



Photo credit: Ian Sanderson

An Introduction to the St. Clair River Area of Concern

Prepared for the 2021 Virtual Science Symposium: Session 2 – *Fish and Wildlife Populations in the St. Clair River*

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The St. Clair River, an Area of Concern



- Discovery of oil in late 1800's led to significant industrial and municipal development within the Sarnia area which impacted water quality and the aquatic environment of the St. Clair River.
- In 1987 the St. Clair River was designated as an Area of Concern (AOC).

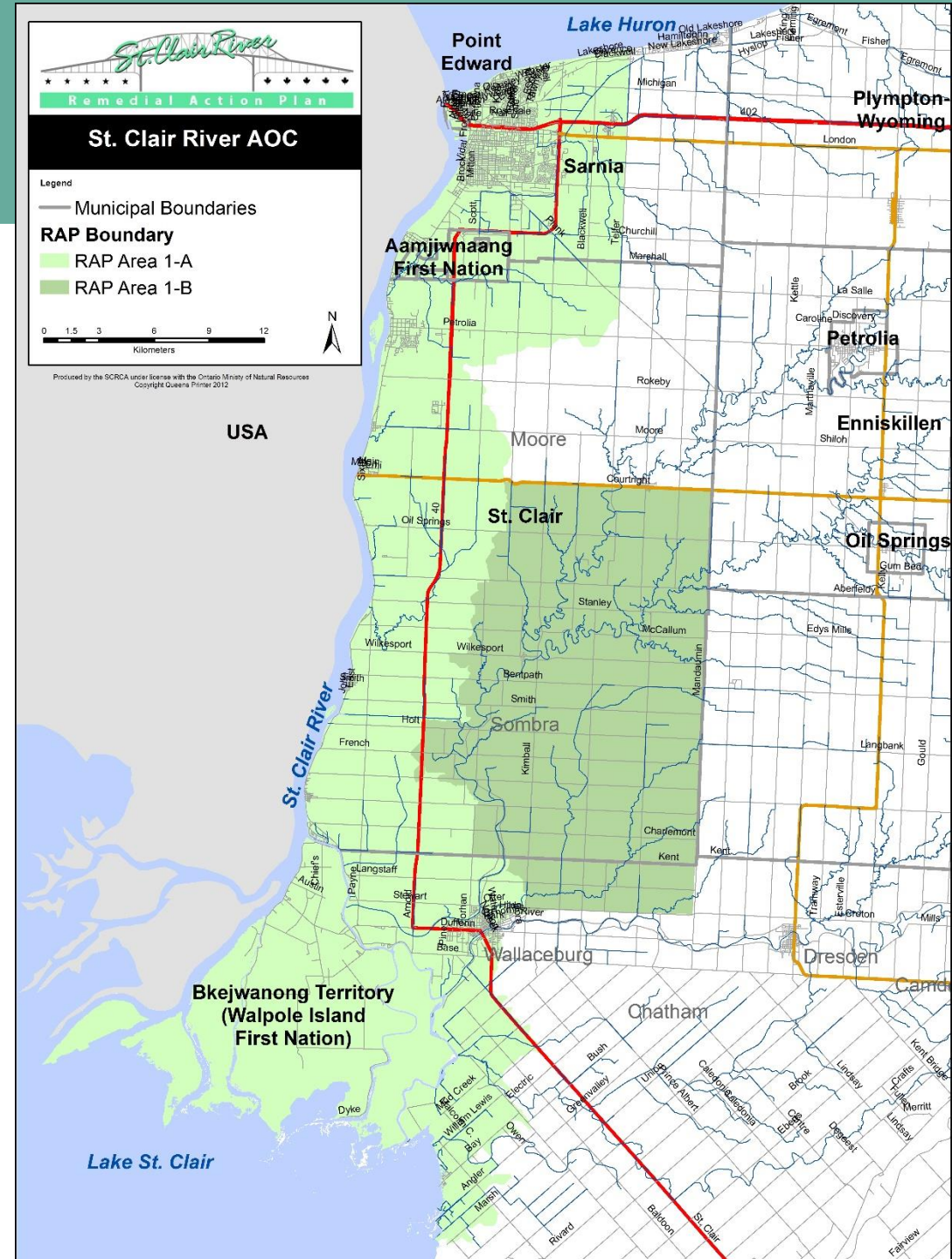
What is an Area of Concern?



