15 Falcon Street.
Toronto, ON M4S 2P4
416-485-5103
rkindersley@georgianbay.ca

www.georgianbay.ca

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BY EMAIL:
ec.grandslacs-greatlakes.ec@canada.ca *and* *glo@ontario.ca*

Michael Goffin
Great Lakes National Program Office
Environment and Climate Change Canada
4905 Dufferin Street
Toronto, ON
M3H 5T4

Carolyn O'Neill
Great Lakes Office,
Ministry of the Environment, Conservation and Parks
40 St Clair Avenue West, Floor 10
Toronto, ON
M4V 1M2

Response to the Draft Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2020

We would like to thank you for the opportunity to provide input to the terms of the Draft Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2020 (the "Agreement") and commend both the federal government (Canada) and the Ontario government ("Ontario") for implementing this consultation process. We support the intent of this Agreement and the protections it offers the Great Lakes and its watershed, but believe that there is additional action that should be taken with respect to Georgian Bay. In particular there is a need for an improvement to long term strategies to protect and preserve the unique Georgian Bay ecology and its pristine ecosystem.

The Georgian Bay Association (GBA) is an umbrella organization for 19 community associations along the east and north shores of Georgian Bay, Lake Huron, representing around 3,000 families. We have been advocating on behalf of our land-owning members for over 100 years and estimate that we reach around 18,000 residents of the Georgian Bay. Our mandate is to work with our water-based communities and other stakeholders to ensure the careful stewardship of the greater Georgian Bay environment.

General Comments

In GBA's view:

- The Agreement is primarily a cleanup plan and lacks identification of many pollution sources, accountabilities and penalties that should be applied. The goal is to protect and restore the Great Lakes, however, the emphasis is on restoration and precautionary steps. Actions that should be taken for future protection are unclear, because a strategy has not been developed for measures to prevent, for instance, future Areas of Concern. In this respect prevention is more effective and less expensive than recovery/remediation. There is therefore benefit in recognizing that there is tremendous diversity in the Great Lakes watershed between developed areas and semi-wilderness, near pristine environments. While remediation and ecological recovery is a necessary and laudable goal, the Agreement would do well to enhance its focus on prevention through acknowledging areas, such as the eastern and northern coasts of Georgian Bay, which is in a largely in-tact state and provides innumerable and relatively inexpensive ecological values, provided that its ecosystem remains functional.
- Detailed plans to hold polluters accountable are needed.
- Volunteer organizations need to be provided with better tools by Canada and Ontario to improve the ability of their members to deploy preventive measures.
- The methodology under the Agreement involves many time-consuming assessments and reporting on issues. This means that current practices are likely to continue until action is taken **after** the reports and studies are completed. The Precautionary Principle states that *"where there are threats of serious or irreversible environmental damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".* GBA recommends that this principle should be applied more vigorously to accelerate protective measures **before** the reports and studies are completed.
- Instead of tax payers financing cleanups, tax dollars should be used to reduce the risk of pollution and the responsible parties should finance cleanups..

Recommendations

The purpose of this response is to make recommendations on changes and additions that GBA feels should be made to the Agreement. Our recommendations will follow the order that the relevant items appear in the Agreement, showing any GBA recommended changes to the text in red, and follow those recommendations with an explanation of why the change should be made.

Recommendation 1: add "Georgian Bay" to Definitions, page 4
(e) "Great Lakes" means the waters of Lakes Superior, Huron, Michigan, Erie and Ontario, Georgian Bay, and the connecting river systems of St. Marys, St. Clair including Lake St. Clair, Detroit, Niagara and St. Lawrence at the international boundary or upstream from the point at which this river becomes the international boundary between Canada and the United States, including all open and nearshore waters;

Georgian Bay, in particular the eastern and northern shores, has the following features which makes it unique within the Great Lakes system and requires that it be separately recognized and accorded additional focus and identity in the Priorities, associated Annexes and their respective action plans set out in the Agreement:

- The eastern shore is a UNESCO designated Biosphere Reserve recognized as having international significance;
- Together, the eastern and northern shores and waters (including the eastern end of the North Channel of Lake Huron, known as the Bay of Islands) contain the largest global fresh water archipelago (30,000 islands);
- This area has the largest biodiversity of amphibians and reptiles in Canada and one of the largest in the world;
- In addition, there is a substantive biodiversity of other aquatic biota, land-based fauna, birds, insects and flora;
- The islands and shore of this area have a collective shoreline of 10,000 kms, which is longer than the collective shoreline of all the other Great Lakes;
- There are 53 species at risk and endangered species in this area which are all thriving;
- The ~19,000 wetlands in this area and the nearby watershed is more extensive, more biologically significant and more diverse than all of the wetlands in all of the other Great Lakes;
- These wetlands, and the extent to which they filter water, are a vital component in maintaining good water quality both in Georgian Bay, Lakes Huron and Michigan and downstream through the Great Lakes system;
- Wasaga Beach is thought to be the longest freshwater beach in the world;
- Manitoulin Island, which borders the northeast section of Georgian Bay, is the largest global freshwater island; and, finally
- The 12 First Nations bands and other residents in this area all share a passionate devotion to protecting the environment, which is enshrined in the Township of the Archipelago's official plan and bylaws (dictating all their operations); there is a need to extend this municipal structure of "Environment First" throughout the entire area to ensure the long-term protection and preservation of this unique archipelago from the incursions of human activities.

