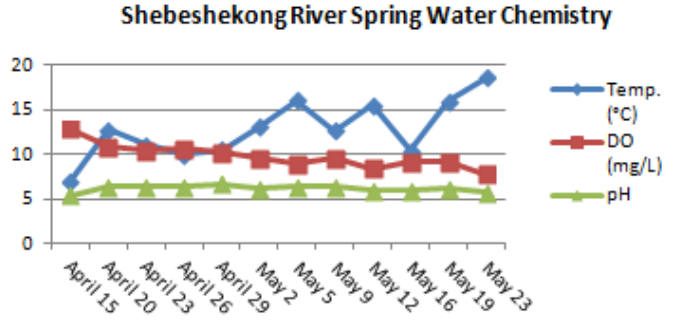
2016 Spring Spawning Survey Summary
Dillon Rapids, Shebeshekong River
Eastern Georgian Bay Stewardship Council

MONITORING OVERVIEW

During the 2016 spring spawning and egg incubation period (mid-April to early June), EGBSC monitored spawning habitat for Walleye and Sucker species at Dillon Rapids on the Shebeshekong River. 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. Water chemistry and flow were within the normal range for the region and were suitable for successful fish spawning and egg incubation.



The Shebeshekong River drains a relatively small watershed and is strongly influenced by local conditions and weather events. In addition to depth measurements, aerial 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.

Five stations at Dillon Rapids were measured for water level and flow. Over a period of 20 days, water levels at three stations dropped by 40 to 50cm, and one site dried up. The station farthest downstream was moderated by Georgian Bay water levels. On May 14th, a significant rain event caused water levels and flow to increase almost immediately. During the spawning and egg incubation period, the spawning bed experienced considerable water level and flow fluctuations, as illustrated in the photos below.

Aerial view of Dillon Rapids (left photo taken on April 20, 2016, right photo taken on May 12, 2016)

Twelve day and four night visual surveys were completed. No Walleye were observed during day surveys, and the highest number of Walleye observed during the night surveys was 11. Eleven Common White Sucker were observed during night surveys and several during the day. No Redhorse Sucker species were observed. A large number of Logperch were observed during the monitoring period. All fish observations were made along the south shore of the spawning area. No fish were observed along the north shore at any point.

KEY OBSERVATIONS

Walleye eggs were observed along the south shore, caught in algae and cracks in the bedrock. On May 2nd, water levels had declined and many of the eggs on the south shore were stranded out of water. Blue mats (furnace filters) were used to collect eggs. Three were placed at shallow areas along the shore, and a fourth was placed farther into the channel. Three of the four egg mats were removed by unknown persons from the river. From the fourth mat, a total of 28 Walleye eggs were counted. In comparison with other sites along Eastern Georgian Bay, the number of eggs was extremely low.

Egg mat used to collect 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 current 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 downstream of Dillon Rapids, four plankton samples were collected in late May. In comparison with other sites (Sucker Creek, Shawanaga, Shebeshekong and Seguin Rivers), the density of zooplankton in the Shebeshekong River sample was moderate.

Field observations and measurements were taken at Young's Rapids, the next spawning area upstream of Dillon. On April 22nd, approximately 100 Common White Sucker were present at Young's and were observed by-passing the rapids. No Walleye were observed. On the April 26th and 29th visits, no fish were observed at the site and were assumed to be upstream of the rapids. It is not known if Walleye could by-pass this site.

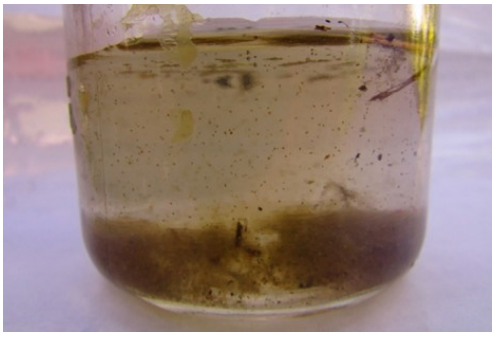
This project was undertaken with the financial support from the Government of Canada. Ce projet a été réalisé avec l'appui financier du gouvernement du Canada.

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.

Georgian Bay Biosphere Reserve

Ontario

Environment and Climate Change Canada | Environnement et Changement climatique Canada



Four plankton samples taken downstream of Dillon Rapids

Aerial view of Young's Rapids

Field observations indicate the number of spawning Walleye in the Shebeshekong River is exceedingly low. EGBSC recommends enhancement work to help Walleye and Sucker species by-pass the Dillon site, where habitat is limited and of poor quality. Higher quality spawning habitat is present at Young's Rapids and upstream of Young's.