- An **Area of Concern (AOC)** is a geographically defined area where severe water quality degradation has resulted.
- **12** AOCs are fully in Canada, **26** in U.S and **5** are binational (shared).
- The St. Clair River is one of the binational AOCs.




St. Clair River AOC

- St. Clair River is an integral part of the Great Lakes, connecting Lake Huron and Lake Erie
- 64 kilometers (40 miles) long
- St. Clair River AOC boundary extends from mouth of Lake Huron to Mitchell's Bay



Beneficial Use Impairments (BUIs)

- A BUI is a reduction in the chemical, physical or biological integrity of the waters of the Great Lakes sufficient to cause any of the following: (in the table to the right)
- Each AOC has one or more of the 14 beneficial use impairments (BUIs) identified under the Great Lakes Water Quality Agreement.
- Status of BUIs:
 - Impaired
 - Not Impaired
 - Requires Further Assessment (only in Canada) when there was insufficient data

Beneficial Use Impairment	
	Restrictions on Fish and Wildlife Consumption
	Tainting of Fish and Wildlife Flavour
	Degraded Fish and Wildlife Populations
	Fish Tumours and other Deformities
	Bird or Animal Deformities or Other Reproductive Problems
	Degradation of Benthos
	Restrictions on Dredging Activities
	Eutrophication or Undesirable Algae
	Restrictions on Drinking Water Consumption or Taste and Odour Problems
	Beach Closings
	Degradation of Aesthetics
	Added Costs to Agriculture or Industry
	Degradation of Phytoplankton and Zooplankton Populations
	Loss of Fish and Wildlife Habitat

Remedial Action Plan (RAP)

