

Fact sheet on the Re-designation of the Restrictions of Fish and Wildlife Consumption BUI #1



BACKGROUND

The Detroit River and its watersheds have been used intensively for international shipping, industrial and agricultural development, recreation, and drinking water for decades. This has led to environmental degradation and as a result, the Detroit River was listed as an Area of Concern (AOC) in 1987. The Detroit River Remedial Action Plan (RAP) was established to develop and implement actions to clean up the river. Under the RAP, 14 Beneficial Use Impairments (BUIs) were created to measure progress towards the cleanup. A BUI is a common use or feature of a waterway that has been negatively impacted due to local environmental degradation. These 14 BUIs must be considered not impaired before the Detroit River can be removed as a Great Lakes AOC.

WHAT WAS THE PROBLEM?

The Detroit River has had a long history of environmental problems including combined sewer overflows, degradation of habitat, and presence of toxic contaminants (e.g., mercury, polychlorinated biphenyls (PCBs), and metals) in water and sediment. This degraded aquatic environment has resulted in the bioaccumulation of these contaminants within fish and wildlife that use the river. Many of these contaminants have been found to be detrimental to fish and human health. It should be noted that this BUI was only found to be impaired for fish only and not wildlife.

WHAT ARE CONSUMPTION ADVISORIES?

The Guide to Eating Ontario Fish provides guidance on the number of fish meals someone can safely eat in a month from the various locations in Ontario based on contaminant levels in various fish species and size for the general and sensitive population (children under 15 years of age and anyone who is pregnant or may become pregnant). When there is a limit on the type and number of fish meals that are safe to eat, these restrictions are called **consumption advisories** or restrictions and are established in accordance with Health Canada guidelines. The benchmark for what is considered safe monthly levels for consuming fish is 8 meals per month.



WHEN WILL RESTRICTIONS ON FISH CONSUMPTION BE CONSIDERED NOT IMPAIRED?

For all beneficial use impairments specific, measurable, science-based, and locally agreed-upon targets or delisting criteria are developed and must be met to prove that environmental degradation has been addressed. The delisting criteria for the Restrictions on Fish and Wildlife Consumption stated that this BUI will be considered not impaired:

“When consumption advisories for indicator fish species (e.g. walleye, brown bullhead, smallmouth bass and largemouth bass) given for the sensitive population in the AOC are similar to upstream and downstream non-AOC Great Lakes reference areas due to contaminants from locally-controllable sources”

This delisting criteria was developed to focus on contaminants levels in a variety of indicator species that represent different trophic levels.



Fact sheet on the Re-designation of the Restrictions of Fish and Wildlife Consumption BUI #1



CANADIAN CONTAMINANT REDUCTION

There have been several actions taken to reduce water and sediment contamination in the Canadian portions of the Detroit River. These actions have included upgrades to sewers and wastewater treatment plants, the construction of the retention treatment basin (RTB), creation of stormwater retention ponds to help settle out contaminated sediment before entering the river, and sediment remediation in Turkey Creek (a tributary to the Detroit River) in 2008.

RESULTS OF RESEARCH & MONITORING

A number of fish contaminant and sediment assessments have been conducted by various agencies in the Detroit River over the past number of years. This monitoring has helped inform the Detroit River Canadian Cleanup (DRCC) of the status of fish contamination in the river over time. A fish consumption survey, to help provide information on angler preferences on the fish species consumed and how often, was also completed. Below are the results of the fish consumption survey and the four-tiered framework used to assess the status of this BUI:

Results for the angler survey conducted between 2019 and 2022, found that many respondents who ate fish from the river, 211 of 231 (91%), said that they eat less than 8 meals per month, the threshold used in this assessment. The most popular species consumed included walleye, yellow and white perch and white/silver bass.

The four-tiered assessment was used to compile and interpret evidence lines in support of the delisting criteria. It recognizes that assessing fish consumption is complex and multi-faceted and requires the examination of several lines of evidence through a weight of evidence approach.

Within the framework, data is collected and evaluated in a hierarchical manner via four separate, but related, tiers (Figure 1). At each tier, an unimpaired or impaired status is possible based on each assessment.

Tier 1 assesses the presence of fish consumption restrictions within the AOC and whether they exceed a benchmark level of allowable meals per month.

Tier 2 compares the degree of restrictiveness of fish consumption advisories in the AOC to multiple reference sites.

Tier 3 compiles multiple lines of evidence to address whether past mitigation actions in the AOC have contributed to the improvement of fish consumption advisories over time.

Tier 4 was added to provide an additional line of evidence that can be used to understand contaminant recovery in the AOC over time and address whether there is a need for additional, local restoration actions

None of the indicator species passed the unrestricted consumption benchmark (Tier 1) for the sensitive population, they were assessed in the following tiers.

- For Tier 1, fish consumption advisories were observed to be in place for all four indicator species in the AOC and each species had one or more advisories more stringent than the unrestricted consumption benchmark of 8 meals per month in the sensitive population. As a result, Tier 1 fails the assessment criteria.
- Brown bullhead and walleye passed Tier 2 for the general population, whereas, both largemouth and smallmouth bass failed Tier 2 for the general population.



Fact sheet on the Re-designation of the Restrictions of Fish and Wildlife Consumption BUI #1



- The majority of evidence lines in Tier 3 support decreasing environmental contamination of mercury and PCBs in the Canadian portion of the AOC.
- Tier 4 indicates that additional restoration actions in the Canadian part of the Detroit River AOC are not required to improve fish contamination levels.

