Bureau of Fisheries Technical Brief

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Silver Lake Big Panfish Initiative Survey (Survey #923200)

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As part of the recently implemented Big Panfish Initiative (BPI), New York State Department of Environmental Conservation (NYSDEC) developed the BPI Study Plan, which outlines several objectives for management of sunfish and crappie fisheries throughout the state (NYSDEC 2021). The initiative proposes more conservative statewide and lake-specific experimental fishing regulations that aim to provide unique fishing opportunities by managing for larger-sized crappie and sunfish. As part of this initiative, Silver Lake was one of several waters selected for introduction of experimental regulations on sunfish. These regulations seek to improve size structure through a reduced bag limit (50 to 15 fish) and implementation of an 8-inch minimum for bluegill, pumpkinseed, and redbreast sunfish. Additionally, several regulation changes for panfish were implemented statewide, which include a minimum length increase from 9 to 10 inches for crappie and a bag limit reduction for sunfish from 50 to 25 fish. These regulation changes took effect on April 1, 2022. This report briefly summarizes survey results from a 2023 trap net survey intended to gather data on populations of panfish in Silver Lake (Wyoming County). This survey is part of an assessment that was initiated in 2021 to evaluate the impacts of these recently implemented experimental regulations. It is expected this assessment will continue through 2025. A comprehensive report will be produced in 2026 following the conclusion of this statewide assessment.

In late May 2023, Region 9 Fisheries staff conducted a spring trap net survey targeting sunfish on Silver Lake following the methods outlined by Loukmas (2021). NYSDEC (2021) did not identify black crappie as a target species for Silver Lake; however, data was also collected on this population since a high abundance of black crappie was observed at the time of sampling. Stock indices for black crappie were calculated and reported alongside bluegill and pumpkinseed. Three Oneida-style trap nets were deployed on May 30, 2023, and fished for three consecutive nights resulting in 9 net-nights of effort. Immediately following this, one Oneida-style trap net and three fyke nets were deployed for a total of four net-nights to collect additional samples for pumpkinseed. A total of 2096 fish were collected, representing 12 species. Black crappie was the most abundant (N=812) species, followed by bluegill (N=668), brown bullhead (N=233), and pumpkinseed (N=145). Lengths ranged from 3.9 to 9.1 in for bluegill, 4.9 to 9.3 in for pumpkinseed, and 5.9 to 10.6 in for black crappie (Figure 1). The dominant age-class was age-5 for black crappie, age-3 for bluegill and age-4 for pumpkinseed (Figure 2). Catch per unit effort (CPUE) was calculated using the total number of net nights, which included all Oneida-style trap net and fyke net sets. Black crappie CPUE resulted in 68 fish/net-night, followed by bluegill (52 fish/net-night) and pumpkinseed (13 fish/net-night; Table 1). Relative weight and stock density indices were determined using lengths in inches following the methods reported by Anderson and Neumann (1996). Proportional stock density (PSD) for black crappie, bluegill, pumpkinseed were above the objectives listed in the BPI Study Plan (PSD≥70); however, relative stock density-preferred (RSD_p) and relative stock density-memorable (RSD_m) were below targets for all panfish (Table 2). Mean relative weight (Wr) was above objectives (Wr=100) listed for pumpkinseed and bluegill; weights were not recorded for black crappie (Table 1). Length at age-5 for bluegill (mean=8.4 in; SE=0.15) and pumpkinseed (mean=7.6 in; SE=0.12) both exceeded the 7-inch BPI objective, while mean length at age-5 for black crappie (mean=8.9, SE=0.09) was below the 10-inch objective.

Most BPI metrics are being met annually, except for length-at-age for black crappie and RSD_p for all species (Table 3). Size structure for pumpkinseed was relatively similar from 2021 to 2023, yet bluegill and black crappie showed clear increases in PSD. Even though measurable increases in PSD were observed for these species, RSD_p remained below BPI objectives. It is anticipated this large group of

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sub-legal bluegill and black crappie should provide increased opportunities for harvest within the next one to two years. NYSDEC expects to continue sampling through 2025 to assess the impacts of these experimental regulations and will conduct a survey to gauge angler sentiment at the conclusion of this study.