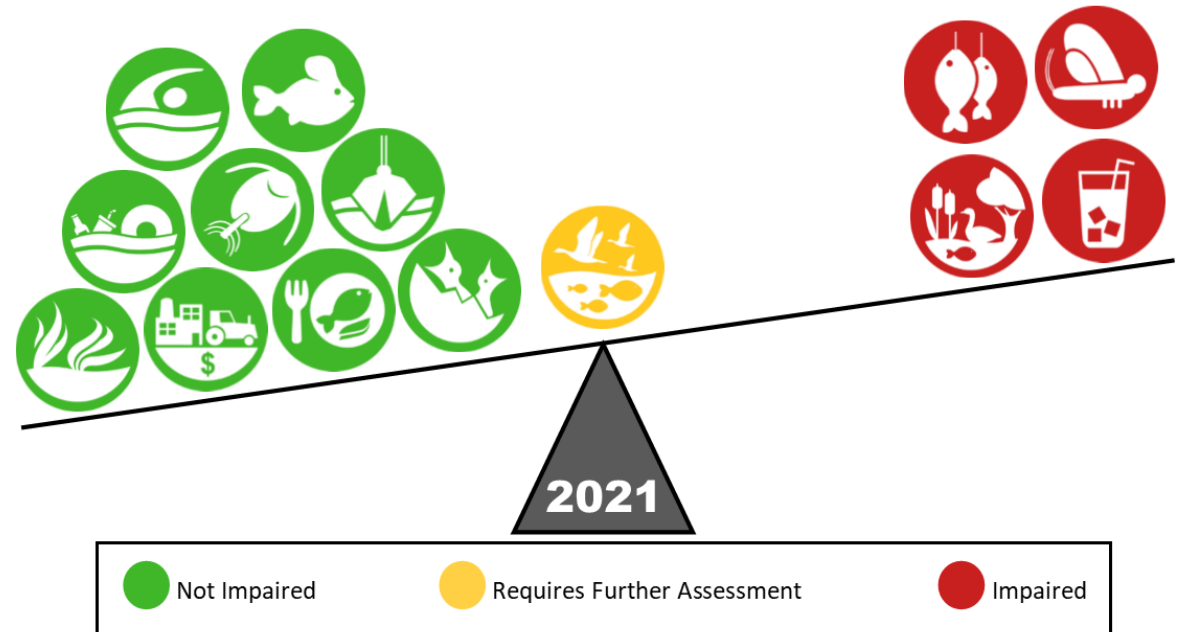
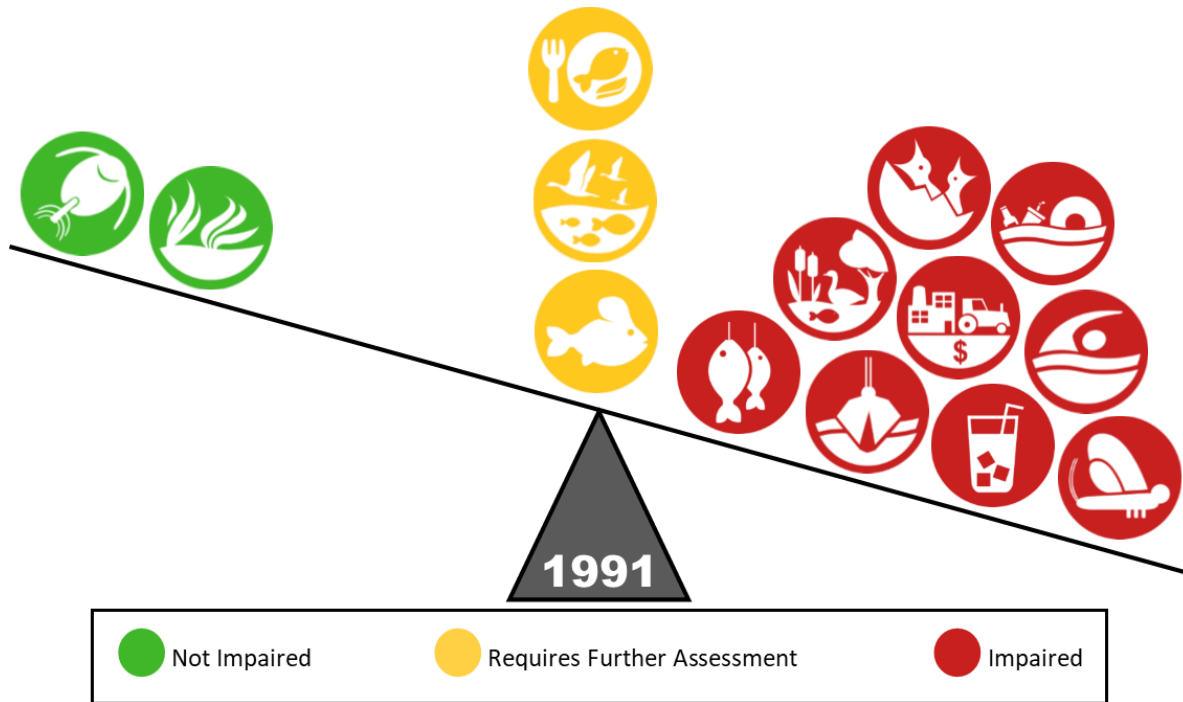
- *Remedial Action Plans* (RAPs) were developed to address the environmental issues (BUIs) identified in each Area of Concern in Canada and the U.S.
- The *Canadian Remedial Action Plan (RAP) Implementation Committee* (CRIC) was established to develop and implement the RAP.
- Objective of the RAP is to bring the quality of the AOC to a quality consistent to other areas around the Great Lakes.

















