WISCONSIN DEPARTMENT OF NATURAL RESOURCES

# Long Lake Fisheries Survey Report
# Chippewa County, Wisconsin 2025

Waterbody Code: 2351400


*Photo Credit: Wisconsin DNR*

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March 2026

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## Executive Summary

Long Lake is still one of the premier waterbodies in Chippewa County from a fishery perspective and continues to change overtime. Changes in the fishery were likely influenced by changes in habitat, especially the abundance of aquatic vegetation, which has increased substantially in recent years. Aquatic vegetation is a critical component of fish habitat, and the proliferation has likely influenced fish populations in Long Lake. Walleye natural reproduction has declined during the past 20 years and has been exceptionally low during the past five years. Private and state funded walleye stocking has occurred intermittently since 2015. Despite the lack of natural reproduction, the adult population was 2.0 adults per acre in this survey, which is still at a fishable level although lower than estimated in previous surveys. A muskellunge population estimate was not conducted in 2025 as the muskellunge abundance estimate from 2021 of 0.21 adults per acre still serves as a good indicator of population status considering the long lifespan of these fish. Muskellunge size structure appears to have declined slightly with 10% of the muskellunge that were over 20 inches were also over 40 inches, which could be due to a small sample size or new, young fish recruiting into the population. The smallmouth bass population appears to be smaller than it once was as relative abundance and size structure indices have declined, but a few trophy fish are still present in the population. Future surveys will tell if this is due to environmental conditions or long-term decline in abundance. Largemouth bass catch rates increased almost three-fold relative to the 2021 survey, and the creel survey data indicated that anglers are taking advantage of this expanding fishery as effort and harvest increased substantially compared to the 2013 creel survey. Northern pike were present in relatively low numbers, but size structure remained good as over a quarter of the fish sampled were greater than 28 inches. Bluegill catch rates increased over three-fold compared to the long-term average and size structure increased as well with many in the 7-inch range, which is a great sign, as Long Lake has had a history of poor bluegill size structure. The creel survey data supported the fisheries survey data, with the projected catch of bluegill nearly doubling since the 2013 creel survey. Black crappie catch rates were very similar to previous survey, but size structure increased slightly with 18% of the fish caught over 10 inches. The angler catch rate for black crappie increased 17-fold and harvest increased 7-fold since the 2013 creel survey, so anglers are targeting this population. Given the consistent fisheries survey catch rates, the conservative panfish bag limit appears to be providing adequate protection to the population.

## Introduction

Long Lake is a 1,052-acre natural lake located in northwest Chippewa County. Long Lake is connected to Herde and Dark lakes. These three waterbodies are treated as one for fisheries management purposes because of their connectivity and movement of fish between them. Long Lake has a maximum depth of 101 feet, a mean depth of 20 feet and a relatively complex shoreline that is 14 miles in length. Long Lake is considered a mesotrophic waterbody with an average secchi depth of 12.5 feet and a

Trophic Status Index of 47 as measured in 2022. Long Lake is classified as a two-story lake, so a thermocline develops during summer generally around 20 feet of water. Because of good water quality and deep, cold water, a cisco population is present in Long Lake.

The fishery in Long Lake is primarily comprised of walleye, smallmouth bass, largemouth bass, northern pike, muskellunge, bluegill, black crappie and yellow perch.

Habitat changes in Long Lake over the past 60 years associated with the presence of rusty crayfish, an introduced species, has likely impacted fish community dynamics. Rusty crayfish are non-native to Wisconsin and were likely introduced into Long Lake through use as fishing bait (Lorman 1980). Plant material makes up the majority of the diet for rusty crayfish, and they can eat twice as much plant biomass as some native crayfish species (Gunderson 1995). In the 1960s, rusty crayfish were on the increase in Long Lake, and during that timeframe residents noticed a decline in aquatic macrophyte populations in the lake (Konkel 2006). Rusty crayfish became so prolific in Long Lake that the 1974-1978 population was estimated at 5.2 million and the density on rock substrate was estimated at 51 crayfish per square meter (Magnuson et. al. 1975). By the mid-1970s, the amount of aquatic vegetation in Long Lake was limited to a few stands of bullrush and pickerelweed. In an effort to control rusty crayfish and reestablish aquatic vegetation, smallmouth bass were stocked into Long Lake as a biological control. Five stocking events occurred from 1973-1975 which consisted of 159,165 fingerling (3 inch) smallmouth bass. The stockings were successful, as a quality smallmouth bass fishery became established and the aquatic macrophyte community rebounded. In 1986, only 6.5% of the littoral zone was vegetated (Konkel 2006), but a 2023 survey showed 61.5% of the littoral zone was vegetated. Aquatic vegetation is used as a critical habitat component for many fish species at various life stages and plays an important ecological role in the lake for many non-fish species. The recovery of the aquatic plant community and return to a more natural, historic state is a sign of a healthy lake ecosystem.

When natural reproduction is not enough to sustain the fishery, stocking is used to augment year classes. Walleye were stocked into Long Lake in 2015 due to concerns with declining recruitment for the first time in recent history. Since then, large fingerling walleye have been stocked intermittently by both the DNR and Lower Long Lake Fishing Club (Figure 1). Muskellunge have largely been stocked in alternate years through DNR stockings, but private stockings have also occurred (Figure 2). The contribution of stocked fish to the adult population is unknown at this time, but future surveys will help provide insight on this issue.

In an effort to improve fish habitat, a large-scale fish stick project was conducted by the Wisconsin Department of Natural Resources (DNR) in 2014 and 2015. Fish stick projects are when trees are brought to the lake from nearby locations and secured to

the shoreline. Nearshore woody habitat serve as spawning, rearing, and foraging habitat for many fish species.

There are two public boat landings on Long Lake. One landing is located off of State Highway 40 near Morris-Erickson County Park and the other landing is located off of Basswood Road and 290th Avenue.

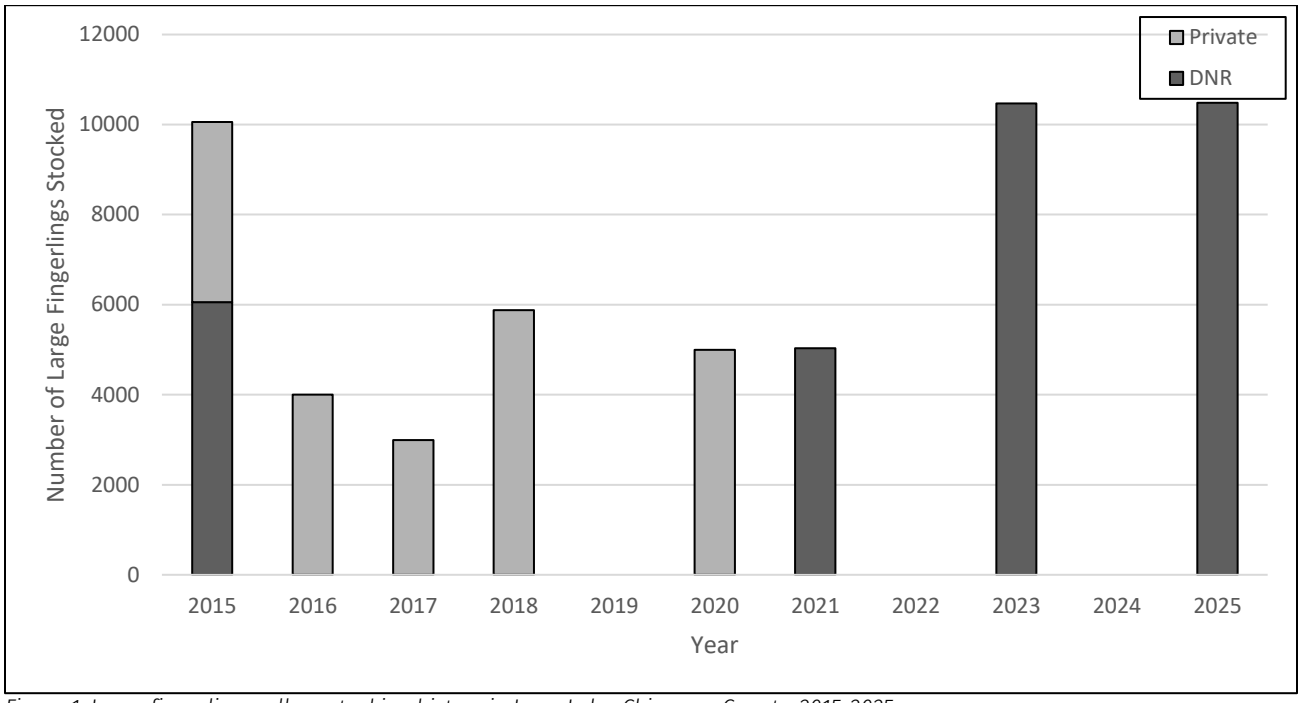


*Figure 1: Large fingerling walleye stocking history in Long Lake, Chippewa County, 2015-2025.*

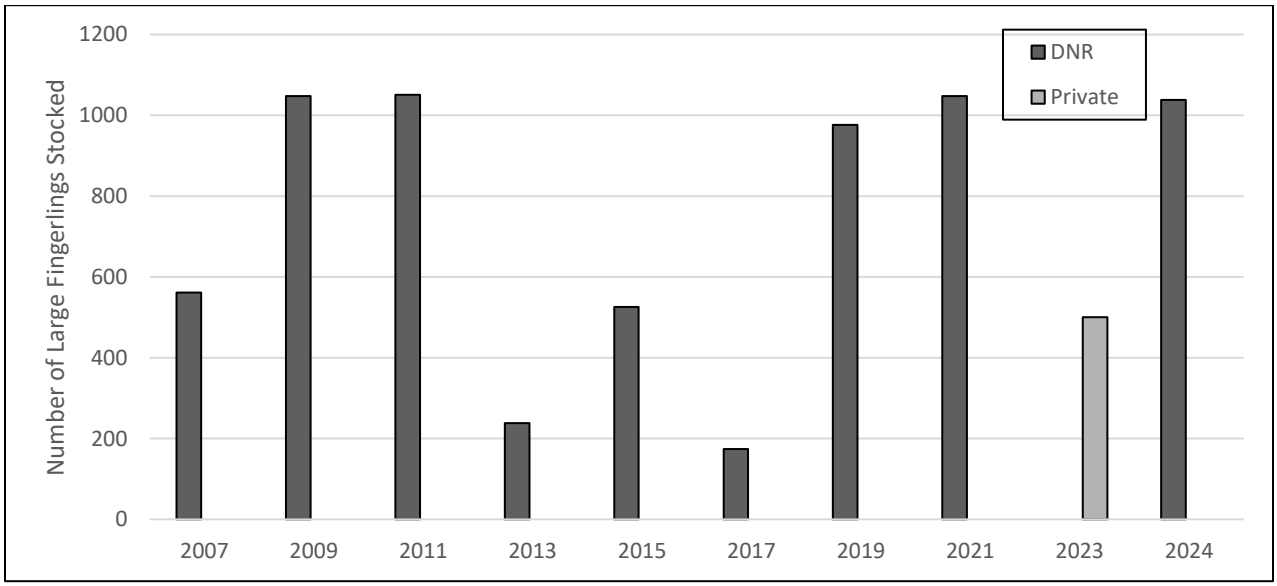


*Figure 2: Muskellunge stocking history (2007-2025) in Long Lake, Chippewa County.*

## SURVEY EFFORT

**Fisheries:** The primary goal of the survey was to collect data on the walleye population including adult abundance, size structure, mortality, growth and age structure. Bass and panfish populations were assessed in the spring during their spawning timeframe and catch rates, size structure and growth were assessed. Long Lake is also surveyed each fall to evaluate walleye natural reproduction and stocking success. Data from these surveys were compared to historical surveys to evaluate trends over time and determine if future management actions are necessary. Long Lake is on a four-year survey rotation. Aquatic plant survey data from 1986 to 2023 were also included in this report.

**Creel:** Fishing effort and harvest are important to know for fisheries management decisions, and this information was collected through a creel survey.

# Methods

### Fyke netting

Ten fyke nets targeting walleye were set shortly after ice out on April 9-12 and checked daily for an effort of 38 net-lifts.

Walleye captured with fyke nets were measured and marked with a right ventral fin clip to estimate population size. Once approximately 10% of the population was believed to be marked, the fyke nets were removed. In order to get the information needed to estimate total abundance, a 'recap run' was conducted where the entire shoreline was electrofished and all adult walleye observed were captured. The ratio of marked (fin clipped) to unmarked walleye which was used to calculate an abundance estimate. For aging purposes, scales and a dorsal spine were taken from five walleye of each sex per half-inch group.

Muskellunge were measured and given a Passive Integrated Transponder (PIT) tag to mark fish for identification in future surveys. Anal fin rays were taken for age estimation. In coordination with the DNR, members of the First WI Chapter of Muskies Inc. have an angler tagging program, which is cooperative project that allows trained anglers to PIT tag muskellunge. The angling data were integrated with DNR data to provide additional information to help make better management decisions.

All northern pike were measured, and anal fin rays were taken from five fish for each inch class per sex for aging purposes. All bass were measured, and a dorsal spine was taken from five fish per inch class for smallmouth bass. Twenty-five of each species of panfish were measured per net per day. Scales were taken for aging purposes from five of each half inch class of bluegill, black crappie and yellow perch. All other fish were identified and counted.

