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Canadian GLEC Secretariat  
Great Lakes Environment Office  
Environment and Climate Change Canada  
Email: [ec.acegl-glwqa.ec@canada.ca](mailto:ec.acegl-glwqa.ec@canada.ca)

United States GLEC Secretariat  
Great Lakes National Program Office  
U.S. Environmental Protection Agency  
Email: [glwqa@epa.gov](mailto:glwqa@epa.gov)

Transmission by email

c.c.: [eccc.substances.eccc@canada.ca](mailto:eccc.substances.eccc@canada.ca); Lisa Sealock (ECCC) [lisa.sealock@canada.ca](mailto:lisa.sealock@canada.ca); Edwin Smith (EPA) [Smith.Edwin@epa.gov](mailto:Smith.Edwin@epa.gov)

***RE: Comments on the draft of Canada's Great Lakes Strategy for PFOS, PFOA and LC-PFCAs Risk Management (April 26, 2021)***

The undersigned organizations are responding to the draft of Canada's Great Lakes Strategy for PFOS, PFOA and LC-PFCAs Risk Management (draft Strategy) released on April 26, 2021. We are pleased to see the release of the draft Strategy as it will advance Canada's efforts to better address the ongoing problem of pollution caused by PFOS, PFOA, and LC-PFCAs which belong to a broad family of more than 4,000 PFAS chemicals in the Great Lakes basin. We support the importance of implementing risk mitigation and management actions aimed at reducing PFOS, PFOA, LC-PFCAs, and their salts and precursors in the Great Lakes waters, wildlife, and people. However, we are disappointed that this is not part of a binational strategy on these substances. The Great Lakes Water Quality Agreement (GLWQA) requires Canada and the United States to "prepare binational strategies for chemicals of mutual concern" [Annex 3, Part B].

Our organisations also support the recommendations presented in the report released by CELA in 2019 "Scoping Per- and Polyfluoroalkyl Substances Releases from the Recycling of Paper and Textiles and their Implications for the Great Lakes-St Lawrence River Ecosystem: Identifying Opportunities to Address Toxicity of Products in a Circular Economy"<sup>1</sup> to address the challenges of PFAS releases into the Great Lakes ecosystem. The CELA Report inter alia highlights and proposes measures in support of the conclusion made by the Identification Task Team (ITT), an expert committee created under the Great Lakes Water Quality Agreement (GLWQA<sup>2</sup>), in its Summary Report<sup>3</sup> of 2015 that PFOS, PFOA and LC-PFCAs

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<sup>1</sup> Canadian Environmental Law Association (CELA). 2019. Scoping Per- and Polyfluoroalkyl Substances Releases from the Recycling of Paper and Textiles and their Implications for the Great Lakes-St Lawrence River Ecosystem:

<sup>2</sup> Great Lakes Water Quality Agreement (binational.net)

<sup>3</sup> <https://binational.net/wp-content/uploads/2015/05/EN-PFCs-Binational-Summary-Report-Final-Draft.pdf>

pose a threat to the environment and to human health in the Great Lakes basin. ITT inter alia noted the need for activities in addition to the Canada and US federal programs, including monitoring of air, sediment, wastewater, top-predator fish species and herring-gull eggs in the Great Lakes; develop environmental quality guidelines to evaluate regulatory and control measures.

Our organizations offer the following commentary and additional recommendations in response to Canada's draft Great Lakes Strategy.