Canadian RAP Implementation Committee (CRIC)

- Environment and Climate Change Canada (ECCC)
- Ontario Ministry of Environment, Conservation and Parks (MECP)
- Ontario Ministry of Natural Resources and Forestry (MNRF)
- Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
- Lambton Public Health
- City of Sarnia
- St. Clair Township
- Sarnia-Lambton Environmental Association (SLEA)
- Walpole Island First Nation
- St. Clair Region Conservation Authority (SCRCA)
- Aamjiwnaang First Nation
- Binational Public Advisory Council (BPAC)
- Rural Lambton Stewardship Network (RLSN)

Restoration of BUIs in the St. Clair River



St. Clair River Area of Concern Binational BUI Status		
Beneficial Use Impairment		Status
		Canada US
 Restrictions on Fish and Wildlife Consumption	Impaired	Impaired
 Tainting of Fish and Wildlife Flavour	Not Impaired Formally re-designated 2011	Not Impaired Formally re-designated 2010
 Degraded Fish and Wildlife Populations	Requires Further Assessment	Not Impaired
 Fish Tumours and other Deformities	Not Impaired Formally re-designated 2021	Not Impaired
 Bird or Animal Deformities or Other Reproductive Problems	Not Impaired Formally re-designated 2018	Not Impaired Formally re-designated 2017
 Degradation of Benthos	Impaired	Not Impaired Formally re-designated 2015
 Restrictions on Dredging Activities	Not Impaired Formally re-designated 2018	Not Impaired Formally re-designated 2011
 Eutrophication or Undesirable Algae	Not Impaired	Not Impaired
 Restrictions on Drinking Water Consumption or Taste and Odour Problems	Impaired Draft assessment report prepared 2021	Impaired
 Beach Closings	Not Impaired Formally re-designated 2018	Not Impaired Formally re-designated 2016
 Degradation of Aesthetics	Not Impaired Formally re-designated 2016	Not Impaired Formally re-designated 2012
 Added Costs to Agriculture or Industry	Not Impaired Formally re-designated 2012	Not Impaired Formally re-designated 2012
 Degradation of Phytoplankton and Zooplankton Populations	Not Impaired	Not Impaired
 Loss of Fish and Wildlife Habitat	Impaired	Not Impaired Formally re-designated 2017

Municipal infrastructure Upgrades

Over \$60 million on combined sewer overflow (CSO) remediation by the City of Sarnia (on-going).

\$105 million dollars in ongoing industrial wastewater improvements over past 10 years.

\$35 million upgrade to the Sarnia, Corunna and Courtright sewage treatment plants.

Automated pumping stations to improve flow management.



