

Public Abstract

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Title:Comparative analysis of aquatic insect, amphipod, and isopod community composition along environmental gradients in rheocrene spring systems of Missouri

Although Missouri is well-known for its abundance of springs, the biology and ecology of these spring systems are poorly studied and understood. Studies investigating the species that inhabit spring systems are necessary for proper management and conservation of these unique systems and the organisms that inhabit them. Thus, the goals of this study were to examine the aquatic insect, amphipod, and isopod communities in 16 spring systems in Missouri not only to get a comprehensive list of the species that live in these systems, but also to determine if the communities vary among and within spring systems and, if so, to determine if these variations are related to environmental variables in each system. Results show that the aquatic insect, amphipod, and isopod communities present in spring systems with high water discharge may vary based on the presence of trout and trout fisherman, whereas the communities in spring systems with low to medium water discharge vary depending on the region of Missouri in which each exists. The environmental variables measured in each spring system also corresponded with the region in which each spring exists, which may explain the observed differences in the species present. In addition, several state and federally listed species of conservation concern were collected, as well as species that are only found in the Interior Highlands region of the United States.