### **Scope of the draft of Canada's Great Lakes Strategy for PFOS, PFOA and LC-PFCAs Risk Management**

The draft Strategy specifically focuses on three substances, PFOS, PFOA and LC-PFCAs, out of eight chemicals included as designated chemicals of mutual concern (CMC) under Annex 3 of GLWQA. By developing the CMC list, Canada and the United States agreed to protect “human health and the environment through cooperative and coordinated measures to reduce the anthropogenic release of chemicals of mutual concern into the Waters of the Great Lakes.”<sup>4</sup>

Both countries agreed to:

- **“Identify** chemicals of mutual concern that originate from anthropogenic (human) sources, and that are agreed to by both countries as being potentially harmful to human health or the environment;
- **Target** these chemicals of mutual concern for action by preparing binational strategies and coordinating the development and application of domestic water quality standards, objectives, criteria and guidelines, as appropriate;
- **Reduce** anthropogenic releases of chemicals of mutual concern and products containing chemicals of mutual concern throughout their entire life cycles;
- **Promote** the use of safer chemical substances and the use of technologies that reduce or eliminate the uses and releases of chemicals of mutual concern;
- **Continue progress** toward the sound management of chemicals of mutual concern using approaches that are accountable, adaptive and science-based;
- **Monitor and evaluate** the progress and effectiveness of pollution prevention and control measures for chemicals of mutual concern and adapt management approaches as necessary;
- **Regularly exchange information** on monitoring, surveillance, research, technologies, and measures for managing chemicals of mutual concern; and
- **Coordinate and collaborate** with various stakeholders on science priorities, research, surveillance and monitoring activities in the Great Lakes basin ecosystem.”<sup>5</sup>

It is obvious that consolidated efforts are needed from both the United States and Canada to implement the agreed activities to protect the Great Lakes ecosystem through the reduction

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<sup>4</sup> Chemicals of Mutual Concern (Annex 3) – Binational.net

<sup>5</sup> Ibis

and virtual elimination of CMC uses and releases. Unilateral actions will not reduce pollution caused by CMC from a variety of sources, nor will they reduce CMC exposure on the health of people living in the Great Lakes basin.

A binational strategy and action plan with timelines should be developed to identify sources of exposure, promote safer alternatives and innovative technologies to reduce anthropogenic releases of CMC with the goal for their virtual elimination and zero discharge in accordance with the principles and approaches indicated in Article 2 of the GLWQA, and ensure transparency and regular information sharing with interested stakeholders from both countries.

Though the draft Strategy suggests 16 actions to address data gaps, it, nevertheless, does not call for a binational strategy on three CMCs, nor does it suggest cooperative and coordinative actions needed to meet the purpose under Annex 3 of the GLWQA. This contradicts the commitments undertaken by Canada and the United States under the GLWQA to create a binational strategy and provides a bad precedent for addressing other CMCs.

The absence of a binational strategy for CMCs, particularly for PFOS, PFOA and LC-PFCAs will make it very challenging if not impossible to evaluate measures and report (as required under the GLWQA) on the progress when actions are taken under the different strategies. It is particularly problematic given that the US will rely on EPA's PFAS Action Plan. The EPA's PFAS Action Plan has no specific measures targeting the Great Lakes basin which makes it extremely difficult to make comparisons and evaluate the progress on these targeted CMCs required under the GLWQA.

**Recommendation:**

We strongly recommend that Canada and United States develop a binational strategy on PFOS, PFOA, and LC-PFCA in support of their commitment to binational strategies under the GLWQA.

**The draft Strategy does not address key principles under GLWQA**

Principles and approaches under GLWQA include inter alia virtual elimination and zero discharge of CMC. However, the actions underlined in the draft Strategy do not clearly address these principles. The activities included in the draft Strategy are focused on the continuation of environmental monitoring, research, and inventory of sources of pollution. While these measures can help make progress towards virtual elimination and zero discharge of CMC, a more proactive approach to address the chemical life cycle and the adoption of safe alternatives is essential, including updating regulations on these CMCs that eliminate existing exemptions.

**Recommendation:**

Virtual elimination and zero discharge should be the central element of Canada's Great Lakes Strategy on PFOS, PFOA, LC-PFCAs.

