

**Joint Submission to the Co-ordinated Land Use Planning Review:**

# **THE CONFLUENCE OF NEED AND OPPORTUNITY**

October 31, 2016

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PDF via e-mail

**RE: Co-ordinated Land Use Planning Review –  
Environmental Registry #s 012-7194, -7195, -7197, and -7198**

The undersigned organizations consider the proposed changes in the four plans in the Co-ordinated Land Use Planning Review as representing exemplary progress toward a better balance between natural heritage protection and development.

While we think the bar can be raised even higher, we are particularly supportive of the Province's efforts in the areas of:

- Growing the Greenbelt;
- Supporting agriculture;
- Setting aside some areas of natural heritage;
- Safeguarding both the water resource system and key hydrologic areas;
- Requiring for sub-watershed planning for new developments;
- Encouraging complete communities; and,
- Addressing climate change.

We are also encouraged - if naturally apprehensive about unclear processes and outcomes - on what we call the Four Directions: the inventories of both natural heritage and agriculture; the development of a guideline for watershed management; and the intent to (identify and) protect significant surface water contribution areas.

While other submissions may predominantly address either clause-by-clause comments and/or potential deletions and additions to the Greenbelt, this submission focuses on areas in which we perceive that the Review does not go far enough and is not fully integrated with aligned initiatives, including efforts to implement the Great Lakes Protection Act, develop a new wetland strategy, and update the Conservation Authorities Act.

In addition, we believe that the Province lacks both a sense of urgency and a sense of direction on several issues. The urgency is clear, as Ontario's headwater areas in particular are under increased pressures from a growing population, greater demand for natural resources & agriculture, and a changing climate. On direction, we believe that several issues need to be embraced in a more robust and comprehensive approach than one driven primarily by land use planning.

**As a result, we perceive that the Review represents a timely confluence of need and opportunity, and we urge the Province to use the Review and its aligned initiatives to integrate its approaches to better protect Ontario's natural heritage, watersheds, and headwater areas.**

Our comments and recommendations cover broad areas and include:

- The establishment of natural heritage protection targets across the province - especially in conjunction with the planned natural heritage and agricultural inventories;
- The implementation of Integrated Watershed Management - as the key focus of both the promised watershed management guidance document and under the current review of the *Conservation Authorities Act, 2006*;
- The elimination of numerous policy gaps and inconsistencies in the implementation of Ontario's watershed and headwater management regimes;
- The inclusion of headwater mapping, monitoring, and management in the current regime of watershed management - especially vis-a-vis the Province's proposed direction to protect significant surface water contribution areas; and ,
- Broad discussion on how conservation, stewardship, and remediation programs can be enhanced across Ontario.

The organizations and contact information listed below indicate support for this joint submission. We offer the comments and recommendations immediately following this information.

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## 1. Natural Heritage

In 1992, Canada agreed to the recommendation from the World Commission on Environment and Development that 12% of each type of habitat be protected nationally. In 1998, *How Much Habitat is Enough* (revised in 2004 and 2013) suggested that 50% of each watershed be set aside as a low-risk threshold for the future, with 40% as a medium threshold and 30% as a high-risk threshold.

More recently, E. O. Wilson, the father of conservation biology, bolstered the higher figure of 50% based on emerging perspectives of the extent of the damage that humans have done to both regional habitat and whole systems.

We are encouraged that the Co-ordinated Land Use Planning Review has suggested that 30% of some areas under development be retained in natural heritage, and that several conservation authorities target 30% for their jurisdictions.

We are discouraged, however, that the Province has chosen a high-risk threshold in an area of significant development, and has no natural heritage targets to protect Ontario outside of the Greater Golden Horseshoe (GGH).

While this review has suggested that some new developments set aside 30% of areas in natural heritage, we need extensive discussion on this. Is 30% adequate? What does protected mean? How do we account for agriculture? Do we do this on a per development basis, a watershed basis, and/or a broader scale?

