

**Otisco Lake Trap Net Survey (Survey #:722006)
James Everard, Region 7 Fisheries****01/17/2023**

Otisco Lake is an 1,877 acre eutrophic lake lying wholly within Onondaga County, near the city of Syracuse. It is the most easterly of the eleven Finger Lakes and is eighth in size. There is a DEC hard surface ramp boat launch and an angler access site on the west side of the lake by the causeway that provides trailered boat and shore access. Onondaga County has a park located on the east side, near the north end of the lake, adjacent to Turtle Bay. This site provides access for shore and ice fishing, and for launching of car top boats. Ice fishing and shore access is also found along the east side at the north end, but no formal parking area exists. There are two private marinas with launches located on the east side of the lake, one on either side of the causeway, which provide trailered boat access for a fee.

A trap-net survey was conducted on May 19, 2022 as part of the statewide Big Panfish Initiative (BPI). Trap net sampling was done using six-foot Oneida trap nets following methods outlined in the New York Sunfish and Crappie Trap Netting Protocol (Loukmas 2020). Three nets were fished on May 19th and target species were bluegill, pumpkinseed, and black and white crappie.

Overall, 407 fish were caught, representing 14 species (Table 1). Bluegill were the most numerous with 122 caught. Other target species caught were pumpkinseed (n=34), black crappie (n=27), and white crappie (n=12). For this survey, sunfish are the bluegill and pumpkinseed catch combined (n=156), and crappie is the combined white and black crappie catch (n=39). Catch per unit effort (CPUE) for sunfish was 52 fish/net-night (SE=34) for \geq stock (\geq 3 in) size sunfish. Crappie CPUE was 13/net-night (SE=6) for \geq stock (\geq 5 in) size (Table 2).

Sunfish in the 7.0 inch range were most frequently collected (Figure 1). The sunfish PSD of 83 is above the target PSD of 70 outlined in the New York Sunfish and Crappie Management Plan (NYSDEC 2020; Table 3). From here on referred to as "the plan". The sunfish RSD₈ of 6, and RSD₁₀ of zero are both below the 30 and 5, respectively, also outlined in the plan. These numbers suggest that the sample population had a high percentage of quality (\geq 6 in) sunfish but few preferred (\geq 8 in) and no memorable (\geq 10 in) sized. This PSD was higher than for sunfish collected in both the 2021 BPI survey and the 2014 Community Survey (Table 4: Everard 2017). It should be noted that 2014 survey used multiple gear types and took place in May, August, September, and October. The 2022 RSD₈ was lower than in 2021 but higher than 2014 (Table 4). The 2022 average relative weight (Wr) for all size sunfish of 95 (SE=1) also falls below the plan target Wr of 100. The Wr index uses a range of 95 to 105 as the benchmark for fish in good condition (Pope and Kruse 2007). The 2022 average Wr was the highest of the three surveys (Table 4). The average length at age-5 for sunfish was 6.4 inches (pumpkinseed was 5.9" and bluegill was 6.8") and the percentage of the stock sample population \geq age-5 was 82%. This would suggest that the sample population was comprised of older (\geq age-5) fish with average growth rates just below the NY spring average of 6.5 inches at age-5 (Brooking et al. 2018). Many definitions of stunting exist, but Heath and Roff (1987) define stunting as a population with "drastically" reduced growth rates. Otisco Lake sunfish would not be considered stunted as they are just "slightly" slower growing than the NY spring average. However, the 6.4 inch average

length at age-5 was below the plan target of 7 inches. For the 2014 survey the average length for age-5 sunfish was 6.2 inches, and in 2021 it was 6.0 inches (Table 4).