## **Timelines and Reduction Targets for PFOS, PFOA and LC-PFCAs:**

The draft Strategy lacks timelines and reduction targets on PFOS, PFOA and LC-PFCAs. The absence of any timelines and reduction targets does not provide the needed accountability in the proposed measures to drive the reductions required on these CMCs and ensure adequate protection of the Great Lake basin and the health of its populations. Furthermore, the absence of timelines and reduction targets for these CMCs creates challenges for the governments to develop their annual workplans and evaluate their progress on these CMCs. We have made substantial comments on previous Binational Strategies proposed for CMCs regarding the absence of timelines and reduction targets and continue to express our concerns with this approach.

### **Recommendation:**

Require timelines and reduction targets for PFOS, PFOA, and LC-PFCAs.

## **The draft Strategy does not provide recommendations to reduce exposure on vulnerable populations**

The draft Strategy refers to the ecological screening assessments for PFOS, PFOA, LC-PFCAs, conducted in different years and concludes that these substances, and their salts and their precursors were placed on Canada's List of Toxic Substances under the *Canadian Environmental Protection Act*. It provides detailed data confirming the "widespread presence of these substances in the Canadian environment", including environmental media, fish, and wildlife. It further recommends continuing monitoring in environmental media in the Great Lakes as well as the need to better understand health effects data relevant to human health.

Though Health Canada concluded in 2009 and 2012 that PFOS and PFOA were not a concern for human health at current levels of exposure, data of 2019 presented in the draft Strategy shows serious health complications as a result of exposure, and the presence of PFOS, PFOA, and perfluorohexane sulfonate (PFHxS) in "over 85% of human blood serum samples from non-occupationally exposed adult Canadians".

However, the draft Strategy does not recommend continuing human biomonitoring in the respective communities with the focus on the vulnerable population, including workers, women and children in the Great Lakes basin. Neither does it discuss the importance to consider mixtures of PFOS, PFOA, LC-PFCAs when assessing toxicity of these substances.

Furthermore, the draft Strategy does not include activities to prevent exposure to the population in the Great Lakes basin, especially to the most vulnerable. This is a substantial gap in the draft Strategy since the Great Lakes basin is home to half of Canada's population. In addition, prevention is among key principles and approaches the US and Canada agreed upon in the GLWQA (see Article 2, section 4(j) of the GLWQA). The draft Strategy on PFOS, PFOAs and LC-PFCA should note that environmental monitoring and human biomonitoring are not enough to reduce pollution and exposure to these CMCs. Concrete risk

reduction activities should be included along with the reduction targets and timelines to achieve a meaningful result.

**Recommendations:**

Include human biomonitoring of PFOS, PFOA, LC-PFCAs in the Great Lakes basin with a focus on the vulnerable populations including workers, children, and pregnant women, including as part of formal epidemiological studies where feasible. Mixtures of these substances should be considered when assessing toxicity data for amending or developing new regulatory controls. Adoption of prevention approaches in keeping with Article 2 of GLWQA should be strengthened for PFOS, PFOA and LC-PFCAs.

Include risk reduction activities, the reduction targets, and timelines to prevent pollution and exposure to PFOS, PFOA and LC-PFCAs on the population of the Great Lakes basin with a focus on the most vulnerable groups.

The draft Strategy further concludes that current chemical data collected within different programs are not consistent, standardized, or structured, and suggests working towards greater data uniformity. While setting up a well-structured database for data collected via various research efforts is important, data and information generated by NGOs and community groups through community science efforts meeting data quality standards should also be considered to better understand the impact of risk management activities on the human health with the focus on the most vulnerable groups.

**Recommendations:**

A repository for data collected through various monitoring and surveillance programmes should include data from independent monitoring conducted by NGOs and other groups through community science efforts meeting data quality standards to ensure better understanding of the impact of risk management activities on the human health with the focus on the most vulnerable groups, including workers, children, and women.

Ensure open access to the database to all stakeholders involved in PFOS, PFOA, LC-PFCAs monitoring in the Great Lakes basin, including local citizens and community groups whose lives and wellbeing depend on Great Lakes ecosystem.

