



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

www.georgianbay.ca

January 15, 2021

Aquaculture Management Directorate
Fisheries and Oceans Canada
200 Kent Street (10th floor)
Ottawa ON K1A 0E6

By Email to: AquacultureConsultations.XMAR@dfo-mpo.gc.ca
Alexandra Dostal, Director General, Aquaculture Policy
Margaret Andrade, Aquaculture Legislation and Regulation, Policy Advisor

**Additional Comments on the Consultation for Engagement on a Potential Aquaculture Act—
Section: Finfish Production in the Great Lakes**

The Georgian Bay Association (“GBA”) welcomes the opportunity to provide additional comment toward the development of the proposed federal Aquaculture Act (“Act”).

Our primary concerns are the numerous environmental problems associated with the open net-pen (net-cage) aquaculture industry in the Great Lakes, specifically Georgian Bay and the North Channel of Lake Huron (“the Industry”). These issues pose significant threats to water quality, have been identified at existing and former (now closed) Industry sites, and include:

1. reduction in water quality, particularly phosphorus loading and hypoxic events;
2. effects of nutrient loading on water transparency and algae production, particularly the presence of blue-green algae;
3. impacts of nutrient loading and sedimentation on the benthic invertebrate community, its species diversity, and its natural habitat;
4. effects of the growth of quagga and zebra mussels and other invasive species that are attracted to the farms;
5. effects on native, wild fish stocks by the inevitable escapements of domesticated rainbow trout or other new introduced species, and disease pathogens they may carry, and by the loss of habitat due to anoxic conditions caused by the farms;
6. possible effects of introducing contaminants and/or antibiotics into the environment from contaminated or medicated feed sources; and
7. future climate change effects that could impact total phosphorus, water quality with the rise in temperatures, and the risk of escapements from the storm and ice action.

On December 3, 2019 GBA submitted an extensive and well-documented set of comments to the Aquaculture Management Directorate describing our concerns regarding the Industry, **the only open net-pen aquaculture sites given authority to operate within all of the Great Lakes.**

Our major recommendations in the previous submission were:

- A. The Act must recognize that the risks associated with freshwater cage aquaculture differ from those associated with marine cage aquaculture** and should therefore ensure that freshwater cage aquaculture is subject to different regulations than those that apply to marine cage aquaculture. For example, phosphorus is the limiting nutrient in freshwater as opposed to nitrogen in the marine environment.
- B. The Act should distinguish between waterbodies subject to Canadian only policies and regulations, and those subject to international agreements.** Policy and regulation of open net-cage aquaculture within international waters, such as the entire Great Lakes, should be governed by the Boundary Waters Treaty (operations of the International Joint Commission, “IJC”) and the Great Lakes Water Quality Agreement (“GLWQA”).
- C. The Act and regulations should ensure that license applications and renewals for aquaculture operations comply with United Nations Guidelines, the Boundary Waters Treaty, the GLWQA, and the revised Fisheries Act (Bill C-68).** Fisheries and Oceans Canada (“DFO”) and Environment and Climate Change Canada (“ECCC”) should provide the legislation, regulations and standards to monitor compliance, and all provinces should also adopt these standards.
- D. The Act should examine phosphorous load limits as defined in the GLWQA and the work of the IJC** and distinguish between the risks and impacts of nearshore and offshore locations for cage aquaculture in the Great Lakes.

Our earlier December 2019 submission is attached for your reference, and its accompanying *Attachments A-J* can be found here: <https://georgianbay.ca/fisheries/cage-aquaculture-issue/cage-aquaculture-submissions/>

New information has since come to our attention that supports our previous recommendations and addresses several questions presented in the current DFO Discussion Paper: A Canadian Aquaculture Act, 2020 (<https://dfo-mpo.gc.ca/aquaculture/act-loi/discussion-eng.html>). We are providing additional input on the eight Elements of the Act set out in the Discussion Paper.

Element 1: Application, purpose, and definitions

- *Is the proposed preamble sufficiently broad?*
- *How should “aquaculture” be defined?*
- *What definitions and overarching factors are important to include in the Aquaculture Act?*

GBA strongly endorses the federal “*commitment to foster the sustainable development of the aquaculture industry [and] healthy aquatic ecosystems.*” However, aquaculture in fresh water should be more clearly defined in the Act. Specifically, **a distinction is required between freshwater, open net-pen aquaculture and its counterpart in the marine environment**, as recommended above (*Recommendation A*).

