

Butterfield Lake, Bass Management Evaluation (Survey #: 616702)

Rodger Klindt, Region 6 Fisheries

4/12/2019

Butterfield Lake (961 acres) is located in northern Jefferson County within the Oswegatchie River watershed. This water provides anglers opportunities for black bass, northern pike, walleye and panfish. This is one of the few waters in the "Indian River Lakes" group that has an unrestricted horsepower public launch, making it attractive to anglers. Walleye are stocked in the spring as fry at \approx 3 million per year. This survey was conducted to evaluate the black bass community primarily due to heavy use by bass anglers for regional tournaments.

Two electrofishing boats spent a total of 5.5 hours of on-time working both sides of the lake the evening of May 17, 2016 as part of a Centrarchid Sampling Plan (Green et al. 1989) effort. Five hours were dedicated to game fish only collections with the remaining 0.5 hour focusing on all fish collections. Approximately 70% of the lake shoreline was sampled.

A total of 14 species were collected representing a typical warm-cool water assemblage (Table 1). Gamefish collected included largemouth bass, smallmouth bass, northern pike, and walleye, in order of abundance.

Table 1. Fish species and numbers collected by boat electroshocking Butterfield Lake, 5/17/16

Common Name	Number
Bowfin	7
Northern Pike	2
Golden Shiner	4
Brown Bullhead	21
Brook Silverside	2
Rock Bass	9
Pumpkinseed	45
Bluegill	58
Smallmouth Bass	32
Largemouth Bass	363
Black Crappie	10
Yellow Perch	5
Logperch	1
Walleye	1

Largemouth bass were most abundant with 363 fish collected at an average total length of 10.9 inches and ranging from 3.7-19.3 inches. Catch per Unit Effort (CUE) was 61.4 fish/hr which was similar to the previous electrofishing effort in 2002 (CUE = 52.1). Collection rate of largemouth \geq 10 inches was 33.4 fish/hour, placing Butterfield Lake in the moderate density category.

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Smallmouth bass were present at lower levels (N=33) with a CUE = 2.1 fish/hr. Overall lake habitat favors largemouth bass, with extensive weed beds over 66% of the lake. Approximately 70% of the smallmouth catch occurred on the eastern shore where rock cliffs and outcrops dominated the water-upland interface. Smallmouth bass had an average total length of 12.4 in and ranged from 5.2-18.7 inches.

Proportional Stock Density (PSD) for largemouth bass was 43.3, indicating a substantial portion of the population is of quality or preferred size (≥ 300 mm, ≈ 12 in). This is also reflected in the length frequency distribution (Figure 1) where a large proportion of fish are larger than the minimum harvestable limit of 12 inches. Smallmouth bass size distribution showed no pattern as fish were evenly distributed at low levels throughout the sample area.

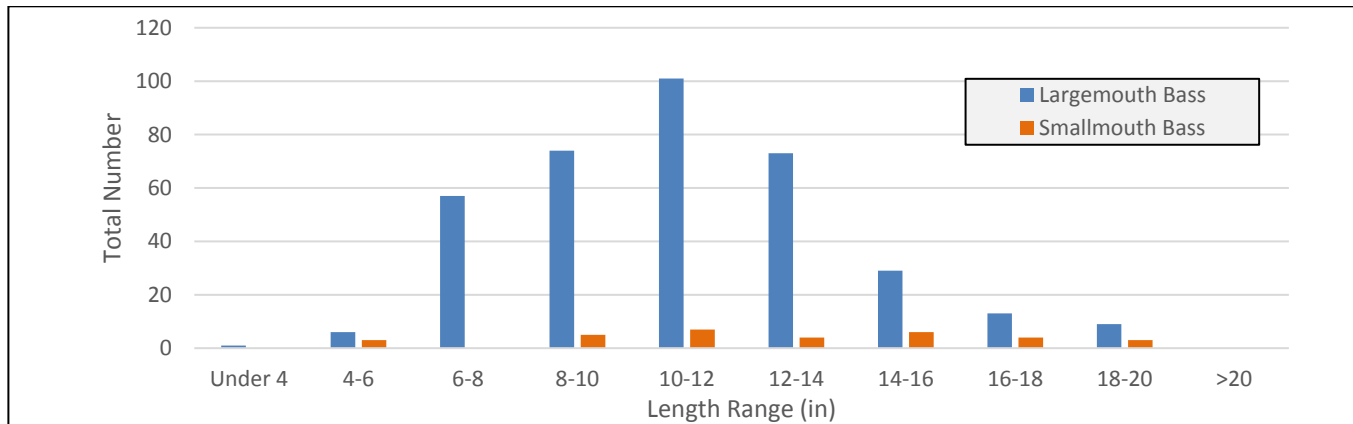


Figure 1: Length frequency distribution for black bass collected with boat electroshocking on Butterfield Lake (Jefferson Co.) on 5/17/16.

Growth of largemouth bass in Butterfield Lake was comparable to statewide averages for fish collected in May from waters ≥ 300 acres. In general fish were legal for harvest by age-4.

Butterfield Lake is a year around fishery, providing anglers opportunities for both open water and ice fishing. Catch rates for largemouth bass by boat electroshocking were among the highest in New York State for lakes of similar size. Management for black bass will remain under Statewide Regulations of 12 in minimum length with a limit of 5 per day. Walleye fry will continue to be stocked at the current rate of ≈ 3 million per year.

Literature Cited

Green, D.M. 1989. Centrarchid Sampling Manual. Chapter 1 *in* Fish Sampling Manual. New York State Department of Environmental Conservation, Bureau of Fisheries, Albany, NY.

