



The Ontario Headwaters Institute, a provincial corporation with charitable status, has three main areas of activity:

Research The foundation of the OHI's research efforts focus on science, policy, and performance related to the ecological integrity of Ontario's framework approach to watershed management;

Education Our desire to share with and learn from others includes OHMapping, Headwater Hikes, our YouTube Channel, and speaking to a range of audiences; and,

Civic Engagement Work in this portfolio is delivered mostly in collaboration with other organizations. The most recent example was facilitating six meetings with 13 partners across South-central Ontario in 2018 in the WaterScape project, which was followed up with a 2019 survey on sustainable planning.



Headwaters

The Ontario Headwaters Institute

The Ontario Headwaters Institute is a registered charity delivering research, education, and civic engagement to help preserve and protect Ontario's headwaters & their catchments, their natural heritage & biodiversity, and our watersheds & receiving waters.

From the undulating hues of the Oak Ridges Moraine, the bounty of forests and agricultural lands, and Ontario's rivers and lakes, our headwaters and their watersheds are the foundation of Ontario's ecological, economic, and social vitality.

The OHI works to protect this foundation through meaningful environmental safeguards, sustainable planning, and sound stewardship, and has emerged as a leading Ontario non-profit organization focused on watershed management.

Please visit our website or contact us at your convenience for more information or to explore partnership opportunities.

www.ontarioheadwaters.ca
Andrew@ontarioheadwaters.ca
416 231 9484

Headwaters

The Ontario Headwaters Institute

What are Headwaters?

The OHI defines headwaters as:

- Surface collection areas including ephemeral and intermittent streams, as well as groundwater infiltration areas and sub-surface flows;
- Areas of groundwater discharge and upwelling;
- Vernal ponds, spring-fed ponds, and wetlands;
- First, second, and third order streams, as shown in the drawing. A first order stream is one with no tributaries, while a second order stream starts where two first order streams converge, and so on.

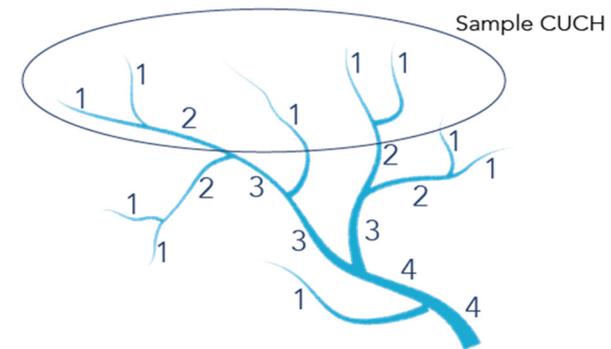
Why are headwaters important?

Headwaters and their catchments, areas drained by small streams:

- Drain the majority of surface area in a watershed;
- Comprise the majority of stream length in most watersheds;
- Contribute the majority of flow to most watercourses;
- Help regulate watercourse flow – through natural cover, soil type, and geology – to both surface and groundwater, which impact flooding, erosion, and water budgets for downstream areas;
- Furnish key habitat types for the breeding, feeding, and sheltering of upstream species. In fact, more species require headwaters at some point in their lives than any other type of habitat; and,
- Nurture downstream ecosystems by providing significant portions of a watershed's nutrients, organic material, and sediment, thereby providing the base of a watershed's biodiversity and resilience.

CUCHs - Contiguous Upland Headwater Catchments

This drawing demonstrates how stream order works. The circles show what the OHI has called CUCHs – Continuous Upland Headwater Catchments - areas where first and second order catchments touch.



Our research shows that CUCHs constitute critical reservoirs that protect regional ecological integrity and that might benefit from innovative policies in watersheds that face increasing development.

The OHI's Vision for Watershed Management

Ontario has been in the forefront of watershed management since 1941. We believe that Ontario should build on its past success by:

- Establishing provincial targets for watershed health similar to those in the How Much Habitat is Enough, a federal guideline;
- Embracing Integrated Watershed Management, including the allocation and integration of appropriate resources;
- Adopting standardized permitting practices, perhaps based on Ontario Natural Heritage Reference Manual;
- Pursuing adaptive management, with an expanded framework for education, outreach, and public engagement to protect our watersheds; and,
- Including headwaters more comprehensively in watershed mapping, planning, monitoring, reporting, and restoration.