

## **Macroinvertebrate Community Biomonitoring for Tallgrass Prairie**

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The objectives of the macroinvertebrate biomonitoring was to detect changes in the macroinvertebrate community over time that may reflect changes in water quality, especially in areas like Tallgrass Prairie NP where resources for direct measurement of water quality are limited. Qualitative assessments of the physical habitats were also made to address their potential impact on community metrics. Detection of adverse changes may allow management actions to be taken to minimize impacts or to remediate impacts to water quality. In general, the macroinvertebrate community metrics show good water quality for the streams sampled at TAPR. The metrics for the TAPR sites are higher than other parks in the tallgrass region (WICA and PIPE), sampled with similar gear, and compare favorably with the metrics for pristine Ozark and prairie streams. The metrics closest to the values for the regional parks with more impaired water quality are those most sensitive to organic enrichment effects; the FBI and the EPT ratios. These metrics probably reflect the cumulative impacts of grazing on these systems. The macroinvertebrate metrics show that water quality in the TAPR streams is presently good, but also point out the tremendous interannual variability in such environmental data, and the desirability of obtaining baseline data reflecting the range of environmental conditions at TAPR. In particular, data reflecting normal to wet rainfall periods would be highly desirable. Nevertheless, the metric values and changes in metrics shown by the available data demonstrate the utility of using macroinvertebrate sampling as a monitoring tool.