

## Hooked on Fish: a brief history of Walleye on Big Gull Lake.

Lynda Corkum

Walleye are found in cool-water habitats in lakes and streams throughout Ontario. They are piscivorous, which means that they feed almost exclusively on other fish, at least as adults. Walleye (also known as pickerel) is the accepted common name by the American Fisheries Society, and comes from their large, silvery and outward pointing eyes. Although Walleye are not caught as often as Smallmouth or Largemouth Bass in Big Gull Lake, they are a favourite catch among many anglers. Big Gull is a glacial headwater lake with an irregular bottom, having numerous shoals and islands, and it has ideal habitat for recreational fishing, including Walleye. The bottom of both offshore and onshore waters of the lake is mainly rock, boulder, gravel, silt and sand. Aquatic plants are abundant in bays. These conditions allow a wide variety of food items for the Walleye to grow, and also provides cover for young and developing fish.

Big Gull Lake has a long history of study by the Ontario Ministry of Natural Resources and Forestry (OMNRF, formerly OMNR). Erin MacDonald, the OMNRF Management Biologist in Bancroft, kindly sent me copies of several historical fish survey reports conducted by Ministry staff. I have summarized the information from the reports for this article. Big Gull Lake was formerly known as Clarendon Lake; the later name is used in many of the reports.

Interestingly, fish stocking of many species (Lake Trout, Largemouth Bass, Muskellunge, Smallmouth Bass, Walleye) occurred on Big Gull Lake from 1916 to 1961. Stocking of Walleye began in 1925 and concluded in 1951. The information in this table was obtained from a report prepared by H.A. Cooper (Appendix 1).

In a trap and gill net survey from 1970, conducted August 14-29, Walleye were found throughout the lake near shoreline and on rocky shoals on Big Gull Lake (H.A. Cooper 1970). Of 52 fish caught in trap nets, 8 were Walleye. Several game fishes were caught in gill nets, including Cisco (34 fish), Walleye (22 fish), Smallmouth Bass (16 fish), Lake Whitefish (9 fish), and smaller numbers of Northern Pike and Largemouth Bass.

Other surveys were conducted over the years. For example, on April 16 and 22, 1987, the daytime assessment in the western basin of Big Gull occurred after the spawning run when water temperatures ranged between 12 and 16 C. (*Typically, Walleye spawn after ice breakup when water temperatures are < 6 to 11 C, Scott and Crossman 1973*). Staff identified and mapped potential spawning locations in the western basin. The Biologists then recommended that Walleye spawning areas be protected from future shoreline development, that shoal materials not be removed from lake shorelines and that sand and silt be protected from entering the lake by erosion. Walleye spawn in the evening in shallow waters over gravel shoals of lakes (and streams).

Year	Number of Walleye hatchery plantings.
1925	100,000
1931	300,000
1932	250,000
1934	250,000
1935	500,000
1936	500,000
1937	700,000
1938	500,000
1939	850,000
1940	700,000
1941	1,000,000
1942	500,000
1943	250,000
1944	1,500,000
1945	1,500,000
1946	2,000,000
1947	850,000
1948	800,000
1949	300,000
1950	400,000
1951	500,000

In March 1988, the OMNR conducted a creel census for 13 days on Big Gull Lake (Vince Ewing 1989). A creel survey is an estimation of recreational angler catches usually obtained from interviews and inspections of individual catches. About 75% of anglers in the March 1988 survey targeted Walleye, whereas others sought Northern Pike and Yellow Perch. The estimated Walleye harvest was considered to be low; 160 fish were caught with an estimated effort of 2,439 rod hours. Average Walleye weight was 0.9 kg.

In another 1988 survey (April 20, 21, 24, 28 and 29, 1988), OMNR conducted a Walleye spawning assessment on Big Gull Lake. At the time, water temperatures ranged from 3 to 6 C, and spawning activity was observed at night. Although Walleye spawned all along the south shoreline, concentrations of fish were never high. Only "*the odd fish*" was found on the north shore. Biologists reported that all of the islands in the eastern basin had potential spawning habitat for the species. Nevertheless, spawning substrate was described as "poor" given the number of large flat rocks and small amount of large rock. This assessment led to a project to improve the habitat and enhance spawning sites for Walleye, involving the Big Gull Lake East End Cottage Association.

The habitat improvement project was conducted in August 1988 by our cottage association and the Ministry as part of the "Community Fisheries Involvement Program, CFIP." Ken Grant, David Cox and other cottagers helped with this project. A total of 64 tons of rock was purchased (\$448), and loaded and hauled from Tweed to Big Gull Lake (\$432). Conservation Officer (Dave Palmer), student (Aaron Scott), and 20 Junior Rangers assisted the cottage association for 4 days. Two loads of rock were dumped at the public boat ramp at the east end of the lake and another two loads were dumped at a private site on the north shore. Imagine the work involved to load the rocks by hand into boats! Rocks were taken to designated sites where rocks were then dumped from boats into the lake bottom to enhance Walleye spawning beds.

