

DATE: December 13, 2023

TO: Royce Zehr-Woodruff Area Fisheries Supervisor

FROM: Tim Tobias-Fisheries Technician

SUBJECT: 2023 Fall Lake Trout Sampling Summary, Black Oak Lake, Vilas County

A bottom gill net lake trout spawning assessment of Black Oak Lake was conducted on the nights of October 30, 31 and November 2, 6, 7, 8, 13, 14 and 15, 2023. The purpose of this survey was to gather population information and collect lake trout eggs. Three, 300 foot by 6 foot, 2 ½ inch stretch gill nets were set multiple times at dark for short intervals. These short sets, typically less than 60 minutes, are used to minimize mortality. Lake trout were measured to the nearest tenth of an inch, sex identified, past floy tags recorded, and PIT tagged. Captured lake trout were carefully removed from the gill net, processed, and placed into a holding net. Art Oehmcke Hatchery staff removed the lake trout from the holding nets the following morning for spawning. Fertilized, water-hardened eggs were then transported to the Les Voigt Hatchery at Bayfield where they will be hatched and reared.

A total of 67 new adult lake trout were captured and 7,197 eggs were collected. There were no known lake trout mortalities. The catch consisted of 55 males and 12 females. The average length of males and females combined was 28.5 inches. The shortest lake trout captured was a 23.2-inch female, and the longest was a 31.5-inch male. A total of 58 lake trout (86%) were captured from previous years, based on floy and PIT tag returns. The 54 net sets were fished for a total of 68.8 hours for a lake trout catch per effort of 1 fish per hour. The incidental catch consisted of 28 walleye, 15 cisco, 4 white sucker, 3 burbot, 1 smallmouth bass and 1 northern pike.

Current and past assessments help judge the overall health of the Black Oak Lake lake trout population. All signs indicate a decreasing lake trout population in Black Oak Lake. The current assessment revealed the lowest lake trout catch per effort on record (Figure 1). Also, the most recent spawning reef estimate in 2020 puts the population at approximately 209 lake trout, which is down from the 2016 estimate of 402 fish. This information should elevate this to a lake trout population at risk. To help mitigate the continued decrease in the population we initiated stocking of Black Oak strain lake trout back into Black Oak Lake in 2017. Another step that may be considered is closing the lake trout fishery to angling until we see increases in the population. On a positive note, we did catch two stocked lake trout, one from 2017 and one from 2018 stockings. In assessments prior to 2010 crews captured lake trout less than twenty inches indicating natural reproduction was occurring (Figure 2). Although no recent natural reproduction has been identified, the 2023 survey marks the first lake trout (2018 stocking) captured under 25 inches since the 2010 survey.

Black Oak Lake was stocked in 2017 (2,402), 2018 (2,724) and 2022 (4,524) with Black Oak strain yearling lake trout. From the successful egg take this fall, we will plan another yearling stocking event in Black Oak and the other recipient lakes in the spring of 2025. Recipient lakes that are stocked with the Black Oak strain are: Long Lake, (Vilas County), Big Carr Lake, (Oneida County) and Lake Lucerne (Forest County).