This last question is extremely important. While the Review's suggestion that "at least 30 per cent of the total developable area of the site will remain or be returned to natural self-sustaining vegetation" is welcome, it may be prescriptive of broader initiatives. We are not against setting aside 30% of any area in a new development for natural heritage, but we would oppose any short-term perspective that might mandate a patchwork approach to natural heritage based on individual developments that might preclude the creation of a larger network of linked areas across a watershed or ecological region.

### Recommendation 1: Protecting Natural Heritage

**Ontario should consult on the establishment of thresholds for how much natural heritage should be set aside to protect our ecological integrity, biodiversity, and the well-being of future generations. The consultation should:**

- a.) **Be based in part on the federal publication *How Much Habitat is Enough* and the Ontario Natural Heritage Reference Manual;**
- b.) **Be held in conjunction with the Province's proposed directions in the Greater Golden Horseshoe (GGH) on both the promised natural heritage and agricultural inventories;**
- c.) **Address a balance amongst large regional targets, watershed targets, and local development targets, including discussion on the protection of significant surface water contribution areas and the construct of the Ontario Headwaters Institute (OHI) on contiguous upland headwater catchments, as described in Appendix 1, and,**
- d.) **Consider areas beyond the GGH, especially for the Far North, the watersheds draining in to Lake Superior, and other areas facing significant development.**

Recommendation 2: No Negative Impacts

Section 4.2.2. 4 b) i of the proposed amendments to the Growth Plan states that “there will be no negative impacts on *key hydrologic features* or *key natural heritage features* and their functions”. We note that there is no definition of negative impacts; that almost all urban development in the Greenbelt has had negative impacts on surface water quantity, quality, and/or temperature; and that the monitoring of negative impacts on surface water will depend on pre-development benchmarks. As such, the clause represents a virtually unattainable goal.

**We urge the Province to add a definition of negative impacts and to revise section 4.4.2 4 b) i so that it better represents both an aspirational and a practical objective.**

2. Integrated Watershed Management and Land Use Permitting

We are encouraged by the new direction proposed in the Review to require watershed planning prior to the issue of land use permits and that commits the Province to craft a watershed planning guidance document within two years of the implementation of the new direction.

We are concerned, however, that this direction will establish different policies in different parts of the province; that it is somewhat vague, especially on the process for crafting the guideline; and that it will take some time to implement once the guidance document is finalized.

We therefore suggest that the Province move quickly to embrace Integrated Watershed Management (IWM).

As described by Conservation Ontario, an organization which represents Ontario’s 36 conservation authorities, IWM is “the process of managing human activities and natural resources in an area defined by watershed boundaries. It is an evolving and continuous process through which decisions are made for the sustainable use, development, restoration and protection of ecosystem features, functions and linkages. Integrated watershed management allows us to address multiple issues and objectives; and enables us to plan within a very complex and uncertain environment.”

Currently, IWM is being embraced by leading jurisdictions around the world; has been recommended for Ontario by the province’s Environmental Commissioner; and is being pursued by several conservation authorities while other CAs and natural heritage agencies in the province implement most of its tenets under the term Adaptive Management.

In addition to the improved delivery of specific watershed management, a commitment to IWM led by the Province might help mandate better inter-agency collaboration across the province and include the implementation of the shift to cumulative monitoring broached frequently in the past, such as in the Provincial Policy Statement (2014).

Recommendation 3: IWM and the Proposed Watershed Planning Guideline

**Ontario should focus its commitment to develop a new watershed management guidance document on Integrated Watershed Management and include the establishment of clear ministry mandates and defined roles for other agencies, such as municipalities and conservation authorities.**

Recommendation 4: IWM Advisory Committee

**Ontario should create a multi-sectoral committee to advise on both the development of the guideline referred to above and on the earliest possible implementation of IWM in Ontario.**

Recommendation 5: IWM Implementation

**We support the establishment of an on-going multi-stakeholder table to regularly address the implementation of IWM in Ontario, as recommended by Conservation Ontario in the review of the Conservation Authorities Act, provided it includes representatives from civil society.**

Recommendation 6: Require Watershed Planning before issuing Land Use Permits

**As an immediate and required step before launching a two-year development of a new watershed planning guideline, Ontario should require watershed planning across the province prior to the issue of land use permits by amending section 2.2.1 a) of the Provincial Policy Statement as follows:**

**“using the requiring watershed and/or sub-watershed plans as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development”.**

3. Addressing Gaps in our Watershed and Headwater Management Regimes

In spite of progress in how land use planning seeks to protect natural heritage and water, we consider the current land use planning regime inadequate for the protection of the aquatic resources in the Greenbelt, and indeed throughout Ontario, without a more robust policy and implementation framework for Ontario’s approach to watershed management.

