

Fall 2024 Macro-Invertebrate Survey in the Cut River and Big Creek

On September 5 and 6, 2024, the macroinvertebrate sampling team surveyed Big Creek and Cut River for all types of macroinvertebrates (insects, spiders, crustaceans, mollusc, worms) and performed a habitat assessment of each stream. The team followed sampling and processing protocols provided by the Michigan Clean Water Corps (MiCorps) and the Muskegon River Watershed Assembly. The weather was beautiful for sampling at Big Creek. The creek was at 8 degrees Celsius, which was perfect for the Brook Trout. Samples were collected on both sides of the Dewey Avenue culvert. Weather at the Cut River was cooler, but the water warmer at 17.5 degrees Celsius. Sampling on the Cut River is below the dam and before the highway culvert on E. Higgins Lake Drive.

The species diversity and abundance sampled from each stream provide a measure of the water quality present at the time of sampling. For Big Creek, the team identified 10 species groups of macro invertebrates with the most abundant species being scuds. Very few of the species groups that are sensitive to pollution like mayflies and stoneflies were seen. For the Cut River, 12 species groups were identified with the majority being scuds. As seen in previous years, the Cut River had more species sensitive to water quality (e. g. dragonfly, caddisfly, and mayfly) than Big Creek.

This is the fourth year of macroinvertebrate sampling in the fall in each stream. In general, at least three time periods of data allow one to determine if a trend in water quality may exist. The table below is a summary of the water quality for each stream in the past four years based on Micorps protocols for the macroinvertebrate sampling.

Date	Cut River	Big Creek
9/2021	very good	good
8/2022	good	fair
9/2023	good	Very good
9/2024	fairly poor	good

Big Creek appears to be holding fairly steady with more than half the years in the good and very good level of water quality. The Cut River had a large drop in water quality rating in 2024 compared to previous years due to the low abundance of macroinvertebrates in the samples processed by the pickers. Our more experienced pickers noticed fewer insects in the Cut River samples, and we also had one less picker at this location compared to previous years. These two factors may have contributed to the low abundance numbers for the Cut River. If we had counted only 5 more macroinvertebrates, the water quality result would have been "good". In addition, the green filamentous algae, that was first noticed a couple years ago, is now covering the Cut River bottom throughout the sampling location in the river, which may be altering the habitat that supports macroinvertebrates.

Stream access and worksites were provided by Earl Townsend for the Cut River and by Bill Schmidt for Big Creek. Volunteers for the sampling and processing this year were Wayne and Susan Brooks, Rick Larobardiere, Dan Schaeffer, Candy Hendrickson, Linda Stevens, Jamie and Melanie Brown, and Duncan and Kathy Lawrence. Wayne Brooks and Jamie Brown provided photos of sampling and processing. We greatly appreciate everyone's help and support! We are always looking for new helpers, including high schoolers, so please contact Melanie Brown at Alaskamel@gmail.com if you are interested.



Dan Schaeffer, Kathy Lawrence, Duncan Lawrence, Rick Larobardiere, and Melanie Brown identifying and preserving macroinvertebrates collected at the Cut River, September 6, 2024. Photo by Jamie Brown.



Macroinvertebrates from the Cut River sorted into species groups. September 6, 2024. Photo by Jamie Brown

Duncan Lawrence ferrying river water for processing samples from the Cut River, September 6, 2024. Photo by Jamie Brown





Melanie Brown, Dan Schaeffer, and Kathy Lawrence sorting samples from Cut River. September 6, 2024. Photo by Jamie Brown



Caddisfly adult collected from Big Creek,

September 5, 2024. Photo by Wayne Brooks

Snail collected from Big Creek, September 5, 2024. Photo by Wayne Brooks