**Electrofishing**
An early spring electrofishing survey was conducted on the night of April 13th using a pulsed DC mini-boom shocker and two pulsed DC maxi-boom shockers. This survey served as the recapture event for the walleye population estimate. All walleye were collected, measured and inspected for a fin clip. A late spring electrofishing survey was conducted on May 27th and 29th to assess bass and panfish. This survey was broken into six runs. There were three 0.5-mile 'bass/panfish runs' in which all bass and panfish were collected and three 1.5-mile 'bass runs', where only bass were collected. For bass, aging structures were collected from five fish per inch group; scales were collected from fish less than 12 inches and dorsal spines were collected from fish greater than 12 inches. Scales were collected from panfish greater than three inches up to five per half inch group. One hundred of each species were measured and the rest were counted. Data for age-0 and age-1 walleye were collected by electrofishing the entire shoreline in the fall with a pulsed DC mini-boom and a pulsed DC max-boom shocker. All walleye less than 11 inches were collected, measured and scales were taken for age estimation.

**Creel**
A creel survey was used to assess fishing effort and harvest. Creel surveys are designed to have a creel clerk on a lake, work random shifts, and forty hours each week throughout the fishing season. Each month these shifts cover a sample of all the daylight hours. Creel clerks travel their lakes using a boat, snowmobile or vehicle to count and to interview anglers. The information collected from anglers during the interview includes the species of fish being targeted, catch and harvest, lengths of harvested fish and hours of fishing effort. Typically, only anglers that have completed their fishing trip are interviewed because it provides the most accurate information, and it avoids the need to disturb anglers while they are fishing.

**Aquatic plant survey**
A rake sampling method was conducted where a long handled, steel, thatching rake was used to sample vegetation at each site. The rake was tossed off the boat at stratified, randomly selected locations, allowed to reach the bottom and retrieved. The plants on the rake were identified and quantified.

**Data Analysis**
Spring fyke netting, electrofishing and abundance estimate data from 2025 were compared to previous surveys. An age frequency histogram was developed for the walleye population. Catch per unit effort such as catch per mile of shoreline electrofished or catch per net-lift were compared to past surveys. Size structure was evaluated by Proportional Size Distribution (PSD) which is a numerical description of population size structure (Gabelhouse 1984). PSD is the percentage of fish over a specified length when smaller fish below a species-specific length standard are disregarded. The higher the number, the greater proportion of large fish are present. For example, for walleye a PSD-15 is (# of fish ≥ 15 inches) / (# of fish ≥ 10 inches) X 100. PSDs of various length standards were compared to prior survey data. Length at

age for various species was calculated and compared to the statewide average to determine relative growth rates. Open water creel data from 2025 were compared to open water creel data from 2012 to determine changes in angling dynamics.

# Results

## WALLEYE

In 2025, 590 adult walleye were marked with a fin clip during the fyke netting portion of the survey. Three hundred ninety-eight adult walleye were captured during the recapture electrofishing run, of which 120 were marked and yielded an adult walleye population estimate of 2,095 (95% C.I.=1,700-2,490) or 2.0 per acre, a decrease from the 2021 survey (Figure 3).

Size structure was considerably lower in the 2025 survey compared to previous surveys. The mean length of walleye was 14.2 inches (range 9.5-27.9 inches), PSD-15 was 24, and PSD-20 was 1.8 (Figure 4). In 2021, the mean length of walleye was 15.7 inches, PSD-15 was 59, PSD-20 was 3.5, and walleye ranged from 11.7-27.7 inches. In 2016, the mean length of walleye was 15.5 inches, while the walleye PSD-15 and PSD-20 values were 57 and 2.3, respectively, and the length ranged from 7.2-28.7 inches. The mean length of walleye in the 2012 survey was slightly smaller at 15.3 inches, while the walleye PSD-15 and PSD-20 values were 62 and 2.5, respectively, and the length ranged from 7.2-25.2 inches. Out of the 854 sexable walleye captured in this survey, 742 were male and 112 were female for a male:female sex ratio of 6.6:1 (Figure 4).

Ten age classes were present in this survey and ranged from 3-12 years (Figure 5), which is the same number of age classes in the 2021 survey. Total annual mortality for the walleye population was estimated at 59% (Figure 6), which was slightly higher than observed in the 2021 survey at 52%. Walleye length at age was generally shorter than the statewide mean, and shorter than the Ceded Territory mean (Figures 7 & 8), which may represent slower growth than estimated in the previous survey.

Fall electrofishing catch rates of age-0 walleye are used to measure natural recruitment. No age-0 or age-1 walleye were captured in the 2025 fall electrofishing survey (Figures 9 & 10). The age-0 catch is solely comprised of naturally reproduced walleye because walleye were not stocked prior to the survey. From 1993-2004, catch rates averaged 67 age-0 walleye per mile; however, from 2005 to 2025 the average catch rate has declined to 11 age-0 walleye per mile.

During the open water period, the creel clerk measured five walleye in May and one walleye in October for a projected walleye harvest of 20 walleye for the entire open water period. The catch rate was one walleye per 4.6 hours of directed angling effort which resulted in a total estimated walleye catch of 767 fish. Walleye represented 6.3% of directed angling effort (Table 1). For comparison, during the last creel survey in 2012, one walleye was captured every 3.1 hours of directed effort during the open

water period and resulted in a projected harvest of 527 walleye, a projected catch of 1,857 walleye and directed angling effort toward walleye was 22.5% of the total angling effort (Table 2).

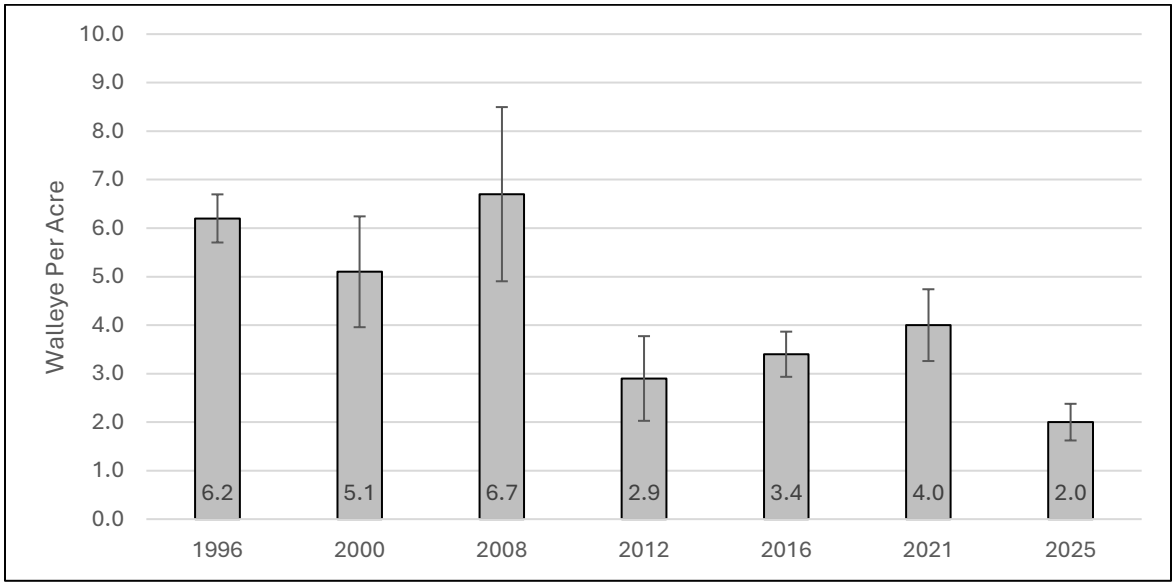


*Figure 3: Adult walleye abundance estimates (fish/acre) in Long Lake, Chippewa County, 1996-2025.*

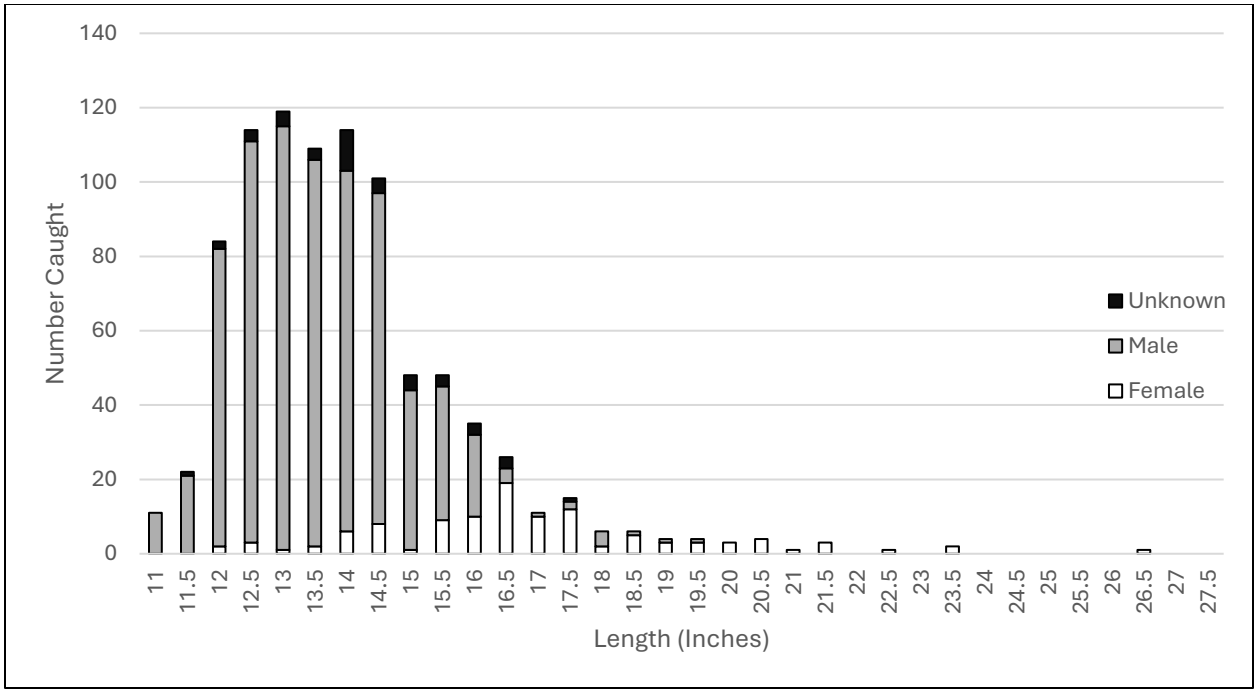


*Figure 4: Walleye length frequency from the early spring netting and electrofishing surveys in Long Lake, Chippewa County, 2025.*

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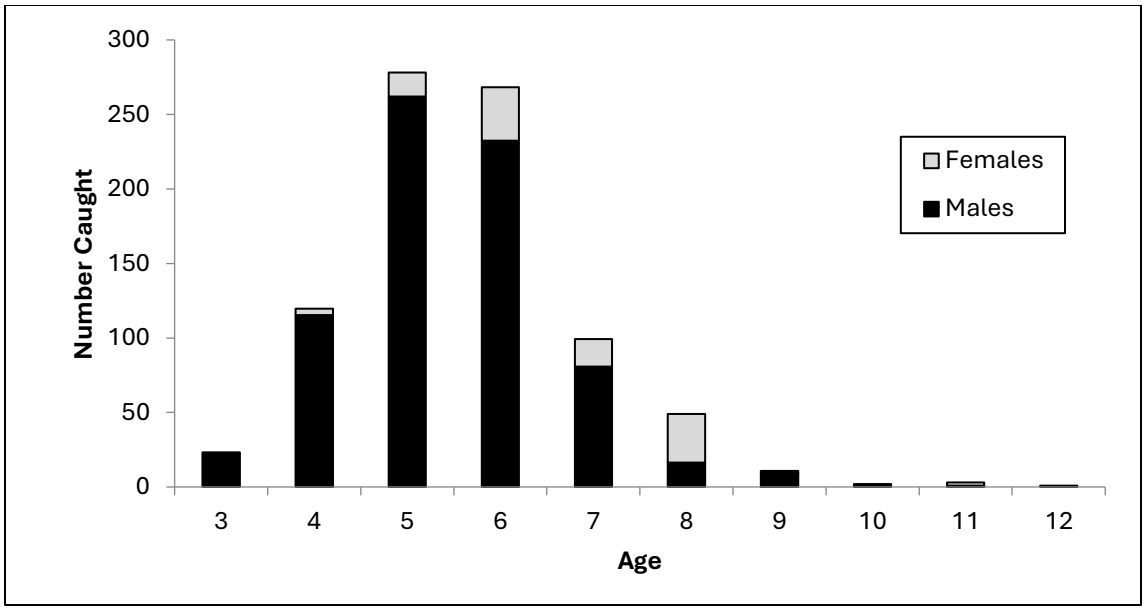


*Figure 5: Walleye age frequency from the early spring netting and electrofishing surveys in Long Lake, Chippewa County, 2025*

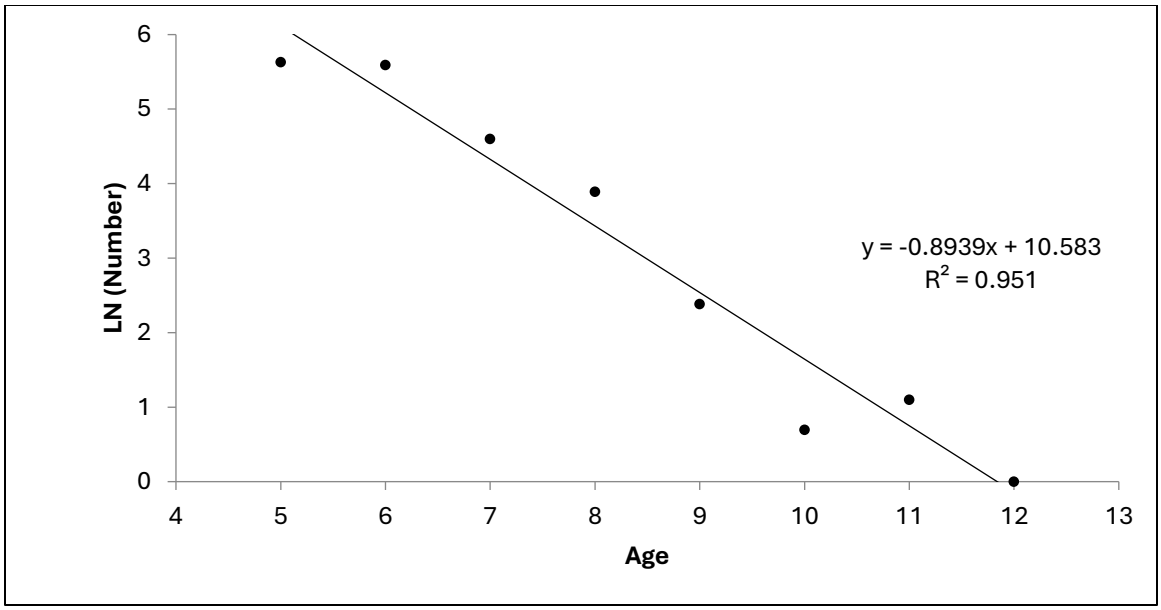


*Figure 6: Catch curve for walleye on Long Lake, Chippewa County, 2025. Total annual mortality was 59%.*