Crappie in the 9 inch range were most frequently collected (Figure 3). The crappie PSD of 85 and the RSD₁₀ of 46 were both above the plan target of 70 and 20, respectively. This suggest that our sample population had a high percentage of quality (≥ 8 in) and preferred (≥ 10 in) sized crappies. One trophy (≥ 15 in) crappie was caught. The PSD and RSD₁₀ values were similar to the 80 and 48, respectively, from the 2014 survey (Everard 2017). But both were lower than the 2021 values (Table 6). The average Wr for all size crappie was 94 (SE=1) which was just below the plan target Wr of 100. This average Wr value was higher than in 2014 but below the 102 of 2022 (Table 6). The average crappie length at age-4 was 8.2 inches (white crappie was 9.9" and black crappie was 7.9") and the proportion of the stock size in the sample \geq age-4 was 92% (Figure 4). As with the 2022 sunfish, this suggest that the crappie sample population is comprised of older individuals and are growing slightly slower by NYS standards. The NYS spring average length at age-4 for black crappie is 8.7 inches and 9.4 inches for white crappie (Brooking et al. 2018). The average length at age-4 was below the plan target of 10 inches. For the 2014 survey the average length at age-4 for crappie was 9.0 inches and in 2021 it was 8.9 inches (Table 6)

As this survey is the second of a five-year study, there are no recommendations at this time and the survey will be repeated in 2023.

Table 1. Species of fish caught and catch per unit effort (fish/net-night) during May 2022 trap netting of Otisco Lake, Onondaga County. Standard error is in parentheses.

Species	Total	Fish/net-night
Alewife	2	0.7 (1)
Tiger Musky	1	0.3 (0)
Golden Shiner	4	1.3 (1)
White Sucker	1	0.3 (0)
Yellow Bullhead	1	0.3 (0)
Brown Bullhead	69	23.0 (19)
Channel Catfish	84	28.0 (28)
White Perch	46	15.3 (26)
Rock Bass	3	1.0 (1)
Pumpkinseed	34	11.3 (8)
Bluegill	122	40.7 (25)
Largemouth Bass	1	0.3 (0)
White Crappie	12	4.0 (4)
Black Crappie	27	9.0 (2)
Total	407	

Table 2. Spring trap-net catch of target species from Otisco Lake, Onondaga County, on May 19, 2022. CPUE values are mean catch rates by net-night, with standard error in parentheses.

Species	Total Catch	CPUE (Fish/net-night)				
		All	\geq Stock	\geq Quality	\geq Preferred	\geq Memorable
Sunfish	156	52 (34)	52 (34)	43 (30)	3 (2)	-
Crappie	39	13 (6)	13 (6)	11 (6)	6 (5)	5 (4)
Pumpkinseed	34	11 (8)	11 (8)	8 (7)	0.3 (0)	-
Bluegill	122	41 (25)	41 (25)	35 (23)	3 (1)	-
White Crappie	12	4 (4)	4 (4)	4 (4)	4 (4)	3 (3)

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Black Crappie 27 9 (2) 9 (2) 7 (2) 2 (2) 2 (1)

Table 3. Number of fish caught of stock, quality, preferred (Pref), memorable (Mem), and trophy lengths and resulting PSD, RSD_P, RSD_M and RSD_T in May 2022 on Otisco Lake, Onondaga County.

Species	Stock	Quality	Pref	Mem	Trophy	PSD	RSD _P	RSD _M	RSD _T
Sunfish	156	129	9	0	0	83	6	0	0
Crappie	39	33	18	15	1	85	46	38	3
Pumpkinseed	34	24	1	0	0	71	3	0	0
Bluegill	122	105	8	0	0	86	7	0	0
White Crappie	12	12	11	10	1	100	92	83	8
Black Crappie	27	21	7	5	0	78	26	19	0

Table 4. Objectives from the study plan used to compare sunfish collected in a 2014 Community Survey, and 2021 and 2022 BPI surveys on Otisco Lake, Onondaga County

Year	PSD	RSD8	RSD10	Average	
				Wr	Length Age-5
2014	47	1	0	91	6.2"
2021	81	14	0	91	6.0"
2022	83	6	0	95	6.4"
Objective	70	30	5	100	7.0"

Table 5. Mean relative weight (Wr) by size categories for fish sampled on Otisco Lake, Onondaga County, in May 2022. N is number of fish in the size category and standard error is in parentheses. Pref=preferred and Mem=memorable.

