

Delta Lake Big Panfish Initiative (Survey #: 622201)
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Delta Lake is an impoundment measuring approximately 2,400-acres in the Mohawk River watershed in central Oneida County and was created as a water supply for the Erie Canal. Public access is available through Delta Lake State Park which maintains a boat launch as well as shoreline fishing access. A private boat launch also provides additional access for anglers. Delta Lake is managed under statewide fishing regulations and ice fishing is permitted. The fish community is that of a typical warm water fishery and includes species such as northern pike, chain pickerel, walleye, smallmouth bass, largemouth bass, yellow perch, black crappie, pumpkinseed and brown bullhead.

Goal 4 of the Big Panfish Initiative is to determine the potential for further crappie population age and size structure improvement in select waters of New York State (BPI; NYSDEC 2021). In Region 6, Delta Lake was selected as the water to conduct several years of crappie population assessments to determine the lake’s potential to provide sustainable angling opportunities for larger fish.

Additionally, sampling allows for evaluation of the new statewide regulation (in effect on April 1, 2022) that changed the minimum size limit on black and white crappie from 9 inches to 10 inches. In April 2021, a survey was conducted to collect baseline data on the crappie population in Delta Lake (Erway 2022). The survey will be repeated each year through 2025 to evaluate changes in the crappie population in response to the new regulation. Sampling methodology followed the New York State Sunfish and Crappie Trap Netting Protocol (Loukmas 2021).

The 2022 sampling occurred soon after the regulation change; therefore, the 2022 data can serve as a second year of baseline data. In 2022, two trap nets were set overnight between April 24-26 for a total of four net nights. Water temperature was 49°F.

Figure 1. Length Frequency Distribution of Black Crappie from Delta Lake in 2021 and 2022

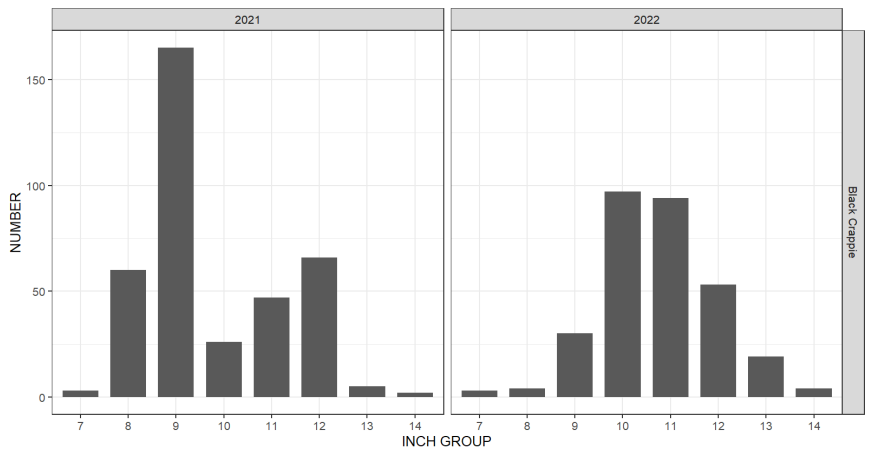
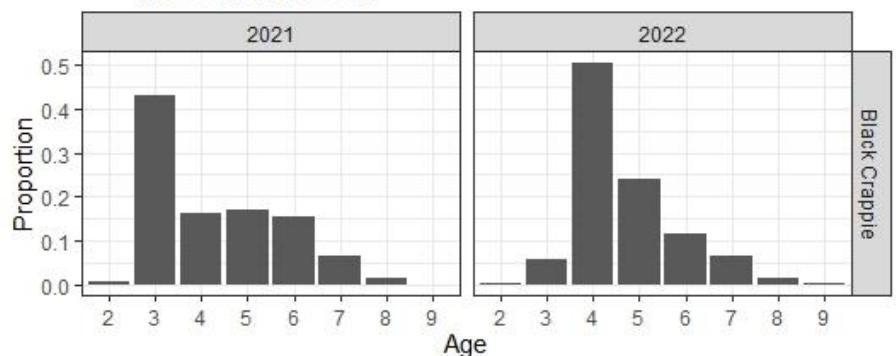


Figure 2. Age Distribution of Black Crappie from Delta Lake in 2021 and 2022



A total of 304 black crappie were caught during four net nights resulting in a catch rate of 76 crappie/net night. In 2022, black crappie lengths ranged from 7-14.6 inches with the majority of fish in the 10-12-inch range (Figure 1). 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 99.7, 89.8 and 26.3, respectively. These values indicate that the catch is dominated by fish in the “quality” size class (i.e., 99.7% of stock sized population were ≥ 8 inches; Table 1). In Delta Lake, 89.8 % of the stock sized population was the preferred size (10-12 inches) and 26.3% of the stock sized population was memorable size (12-14.9 inches). Black crappie ranged in age from two to nine years old, with the largest proportion of the catch being age-4 fish (Figure 2). Growth was above the New York State average for all ages collected in 2021 and 2022 (Figure 3).

Relative weights (Wr; an index of condition) were calculated for each size class (Table 1). Average Wr for each size class was higher than the statewide average which was determined from fish caught during springtime electrofishing. These values indicated optimal condition of crappie in Delta Lake (Brooking et al. 2018).

Figure 3. Mean Length at Age of Black Crappie from Delta Lake in 2021 and 2022

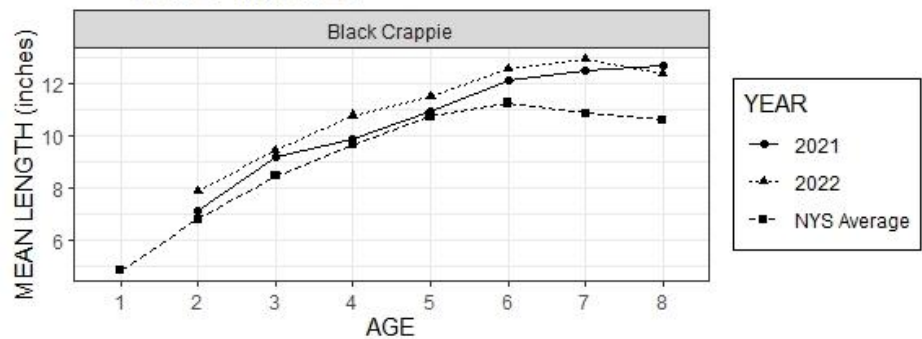


Table 1. Average relative weights (Wr) for each size class of Black Crappie from Delta Lake in 2022; n = number collected and SE = standard error.

Size Class (min. length)	n	Wr (SE)	Wr _{statewide} (SE)
Stock (5-7.9")	1	97.9 (NA)	100 (3)
Quality (8-9.9")	30	94.6 (4.0)	93 (2)
Preferred (10-11.9")	193	93.6 (7.1)	92 (4)
Memorable (12-14.9")	80	95.5 (6.0)	84 (7)

Literature Cited:

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

Erway D. 2022. Delta Lake Big Panfish Initiative Survey. Technical Brief TB621202. New York State Department of Environmental Conservation, Bureau of Fisheries, Utica, 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

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.