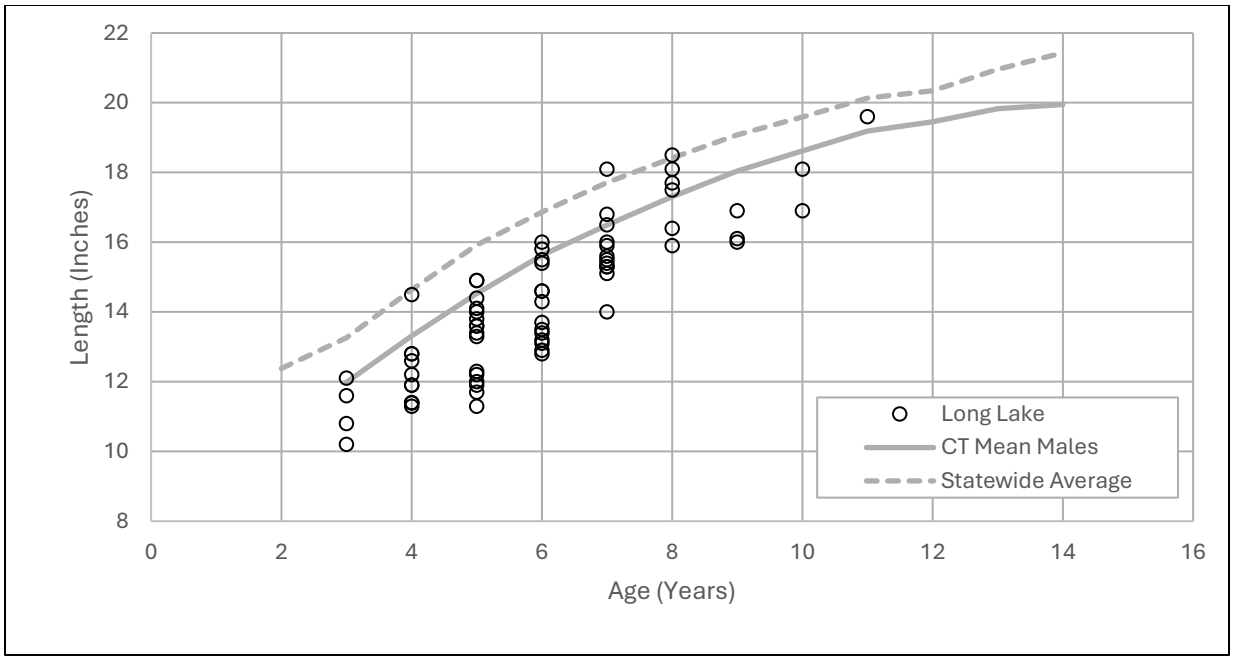


*Figure 7: Length at age for male walleye in Long Lake, Chippewa County, 2025 compared to the mean length at age for male walleye from the Ceded Territory (CT) and the statewide average.*

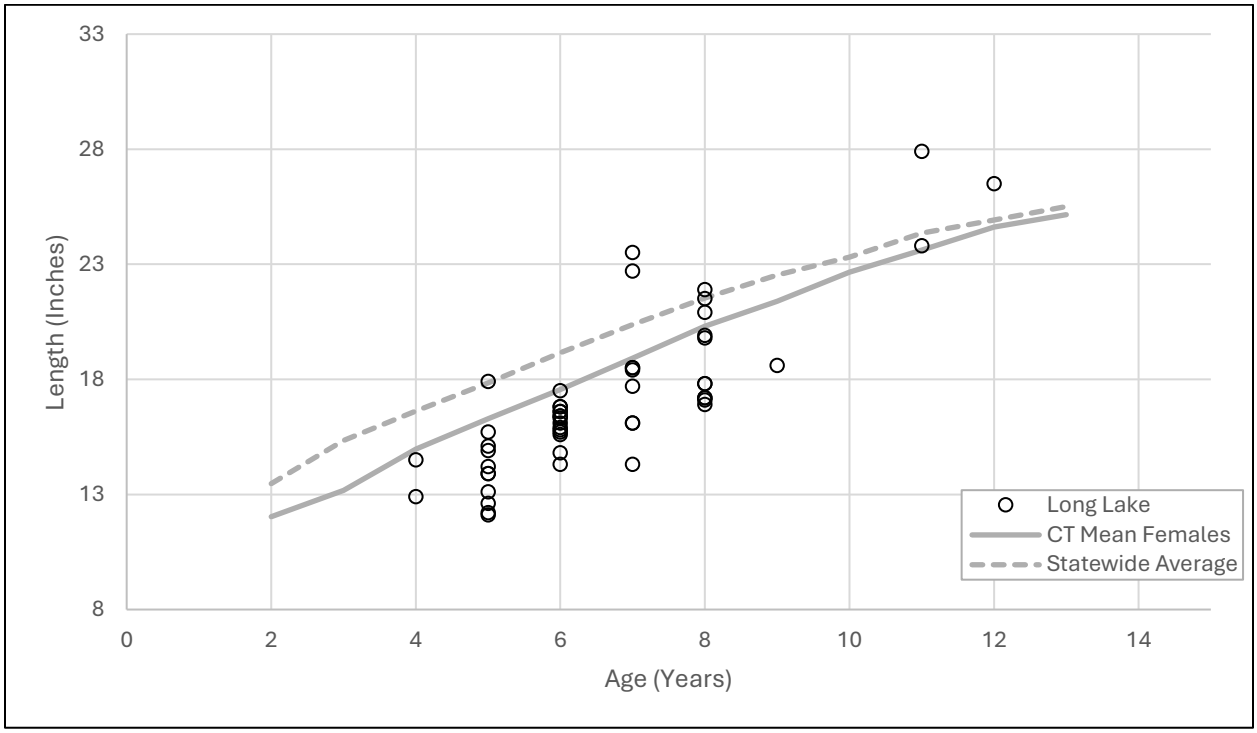


*Figure 8: Length at age for female walleye in Long Lake, Chippewa County, 2025 compared to the mean length at age for female walleye from the Ceded Territory (CT) and the statewide average.*

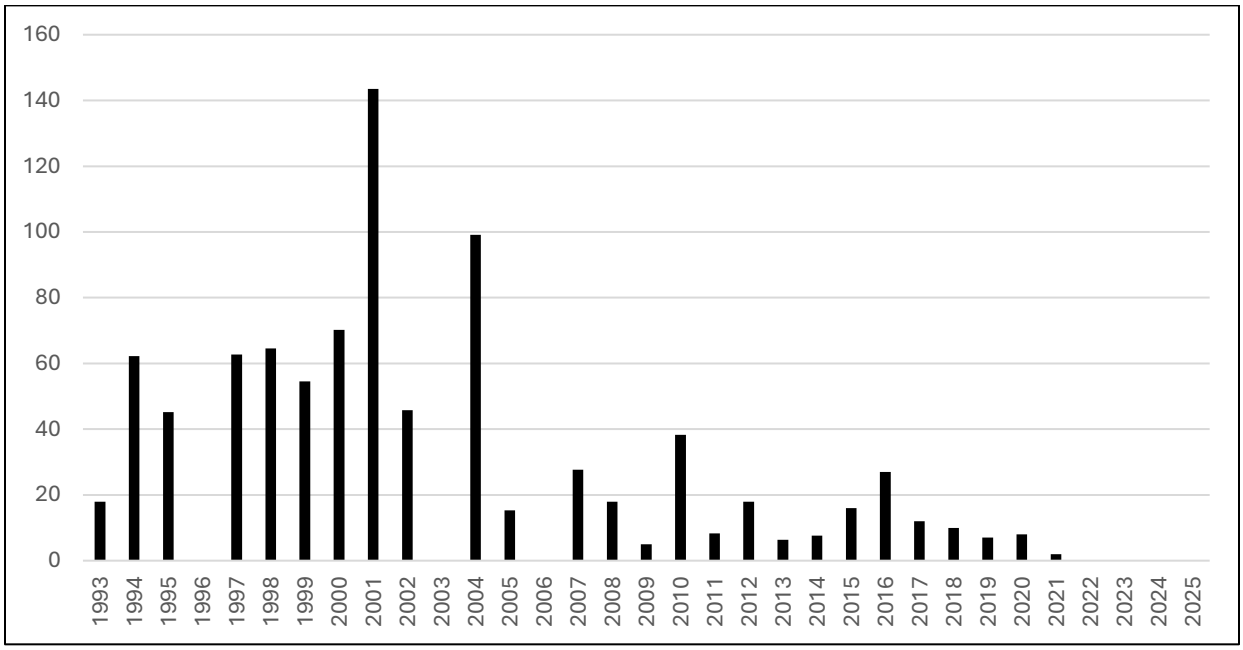


*Figure 9: Walleye age-0 catch rates (fish caught per mile) from fall electrofishing surveys in Long Lake, Chippewa County, 1993-2025. No surveys were conducted in 1996, 2003, 2006.*

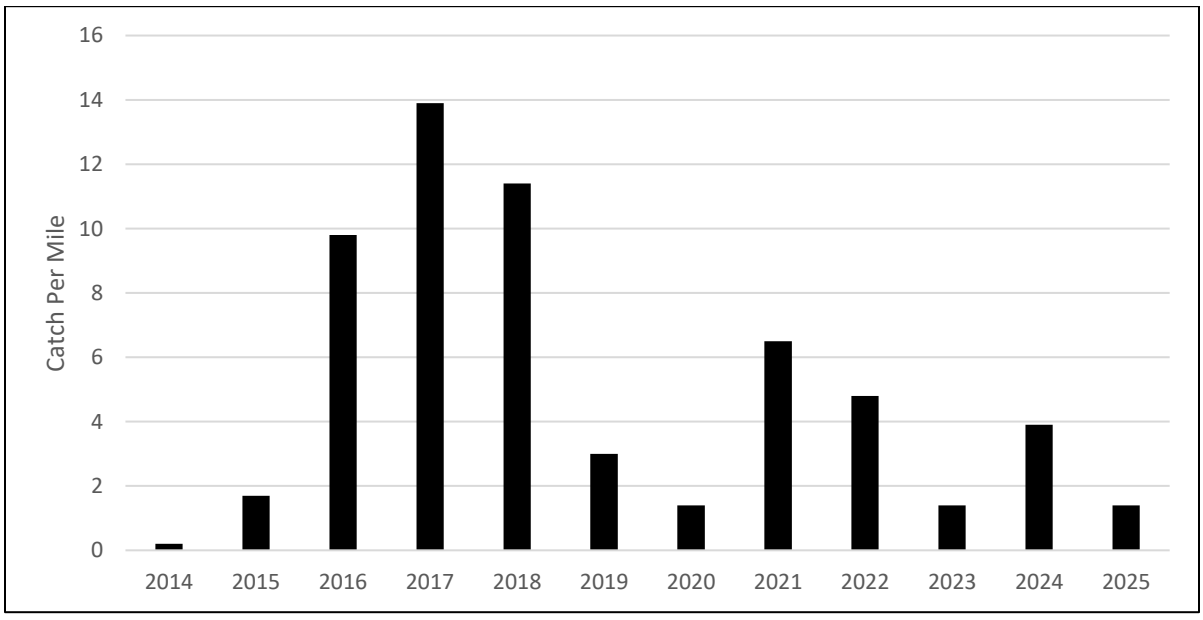


*Figure 10: Walleye age-1 catch rates (fish caught per mile) from fall electrofishing surveys in Long Lake, Chippewa County, 2014-2025.*

## MUSKELLUNGE

In the three years since the last survey, 30 muskellunge were captured greater than 20 inches between the DNR surveys and Muskies Inc. anglers (Figure 11). There were 13 muskellunge sampled electrofishing and fyke netting and Muskies Inc. members caught 17 muskellunge. Using the samples collected by the DNR and Muskies Inc., the size structure indices were 83 and 10 for the PSD-30 and PSD-40, respectively, and the maximum length sampled was 44.3 inches by a Muskies Inc. angler.

A muskellunge population estimate was not conducted in the 2025 survey because the last one was completed relatively recently and still serves as a good indicator of population health. The 2021-2022 adult (≥30 inches) abundance estimate was 0.21 fish per acre or 224 fish (95% C.I.=120-497). Combining data collected by the DNR and Muskies Inc. from 2021 and 2022, the PSD-30 was 86 and PSD-40 was 22. The maximum length of muskellunge measured was 46.1 inches. Musky length at age was above the mean for other musky populations in the state for both males and females (Figures 12 & 13)

In the open water creel survey, 9.8% of angling effort was directed toward muskellunge in 2025. The catch rate was one fish per 24 hours of directed angling effort, the projected catch was 767 muskellunge, and none were harvested (Table 1). In the 2012 open water creel survey, 10.1% of angling effort was directed toward muskellunge, the catch rate was one fish per 20 hours of directed effort, 213 were projected to have been caught and no muskellunge were harvested (Table 2).

