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Sharifa Wyndham-Nguyen
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Ministry of Environment, Conservation and Parks ("MECP")
135 St Clair Ave W
Toronto, ON
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By Email

Reference #: 019-2377
Re: Proposed Project List for comprehensive environmental assessments under the Environmental Assessment Act (EAA)

Dear Ms. Wyndham-Nguyen,

First, I thank you for letting us know we can still submit our comments to you, having notified you that we were late to catch the ER posting.

Second, please let me frame our submission with some facts and background:

The Great Lakes is the most important aquatic ecosystem in North America and contains approximately 20% of the world's freshwater resources. Georgian Bay and its North Channel to the Manitoulin Island area is a particularly unique water basin that represents one of the most pristine ecosystems in the Great Lakes. The eastern side of Georgian Bay, comprising the 30,000 Islands, marks the largest freshwater archipelago in the world, and is recognized by the United Nations as a World Heritage Site, designated as the Georgian Bay Littoral Biosphere Reserve (http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/europe-north-america/canada/georgian-bay/).

Our Georgian Bay Association (GBA) is an umbrella organization (run by only two paid staff), and directed by a host of volunteer Directors that represent 19 community associations along the east and north shores of Georgian Bay and the North Channel of Lake Huron. We represent around 3,000 families and ancillary businesses to our water-based communities. We have been advocating on behalf of our members for over 100 years and estimate that we reach around 18,000 property owners of the Georgian Bay, Lake Huron. Our mandate is "To work with our water-based communities and other stakeholders to ensure the careful stewardship of the greater Georgian Bay environment."

The GBA's Aquaculture Committee has been following the issue of open net cage aquaculture in Ontario since the 1990s. For all these years both the GBA and some First Nations groups have often wondered why the regulation of a federal issue such as this freshwater open net cage aquaculture, which is located in Great Lakes water and adds stress to the water quality, invasive species risks, and habitat concerns, has been assigned to an Ontario Ministry, Natural Resources and Forestry ("MNRF"), for its regulatory powers and is mainly subject only to short form risk analysis and screening under the Class EA RSFD.

It seems to us that because in situ cage farm aquaculture was such a new and pioneering business when these cage farms began their operations in the 1980s and 90s, and because regulating them changed from point source to non-point source status and from provincial to federal and back to provincial management and regulatory responsibility, these cage farms have never undergone any sort of comprehensive environmental assessment, ever.

No other Great Lakes State or Province permits open net pen aquaculture within their jurisdictions of the Great Lakes. The most recent example is from the Lake Huron operators' application for licence (in 2015) to permit 2 cage aquaculture facilities within State of Michigan's side of Lake Huron and Lake Michigan. Please see Appendix A below.

We therefore request that <u>new applications</u> of open net cage aquaculture licenses be included on the project list for comprehensive environmental assessments.

When it comes to regulating the <u>existing</u> open net cage aquaculture operations of Georgian Bay and the Manitoulin Island area within the North Channel, we regard the current application of the Class EA for MNRF Resource Stewardship and Facility Development as an inadequate screening criterion, and spoke to this in our August 28th submission (ERO Reference #99026), attached.

Since use of the Class EA RSFD as the screening tool for the existing operations, the MNRF has been continuously assigning the cage farms to a Category A project, i.e. exempt and having the following attributes: "*Potential for low negative environmental effects and/or public or agency concern*", as per section 3.1.1. The GBA has voiced its objection on this point at least as far back as the 2005 applications for licencing. Some of the applications were granted an increase in feed quota (expanded production) without any further environmental assessment other than the same Class EA screening, some were only required to complete the "Short form risk analysis". These farms all continued to be exempt from any further assessment despite the minimal science available on environmental impacts.

We deem that the arguments below qualify these existing aquaculture facilities to be added to the project list for Comprehensive Environmental Assessment under the Environmental Assessment Act, as per the six criteria on p.4 of this ERO:

1. *the magnitude of the effect*
2. *the geographic extent of the effect*
3. *the duration of the effect*
4. *the frequency of the effect*
5. *the degree of reversibility of the effect*
6. *the possibility of occurrence of the effect*

The magnitude, geographic extent, duration, frequency, degree of reversibility, and possibility of occurrence of the effects do have the potential to be significant and cumulative.

The magnitude of the effect

Ontario is adopting a highly questionable plan for cage aquaculture (Modernizing Ontario's Approach to Cage Aquaculture through Enhanced Licensing and Occupational Authority [ERO number 013-5097] under the Fish and Wildlife Conservation Act 1997, ("FWCA") that will extend licence terms from the current 5-year term to 20 years, and the 5-year Land Use permits to a 20-year Crown Lease under Ontario's Lands Act. At present, the existing cage farms have been given a temporary licence without public notification via the ER. And GBA is concerned that the government will, if it successfully amends the FWCA as proposed, simply roll these temporary licences over into 20-year licences through the powers of the proposed new section 62.1 added to the Act.

