinvertebrate assemblages of natural springs along an altitudinal gradient in the Bernese Alps, Switzerland****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 3342049**Author(s)** Wigger, Fabian William; Schmidlin, Lara; Nagel, Peter; von Fumetti, Stefanie**Author(s) at UniBasel** [von Fumetti, Stefanie](#) ; [Wigger, Fabian](#) ; [Grieder, Lara](#) ; [Nagel, Peter](#) ;**Year** 2015**Title** Macroinvertebrate assemblages of natural springs along an altitudinal gradient in the Bernese Alps, Switzerland**Journal** Annales de Limnologie**Volume** 51**Number** 3**Pages / Article-Number** 237-247

Alpine springs are sensitive ecotones which are inhabited by highly adapted organisms. Studies on how the species assemblages change vertically have not been conducted previously. We investigated 35 natural springs along an altitudinal gradient of about 2000 m in a valley in the Bernese Alps over 2 years. The aim of this study was to investigate the changes of the macroinvertebrate assemblages of natural springs along this gradient and to find out which environmental factors determine the distribution of the species along the altitudinal gradient. The spring fauna was quantitatively sampled three times and a wide range of environmental parameters were measured. The species richness significantly decreased with increasing altitude and the composition of the species assemblages changed distinctively along the altitudinal gradient. The low-elevation springs were dominated by crenobiont species, whereas high-altitude springs were mostly inhabited by taxa typical for Alpine headwaters in general. The mid-altitudinal range was a transition zone where crenobiont and alpine species co-existed. The water temperature was an important factor determining the species richness and the composition of macroinvertebrate assemblages of the springs at different altitudes. Moss, stones and the degree of forestation also had a significant influence on the composition of the macroinvertebrate assemblages. This study helps to understand the distribution of the spring fauna along altitudinal gradients. Knowing the current distribution ranges is an important prerequisite to predict potential changes of the species distribution, caused by global change, in the future.

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