Moreover, it is important to distinguish between aquaculture operating in Great Lakes waters versus those in enclosed, land-based systems. Under the present regulatory status, environmental monitoring and management of open net-pen aquaculture in Georgian Bay and the North Channel is limited. But these waters are part of Lake Huron and thus should be recognized in the Act with respect to the Boundary Waters Treaty and the Great Lakes Water Quality Agreement (*Recommendation B*).

No other Great Lakes jurisdiction permits open net-pen aquaculture within the Great Lakes.

The most recent example is the State of Michigan’s refusal of the license applications from the Lake Huron operators in 2015 for proposed cage farm sites in the US side of Lake Huron and Lake Michigan (see: <https://georgianbay.ca/wp-content/uploads/2019/09/22-Michigan-nixes-net-pen-aquaculture-Aquaculture-North-America.pdf> and <https://georgianbay.ca/wp-content/uploads/2019/09/22A-ReportMichigans-Science-Advisory-on-Net-cage-aquaculture-Oct2015.pdf>).

Furthermore, in 2016 the US Committee of Advisors to the Great Lakes Fishery Commission, responsible for monitoring all fisheries issues, passed a resolution to call on the Great Lakes Fishery Commission ***to encourage all Great Lakes jurisdictions to prohibit the establishment of any net-pen aquaculture facilities in the US waters of the Great Lakes to protect the water quality and fishery of the Great lakes system.***

See: http://www.glfc.org/pubs/pdfs/resol2016_4.pdf

Element 2: Leases, licences, and fees

- *What are key aspects of the leasing or licensing process that should be defined or clarified in the Aquaculture Act?*
- *When should the Minister be allowed to revoke a federal lease or licence or issue a management order?*

In the IJC's science advisory webinar meetings it was acknowledged that **open net-pen cage aquaculture is a significant source of phosphorous loading to Lake Huron** that requires more study and analysis (see comments to Element 5 below). As a result, there is valid concern with the Premier of Ontario's Open for Business Ontario Policy giving the Industry 20-year aquaculture licencing rights and 20-year leases to the Crown land (bottomlands, or operational boundaries,) and, with no explanation given, expanding the operational boundaries for some of the farms. Starting as early as March 2022, when the temporary licences are renewed, the Province of Ontario will move the permits from a 5-year to a 20-year renewal.

The Public Lands Act, 1990 regulates the land use permits and crown leases for the occupational boundary of the cage farms and is subject to Ontario's MNRF Class Environmental Assessment (EA) for Resource Stewardship and Facility Development (RSFD) as a screening criterion. Using the Class EA RSFD as the screening tool for the existing cage farm operations applications, MNRF has continually assigned open net-pen fish farms to a **Category A project – (exempt) - Potential for low negative environmental effects and/or public or agency concern,**

GBA opposed that classification, and insist that these projects ought to be screened to Category C of the Class EA in order to properly assess the potential high negative environmental effects and address public concerns regarding open net cage aquaculture. GBA clearly stated our position to the Province in our letter regarding the MNRF's Class EA RSFD, on August 22, 2020, available at: <https://georgianbay.ca/fisheries/cage-aquaculture-issue/cage-aquaculture-submissions/>.

GBA feels strongly that an exemption from a more extensive EA is inadequate for screening Industry license renewals, and that **the 20-year renewal provision could lead to a lack of adequate oversight and monitoring of the industry**. The recent (November 2020) Auditor General of Ontario's report indicated that: "*Quadrupling the number of years a licence is valid introduces more risk to the environment from adverse effects*" (Subsection 3.3, Section 3.0, https://www.auditor.on.ca/en/content/annualreports/arreports/en20/ENV_ch2EBR_en20.pdf).

The 1997 Fish and Wildlife Conservation Act, which has regulated the Ontario cage aquaculture licences, was amended and on December 18, 2020 a decision was posted on the Ontario Environmental Registry: <https://ero.ontario.ca/index.php/notice/019-1502>. Amendments have also been made to the *Fish and Wildlife Conservation Act, 1997* (FWCA) through the *Better for People, Smarter for Business Act, 2020*, which received Royal Assent on December 8, 2020.

