**Bureau of Fisheries Technical Brief # tb621003**

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

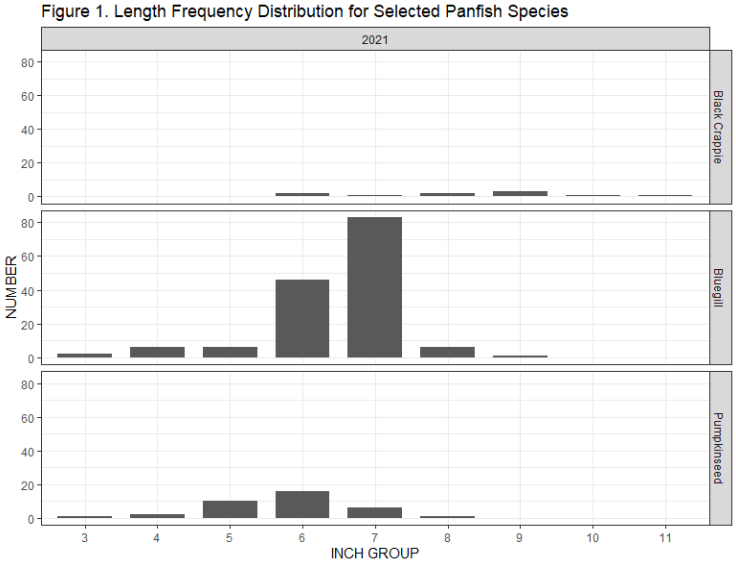
# Red Lake Big Panfish Initiative (Survey #: 621003)

**Les Resseguie, Region 6 Fisheries**

**6/9/2022**

Red Lake is a 366-acre waterbody in the Town of Theresa in Jefferson County with a maximum depth of 47 feet and mean depth of 27 feet. Public access is available by a NYSDEC maintained beach launch located on Red Lake Road. Popular sportfish found in Red Lake are largemouth bass, northern pike, walleye, yellow perch, brown bullhead, black crappie, bluegill and pumpkinseed sunfish. The walleye fishery is currently supported by annual fry stocking. Prior to April 1, 2022 special fishing regulations applied to yellow perch and sunfish (open year-round, no minimum length, no daily limit) and black bass (fishing for black bass, including catch and release, is prohibited outside the open season [third Saturday in June – November 30]). The special regulation for yellow perch remained in place; however, effective April 1, 2022, the special regulations for black bass and sunfish changed, as did the statewide regulation for black crappie. The only change to the bass special regulation was changing the start of the open season from the third Saturday in June to June 15. The black bass special regulation that prohibited fishing for black bass, including catch and release, outside the open season remains in effect. The sunfish special regulation changed to open year-round, minimum length of eight inches, and daily limit of 15 fish. The statewide minimum length for crappie was increased from nine to ten inches. Ice fishing is permitted on Red Lake.

Figure 1. Length Frequency Distribution for Selected Panfish Species




Red Lake has been surveyed nineteen times from 1979 – 2015 predominately using boat electrofishing and gillnets to evaluate walleye. Goal 1 of the Big Panfish Initiative is to determine if the experimental BPI sunfish regulation (i.e., new special regulation) in Red Lake results in improved population age and size structure (NYSDEC 2021). In May 2021, a survey was conducted to provide baseline data for the evaluation of the experimental BPI regulations with repeated surveys planned each year through 2025. Sampling methodology followed the New York State Sunfish and Crappie Trap Netting Protocol (Loukmas 2021). Three trap nets were set on May 19, 2021, resulting in a total of three net-nights of effort. Surface water temperature was 72˚F.

Bluegill dominated the panfish catch (n=150) followed by pumpkinseed (n=36) and black crappie (n=10) resulting in catch rates of 50, 12, and 3.3 fish/net-night respectively. Pumpkinseed and black crappie have been sampled with more regularity in previous survey efforts yet were poorly represented in 2021. Therefore, population metrics will not be calculated for pumpkinseed and crappie as they are not likely representative of the population.

SPORT FISH RESTORATION

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Bluegill lengths ranged from 4 – 9.2 inches (Figure 1), with an average of 7.1 inches. Stock density indices were calculated to evaluate size structure in the population and allow for comparisons between different lakes and years. The Proportional Stock Density (PSD) and Relative Stock Density for preferred ($RSD_p$) and memorable ($RSD_m$) were 92.7, 8.0 and 0, respectively. These values indicate that the population is dominated by fish in the "quality" size class (i.e., 92.7% of stock sized population were 6-8 inches; Table 1). In Red Lake, 8.0 % of the stock sized population was preferred size (8-10 inches) and none were memorable size (10-12 inches). Relative weights (Wr; an index of condition) were calculated for each size class (Table 1) and were found to be higher than the statewide average that was determined from fish caught during springtime electrofishing. These values indicated optimal condition of sunfish for NY waters (Brooking et al. 2018).