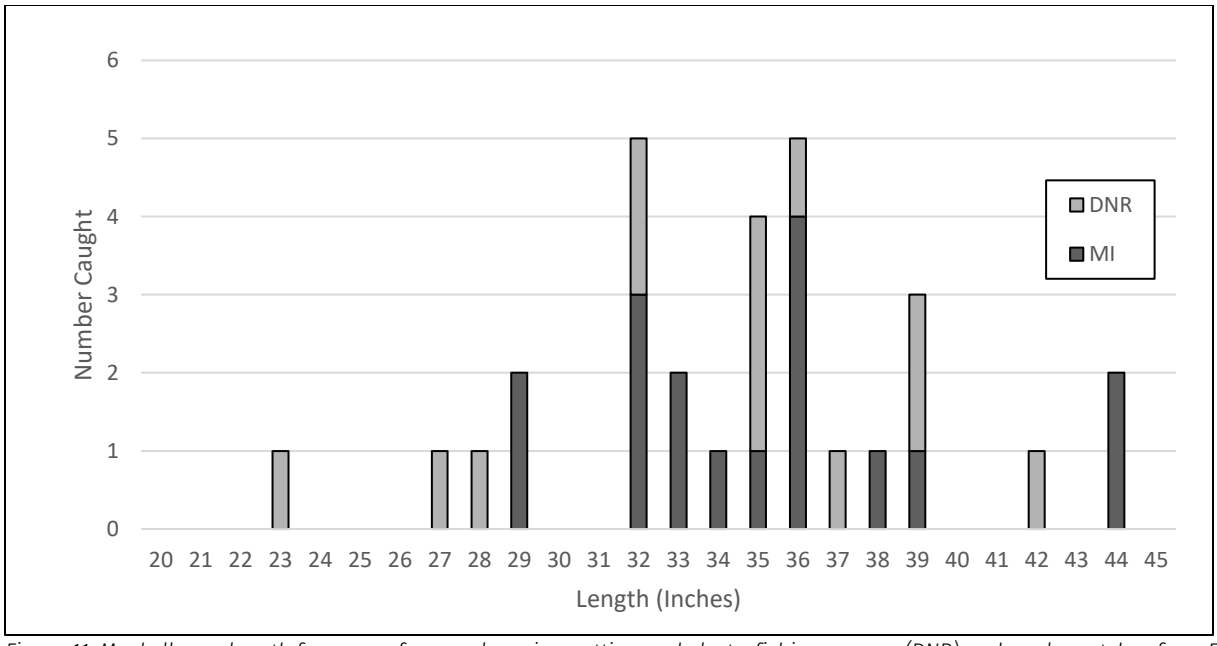


*Figure 11: Muskellunge length frequency from early spring netting and electrofishing surveys (DNR) and angler catches from First Wisconsin Muskies Inc. members (MI) in Long Lake, Chippewa County, 2023-2025.*

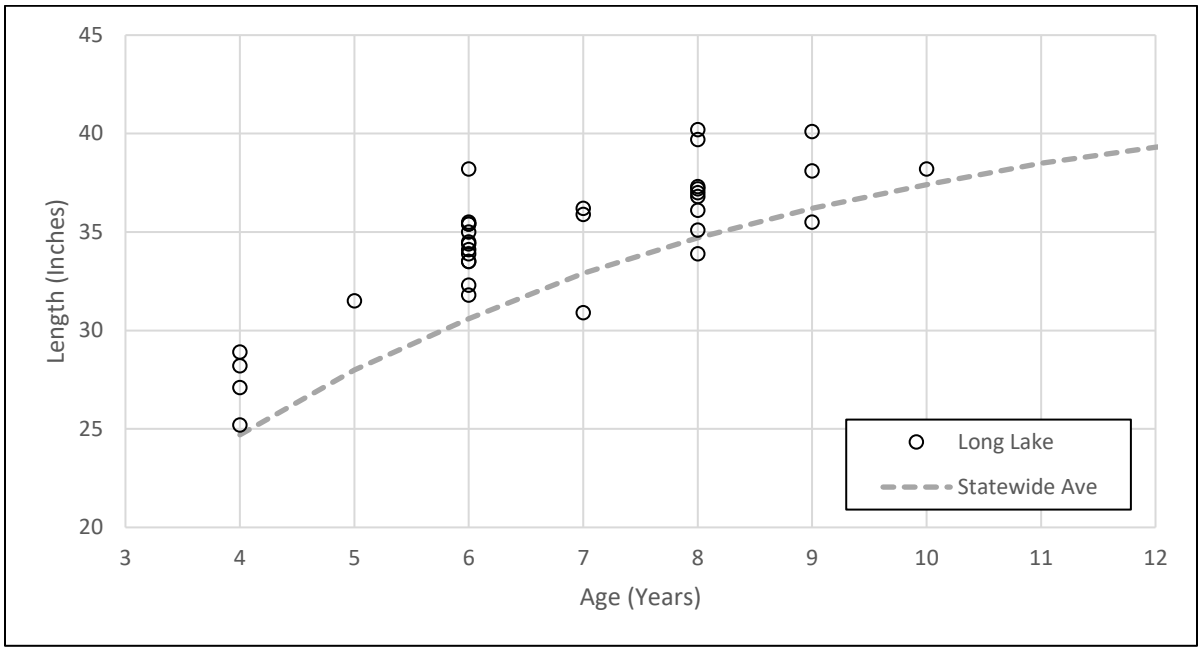


*Figure 12: Male muskellunge length at age in Long Lake, Chippewa County, 2021-2025 compared to the statewide average.*

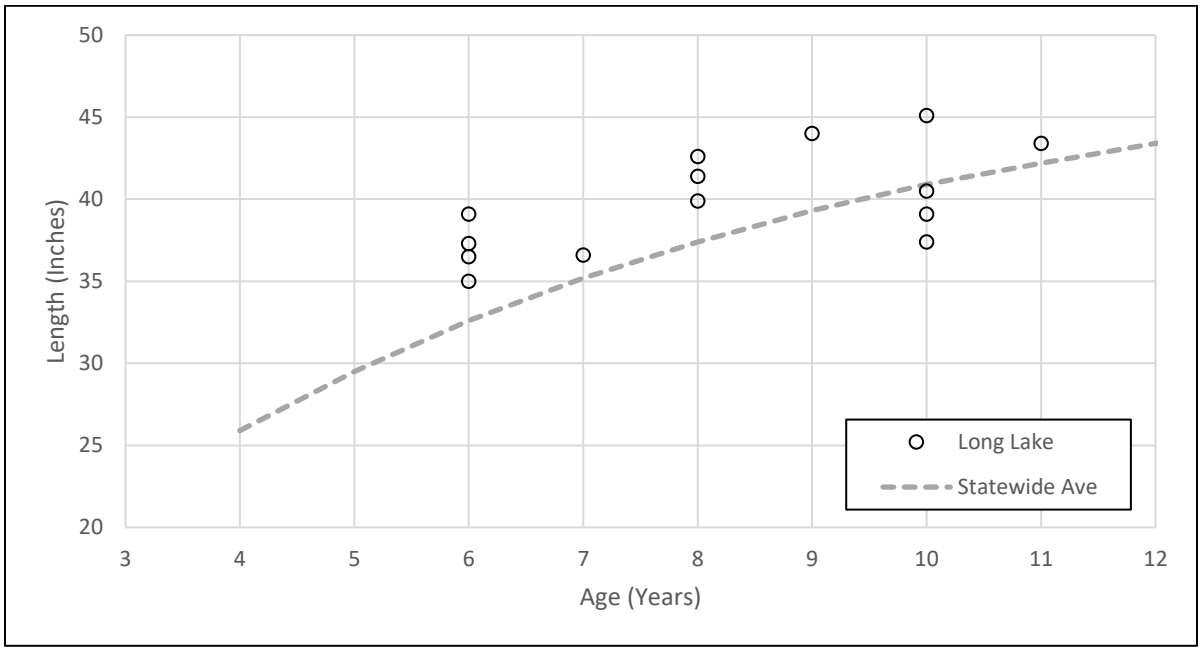


*Figure 13: Female muskellunge length at age in Long Lake, Chippewa County, 2021-2025 compared to the statewide average.*

## SMALLMOUTH BASS

The smallmouth bass electrofishing catch rate was 5.6 per mile, a decrease from 2021, when the catch rate was 25 fish per mile. The catch rate in 2016 was 14.8 fish per mile and 19.0 fish per mile in 2012. In 2025, the average length was 11.8 inches (range: 6.4-19.6 inches; Figure 14), which was a 1.2-inch decline from the 2021 survey when it was 13.0 inches (range: 6.8-20.3 inches). The mean length in the 2021 surveys was similar to what was observed in 2016 when it was 12.9 inches (range: 6.3-19.8 inches), but lower than in 2012, when it was 14.6 inches (range: 7.3-20.3 inches). In 2025, the PSD-11 was 66 and PSD-18 was 6, which was slightly lower than previous surveys. In 2021, the PSD-11 was 72, and PSD-18 was 8, which was lower than what was observed in 2016 when the PSD-11 and PSD-18 values were 82, and 11 respectively. In 2012, the size structure was much better, the PSD-11 was 77 and PSD-18 was 26. Length at age of smallmouth bass was near the statewide average for most age groups (Figure 15).

During the 2025 open water creel survey, 18.2% of angling effort was directed toward smallmouth bass. Anglers caught one smallmouth bass for every 2.0 hours fished, which resulted in a projected catch of 4,775 smallmouth bass, and an estimated harvest of 14 fish (Table 1). In comparison to the 2012 open water creel survey, 34.3% of angling effort was directed toward smallmouth bass. Anglers caught one smallmouth bass for every 1.9 hours fished, which resulted in a projected catch of 5,073 and 61 fish were estimated to be harvested (Table 2).

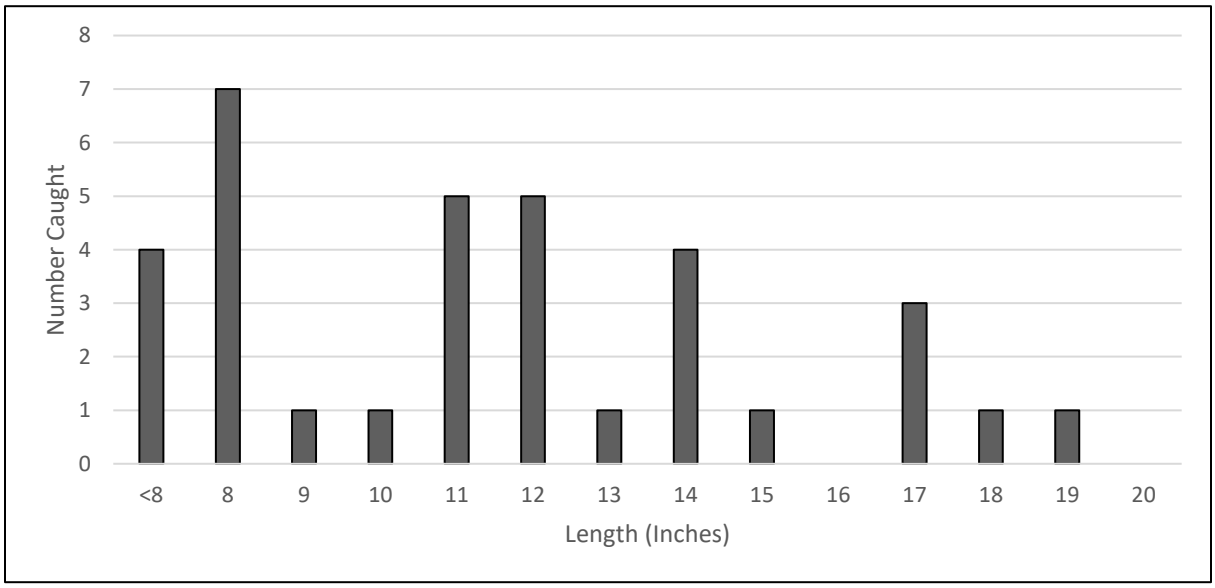


*Figure 14: Smallmouth bass length frequency from a late spring electrofishing survey in Long Lake, Chippewa County, 2025.*

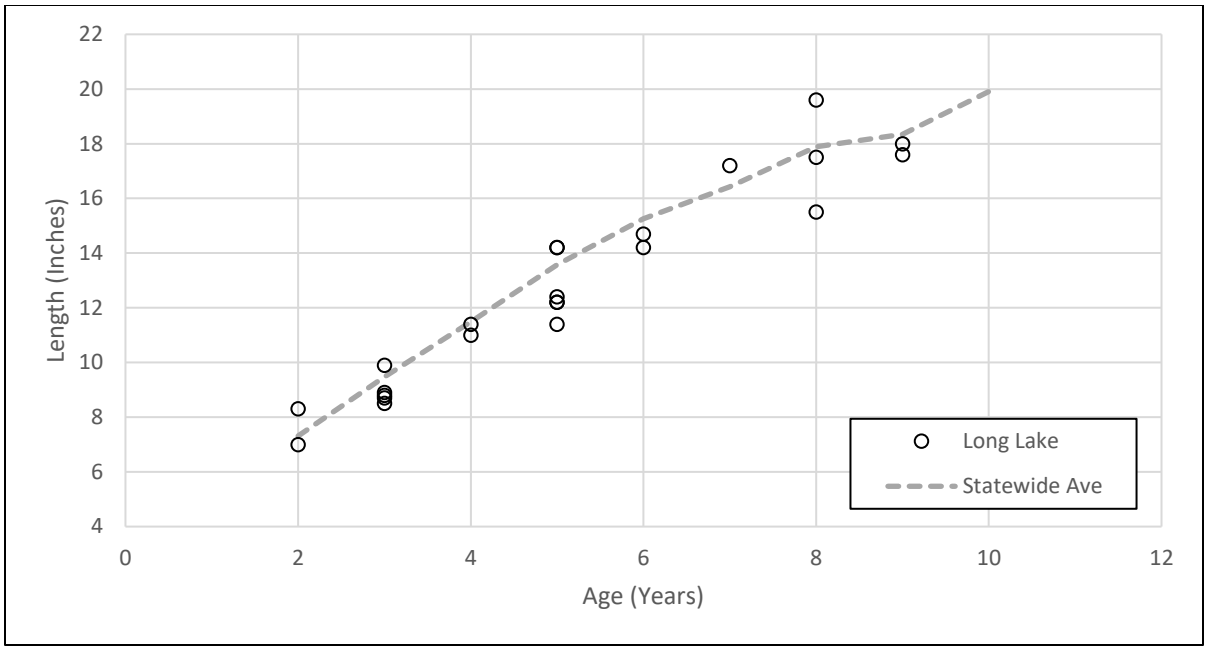


*Figure 15: Length at age for smallmouth bass in Long Lake, Chippewa County, 2025 compared to the statewide average.*

## LARGEMOUTH BASS

The largemouth bass catch rate was 65 fish per mile, which was a substantial increase from prior surveys. For comparison, in 2021, the catch rate was 17 fish per mile, in 2016, the catch rate was 28 fish per mile and in 2012 the catch rate was 18 fish per mile. In 2025, the size structure indices were lower than prior surveys where the mean length was 10.6 inches (range: 4-18.5 inches), PSD-12 was 27, and PSD-16 was 2 (Figure 16). In the 2021 survey, the mean length was 12.7 inches (range: 7.5-18.3 inches), PSD-12 was 64, and PSD-16 was 10. This was a slight improvement in size structure from the 2016 survey where the mean length was 12.5 inches (range: 7.3-20.8 inches), PSD-12 was 57 and PSD-16 was 7. However, the 2012 survey had the best size structure compared to the previous two surveys where the mean length was 14.0 inches (range: 6.8-18.1 inches), PSD-12 was 81 and PSD-16 was 38. Length at age was close to the statewide average for most age classes and then dropped below the statewide average for age seven and older (Figure 17).