These amendments:

- established the ability for the Minister to change FWCA licences and authorizations, including their conditions; and
- changed decision-making power from Lieutenant Governor in Council to Minister to prescribe species of fish that may be cultured in Ontario.

GBA is not yet sure if these changes give the Minister amending powers for the size of Industry operations, water quality standards etc.

In addition, the Ontario Government is currently promoting its Made in Ontario Environment Plan (<https://news.ontario.ca/en/statement/59395/province-marks-second-anniversary-of-made-in-ontario-environment-plan>) and its Open for Business Initiatives, whereby the Ontario

Aquaculture Industry is openly supported by the Minister of Natural Resources, the regulatory authority. Please view this link: <https://ontarioseafoodfarmers.ca/minister-of-natural-resources-and-forestry-john-yakabuski-speaking-about-ontario-aquaculture/>

In light of these sweeping regulatory changes for the Ontario Industry, we urge the Federal authorities (DFO and ECCC) to reinstate an advisory committee such as the previous *Ontario Sustainable Aquaculture Working Group* co-chaired by DFO and Environment Canada and which included provincial regulators (MNRF, MECP, OMAFRA), the cage farmers, indigenous people, and other stakeholders. Our 2003 copy of the Report from this working group is attached and we quote from its Terms of Reference:

“The Ontario Sustainable Aquaculture Working Group project is a cooperative effort by governments and the aquaculture industry to prevent fish habitat damage and water pollution.

PURPOSE:

The purpose of the Ontario Sustainable Aquaculture Working Group is to:

- 1. Identify information and technology needs for enhancing environmental performance in the Aquaculture industry so that industry development will meet the needs of the present without compromising the ability of future generations to meet their own needs.*
- 2. Produce and test some verifiable approaches to preventing fish habitat and water quality deterioration related to freshwater aquaculture operations in Ontario.*
- 3. Disseminate accurate information collected or generated by the working group.”*

Accordingly, in addition to *Recommendation C* above, we recommend that:

- **the Act should make provision in its regulatory framework to address and cooperate with provincial counterparts regarding environmental oversight to be included in licencing for open-cage fish culture in all Great Lakes waters and to require regular government inspection and regulatory review of operations to ensure compliance with licence requirements;**
- **the formation of a separate advisory body with the same terms of reference as the previous Ontario Sustainable Aquaculture Working Group (see above); and**
- **The land use permits and crown leases for the Industry should be screened to a Category C environmental assessment under the MNRF’s Class EA RSFD.**

Element 5: Environmental protection

- *What potential, aquaculture-specific, environmental impacts to fish and fish habitat should be addressed by the Act?*
- *In addition to the existing regulatory oversight and management powers under the Fisheries Act, what additional powers should DFO have to respond to aquaculture-related impacts?*

GBA fully recognizes the necessity and growing importance of developing sustainable aquaculture as an agri-food industry. The demand for seafood products continually increases while the yield from capture fisheries declines such that seafood produced from aquaculture is projected to increase to 53% of the total by 2030 (<http://www.fao.org/3/ca9229en/ca9229en.pdf>).

In 2018, Ontario's annual production of rainbow trout was 5,417 tonnes of rainbow trout with 90% of that production coming from open net-pen fish farms (<https://ontarioseafoodfarmers.ca/wp-content/uploads/2019/07/Aquastats-2018-Ontario-Statistics-for-2018.pdf>), notably in eastern Georgian Bay and the North Channel. Based on 2018 national aquaculture statistics, this represents about **3.7% of all** salmon and trout production in Canada (<https://www.dfo-mpo.gc.ca/stats/aqua/aqua18-eng.htm>), concentrated in relatively small and environmentally sensitive regions of Georgian Bay and its North Channel.

In view of the fact that cage aquaculture in Georgian Bay does not benefit from the flushing effect and assimilation capacity of the coastal ocean currents, and given the small contribution to Canada's aquaculture production from the Industry and the potential problems summarized on page 1, **we recommend that the Ontario aquaculture industry growth be focused on land-based or enclosed facilities that avoid these potential environmental impacts.**

The potential environmental problems and threats listed on page 1 are not novel, but have been recognized, documented and addressed in open net-pen fish culture systems in fresh waters elsewhere throughout the world for decades (e.g., Scotland, Poland, Chile, Australia). **A common thread in past studies is that net-pen fish culture represents a significant point source of organic waste and nutrients in lakes.**

In contrast, studies on the effects of cage aquaculture in Canadian fresh waters are limited, and future research is required to address those problems in naturally oligotrophic waters such as Georgian Bay and the North Channel. **Therefore, in accordance with the precautionary principle, it should be assumed that the Industry operations are a point source of organic waste and nutrients.**

GBA's **most acute concern** is the localized deterioration of water quality resulting from nutrient loading on total phosphorus levels, hypoxia, and benthic sedimentation (*Recommendation D*). Our environmental concerns are set out in detail throughout our December 3, 2019 submission attached.