Literature Cited:

Anderson, O.R, and R.M. Neumann. 1996. Length, Weight, and Associated Structural Indices. Fisheries Techniques Second Edition, pp. 447-482. American Fisheries Society

Loukmas, J.L. 2001. New York Sunfish and Crappie Trap Netting Protocol. New York State Department of Environmental Conservation, Albany, New York.

NYSDEC. 2021. Big Panfish Initiative Study Plan 2021-2026. New York State Department of Environmental Conservation, Albany, New York.

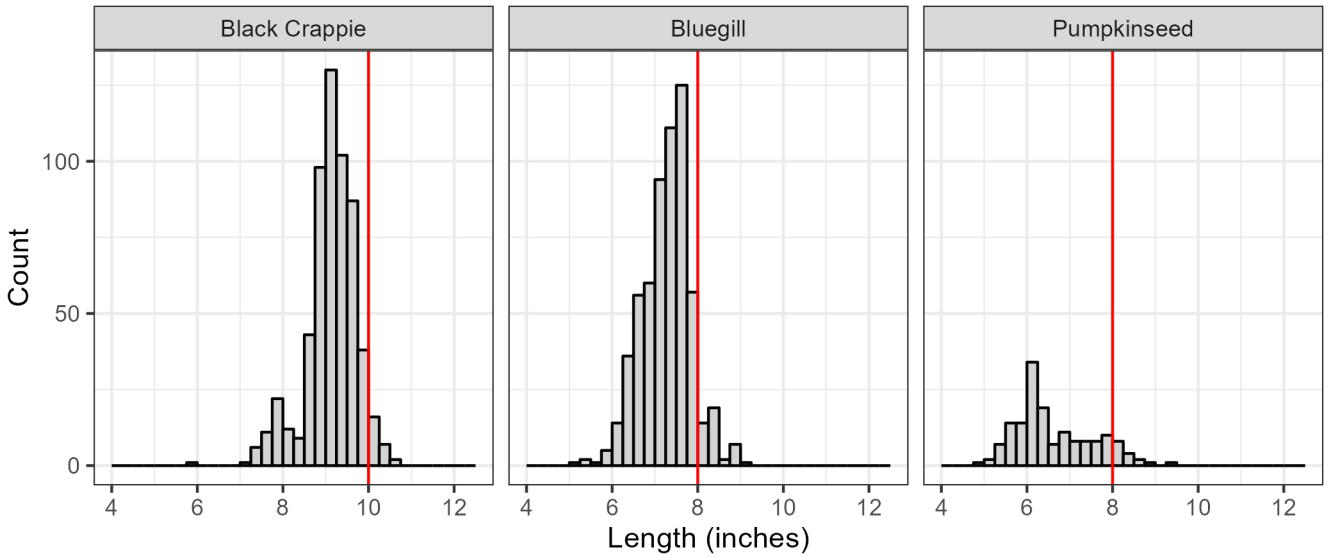

***Figure 1**. Length distribution of black crappie, bluegill, and pumpkinseed collected by trap net from Silver Lake, 2023, with minimum length regulation (red line).*