During the 2025 open water creel survey, 28.2% of angling effort was directed toward largemouth bass, which was over a threefold increase from the previous creel survey of 9.1%. Anglers caught one largemouth bass for every 0.9 hours fished, which resulted in a projected catch of 18,713 largemouth bass, and the projected harvest was 855 fish (Table 1). The projected catch was 15 times greater than the prior creel survey. In comparison, in the 2012 open water creel survey, anglers caught one largemouth bass for every 2.9 hours of directed fishing effort which resulted in a projected catch of 1,217 and none were estimated to be harvested (Table 2).

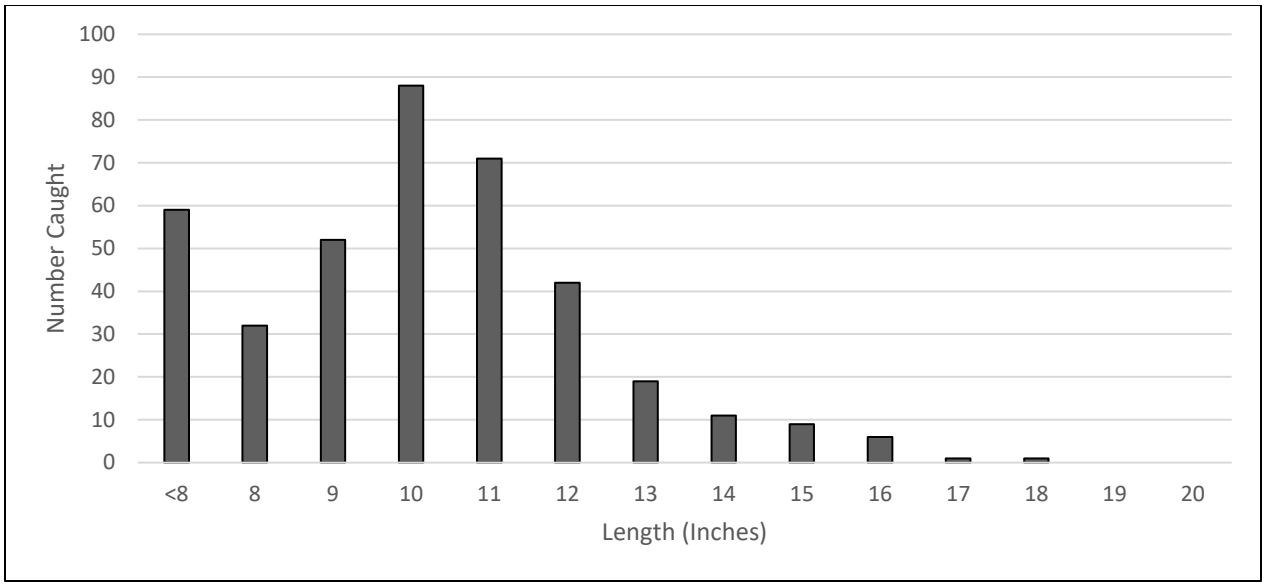


*Figure 16: Largemouth bass length frequency from a late spring electrofishing survey in Long Lake, Chippewa County, 2025.*

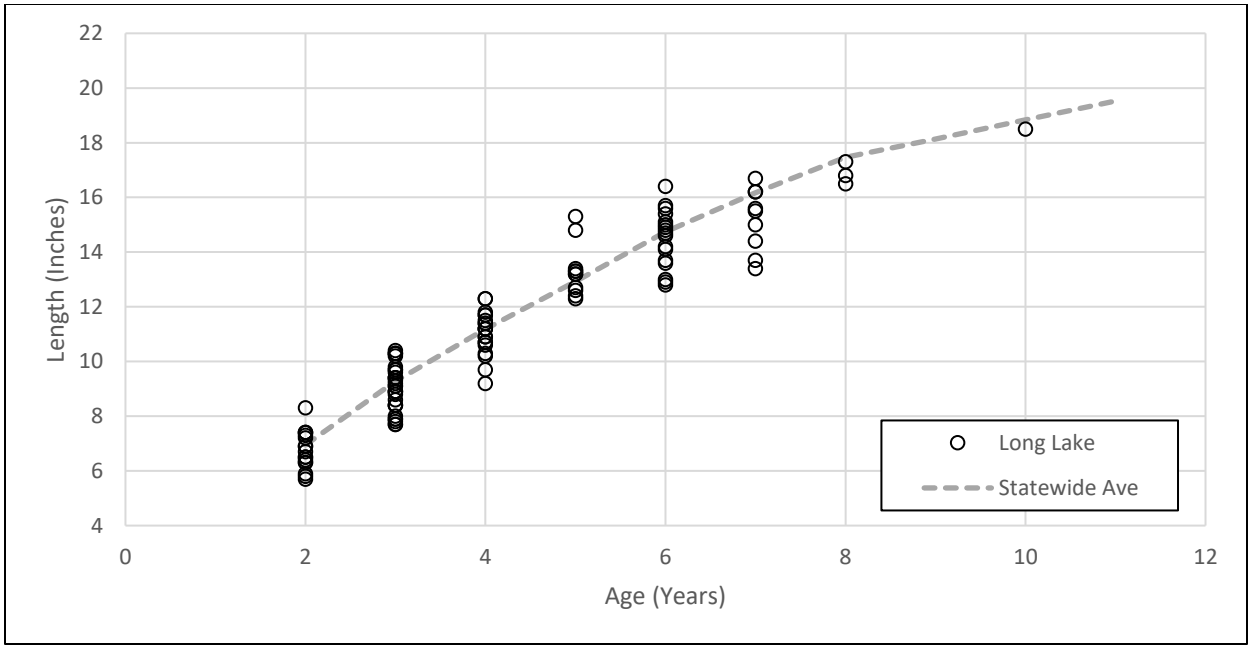


*Figure 17: Length at age for largemouth bass on Long Lake, Chippewa County, 2025 compared to the statewide average length at age.*

## NORTHERN PIKE

The catch rate of northern pike was 0.37 fish per net-lift. In 2021, the mean catch was 0.50 fish per net-lift compared to 0.18 fish per net-lift in 2016, and 0.33 fish per net-lift in 2012.

The size structure of northern pike remains good. Northern pike had a mean length of 23.7 inches (range: 12.7-31.8 inches), a PSD-21 of 73 and PSD-28 of 27 (Figure 18). In 2021, the mean length was 28.4 inches (range: 20.2-39.5 inches), PSD-21 was 95 and PSD-28 was 53. The size structure was similar in 2016 where mean length was 25.3 inches (range: 15.1-36.6 inches), PSD-21 was 100, and PSD 28 was 42. In 2012 the size structure was better where the mean length was 30.2 (range: 11.4- 42.3 inches), PSD-21 was 90, and PSD-28 was 70. The length at age for many northern pike aged was well above the statewide average for most age classes (Figure 19).

Northern pike angling effort was 1.5% of the overall angling effort in the 2025 open water creel survey compared to 4.2% during the 2012 creel survey. In 2025, anglers caught a northern pike for every 4.1 hours of directed effort which resulted in a projected catch of 494 fish and only four were estimated to be harvested (Table 1). While in 2012 anglers caught a northern pike for every 12.5 hours of directed effort and had a total projected catch of 255 fish and an estimated harvest of 68 northern pike (Table 2).

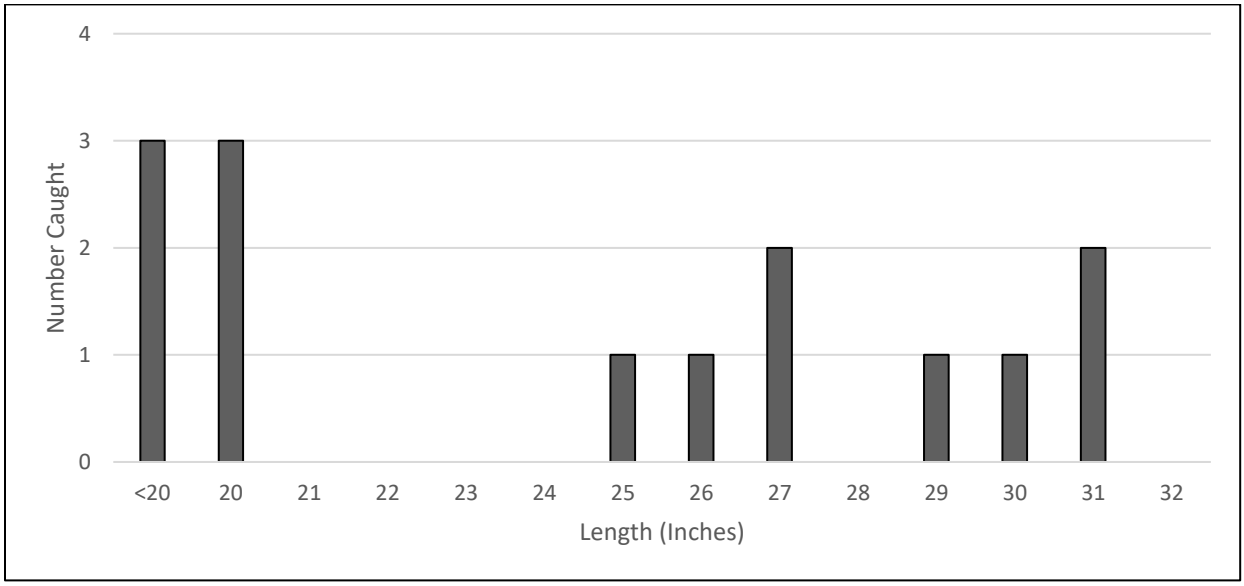


*Figure 18: Northern pike length frequency from an early spring netting survey in Long Lake, Chippewa County, 2025.*

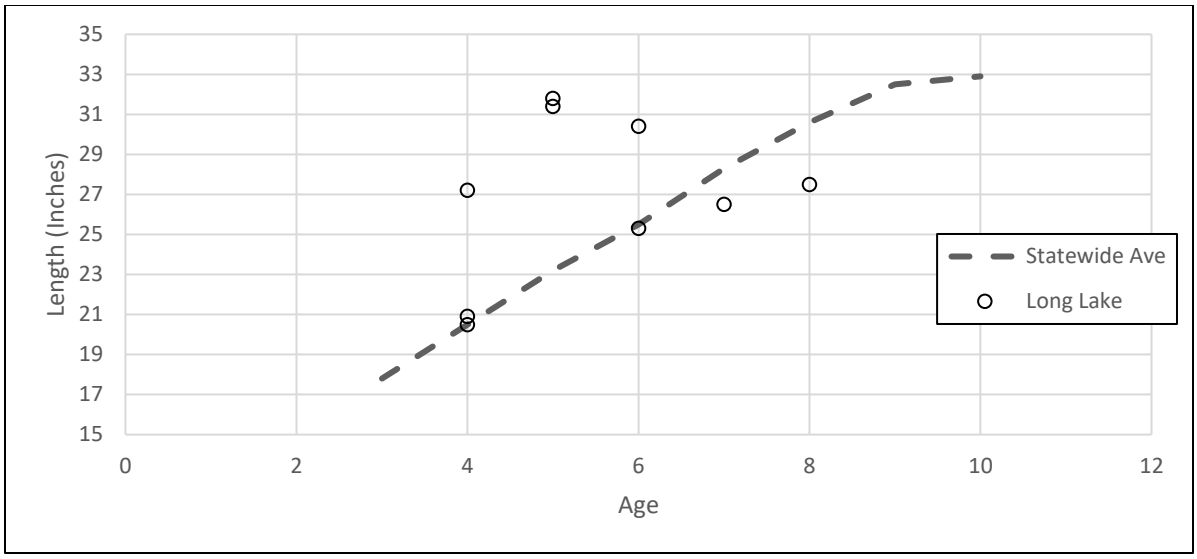


*Figure 19: Length at age for northern pike in Long Lake, Chippewa County, 2025 compared to the statewide average.*

## BLUEGILL

The bluegill catch rate was 178 per mile which was much higher than recorded in previous surveys. In 2021, the mean catch of bluegill was 69 per mile, compared to 61 per mile in 2016 and 30 per mile in 2012. Size structure was better than prior surveys where the mean length was 6.5 inches (range: 2-9.3 inches), PSD-6 as 76 and PSD-8 was 8 (Figure 20). In 2021, the mean length of bluegill captured was 5.4 inches (range: 1.3-9.7 inches), PSD-6 was 43, and PSD-8 was 3. In 2016, the size structure was slightly better than in 2021 when the mean length was 6.2 inches (range: 2.4-8.3 inches), PSD-6 was 63 and PSD-8 was 2. Bluegill size structure in 2012 was relatively poor. The mean length was 5.5 inches (range: 1.3-7.5 inches), PSD-6 was 41 and PSD-8 was 0. The mean lengths at age were consistent with the statewide average for younger fish and was higher for bluegill five years old and older (Figure 21).