Recognizing Georgian Bay as a distinct "6th Great Lake" will be of significant assistance in achieving the long-term protection and preservation of this unique archipelago and its biodiversity. Please see the United Nations Designation here: http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/europe-north-america/canada/georgian-bay/

The aims of the Georgian Bay community are to keep its waters clean and to be citizen guardians of this unique ecosystem for generations to come. It will be substantially less expensive (and more prudent) to implement strong protections for these relatively pristine waters, and avoid the costly remediations that have been required in many locations elsewhere in the Great Lakes resulting from inappropriate shoreline over-development, industrial activity, agricultural run-off and other human impacts on the shoreline and in the basin. For example, in Lakes Erie and Ontario where there are substantial, ongoing expenditures on remediation.

Recommendation 2: The Agreement should recognize the unique contribution of Georgian Bay to Great Lakes water quality and contain provisions that will maintain and enhance the ecology of Georgian Bay and its Biosphere Reserve.

Recommendation 3: The following general recommendations should be incorporated within the Agreement where applicable:

a) **Canada and Ontario must recognize that the aquatic invasive species Phragmites Australis, very destructive to wetlands and habitats, is in the early phase of establishment around the Great Lakes and should therefore be a priority invasive species to eradicate. Rapid detection and eradication efforts will be far more cost effective than delayed efforts and postponing activities will squander previous investments and efforts. Canada and Ontario should also recognize that coordinated efforts throughout the basin must be undertaken including treating vector pathways throughout the region, such as provincial highways and roads, and must be funded through to complete eradication to be effective. Georgian Bay Forever has examples of this successful sustained approach.**

b) **To achieve a sound scientific foundation Canada and Ontario should designate secure, recurring funding to support long-term monitoring programs with appropriate regional partners or agencies to achieve identified science requirements.**

c) **Canada and Ontario should fund the complete genetic inventory of all organisms in the Great Lakes region to determine present baseline biodiversity and relative abundance to facilitate future impacts and identify sentinel species and bio-tracers within systems that can be used as early indicators of ecological stress allowing adaptive management processes to be effective. DNA barcodes use a fragment of an organism's DNA to identify the taxonomic group to which an organism belongs. DNA barcoding began at the University of Guelph under Dr. Paul Hebert, and scientists there continue to lead national and international work aimed at developing a complete catalogue of the Earth's life forms.**

d) **Canada and Ontario should create, maintain and provide access to a digital, Geographic Information System (GIS) referenced data repository for all Great Lakes and related science information including data and reports to allow decision makers direct and easy access to the best available information to facilitate ongoing adaptive management, transparency, legislative and regulatory processes and allow public access to the scientific information.**

e) **There should be a detailed reporting of all relevant spending under Canada Ontario Agreement of 2014 in order to properly assess priority areas for funding under the Agreement. Transparent reporting of funding commitments, actual expenditures, progress and measurements of success must be a standard going forward. Therefore, the Agreement should include:**

- **Specific funding obligations sufficient to implement the commitments under the Agreement and the Annexes.;**
- **Transparent reporting of funding commitments and actual expenditures. Specifically, we recommend that Canada commit to a minimum $100 million per year investment under the Agreement and that Ontario make a similar significant annual funding commitment.**
- **Joint reporting on progress under the Agreement (rather than separately), and do so through publicly available biannual reports that use a consistent set of measures and indicators of progress and success.**
- **Holistic measures of success that incorporate natural, social and economic components of the Great Lakes – St Lawrence ecosystem. Connect with researchers that have developed or will be developing such indicators (e.g, University of Michigan's binational project to develop sustainability indicators) to determine the potential fit within the Agreement.**

ARTICLE III

PRINCIPLES

Recommendation 4
In order to ensure accountability and transparency to the Great Lakes – St Lawrence community, we recommend the following:

a) **Establish concrete, ambitious targets and timelines under the Agreement, as well as clearly articulated responsibilities for participating governments and stakeholders. "An 85 per cent reduction in mercury releases compared to releases in 1988 by 2005" from the 2002 CAO is an example of a clearly articulated target and timeline for mercury releases.**

b) **That Canada and Ontario clarify how cross Ministerial coordination will be managed and how, within a streamlined administration, implementation of the Agreement will be assured.**

c) **That Canada and Ontario clarify which body will oversee the implementation of policies that currently rely on the Agreement Management Committee.**

d) **Ensure that the existing requirement for Annex Leads to follow five-year work plans to guide implementation of the Agreement be maintained.**