Moreover, the cage farm operators are asking for extended operational boundaries and increased feed quota (expanding their combined production according to their 10-year plan to increase to between 30,000 and 50,000 tonnes [metric tons, MT] of production). Additionally, many are deemed to be given larger expanded Operational Boundaries for their individual site plans, and increase production capacity up to a maximum of 2,500 tonnes per farm. This increase in production will substantially increase the point-source nutrient loading via waste feed and fecal matter into the water column, and thus increase nitrogen and phosphorus levels, chlorophyll *a* concentrations, and algae production locally, as well as reductions in dissolved oxygen content leading to hypoxia. To add to our concerns, this maximum production figure of 2,500 MT, as seen in the Ontario Guidelines was given based not on any conclusive environmental assessment, or modelling for Lake Huron's assimilation capacity for the fecal and other organic waste, but rather on the size of the largest cage farm currently in operation at Depot Harbour. This should be reason enough to conduct a comprehensive environmental assessment before this risky action and activity commences.

The possibility of occurrence

One of these cage farms, the Lake Wolsey site, an embayment in the North Channel of Manitoulin Island, which had been assigned its 5-year reissuance of its licence with the same Class EA RSFD screening under Category A (low concern) has recently ceased its cage farm operation. MNRF informed us of this in February 2020. We assume this was mainly due to the numerous water quality reports of high phosphorus levels and also hazardous algae blooms (namely, toxic cyanobacteria). But none of this was reported to the public. We can only make assumptions based on verbal accounts that, for example: (a) one of the fish processing plants rejected the farmed fish from this site because of high toxin levels found in the liver of the fish due to the cyanobacteria in the waters they were reared in, (b) a property owner within the shared waters of this embayment, who contacted us with photos of the horrible plumes of algae within the waters, deemed them unsuitable for swimming from their dock (see Appendix B), and (c) Dundee corporation was losing money on their investment in this cage farm and closed down this operation before MNRF or MECP decided not to renew the licence. The Land tenure had been maintained so that the company was able to sell off or relocate the net cages and other hardware to other producers or locations. We currently do not know the environmental state of this cage farm, nor the receiving waters, but have asked MECP to do follow-up tests of the water and sediment quality, now that it is closed.

It should be noted that two other cage farm sites have been closed due to pollution at Grassy Narrows and LaCloche Channel, and there are currently 5 commercial and 6 First Nation sites still in operation. This represents a high failure rate attributable to pollution issues and emphasizes the very real possibility of a recurrence at other sites.

We would have expected MNRF to demonstrate that this and all other existing open net cage aquaculture operations had gone through extensive environmental assessments of their impacts on:

- water quality, particularly phosphorus loading and hypoxic events;
- the effects of nutrient loading on water transparency, chlorophyll *a* concentration and algae production, particularly the presence of blue-green algae;
- the benthic invertebrate community and its species diversity;
- the natural habitat of benthic and other aquatic species;
- the effects of the growth of quagga and zebra mussels and other invasive species that are attracted to the farms;
- the effects on native, wild fish stocks from the inevitable escapements of the domesticated rainbow trout (and pathogens they may carry) that have been bred to be voracious eaters and, consequently, outcompete native species for food and prey on the fry of native species;
- the possible effects of introducing contaminants and/or antibiotics into the environment resulting from contaminated or medicated feed sources; and
- the all too imminent climate change effects (that impact total phosphorus and water quality with the rise in temperatures, and increase the risk of escapements due to stronger winds, wilder storms and increased ice action).

But we have not found evidence that such assessments have ever been done.

None of these impacts can be contained with the use of open net cage aquaculture. And neither MNRF nor DFO has demonstrated the appropriate level of environmental assessment to address these issues.

We can only conclude that, had this particular cage farm site (Lake Wolsey site) undergone a more comprehensive environmental assessment, and been treated as point source rather than non-point source, these detrimental environmental, social, and economic effects could have been proactively avoided.

The geographic extent of the effect

The monitoring and management of open net pen aquaculture within the Great Lakes should not be in the sole hands of the Ontario Government, for it is of both national and international concern.

