



The Ontario Headwaters Institute has three main areas of activity:

Research The OHI's research efforts focus on science, policy, and performance related to the ecological integrity of Ontario's framework approach to watershed management. Our research often evolve into educational or engagement initiatives, such as Headwater Hikes and WaterScape;

Education We seek to both share information and learn from others, such as through 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, resulting in scores of activities each with multiple partners that engaged hundreds of participants across South-central Ontario. A recent example includes WaterScape, which facilitated 6 meetings with 13 partners across South-central Ontario and its Declaration to Preserve Ontario's Ecological Integrity.



Headwaters

The Ontario Headwaters Institute

The Ontario Headwaters Institute is a registered charity whose research, education, and civic engagement portfolios seek to preserve and protect Ontario's watersheds, their natural heritage, and our 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 three main portfolios – Research, Education, and Civic Engagement – as well as projects and programs, that support meaningful environmental protection, sustainable planning, and integrated watershed management.

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

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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:

- Adopting a sustainability lens for land use planning, with targets similar to How Much Habitat is Enough, a federal guideline;
- Transitioning the Province to Integrated Watershed Management, engaging key agencies to secure environmental, economic, and social wellbeing;
- Establishing minimum ecological permitting protections across ministries, conservation authorities, and municipalities, perhaps based on the Ontario Natural Heritage Reference Manual;
- Implementing cumulative monitoring and a science-to-stewardship framework for regeneration actions; and,
- Including headwaters more comprehensively in watershed mapping, planning, monitoring, reporting, and restoration.

What are Headwaters?

The OHI defines headwaters as:

- Surface collection areas including ephemeral and intermittent streams, 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:

- Drain the majority of surface area of a watershed;
- Comprise the majority of stream length in a watershed;
- Contribute the majority of flow to most watercourses;
- Help regulate that flow to both surface and groundwater through natural cover, soil type, and geology, which impacts 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.

A Key Challenge

In spite of an historically robust environmental policy regime, the lower sections of many of our watersheds have become significantly degraded, especially in South-central Ontario, leaving headwater areas as defacto reservoirs of regional forests, wetlands, niche habitats, and water quality and quantity. The OHI believes that this may require a new approach to protecting headwaters and their Continuous Upland Headwater Catchments.