ANNEX 1: NUTRIENTS

Recommendation 5: add "open net cage aquaculture operations" on Page 16 as below:
The reasons for the occurrence of algal blooms are now more complex than in past decades. The introduction of invasive species such as zebra and quagga mussels and round gobies, changes in agricultural production systems, open net cage aquaculture operations, increased urbanization, and climate change are all contributing factors. New solutions are required.

Recommendation 6: add "open net cage aquaculture operations" on Page 19 as below:
(i) Improve knowledge and understanding of the causal relationships between factors such as duration, intensity, frequency and timing of storms; aquatic invasive species; land use and management; open net cage aquaculture operations; hydrological processes; internal nutrient cycling; hypoxia and harmful and nuisance algal production in the Great Lakes;

This section clearly defines the need to reduce nutrient loading, particularly in nearshore waters where algae blooms are on the increase, and yet Ontario allows open net cage aquaculture operations which directly add nutrients into the nearshore waters of Georgian Bay and the North Channel of Lake Huron. Ontario is the ONLY Province or State within the Great Lakes that permits this free use of public waters for intensive monoculture fish farming that disperses the fish feces, and excess feed (sometimes containing antibiotics and pesticides) into the receiving waters disrupting the natural balance of the aquatic ecosystem. These nutrients and chemicals are assimilated into the surrounding water body and the cumulative effects, such as increased algae blooms (some toxic as shown in the photos below), are yet to be determined.

Picture taken by a resident in August 2019
Ontario has yet to revoke the license for this fish farm despite these regular algae outbreaks and the clear evidence from Ontario's Ministry of Environment that the fish farm is responsible.

This picture is from a research report conducted by Kelly Amber Hille in 2008 at Lake Wolsey, an embayment of the North Channel of Lake Huron.

Over the years there have been regular outbreaks of blue green algae at this fish farm - 1999, 2006, 2010, 2011, 2013, and every year from 2015 to 2019. The trend is clear – the deterioration of these waters is accelerating.

Canada has the ultimate jurisdiction over these waters and should not be allowing this practise to continue, but should instead, with Ontario, require this industry to move into fully sustainable enclosed facilities. Both Ontario and Canada have specific responsibilities under this Agreement to reduce nutrient loading where possible. Neither are living up to these responsibilities if they continue to allow non-sustainable open net cage aquaculture operations **without** any requirement to move these operations into fully sustainable enclosed facilities.
In fact, both Ontario and Canada are encouraging the open net industry to expand both in Lake Huron and into Lake Superior. Since alternative, fully sustainable enclosed methods of growing fish (see below) are readily available to this industry, this nutrient loading poses an unnecessary risk to water quality, because it could be avoided.
In this respect we have learned, in public presentations (see attached: *Ontario Aquaculture Research Priorities Roundtable 2019*), that the open net cage aquaculture industry in Georgian Bay and the North Channel has already grown from 4,000 metric tonnes per annum (mtpa) of annual production to 8,000 mtpa, and aims to grow the industry in Lake Huron and Lake Superior to between 30,000 and 50,000 mtpa over the next ten years."

We therefore ask both Canada and Ontario to determine what the growth of this industry may mean in the context of the international Great Lakes Water Quality Agreement, and the terms of this Agreement, given the high risk to water quality and native fish populations and habitat.

Furthermore:

- There is a current proposal by Ontario to renew all the current open net cage licenses in 2020 for a period of 20 years from the current 5-year renewals. **No public consultation has been permitted regarding this proposal.** See: https://ero.ontario.ca/notice/013-5097
- License renewals for open net cage operations are subject to only a Category A Class Environmental Assessment (EA) which is the lowest category. Category A means that: there is no public concern (GBA has repeatedly confirmed the concerns of the ~18,000 Georgian Bay residents about this industry for over 20 years); and the environmental impacts are negligible (blue green algae outbreaks, and escapees impacting native fish populations and habitat, are just two of the many documented negative environmental impacts from fish farms that Ontario is well aware of). This should be changed to a Category C or higher before the 2020 renewals are completed, to allow for a full environmental assessment appropriate to the public concerns and known impacts, and allow for a public consultation process that is appropriate to the risks associated with open net cage aquaculture operations in freshwater lakes. GBA was called in to participate in meetings and the drafting of the *Provincial Policy Objective for Managing the Effects of Cage Aquaculture Operations on the Quality of Water and Sediment in Ontario Waters.* The Ontario Ministry of Environment, Conservation and Parks (MECP) finalized this document on August 29, 2019. It was first put on the Registry in 2016, see: https://ero.ontario.ca/notice/012-7186. GBA is reviewing the document which MECP depicts as ensuring that the open net cage aquaculture operations will now be sustainable. Given: the previous closure of two of these operations and the need to now close a third; and the US determination that this industry poses an unacceptably high risk to Great Lakes water quality (see below); we question the use of the term "sustainable" in this context.

