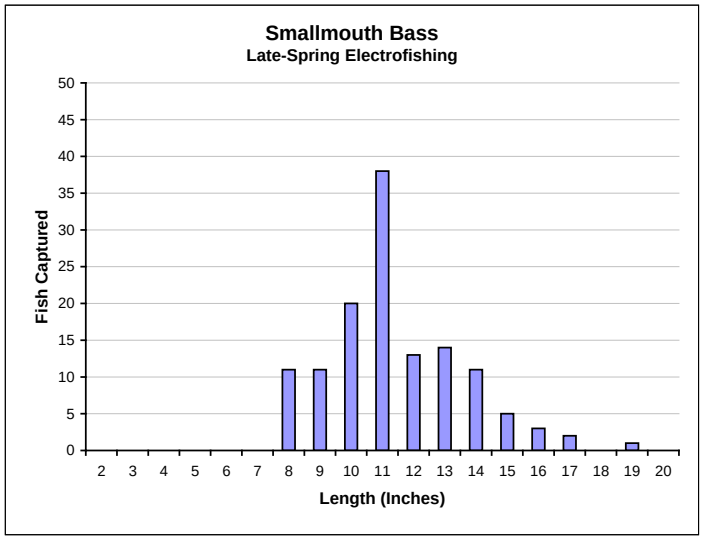
Late-Spring Electrofishing Survey Summary
Sissabagama Lake, Sawyer County, 2010

The Treaty Fisheries Assessment Team at Spooner conducted an electrofishing survey on Big Sissabagama Lake during May 24-25, 2010. A total of 18 miles of shoreline were sampled (1.5 miles sub-sampled for panfish). Primary target species were largemouth bass, smallmouth bass, and bluegill. A fyke netting survey conducted by this crew in early April documented the status of walleye, muskellunge, and northern pike. Those results are presented in a separate survey summary. Quality, preferred, and memorable sizes referenced in this summary are based on standard proportions of world record lengths developed for each species by the American Fisheries Society.

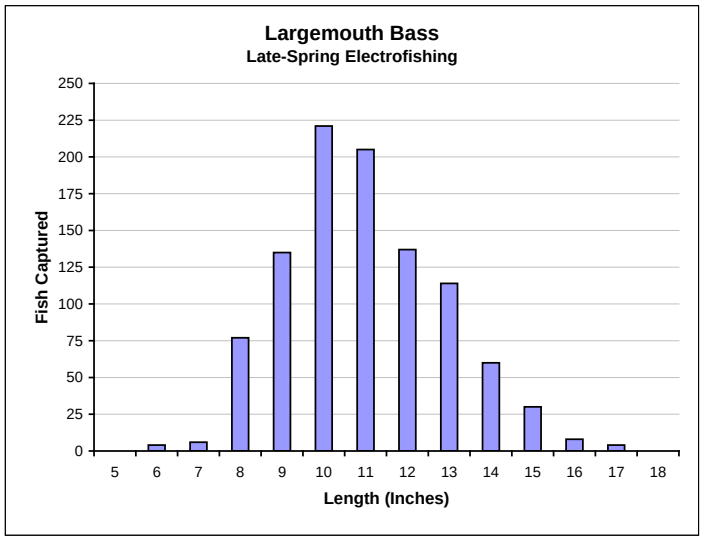
Smallmouth Bass

Captured 8 per mile ≥ 7”	
Quality Size ≥ 11”	67%
Preferred Size ≥ 14”	17%
Memorable Size ≥ 17”	1%



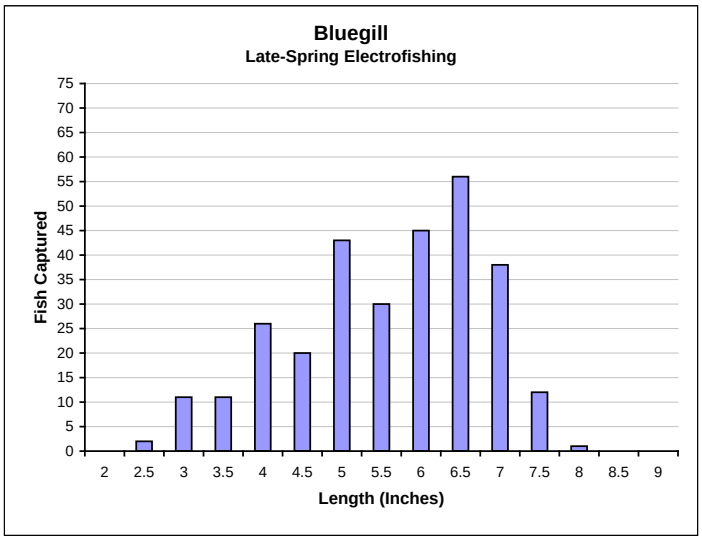
Largemouth Bass

Captured 60 per mile ≥ 8”	
Quality Size ≥ 12”	36%
Preferred Size ≥ 15”	4%



Bluegill

Captured 195 per mile ≥ 3”	
“Keeper” Size ≥ 7”	17%
Preferred Size ≥ 8”	0 %



Summary of Results

Water temperature was 71°F at the time of this survey, making it well timed to survey bass and panfish. Because of the large amount of effort (18 miles of shoreline), we were able to obtain excellent data on the relative abundance and size structure of largemouth and smallmouth bass.

Smallmouth bass were captured at a low rate (8 per mile) and exhibited mediocre size structure. Few fish exceeded the 14-inch minimum length limit in effect at the time of the survey (changed to no length limit in 2011); and there were no trophy-size smallmouths captured.

Largemouth bass were captured at a very high rate (60 per mile) and exhibited poor size structure. With so few small or large bass in this sample, it is likely that abundant 9- to 13-inch largemouths are suppressing their own recruitment through cannibalism and their own growth through competition. It is also likely that abundant largemouth bass in Sissabagama Lake are limiting recruitment of walleye. The minimum length limit for bass was removed in 2011 to increase angler harvest and decrease density of largemouth bass in particular. Largemouth bass in high numbers are thought to compete with and prey upon young walleyes. Increased harvest of largemouth bass may accelerate restoration of the desired walleye-dominated fishery and also lead to increased growth rate and improved sizes of bass.

Bluegills were captured at a moderate rate (196 per mile) in comparison with other area lakes. However, size structure was poor (only 4% of fish over 7 inches), suggesting that growth rate is low or angler exploitation of keeper-size fish is high. Largemouth bass are not as effective as walleyes in controlling the recruitment of bluegills. Restoration of a walleye-dominated fishery would probably result in fewer bluegills that would grow faster and get bigger.

Pumpkinseeds, rock bass, yellow perch, and muskellunge were also captured during this survey.

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