Bluegill were the most targeted panfish during the creel survey with 16.8% of the total fishing effort compared to 11.8% of the effort in 2012. In 2025, anglers reported catching one bluegill for every 0.5 hours fished which resulted in a projected catch of 16,808 bluegill and an estimated harvest of 2,121 fish (Table 1). In contrast, during the 2012 open water creel survey, one bluegill was caught per 0.6 hours fished which resulted in 8,740 bluegill caught and 1,938 harvested (Table 2).

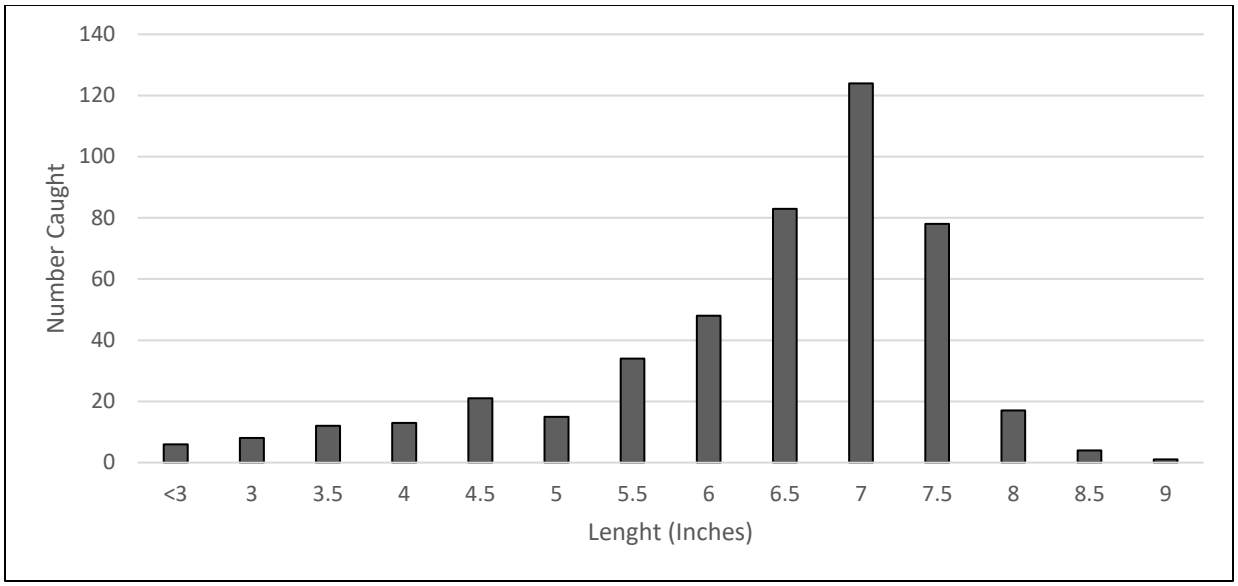


*Figure 20: Bluegill length frequency from early spring netting and late spring electrofishing surveys in Long Lake, Chippewa County, 2025.*

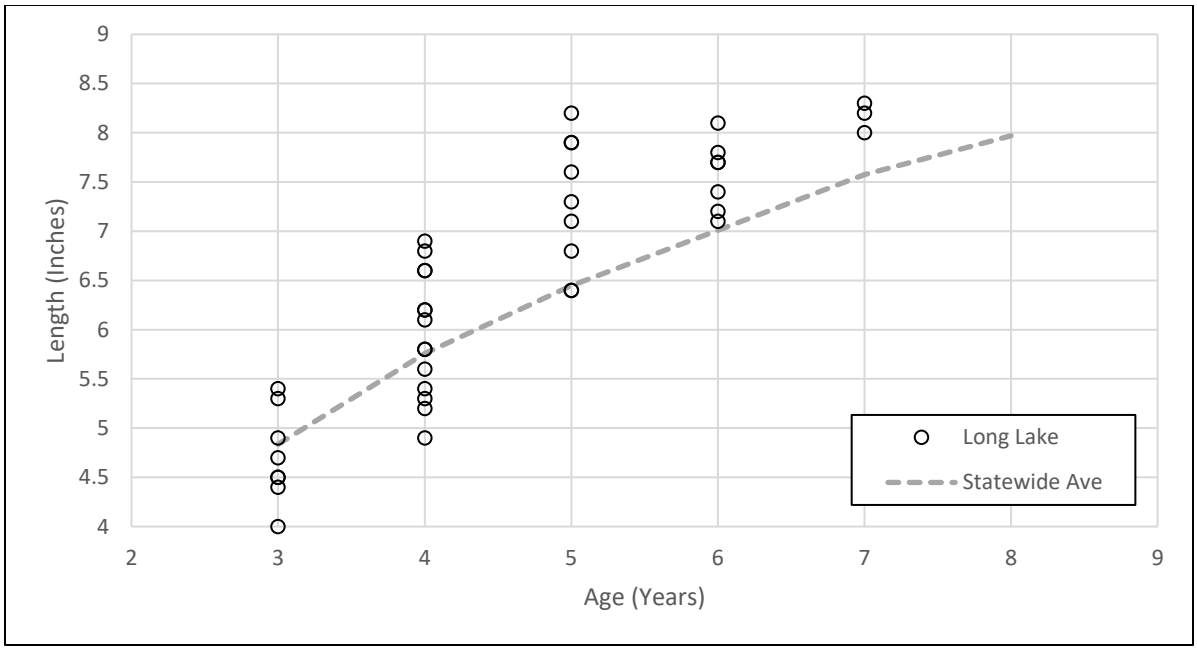


*Figure 21: Length at age for bluegill on Long Lake, Chippewa County, 2025, compared to the statewide average.*

## BLACK CRAPPIE

The black crappie catch rate was 10 per mile which was similar to the previous survey. The mean length was 7.4 inches (range 4.0-13.0 inches), PSD-8 was 40 and PSD 10 was 18 (Figure 22). In 2021, the black crappie catch rate was 11.3 per mile. The mean length was 7.6 inches (range: 4.4-13.4 inches), PSD-8 was 61, and PSD-10 was 5.6 (Figure 22). In 2016, the catch rate was 8.6 per mile. Despite the lower catch, the size structure was better with a mean length of 7.5 inches (range: 2.8-13.4 inches), PSD-8

was 71 and PSD-10 was 38. The catch rate in 2012 was relatively lower than the previous two surveys and was 2.7 per mile. The mean length was 9.7 inches (range: 8.2-11.3 inches). The PSD-8 was 100 and PSD-10 was 50. Black crappie appear to be growing faster than the statewide average in Long Lake (Figure 23).

The amount of directed effort toward black crappie increased from 2.6% during the 2012 open water creel survey to 13.7% in 2025. As a result, the projected catch increased from 328 to 6,016, the estimated harvest increased from 238 to 1,880 and hours of directed effort to catch one fish decreased from 2.2 to 1.0 (Tables 1 & 2).

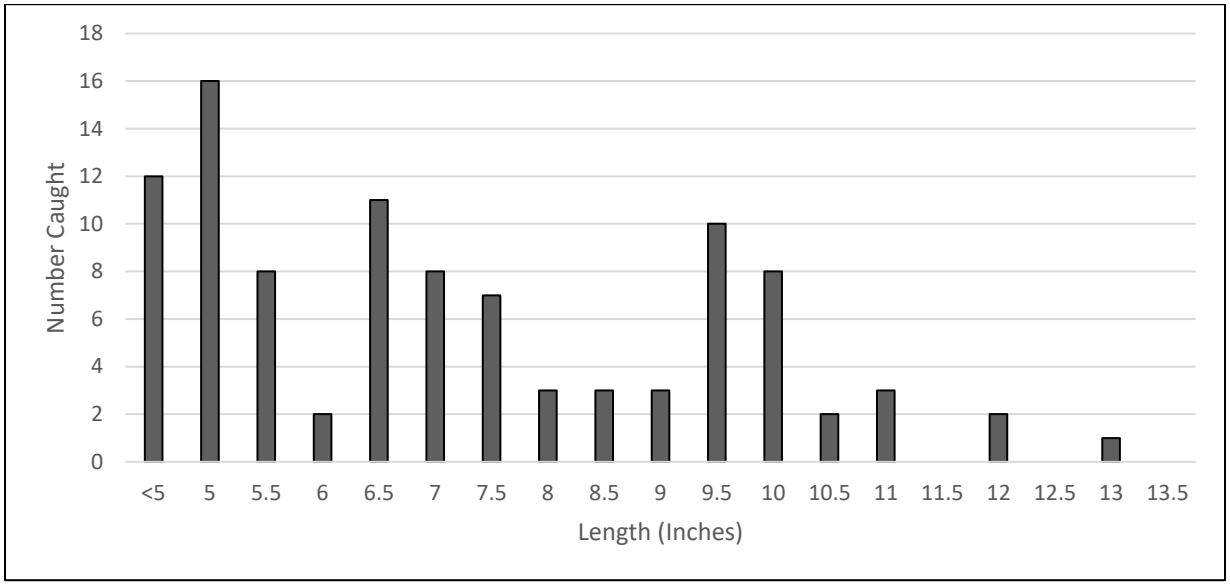


*Figure 22: Black crappie length frequency from early spring netting and late spring electrofishing surveys in Long Lake, Chippewa County, 2025.*

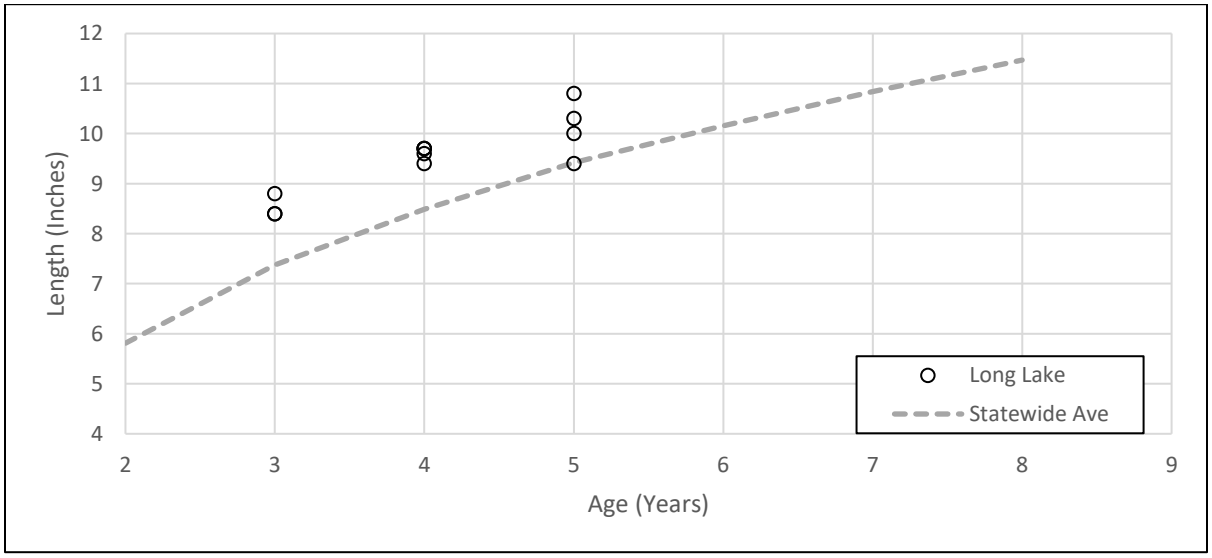


*Figure 23: Length at age for black crappie in Long Lake, Chippewa County, 2025, compared to the statewide average.*

## YELLOW PERCH

The catch rate of yellow perch was 0.63 per net-lift. Size structure indices improved from the prior surveys with the mean length at 7.3 inches (range 3-10.4 inches), PSD-8 was 31 and PSD-10 was 9 (Figure 24). In 2021, the catch rate was 16.1 yellow perch per net-lift, while only 0.1 were caught per net-lift in 2016 and data was not collected on yellow perch while netting 2012. In 2021, the mean length of perch caught was 5.0 inches (range: 2.6-8.6 inches) while the PSD-8 was 22 and PSD-10 was 0. Size structure was poor in 2016 when the mean length of perch captured was 4.4 inches (range: 2.6-9.7 inches). The PSD-8 was 100 but PSD-10 was 0. Size data were collected via electrofishing in 2012 and mean length of perch caught was 2.8 inches (range: 2.1-4.1 inches). The PSD-8 and PSD-10 were both 0. Not enough yellow perch were aged to make conclusions about their growth rates.

The percent of yellow perch directed effort remains low at 4.7% in 2025 compared to 2.4% during the 2012 open water period. Projected catch increased from 597 to 2,009 and projected harvest increased from 58 to 341. In 2012, it took perch anglers 6.3 hours to catch a perch while only 2.0 hours in 2025 (Tables 1 & 2).