In spite of Ontario’s early leadership in watershed management, we find significant gaps across most key aspects of watershed management: legislation, regulations, and policies, as well as with respect to the allocation of appropriate resources for enforcement, mapping, monitoring, restoration, and stewardship.

Similar comments could be made regarding community engagement, access to data, transparency, and accountability. We note, for example, a deep disaffection across several social sectors for the almost complete absence of meaningful ecological data for the Review, as for the earlier review of the PPS.

At another level, we note that there has been no public participation in the establishment of report card indicators and their grading system. Those grades too often use watershed averages, which obscure poor performance in some geographic areas and can sometimes be massaged into public relations messages that conditions are acceptable.

In contrast, studies from Earthroots, Ecojustice, EcoSpark, and others demonstrate that there are no un-impacted streams on the Oak Ridges Moraine and that water quantity and quality have been sacrificed to development, while the Headwater Mapping project of the Ontario Headwaters Institute provides visual evidence of the extent of human impact on streams, riparian cover, and forests.

While we are encouraged by some of the proposed new wording in the Review on protecting water and watersheds, we find them essentially inadequate. In addition to the recommendations above on implementing IWM and requiring sub-watershed plans prior to the issuing of development permits, we recommend the following to address gaps in the water, watershed, and headwater management regimes in Ontario.

Recommendation 7: Regional Water Quality

Ontario's existing Provincial Water Quality Objectives (PWQO) list scientific objectives for clean water. Unfortunately, there are no thresholds for action, and no directives requiring action, even if a body of water should fail to meet one or more objectives, even badly, and even year after year.

**Ontario should move rapidly to develop thresholds and levels of appropriate action to address exceedances under the Provincial Water Quality Objectives.**

Recommendation 8: Great Lakes Water Quality

In spite of Ontario being an implementation partner to the Great Lakes Water Quality Agreement, and although water quality in the Lakes can be significantly impacted by lakeside point-source pollution, Ontario has not moved assertively to link water quality in the Great Lakes with the quality of water flowing in to the Lakes from in-land sources. Nor have the promised electronic source of pollution maps for Ontario-based Areas of Concern have ever been published.

We further note that while the status of eight of the nine objectives in the recently-published Lakewide Action and Management Plan for Lake Superior were assessed as "good", the status of the ecological conditions in main tributaries and watersheds, the ninth indicator, was assessed as "fair".

**We urge Ontario to take a lead role in implementing IWM for the Great Lakes and its watersheds, balancing the current predominance of a lake-based perspective with increased effort to connect the Lakes with their watersheds, and to link the water quality of the Lakes with inland sources of pollution.**

Recommendation 9: Ontario Regulation 97/04

While the Province has in the recent past required consistency from conservation authorities for permit application fees and response times, it has allowed the proliferation of huge disparities in conservation authority guidelines required under O. Reg 97/04 for Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses. And while we acknowledge that recent updates of these guidelines in some conservation authorities are extensive, comprehensive, and embrace up-to-date science and emerging policies such as the precautionary principle, others are out-dated, inconsistent, inadequate to the modern planning framework, and can contain significant errors, such as inaccurate definitions of headwaters.

**Ontario should move expeditiously, perhaps within the framework of the proposed watershed planning guidance document, to develop a common guideline for O. Reg 97/04 to be used by conservation authorities.**

Recommendation 10: Low Impact Development

Ontario, its conservation authorities, and its municipalities are currently pursuing Low Impact Development as a way to reduce run-off in urban areas. We understand the direction, and have minor concerns about both the potential proliferation of non-point source pollution and budgets for swale maintenance.

