

The McMaster students study of Georgian Bay Salmon, who proposed the same capacity(15,000 tons) and same technology as Samonix that would take freshwater and expel salt water into a freshwater source, noted that studies show the effluent from existing fish farms produce excessive amounts of nutrients such as phosphorus and nitrogen which are proven to negatively impact the biology of the water as well as put a greater load on drinking water filtration systems. Students used baseline sampling at 19 points, some close to drinking water intake for town to find out how this increase might effect this situation.(notes 1-2)In our location, the federal and provincial authorities only testing points for these nutrients are located at Waltham and Chats Falls, and data from ORK is not considered.(notes 3-5)These will not take into account the real conditions at our drinking water intake or record the changes that are directly connected to a new facility upstream. New technology requires new testing points. We have a small and relatively poor population covering the cost of these filtration systems, so we should not be responsible to pay for the testing and the increased filtration.

Catherine Fox

Note 1 :

Phosphorus (P) and Nitrogen (N) are the two primary nutrients in freshwater ecosystems that control the growth of algae and aquatic vegetation. A rapid increase in these nutrients in lakes can lead to excessive growth of algae and eventually develop anaerobic conditions when the algae die. In freshwater, total P (TP)" is generally more limiting than total N (TN), and is therefore the nutrient of concern. RAS facilities can limit the amount of nutrients in their effluent by reducing the amount of nutrients used and by using various water treatment procedures such as biofiltration (Dauda et al., 2019). N removal efficiency in RAS has varied from 85% to 98% (Schneider et al., 2007; de Schryver & Verstraete, 2009), but P removal rate can range from 32% to 95% due to the limitations of removal techniques (Kujala et al., 2020).

Ref. Pg 3 ,Environmental and Biological Implications

1) *Will effluent from the proposed GBS operation maintain the oligotrophic character of Colpoy's Bay? "Potential Impacts of Georgian Bay Salmon's Proposed Recirculatory Aquaculture System*

in Colpoy's Bay (Wiarton, ON)

Summary prepared by Dr. Pat Chow-Fraser

based on written report by:

Reta Meng, Brynn Hickey, Jacqui Vinden, Sally Ju, Elaine Marzec,

Maddie McCaig, Jonah Lehman, Jenni Velichka, John Fast, and Sina Zarini

Biology 730, Management of Aquatic Ecosystems and Resources

Department of Biology, McMaster University

1280 Main St. West, Hamilton, ON, L8S 4K1"

Although RAS can remove a large percentage of dissolved nutrients, at a stocking capacity of 15,000 tonnes/y, GBS will still release a large amount of phosphorus and nitrogen in their effluent (GBS, 2021). At a stocking capacity of only 400 tonnes/year, nitrate concentrations in the Kuterra outlet was 57 times higher than that in the inlet, while phosphorus concentrations were 34 times higher and ammonia was only 3 times higher (Table 3; Kuterra, 2015). Excretion rates, and average dissolved nutrient removal efficiencies. Proportionately, we calculated that GBS has the potential to increase nutrient loading into Colpoy's Bay by approximately 4,000 to 50,000 kg of P and 10,000 to 74,000 kg of N annually; this nutrient loading is based on GBS' proposed stocking capacity, Atlantic Salmon nutrient excretion rates, and average dissolved nutrient removal efficiencies (Strain & Hargrave, 2005; Schneider et al., 2007; de Schryver & Verstraete, 2009; Dauda et al., 2019; Kujala et al., 2020). By comparison, the Wiarton sewage plant's nutrient load into Colpoy's Bay in 2015 was only 112 kg of P and 2,556 kg N (Ontario Clean Water Agency, 2016).

*Ref. Pg7 last paragraph ,
"Potential Impacts of Georgian Bay Salmon's Proposed Recirculatory Aquaculture System
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Note 2: Location of 19
sampling sites in Colpoy's Bay.
Grab samples were collected in
January and March of 2022 and
measured for TP concentrations.
All except 3 were oligotrophic
($<10 \mu\text{g/L}$); one was
mesotrophic ($10\text{--}20 \mu\text{g/L}$) and
one was eutrophic ($>20 \mu\text{g/L}$).
Sites 1-9 were additionally
sampled for DO, TDS,
conductivity, and salinity.

pg 4 first paragraph, figure 3
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Note 3:Water Quality & Hydrometric
Stations

The federal and provincial agencies cross-reference these official identifiers for the Chenaux sector:

- Downstream Station (Chats Lake entry):
02KC016 (Ottawa River at Sandpoint). This is located just below the dam's tailwater where the flow enters Chats Lake. @
- Upstream Station (Lac Coulonge exit):
02KC005 (Ottawa River near Westmeath / Fort-Coulonge segment). This tracks the water quality feeding into the Chenaux reservoir.
Canada.ca +1

Note 4:No, the MELCCFP (Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs) does not officially use citizen-science or community-based data collected by the Ottawa Riverkeeper to assess provincial water quality trends or manage official surveillance networks.

Note 5:The MELCCFP monitors water quality through structured, permanent, and automated sampling networks rather than localized community efforts. Instead of individual point locations, these sites are grouped by their specific environmental tracking networks. @

1. Réseau-rivières (Surface Water
Quality Network)

This is the primary network used to assess the health of major rivers.

Focus parameters: Standard physical and chemical variables including total phosphorus, nitrates, suspended solids (TSS), pH, fecal coliforms, and dissolved oxygen.

- Regional coverage: The network features key active sampling points tracking major tributaries flowing directly into the Ottawa River (e.g., the Gatineau River, Coulonge River, and Lièvre River).
- Data access: Exact geographic coordinates, historical metrics, and water quality indexes can be tracked directly through the interactive MELCCFP Water Atlas (Atlas de l'eau).

*Notes 3-5 are Ai generated