

Salmon River Reservoir Survey (Survey #:719006)

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The 2019 Salmon River Reservoir fisheries survey was carried out in mid-June using standard DEC inland graded mesh monofilament gillnets. The primary objective of the survey was to monitor the walleye population in the reservoir and assess relative hatchery survival based on fish ages. A total of eight gillnets were set (four per night for two nights). This replicated the survey design from the 2008 and 2013 efforts, with nets being set in the same locations at the same time of year. The nets were fished for approximately 24 hours prior to retrieval.

One hundred seventy-six fish representing six species were caught in the 2019 netting survey (Table 1). This was the highest number of fish caught of the three gillnet surveys (164 in 2008 and 142 in 2013) (Table 1). The most numerous species captured during all three surveys was white sucker (*Catostomus commersoni*) (Table 1). The most notable shifts in the fish community between 2008 and 2019 was the progressive increase in numbers of walleye caught. The remaining species did not have any notable change in numbers.

Forty-five walleye were caught in this survey yielding a gillnet catch rate of 6 fish per net per night (Table 1). The walleye catch rate doubled from the 2013 survey and was an order of magnitude higher than the 2008 survey (0.8 fish/net) (Table 1). The age distribution of walleye shows that age-4 and age-5 were the most numerous age classes caught in 2019 (Figure 1). Based on age data and DEC stocking records, at least 43 of the 45 walleye caught in 2019 were naturally reproduced fish. Length-at-age results for the 2019 walleye catch show that except for age-2 fish the growth rate in the reservoir is consistently below the state-wide average (Figure 2).

The 2019 gillnet catch of yellow perch (43 total) yields a catch rate of 2 per net per night (Table 1). This rate is roughly half of that from the 2013 survey (5 per net) (Table 1). While not certain, the increased walleye population may be limiting recruitment of yellow perch. Yellow perch in the reservoir showed an age distribution peaking with age-5 fish, with age-6 and age-7 also being important. The length frequency distribution for yellow perch has fish between 251 and 300 mm (10 and 12 inches) being most numerous, which also has been the past pattern. Length-at-age analysis indicates the yellow perch in the reservoir are growing at a faster rate than the statewide average (Figure 3).

Walleye stocking was resumed in 2017 with the intention of enhancing the population that was established following a 5-year experimental stocking effort between 2004-2008. The significant contribution of naturally produced walleye observed in this survey would suggest that continued stocking would not be warranted. However the reservoir exists for power generation and experiences periodic severe drawdowns during very dry periods to maintain license required downstream baseflows. During drought years the reservoir has returned to just the historical river channel. This reduction in available habitat significantly impacts the fish community. Because of this we recommend periodic maintenance stocking (every 2-3 years) to counteract



the suspected variable walleye survival caused by reservoir fluctuations. Gillnet evaluations will continue as well to assess the population.

Table 1. Numbers of fish collected in the Salmon River reservoir by survey year.

Species	2008		2013		2019	
	Number of fish	Fish per net	Number of fish	Fish per net	Number of fish	Fish per net
Yellow Perch	6	1	43	5	19	2
White Sucker	74	9	45	6	87	11
Walleye	6	0.8	23	3	45	6
Smallmouth Bass	52	7	18	2	18	2
Rock Bass	16	2	10	1	6	1
Brown Trout	0	0	1	0	0	0
Black Crappie	0	0	2	0	0	0
Pumpkinseed	6	1	0	0	0	0
Rainbow trout	1	0	0	0	0	0
Brown bullhead	3	0	0	0	1	0
Total fish	164		142		176	

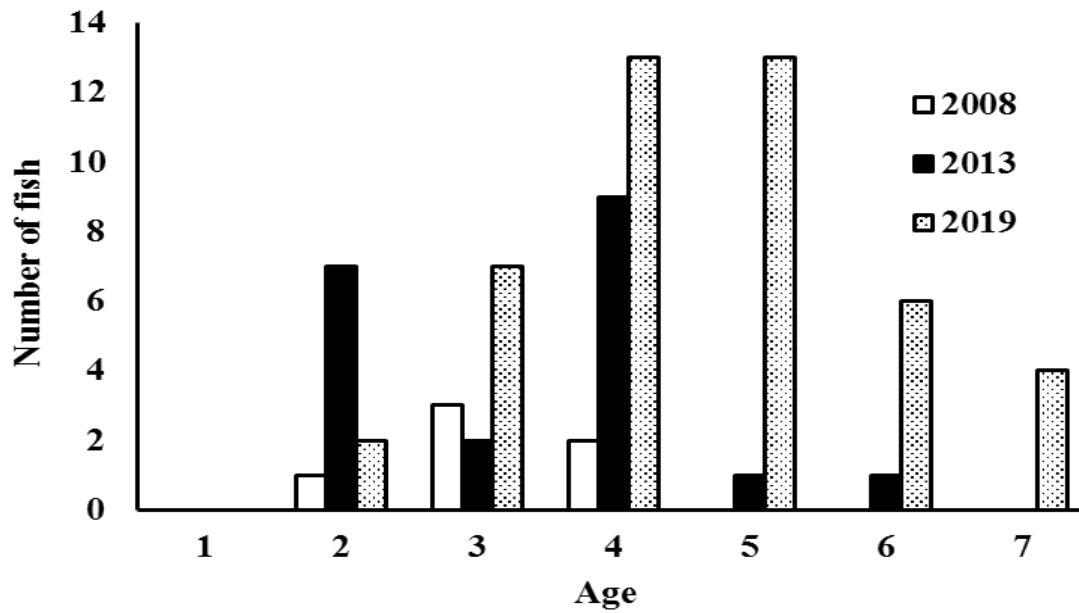


Figure 1. Age frequency distributions of walleye sampled in the Salmon River Reservoir by year

