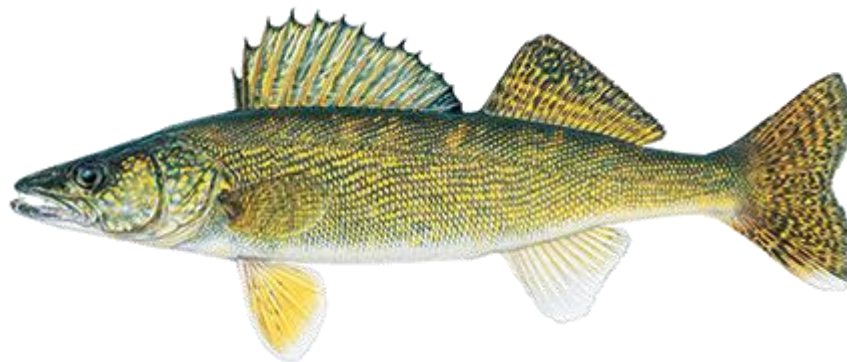


Loon Lake – 2020 Fall Walleye Survey

2020 Discretionary Survey Report



Addie Dutton, Fish Biologist, MI DNR

**Southern Lake Huron Management Unit
Bay City Customer Service Center
3580 State Park Drive
Bay City, Michigan 48706**

On the cover: Walleye. Credit: Joe Tomelleri ©

Introduction

Loon Lake has a history of Walleye stocking by the Michigan DNR on an infrequent basis since 1992 (Table 1). Loon Lake is not within the 1836 ceded territory but is classified as a stocked lake within the Michigan DNR Inland Walleye Management Plan. The lake receives substantial stocking efforts by the MDNR and additional efforts by the lake association (under permit). Anecdotal reports from anglers indicate that Loon Lake provides an inland Walleye fishery for anglers willing to spend time learning the lake and targeting Walleye at peak times. A comprehensive Status and Trends Lake Survey was last completed in 2011. Results from that survey netted 23 Walleye that ranged in total length (TL) from 9.0 to 25.0 inches representing 9 age classes. At least 5-year classes did not correspond to the stocking history suggesting that natural reproduction of Walleye was occurring. Further documentation of natural reproduction is warranted to evaluate the efficacy and necessity of our current management and stocking regime.

We surveyed Loon Lake on 30 September 2020 for Walleye. Our objectives were to 1) document relative abundance, 2) document size structure, and 3) determine age and growth of Walleye. Incidental catches of Northern Pike were also collected as supplementary information.

Study Area

Loon Lake is a 417-acre natural lake in Iosco County approximately two miles north of the Village of Hale in north-central Michigan (Figure 1). Loon Lake is classified as a deep, warmwater lake, of medium size that stratifies. The lake has a narrow littoral zone with only 17% of the lake 15 feet in depth or less. Loon Lake has a maximum depth of 128 feet and the drop-offs are steep. Maggie Creek, a small intermittent coldwater tributary is an inlet to Loon Lake and Smith Creek is the outlet—a trout-stream that forms the East Branch Au Gres River. Loon Lake is a oligotrophic lake—a classification which typically has low to medium levels of water clarity and nutrients and can support less productive aquatic communities.

Public access to Loon Lake can be gained through the Plainfield Township boat access site. The site has a boat ramp, parking, an outhouse, and a boardwalk with trails to a nearby lake and wetland complex.

Methods

Boat electrofishing was used to collect Walleye and Northern Pike. One complete shoreline electrofishing pass was conducted after dusk and the surface water temperature was 61 F. Electrofisher settings were generally tuned to 7 amps, a pulse rate of 60, and a duty cycle of 35. All Walleye and Northern Pike were netted (opportunistically because Walleye was the primary species), measured to total length (TL in inches) and a dorsal fin ray was removed for later age estimation using standard techniques. In the laboratory, a cross section of the fin ray is removed using a Dremel tool. Then the cross section is observed under a microscope to count the number of annuli—representing the age of the fish. Catch per unit effort (CPUE) was expressed in number of fish/species per hour of electrofishing. Lake surface water temperature was measured with a handheld temperature probe.



Figure 1. Loon Lake in Iosco County, Michigan.

Results

Twenty Walleye (CPUE= 10/hr) and 9 Northern Pike were collected. Walleye TL ranged from 7.5 to 20.4 inches age estimates revealed 7 age classes (Table 2). Walleye in Loon Lake grew at a faster rate (0.8 inches) when compared to statewide average. Walleye in Loon Lake appeared to originate from natural reproduction and stocking events. Fish that were age-0, 1, or 3 do not correspond with years in which Walleye were stocked and were therefore likely naturally produced in the lake. Without definitive marking of stocked fish (e.g., oxytetracycline marking) it is difficult to differentiate stocked and naturally produced fish.

Northern Pike ranged in TL from 11.2 to 33.1 inches and fish were estimated to be age 0, 1, 3, and 6. Growth rates of Northern Pike were not compared to statewide averages due to a low sample size.

Table 1. Fish stocked by the MI DNR in Loon Lake, Iosco County, 1990-2020.

Year	Species	Age	Average Length (inches)	Number
1992	Walleye	Small fingerling	1.26	34,540
1993	Walleye	Small fingerling	1.77	18,620
1995	Walleye	Small fingerling	3.50	10,500
1999	Walleye	Small fingerling	2.01	40,050
2001	Walleye	Small fingerling	1.50	44,983
2004	Walleye	Small fingerling	1.85	24,640
2006	Walleye	Small fingerling	2.00	21,968
2009	Walleye	Small fingerling	1.58	24,367
2012	Walleye	Small fingerling	2.27	26,117
2014	Walleye	Small fingerling	1.81	41,552
2016	Walleye	Small fingerling	1.73	34,983
2018	Walleye	Small fingerling	1.86	52,133

Table 2. Estimated age, number, and total length (TL) range of Walleye captured in Loon Lake on 30 September 2020.

Age	Number	TL range (in)	Statewide average TL (in)
0	8	7.5-8.8	7.1
1	2	10.4-11.7	9.8
2	3	14.2-15.1	13.3
3	1	19.5	15.2
4	4	17.0-19.7	17.2
6	1	18.3	20.3
8	1	20.4	22.1

Conclusions

This survey provided a snapshot of the Walleye and Northern Pike populations of Loon Lake. This survey provides clear evidence that natural reproduction of Walleye is occurring in Loon Lake. Future fall electrofishing surveys should continue to assess the amount of natural reproduction in the lake. In addition, DNR stocking of spring fingerling Walleye should be reduced to encourage natural reproduction of Walleye. The current rate of 75 spring fingerling Walleye per acre in Loon Lake could be too high given the amount of natural reproduction present in the lake.



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