

BIOMONITORING

In The Upper Athabasca Watershed



The Athabasca Watershed Council launched its five-year river biomonitoring project in May 2020. This project aims to monitor benthic invertebrate communities in the Upper Athabasca Watershed over time. The Canadian Aquatic Biomonitoring Network (CABIN) sampling protocols will be used, along with the Sequencing the Rivers for Environmental Assessment and Monitoring (STREAM) eDNA metabarcoding analysis, and a taxonomic analysis.

The Upper Athabasca Watershed is in the eastern slopes of Alberta where an increase in pressures from human uses may impact water quality and aquatic ecosystems. Comparable monitoring is needed to measure change throughout this region. Therefore, the AWC and its partners are working together to perform biomonitoring in the eastern slopes using the CABIN protocols to measure change in invertebrate communities over time.



Alberta's eastern slopes are the headwaters for the Athabasca, Peace, North and South Saskatchewan Watersheds. Increased pressures from human uses, including forestry, mineral and energy extraction, communities, cattle grazing, motorized recreation, hunting, fishing, horse back riding, hiking and camping, may impact water quality and aquatic ecosystems.

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To collect benthic invertebrates in the Upper Athabasca watershed the Canadian Aquatic Biomonitoring Network (CABIN) sampling protocol is used. Samples collected are sent to the Sequencing the Rivers for Environmental Assessment and Monitoring (STREAM) eDNA metabarcoding analysis at the University of Guelph and a CABIN trained taxonomic expert.



CABIN is a national biomonitoring program by Environment and Climate Change Canada (ECCC) to assess wetlands, streams, and river habitats. It was developed to provide a standardized sampling protocol and a recommended assessment for determining the aquatic ecosystem. CABIN training provides the tools necessary for groups to conduct consistent comparable and scientifically credible assessments of streams. Learn more at this [link](#).

The STREAM project uses eDNA metabarcoding to analyze benthic samples collected by community-based water monitors faster, cheaper and more accurately. Learn more at this [link](#).