**Consumer products as a source of PFOS, PFOA, LC-PFCAs release in the Great Lakes basin**

*The target chemicals are prohibited for the use in consumer product both manufactured domestically and imported however they continue to be a source of pollution in the Great Lakes basin. How is the draft Strategy addressing the problem?*

Canada prohibits the manufacture, use, sale, offer for sale or import of products that contain PFOS, PFOA, LC-PFCAs, and their salts and precursors under the Prohibition of Certain Toxic Substances Regulations, 2012 (PCTSR)<sup>6</sup>.

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<sup>6</sup> CEPA Registry - Canada.ca

Moreover, Canada does not include consumer products in the list of acceptable purposes for PFOS. According to Chapter 4<sup>7</sup> of the Updated version of Canada's National Implementation Plan under the Stockholm Convention on Persistent Organic Pollutants, Canada has notified the Secretariat of the Convention of the intention to use PFOS for a number of acceptable purposes which do not include consumer products<sup>8</sup>.

Furthermore, in the proposed amendments to the Prohibition of Certain Toxic Substances Regulations, 2018 consultation document: chapter 2<sup>9</sup>, it is suggested to remove the specific exemption for the import of a product containing PFOA and/or LC-PFCAs, if the product is for personal use. The reason to remove this exemption is that alternatives are available globally.

The Prohibition of Certain Toxic Substances Regulations, 2018 consultation document: chapter 2 also suggests removing the exemption for import, use, sale and offer for sale of manufactured items containing PFOA and/or LC-PFCAs that includes “Textiles – Outdoor applications such as awning, outdoor furniture and camping gears; Textiles for oil and water repellency for the protection from dangerous liquids for the protection of workers from risks to their health and safety”<sup>10</sup>.

In addition, the proposed amendments recommend removing exemptions for import, use, sale and offer for sale of manufactured items containing LC-PFCAs that includes surface treated paper and cardboard packaging for commercial and consumer use; and semiconductors or related electronic devices that contain fluoropolymers and/or fluoroelastomers with PFOA residues. The reason for removing these exemptions is due to the presence of affordable alternatives around the world.

By removing consumer products from the lists of acceptable purposes and specific exemptions for PFOS, PFOA LC-PFCAs under the Stockholm Convention on POPs and by prohibiting the use of this substances in products, Canada made a clear decision to stop manufacturing products containing the target PFAS chemicals.

Nevertheless, the Proposed risk management approach for PFOA, its salts, and its precursors and LC-Perfluorocarboxylic Acids (PFCAs), their salts, and their precursors submitted by Canada to the Stockholm Convention Secretariat in 2016, admits that “long-chain PFCAs may be detected in typical North American homes with carpeted floors, pre-treated carpet, and commercial carpet-care liquids, while floor waxes and stone/tile/wood sealants that contain fluorotelomer products are also potential sources in homes and commercial buildings containing these materials”.<sup>11</sup> Other potential sources include home textile, upholstery and

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<sup>7</sup> Consultation on the update to the national implementation plan on persistent organic pollutants: chapter 4 - Canada.ca

<sup>8</sup> Acceptable Purposes: PFOS and PFOSF (pops.int)

<sup>9</sup> Proposed amendments to the Prohibition of Certain Toxic Substances Regulations, 2018 consultation document: chapter 2 - Canada.ca

<sup>10</sup> Ibis

<sup>11</sup> PFOA Info (pops.int)

apparel and household carpet and fabric care liquids, all-weather clothing, and non-stick frying pans.

The draft Strategy also names consumer products as one of the key sources that release PFOS, PFOA, LC-PFCAs and their salts and precursors into the Great Lakes ecosystem. It notes that consumer products which may contain PFAS substances include paper and packaging (especially food packaging), electrical and electronic equipment, and textile. However, it does not provide a clear path towards addressing the problem in the Great Lakes basin.

***PFOS, PFOA, LC-PFCAs are not tracked in consumer products.***

The Canada's Plastics Science Agenda notes that the Canadian economy is mostly linear meaning that for some types of waste more than 90% are either "landfilled, incinerated, or lost to the environment"<sup>12</sup>.