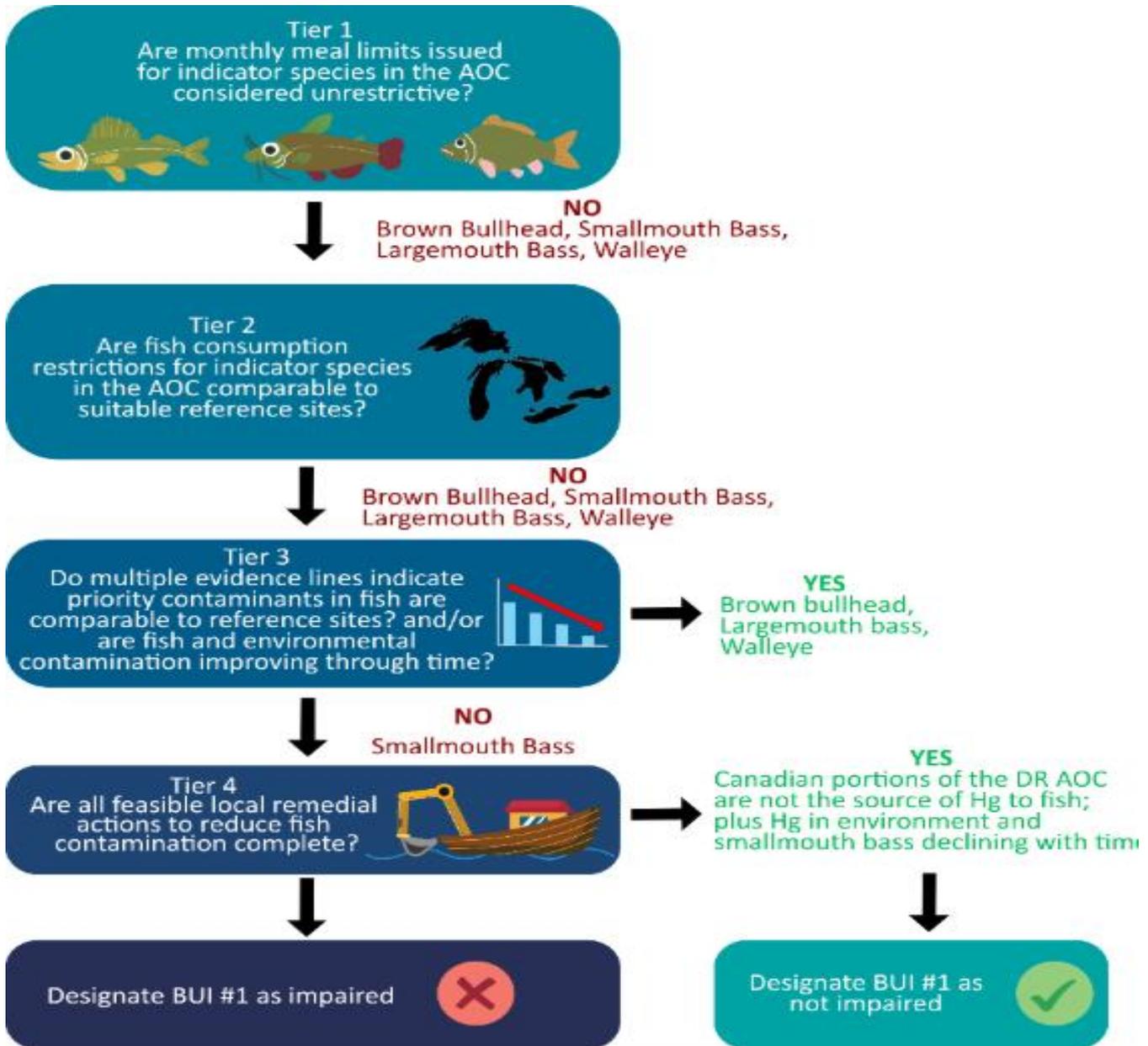


Figure 1: Hierarchical framework used to evaluate the fish consumption BUI in the Canadian Detroit River



Fact sheet on the Re-designation of the Restrictions of Fish and Wildlife Consumption BUI #1



CONCLUSIONS

The Restrictions on Fish and Wildlife Consumption BUI (fish only) was evaluated using a tiered BUI framework assessment to compile and interpret multiple lines of evidence. Though there were some failures within the tiers for the indicator species, historical data indicate that there are declining, or stable, concentrations of PCBs and mercury in the Canadian portion of the Detroit River AOC. Overall, the assessment report concludes that this BUI should be redesignated as unimpaired.

Furthermore, though the degree of fish contamination and meal per month restrictions are greater in Canadian fishing zones of the AOC compared to non-AOC Great Lakes reference sites, the degree of restrictions is a result of regional contamination (including heavily contaminated areas on the U.S. side of the river) and a high degree of cross-channel movements for some indicator species such as walleye, not from contaminant sources within the Canadian portion of the AOC.

Planned U.S. Detroit River and the recently completed Canadian St. Clair River sediment remediation activities, and the continued natural recovery of mercury and PCBs over time in upstream waterbodies, have the greatest potential to directly benefit fish consumption advisories in the Canadian portion of the AOC.

Therefore, the results of this work and findings have led to the recommendation that the *Restrictions on Fish and Wildlife Consumption BUI* be re-designated to not impaired.

For more information or to download the report, please visit www.detroitriver.ca.

The Detroit River Canadian Cleanup implements the Remedial Action Plan on behalf of a community-based partnership working together to protect, restore and enhance the Detroit River ecosystem. The federal, provincial and municipal government, local industries, scientific researchers, local environmental organizations and many dedicated citizens are key partners and play an important role in the cleanup process. The DRCC's member organizations provide leadership in identifying partnerships and funding opportunities to support and implement clean up goals.

Detroit River Canadian Cleanup

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