Newsletter of the Lake Ontario Atlantic Salmon Restoration Program

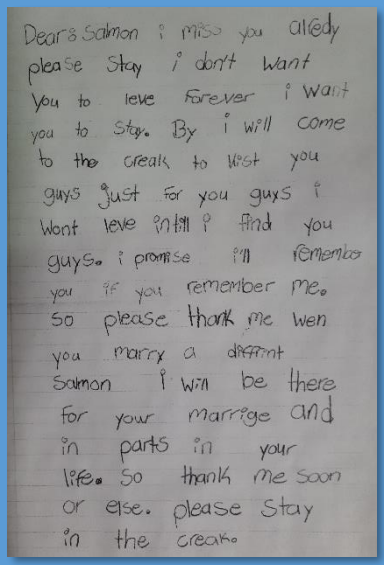
Spring 2020 Newsletter

Bring Back the Salmon

BBTS tidbits

An original Lake Ontario Atlantic Salmon. Photo by W. Carrick. From: Ontario Fish and Wildlife Review, Spring/Summer 1970, vol 9 (1-2).

This macroinvertebrate (Family Heptageniidae: flat-headed mayflies) is indicative of a cool-water stream.



Dear Salmon i miss you alredy
please Stay i don't want
You to leve forever i want
you to Stay. By i will come
to the creak to Wist you
guys just for you guys i
Wont leve until i find you
guys. i promise i'll remembo
you if you remember me.
So please thank me wen
you marry a diffrnt
Salmon i will be there
for your marrige and
in parts in your
life. So thank me Soon
or else. please Stay
in the creak.

Art throwback: a cute letter from a classroom hatchery participant.

An adult Atlantic Salmon is measured before being transferred past Norval Dam on the Credit River.

BBTS has a new story map. Co-created with students from the University of Toronto Master of Environmental Science Program, it tells the story of Atlantic Salmon colonization, decline, extirpation, and restoration, while highlighting other major events in Lake Ontario, including the timeline of non-native salmonid introductions. Visit https://arcg.is/0Or9SL0 to check it out!

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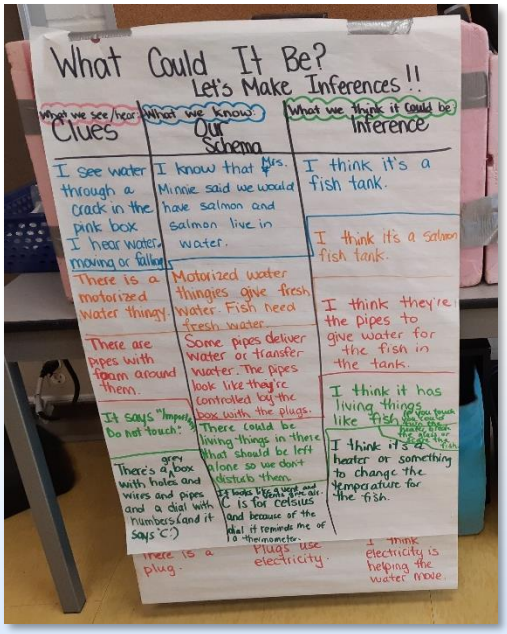
Education and outreach

Classroom hatchery program

This year we had 86 locations with classroom hatchery units that received their 100 Atlantic Salmon eggs in January. Before schools closed in March, we visited 44% of them to deliver our presentation about Atlantic Salmon biology, history, and restoration. For the rest of the schools, we made a narrated version of the presentation which is available at https://www.youtube.com/watch?v=pviSoCMOqDU.

We have developed curriculum-linked lesson plans for grades 1-6, which we converted to a version suitable for students learning at home for the remainder of the 2020 school year.

Our biggest challenge was rescuing the alevin that remained in the hatcheries in schools, libraries, education centers, and information centers across southern Ontario. Through coordination with staff, we were able to collect the vast majority of fish and release them into our restoration streams. Thanks to all our teachers for their dedication!



Above: Students make inferences about the classroom hatchery tank's purpose.

Are you a grade 4 or 6 teacher in the Durham or Northumberland region that is passionate about local stewardship? Please contact Ben (ben_teskey@ofah.org) if you're interested in joining the program!

Angler signs

We are installing angler information signs on our five restoration tributaries, plus the Ganaraska River. These signs remind anglers about proper species identification and best practices for catch-and-release.

Friends of the Environment Foundation

Ontario Trillium Foundation / Fondation Trillium de l'Ontario
An agency of the Government of Ontario
Un organisme du gouvernement de l'Ontario

OWF Ontario Wildlife Foundation

Research and assessment

Fish counter technology

In 2019, two Vaki Riverwatcher fish counters were fully operational throughout the Atlantic Salmon migration season: one at the Corbett Dam fishway in the Ganaraska River, Port Hope; and one at the Streetsville Dam fishway in the Credit River, Mississauga. These counters allow us to assess the migration of all species of salmonids during spring, summer and fall by recording an infrared silhouette and a video of each individual passing through. From this information we can determine species, sex, length, and presence of fin clips, and we can monitor timing of fish passage even in turbid water conditions.

Using combined information from the cameras and angler catches, we estimated that in 2019, >50 adults returned to the Ganaraska River, and >20 returned to the Credit River. MNRF also conducted the first assessments of fishway attraction and passage efficiency to learn about how easily fish can find and use fishways.

The video counter is funded and operated by MNRF to support Lake Ontario's diverse salmon and trout fisheries and provides valuable information on Atlantic Salmon numbers and timing. Watch videos of the fish migrating at www.riverwatcherdaily.is/rivers.

Top: An Atlantic Salmon returning through the Credit River fishway camera on September 1, 2019. Bottom: An Atlantic Salmon moving through the Ganaraska River fish counter on September 18, 2019.