The draft Strategy stresses that consumer products containing PFOS, PFOA, LC-PFCAs, and their salts and precursors "function as vectors for the release of these substances to the environment" and that "the disposal of products containing these substances into landfills can become a pathway of release to the environment".

The draft Strategy also notes that the current amount of PFOS, PFOA, and LC-PFCAs in consumer products is unknown and that commercial and residential products that may contain these chemicals are not reported or tracked. However, the draft Strategy does not include an activity that will require manufacturers to provide data about the presence of target substances in imported products.

**Recommendations:**

The draft Strategy should stipulate initiatives aimed at removing all the remaining specific exemptions related to the presence of PFOA and/or LC-PFCAs, including in products with clear guidance on avoiding the use of other PFAS as substitute replacements. These initiatives should include a clear timeline.

The draft Strategy should require manufacturers and retailers of new products, imported, and produced domestically in the Great Lakes basin, to report PFOA, PFOS, and/or LC-PFCAs or other PFAS chemicals in products to establish inventories of pollution sources.

***Does the draft Strategy encourage manufacturers to use alternatives to PFAS in products?***

Moreover, the draft Strategy does not call for manufacturers and retailers to disclose the presence of PFAS alternatives in products, nor does it encourage product manufacturers to explore PFAS-free alternatives in consumer products.

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<sup>12</sup> Canada's plastics science agenda - Canada.ca

It should be admitted that in the textile sector, for example, there are a variety of alternative impregnating agents on the market that have been shown to provide water repellency which is the most essential property of outdoor apparel. These alternatives to PFAS-based repellents may fulfill user requirements.<sup>13</sup> Examples of non-fluorinated alternative water repellent finishing agents include those based on paraffin and silicon.<sup>14</sup> While these alternatives have their disadvantages, for example, they provide durable water repellence but do not provide oil repellence, they represent an opportunity to move beyond the use of PFAS in textiles, to continue to imagine innovative solutions and alternatives that are better for both people and the planet.

In addition, the Secretariat of the Stockholm Convention on POPs released information on the availability of alternatives to PFOA<sup>15</sup> noting that for most of PFOA uses the work on alternatives is under way. The Addendum to the risk management evaluation on PFOA, its salts and PFOA-related compounds to the POPRC Report of 2018 inter alia notes that for professional, technical and protective textiles “no alternatives meeting the high demand by legal requirements and by customers are currently available”<sup>16</sup>. However, it is admitted that usually clothing and outdoor textiles may be treated by C6-products or even fluorine-free alternatives.

In 2013, the Conference of the Parties to the Stockholm Convention at its 6<sup>th</sup> meeting encouraged parties to consider stopping their use of PFOS, its salts, and related chemicals for the applications for which some PFAS-free and non-chemical alternatives have been identified and are commercially available, which, inter alia include carpets; leather, and apparel; textiles and upholstery. In September 2016, the twelfth meeting of the Persistent Organic Pollutants Review Committee (POPRC 12) presented a Consolidated Guidance on alternatives to PFOS and its related chemicals<sup>17</sup><sup>18</sup>. The Guidance inter alia explains that ‘currently there are no parties registered for specific exemptions for carpets, leather and apparel, textiles and upholstery’ meaning that PFOS-related chemicals are no longer used on these products.

### **Recommendations:**

Product manufacturers using PFAS in the Great Lakes basin should provide a list of the PFAS chemicals they use and an action plan for switching to safe, non-PFAS alternatives, including non-chemical alternatives, with a clear timeline for implementation. Data and information about PFAS alternatives assessment utilised by these facilities should be provided.

The draft Strategy should initiate the development of a database of brands and retailers operating in the Great Lakes basin, of PFAS-free products including carpets, textiles, building materials, food contact materials, and electronic products. The database will help prioritise

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<sup>13</sup> Hill, P.J., Taylor, M., Goswami, P., & Blackburn, R.S. (2017). Substitution of PFAS chemistry in outdoor apparel and the impact on repellency performance. *Chemosphere*, 181, 500-507.

