



**Headwaters**
The Ontario Headwaters Institute

The Ontario Headwaters Institute is a registered charity that works to preserve and protect Ontario's watersheds, their natural heritage, and our receiving waters such as the Great Lakes and Lake Simcoe..

In addition to crafting submissions and petitions on key ecological issues in Ontario, some recent OHI efforts have included:

AGGREGATES: Posting the results of a University of Guelph Capstone project on the landscape impacts of aggregate extraction in the Credit watershed, both on our website and on our YouTube channel. Contact us for the urls;

WATERSHED HYDROLOGY AND LAND USE IN THE GREATER GOLDEN HORSESHOE: Posting a set of drawings by students at the Geomatics Institute at Fleming College to help people visualize the implications of development on the natural resources of the GG. Contact us for the url; and,

COWG: Facilitating the creation of the Coalition of Ontario Water Guardians, at www.COWG.ca, to help protect Ontario's watershed security - water for people and for nature - to help safeguard public health, ecological integrity, and economic vitality. See www.COWG.ca.

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 through projects, that support meaningful environmental protection, sustainable planning, and integrated watershed management.

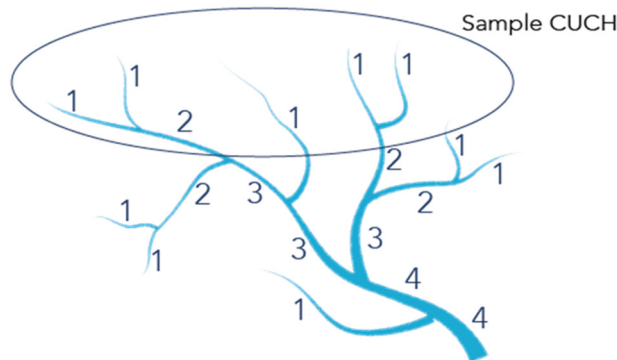
Please visit our website or contact us at your convenience for more information or to explore partnership opportunities.

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

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.
- See the text on the right regarding a CUHC.

Why are headwaters important?

Headwaters and their catchment areas:

- 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, with implications for flooding, erosion, and water budgets for downstream areas;
- Furnish key habitat types for the breeding, feeding, and sheltering of many 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.

The Need to Protect CUHCs: Contiguous Upland Headwater Areas

Across the province, but especially in South-central Ontario, urban development historically clustered near large lakes, while upland areas were rural and/or well-suited to agriculture. This has often meant that the lower sections of many of our watersheds contain significantly reduced natural heritage and degraded water, leaving headwater areas as natural reservoirs of regional forests, wetlands, niche habitats, and water quality and quantity.

As development continues to expand upstream, the OHI believes we need new approaches to sustainable planning and watershed management, especially in order to protect headwaters and where their low-order catchments are close together - what we call Contiguous Upland Headwater Catchments. These natural reservoirs should be carefully protected on their own, as well as to counter downstream damage and prevent whole watercourses from losing their ecological integrity, thereby disrupting public health and economic vitality.