

**Red Lake Big Panfish Initiative (Survey #: 622007)**  
**Les Resseguie, Region 6 Fisheries**

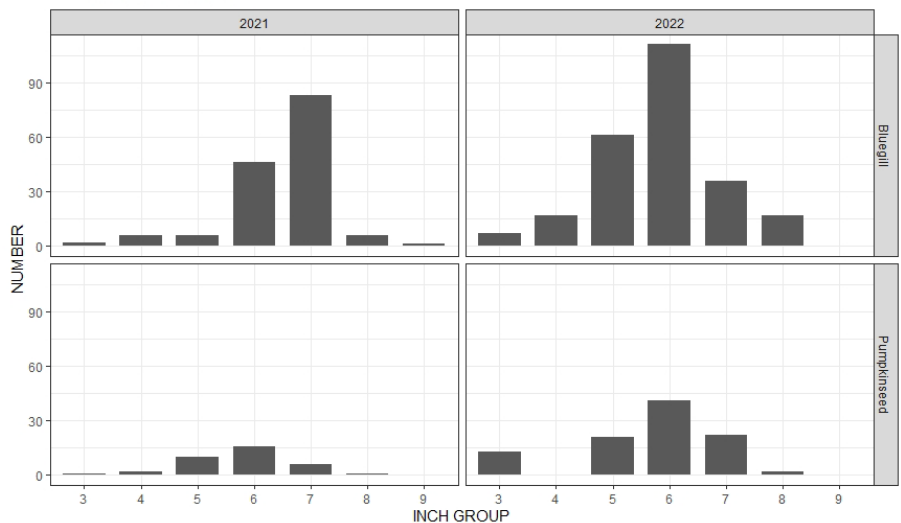
06/09/2023

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 at 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. Red Lake was selected to be part of the Big Panfish Initiative (BPI; NYSDEC 2021) and effective April 1, 2022, special sunfish regulations were adopted with an open season year-round, minimum length of eight inches, and daily limit of 15 fish.

In 2021, an initial trap-netting survey was conducted to provide baseline data for the evaluation of the experimental BPI regulations (Resseguie 2022) with additional 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 17 and 23, resulting in a total of six net-nights of effort. Surface water temperatures ranged from 63-65°F.

In 2022, bluegill again dominated the panfish catch (n=249) followed by pumpkinseed (n=99) and black crappie (n=17) resulting in catch rates of 41.5, 16.8, and 2.8 fish/net-night respectively. Pumpkinseed and black crappie were poorly represented in 2021; therefore, population metrics were not calculated as sample size would not likely be representative of the population. In 2022, catches of pumpkinseed improved allowing for analysis, but black crappie catch was again too low for analysis.

Figure 1. Length Frequency Distribution of Bluegill and Pumpkinseed from Red Lake in 2021 and 2022

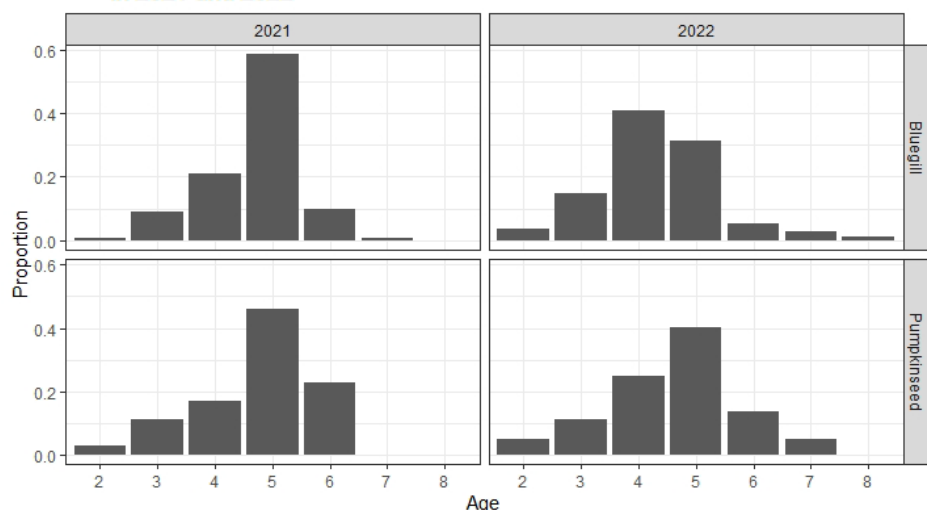


In 2022, bluegill lengths ranged from 3.2–8.6 inches (average 6.3 inches) and pumpkinseeds ranged 3.3-8.4 inches (average 6.1 inches, Figure 1). Stock density indices were calculated to evaluate size structure in the population and allow for comparisons between different lakes and years. The bluegill Proportional Stock Density (PSD), and Relative Stock Density for preferred (RSD<sub>p</sub>) and memorable (RSD<sub>m</sub>) were 71.5, 7.6 and 0, respectively. Pumpkinseed PSD, RSD<sub>p</sub>, and RSD<sub>m</sub> were 66.7, 5.1 and 0 respectively. These values indicate that the bluegill and pumpkinseed catch is dominated by fish in the “quality” size class (i.e., 71.5% of the bluegill and