Species	N	All	≥Stock<Quality		≥Quality<Pref		≥Pref<Mem		≥Mem<Trophy	
		N	Wr	N	Wr	N	Wr	N	Wr	N
Sunfish	133	95 (1)	15	101 (6)	109	95 (1)	9	89 (3)	-	-
Crappie	37	93 (1)	5	96(3)	14	98 (2)	3	94 (5)	15	89 (2)
Pumpkinseed	24	101 (3)	6	105 (9)	17	99 (12)	1	99 (0)	-	-
Bluegill	109	94 (1)	9	98 (7)	92	94 (11)	8	88 (8)	-	-
White Crappie	12	88 (1)			1	80 (0)	1	96 (0)	10	88 (1)
Black Crappie	25	96 (2)	5	96 (3)	13	100 (2)	2	92 (4)	5	91 (5)



Table 6. Objectives from the study plan used to compare crappie collected in a 2014 Community Survey, and 2021 and 2022 BPI surveys on Otisco Lake, Onondaga County.

Year	PSD	RSD ₁₀	Average	
			Wr	Length Age-4
2014	80	48	86	9.0"
2021	92	69	102	8.9"
2022	85	46	94	8.2"
Objective	60	20	100	10.0"

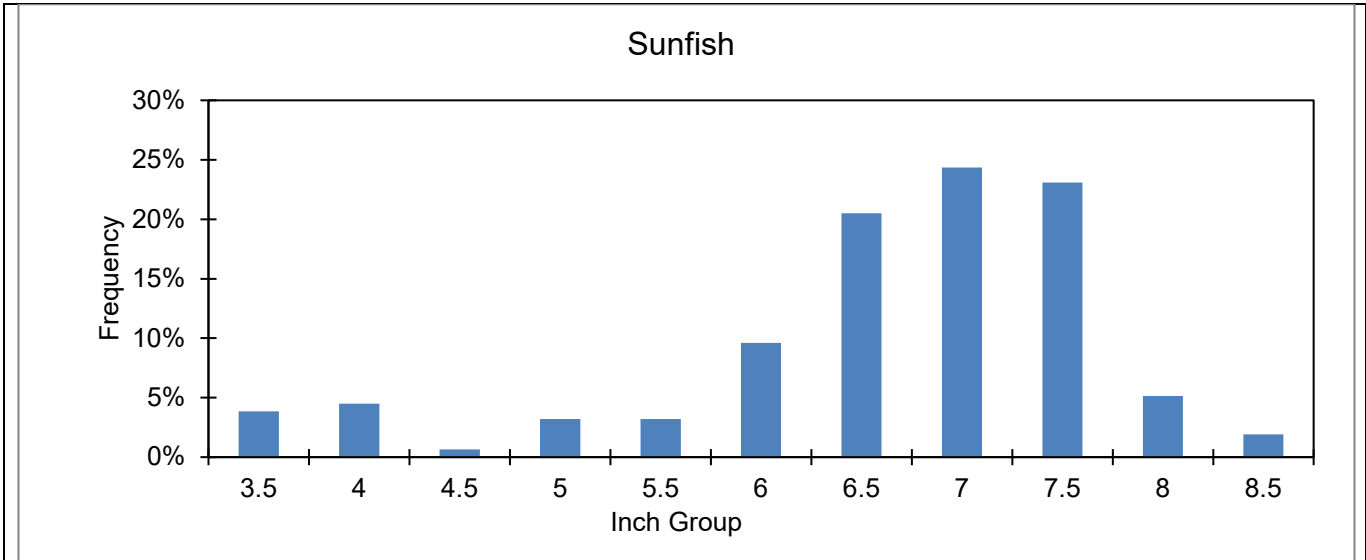


Figure 1. Length frequency distribution of sunfish collected in May 2022 on Otisco Lake, Onondaga County.