- Conversely, the land based fully sustainable enclosed methods of growing fish, such as the newer Recirculating Aquaculture Systems (RAS) and Aquaponic technologies, and the older pond and flow-through methods, are required to obtain Environmental Compliance Approval from MECP.

Recommendation 7: Canada and Ontario, work together to phase out open net cage aquaculture operations in Georgian Bay and the North Channel and support their move into sustainable enclosed systems.

In this context it is important to note the following:

- Two open net cage aquaculture operations off the north-east coast of Manitoulin island in Georgian Bay were closed by Ontario in past years due to severe water quality degradation including blue green algae, and/or hypoxic conditions of the receiving waters, and a third should be closed without delay:
  - **Closed:** La Cloche Channel where the undesirable anoxic (low oxygen) condition of the water was attributed to this operation and was documented by Hamblin and Gale (2002), Clerk et al. (2004) and within the Environment Commissioner of Ontario's reports to the Ontario legislature;
  - **Decommissioned:** Grassy Narrows, where Milne (2008) documented that it took approximately nine years, after operations ceased in 1999, for most of the accumulated fish deposits and excess feed to dissipate and that some detectable deposits of fish manure on the lake bed near the cage location still remained. Close to one third of the phosphorus occurring in the surrounding waters was attributed to this fish farm; and
  - **Lake Wolsey**, an embayment of the North Channel on Manitoulin Island, has had annual blue green algae blooms every year since 2010 (except 2014) and should be closed without delay. Two Ontario Ministry of the Environment reports confirm that these outbreaks are attributable to the open net cage aquaculture operation in this bay. These 2016 MOE reports are: THE STATE OF LAKE WOLSEY WATER QUALITY DYNAMICS and THE STATE OF LAKE WOLSEY PART II: SOURCE LOADING ASSESSMENT, both by Ngan Diep and Duncan Boyd, Environmental Monitoring and Reporting Branch, Water Monitoring and Reporting Section, Ontario Ministry of Environment and Climate Change (MOECC). The main findings of these reports were that the aquaculture operation is contributing around 45% of the phosphorous input into this bay, and wide-spread hypolimnetic anoxia was being caused as the result of this input exceeding the capacity of the bay to absorb these nutrients. Please also see the GBA press release on this matter earlier this year and recent posting of algae pictures at Lake Wolsey from early August, here:
    https://georgianbay.ca/gba-is-calling-for-the-closure-of-fish-farm-on-lake-wolsey/
    and here: https://georgianbay.ca/news/fish-farm-algae-and-potential-threat-to-pets
- The State of Michigan recently conducted a detailed review after fish farmers applied for open net licenses in Lake Michigan. They concluded that this industry posed too great a risk to water quality. As a result, no US Great Lakes state allows open net fish farms. See attached file: *Michigan Ministries Report to not permit cage aquaculture March 2016*

Here are the relevant conclusions reached by Michigan that can be found at the end of this report:
"The Michigan QOL agencies do not recommend pursuing of commercial net-pen aquaculture in the Great Lakes at this time for the following reasons:

- ***Given the ecological and environmental risks and uncertainties, as pointed out by the Science Panel and with further information provided through public input, commercial net-pen aquaculture would pose significant risks to fishery management and other types of recreation and tourism. Furthermore, both collaborating management interests and tribal nation interests would likely not agree to Michigan moving forward and pose a significant challenge in any attempts to do so.***

……

While not recommending the pursuit of commercial net-pen aquaculture in the public waters of the Great Lakes, the state can and will continue to work within existing authorities to assist the industry in development of well-designed flow through, closed and recirculating aquaculture facilities."

Finally, it should be noted that this industry does not have remediation provisions for the private operators to address the environmental degradation caused by the fish farm in the event that an operation is closed down. As noted above two sites have already been closed and it is likely that a third will follow shortly. The cost to Ontario to remediate these sites is likely to outweigh the financial support Ontario and Canada could provide to move the current operations into sustainable facilities. GBA would suggest that not remediating closed sites is inconsistent with the provisions of both this Agreement and the Great Lakes Water Quality Agreement. So why continue to allow this avoidable non-point source nutrient loading, which poses such an unnecessary risk to water quality and ecosystem health and a potential financial loss to government?