Fish and Wildlife Studies



**Fish Tumours or Other
Deformities**

**Fish and wildlife
contaminant burden
assessments**



**Bird or Animal
deformities or
reproduction
problems**



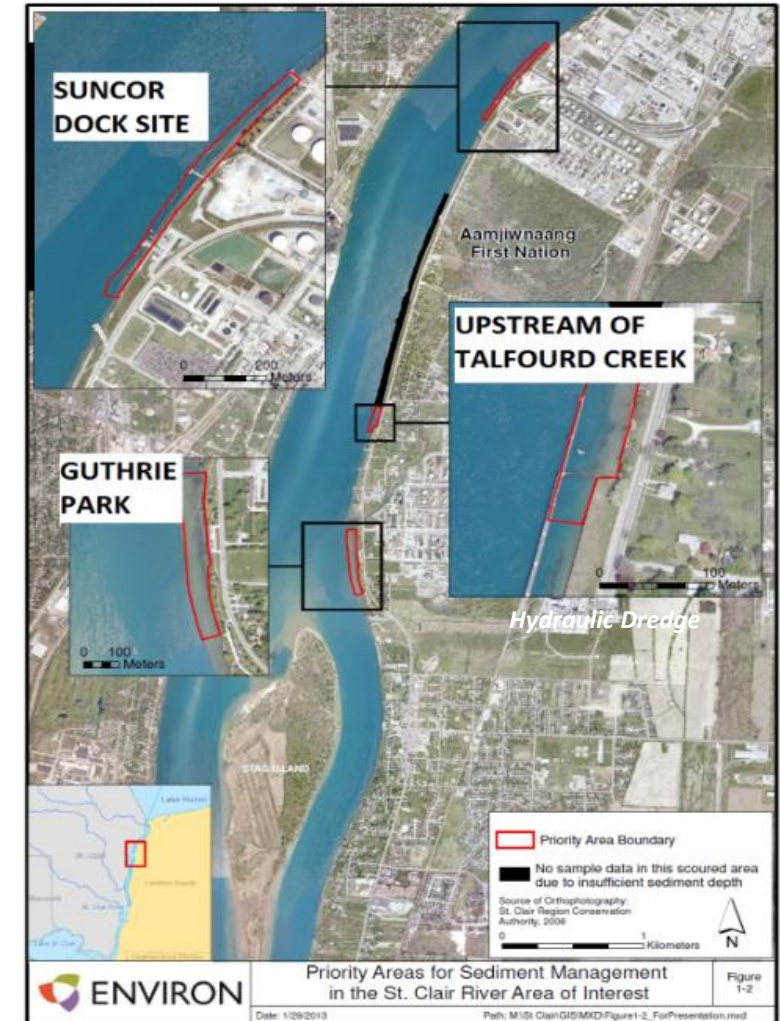
Habitat Creation and Restoration



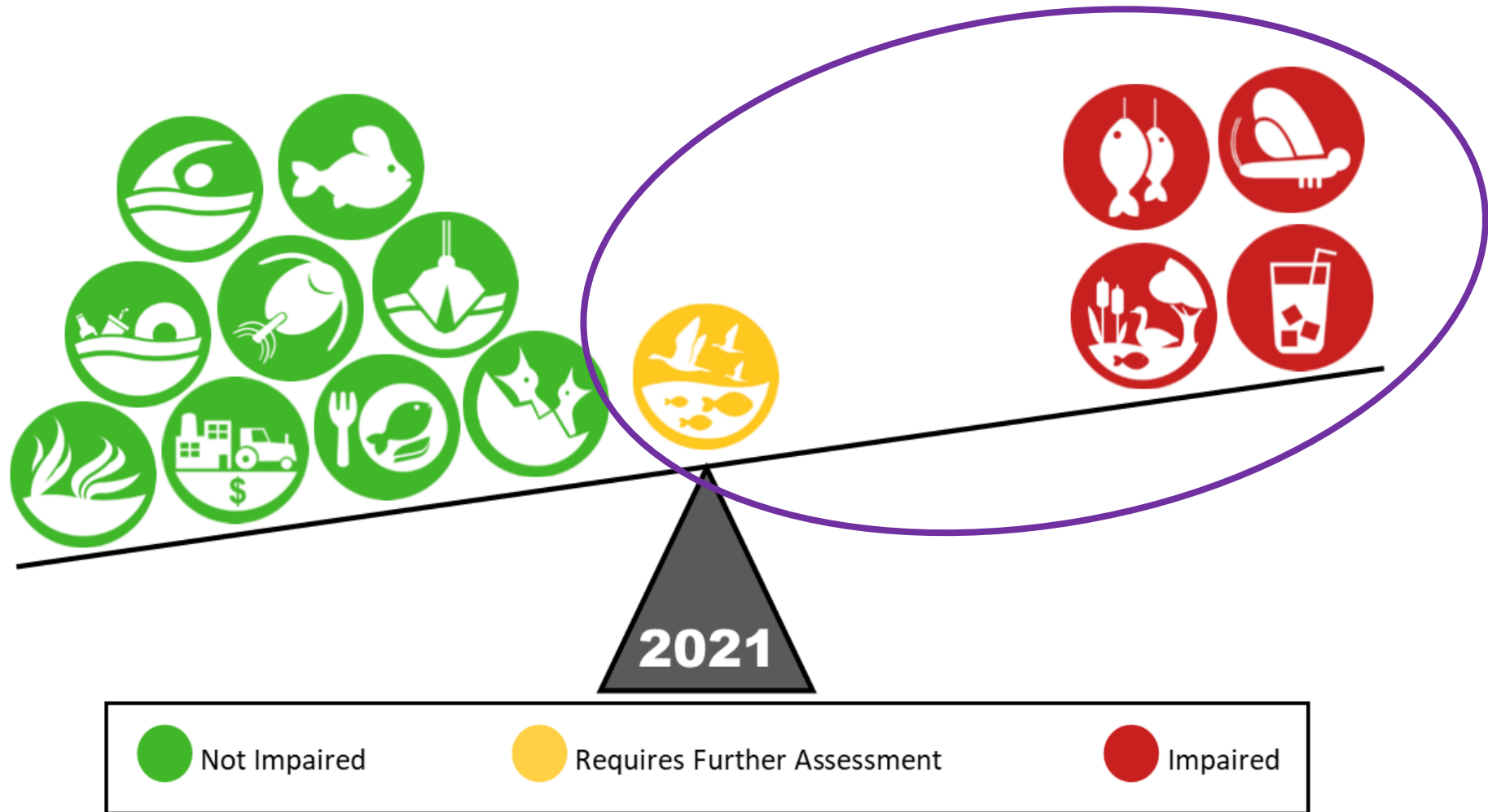
Contaminated Sediment Management

- 2001-05 DOW cleaned up 14,000 cubic meters of contaminated sediment.