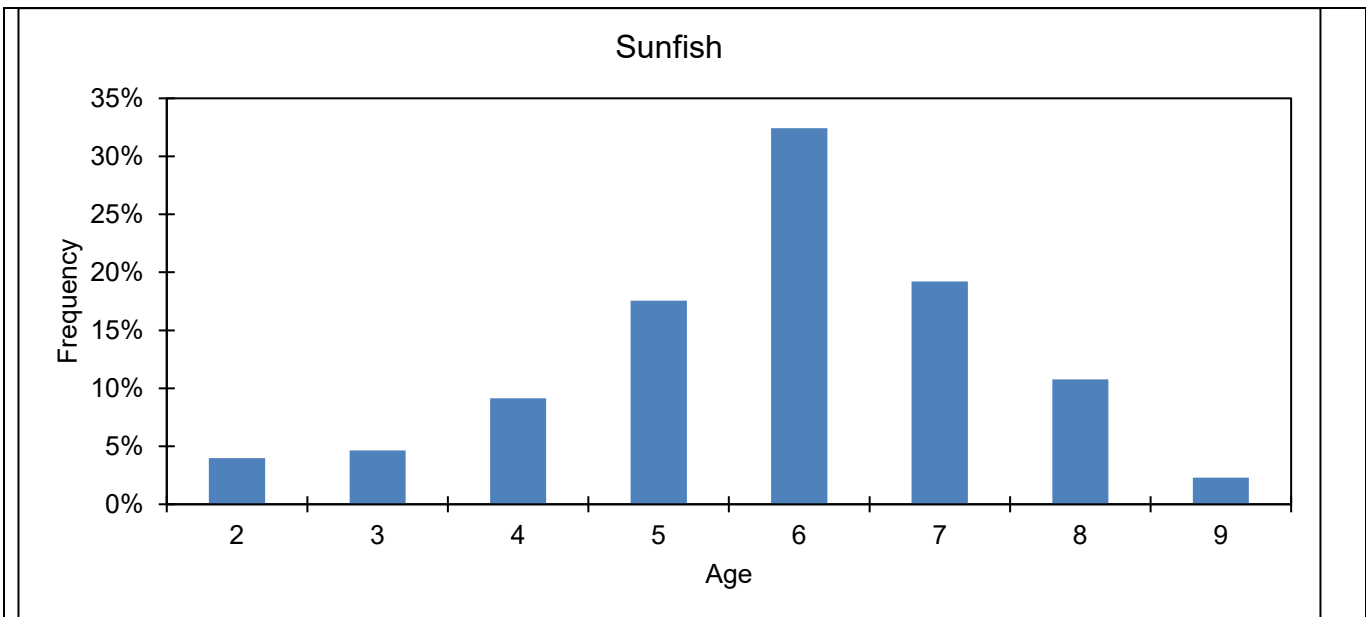


Figure 2. Age frequency distribution of sunfish collected in May 2022 on Otisco Lake, Onondaga County.

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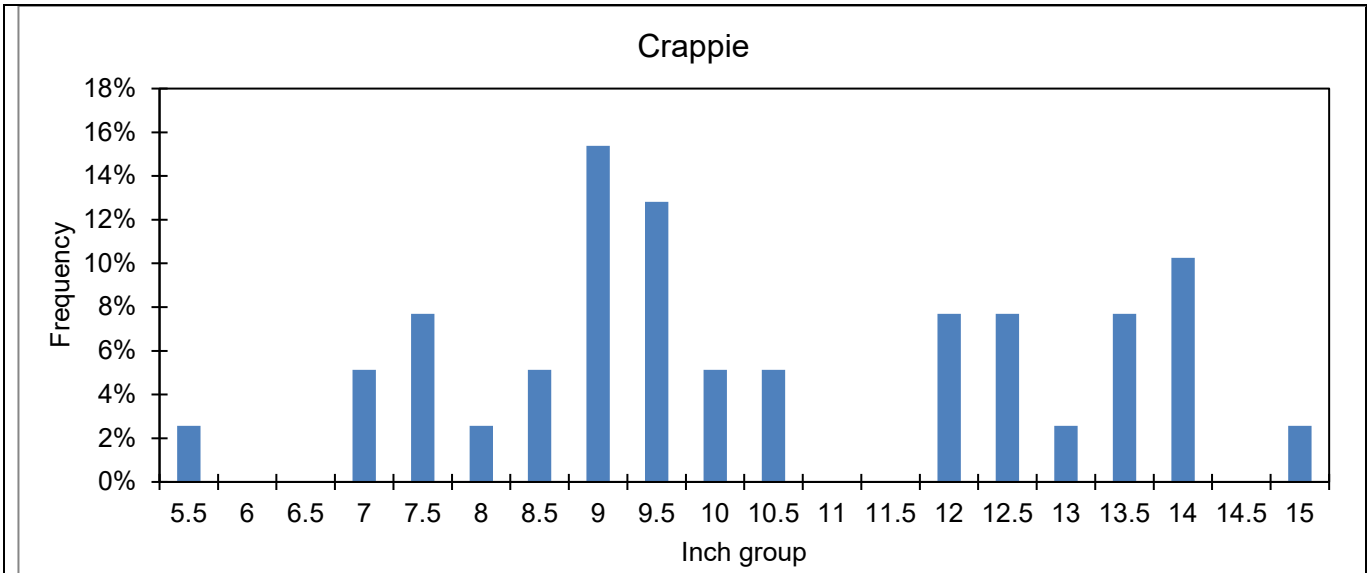