Most recently, on September 22, 2020, GBA members attended the *Stressors in the Great Lakes* – IJC Webinar, with the Science Advisory Board, from both the USA and Canada who were planning the focus for the 2022 Lake Huron science studies.

The various presenters spoke of 34 stressors and their interactions that Lake Huron and the other Great Lakes are subjected to. **The seven most urgent stressors to be studied and considered are: invasive species; toxic chemicals; nutrients; climate change; habitat loss; fish harvest (commercial); and pathogens (such as viral hemorrhagic septicemia [VHS], other viruses, fecal indicator bacteria).** The IJC is set to focus on the stressors in Lake Huron and just how they interact and impact the aquatic ecosystem.

We therefore recommend that:

- **Industry operations are treated as point sources of organic waste and nutrients and future environmental assessments of the Industry are consistent with those required for point source operations; and**
- **the Act include a requirement that sufficient studies are carried out, and modelling developed, to ensure any expansion of the Industry will have no cumulative detrimental impact on the aquatic ecosystem of Georgian Bay and Lake Huron.**

These recommendations are in line with:

- The proposed modification stated in the DFO Discussion Paper (Element 5: Environmental Protection) that the suggested regulatory framework governing aquaculture would prohibit “***the deposit of biochemical oxygen-demanding matter, pest control products, drugs, or other harmful chemicals that can harm fish or fish habitat.***” (<https://dfo-mpo.gc.ca/aquaculture/act-loi/discussion-eng.html>).
- The recommendations presented by the Report [to DFO] of the Independent Expert Panel on Aquaculture Science (2018) (<https://www.ic.gc.ca/eic/site/052.nsf/eng/00011.html>), particularly the first three, namely:

Recommendation 1: DFO should implement best practices for synthesizing available scientific evidence on aquaculture risks. This includes incorporation of Indigenous and local knowledge as well as the use of systematic reviews, external peer review and other universally accepted standards.

Recommendation 2: In consultation with the Departmental Science Advisor, DFO should use best practices to characterize and understand the potential risks and impacts associated with aquaculture.

Recommendation 3: DFO should use quantitative methodologies and risk-science approaches to develop an Integrated Risk Management Framework (IRMF) that ensures that all relevant factors are properly considered in aquaculture decisions.

The definitions for “point source” of other international regulatory agencies, specifically the US Environmental Protection Agency in section 502(14) of the Clean Water Act that defines: *“point source [to] mean any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, from which pollutants are or may be discharged,”* See: <https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution> ; and the EU’s European Environment Agency who states that: *“point sources, such as discharges from the treatment of urban wastewater, industry and fish farms, are defined as stationary locations or fixed facilities from which pollutants are discharged.”* See: <https://www.eea.europa.eu/archived/archived-content-water-topic/water-pollution/point-sources>

We note that the Discussion Paper contains a summary on page 13 of how the current Fisheries Act (FA) provisions will be carried forward into the new Aquaculture Act (AA), as follows:

- Develop equivalent prohibitions to s.34.4, 35, 36 in AA;
- Amend FA 35 and 36, as necessary, to recognize relevant activities authorized under AA regulations; and
- Create equivalent of FA s.35.1 in AA.

In our attached December 2019 submission, we examined the extent to which the Industry fails to comply with the FA, specifically sections 35 and 36, and recommended that the AA ensures compliance. We are therefore concerned that amendments to FA 35 and 36 “to recognize relevant activities authorized under AA regulations” are being contemplated. This could negate the environmental protections in the AA currently afforded under the FA.

We therefore recommend that no amendments to FA sections 35 and 36 be made in the AA.

We further recommend that the powers of DFO under the AA be strengthened to enable it to review existing and proposed provincial regulations on open net cage aquaculture so that DFO ensures full compliance with all provisions of the AA. We are particularly concerned with Ontario regulation of the Industry (as above). The DFO should be empowered to propose changes to, or to override, provincial regulations that do not conform to the requirements of the AA.