We have more important reservations, however, about the larger emerging framework of municipal “whole water” management that considers that municipal water starts at the municipal boundary, dis-connected from full watersheds.

While managing run-off in urban areas is important, overall flow is best protected through preserving natural heritage, maintaining regional forests and wetlands, and ensuring extensive riparian cover.

**Ontario should balance its approach to low impact development in urban areas with assertive rural efforts to preserve natural heritage, maintain regional forests and wetlands, and ensure extensive riparian cover.**

4. Protecting Headwaters

We note that there are clear, overlapping aspects in Ontario’s valued areas of natural heritage, significant surface water contribution areas, and the OHI’s construct of contiguous upland headwater catchments.

Unfortunately, the current reality is that our headwaters are not well mapped, there are few indicators of headwater health in watershed report cards, and there is no public participation in agency discussions on the evolution of Conservation Ontario’s watershed report card template. We offer the following suggestions.

Recommendation 11: Headwater Mapping

We are aware that many CAs don’t map ephemeral or intermittent streams, and that as much as 30% of wetlands shown on aerial photos in the Land Information Office are no longer there. This indicates that aerial photographic material used by the Province and regional agencies may not be current enough to be used over their budgeted life-cycle.

This is particularly important as emerging technologies, such as queries to generate automated reports, are promised to generate better deliverables as more and more ministry cut-backs for staff continue to be implemented. As it would be difficult to generate accurate reports based on a dearth of mapping and/or obsolete photos, Ontario needs either more up-to-date photos or ways to track changes.

In addition, we are that most conservation authorities have no mandate, and no funding, to replicate the OHI’s Headwater Mapping initiative. OHMapping is a unique project with three key outcomes: it colour-codes watercourses by stream order so they are better seen and tracked across the landscape; it allows for immediate visual identification of where streams have been straightened or placed under ground; and it shows the extent to which combined 1<sup>st</sup> and 2<sup>nd</sup> order stream catchments may have significantly reduced forest and/or riparian cover.

Mapping similar to that in OHMapping but applied across the broader landscape would allow members of the public to visualize the condition of our headwaters and their watersheds, and could serve as a basis for automated queries on some headwater conditions for inclusion in watershed report cards.

In addition, expanded headwater mapping could be a significant tool to assist in the Province's direction on identifying and protecting significant surface water contribution areas, particularly if they incorporated other data layers on indicators on water quantity, quality, and temperature.

**We urge the Province to pursue the creation of a common GIS template so that agencies can show stream order and combined 1<sup>st</sup> and 2<sup>nd</sup> order catchments; that the template have a capacity to display multiple layers of data such as on water quantity, quality, and temperature; and that Ontario support the development of automated queries for meaningful indicators of headwater health for inclusion in watershed report cards.**

Recommendation 12: Headwater Monitoring and Indicators of Headwater Health

We understand that watershed report cards must be selective - using meaningful scientific indicators and grades to accurately describe conditions for members of the public, without becoming unwieldy in length or technical jargon.

We are concerned, however, that most watershed report cards do little to depict the health of our headwaters, and in fact use watershed averages for things like water quality that both reduce the impact of urban areas and fail to flag emerging problems in upland headwater areas.

**We urge the Government to facilitate multi-sectoral discussion on the inclusion of headwater indicators in watershed report cards, and we offer the following indicators for discussion:**

- **Percentage of remaining historic wetlands in 1<sup>st</sup> and 2<sup>nd</sup> order catchments;**
- **Percentage of combined 1<sup>st</sup> and 2<sup>nd</sup> order catchments in natural heritage;**
- **Percentage of 1<sup>st</sup> and 2<sup>nd</sup> order streams, by stream order, that have been altered;**
- **Percentage of 1<sup>st</sup> and 2<sup>nd</sup> order streams with 30 M of natural cover (one and both sides);**
- **Conformity of historic flow at confluence of 3<sup>rd</sup> and 4<sup>th</sup> order streams;**
- **Water Quality Indices at confluence of 3<sup>rd</sup> and 4<sup>th</sup> order streams; and**
- **Water temperature at confluences of 3<sup>rd</sup> and 4<sup>th</sup> order streams.**

