

**18 Fenwick Avenue.**

**Toronto, ON M4K 3H3**

Adrienne Paylor,

Regional Aquaculture Manager,

Fisheries and Oceans Canada

501 University Crescent   
Winnipeg, Manitoba  R3T 2N6

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Dear Ms. Paylor,

We are grateful for your invitation to the Georgian Bay Association (GBA) to review the DFO’s Draft scientific review P objectives as mentioned in your Nov. 27th email to Claudette Chabot.

We have passed your information on to the expert members of our aquaculture committee for their comments.

As a bit of background to our concerns, let us first point out the following:

The GBA is focused on the stewardship of the Georgian Bay and North Channel ecosystem.

The GBA has been engaged with the government and the aquaculture industry for over a decade to try to find a way forward to grow this industry in a way that will not continue to pollute the public waters and lake beds through the dispersion and deposition of aquaculture waste. As we have noted numerous times, many stakeholders depend on these public waters. Local, provincial and federal governments benefit from the hundreds of millions of dollars that are generated annually by tourism and recreation activities of those drawn to the area by the pristine quality of the public waters and aquatic life. It would be a travesty to enable one industry to put these public waters at risk.

Study and discussion of the freshwater open netcage aquaculture and the effects from Phosphorus on the Great Lakes inarguably requires full consideration of other initiatives that focus on water quality concerns: Environment Canada; the Ontario Ministry of Environment; binational Treaties and Water Quality Agreements are all responsible for ongoing management of the vast number of threats to the expansive, yet fragile freshwater ecosystems of these Great Lakes. The purpose of the Great Lakes Water Quality Agreement (GLWQA), "to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes", relies on cooperation, collaboration, and commitment of the federal, and provincial (as well a state) government regulators . (See <http://www.epa.gov/glnpo/glwqa/>)

We recognize the mandate of Fisheries and Oceans Canada to protect and grow recreational and commercial fisheries. When it comes to the Great Lakes there are many threats that pose great challenges for growing fisheries while maintaining environmental integrity. Along with invasive species such as Asian Carp, climate change bringing warmer water temperatures, increasing pressure of shoreline development, an increase of land based and air borne pollutants; the effects from nutrient loading (Phosphorus) is a documented threat to the integrity of the ecosystem. There are more and more outbreaks of toxic blue green algae blooms in many parts of the Great Lakes, including Georgian Bay, leading to further impairment. These outbreaks are fueled by Phosphorous.

DFO’s Aquaculture initiatives position Canada to be a leader in the commercial aquaculture sector and production of farmed fish to both domestic and international markets. In the Great Lakes, where there are so many threats to the ecosystem as outlined above, GBA believes that DFO and the industry should use closed contained systems to support the future growth of the freshwater aquaculture industry. The practice of open netcage rearing of fish in the Great Lakes ought to be phased out so as to lessen the pressure on the ecosystem from the waste generated by this industry. This can be done through DFO and other government regulators supporting a plan for the existing cage farm operators to gradually transition towards closed contained operations.

Consumer demand is moving increasingly toward foodstuffs, including fish, which are grown in an environmentally sustainable fashion. Retailers such as Loblaw are picking up on this trend and are promoting sustainably grown products. Closed systems would enable the aquaculture industry to participate in this movement. They virtually eliminate all negative impacts on the surrounding waters because they are biologically secure (eliminating disease and parasite transfer from the wild) and they allow for containment and treatment – even possible commercial use - of the waste (phosphorous). Moreover the possibility of a controlled and biosecure environment (temperature and oxygen) can allow for even greater production in size-specific and more frequent harvests of a truly pure and organic fish.

In regards to the draft objectives of the DFO studies and reviews on Phosphorus, we respectfully request your consideration for the following points of contention. Aquaculture proponents (i.e. DFO) have made the following claims in the past that we find highly contestable:

i) proper siting of cages allows for good flushing and the P is being assimilated into the larger lake volume (i.e. dilution is the solution for pollution); ii) the P is being locked into the sediments and not readily available to the water column; and iii) there is a deficiency of P in Georgian Bay, so a bit more will only enhance the natural living system….