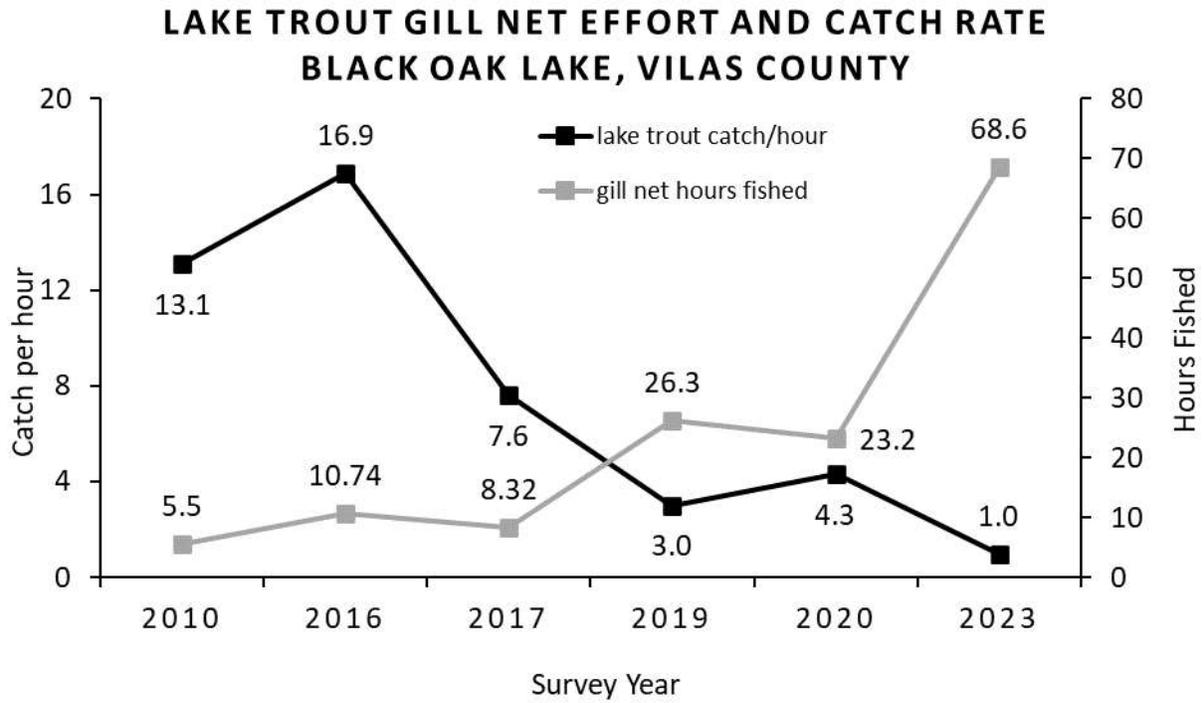


Figure 1: Lake trout gill net catch per hour and total hours of gill net fished for survey years 2010, 2016, 2017, 2019, 2020, and 2023.

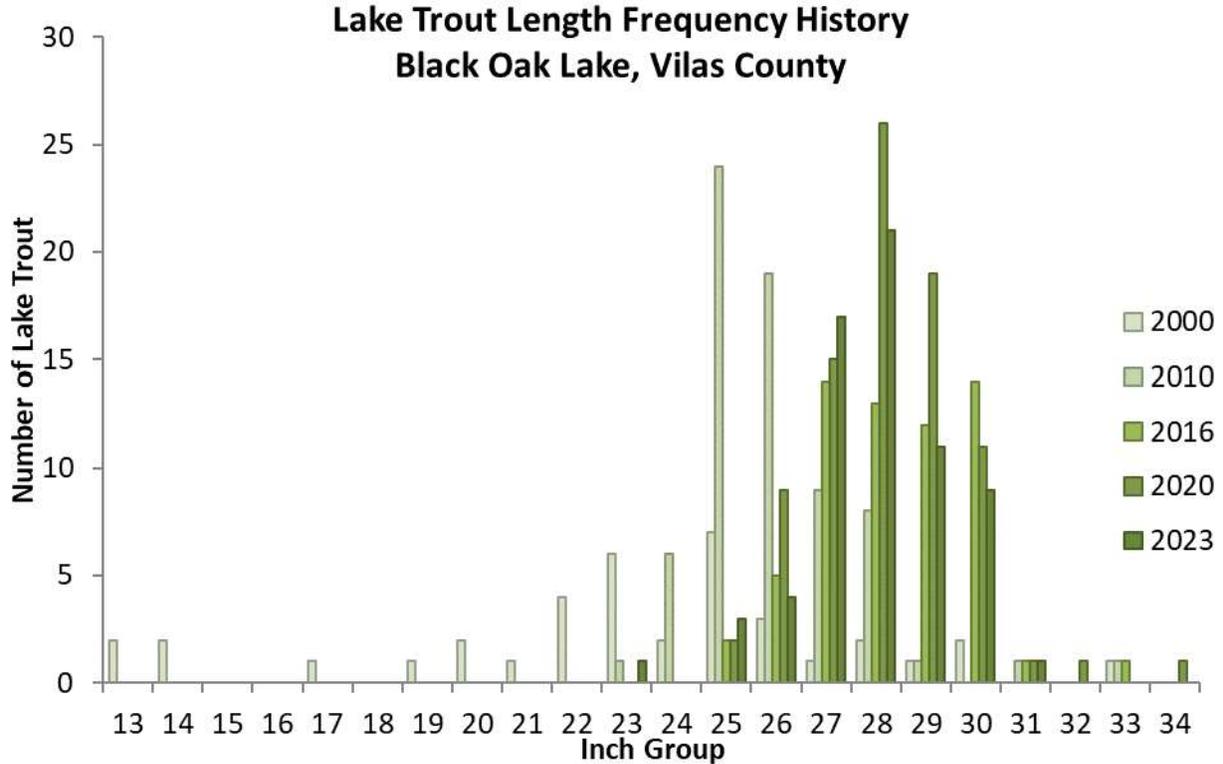


Figure 2: Lake trout length frequency from Black Oak fall gill netting surveys in 2000 (n=38), 2010 (n=70), 2016 (n=62), 2020 (n=85), and 2023 (n=67).