- 2013 Sediment Management Options Report completed.
- 2019/20 additional field work to facilitate management of remaining contaminated sediments in the river.

Find more information on this project at stclairsediment.ca.

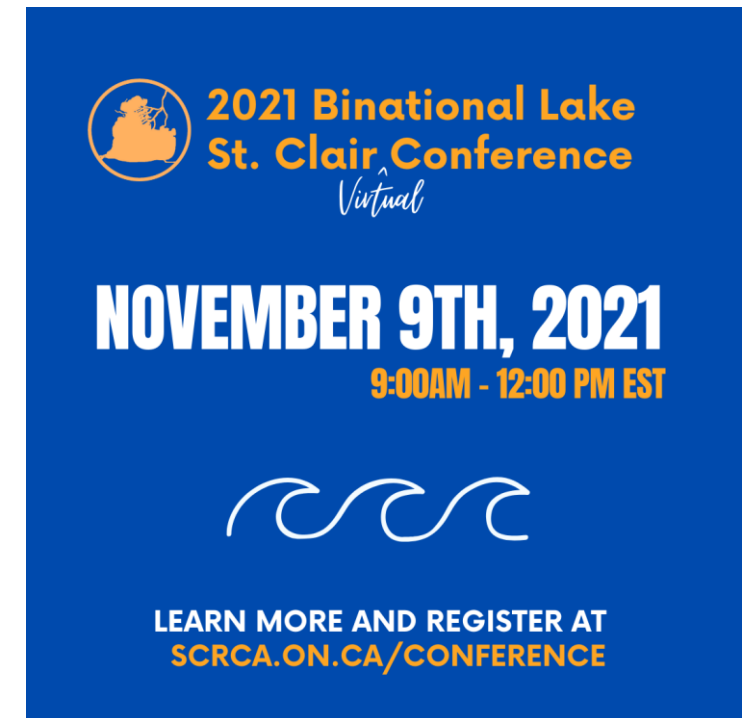


Next steps



Thank you all for coming! Miigwetch!

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For more information visit friendsofstclair.ca