

Otsego Lake (SR-404) Survey #:417062  
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Otsego Lake is a 4226-acre headwater to the East Branch of the Susquehanna River in Otsego Co., NY. Historically, this two-story oligotrophic lake supported a relic population of walleye prior to successful reintroduction of stocked fingerlings between 2000-2014. Currently in the absence of alewife, the more balanced lake ecosystem (Wells et al. 2015) includes rebounded yellow perch and walleye populations that have become very popular fisheries. In the spring of 2017, SUNY Oneonta researchers implanted 500 adult walleyes with PIT (passive integrated responder) tags, as they spawned in northern tributaries of the lake. The purpose of this warmwater gill net survey was to recapture tagged walleye for a population estimate. Initial water chemistry showed dissolved oxygen (mg/l) and water temperature (°F) ranged from 9.4 and 73.5 at the surface down to 9.5 and 65.7 near the bottom in 30 feet of water as gill nets were set overnight (avg. 22 h) at 10 sites around the lake above the thermocline in 10-28 feet of water between September 18-20, 2017.

A total of 10 fish species were netted resulting in 289 (> 80% adult) fish captured in the survey. Yellow perch were the most numerous (141) of the Percids captured, followed by walleye (58) with catch rates of ~14 and 6 fish per net, respectively (Table 1). Yellow perch numbers ≥ quality size have expanded without competition from invasive alewife, as only 18 fish collected were of ≤ stock size (Table 1, Fig. 1). Similarly, >65% of walleye collected were ≥ quality or legal (≥ 15 in.) size. Walleye < age-3 dominated the juvenile (YY/SY) length category for all fishes captured. Adult walleye ranged from 16.1 to 26.2 in. (Fig. 1), with a maximum weight of 6 lbs. Smallmouth bass was the most numerous Centrarchid captured. Over 76% were ≥ quality or legal (≥12 in.) size with 14 fish >16 in., with a maximum length of 18.1 in. (Fig. 1), and a maximum weight of 2.9 lbs.

Table 1. Results from warmwater gill netting in Otsego Lake, NY on September 18-20, 2017.

Fish Species	N <sup>2</sup>	fish/net <sup>3</sup>	YY/SY <sup>4</sup>	Numbers by total length category <sup>1</sup>			
				≥Stock	≥Quality	≥Preferred	≥Memorable
Chain pickerel	4	0.4	0	0	3	1	0
White sucker	4	0.4	0	0	0	0	4
Brown bullhead	1	0.1	0	0	0	1	0
Rock bass	27	2.7	3	7	8	9	0
Pumpkinseed	15	1.5	0	0	5	10	0
Bluegill	3	0.3	0	0	1	2	0
Largemouth bass	6	0.6	1	2	3	0	0
Smallmouth bass	30	3.0	1	6	3	11	9
Yellow perch	141	14.1	0	18	42	73	8
Walleye	58	5.8	14	6	29	8	1

<sup>1</sup>Total length categories for various fish species

	Largemouth bass	Smallmouth bass	Walleye / Chain pickerel	Bluegill / Pumpkinseed	Yellow perch / Brown bullhead	Rock bass	White sucker
Stock	≥ 8 in	≥ 7 in	≥ 10 in	≥ 3 in	≥ 5 in	≥ 4 in	≥ 6 in
Quality	≥12 in	≥11 in	≥ 15 in	≥ 6 in	≥8 in	≥ 7 in	≥ 10 in
Preferred	≥15 in	≥14 in	≥ 20 in	≥ 8 in	≥10/11 in	≥ 9 in	≥ 13 in
Memorable	≥ 20 in	≥ 17 in	≥ 25 in	≥ 10 in	≥ 12/14 in	≥ 11 in	≥ 16 in

<sup>2</sup>N—total number of individuals caught, <sup>3</sup>fish/net—catch per net effort at 10 sites, <sup>4</sup>YY/SY—young of year or spring yearling (age -1) fish



Rock bass and pumpkinseed were the next most common Centrarchids, followed by largemouth bass and bluegill, respectively. Four chain pickerel and white sucker each, along with a lone brown bullhead rounded out the catch that included several memorable sized fishes (Table 1). No forage or coldwater fishes were caught in this cooperative survey that included students/faculty from SUNY's Cobleskill and Morrisville, plus Hartwick College.

