



2016 Spring Spawning Survey Summary

Seguin River

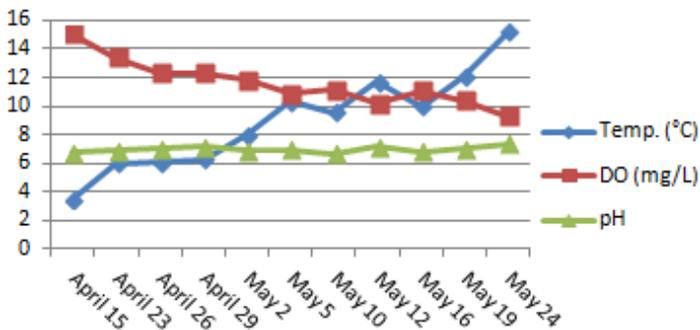
Eastern Georgian Bay Stewardship Council

MONITORING OVERVIEW

During the 2016 spring spawning and egg incubation period (mid-April to early June), EGBSC monitored spawning habitat for Walleye, Lake Sturgeon and Sucker species on the Seguin River in Parry Sound. The goal of the assessment was to document environmental (water chemistry) and hydrologic features (water levels & flow) as well as spawning population observations (fish and eggs) to determine if restoration of the spawning area is required.

As part of the survey, EGBSC monitored water chemistry (temperature, dissolved oxygen, pH, total dissolved solids and conductivity), water levels and speed of water flow. All measurements were within the normal range for the region and were suitable for successful fish spawning and egg incubation.

Seguin River Spring Water Chemistry



In addition to depth measurements, daily photographs were taken to track changes in water levels and calculate the change in spawning and egg incubation area as water levels and flow decreased over the survey period. This information will be available at a later date.

Between May 3rd and 5th, all logs were placed in the upstream dam (north trestle dam) and water levels at the monitoring station dropped by 29.5cm. Consequently, a large portion of the spawning bed

and shoreline was dewatered. No stranded Walleye eggs were observed; however, most of the Walleye spawning took place after water levels had dropped.



The Seguin spawning bed in high water levels



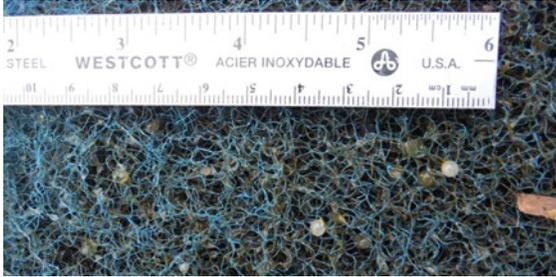
The Seguin spawning bed after water levels dropped

Eleven day and four night visual surveys were completed. At most, only three Walleye and 15 Common White Sucker were observed during a single survey. Common White Sucker were present in varying numbers between May 5th and May 30th. Seven Walleye were observed during snorkelling on May 30th, in addition to Smallmouth Bass and Brown Bullhead. No Lake Sturgeon were observed.



KEY OBSERVATIONS

Walleye eggs were observed along the shore beginning May 10th. In addition to visual observations, EGBSC used blue mats (furnace filters) as egg traps to collect eggs, which were placed in shallow areas along the north shore. From the four egg traps cumulatively set in the spawning bed for 33 days, 144 Walleye eggs and 107 Common White Sucker eggs were counted. Relative to other sites along Eastern Georgian Bay, the number of eggs counted for both species was low.



Walleye eggs

Once eggs incubate and hatch, the fish enter their larval stage. This stage is critical for Walleye and most other fish species. Larval Walleye have limited mobility and typically move by water flow and wave action. Shortly after hatching, Walleye need to feed on zooplankton to ensure survival, growth and development. The availability of zooplankton is a major factor in surviving this life stage. To help evaluate the amount of zooplankton in the Seguin River, plankton samples were collected in late May. In comparison with other sites (Sucker Creek and Shawanaga, Shebeshekong and Magnetawan Rivers), the Seguin sample had one of the highest densities of zooplankton.



Zooplankton sample from the Seguin River

CONCLUSION

In summary, the low number of Walleye and Sucker observed and the low number of eggs collected indicates there is a very low spawning population at the Seguin River. No Lake Sturgeon were observed.

The manipulated water levels on the Seguin River reduce the amount of spawning habitat available for Walleye and Sucker species. Because Lake Sturgeon spawn later in the spring, it is possible that with reduced water levels in early May, water depth over the first ledge is not sufficient to allow Lake Sturgeon passage. EGBSC recommends Lakeland Power Corporation and the Ministry of Natural Resources and Forestry amend the *Seguin River Simplified Water Management Plan* to clearly state that maximum flows be directed over the spawning bed (downstream of the north dam) throughout the spawning and egg incubation period to enhance fish production on the spawning bed.

This spawning assessment is part of a larger project EGBSC is conducting in the Parry Sound District. Between 2015 and 2017, EGBSC is undertaking spawning and nursery habitat assessments for Walleye, Lake Sturgeon and Sucker species on eight rivers flowing into Eastern Georgian Bay. Project partners include Georgian Bay Forever, Georgian Bay Biosphere Reserve, Ministry of Natural Resources & Forestry Upper Great Lakes Management Unit, and Environment and Climate Change Canada.



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