The age distrubtion of bluegills sampled in 2021 was dominated by age-5 fish (Figure 2). It is unclear why age-1 and 2 fish were poorly represented. It may have to do with capture effiency or younger fish may not occupy the same space as adult fish that are moving around pre-spawn. In 2021, mean lengths at age of Red Lake bluegills were slightly above the statewide average for fish ages 4 and older (Figure 3).

Fishing regulations allowed for unlimited harvest of sunfish in Red Lake prior to April 1, 2022. Trap net surveys will continue annually through 2025 to evaluate the response of the panfish population under the new regulations which apply a minimum length requirement of 8 inches and a daily limit of 15 fish.

Figure 2. Age Distribution of Bluegill from Red Lake in 2021

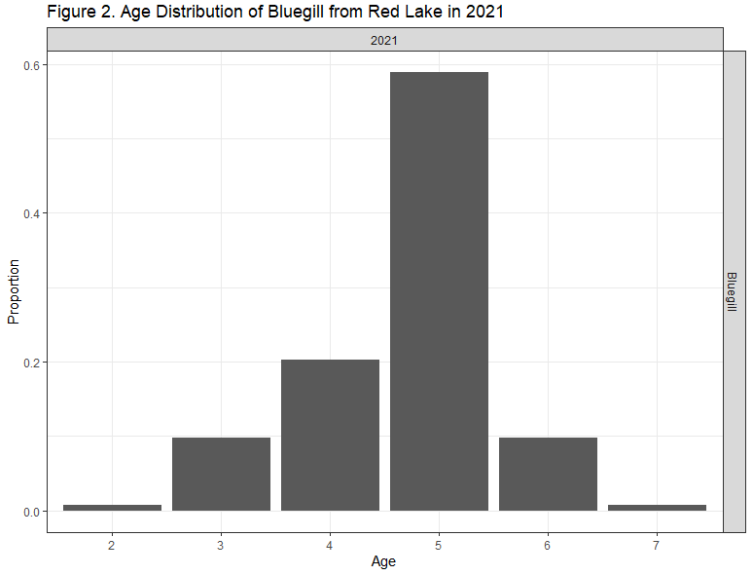


Figure 3. Mean Lengths at Age of Bluegill from Red Lake in 2021

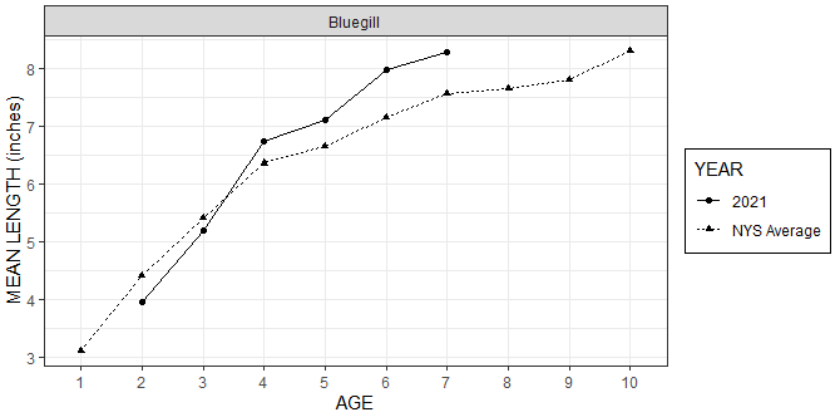


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**Table 1. Average relative weights (Wr) for each size class of Bluegill from 2021 in Red Lake (n = number collected and SE = standard error).**

| Size Class (min. length) | n | Wr (SE) | $Wr_{statewide}$ (SE) |
|---|---|---|---|
| Stock (3-5.9”) | 11 | 108 (2.0) | 105 (1.0) |
| Quality (6-7.9”) | 127 | 111 (1.0) | 101 (1.0) |
| Preferred (8.0-9.9”) | 12 | 109 (2.8) | 99 (1.0) |

Literature Cited:

Brooking, T., Loukmas, J., Jackson, R., VanDevalk, T. 2018. Black Bass and Sunfish Sampling Manual for Lakes and Ponds. New York State Department of Environmental Conservation, Federal Aid in Sportfish Restoration, F-63-R, Study 2, Job 2-2.3. Albany, New York.

Loukmas, J. 2021. New York Sunfish and Crappie Trap Netting Protocol. New York State Department of Environmental Conservation, Bureau of Fisheries. Albany, NY

NYSDEC, 2021. Big Panfish Initiative Study Plan. New York State Department of Environmental Conservation, Bureau of Fisheries. Albany, NY