<sup>14</sup><https://legislature.vermont.gov/Documents/2020/WorkGroups/House%20Human%20Services/Bills/S.295/Witness%20Testimony/S.295~Elena%20Mihaly~DK-PFAS-AlternativesTextiles15-6-24-2020.pdf>

<sup>15</sup> PFOA (pops.int)

<sup>16</sup> <http://chm.pops.int/Portals/0/download.aspx?d=UNEP-POPS-POPRC.14-6-Add.2.English.pdf>

<sup>17</sup> <http://chm.pops.int/Portals/0/download.aspx?d=UNEP-POPS-POPRC.12-INF-15-Rev.1.English.pdf>

<sup>18</sup><http://chm.pops.int/Implementation/Alternatives/AlternativestoPOPs/ChemicalslistedinAnnexB/Perfluorooctanesulfonicacidandperfluorooctane/tabid/5869/Default.aspx>



these companies within the federal and provincial procurement policy and inform consumers and other stakeholders within the Great Lakes basin about the availability of PFAS-free products on the market.

The draft Strategy should prioritize information gathering on non-fluorinated alternatives to LC-PFCAs in products including information on hazard assessment of chemical alternatives to avoid regrettable substitution.

***Does the draft Strategy provide for disclosure of chemical product composition to facilitate alternative PFAS assessment?***

In the Technical paper on the identification and assessment of alternatives to the use of perfluorooctane sulfonic acid in open applications submitted by Canada to POPRC 8 meeting in 2012, it is noted that alternatives to PFOS for impregnation or coating of textiles, leather and carpets were well known and “there was a good access of data available for further evaluations on health and environment”. However, the paper also admits that “there were manufacturer trade secrets concerning detailed chemical product compositions that may be a weak point for detailed assessments when these alternatives are applied in production”.<sup>19</sup>

The same problem was noted in the Consolidated Guidance on alternatives to PFOS and its related chemicals where it is said that many alternatives for PFOS-related chemicals and mixtures have been claimed as Confidential Business information (CBI) and thus could not be disclosed and “these registered substances and mixtures have included short-chain PFAS and various fluorinated telomers”.

Gaps in information disclosure of PFAS chemicals in products results in their continued application which makes consumer products which contain them a significant source of PFAS pollution everywhere including the Great Lakes basin. However, the draft Strategy does not include activities that will address this gap and facilitate assessment of PFAS alternatives in products.

**Recommendations:**

Gaps in information disclosure of PFAS chemicals in products should be addressed to facilitate assessment of alternatives for the target chemicals and mixtures and avoid regrettable substitution including short-chain PFAS and various fluorinated chemicals.

The draft Strategy should emphasize that CBI should not undermine efforts for the assessment of PFAS and their chemical alternatives in products. The use of CBI claims should be limited to ensure that information on chemicals relating to the health and safety of humans and the environment is not regarded as confidential.

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<sup>19</sup><http://chm.pops.int/TheConvention/POPsReviewCommittee/Meetings/POPRC12/POPRC12Followup/PFOAInfo/tabid/5453/ctl/Download/mid/16352/Default.aspx?id=42&ObjID=22829>

The draft Strategy should include activities to raise awareness of the continued use of the target CMCs in products, the need to move towards their virtual elimination, and the availability of safe alternatives, including non-chemical alternatives.

The draft Strategy should address how remaining exemptions under the Prohibition of Certain Toxic Substances Regulations under CEPA should outline when and how exemptions should be removed under the regulations. It should adopt the Proposed amendments to the Prohibition of Certain Toxic Substances Regulations, 2018 consultation document: chapter 2<sup>20</sup> and indicate the related timelines and reduction targets.

There are ongoing concerns related to the contamination of PFAS from landfills and areas used for military and fire fighting training exercises which use aqueous fire fighting foam containing PFOAs or PFOS. It is important to better understand if the use of these materials are sources of contamination in the Great Lakes basin.