Why do Canada and Ontario insist on allowing this industry when the US states have determined that the risks to water quality are too high to permit it, following thorough scientific research on those risks?

How is this divergence consistent with the Great Lakes Water Quality Agreement under which both countries are supposed to work together to improve water quality and reduce the risks to water quality?

Given the above, why do Canada and Ontario insist on encouraging this industry to expand, provide them with free access to public waters and a free license to dump nutrients, pharmaceuticals and escapees into public waters, without any remediation performance bond to address the long-term impacts?

It is not only GBA who have been expressing concern on the impacts of this industry. Please see the attached synthesis of former Environmental Commissioner for Ontario Gord Miller's annual reports to the Ontario Legislature: *Excerpts from ECO (2000-2006) revolving issues*, which explains many of the issues that are still relevant today

Recommendation 8: Given the determination by the US Great Lakes states that open net cage aquaculture operations pose too high a risk to water quality, and given the terms and intent of the Great Lakes Water Quality Agreement, Canada should cease their support for this industry, and Canada and Ontario should reflect this decision in the Agreement.

Recommendation 9: The ANNEX 1: NUTRIENTS section should be reconfigured to extend all the Result 5 action items to all the Great Lakes.
Page 19
Result 5 – Improve understanding of sources of nutrients, nutrient dynamics, and transport, as needed, and the role nutrients play in the development of algal blooms and hypoxia in the Great Lakes ~~with an emphasis on Lakes Erie and Ontario~~.

Many of the action items in Result 5 are confined to Lakes Erie and Ontario, but, given the above statement on page 16 regarding the increase in algae blooms in other Great Lakes, these action items need to be carried out in all the Great Lakes. In addition to the above deletion the sub-clauses (a) to (o) need to be amended in this respect to remove references to Lake Ontario and Lake Erie, so that these clauses will apply to all the Great Lakes.

ANNEX 2: HARMFUL POLLUTANTS

Recommendation 10: Make the following amendments in red:

Canada will

Page 23
(f) For pollution prevention or control measures implemented under the Canadian Environmental Protection Act, 1999 or other federal Acts for Chemicals of Concern, deliver compliance promotion, monitoring and enforcement actions as appropriate, including increasing penalties and fines to industry to ensure that the cost of non-compliance substantially exceeds the costs savings from continuing to pollute.

Page 24
(g) Provide funding support to projects that increase participation in the application of beyond compliance measures through developing, implementing, assessing and promoting the use of innovative approaches and best practices. This should include development of implementation guidelines to support industry compliance with regulations and recognized standards. Financial incentives to support the development and implementation of innovative approaches and best practices should also be considered.

Add on Page 24 under "Ontario will - - :
In consultation with Canada, increase penalties and fines for failure to comply with Ontario laws and regulations regarding pollutants, to ensure that the cost of non-compliance substantially exceeds the costs savings from continuing to pollute. Ontario should also consider providing financial incentives to support the development and implementation of innovative approaches and best practices.

GBA suggests that problems stemming from established practises that pollute are likely to continue degrading water quality in the Great Lakes if enforcement continues to be weak and episodic. It is important that organizations and individuals perceive that they run a significant risk that the cost of continuing to pollute or skirt environmental regulations will exceed the costs of complying with regulations and investing in new technologies and practices that ensure compliance with regulations. This will likely require substantial increases in fines and penalties, as well as investing more resources in enforcement programs, including enabling officials to monitor compliance and effectively respond to complaints. Additional revenues from fines should be invested in enforcement programs and funding for innovations to help incentivize industry to eliminate pollutants from entering the environment.

Canada and Ontario should consider amendments to legislation to better enable citizens to take legal action for damages caused by violations of laws and regulations aimed at controlling pollutants.

Canada and Ontario should also specify that climate change is not only exacerbating the adverse effects of this pollution, but that climate change is increasing precipitation intensity and directly increasing the presence of this pollution, especially related to raw and partially treated sewage discharges into the Great Lakes due to aging combined sewage and storm water systems. Substantial and specific commitments must be made to enable municipal waste and storm water system upgrades and replacements in addition to green infrastructure investments.

ANNEX 3: WASTEWATER AND STORMWATER

Recommendation 11: Make the following amendments in red:

Result 1 – Excess nutrient loadings from stormwater and wastewater collection and treatment facilities in urban and rural communities are reduced.
Page 30
Canada and Ontario will:
Add a clause as follows:
Coordinate to ensure that municipalities are able to improve their infrastructure to eliminate stormwater and wastewater overflows, by identifying and implementing the optimum method of addressing the improvements and investments needed, andproviding program support to meet the costs of such improvements.

