

St. Clair River Area of Concern

Virtual Information Session #3 – A Presentation on Fish and Wildlife Habitat Projects in the St. Clair River

Date – Thursday, April 21, 2022

Time – 7:00 pm – 8:30 pm

Background:

On Thursday, April 21st, 2022, the Canadian Remedial Action Plan Implementation Committee (CRIC) hosted a virtual information session highlighting several fish and wildlife habitat creation and restoration projects that have been completed within the St. Clair River Area of Concern. During the information session, participants were taken on a ‘tour’ of several projects adjacent to the river that provide valuable habitat for local fish and wildlife including the wetland creation at Bowen’s Creek, pike spawning habitat at Branton Cundick Park, and marsh restoration at Swan Lake. A biologist with Environment and Climate Change Canada’s Canadian Wildlife Service also shared results from extensive wetland health monitoring.

Summary of Questions and Answers:

Questions and Answers Addressed during the Virtual Information Session:

- 1. Are there other examples of projects that the St. Clair Region Conservation Authority has been involved in, either in or outside of the St. Clair River Area of Concern in recent years?**

Erin Carroll, Director of Biology, St. Clair Region Conservation Authority

Yes, we have been involved in many projects within the St. Clair River Area of Concern and outside of the area. One project that is currently in process is at the Keith McLean Conservation Lands, located near Rondeau Bay where we will be creating coastal wetland to support spotted gar populations.

We are also working closely with local farmers to install berms and grassed waterways (among other projects), to help support the needs of the farming community all while achieving local habitat and water quality improvement goals.

- 2. Are the graphs you displayed during your presentation that show information on overall water quality, benthic macroinvertebrates, and submerged aquatic vegetation results available for each individual location?**

Joe Fiorino, Habitat Ecologist, Canadian Wildlife Service, Environment and Climate Change Canada

Yes. We complete a report after each sampling year that includes an Appendix that breaks down all the data and information collected at each individual sampling site. The

most recent report, completed in 2014, is available on the Friends of the St. Clair River website at <https://friendsofstclair.ca/st-clair-river-area-of-concern/publications/>.

- 3. It appears that Swan Lake site has a very small invasive Phragmites population. What were the techniques you used at this site to eradicate and control the encroachment of this invasive species?**

Clint Jacobs, Natural Heritage Coordinator, Walpole Island Heritage Centre

We have seen some expansion in the areas being invaded by Phragmites at Swan Lake. During our initial treatment, we did not use herbicide to treat the Phragmites population and instead relied on cutting, burning, and flooding when possible, to try and get the population under control. Unfortunately, there really isn't an effective way to permanently eradicate Phragmites. We continue to try and manage it on a yearly basis. Walpole Island also issued a ban on using herbicide in our marshes so that method of control is unavailable to us.

- 4. Why do you measure submerged aquatic vegetation (SAV) and bugs (benthic macroinvertebrates) in a wetland? What does that information tell us about the health of a wetland?**

Joe Fiorino, Habitat Ecologist, Canadian Wildlife Service, Environment and Climate Change Canada

Both are extremely important components of coastal wetland ecosystems. In terms of their function in wetland habitats, submerged aquatic vegetation stores and releases nutrients, releases oxygen to the water through photosynthesis, and stabilizes sediment which reduces turbidity. SAV also provides important habitat for spawning and rearing of juvenile fish and certain turtle species prefer the warmer micro-climate and foraging opportunities provided by SAV. Marsh dependent birds also use SAV for foraging and breeding activities and a number of studies have indicated that wetland ecosystems with healthy SAV help support a robust marsh bird community. The condition of SAV is also a good reflection on the level of disturbance occurring in the watershed. A lot can be learned by evaluating SAV conditions and the same holds true when examining benthic macroinvertebrate communities.

- 5. Is there information available to individual landowners looking to enhance or create habitat on their properties?**

Erin Carroll, Director of Biology, St. Clair Region Conservation Authority

I would suggest that anyone looking to create new habitat or enhance already existing habitat on their properties should connect with our staff at the Authority to tell us about their project and what their goals are. The SCRCA will help where we can and can support a number of projects such as tree planting, increasing native vegetation, or creating wetlands, just to name a few.