These Ontario regulated and monitored cage farms are situated within the Lake Huron basin. Our files of the International Joint Commission's concerns for the health of the Great Lakes outlined seven Priority Stressors, all of which have various potential to interact with one another: aquatic invasive species; nutrient loadings; toxic chemicals; habitat and species loss; climate change; and pathogens.

https://ijc.org/sites/default/files/2020-09/SAB-SPC_StressorInteractionsReport_2020.pdf

Only closed, contained, land-based systems for fish farming can avoid and prevent such impacts, be it on the fish stocks of the farm or the wild stocks and waters receiving the farm waste, and hence they should be comprehensively assessed for their potential environmental impacts.

The Great Lakes Water Quality Agreement and the Canada Fisheries Act must be considered when permitting the licencing of cage farms.

Fisheries and Oceans Canada (DFO), which is the lead organization for aquaculture in Canada, developed a National Aquaculture Strategic Action Plan Initiative (NASAPI) that clearly stated the provincial and federal roles and obligations to be implemented : https://www.dfo-mpo.gc.ca/aquaculture/lib-bib/nasapi-inpasa/freshwater-eauxdouces-eng.htm

We question whether the Ontario government is following its national responsibilities for ensuring the sustainable growth of this industry in the Great Lakes.

Within the NASAPI plan are clear recommendations for obtaining the necessary Social Licence and sustaining the equitable balance of social, economic, and environmental considerations for its continued growth.

The Agreement (Memorandum of Understanding) between DFO and OMNRF was to have specific action items completed as shown below (see "Public Engagement & Communications" from the NASAPI link above):

Social Licence and Reporting

In all sectors of Canadian aquaculture, it is imperative that producers build and maintain local and regional community support for their activities. Commonly referred to as maintaining social licence, this work involves a wide range of communication and engagement activities designed to ensure that the media, communities and the public are well-informed about the industry in general and its specific operations in particular. The following strategic objectives are seen as key means of doing so:

- Develop a more transparent system for gathering and sharing information to keep Canadians informed about the environmental, social and economic sustainability of aquaculture operations;
- Utilize **resource mapping** to improve planning for aquaculture development in public waters in a manner that is respectful of the equitable interests of all resource user groups; and
- Explore mechanisms and strategies for **engaging aboriginal groups** in the implementation of NASAPI and generate awareness of opportunities for expanded engagement in aquaculture.

Action Items—Public Engagement & Communications

This table outlines the summary information related to the action item identified above. The first column indicates the specific action, the second column indicates the suggested timeframe, and the third column indicates the status of this action item.

SL–1. Establish a transparent information sharing system to facilitate aquaculture reporting

Actions	Suggested Timeframe	Status
Define information requirements and establish a standardized system for compiling, reporting and disseminating operational and compliance information that is respectful of the proprietary nature of some industry data	Year 1	Ongoing
Incorporate information sharing protocols into the federal–provincial/territorial aquaculture MOUs	Year 1	Ongoing
Where appropriate, and within the scope of the *Privacy Act* and other pertinent regulations, incorporate information sharing requirements as a condition for securing an aquaculture licence Identify the key issues related to the scope, timing and cost of the information requirements	Year 1	Ongoing
Implement the Sustainability Reporting Initiative; i.e. compile information and publish an annual, fact-based, objective report on the social, economic and environmental sustainability of the aquaculture sector that will: • report transparently on sustainability • demonstrate and reflect the performance & transparency of government and industry	Year 1	Ongoing

Accordingly, we are making this submission to register our ongoing concern about the use of the Class EA for RSFD for the commercial culture of net pen cage farmed fish in public waters. This industry is completely different from other resource stewardship and facility development projects that are subject to this Class EA and should not therefore be assessed under the same classification. If the fish farms were land-based, contained operations on crown land, then the Class EA RSFD would be an appropriate environmental assessment tool, but they are not. They operate in public, internationally protected, Great Lakes waters.

The MNRF has designated these finite, fragile waters (Crown land) for the "assimilation" of farm waste from the high-density feedlot-like, open net cage aquaculture industry, whereas all terrestrial animal and land-based fish farms are subject to the MECP Certificate of Approval and/or the Nutrient Management Act.

The frequency of the effect

Open net cage aquaculture production of rainbow trout in Georgian Bay and Lake Huron continues to dominate all other, land-based forms of aquaculture and accounts for 90% of the total farmed fish output in Ontario. This industry is slated for continuous growth. (http://animalbiosciences.uoguelph.ca/aquacentre/files/aquastats/Aquastats%202018%20-%20Ontario%20Statistics%20for%202018.pdf)

