

Public Abstract

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Title:DIVERSITY OF MACROINVERTEBRATES IN TRIBUTARIES OF THE JACKS FORK AND CURRENT RIVERS, OZARK NATIONAL SCENIC RIVERWAYS, MISSOURI AND EFFICACY OF SPRING-FED TRIBUTARIES AS REFUGIA

Disturbance is a dominant force shaping stream communities and recovery from disturbance requires the presence of refugia or environments where disturbance effects are lessened. In the Missouri Ozark region, groundwater-dominant streams or spring-fed tributaries are possible refugia. To determine if spring-fed tributaries serve as thermal refugia to macroinvertebrates, the movement of macroinvertebrates and the community composition were measured from spring-fed and surface-fed confluences in the Current River, Missouri during the middle of winter and summer. Macroinvertebrate communities in summer could be placed into three categories: surface-fed tributaries, Current River main channel, and spring-fed tributaries. Spring-fed tributary macroinvertebrate communities were unique in composition which suggests these tributaries were unlikely thermal refugia for macroinvertebrates because they were not a reflection of the communities present in the entire confluence. At the smaller-scale of mesohabitats within the tributaries, communities were unique and could be categorized as belonging to the structural environment of riffles, pools, and marginal vegetation. Further work on a family of flies, Chironomidae, within these mesohabitats revealed that this family alone could convey the same community relationship patterns as those revealed using the entire macroinvertebrate community. Refugia work indicates spring-fed tributaries could be important contributors to the numbers of macroinvertebrates transported downstream to support recovery in the main channel. Work at the mesohabitat scale revealed high structural diversity in the streams with corresponding diversity in macroinvertebrate communities. Work on the Chironomidae indicated potential use of this family in habitat assessment especially in environments unsuitable to other macroinvertebrate taxa.