Good numbers of yellow perch caught in the survey is indicative of the lake's productive littoral zone once balance was restored in the zooplankton community post-removal of an invasive pelagic forager like alewife (Wells et al. 2015); a rare scenario. Furthermore, the walleye population continues to naturalize now that alewife (a main fry predator) are gone, with wild offspring recruiting into the population.

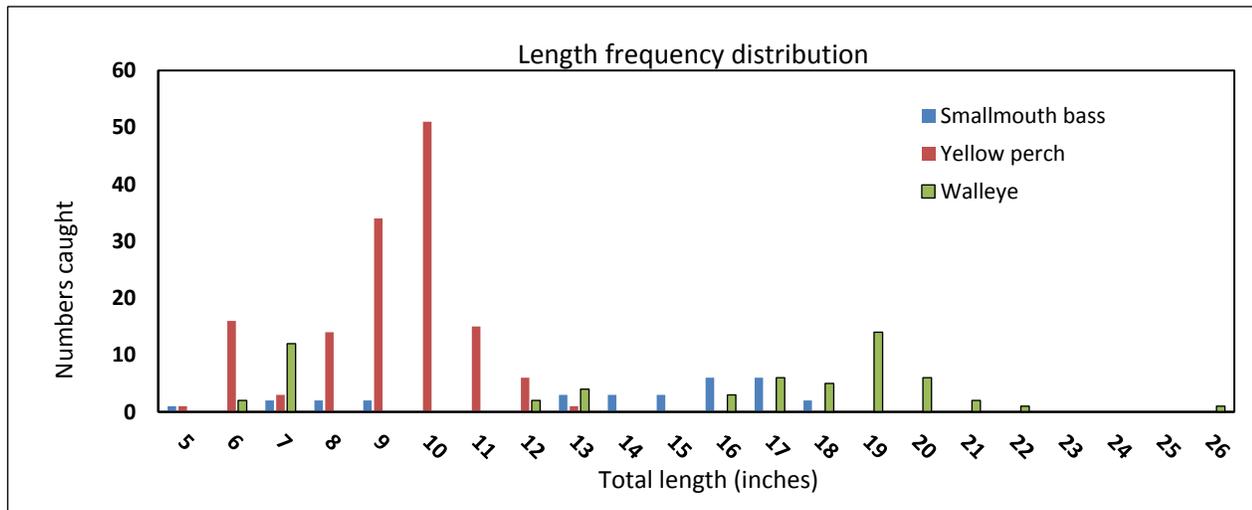


Figure 1. Gill net catches for three fishes in Otsego Lake, NY between September 18-20, 2017.

Recapture results were dismal as only two of the 58 walleyes captured possessed tags (1 jaw, 1 PIT), indicating that there may be more adults (and now juveniles) in the lake than expected. The walleye catch rate of 6.2 fish/net in 2013 matches the 2017 findings (5.8 fish/net), suggesting little change in the population estimate of >5000 walleye in Otsego Lake. However, wild recruitment may be balancing out angler harvest rates of adult walleye from the lake, likely moderate to high during years with safe winter ice cover. The stocking of walleye into Otsego Lake was terminated in 2014 after a decision by DEC to manage for native Salmonids (Lake Trout, Lake Whitefish) that are adjusting to less forage, and to allow walleye to develop a self-sustaining population in the absence of alewife.

Two adult walleyes caught in the 2017 gill nets were implanted with PIT tags and released alive off Three Mile Point as SUNY Oneonta researchers continue a study on the life history dynamics of walleye in Otsego Lake. Walleye are now feeding primarily on yellow perch in the lake and unlike walleye, the catch rate for yellow perch increased almost 3 fish/net with > 29% more fish of quality size caught in 2017 compared to the 2013 gill net effort. This productive and growing Percid fishery in Otsego Lake will continue to be managed under the statewide fishing regulations and should provide high quality fishing opportunities for many years to come.

Wells, S.M, and H.A. Waterfield, and A.J. Reyes. 2015. Invasive species and native salmonids in Otsego Lake, NY, USA. *Poster presented by S. Wells at the NY Chapter AFS mtg. Lake Placid, NY. Feb 2015.*