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NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Murphy Lake General Biological Survey (Survey #: 517054)

Jonathan Fieroh, Region 5 Fisheries **07/16/2018**

Murphy Lake is a remote 33-acre lake in Hamilton County in the Wilcox Lake Wild Forest. This water was reclaimed in 1954 and has been stocked with fingerling brook trout since 1955. The current annual stocking policy is for 2200 Temiscamie x Domestic hybrid fingerling brook trout. The acidity level of Murphy Lake has not been problematic in recent decades and the 2017 survey found a pH of 6.7, an ANC of 34.8 µeq/L and a conductivity of 13.2 µS/cm. The lake has a maximum depth of 37 ft, a mean depth of 18 ft, and there is sufficient dissolved oxygen to a depth of about 20 ft. The lake has a special fishing regulation prohibiting the use or possession of bait fish (6 NYCRR §10.6 (g) (3)). The draft Wilcox Lake Unit Management Plan calls for the pond to be reclaimed to eliminate nonnative golden shiner, whose presence was last documented in a 1987 survey. This survey was conducted to establish the status of the lake's fish population and to verify the continued presence of nonnative golden shiner.

On July 25, 2017, three 150-foot Swedish experimental gill nets, a 30-foot minnow net, and a minnow trap were set overnight. A total of 27 brook trout averaging 10.2 inches in length were collected. Most brook trout were 8-10 inches long, with only three fish longer than 12 inches. Most of the brook trout appeared to be in poor condition, and a prolific gill lice infestation was present on all brook trout handled. Scale samples were taken from a subset of brook trout and growth was quite poor, probably from the combined effects of the gill lice and competition from nonnative golden shiner. For example, the average 3-year old brook trout was only 12.2 inches long. However, a 5-year old fish exceeding 18 inches was also collected. This can be a common pattern in waters where brook trout coexist with golden shiners. Survival and growth of the brook trout is quite poor except for a very few individual trout that grow large enough to prey on their former competitors. Other species collected include golden shiner and banded killifish (Table 1). Likely the 161 golden shiners collected underrepresents their true abundance, as the minnow net was extensively damaged and numerous golden shiners were observed throughout the shallows of this lake. The 1987 survey documented creek chub, though none were collected during this survey.

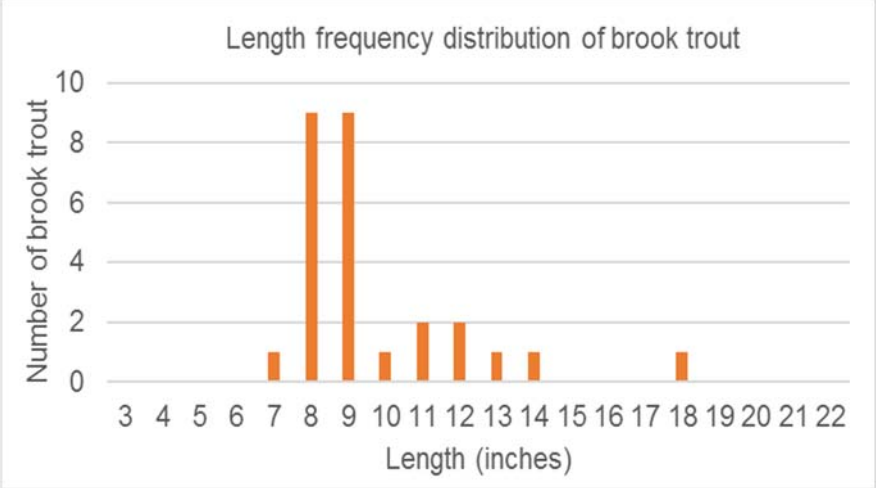

Table 1. Number and length ranges of fish collected at Murphy Lake, July 2017.

Species	Number collected	Minimum length (in)	Maximum length (in)
Brook trout	27	7.6	18.7
Golden shiner	161	2.3	6.5
Banded killifish	33	1.8	2.6

SPORT FISH RESTORATION

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The current stocking policy is maintaining a fishery and should be continued, as anglers still frequent this water. It is still appropriate to prohibit the use or possession of baitfish, so the special fishing regulation will be retained. Murphy Lake is a viable reclamation candidate and should be reclaimed to eliminate nonnative golden shiner and to interrupt the gill lice life cycle. A reclamation could potentially produce excellent brook trout angling, much like that seen following the 1954 Murphy Lake reclamation. In preparation for the reclamation, the natural fish barrier on the outlet was enhanced in 2017 by removing rock that was creating a potential jump pool halfway up the barrier.