Fisheries and Oceans Canada is guided by Canada’s Fisheries Act. Subsection 36(3) prohibits the deposit of deleterious substances. Environment Canada is responsible for administering this subsection. Unlike Subsection 35(2), there is no provision to authorize the deposit of deleterious substances except by Regulation or an Order in Council. A deleterious substance is defined by the *Fisheries Act* as any substance that, if added to water, makes the water deleterious to fish or fish habitat.

Environment Canada identifies phosphorus as the primary nutrient causing excess algae growth. Common sources of phosphorus include fertilizers in urban and agricultural runoff, improper manure storage, municipal wastewater effluents, septic systems, and industrial discharges. Open netcage aquaculture results in the direct source of phosphorus into the public waters. Whereas all other sources, land based farms, industries, municipalities, boaters and cottagers are required to take costly measures to contain wastes and reduce phosphorus discharges, the cage farming industry is given free use and license of the public waters of the Great Lakes to discharge unlimited amounts of fecal matter and other waste into the waters. Relying on the assimilative capacities of the receiving waters to disperse the nutrients is akin to a temporary waste management technique that results in dilution and delay (over years) of the harmful accumulative effects that, over a certain amount of years will most likely amount to higher risks and harmful effects (e.g. more algae blooms).

Environment Canada (EC) has initiated a $16 million Great Lakes Nutrient Initiative to understand and address the complex problems of recurrent toxic and nuisance algae in the Great Lakes. The objectives of EC’s Initiative are clear:

* Enhancing knowledge of the factors that impact tributary and nearshore water quality, ecosystem health, and algae growth;
* Establishing binational lake ecosystem objectives, phosphorus objectives, and phosphorous load reduction targets;
* Developing policy options and strategies to meet phosphorous reduction targets;
* Developing a binational nearshore assessment and management framework.

The Initiative will also help Canada to deliver on key commitments under the recently amended [Canada – United States Great Lakes Water Quality Agreement](http://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=45B79BF9-1).

See: <http://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=4FF37866-1>

Environment Canada’s mandate is clear:

... (to) manage the resource because various users are competing for the available supply of fresh water to satisfy basic needs, to enable economic development, to sustain the natural environment and to support recreational activities. It is necessary to reconcile these needs and promote the use of fresh water in a way that recognizes its social, economic, and environmental benefits….  Governments in Canada are moving to integrated ecosystem and watershed management approaches that draw on sustainable development principles. These are designed to ensure that decision making reflects the interests of many stakeholders and balances a range of goals, including sustainable water and aquatic resource management; protection from water quality-linked health threats; protection of aquatic ecosystems and species; and reduction of the health, economic and safety impacts from floods and droughts.” (See <http://www.ec.gc.ca/eau-water/default.asp?lang=En&n=DF9EE875-1>)

To the GBA and other stakeholders, the mandate of Fisheries and Oceans is not so clear.

One arm of the Department is focused on maintaining Canada’s clean and healthy aquatic ecosystems and protecting the aquatic life systems. The other arm of the Department is geared to promoting the growth of (open netcage) aquaculture in Canada’s waters.

DFO’s National Aquaculture Strategic Action Plan (for freshwater, 2011-2015) is clearly focused on promoting and facilitating the expansion of freshwater aquaculture in Canada. The plan appears to have already accepted the premise that expanding freshwater aquaculture in public waters is desirable, and that the environmental costs and resource allocation tradeoffs are acceptable. It is not clear to the GBA where this premise originates. There are still unanswered questions that need to be addressed:

1. Why is the aquaculture industry permitted to alter and reduce water quality, whereas other industries and users of public water are required to reduce water quality impact?
2. What is the rationale behind exempting the aquaculture industry from the fish habitat provisions of the Fisheries Act?
3. Is it equitable that the aquaculture industry is permitted to directly discharge its untreated effluents and manure to public waters, and have no responsibility to move towards containing its wastes as land based farming practices require?