Result 2 – Contaminant loadings from stormwater and wastewater collection and treatment facilities in urban and rural communities are reduced.
Page 32
Ontario will:
Add a clause as follows:
Introduce regulations to oblige owners of rural domestic septic systems to inspect, and maintain or replace their systems to enhance environmental protection and eliminate pathogens and contaminants in effluents being discharged from these systems.

In Ontario legislation is in place to allow for regulations to be introduced that could eventually achieve the above objective. Ontario should review previous proposals that it has received on how to introduce these regulations in a way that should garner public support and compliance. It is estimated that around 70% of the rural domestic septic systems in Ontario are not functioning properly. This is therefore an important issue that can and must be addressed.

Some municipalities have instituted inspection programmes, which have led to improved system maintenance by property owners, but there is no Ontario requirement for municipalities to do this, and no Ontario regulatory framework to support these municipal initiatives. The attached report *FOCA 2018 AGM presentation on septics* and the 2019 report highlight the extent of the problem. The link to the 2019 report is after the third paragraph on this page:
https://foca.on.ca/septic-systems/

Given the extent of the current pollution from these deficient systems, we urge Ontario to consider introducing regulations that require all private septic system property owners to complete a regular inspection report, and then carry out all maintenance requirements identified. Since this can all be done by the property owner themselves, should they choose to do so, these inspections and the subsequent maintenance (if any) need not be intrusive, and will create a significant number of new jobs in rural Ontario.

ANNEX 6: LAKEWIDE MANAGEMENT

Recommendation 12: Make the following amendments in red:
Result 1– The status of each of the Great Lakes, including the connecting river systems, is regularly assessed and reported, and issues best addressed on a lake-wide scale are coordinated and implemented binationally through LAMPs and with domestic agencies and organizations.
Page 50
Canada will lead, with Ontario's support:
(a) Assessment and reporting on the state of the waters (physical, chemical and biological attributes) and ecosystem health of each Canadian Great Lake, its tributaries, wetlands and connecting channels including current and future potential threats and trends;
Add a clause as follows:
Both Canada and Ontario will ensure that the resources required to fulfil all the LAMP requirements under the Agreement on a timely basis are sufficient.

Rivers and streams flowing into all the Great Lakes pose current and potential future threats to water quality and therefore these tributaries should also be assessed by LAMPS. In particular for Georgian Bay there is a need for an updated analysis of the contribution of tributaries to the near shore of the eastern and northern shorelines - specifically analysis of phosphorus, nitrogen & nutrients.

It has come to our attention that there are insufficient resources being devoted to the LAMP program to allow government to fulfill its obligations thereunder on a timely basis.

Result 4 – Initiatives and lake-specific priority actions to address current and future threats to water quality and ecosystem health, as identified through LAMPs, the nearshore framework, Ontario's Great Lakes Strategy and other means.

Canada and Ontario will:

Recommendation 13: Amend clause (c) on Page 52 as follows:
Take action for Lake Huron through such initiatives as:

i. **Lake Huron Georgian Bay Initiative for Community Action;**
ii. **Niagara Escarpment Biosphere Reserve and Georgian Bay Biosphere Reserve and their local partnerships;**
iii. **Healthy Lake Huron Clean Water, Clean Beaches Campaign (Southeast Shores); and**
iv. **Southern Georgian Bay Shoreline Management Plan.**

ANNEX 8: HABITAT AND SPECIES

The purpose of this Annex is to continue efforts to restore, protect and conserve the resilience of Great Lakes native species and their habitats.

As a result of high quality habitats that nurture improved species survival, 90% of life-forms live at or near the interface of land and water. Eastern Georgian Bay has the world's largest freshwater land-water interface (5300 km). When considering conservation actions on the Great Lakes one cannot exclude water from land or vice versa.

Recommendation 14: Amend the wording of the opening paragraphs of this Annex on page 61 as follows:
The Great Lakes and their basins support a rich diversity of fish, wildlife and plant species. Thriving habitats and native fish and wildlife communities contribute to the social and economic vitality of the Great Lakes region. UNESCO Biospheres on the Great Lakes are areas officially recognized as important for world biodiversity. These regions include nearshore and inland habitats, inland wetlands and riparian zones all of which have a critical role in Great Lakes ecosystem health. Unfortunately, many human activities put pressures on the ecosystem that result in the loss or degradation of habitats, fragmentation of natural systems, threats and impacts from aquatic invasive species (AIS), and reductions in the health and abundance of native species.

This Annex focuses on collaborative efforts to restore, protect and conserve the diversity of habitats and species that make up the Great Lakes aquatic and terrestrial ecosystems while providing sustainable social, ecological and economic benefits.

Recommendation 15: Amend Result 1 on page 62 as follows:

Result 1– High quality habitats in need of protection, priority areas for restoration and habitat creation, and the most significant stressors to native species and habitats are identified, including shifting ecosystem structure and function in light of climate change stressors and invasive species. High quality connected habitats at the regional level are necessary to protect against continuing species loss and to provide optimal resilience against climate change effects, including drought (inland wetlands and their connectivity) intact riparian zones (flooding).