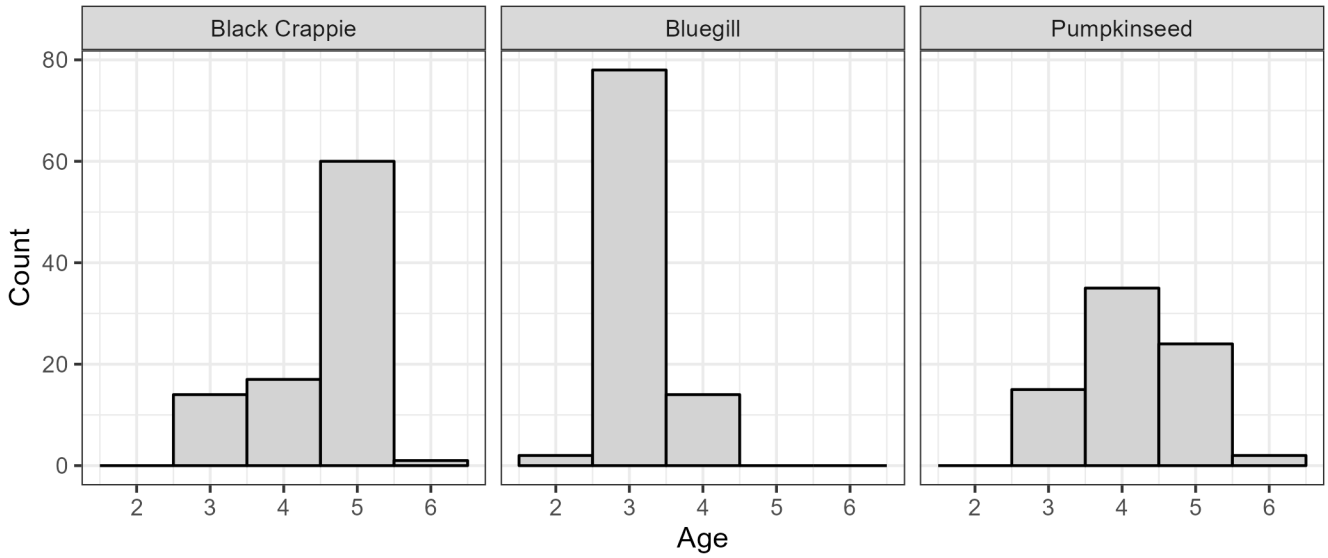

Figure 2*. Age distribution of black crappie, bluegill, and pumpkinseed collected by trap net from Silver Lake, 2023.*

Table 1. *Catch per unit effort (CPUE), relative weight (Wr), mean length and length-at-age for black crappie, bluegill and pumpkinseed captured by trap net from Silver Lake, 2023.*

Species	CPUE (fish/net-night)	Wr	Mean length (in)	Length-at-age (in)
Black crappie	68	NA	9.1	8.9 (age-4)
Bluegill	52	103	7.3	8.4 (age-5)
Pumpkinseed	13	105	6.6	7.6 (age-5)

Table 2. *Stock density indices for black crappie, bluegill and pumpkinseed collected from Silver Lake, 2023, alongside Big Panfish Initiative objectives (NYSDEC 2021).*

	Silver Lake 2023			BPI Objectives		
Species	**PSD**	**RSD_p**	**RDS_m**	**PSD**	**RSD_p**	**RDS_m**
Black crappie	93	5	0	60	20	NA
Bluegill	98	7	0	70	30	5
Pumpkinseed	76	10	0	70	30	5

Table 3. *Catch per unit effort (CPUE), relative weight (Wr), mean length, length-at-age and stock density indices for black crappie, bluegill and pumpkinseed collected from Silver Lake, 2021 through 2023.*

Species	Year	CPUE (fish/net-night)	Wr	Mean length (in)	Length-at-age (in)[a]	Stock density indices		
						PSD	RSD_p	RSD_m
Black Crappie								
	2021	163	NA	8.3	9.2	49	5	0
	2022	105	NA	8.5	7.8	86	1	0
	2023	68	NA	9.1	8.9	93	5	0
Bluegill								
	2021	36	110	6.9	8.2	75	19	0
	2022	124	98	6.8	7.4	85	9	0
	2023	52	103	7.3	8.4	98	7	0
Pumpkinseed								
	2021	29	109	6.9	7.7	83	9	0
	2022	34	101	6.9	7.3	76	15	0
	2023	13	105	6.6	7.6	76	10	0

[a] Length-at-age reports mean length at age-4 for black crappie and age-5 for bluegill and pumpkinseed.