GBA’s aquaculture committee would like to add the following:

* We believe the CSAS steering committee on the phosphorus enquiry should first look at the work already done elsewhere in the world that has proven that phosphorous from aquaculture operations in fresh water is harmful and has already identified the levels of phosphorous that can safely be released (see standards <http://www.asc-aqua.org/upload/ASC%20Freshwater%20Trout%20Standard_v1.0.pdf>)Our limnological analysis shows that current provincial phosphorus standards are insufficient to protect the coastal waters of Georgian Bay from over enrichment, never mind an expansion of the industry. There is already the potential from current P loading to cause serious degradation of our coastal waters. (See Appendix A)
* The Great Lakes Water Quality Agreement determined acceptable P loadings based on total lake volume. All P-load from cage aquaculture is released into the nearshore. Nearshore does not mix with offshore. Nearshore is 2% of total lake volume. This results in a concentration factor of 50x (i.e. actual P concentrations will be 50 times greater than predicted by GLWQA analysis). The GLWQA analysis significantly underestimates the actual impact of nearshore nutrient release. The nearshore is what we need to protect given its fragile ecosystems (i.e. bogs).
* Georgian Bay/Lake Huron oligotrophic waters, and its high density of bogs and wetlands so important to fish habitat and spawning areas along the shore, require greater protection and avoidance of harm. Steps towards moving the freshwater aquaculture systems to closed containment systems need to be inserted into aquaculture guidelines and thereby eliminate management and mitigation measures once wastes are contained and treated.

Your email of October 22 giving an update on the freshwater aquaculture file attests that, “Within the CSAS process, scientific expertise is applied to provide high quality, timely and relevant scientific advice in support of sound policy development and informed decision-making.” The Aquaculture Plan for policy development within that sector of DFO is clearly to enable the growth of (the open netcage) industry: “… the Department is collaborating… to increase public confidence in the sustainability of aquaculture development and create conditions necessary to enable the responsible growth of this important industry.” (See <http://www.dfo-mpo.gc.ca/aquaculture/management-gestion/vision-eng.htm>)

The free and direct discharge from cage aquaculture operations and the sediment accumulated by the effluent are deleterious (defined as harmful, often in a subtle way – see [www.miriam-webster.com/deleterious](http://www.miriam-webster.com/deleterious)) to the natural aquatic ecosystem of the receiving waters and lake bottoms. Water quality regulation concerns specific to the aquaculture industry and its increasing demand for water resources are within the realm and responsibilities of Environment Canada and Ontario’s Ministry of Environment. Canada’s Department of Fisheries and Oceans has a primary responsibility to Canadians for preserving the wild fishery that the commercial and recreational fisheries depend upon. Its traditional role has always been to protect Canada’s vast water resources for those causes – not for permitting the use of the waters as sink holes and assimilators of the high concentrations of farming wastes. We believe that this creates a conflict of interest position within the Department. It is for these reasons that we urge the DFO to give over the role of scientific enquiry of the effects of freshwater aquaculture on water quality and its draft plan for the CSAS process to Environment Canada so the conclusions may more clearly be determined by a government agency that operates at arm’s length from the aquaculture industry. Most certainly, the GBA applauds the importance of P studies to identify the risks of phosphorus released from cage aquaculture, and how P discharge is affecting the environment.  Other enquiries should also aim to answer: Where is P going, how is it transported, how does it cycle, what is its ultimate fate?

Questions related to water resource allocation and water quality protection are not fishery or aquaculture exclusive. They are both a Provincial (MOE) and a Federal (EC) responsibility. It is therefore reasonable that the study and review of the effects of phosphorus on the public water resources of the Great Lakes be developed through the efforts of EC and MOE.

We are sending a copy of this letter to the aforementioned government bodies as well as you in the hope that a collaborative effort can be made to consider all aspects of all studies, treaties and agreements that touch upon the Great Lakes Phosphorus dilemma.

Sincerely,



Executive Director

Georgian Bay Association

CC

Michael Goffin

Regional Director General  
Environment Canada  
Ontario Region

4905 Dufferin St   
Toronto, Ontario M3H 5T4

Hon. James Bradley  
Minister of Environment

Government of Ontario  
Ferguson Block  
11th Flr 77 Wellesley St W  
Toronto ON M7A2T5