6. The St. Clair River has had record high water levels over the past several years. Can you tell us whether the high-water levels are beneficial or detrimental to wetlands and marsh bird populations?

Joe Fiorino, Habitat Ecologist, Canadian Wildlife Service, Environment and Climate Change Canada

Water levels in lakes and rivers naturally fluctuate over time and ultimately it is these fluctuations that drive the structure of wetland vegetation. During the recent high-water levels, we have seen an increase in the number of marsh birds stopping at coastal wetlands in the lower Great Lakes, likely due to the formation of pools and ponds in areas that are typically dominated by dense wetland vegetation, which is preferable for many marsh birds. Clearly sustained, overly high-water levels would flood out wetlands which would lead to a decrease in coastal wetland habitat and be detrimental to marsh birds.

Water levels look to be decreasing throughout the Great Lakes and if that trend continues, we would expect the regrowth of less competitive wetland vegetation species and an increase in local biodiversity.

Questions and Answers Received that were not Addressed during the Virtual Information Session:

1. For the long-term studies on the mainland, is there any correlation between restoring wetlands with watershed health?

Erin Carroll, Director of Biology, St. Clair Region Conservation Authority

Generally speaking, wetland creation should improve watershed health by increasing habitat and filtering water. The St. Clair Region Conservation Authority collaborated with Ducks Unlimited Canada to collect data on newly constructed wetlands in our Region. Results indicate that the “*small wetlands were effective at settling and filtering water under a variety of conditions—protecting downstream rivers and lakes in all seasons.*” More information on the study can be found at <https://www.ducks.ca/stories/policy/the-power-of-small-wetlands-for-clean-water/>.

Every five years, the St. Clair Region Conservation Authority publishes a watershed report card that summarizes information collected on surface water quality, forest condition, and groundwater quality on a subwatershed basis. These parameters have been selected by Conservation Ontario (the provincial organization that Conservation Authorities report to) to give an indication of environmental health. These watershed report cards are published on SCRCA’s website and can be found at <https://www.scrca.on.ca/about-us/2018-watershed-report-cards/>. The next round of report cards will be published in early 2023.

2. What has the impact of phragmites been on the wild bird habitat in the Snye River area?

Erin Carroll, Director of Biology, St. Clair Region Conservation Authority and Joe Fiorino, Habitat Ecologist, Canadian Wildlife Service, Environment and Climate Change Canada

A specific study within the Snye River has not been conducted however, there have been studies conducted to assess impacts on marsh nesting birds. Below are two articles provided by Joe Fiorino, who presented on the wetland health findings that may be helpful.

Robichaud, C. D. and R. C. Rooney. 2017. Long-term effects of a *Phragmites australis* invasion on birds in a Lake Erie coastal marsh. *Journal of Great Lakes Research* 43(3):141-149.

Tozer, D.C. and S.A. McKenzie. 2019. Control of invasive *Phragmites* increases marsh birds but not frogs. *Canadian Wildlife Biology and Management* 8:66-82.

In general, a monoculture of invasive phragmites is generally not beneficial for sensitive/specialist species that would have co-evolved/adapted to the pre-existing diverse marsh plant communities. Some generalist bird species may thrive, but large, thick stands of *Phragmites* is not ideal marsh bird habitat. Bird Studies Canada has released an article on the topic that can be found at <https://www.birdscanada.org/download/LakeEriePart1Phragmites.pdf>. In this article, the authors indicate that many wetland birds, such as Common Gallinule or Virginia Rail, avoid *Phragmites* and that it grows too tall to make good habitat for most marsh nesting birds. The authors also indicate that eradication of *Phragmites* appears to greatly benefit marsh nesting birds.

More information on *Phragmites* can be found via the links below:

Phragmites fact sheet (Government of Ontario)
<https://www.ontario.ca/page/phragmites-fact-sheet>

Great Lakes *Phragmites* Collaborative
<https://www.greatlakesphragmites.net/aboutus/>