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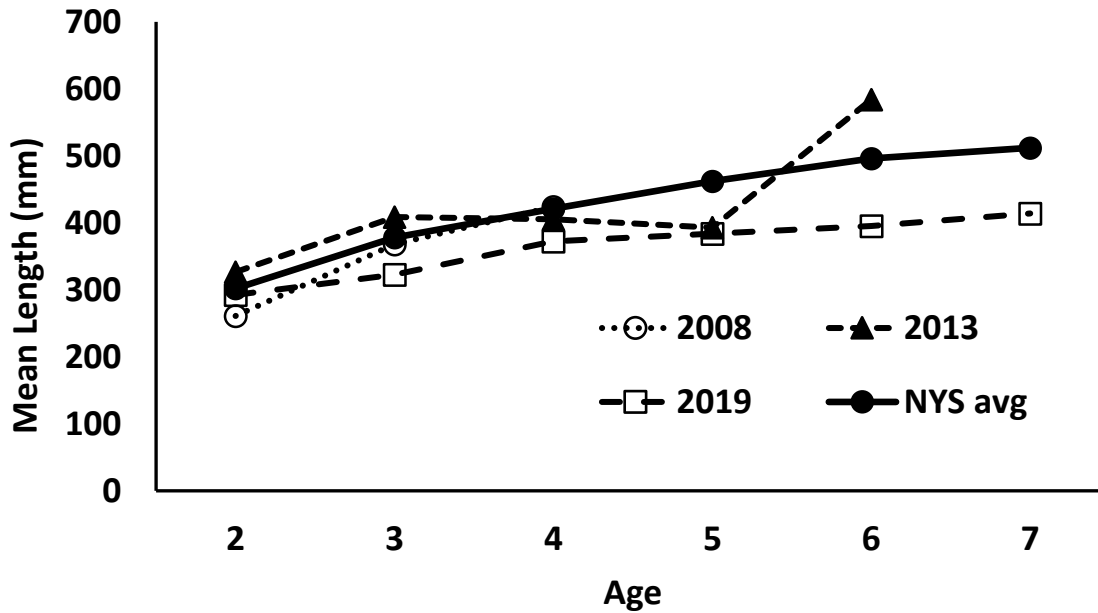


Figure 2. Length-at-age results for walleye in the Salmon River Reservoir by year.

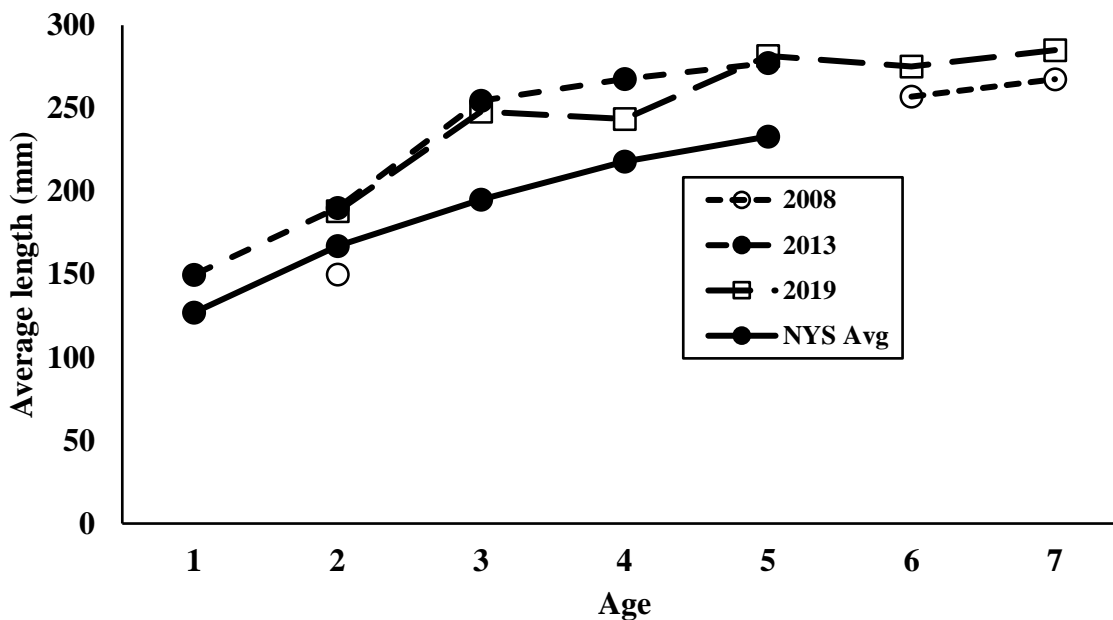


Figure 3. Length-at-age results for yellow perch in the Salmon River Reservoir by year.

