

# Little Hawk Lake

## Benthic Macroinvertebrate Health Assessment 2023

### Background

Benthic invertebrates spend all or part of their lives at the bottom of waterbodies and are affected by cumulative water quality. Groups such as Ephemeroptera, Odonata, and Trichoptera (EOT) are sensitive to pollutants and serve as indicators of good water quality. Benthos are inexpensive to study, relatively simple to identify, and are directly associated with ecosystem health.

### Research Goals

- Collect data that can be utilized in the future to evaluate water quality and overall health of the lake through the study of benthic macro-invertebrates
- Provide insights on the perceived state of Little Hawk Lake
- Contribute to baseline data for use in future projects



Ephemeroptera



Isopoda

### Purpose

To use benthic macro-invertebrate data collected following a modified OBBN protocol to create baseline data on the health of Little Hawk Lake, located in Haliburton, Ontario. The baseline data will be used in future research and long-term biomonitoring by U-Links and the Halls & Hawk Lakes Property Owners Association (HHLPOA), as well as when making future management decisions about the lake.

### Research Question

What is the current health of the benthic macroinvertebrate community in Little Hawk Lake?

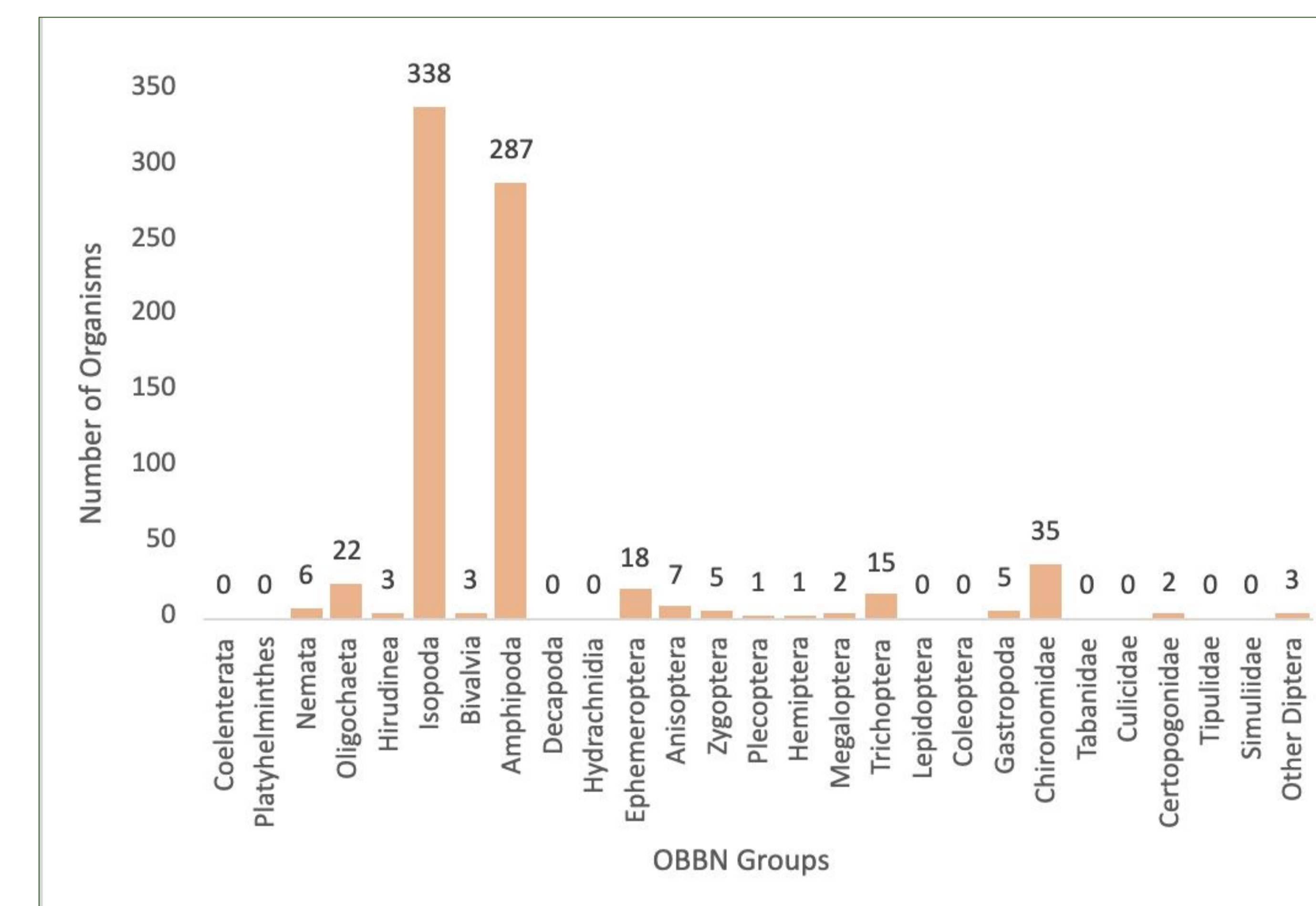
### Methods

U-Links team members, Trent University Applied Biomonitoring students, and members of the HHLPOA visited 4 sites by boat.

Site features and information regarding the vegetation, substrate, and terrestrial landscape in and around each site were recorded. A modified version of the Ontario Benthos Biomonitoring Network (OBBN) kick and sweep protocol was followed. This protocol was followed at all 4 sites to collect benthic macroinvertebrates. In the lab, invertebrates were randomly sampled using the teaspoon method. All invertebrates were identified using the OBBN 27-taxa grouping. Indices calculated included: Modified Hilsenhoff Family Biotic Index (FBI), % EOT, Simpson's Diversity Index, and % Amphipods vs. % Insects.



### Findings



Isopoda and Amphipoda were the dominant groups in Little Hawk Lake. Chironomidae and Oligochaeta were also abundant. The results from sampling sites 1 and 2 showed a % EOT rating of "Typical", while sites 3 and 4 had a rating of "Atypical" and "Extremely Atypical" respectively. This suggests that sites 3 and 4 have lower than expected water quality for the area.

### Next Steps

An additional year of benthic monitoring is recommended to complete the 5 years of sampling required to establish a baseline for comparison. A future consideration for this research project would be to include pre-sifting equipment for site sampling to ease later sorting efforts in the lab.

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