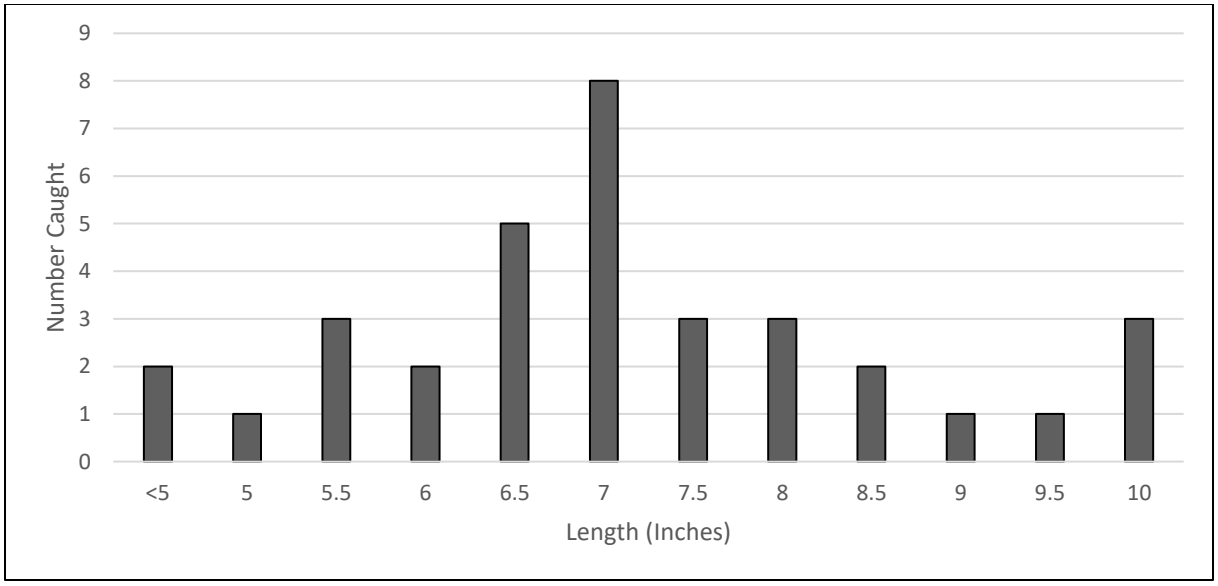


*Figure 24: Yellow perch length frequency from early spring netting and late spring electrofishing surveys in Long Lake, Chippewa County, 2025.*

## AQUATIC PLANTS

In the summer of 2023, an aquatic plant survey was conducted where a total of 874 sites were visited, 520 site were shallow enough to allow for plant growth, and 320 sites contained plants. Maximum water depth where plant growth occurred was 18.0 feet of water. The percent of the littoral zone (lake bottom capable of supporting aquatic plant growth) that was vegetated has steadily increased since the late 1980s (Figure 25). In 2023, 61.3% of the littoral zone was vegetated, which was over double what it was in 2016, and over an eight-fold increase since the 1986 survey. Only

native plant species were found in the 2023 survey which indicated that the newly vegetated area was an expansion of existing plant communities.

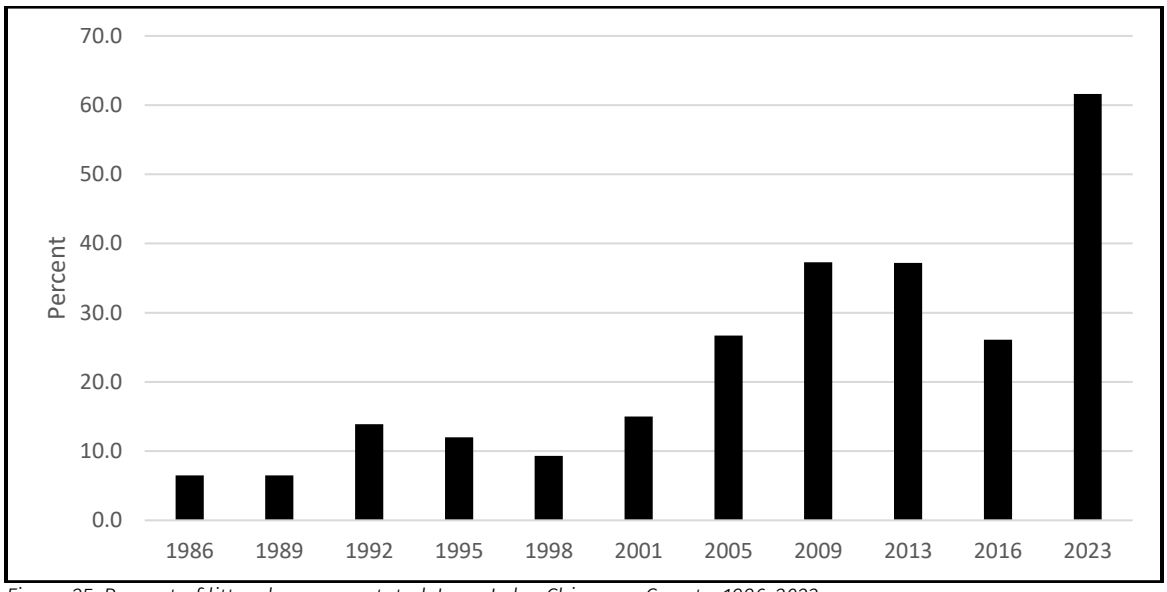


*Figure 25: Percent of littoral zone vegetated, Long Lake, Chippewa County, 1986-2023.*

*Table 1: Creel survey results from the 2025 open water period (May 3rd-Oct. 31st) on Long Lake, Chippewa County.*

| Species | Directed Effort (Hours) | (%) | Catch | Specific Catch Rate (Fish/Hour) | Harvest | Specific Harvest Rate (Fish/Hour) | Mean Length (inches) |
|---|---|---|---|---|---|---|---|
| Walleye | 2,635 | 6.3% | 767 | 0.2196 | 20 | 0.0072 | 17.5 |
| Muskellunge | 4,118 | 9.8% | 273 | 0.0417 | 0 | 0.0000 | * |
| Northern Pike | 653 | 1.5% | 494 | 0.2411 | 4 | 0.0000 | 23.4 |
| Largemouth Bass | 11,901 | 28.2% | 18,713 | 1.1683 | 855 | 0.0535 | 11.5 |
| Smallmouth Bass | 7,685 | 18.2% | 4,775 | 0.5120 | 14 | 0.0008 | 16.3 |
| Bluegill | 7,070 | 16.8% | 16,808 | 2.0791 | 2,121 | 0.2854 | 7.5 |
| Pumpkinseed | 310 | 0.7% | 694 | 0.9922 | 284 | 0.3757 | 7.2 |
| Black Crappie | 5,777 | 13.7% | 6,016 | 1.0021 | 1,880 | 0.3115 | 10.5 |
| Yellow Perch | 1,995 | 4.7% | 2,009 | 0.4987 | 341 | 0.0593 | 8.8 |
| Rock Bass | 15 | 0.0% | 2,659 | 2.5794 | 141 | 1.3348 | 7.9 |
| Longnose Gar | * | 0.0% | 7 | * | 0 | * | * |

*Table 2: Creel survey results from the 2012 open water period (May 5th-Oct. 31st) on Long Lake, Chippewa County.*

| Species | Directed Effort (Hours) | (%) | Catch | Specific Catch Rate (Fish/Hour) | Harvest | Specific Harvest Rate (Fish/Hour) | Mean Length (Inches) |
|---|---|---|---|---|---|---|---|
| Black Crappie | 656 | 2.6% | 328 | 0.45 | 238 | 0.35 | 11.2 |
| Bluegill | 3,742 | 14.8% | 8,740 | 1.79 | 1,938 | 0.45 | 7.2 |
| Largemouth Bass | 2,311 | 9.1% | 1,217 | 0.35 | 0 | 0.00 | |
| Longnose Gar | * | 0 | 6 | * | 6 | * | 47.0 |
| Muskellunge | 2,551 | 10.1% | 213 | 0.05 | 0 | 0.00 | |
| Northern Pike | 1,053 | 4.2% | 255 | 0.08 | 68 | 0.04 | 24.4 |
| Rock Bass | 54 | 0.2% | 401 | 0.44 | 158 | 0.00 | 7.8 |
| Smallmouth Bass | 8,685 | 34.3% | 5,073 | 0.53 | 61 | 0.01 | 19.5 |
| Walleye | 5,696 | 22.5% | 1,857 | 0.32 | 527 | 0.09 | 13.8 |
| Yellow Perch | 605 | 2.4% | 597 | 0.16 | 58 | 0.04 | 8.3 |

# Discussion

## WALLEYE

The adult walleye density dropped to 2.0 adults per acre in 2025 which was significantly lower than the estimate of 4.0 adults per acre observed in the 2021 survey (Figure 3). For comparison, lakes supported by naturally reproducing walleye populations are generally between 3-4 adults per acre. The walleye population was lower than it was in the 1990s and early 2000s, but the population has been lower before and rebounded. In 2012, the population was at 2.9 adults per acre and steadily increased in the 2016 and 2021 surveys. Two adults per acre is still above the threshold for a fishable population of 1.5 adults per acre.

The decline in adult abundance was likely due to poor recruitment over the past decade. In the 1990s and early 2000s Long Lake had consistently strong walleye natural reproduction and averaged 67 age-0 walleye per mile from 1993-2004, but since 2005 the average catch of age-0 walleye has been 11 fish per mile. Over the past five years (2021-2025), only a handful of age-0 walleye have been captured which resulted in a mean catch rate of 0.5 fish per mile during that time period (Figure 9). Considering the total annual mortality rate for walleye was estimated at 59% (Figure 6), new fish need to enter the population in order to sustain it into the future. Large fingerling walleye stocking started in 2015 and has occurred in eight out of the last 11 years by either the DNR or private funding from the Lower Long Lake Fishing Club (Figure 1). The level of stocking has varied over time, but walleye from the larger stocking events in 2023 and 2025 were immature at the time of this survey, so they were not represented in the adult stock evaluated in this survey. There could be a significant population of juveniles in Long Lake that were inaccessible to the survey gear and future surveys will provide more information whether these stocked year classes will contribute to the adult population.

Long Lake is one of many lakes in northwestern Wisconsin and the upper Midwest that has declining walleye natural reproduction (Gostiaux et al. 2022; Honsey et al. 2020). Many research projects from different agencies, universities and organizations have been dedicated to this subject, but it is still not fully understood why walleye recruitment declines are occurring. Large scale habitat changes with the resurgence of aquatic macrophytes are likely playing a role in reshaping the fish community in Long Lake. Aquatic vegetation has become more abundant in Long Lake over the past two decades (Figure 25) which favors species that prefer vegetated habitat such as largemouth bass and bluegill. However, an increase in the bluegill population may have benefits for the walleye population because juvenile bluegill are a preferred diet item for walleye (Schnieder and Breck 1997), which could lead to an increase in growth and condition perhaps contributing to better reproductive success. Walleye natural reproduction and recruitment in Long Lake will continue to be monitored annually for the foreseeable future with fall electrofishing surveys, but the lack of recruitment is concerning for maintaining a self-sustaining population into the future.

As a result of the trend of poor year classes, in 2016 the walleye regulation was changed from a 14–18-inch protected slot with a sliding bag limit to an 18-inch minimum length limit with a three fish bag limit. The reasoning behind the regulation change was to protect more juvenile and adult walleye than the previous regulation with the goal of increasing the spawning stock to bolster natural reproduction. The 18-inch minimum length limit has considerably limited angler walleye harvest as indicated by creel survey data. The estimated projected recreational harvest decreased from 527 walleye in the 2012 open water creel survey to 20 during the open water period in 2025 which was due to the more conservative 18-inch minimum length limit, and the size structure of the population as only 3.7% were of a legal length. The estimated angler catch in 2025 was 767 walleye, so walleye were being caught but not harvested. With the low level of natural reproduction and decline in the adult population, the 18-inch minimum length limit is the best fit for the population as it protects over 96% of the population, but more conservative regulations could be explored as a proactive measure to provide protection when size structure improves.

It is difficult to make definitive conclusions regarding the origin (stocked vs natural reproduced) of the walleye that compose the current population. The adult age classes (Figure 5) do not correspond well with the years that were stocked (Figure 1) or the years where survey data indicated some natural reproduction (Figure 9). For example, the age-6 year class was strong (Figure 5), especially since it was subjected to one additional year of mortality than the age-5 year class. The age-6 fish were from the 2019 year class and walleye were not stocked in 2019 (Figure 1). Natural reproduction was measured to be relatively low in 2019 at 7 age-0 walleye per mile (Figure 9), which likely is not enough to result in such a large adult year class. There are a few explanations that may explain this occurrence. First, age-0 walleye surveys may no longer be a good representation of natural reproduction in Long Lake. There

is some evidence to support this because the 2022 year class was nearly non-existent at 0.2 per mile and no stocking was conducted in 2022, but the age-1 catch in 2023 was 1.4 per mile, so this is an indication that year class strength may not always be best assessed in Long Lake through age-0 catches in fall recruitment surveys. One reason for the reduction in effectiveness of this survey may be the increased aquatic vegetation provides age-0 walleye more refuge habitat, which could result in less effective age-0 surveys. Secondly, the age estimation data for the adult walleye population may be imprecise. There is a possibility there is error by a year or two when estimating ages, which would result in inaccurate age class representation in the adult population. Given that most fish were smaller than average for their estimated ages (Figure 7 & 8), it is possible that the fish were aged older than their true age. If this were true, it would mean that there were more fish from younger year classes (age-4 and age-5) which were stocked years. Even if there is error in the estimated ages by a year or two, or the recruitment surveys are not a good representation of the level of natural reproduction, there are still young year classes represented in the population which is a good sign for sustaining a fishable population into the future considering the recruitment concerns.

