THE ST. CLAIR RIVER AOC

HISTORY

The St. Clair River was designated as an Area of Concern (AOC) in 1987 under the Great Lakes Water Quality Agreement between Canada and the United States due to a lengthy history of urban and industrial development. For over 30 years, local and Indigenous communities, industry and conservation organizations, and all levels of government in both countried have been working together to improve water quality and aquatic habitats in the St. Clair River through the implementation of a Remedial Action Plan (RAP). The ultimate goal of this plan is to restore the beneficial uses of the St. Clair River and remove it from the list of Great Lakes Areas of Concern.

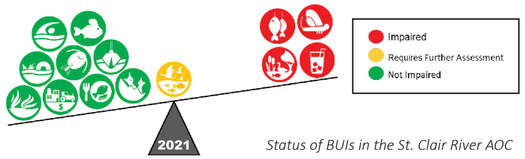
BENEFICIAL USE IMPAIRMENTS

The progress towards restoring an AOC is measured through the status of 14 Beneficial Use Impairments (BUIs). A BUI is a common use or feature of a waterway that has been impacted due to local pollution. BUIs cover a range of aquatic health indicators such as contaminant levels in local fish, habitat availability, and water quality.

BUIs are identified as “impaired” (impacted by local pollution), “not impaired” (not impacted by local pollution) or “requires further assessment” (RFA) (more data is needed to determine status). Once all BUIs are identified as “not impaired”, an AOC can be removed from the list of Great Lakes AOCs.

Presently, the St. Clair River has four remaining BUIs identified as “impaired”, one “requires further assessment” (yellow) and 9 BUIs that are “not impaired” (green). Since 1991, seven BUIs have had their status changed to “not impaired” signifying that the aquatic environment of the St. Clair River is improving.

- Restrictions on fish and wildlife consumption
- Tainted fish and wildlife flavour
- Degraded fish and wildlife populations
- Fish tumours and other deformities
- Bird and animal deformities or reproductive problems
- Degradation of benthos
- Restrictions on dredging activities
- Eutrophication or undesirable algae
- Restrictions on drinking water consumption or taste or odour problems
- Beach closings
- Degradation of aesthetics
- Added costs to agriculture and industry
- Degradation of phytoplankton and zooplankton populations
- Loss of fish and wildlife habitat



Status of BUIs in the St. Clair River AOC

WANT TO KNOW MORE?

We’re always exploring new options to update the community on the progress of the St. Clair River Remedial Action Plan. We’ve recently launched our new official AOC website, an interactive Story Map, and a monthly E-Newsletter. Visit friendsofstclair.ca to:

- **Learn from our NEW AOC Story Map**
- **Watch our NEW St. Clair River AOC video**
- **Subscribe for monthly St. Clair River E-News**
- **Find out about upcoming events**
- **Learn about binational efforts to restore the St. Clair River**
- **Access publications**
- **Review CRIC meeting minutes, and more!**

New AOC Story Map

Monthly E-News: July edition

VISIT FRIENDSOFSTCLAIR.CA

St. Clair River Remedial Action Plan

St. Clair Region Conservation Authority
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ST. CLAIR RIVER REMEDIAL ACTION PLAN

THE CANADIAN RAP IMPLEMENTATION COMMITTEE

2021 ANNUAL PROGRESS REPORT

Prepared by Natasha Pozega
Canadian St. Clair River RAP Coordinator

A LETTER FROM THE BPAC

Dear Reader,

I am pleased to introduce the 2021 St. Clair River Area of Concern (AOC) Annual Progress Report. The accomplishments highlighted in this report are the result of thirty years of ground work and initiatives led by the Canadian Remedial Action Plan Implementation Committee (CRIC) with involvement from Federal and Provincial Agencies, municipalities, industry and conservation partners, and local and Indigenous communities.

This year, we are proud of our new official AOC website - friendsofstclair.ca, and especially the 12-minute video and interactive Story Map that outline the many projects completed by the CRIC partners that have been instrumental in helping us successfully achieve many restoration targets. Just this year, we officially designated the fish tumours and other deformities beneficial use as “not impaired”, and are currently working on two status recommendation reports pertaining to drinking water consumption and fish and wildlife populations.