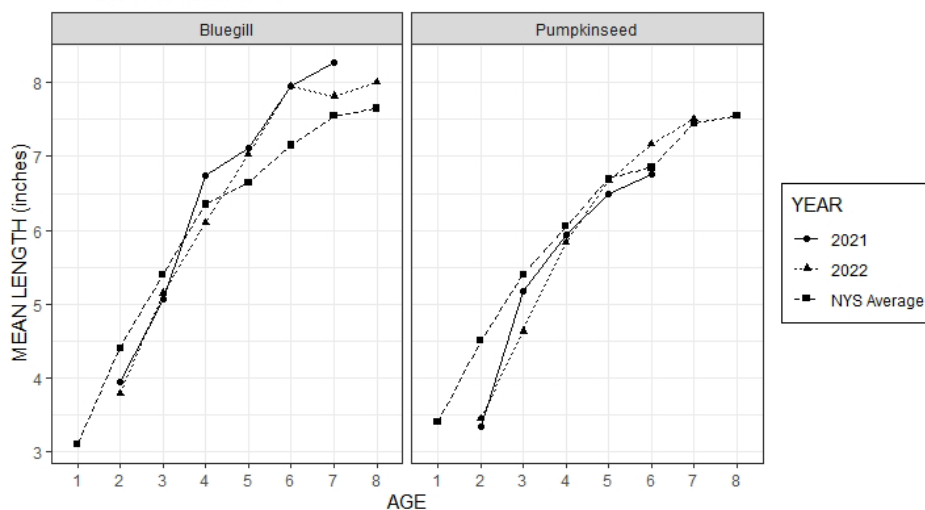
66.7% of the pumpkinseed were 6-8 inches; Table 1) and 7.6% of the bluegill and 5.1% of the pumpkinseed were preferred size (8-10 inches). None were of memorable size (10-12 inches) for either species either year. Relative weights ( $W_r$ ; an index of condition) were calculated for each size class (Table 1) and were found to be near or above the statewide average for both species. These values indicate bluegill and pumpkinseed in Red Lake are in optimal condition for NY waters (Brooking et al. 2018).

Figure 2. Age Distribution of Bluegill and Pumpkinseed from Red Lake in 2021 and 2022



The age distribution of bluegills and pumpkinseeds sampled was dominated by age-5 fish both years (Figure 2). Age-1 and -2 fish were again poorly represented and is likely a result of low capture efficiency of these age groups or younger fish may not occupy the same space as adult fish at this time of year. In both years, mean length at age-5 bluegills meets the Objective 3 goal of  $\geq 7$  inches outlined in the BPI (NYSDEC 2021; Figure 3).

Figure 3. Mean Length at Age of Bluegill and Pumpkinseed from Red Lake in 2021 and 2022



Fishing regulations allowed for unlimited harvest of sunfish in Red Lake prior to April 1, 2022. This 2022 survey was conducted only a month after the regulation change went into effect; therefore, these results should serve as another year of baseline data. Trap net surveys will occur annually through 2025 to evaluate the response of the panfish population under the new regulation of a minimum harvestable length of 8 inches and a daily limit of 15 fish.

**Table 1. Population metrics for bluegill and pumpkinseed sunfish from Red Lake BPI evaluations in 2021 and 2022 (n = number collected, Wr = mean relative weight, SE = standard error, PSD = Proportional Stock Density, RSD<sub>p</sub> = Relative Stock Density Preferred, RSD<sub>m</sub> = Relative Stock Density Memorable, and — is not evaluated).**

	Size Class (min. length)	n		Wr (SE)		Wr statewide (SE)	PSD		RSD <sub>p</sub>		RSD <sub>m</sub>	
	Sample Year	2021	2022	2021	2022		2021	2022	2021	2022	2021	2022
Bluegill	Stock (3-5.9")	11	71	108 (2.0)	104 (1.3)	105 (1.0)						
	Quality (6-7.9")	127	159	111 (1.0)	108 (1.0)	101 (1.0)	92.7	71.5	8	7.6	0	0
	Preferred (8.0-9.9")	12	19	109 (2.8)	114 (2.7)	99 (1.0)						
	Total	150	249									
Pumpkinseed	Stock (3-5.9")	9	33	—	109 (2.9)	105 (1.0)						
	Quality (6-7.9")	26	61	—	117 (1.2)	101 (1.0)	—	66.7	—	5.1	—	0
	Preferred (8.0-9.9")	1	5	—	109 (4.1)	99 (1.0)						
	Total	36	99									

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

Resseguie, L. 2022. Red Lake Big Panfish Initiative Survey. Technical Brief TB621003. New York State Department of Environmental Conservation, Bureau of Fisheries, Watertown, New York.