Figure 3. Length frequency distribution of crappie collected in May 2022 on Otisco Lake, Onondaga County.

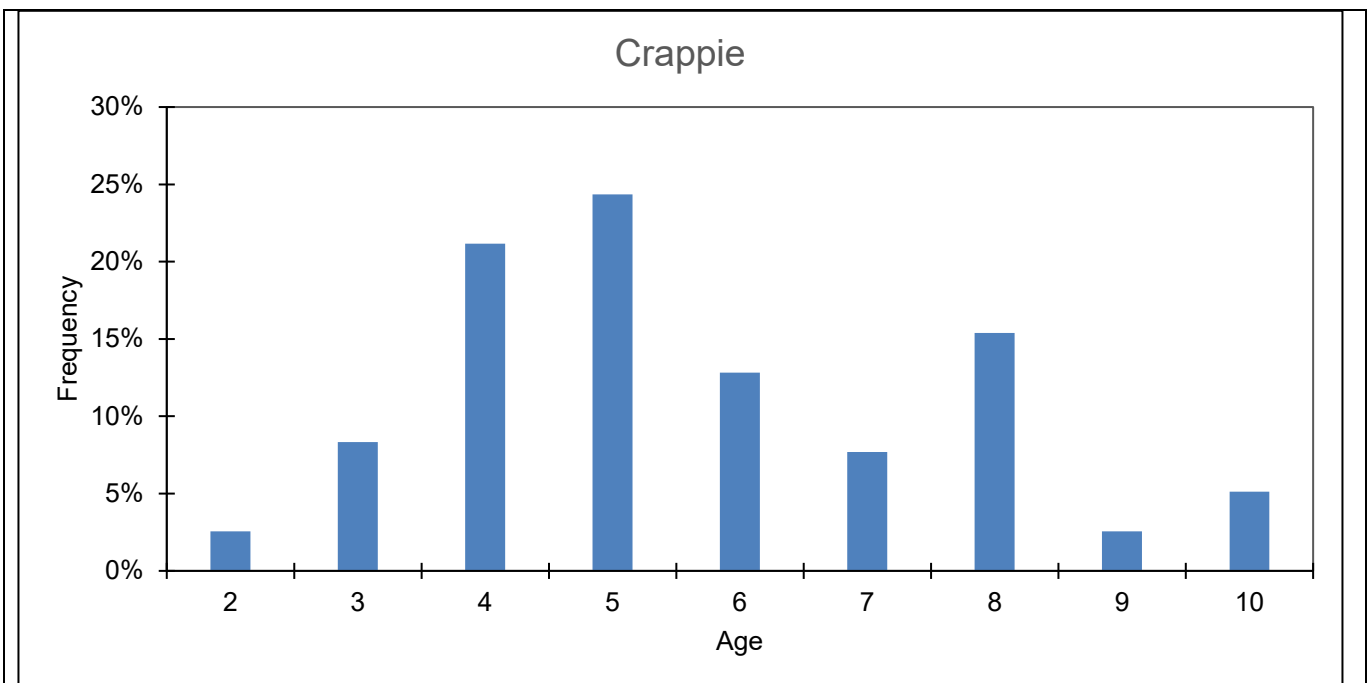


Figure 4. Age frequency distribution of crappie collected in May 2022 on Otisco Lake, Onondaga County



Literature Cited

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