Our digital outreach efforts have resulted in greater attendance in meetings and enabled the Binational Public Advisory Council (BPAC) to continue its work on both sides of the river. In addition, the 5th AOC Symposium Virtual Series has kept us connected with the community and expanded our reach.

Lastly, we need to acknowledge the Friends of the St. Clair River volunteer organization for their many efforts to raise awareness and increase participation in the restoration and beautification of the St. Clair River. Through events such as the Sombra Family Fishing Derby and Theodore TOO Tugboat visit, they were able to promote the Fish Consumption Survey and the newly updated AOC website that details restorative actions led by the CRIC and BPAC.

Kristina Lee,
Canadian Co-Chair, Binational Public Advisory Council
Director, Friends of St. Clair River (Canada)

2021 YEAR IN REVIEW

FISH TUMOURS BUI OFFICIALLY NOT IMPAIRED

Fish that dwell and feed from bottom sediments have higher exposure to contaminants in the sediment, which can lead to liver tumours. To determine if contaminants in the sediment of the river were causing liver tumours in bottom-dwelling fish, two comprehensive scientific studies were completed. The first study was conducted between 2002 and 2006 and evaluated 126 livers from shorthead redhorse suckers (*Moxostoma macrolepidotum*) and the second study, a collaboration with Walpole Island First Nation, collected 60 livers from brown bullhead (*Ameiurus nebulosus*).Of the 186 livers scientifically analyzed, no liver tumours were found. These studies provided the scientific evidence for the CRIC to recommend a "not impaired" status for the BUI, which became effective in June 2021.

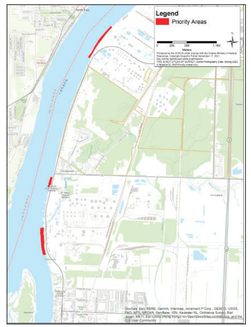
A PLAN TO ADDRESS CONTAMINATED SEDIMENTS

There are three remaining priority areas of mercury-contaminated sediment in the St. Clair River, located between the southern end of Sarnia's industrial area and north of Stag Island. The goals of this project are to promote local risk reduction, limit downstream transport of contaminated sediment, and mass removal/isolation of mercury contamination where feasible.

In 2019 and 2020, extensive data was collected as part of a pre-design investigation, leading to the development of a recommended approach for managing the sediment. Data included water velocity measurements, sediment sample collection from various depths, and a bathymetry survey to measure surface sediment elevations in targeted areas. Acheiving an average concentration of 3mg/kg of mercury in the top 15cm of sediment in each priority area was identified as the objective that would need to be met to be protective of local benthic and fish populations.

Collected data indicates that this objective has already been achieved and that there are no measurable risks presented to fish by mercury in the sediment. The recommended action is to apply an Erosion Resistant Cover in focused areas, within the three priority areas to further reduce the mercury concentrations within the surface sediments, and to enhance erosion protection. The final report is expected by December 2021.

For more information visit stclairsediment.ca.



Map indicating three priority areas

DO YOU FISH THE ST. CLAIR RIVER?

Individuals who fish the St. Clair River are being asked to complete a survey on their fish consumption behaviors. The results of this survey will provide a better understanding of the species of fish being consumed, how much individuals are eating, and how often.

This survey is identified as a key deliverable for the advancement of the *restrictions on fish and wildlife consumption* BUI in the 2017-2022 St. Clair River Area of Concern Workplan. The survey was launched in Spring 2021 and over 100 have been completed to date.

Fish Consumption Survey Flyer

All survey respondants are entered into a prize draw. Congratulations to the 2021 draw prize recipients: Tyler Hall, Josh Gravelle, and Dylan Griffith.

5th AOC SYMPOSIUM - VIRTUAL SERIES

The 5th Annual AOC Science Symposium was converted to a 3-part virtual series in accordance with COVID-19 protocols. These events provided the community with an introduction to the St. Clair River AOC, an update presentation on an individual BUI, and the opportunity to pose questions directly to subject matter experts.

Session 1 Event Flyer

Session 1 - An introduction to the multi-barrier approach to protecting the St. Clair River as a drinking water supply. This presentation provided an overview of the cultural importance of water to local Indigenous communities, the voluntary and legislated practices adopted by local industry to reduce the risk of spills, and municipal infrastructure upgrades that provide added protection to Wallaceburg and Walpole Island First Nation drinking water supplies.