Canada and Ontario will:
(a) Continue to undertake a baseline habitat survey of coastal and inland wetlands, and the terrestrial areas of their basins to guide sustainable conservation actions and measure progress towards a goal of net habitat gain considering extent, condition, current protections and key threats and stressors for each Great Lake; and
(b) Determine priority terrestrial and aquatic habitats in need of protection and restoration to maintain and enhance populations of native species, including species at risk, and improve the resilience of natural systems and processes while considering the broader Great Lakes ecosystem.
(c) Create Natural Heritage mapping for Great Lakes Basins that delineates a mosaic of Naturally Connected Habitats for protection.

Recommendation 16: Amend Result 2 on page 62 as follows:

Result 2 – An improved understanding of climate-related vulnerabilities and resilience of Great Lakes coastal and inland wetlands.
Canada will lead and Ontario will support:
(a) Complete a science-based assessment of near-shore, coastal and inland wetlands vulnerability to climate- related impacts; and
(b) Identify adaptive measures and develop guidance to enhance wetland resilience.

Recommendation 17: Amend Result 3, clause (d) on page 63 as follows:

Support priority actions to restore and/or improve connectivity to Great Lakes tributaries for migratory fish to ensure continued progress of native species conservation;
and
support priority actions to maintain, restore and/or improve connectivity within Great Lakes coastal terrestrial and inland wetland habitats.

Recommendation 18: Amend Result 3, clause (g) on page 63 as follows:

(g) Strengthen the long-term protection of biodiversity and restoration of ecosystems through a network of aquatic and terrestrial protected areas, and reviewing and establishing land use planning and management approaches;

It should be noted that Georgian Bay has ~15,000 inland wetlands compared to ~4,000 coastal wetlands. The inland wetlands are inherently more susceptible to climate change effects such as drought and temperature rise than coastal wetlands. Much of Georgian Bay's biodiversity resides in these nearshore wetlands.

Recommendation 19: Ontario should reverse the removal of protections for Species at Risk contained in Schedule 5 of Bill 108.

In Ontario's review of the Endangered Species Act (ESA) Ontario made a number of changes that are contrary to the stated objectives above, namely:

- Compromising the protection of Species at Risk (SARs) by relaxing regulations to favour industry and development;
- Downgrading the core purposes and values of the ESA, which was intended to prioritize the protection and recovery of at-risk species;
- Delaying the classification of species not currently listed as an SAR in Ontario so they remain unprotected;
- Broadening Ministerial decision-making powers absent a requirement to seek expert advice;
- Limiting the public accessibility and transparency of agreements made under the Act.
- Allowing otherwise prohibited activities to occur within currently protected areas.

More details can be found in the following two attachments:

GBA's submission on this matter: *GBA submission on 10 year review of the Endangered Species Act Mar 4 2019*
And a joint submission by CELA, Ecojustice and Lintner Law that GBA confirmed support for: *CELA - Ecojustice - Lintner Law - Schedule 5 Bill 108 (EBR No 013-5033)*

Page 62
Result 3 – Great Lakes habitat and native species are protected, enhanced and/or restored to maintain ecosystem health.
Canada and Ontario will:
(a) Implement binational collaborative actions, guided by fish community objectives, to support management that reduces the loss of, and makes progress on rehabilitation of, native species such as:
ii. Lake Huron: lake sturgeon, lake trout and walleye;

Referring back to the comments on the impacts of open net cage aquaculture operations above, it should be noted that this industry through the Federal Aquaculture Regulations Act 2015, an Annex of the Fisheries Act, has been exempted from the section of the Act which forbids the harmful alteration, disruption or destruction of fish habitat (HADDS).

The high biological oxygen demand of the excess fish feces, excess feed, and intermittent antibiotic use has an impact on the wild fish species and biota of the lakebed, because unlike any other sort of industrial farming, the high phosphorus pollution freely flows into the receiving waters in Lake Huron.

Recommendation 20: In keeping with Result 3 on page 62:

Canada should reverse the exemption afforded the open net cage aquaculture operations in Georgian Bay and the North Channel from the section of the Federal Aquaculture Regulations Act 2015 Act, an Annex of the Fisheries Act, which forbids the harmful alteration, disruption or destruction of fish habitat (HADDS).