Recommendation 13: Protecting Significant Surface Water Contribution Areas

**Ontario should include the need for both headwater mapping and headwater indicators, as described in the two preceding recommendations, in assessing significant surface water contribution areas that may be proposed for protection under the Review.**

Recommendation 14: Public Input into Ontario's Watershed Report Card Template

**Ontario should ensure public participation in and transparency for discussions on the evolution of Ontario's watershed report card template.**

Recommendation 15: Using Ecological Indicators in Provincial Reviews

**Ontario should ensure adequate public input on the selection of meaningful ecological indicators for future reviews of land use planning effectiveness and ensure that the data is made available to the public in a timely manner prior to such reviews.**



## 5. Increased Efforts on Conservation, Stewardship, and Regeneration

Ontario has numerous champions of conservation, stewardship, and remediation, in the private, public, and government sectors. Key programs include:

- General programs such as Earth Day and more targeted efforts such as Earth Hour, waste reduction and recycling initiatives, Bike to Work Week, and many more;
- Sectoral initiatives such as the Ecological Farm Plan of the Ontario Federation of Agriculture; the Cornerstone Standards Council for the aggregate sector; and forestry initiatives such as the Forest Stewardship Council;
- Provincial and conservation authority efforts aimed at cottagers and other land owners to maintain forest cover, shorelines, stream edges, and wetlands, including a Provincial initiative to plant 50 Million Trees on private land, being delivered through Trees Ontario;
- Regional programs to regenerate degraded or fragmented natural habitat, as well as to acquire lands; and,
- Organizations that facilitate land trusts and easements.

Unsurprisingly, the challenges are daunting. Funding is always a problem, as is adequate publicity to raise public awareness and participation. Program delivery can lag. People can object to government guidelines for private property, as if “their” water could not possibly cause flooding or illness downstream. The biggest challenges, however, are philosophical.

We note that:

- The Province has still not embraced the need for a conservation culture, and has had numerous efforts fail for a lack of on-going commitment. Examples include the early termination of efforts on pollution prevention and the Conservation Bureau, delays in addressing water conservation under various Great Lakes agreements, and even the dropping of the second half of the title for the Ontario Water Opportunities and Conservation Act;
- In 2013, the Province ceased direct support for regional Stewardship Councils;
- There is limited discussion on possible incentives and credits for farmers, who might with some help be able to increase buffers beside streams, leave wetlands where they are, restore past wetlands, and even reduce water-takings by building sloughs or similar features;
- The Province is proposing a four-stage wetland mitigation / compensation strategy. The first three stages to avoid harm, minimize disruption, and mitigate damage make sense. Rushing in to the proposed fourth stage of compensation, without seeing how the first three work, may lock Ontario into a commodification mindset that favours certain players, could be unalterable, and is based on a wishful belief in carbon credits that ignores the prospects that wetlands may run dry and that carbon credits for such wetlands may require to be reimbursed; and,
- Regional restoration projects based on opportunity rather than any sense of ecological priority, which might be better informed under a science-to-stewardship framework based on monitoring.

Overall, while we find that Ontario’s framework for stewardship is delivering beyond its limited resources, it is fragmented, under-funded, and in need of Provincial leadership. We recommend the following.

### Recommendation 16: Adopting a Conservation Culture

**Ontario should launch renewed efforts to embrace and foster a conservation culture, spanning energy, water, food, and materials while challenging the use of disposable goods.**

Recommendation 17: Stewardship and Regeneration

**Ontario must take a leadership role in public awareness on stewardship and regeneration, adopt a stewardship- to-regeneration framework, and should facilitate broad discussion on how stewardship and remediation programs can be enhanced across Ontario.**



**Conclusion**

Ontario's natural heritage, its watersheds, and its headwaters areas are facing increased and increasing pressures from a growing population, a greater demand for natural resources and agriculture, and a changing climate.

Fortunately, the current direction in the Co-ordinated Land Use Planning Review provides encouraging efforts to address some these challenges, although they do not go far enough.