Session 2 Event Flyer

Session 2 - The status of fish and aquatic wildlife populations within the St. Clair River. In the 1980s, concern for the effects of contaminants and impacts on fish and wildlife populations was raised. This presentation summarized trends in waterfowl, marsh birds, frogs, and muskrat diversity and abundance over time based on available survey data and other resources.

Session 3 - Restoring fish and aquatic wildlife habitat along the St. Clair River. This presentation will be delivered in January 2022.

For more information and to view event recordings and Q&A, visit friendsofstclair.ca/symposium.

MOVING FORWARD

2017-2022 Workplan

The 2017-2022 St. Clair River AOC Work Plan identifies the remedial actions necessary to continue to restore the remaining BUIs and ultimately delist the St. Clair River from the list of Great Lakes Areas of Concern. Below is a summary of progress and next steps for each BUI with remedial actions remaining.

DEGRADED FISH AND WILDLIFE POPULATIONS

This BUI will be considered restored when the diversity and abundance within the AOC is similar to areas outside the AOC and industrial contaminant burdens in fish and wildlife have declined, with no evidence of adverse effects on growth or reproduction. Analysis of long-term data sets on aquatic wildlife indicate that the diversity and abundance within the AOC is similar to, or better than, areas outside the AOC and study results indicate that contaminant burdens have declined and there is no evidence of adverse effects on growth and reproduction. The "not impaired" status recommendation report is under review.

Next Steps:
- Finalize the status assessment report (draft presented in June 2021)
- Initiate BUI redesignation process

DRINKING WATER CONSUMPTION

The St. Clair River provides the drinking water supply for the town of Wallaceburg and Walpole Island First Nation. In the late 1900s, it was not uncommon for these treatment facilities to close their intakes due to industrial and municipal spills upstream, which interrupted the drinking water supply. The last mandatory intake closure of the Wallaceburg Water Treatment Plant was in 2013, suggesting that spill frequency and severity have greatly declined since the St. Clair River was designated an Area of Concern. A draft assessment report was written and presented to the CRIC in 2021 recommending, the redesignation of this BUI to "not impaired".

Next Steps:
- Present updated draft report to CRIC for formal decision to support redesignation to Not Impaired
- Initiate BUI redesignation process

RESTRICTIONS ON FISH AND WILDLIFE CONSUMPTION

When contaminant levels, such as mercury and polychlorinated biphenyls (PCBs), are high in fish, consumption advisories (found in the Ontario Ministry of Environment, Conservation and Parks Guide to Eating Fish), may recommend that people and sensitive populations (e.g., children, pregnant women) limit or avoid eating certain sizes and species of fish caught in specific areas. This BUI will be considered restored when fish consumption advisories in indicator fishes and wildlife in the St. Clair River are comparable to non-AOC sites in the Great Lakes.

Next Steps:
- Complete and report on community fish consumption survey (launched Spring 2021)
- Implement preferred sediment management option

DEGRADATION OF BENTHOS

Historically, municipal and industrial discharges along the shorelines of the St. Clair River have contributed to the significant ecological degradation of the benthic community. Benthos are a group of organisms made up of aquatic worms, insects, and other invertebrates living in the sediment of the riverbed, and are a key source of food for fish, frogs, and other wildlife. Increased pollution in the sediments in which these critters dwell can affect the entire food web. One key action remaining in the St. Clair River Area of Concern is addressing three priority areas of contaminated sediments in which these organisms live, so the community structure, diversity and abundance can be comparable to suitable reference sites within the AOC.

Next Step:
- Implementation of preferred sediment management option

LOSS OF FISH AND WILDLIFE HABITAT

This BUI will be considered restored when seven restoration goals have been met. These goals range from having mechanisms to protect habitats from destruction and degradation to action-based goals that include restoring shoreline, enhancing and creating wetlands, promoting riparian buffers within the St. Clair River tributaries, and creating a report that details habitat projects completed, their maintenance requirements, and where future restoration opportunities exist.

Next Steps:
- Compile and organize available datasets and information
- Prepare draft status assessment report