In addition, the net cages are frequently damaged by storms, ice movements and vandalism allowing the rainbow trout to escape by the tens of thousands into the ecosystem, impacting both habitat and the natural sources of food for other wild species of fish. The farmed rainbow trout are selectively bred to be voracious eaters that grow fast to maturity for harvesting. Furthermore, reports given to us by anglers say they have been spotted in creeks and stream areas during the spawning season. They are reported to be triploid (unable to reproduce) but it is suspected they are there to eat the eggs of other fish, because they are a carnivorous salmonid breed. Whilst no definitive studies have been done, the anecdotal evidence is that these escapees do substantial harm to the native fish populations and reduce the effectiveness of government programs to increase native fish populations.

Recommendation 21: Canada and Ontario should fully assess the negative environmental impacts on water quality, aquatic biota, and fish habitat from open net cage aquaculture operations in Georgian Bay and the North Channel, including the impact of rainbow trout that escape from the nets, before they continue to support this industry and its expansion plans.

ANNEX 11: FROM AWARENESS TO ACTION

The purpose of this Annex is to provide opportunities for local community action for the restoration, protection and conservation of the Great Lakes.

Result 1 – Enhance engagement of the Great Lakes community through priority setting and working in partnership in the delivery of Agreement commitments.

Canada and Ontario will:

Recommendation 22: amend clause (a) on page 75 as follows:
Increase awareness and knowledge of the Great Lakes and engagement in their protection through: use of online engagement platforms and social media; State of the Lakes reports; Lake-wide Action and Management Plans (LAMPs); actions to restore Areas of Concern (AOC's); the implementation of the Lake Erie Action Plan; partnerships with municipalities, First Nations, Non Government Organizations (NGOs) and Community Associations; and other activities; and

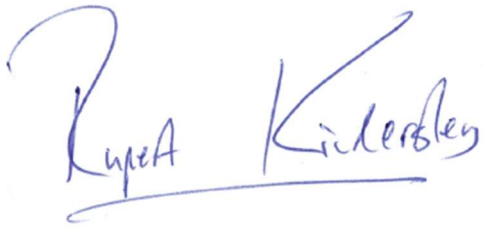
The Agreement acknowledges important areas and regions such as AOC's and other initiatives. Ontario has four UNESCO designated Biosphere Reserves all situated on the shores of the Great Lakes and all with a mandate for biodiversity conservation (balanced with economic and community vibrancy, in concert with Indigenous partnership and engagement) that the Agreement should acknowledge and better utilize. All these biosphere reserves work to develop and strengthen local partnerships, which then provide valuable support for their respective objectives. This partnership structure is entirely consistent with the goals and approaches of the Agreement.

For example, Georgian Bay Forever is actively supporting research and monitoring of water quality and is integral to Phragmites control on Georgian Bay. The Georgian Bay Land Trust is undertaking a Natural Areas Conservation Plan including development of priority protection areas in addition to substantial land securement to protect coastal areas and important biodiversity values. The Georgian Bay Biosphere Reserve collaborates with a range of NGO's, First Nations, Municipalities and provincial and federal agencies and researchers to collate the State of the Bay – a repeating report on the state of our knowledge about ecosystem health of eastern Georgian Bay. Beyond science expertise, each of these organizations, with support from residents, visitors and municipalities have community engagement mechanisms (be it workshops, hands on stewardship or youth education approaches) that are exemplary and highly effective in raising the awareness and needed connections between people and the Great Lakes.

Therefore, there is considerable potential in partnering with municipalities, First Nations, NGO's and community associations, because they have more contact and concerted expertise in engaging Great Lakes communities directly in manners that will be more accountable and results oriented.

We hope that these comments and recommendations are useful and can be implemented within the finalized Act. We look forward to hearing from you in this respect and would be pleased to meet to explain the above recommendations and discuss further.

Yours sincerely



Rupert Kindersley
Executive Director

Copied to:

The Honourable Catherine McKenna	Minister of the Environment (and Minister Responsible for Parks Canada Agency)
The Honourable Marie-Claude Bibeau	Minister of Agriculture and Agri-Food
The Honourable Jonathan Wilkinson	Minister of Fisheries and Oceans
The Honourable Ginette Petitpas Taylor	Minister of Health
The Honourable Amarjeet Sohi,	Minister of Natural Resources
The Honourable Marc Garneau	Minister of Transport
The Honourable Jeff Yurek	Minister of the Environment, Conservation and Parks
The Honourable John Yakabuski	Minister of Natural Resources and Forestry
The Honourable Ernie Hardeman	Minister of Agriculture, Food and Rural Affairs

Attachments

Page Ref:

7	Ontario Aquaculture Research Priorities Roundtable 2019
8	Michigan Ministries Report to not permit cage aquaculture March 2016
9	Excerpts from ECO (2000-2006) revolving issues
12	FOCA 2018 AGM presentation on septics
15	GBA submission on 10 year review of the Endangered Species Act Mar 4 2019
15	CELA - Ecojustice - Lintner Law - Schedule 5 Bill 108 (EBR No 013-5033)