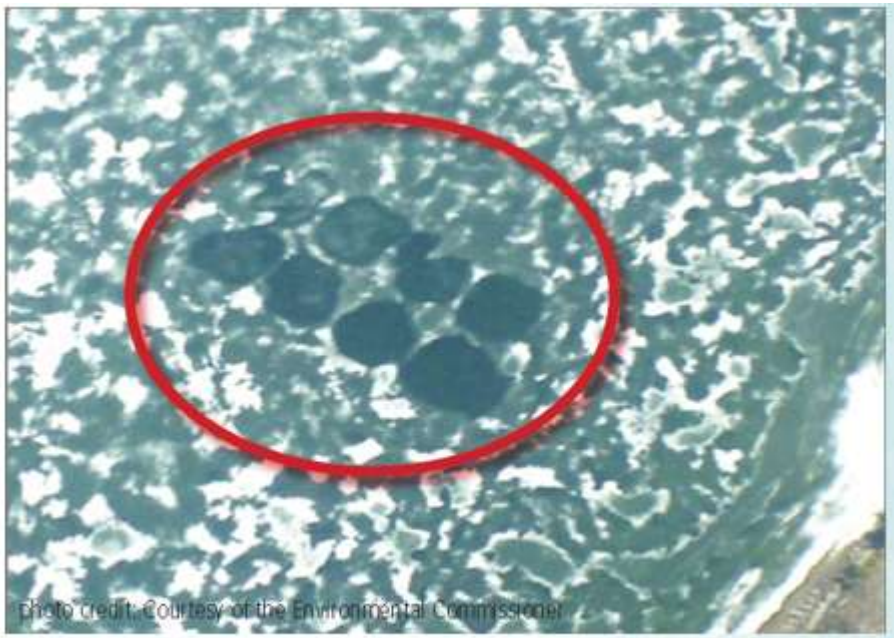
Climate change appears to be occurring more rapidly than previously envisaged. According to the same source sited above, "Aquastats" (University of Guelph 2018), there have already been fish losses due to warmer lake water temperatures, and large escapements due to major storm events. Climate change also impacts the receiving waters and natural ecosystems that rely on maintaining waters and bottomlands in a healthy state—the same waters and bottomlands that MNRF designates to the proponents (cage farm operators) through the Class EA RSFD (screened to Category A) for direct discharge of waste.

This industry does not comply with the waste disposal provisions of the Ontario Environmental Protection Act that all other land-based aquaculture operations must abide by. The environmental impacts from cage farms are continuous and cumulative.

The duration of the effect

There has never been any modelling to show the possible extent and duration of environmental and ecological effects should the industry grow to its anticipated 50,000 tonnes of production over the next ten years, relying on the Great Lakes waters for this expansion. One would hope that the government would apply the precautionary approach, and the wisdom of the aboriginal people when making decisions, in particular looking ahead seven generations beyond the enactment of permits.

The satellite image below aptly demonstrates the long-term impacts that can occur and the longer cage farms are in operation, the greater the impact. LaCloche Channel was found to leave the imprint of the cages in winter ice for over a decade as it stood decomposing emitting methane gas and ongoing depletion of oxygen in the waters.



LaCloche Channel, Georgian Bay ON
Spring 2005, 8 years after farm closure

The degree of reversibility

Lake Wolsey has now been rendered inoperable for various reasons, but which no doubt can be directly related to the fact that it caused continuous hazardous algae blooms (cyanobacteria) due to high total phosphorus levels in the waters and depleted dissolved oxygen content. As above, this is now the third cage farm site that has been closed since cage farming was permitted in the waters of Lake Huron.

Yet there have been no posting of bonds and no remediation expectations from the industry. The sites are simply abandoned.

We thank you for accepting and considering our points listed herein.

Many Thanks

Yours sincerely,

Rupert Kindersley
Executive Director

Appendix A

Concluding remarks from the State of Michigan's, **Synthesis Report Regarding Net-pen Aquaculture in the Great Lakes,** March 9, 2016, by the Quality of Life panel [Departments of: Agriculture and Rural Development (MDARD), Environmental Quality (MDEQ)**, and** Natural Resources (MDNR)].

The synthesis report can be viewed here:
http://www.michigan.gov/documents/mdard/Synth-Paper-_NetPENS-9Mar2016_516439_7.pdf

Conclusions

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.

Appendix B

The following two pictures are from a research report published by Kelly Amber Hille in 2008 on the effects of cage aquaculture on epilithic biofilms.

The portion of her report that focuses on Lake Wolsey concludes in part, “even though the aquaculture operation may not be the main impacting agent on the system, it still plays a part. Every new invasion, every added nutrient and every physical change to the system adds stress to this already highly disturbed system.”

Phytoplankton bloom in the near-shore region of Lake Wolsey adjacent to fish farm. Photo by K. Hille September 2006.

Aquaculture cage and Phytoplankton bloom at Lake Wolsey.
Photo by K. Hille September 2006.