During a survey the next year (April 28, 1989), a two-person OMNR crew surveyed the East End of Big Gull Lake where they reported the following. "*There were not a lot of Walleye seen at the time of the survey. One large concentration of fish was seen along the south shore. At the time of the survey, it was felt most of the spawning activity was either over or had not yet begun. This would account for the small number of fish during the survey. The size of the fish ranged from 2 – 5 lbs*" (0.9 – 2.3 kg).

A 1996 Big Gull Lake Environmental Report was prepared by Friends of Big Gull Lake. The "Friends" included a coalition of five cottage associations (Big Gull West, Big Gull East End, West Pinnacle Point, South Pinnacle Point and Kirk Cove). The report documented Physical Geography, Fish and Wildlife, Water Levels, Water Quality, Sewage Disposal Systems and Sanitation Surveys, and a brief history (Looking Back).

Results from a creel survey conducted by the East End Cottage Association from 1989 to 1993 (and documented in the 1996 report) provided the best fish data on the lake and allowed cottagers to evaluate the success of their spawning enhancement project. The total number of game fish reported from the 4-year creel survey was: Walleye (3,025), Northern Pike (1,981), Smallmouth Bass (2,758), Largemouth Bass (521). Harold Krieger, the first president of the Big Gull Lake East End Cottage Association, commented on the results. He noted that 1. Most cottagers and tourists fished mainly for Walleye; 2. Many of the Walleye and bass caught were small and released; and 3. Most of the Walleye caught in years 1992 and 1993 of the survey were under 16 inches (< 41 cm). This information indicated that the spawning beds created by the C.F.I.P. were a success!

The most recent survey by the OMNR in Big Gull Lake for fish was in 2010. Nets were set July 12 to 22, 2010. Of the 38 nets set, 17 species of fish were caught. The total number of specimens was not relayed, but Walleye represented 12% of the fish caught in large mesh nets (1.5 to 5 inches). Total length of Walleye ranged from 31.8 to 55.4 cm; average length was 42.2 cm. Clearly, Walleye are available for the keen angler. Cottager Keith Rowe relayed that Walleye move offshore to deeper, cooler waters in June. Keith said “Finding walleye is always a challenge, but certainly worth all the frustration once you feel that pull on the line.”

Since Walleye are such popular fish for anglers, there continues to be much interest by cottagers in the status of Walleye in the lake. In 2015, I organized a volunteer creel census of all fish species on the east end of Big Gull Lake. Of the 13 Walleye reported, 8 were kept and the rest released, following the OMNRF regulations on catch and release (see information below) Total length ranged from 33.0 to 62.2 cm; average length was 45.5 cm. To put these values in perspective, the average adult total length of Walleye in Ontario is 42 cm. The Ontario record for Walleye is 91.4 cm, caught May 26, 1943 (Niagara River, near Fort Erie).

The OMNRF has a **harvestable** slot size regulation for Walleye in Fish Management Zone (FMZ)18, within which Big Gull Lake occurs. Any Walleye caught that ranges between 40 and 50 cm total length may be kept. See the graph below where the harvestable slot range is indicated in dashed lines. This regulation prevents overharvesting of small fish coming into spawning size and protects larger females for spawning. Captured fish smaller than 40 cm and larger than 50 cm must be released.

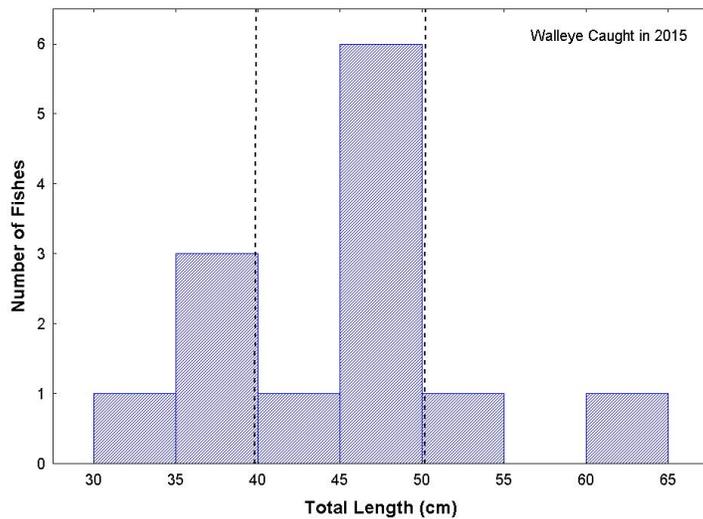


Figure 1. Total length of Walleye reported in Big Gull Lake, 2015. Fish regulations for Fish Management Zone 18 (within which our lake occurs) require fish smaller than 40 cm and larger than 50 cm to be released. Walleye caught between 40 and 50 cm may be kept.

*Thanks to Gord Erickson (upper 2 photos), Keith Rowe (middle left photo), David Cox (middle right photo) and Shean Goonetilleke for contributing images of Walleye caught on Big Gull Lake (next page). David's photo is of Ted Economedes. Shean and son caught the Walleye ice fishing February 4, 2017; the larger fish was 80 cm long!*