On May 9, 2019, we saw approximately 25 Atlantic Salmon smolts in the Ganaraska River camera. These fish had been stocked 10-17 days previously and had traveled downstream more than 25km.

New research

Larocque et al. (2020) compared migration and survival of naturally-reared smolts (stocked as parr) and smolts released months later at the yearling stage. Naturally-reared smolts were 13.9 times more likely to survive to the lake. However, migration speed was the same in the two groups. Since the highest source of mortality occurred shortly after release, we have implemented changes in yearling stocking strategy to improve survival starting in 2020.

Full paper available at: doi.org/10.1111/fwb.13467

Fleming College

Great Lakes Fishery Commission

KENNETH M MOLSON FOUNDATION

BRING BACK THE SALMON LAKE ONTARIO supported by ONTARIO POWER GENERATION

Fish production and stocking

Stocking update

In the fall of 2019, we stocked approximately 50,000 fall fingerlings. In spring 2020, we stocked yearlings into the Credit River, Duffins Creek, and the Ganaraska River. In addition to standard upstream stocking, some of the fish were stocked at river mouths, emulating a successful New York stocking strategy that has produced high numbers of adult returns. Our usual spring fry stocking technique was modified due to COVID-19 restrictions, necessitating us to cancel volunteer assistance and switch to hose stocking. This year we stocked approximately 125,000 spring yearlings and 310,000 spring fry.

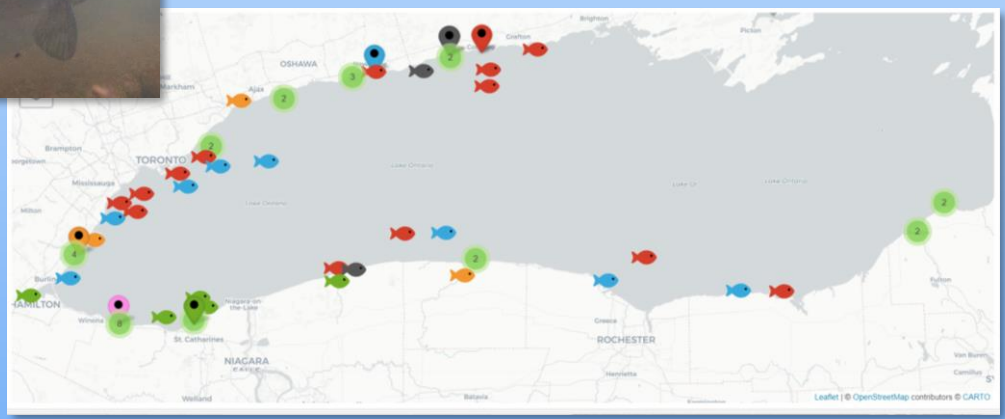
We thank all the volunteers that were eager to help with spring stocking, and we hope to see you next year. Our spring fry were stocked using a hose to reduce the need for additional people to be on site.

Adult broodstock

MNRF has stocked surplus broodstock into Lake Ontario at Bronte Harbour, Port Dalhousie, Cobourg, Newcastle, Grimsby, and Port Hope in 2018-2020. These fish have a floy tag inserted below the dorsal fin. The colour and number on the tag corresponds to release location. Of the 1872 fish tagged, 66 (3.5%) have been caught so far. In addition to providing additional recreational fishing opportunities, angler reports of these tag numbers will continue to provide information on movement.

A reminder that Atlantic Salmon are catch-and-release only in Fisheries Management Zones 16 and 17. Know your species ID and practice responsible angling. Visit www.bringbackthesalmon.ca for more information.

Below: The fish icons indicate capture location, and their colour corresponds to stocking location (pins).



Toronto and Region Conservation Authority

Credit Valley Conservation inspired by nature

Ganaraska Conservation

Conservation Halton

Water quality and habitat enhancement

TD funds tree plantings

Thanks to support from TD Tree Days in 2019, the BBTS habitat team tackled four coldwater stream reforestation restoration projects on three tributaries: Duffins Creek, Humber River, and Bronte Creek. A total of 1,445 native trees and shrubs were planted to increase forest cover, decrease stream temperature and improve stream bank stabilization. The projects benefit many aquatic and terrestrial species by improving the health of the streams by increasing natural cover. A total of 309 volunteers supported these four workdays.

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This year our projects are tentatively scheduled for September and October - stay tuned to our website and social media for updates.

Urfe Creek dam removal

Above: Remnant weir before removal. Below: Post construction, weir removed and banks regraded.

A small dam was removed on Urfe Creek, which is a tributary of Duffins Creek. The removal allows for fish to access additional rearing and spawning habitat, and was conducted in partnership with Toronto and Region Conservation Authority, who was the project lead. Additional funds were secured through EcoAction and the Kenneth M. Molson Foundation. An additional 850 shrubs were planted as part of this project.

Water quality and habitat enhancement

Humber River fishway improvement

A trash screen at the upstream end of the Board of Trade (Country Club) fishway on the Humber River was modified with larger bar spacing to decrease the amount of material that collects against the screen which inhibits water flow through the fishway. The new trash screen will help improve fishway effectiveness and it allows for fish passage to the upper Humber River for all migratory salmonids.

Above: Weir that the fishway circumvents.

Above left: Trash screen as originally installed. Above right: Newly modified trash screen. The rack is raised, and the new bottom rack (below waterline) has wider spacing between the bars.

Stay updated!

Stay connected with Bring Back the Salmon. Hear about updates and current information by following us on Facebook, Twitter, and Instagram (@ontariosalmon).

Have you caught an Atlantic?

Citizen scientists give us valuable information on where these fish are hanging out! Let us know when and where you saw the fish by contacting info@bringbackthesalmon.ca. Location information remains confidential.

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