Element 7: Regulations

- *What aquaculture issues (within federal jurisdiction) should be addressed by the proposed Act’s regulation-making provisions?*

The above recommendations also address this question.

Element 8: Public reporting and legislative review

- *What aquaculture-related information would you like to be available to all Canadians via a public registry?*
- *If an aquaculture-related event occurs that harms fish and fish habitat, how should DFO communicate this info to Indigenous peoples, stakeholders, and the public?*
- *What are your views on including in the proposed Act a requirement to undertake a general review of the Act periodically?*

The present framework for informing stakeholders and the public on the results of environmental monitoring of open-cage aquaculture in Georgian Bay and the North Channel has not proven effective. Under the Aquaculture Act, provision for aquaculture information (e.g., water quality data, production statistics, licence details, etc.) should be made available in a public registry or disclosure of relevant reports. Full transparency of such information should be provided as a matter of public interest. This would also reinforce efforts to ensure compliance.

We recommend that the Aquaculture Act stipulate that DFO demonstrate that all current operations are sustainable by making available to the public regular reports on the aquaculture industry. This should include specifying the occurrence of all incidents which violate the provisions of the Act and the mitigation/enforcement measures taken.

We note that this should be considered to be a given right for public stakeholders such as the GBA and, in particular, indigenous peoples who are the historical guardians of our shared waters.

GBA supports a regular review of the proposed Act to ensure that it can address evolving technologies and assist the sustainable growth of the sector.

Additional Topic

Transitioning to land-based fish farms is a growing trend globally, and GBA supports and advocates the transition of open-water-based, net-pen systems to land-based (or enclosed) systems in the Great Lakes as well, **especially in Georgian Bay and the North Channel**, in order to:

- maintain the current high level of water quality;
- maintain the integrity of native fish and invertebrate communities and their habitat, and;
- minimize the additional risk associated with the stated objective of the Ontario Aquaculture Association to expand Ontario cage farm operations.

In this respect, please also see the concluding statement within the synthesis report of the State of Michigan comprehensive study:

“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.”

Ref: [https://www.michigan.gov/documents/mdard/Synth-Paper- NetPENS-09Mar2016_516439_7.pdf](https://www.michigan.gov/documents/mdard/Synth-Paper-NetPENS-09Mar2016_516439_7.pdf)

Since Canada’s federal regulators have begun transitioning the marine open net pen farms in British Columbia to land-based and/or closed-contained systems and given the different but extensive environmental issues associated with the Industry, as set out by GBA in our submissions, the Act should contemplate the same transitioning for the freshwater open net operations in Canada.

We would like to re-emphasize that the comments and recommendations concerning the Act in this letter are in addition to the comments and recommendations in the attached submission made in December 2019, and we would therefore be most grateful if you could please consider both documents in the development and wording of the Act.

GBA would welcome the opportunity to meet with the appropriate officials to discuss our concerns further. We will contact the Directorate in the near future with a view to setting up a meeting.

Copied to:

Bernadette Jordan	Minister of Fisheries, Oceans and the Canadian Coast Guard
Jonathan Wilkinson	Minister of Environment and Climate Change Canada
Chrystia Freeland	Deputy Prime Minister and Minister of Intergovernmental Affairs
John Yakabuski	Ontario Minister of Natural Resources & Forestry
Jeff Yurek	Ontario Minister of Environment Conservation & Parks
Scott Aitchison	MP, Parry Sound - Muskoka
Norm Miller	MPP, Parry Sound - Muskoka
Dean Medeiros	Aquaculture Management Directorate, Fisheries & Oceans
Steve Naylor	Aquaculture Specialist, Fisheries & Oceans
Michael Goffin	Regional Director General, Environment and Climate Change Canada
Greg Mayne	Lake Huron Program Officer, Environment and Climate Change Canada
Ken Lacroix	Upper Great Lakes Management Unit, Natural Resources & Forestry
Brian Burdick	Lead for Fisheries Section, Natural Resources & Forestry
Liam O'Brien	Director of Policy, Natural Resources & Forestry
Carolyn O'Neill	Great Lakes Office, Environment Conservation & Parks
Jennie Weller	Special Project Officer, Environment Conservation & Parks