

## **Changes in macroinvertebrate composition across side channels of the Upper Mississippi River**

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Large rivers are diverse both in available habitat, and the biological communities they support, but are often heavily modified for economic, environmental, and social interests. Side channels of these rivers, which are connected branches off the main channel, provide sheltered and heterogeneous habitat for organisms such as macroinvertebrates. However, few studies have explored differences among side channels and their biological communities, particularly across large geographical scales. My objective was to describe aquatic macroinvertebrate community composition within side channels ( $n = 23$ ) of six pools in the Upper Mississippi River System (UMRS) along a 2000 river km longitudinal gradient. I tested the hypothesis that macroinvertebrate abundance, taxonomic richness, and proportion of Ephemeroptera, Plecoptera, and Trichoptera (EPT%) would change from upstream to downstream. Macroinvertebrates were collected using rock baskets and Hester-Dendy samplers following a 30-day colonization period ( $n = 134$  samples), and I counted and identified them to genus. Macroinvertebrate abundance varied between 77 – 15,221 organisms across side channels but did not vary significantly across pools. I found longitudinal trends for both richness and EPT%, in which richness decreased from upstream to downstream, while EPT% increased from upstream to downstream. My results suggest that side channels may be more important habitat for certain taxa, such as those represented by our EPT%, in pools where off-channel habitats are less abundant. Future work will incorporate macroinvertebrate functional traits and side channel characteristics (e.g., connectivity to main channel) to test hypotheses about what influences biotic community composition and diversity at different spatial scales.