Given that there are alternatives for aqueous fire fighting foam available on the market, additional consideration under this Strategy should be taken to promote the use of safe alternatives that do not include these CMCs or other members of the class of PFAS.

### ***Drinking water quality guidelines***

The draft Strategy refers to drinking water guidelines of 2018 for PFOS and PFOA which set maximum acceptable concentration (MAC) for PFOS in drinking water at 600 ng/L (0.600 µg/L) and for PFOA at 200 ng/L (0.200 µg/L). This is comparatively higher than the US Environmental Protection Agency lifetime health advisory of 70 ng/L (0.070 µg/L) for PFOS and PFOA combined. Many states in the Great Lakes basin including Michigan and Minnesota have drafted even stricter drinking water and groundwater guidelines after conducting their own analysis of limits that would be more protective of public health.

Noting that precaution is among the key principles indicated in Article 2 of the GLWQA (see Article 2 section 4 line i), harmonisation of both approaches is needed with the preference given to more precautionary and health protective limits established in the United States.

### **Recommendation:**

The draft Strategy should include reducing the MAC in the drinking water guidelines for PFOS and PFOA in Canada to reflect the more health protective levels adopted by the most precautionary approach taken by US states for these CMCs.

### ***Fish consumption advisory***

The draft Strategy notes that most of the human exposure to PFAS can be attributed to diet that includes eating fish. This is especially relevant for indigenous communities who traditionally harvest fish in the Great Lakes basin.

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<sup>20</sup> Proposed amendments to the Prohibition of Certain Toxic Substances Regulations, 2018 consultation document: chapter 2 - Canada.ca

The draft Strategy further makes a reference to the consumption restrictions for PFOS concentrations in edible fish established by Ontario MECP. In Ontario, for example, there are no restrictions on public fish consumption at PFOS concentrations below 640 ng/g body weight.

This level is more than three-fold higher than the restricted level of PFOS concentration in edible fish established by the Great Lakes Consortium for Fish Consumption Advisories Best Practice for PFOS Guidelines “based on the 2016 US EPA Drinking Water Health Advisory reference dose (RfD) of  $2 \times 10^{-5}$  milligrams per kilogram per day (mg/kg/day)”<sup>21</sup>. The Advisory recommends not to eat fish with PFOS concentration above 200 µg/kg.

**Recommendation:**

The draft Strategy should include stricter fish consumption advisory that will protect the health of people in the Great Lakes basin to reflect stringent levels of PFOS concentration in fish adopted by the Great Lakes Consortium for Fish Consumption Advisories Best Practice for PFOS Guidelines.

**Contact:** Fe de Leon, MPH, Researcher and Paralegal, Canadian Environmental Law Association, email: [deleonf@ccla.ca](mailto:deleonf@ccla.ca)

**Prepared by:** Olga Speranskaya, PhD, Health and Environment Justice Support

**Prepared for:** Toxics-Free Great Lakes Binational Network

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<sup>21</sup> Best Practice for Perfluorooctane Sulfonate (PFOS) Guidelines - mainbody (state.mn.us)

## Non-governmental organizations supporting this submission (updated June 1, 2021)



**Toxics-Free Great Lakes Binational Network**  
John Jackson, Co-chair ([jjackson@web.ca](mailto:jjackson@web.ca)) and  
Michael Murray, Co-chair ([murray@nwf.org](mailto:murray@nwf.org))



**Health and Environment Justice Support (HEJSupport)**  
Olga Speranskaya, PhD, Co-Director  
([olga.speranskaya@hej-support.org](mailto:olga.speranskaya@hej-support.org))



**Canadian Environmental Law Association**  
Fe de Leon, MPH, Researcher ([deleonf@cela.ca](mailto:deleonf@cela.ca))



**Citizens' Network on Waste Management**  
John Jackson, Co-chair ([jjackson@web.ca](mailto:jjackson@web.ca))



**Clean Production Action**  
Beverley Thorpe ([bev@cleanproduction.org](mailto:bev@cleanproduction.org))



**Freshwater Future Canada**  
Kristy Meyer, Associate Director  
([Kristy@FreshwaterFuture.org](mailto:Kristy@FreshwaterFuture.org))



