

How You Can Prevent CMCs from Contaminating Lake Superior:

- Take household hazardous materials to hazardous waste collection depots.
- Do not burn garbage; prevent the release of toxic compounds such as dioxins, mercury, and lead.
- Properly dispose of unused medication through pharmaceutical take-back programs.
- Choose environmentally-friendly cleaning and personal care supplies.
- Practice energy efficiency at home.
- Utilize driveway sealants that minimize the release of toxic substances in precipitation events.
- Use natural non-toxic pest-control methods.
- Reduce the use of fluorinated consumer products such as non-stick cookware and stain-resistant products.
- Try eco-friendly de-icing alternatives such as sugar, sand, or coffee grinds.
- Join the Public Advisory Committee for the Thunder Bay Area of Concern.

Helpful Links:

- Guide to Eating Ontario Fish: <https://www.ontario.ca/page/eating-ontario-fish>
- Chemicals of Mutual Concern (Annex 3): <https://binational.net/annexes-issues/a3/>
- Lake Superior 2020-2024 Lakewide Action & Management Plan: <https://binational.net/2022/09/15/lake-superior-lamp-2020-2024/>
- State of the Great Lakes 2022 Report: <https://binational.net/wp-content/uploads/2022/07/State-of-the-Great-Lakes-2022-Report.pdf>



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130 Conservation Road | P.O. Box 10427 | Thunder Bay ON P7B 6T8
P: (807) 344-5857 | F: (807) 345-9156 | info@lakeheadca.com
www.lakeheadca.com



LAKEHEAD REGION
CONSERVATION AUTHORITY

THUNDER BAY FISH
CONSUMPTION ADVISORIES

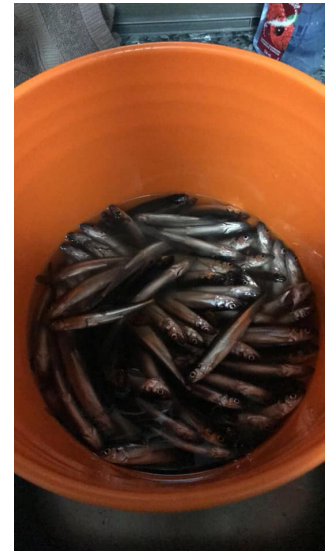
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What are Chemicals of Mutual Concern?

Chemicals of Mutual Concern (CMCs) originate from human sources, and both Canada and the U.S. agree are potentially harmful to human health and the environment. CMCs are persistent and can bioaccumulate in the food web, where fish consumption has now become one of the known routes of exposure. To date, eight chemicals have been designated as CMCs. In Canada, these CMCs, are listed as toxic substances and regulated under the Canadian Environmental Protection Act (CEPA) of 1999:

1. mercury
2. polychlorinated biphenyls (PCBs)
3. hexabromocyclododecane (HBCD)
4. polybrominated diphenyl ethers (PBDEs)
5. perfluorooctane sulfonate (PFOS)
6. perfluorooctanoic acid (PFOA)
7. long-chain perfluorocarboxylic acids (LC-PFCAs)
8. short-chain chlorinated paraffins (SCCPs).



What are the harmful health effects of CMCs?

Under certain conditions, CMCs may pose a risk to human or environmental health. This depends on the type of chemical and the route of exposure (i.e., food, water, air, etc.). In some instances, exposure to certain chemicals can cause serious health problems. Long-term health effects are usually caused by exposure to harmful chemicals at smaller doses over longer periods of time. These long-term effects can include cancer, liver enlargement, changes to the metabolic systems, and other effects on various organs of the body dependent on the chemical. Exposure to certain chemicals in early developmental stages, such as fetus or infant, can lead to birth defects, and mental and physical developmental problems in children that can continue to adulthood.

How do CMCs end up in Lake Superior?

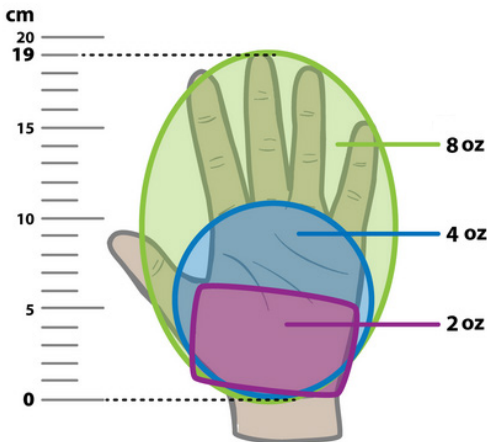
CMCs can enter the air, water and soil when they are produced, used, or disposed. CMCs are known to enter Lake Superior through atmospheric deposition, point sources (municipal/industrial wastewater discharges and landfills), non-point sources (stormwater/surface runoff), and releases from existing contaminated bottom sediments in the lake.

What are Fish Consumption Advisories?

Canadian and U.S. federal, tribal, state, and provincial agencies monitor the chemical concentrations in the edible portions of fish (i.e. fillets). Consumption advice is issued in an effort to avoid the negative health effects of harmful pollutants found in fish and wildlife. The Guide to Eating Ontario Fish was developed to provide fish consumption

advice for both general and sensitive populations (women of child-bearing age and children under 15). Fish consumption advisories are based on location, type of fish, length of fish, and recommended number of meals. A meal is considered 227 grams or 8 ounces for the average adult.

A VISUAL GUIDE TO FISH SERVING SIZES



What's the Status of Fish in Lake Superior?

The status of contaminants in edible fish in Lake Superior is classified as “fair” with an “unchanging” trend over the past 10 years based on the 2022 State of the Great Lakes report. Fish consumption advisories in Lake Superior and the Thunder Bay region are largely due to concentrations of mercury and PCBs, and in a few locations, dioxins/furans and toxaphene (ECCC and EPA, 2022).

PFAS are now being more extensively monitored and have recently prompted the issuance of fish consumption advisories in the Neebing River. The elevated levels of PFAS are attributed to the river’s close proximity to the Thunder Bay Airport a PFAS “hot spot” in the region. Fortunately, PFAS levels were low in freshwater fish sampled from Thunder Bay’s inner and outer harbour and did not lead to a change in the consumption advisory.

SUB-INDICATOR	STATUS - TREND
<i>Treated Drinking Water</i>	Good - Unchanging
<i>Contaminants in Edible Fish</i>	Fair - Unchanging
<i>Toxic Chemicals in Sediment</i>	Good - Unchanging
<i>Toxic Chemicals in Water</i>	Fair - Improving
<i>Toxic Chemicals in Whole Fish</i>	Fair - Unchanging
<i>Toxic Chemicals in Herring Gull Eggs</i>	Good - Improving
<i>Toxic Chemicals in the Atmosphere</i>	Fair - Improving
<i>Groundwater Quality</i>	Undetermined

SOURCE: State of Great Lakes Report - ECCC and EPA, 2021.

Monitoring and Regulations:

- In Canada, the manufacture, import, and use of chemicals are regulated by a number of laws, including *CEPA, 1999*, the *Hazardous Products Act*, the *Food and Drugs Act*, and the *Pest Control Products Act*.
- The 2020 – 2024 Lake Superior Lakewide Action Management Plan (LAMP) identifies restoration and protection actions to respond to chemical contaminant pollution in Lake Superior.
- Ontario regularly reviews fish consumption advisory benchmarks for PFAS and updates as necessary. Revised PFAS benchmarks may result in more restrictive fish consumption advisories in the future.