Unfortunately, they lack urgency and are not fully integrated with aligned initiatives, including efforts to implement the Great Lakes Protection Act, develop a new wetland strategy, and update the Conservation Authorities Act.

These threads represent a timely confluence of need and opportunity, in which Ontario should step up and augment its approach to land use planning - both across the province and while better integrating Ontario's approaches to protect natural heritage, our watersheds, and our headwaters.

We urge the Province to address the full synergy of the challenges we face by pursuing:

- The establishment of natural heritage protection targets across the province - especially in conjunction with the planned natural heritage and agricultural inventories;
- The implementation of Integrated Watershed Management - as the key focus of both the promised watershed management guidance document and under the current review of the *Conservation Authorities Act, 2006*;
- The elimination of numerous policy gaps and inconsistencies in the implementation of Ontario's watershed and headwater management regimes;
- The inclusion of headwater mapping, monitoring, and management in the current regime of watershed management - especially vis-a-vis the Province's proposed direction to protect significant surface water contribution areas; and ,
- Broad discussion on how conservation, stewardship, and remediation programs can be enhanced across Ontario.

Please feel free to contact us at your convenience or to contact Andrew McCammon of the Ontario Headwaters Institute if any of our comments or recommendations require clarification.

**Appendix 1:**

**The OHI Construct of Contiguous Upland Headwater Areas**

The Ontario Headwaters Institute (The OHI) is a provincial corporation with charitable status that focuses on research, education, and best practices to protect our headwaters.

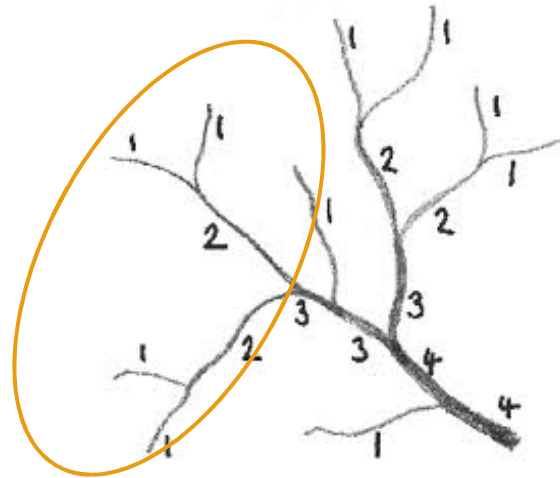
We define headwaters as:

- Surface drainage features, including ephemeral and intermittent streams;
- Groundwater recharge areas and aquifers;
- Vernal pools, spring-fed ponds, and wetlands
- Areas of groundwater discharge and upwelling; &
- First, second, and third-order streams.

A first order stream is one with no tributaries, as per the drawing to the right. A second-order stream starts where two first-order streams converge, and a third-order stream starts where two second-order streams meet.

First and second-order streams can be permanent, ephemeral (where flow is based on precipitation), or intermittent (where flow occurs when the water table rises).

It is rare for a third order stream in Ontario to not be permanent.



While headwater streams can occur anywhere, emptying for example directly into Lake Ontario rather than to another watercourse, most watersheds have significant portions of their headwater catchments in what the OHI calls “contiguous upland headwater areas”, demonstrated by the orange circle in the drawing. Contiguous upland headwater areas is an OHI construct consisting of the catchments of 1<sup>st</sup> and 2<sup>nd</sup> order streams that are side by side in the upland portions of our watersheds.

While headwater streams can occur anywhere, emptying for example directly into Lake Ontario rather than to another watercourse, most watersheds have significant portions of their headwater catchments in what the OHI calls “contiguous upland headwater areas”, demonstrated by the orange circle in the drawing.

While the definition of headwaters includes third order streams, the OHI excludes them from both this concept and in the catchment delineations in our OHMapping program. This is due to the synergistic facts that the first three orders of catchments would constitute significant majorities of the total area of most of the watersheds in south-central Ontario, while urban development increases as stream order rises.

We therefore perceive that the best opportunity to protect Ontario’s natural heritage and hydrologic integrity, especially in south-central Ontario, resides not only in our first and second-order catchments, but those that are contiguous in our upland areas.