

Headwaters

The Ontario Headwaters Institute

The Ontario Headwaters Institute is a registered charity working to protect Ontario's headwaters, natural heritage, and watersheds.

Established in 2003, the OHI initially focused on headwaters.

Whether found in the undulating hues of the Oak Ridges Moraine, the bounty of agricultural lands, the boreal forest, or the Hudson Bay lowlands, Ontario's headwaters are the foundation of our watersheds, economy, and social vitality.

With the evolution of more holistic perspectives in ecosystem science and policy since 2003, and indeed since before then, we expanded our mandate in 2018 to include natural heritage, full watershed management, and the health of receiving waters such as the Great Lakes.

While the OHI will continue to champion the health of our headwaters, our new mandate will enable us to expand our role as the preeminent non-profit organization in Ontario focused on watershed management.

We will do so through our three main portfolio areas - research, education, and civic engagement - as well as various projects, most of which are delivered in partnership with organizations sharing a common cause.

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

Research The foundation of the OHI's efforts focuses on science, policy, and performance as they relate to headwater health and watershed management. Some of our research projects morph into efforts on Education or Civic Engagement;

Education Our desire to share with and learn from others includes OHMapping, Headwater Hikes, our YouTube Channel, and speaking to a range of audiences. Look for a new initiative on watershed management in 2019; and,

Civic Engagement Work in this portfolio occurs independently and in collaboration with other organizations in order to move the science, policy, and implementation yardsticks toward an enhanced watershed management framework in Ontario.

Please contact us for more information.

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What are Headwaters and why are they so important?

The OHI defines headwaters as:

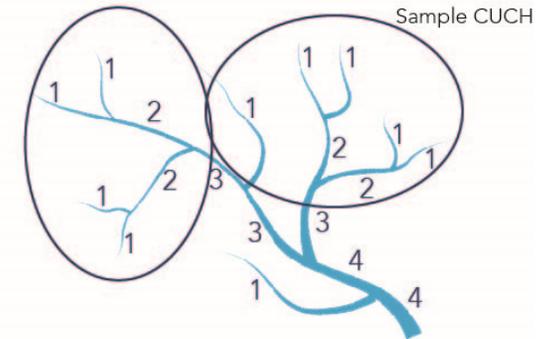
- Surface and groundwater collection areas, and sub-surface flows;
- Areas of groundwater discharge and upwelling;
- Vernal ponds, spring-fed ponds, and wetlands;
- Headwater drainage features, including ephemeral and intermittent streams;
- First, second, and third order streams, as shown in the drawing.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

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 ground water, which 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.

Headwaters and 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 facing increasing development.

What is our Vision for Watershed Management?

Ontario has been in the global forefront of watershed management for more than fifty years. We believe that Ontario should build on its past success by:

- Establishing provincial targets for watershed health and 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;
- Including headwaters more comprehensively in watershed mapping, planning, monitoring, reporting, and restoration; and,
- Pursuing a science-to-stewardship framework, with expanded education, outreach, and engagement efforts to protect our watersheds.