**Blue Fish Canada**  
Lawrence Gunther, President  
([director@bluefishcanada.ca](mailto:director@bluefishcanada.ca))



**International Association of Fire Fighters IAFF**  
Scott Marks, Assistant to General President for  
Canadian Operations ([smarks@iaff.org](mailto:smarks@iaff.org))



**Ontario Headwaters Institute**  
Andrew McCammon, Executive Director  
([andrew@ontarioheadwaters.ca](mailto:andrew@ontarioheadwaters.ca))



**Oakvillegreen Conservation Association**  
Melanie Rose, Executive Director  
([Melanie.rose@oakvillegreen.org](mailto:Melanie.rose@oakvillegreen.org))



**The Oxford Coalition for Social Justice**  
Bryan Smith, Chair ([bryasmit@oxford.net](mailto:bryasmit@oxford.net))



**Ontario Rivers Alliance**  
Linda Heron, Chair  
([lindah@ontarioriversalliance.ca](mailto:lindah@ontarioriversalliance.ca))



**National Council of Women of Canada**  
Patricia Leson, President ([presncwc@gmail.com](mailto:presncwc@gmail.com))



**Environmental Defence**  
Michelle Woodhouse, Program Manager of Water and the Great Lakes  
([mwoodhouse@environmentaldefence.ca](mailto:mwoodhouse@environmentaldefence.ca))



**Wallaceburg Advisory Team for a Cleaner Habitat (WATCH)**  
Kris Lee, Chair ([ecowrappin@hotmail.com](mailto:ecowrappin@hotmail.com))



**AFFEW (A Few Friends for the Environment of the World)**  
Julia Chambers President  
([earthmuffin56@gmail.com](mailto:earthmuffin56@gmail.com))



**Georgian Bay Association**  
Rupert Kindersley, Executive Director  
([rkindersley@georgianbay.ca](mailto:rkindersley@georgianbay.ca))



**Women's Healthy Environments Network (WHEN)**  
Cassie Barker  
([cassie@womenshealthyenvironments.ca](mailto:cassie@womenshealthyenvironments.ca))



**Prevent Cancer Now**  
Meg Sears PhD, Chair ([meg@preventcancer.ca](mailto:meg@preventcancer.ca))



**Association pour la santé environnementale du Québec – Environmental Health Association of Québec**  
Rohini Peris, President ([office@aseq-ehaq.ca](mailto:office@aseq-ehaq.ca))



**Rescue Lake Simcoe Coalition**  
Claire Malcolmson, Executive Director  
([rescuelakesimcoecoalition@gmail.com](mailto:rescuelakesimcoecoalition@gmail.com))



**Provincial Council of Women of Ontario**  
Edeltraud Neal, President  
([edeltraud.neal@gmail.com](mailto:edeltraud.neal@gmail.com))



**Canadian Freshwater Alliance**  
Raj Gill, Great Lakes Program Director  
([raj@freshwateralliance.ca](mailto:raj@freshwateralliance.ca))

**Environmental and Occupational Working Group of the Toronto Cancer Prevention Coalition**  
Sarah Miller, Co-chair  
([reachsandbarsarah@gmail.com](mailto:reachsandbarsarah@gmail.com))

**Religious Coalition for the Great Lakes**  
Irene Senn, Coordinator ([Imbsenn@gmail.com](mailto:Imbsenn@gmail.com))

**Friends of Kingston Inner Harbour**  
Mary Farrar, President ([inverarymary@yahoo.com](mailto:inverarymary@yahoo.com))

**Algonquin Eco Watch**  
Mike Wilton, Director (Former)  
([wilton@algonquin-eco-watch.com](mailto:wilton@algonquin-eco-watch.com))