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BENTHIC MACROINVERTEBRATE COMMUNITY ASSESSMENT OF CLEAR CREEK, SPRING RIVER WATERSHED, MO, FOLLOWING FISH KILL MAY 2014.

In May 2014, Tyson Foods, improperly discharged ALIMET™, a chicken food supplement, to the Monett Municipal Waste Water Treatment Facility (MMWWTF). This resulted in the destruction of the biological treatment at the MMWWTF. The death of the bacteria in the wastewater treatment plant led to the discharge of improperly treated sewage, with high ammonia concentration, into Clear Creek. This resulted in one the largest fish kill in Missouri history affecting >8km of waterway downstream. The purpose of this study was to continue the monitoring of the benthic macroinvertebrate community of Clear Creek, since the fish kill, in order to assess this trophic level of the ecosystem. The results of the biological assessments can also be used to infer water quality. Three sample locations, with varying distances from the wastewater treatment plant, were assessed in March 2016, 2017 and 2018. Metrics assessed included: Total Taxa, Ephemeroptera, Plecoptera and Trichoptera (EPT) Index, Shannon Diversity Index and Hilsenhoff's Family-Level Biotic Index (HBI). Post fish kill data for sites 1 and 2 were also compared to available historical (pre-fish kill) assessments. Spatially, results of total taxa, EPT, and HBI results indicate increasing water quality with increased distance from the MMWWTF. Preliminary temporal results indicate lower total taxa and EPT score in 2018. This decrease is most likely associated to heavy flooding at these site locations a few weeks prior to sampling. Continued assessment will have to take place to confirm this connection. Overall, research on the condition of the Clear Creek has shown the potential for recovery; however, some results indicate continued impairment that may slow the recovery process.