Due to the trend of declining natural reproduction, Long Lake meets the DNR's eligibility criteria for stocking large fingerling walleye. The DNR plans to stock Long Lake with large fingerling walleye on an alternate year basis at a rate of 10 per acre or 10,520 fish, which is at the level that occurred in 2023 and 2025. Future stocking of DNR raised fish, or fish from private fish farms, is contingent on funding, adequate hatchery production, private fish farms having the native genetic strain (upper Chippewa River) and the reproductive success of Long Lake walleye population. Management actions would benefit from knowing the contribution of stocked fish to the adult population.

## MUSKELLUNGE

A muskellunge population estimate was not conducted in the 2025 survey because the 2021-2022 abundance estimate still serves as a good indicator of population health. In the three years since the last survey, 30 muskellunge were captured greater than 20 inches between the DNR surveys and Muskies Inc. anglers (Figure 11). The DNR captured 13 muskellunge during electrofishing and fyke netting surveys while Muskies Inc. members caught 17 muskellunge. An abundance estimate is planned during the next survey in 2029-2030.

Even though a population estimate was not conducted in 2025, size structure indices can be obtained from muskellunge caught in the three years since then. The PSD-30 was very similar to past surveys at 83 but PSD-40 was lower than recorded during past surveys at 10. The PSD-30 was 86 in 2021 and 2022, which is not far off the PSD-30 in 2000 and 2001 which was 90. The PSD-40 was 22 and 26 during the 2021-2022 survey and 2000-2001 survey, respectively. The maximum length sampled from 2023-2025 was 44.3 inches caught by a Muskies Inc. angler, which was smaller than the

maximum length captured in past surveys at 46.5 inches in the 2021-2022 survey and 46.1 inch caught in the 2000-2001 survey. The decline in PSD-40 and maximum size of fish is likely a sampling artifact rather than a true decline in the size of muskellunge present in Long Lake. Only 30 muskellunge were sampled in 2023-2025 compared to a more robust sample of 102 fish in 2021-2022 and 93 fish in the 2000-2001 survey. Lower size structure indices may also represent a strong cohort of young fish entering the population. Size structure of the muskellunge population will continue to be evaluated in future surveys and if a declining size structure trend continues, then management actions will be considered to improve the quality of the fishery.

Long Lake is classified as a Class B musky fishery based on its angling quality. The definition of a Class B fishery is "an intermediate class of water that provides good fishing. In general, angler success and catch rates may be somewhat less than in prime Class A waters." Class B waters represent 27% of all muskellunge waters in Wisconsin. The management objective for adult density in a Class B fishery is between 0.1-0.3 adults per acre. The reproductive category for Long Lake is a Category 2 which is defined as "the population has some natural reproduction; however, some stocking occurs to supplement natural recruitment."

The muskellunge population in 2021-2022 was quite similar in terms of adult abundance compared to when it was surveyed over two decades earlier in 2000-2001. Adult (≥30 inches) density was virtually identical at 0.21 per acre in 2022 compared to 0.20 in 2001. The density is in the middle of the management objective of 0.1-0.3 adults per acre for a Class B fishery. The growth rates were above the statewide average for both males and females which indicated that the adult density is not too high for the lake.

There is some muskellunge natural reproduction in Long Lake based on aging data. There were consistent year classes from age 4 to 11 which indicated adult fish from non-stocked years; however, the vast majority of muskellunge aged were from stocked years which indicated that stocked fish are surviving and contributing to the population (Figures 12 & 13). The presence of natural reproduction has the potential to compensate for the lack of stocked fish. The management recommendation is to continue to stock one large fingerling per acre on an alternate year basis given adequate hatchery production.

Although some natural reproduction may occur, the muskellunge population in Long Lake is sustained through stocking. The recommended stocking rate for maintenance of a Class B water is one fish per acre or 1,052 large fingerlings (~12 inches) on an alternate year basis. Stocking was less than the recommended rate prior to 2013-2017 due to muskellunge production issues in the hatchery system. Stocking was close to or at the recommended rate in 2019, 2021 and 2024. Muskies Inc supplemented the DNR's stocking efforts in 2023 with 500 upper Chippewa River strain musky that were purchased from a private fish farm (Figure 2), so the adult

population may see a slight increase in size in the coming years due to the increased stocking efforts.

The 2025 creel survey indicated that muskellunge angling dynamics were relatively uniform in the 13 years since the last creel survey. Open water angling relative effort increased by 0.7% and the catch rate decreased slightly from one fish caught every 20 to one fish caught every 24 hours. No fish were reported as harvested in either creel survey and the biggest difference between the creel surveys was that 767 were estimated to have been caught relative to 213 in the 2012 survey, so anglers caught relatively more muskellunge in Long Lake in 2025 (Tables 1 & 2).

The First Wisconsin Chapter of Muskies Inc. (FWCMI) has been a partner in helping manage the musky population in Long Lake and I would like to thank them for their efforts. The FWCMI, along with collaboration with the DNR, implemented a volunteer angler tagging program in 2017. The value of that program was demonstrated since the last survey as they have increased our sample size of muskellunge from Long Lake which will lead to better and more confident management decisions. Additionally, this chapter has assisted with sampling and coordinated/funded muskellunge stocking efforts.

## SMALLMOUTH BASS

In the past, Long Lake has been known for its trophy smallmouth bass fishery, but the status of that fishery may be changing. Relative abundance averaged 19.6 per mile over the last three surveys (2012-2021); however, it dropped to 5.6 per mile in the 2025 survey. Memorable sized fish are still present in the population; however, size structure declined in recent surveys as well. The best indicator of trophy size structure is the PSD-18 which is the proportion of smallmouth bass over 7 inches that are also over 18 inches. In the 2025 survey, this value was 6 which is not far off from this value in the 2021 when it was 8, but it is lower than the average over the past three surveys of 15. The decline of fish over 18 inches is likely due to environmental variables and not harvest by anglers considering there is an 18-inch minimum length limit, and most anglers practice catch and release on large smallmouth bass.

Creel survey data also indicated that smallmouth bass declines are unlikely from angler harvest. The projected harvest of smallmouth bass was estimated to be 14 fish, which was less than the projected harvest of 61 fish estimated from the 2012 creel survey. Smallmouth bass estimated catches were quite similar and declined by 6.2% from the previous creel survey, so despite fisheries survey catches being considerably lower, anglers still caught similar numbers of fish as they were when fisheries survey catch rates were higher. The relative angling effort dropped by almost half, but smallmouth bass were still the second most targeted species (Tables 1 & 2).

There are a few explanations as to why smallmouth bass size structure has declined. First off, as noted in the introduction, smallmouth bass were originally stocked to reduce rusty crayfish abundance. Despite not having rusty crayfish abundance data available, it can be inferred by the substantial increase in aquatic vegetation, that the rusty crayfish population is not as large as it once was. With less abundant prey available for smallmouth bass to consume, condition, growth and ultimately the number of large fish in the population may decline. Eventually, the population will stabilize to match their environment and habitat conditions. The smallmouth bass population will continue to be evaluated every four years with a spring electrofishing survey during the spawning timeframe, and it will be reevaluated if further management actions need to be taken at that time.

Smallmouth bass are one of the species that are expected to have benefited the most from the nearshore habitat improvement projects noted in the introduction of this report. Smallmouth bass generally spawn and sometimes forage near coarse woody habitat, and that is the type of habitat that the fish stick projects improved. Perhaps it is time to evaluate whether these habitat structures are still functioning as intended, and if degradation has occurred, explore new options for nearshore woody habitat improvement.

## LARGEMOUTH BASS

The relative abundance of largemouth bass increased over threefold in the 2025 survey to 65 per mile compared to the mean from the past three surveys (2012, 2016 and 2021) of 21 per mile. With the expansion of aquatic macrophytes in Long Lake, it was expected that species that prefer vegetated habitat like largemouth bass, would proliferate to utilize the newly available habitat and that is likely what happened. Size structure indices decreased from previous surveys. The PSD-16 for the 2025 survey was 2, and the mean length of largemouth bass was 10.6 inches (Figure 16). Over the past three surveys, the mean PSD-16 was 11, and the mean length was 13.1 inches.

The higher relative abundance is a result of increased recruitment. This was likely driven by increased natural reproduction and/or better survival of juvenile fish in recent years which can be attributed to more habitat that is preferred by largemouth bass. With an increase in density, competition for limited resources may be greater due to more largemouth bass present, which could lead to a decrease in condition, growth and size structure. This phenomenon is referred to as ‘density dependence’ and is a natural control that keeps populations in balance with their environment. However, according to length at age data, growth was on par with the statewide average for fish up to age 6 and then slowed for older fish. Based on this information, ‘stunting’ or slow growth was not an issue yet in this population, and this is something to watch for with future survey data especially if catch rates continue to increase. Eventually, the population will stabilize to match their environment and habitat conditions.

In the late 2000s, many lakes in northwest Wisconsin experienced a trend of increasing largemouth bass populations coupled with a decreasing walleye populations in a relatively short timeframe, and the concern at the time was that the largemouth bass and walleye populations in Long Lake would quickly 'flip' as well. Therefore, after the 2012 survey, numerous management actions were taken to suppress the largemouth bass population. The Lower Long Lake Fishing Club funded a three-year largemouth bass removal project 2013-2015 where about 1,000 adult largemouth bass were removed annually and stocked into lakes that had recently winterkilled in the Chippewa County Forest. Additionally, in 2016, the largemouth bass regulation was changed from an 18-inch minimum length limit and one fish bag limit to a no-minimum length limit and a five fish bag limit in order to promote harvest. Despite these efforts, largemouth bass relative abundance continued to rise. Largemouth bass fishing regulations are liberal and future management actions are limited if the population continues to expand further.

The creel survey data corresponded well with the recent fisheries survey data for largemouth bass. Angling effort, projected catch, catch rate and estimated harvest were well above the indices from the 2012 creel survey. Relative angling effort increased over threefold, projected catch increased 14-fold and estimated harvest was 855 fish compared to zero in 2012 (Tables 1 & 2). Anglers are responding to this expanding population and are targeting them more often and catching and harvesting more largemouth bass. Considering only about 5% of the largemouth bass caught were harvested, anglers could be doing more to limit this growing population by harvesting more that are caught. Largemouth bass are an aggressive fish which are relatively easy to catch, they provide a hard fight and are very good table fare, so there are many positive attributes to the growth in the population of largemouth bass.

## NORTHERN PIKE

The northern pike population remains at a relatively stable density, and the size structure was very good. Catch rate in 2025 was 0.37 fish per net-lift which was very close to the mean for the past three surveys of 0.33 fish per net-lift. The mean length in 2025 was down slightly at 23.7 inches from the mean of 28.0 inches from the previous three surveys, and 27% of the northern pike over 14 inches were also over 28 inches (Figure 18), which is considered very good size structure. The northern pike population has a low density with quality size structure which provides a bonus fishery to supplement other fishing opportunities in Long Lake.

Relative angling effort for northern pike dropped to 1.5% in 2025 compared to 8.0% in the 2012 creel survey, but catch rates increased, projected catch increased by 57% and estimated harvest dropped considerably from 68 to 4 fish (Tables 1 & 2). Basically, not a lot of anglers were targeting northern pike, the ones that did were successful and few pike were harvested.

## PANFISH

### BLUEGILL

Bluegill are the species that has benefited the most from the expansion of aquatic vegetation. Relative abundance increased over three-fold at 178 per mile relative to the mean relative abundance over the past three surveys of 53 per mile. Catch rates of bluegill of this magnitude are on par with other quality panfish fisheries in Chippewa County such as Otter Lake and Marsh Miller Lake. Size structure increased which is good news for anglers targeting bluegill. Growth rates are strong, the average size increased by over an inch and the percentage of bluegill over 3 inches that were also over 8 inches, PSD-8, increased to 8% (Figure 20). This value was much higher than the mean over the past three surveys of 1.7%. Slow growth, as seen in some populations with fairly high densities, is not an issue with the Long Lake bluegill population and considering the strong growth rates (Figure 21), size structure may increase in the future. The 10 panfish bag limit was implemented in 2000 in order to increase protection for these species when aquatic vegetation was low, and if population trends continue, a more liberal harvest regulation should be explored.

Despite increased bluegill abundance, the directed effort for bluegills was only 2% greater than the 2012 survey. The projected catch of bluegill nearly doubled in this same timeframe, but the estimated harvest was relatively stable around and 2,000 fish (Tables 1 & 2). With this information of a rapidly expanding bluegill population, hopefully anglers will reap the benefit of this abundant, readily available species.

### BLACK CRAPPIE

In 2025, black crappie relative abundance of 10 fish per mile was slightly higher than the mean over the previous three surveys of 7.5 per mile. Size structure had improved from the previous survey with 18% of the black crappie over 5 inches also greater than 10 inches (Figure 22). Black crappie are known for highly variable recruitment and are often referred to as having ‘boom or bust’ populations There were only three year classes present in the population which supports the theory of variable recruitment. Growth rates were above the statewide average, so slow growth is not a concern (Figure 23).

Anglers targeted, caught and harvested more black crappies than they did in the 2012 survey. Relative angling effort increased by 11.1% and projected catch increased 17-fold. Despite the dramatic increase in catch, harvest only increased by nearly 7-fold. According to the creel survey, angler catch rates increased considerably from 2.2 hours to catch one fish to 1.0 hours to catch one fish (Tables 1 & 2). Even with increased harvest, angler catch rates increased, which is a sign of a growing population. Over harvest is likely not an issue due to the conservative regulation for panfish on Long Lake which keeps exploitation low.

**YELLOW PERCH**

The yellow perch population composed a relatively small proportion of the panfish populations in Long Lake. The catch rate of 0.63 per net-lift is on par with past surveys. There was an increase in the catch rate during the 2012 survey, but it has dropped back down to historic survey data levels. Size structure was moderate to poor with the mean length of yellow perch at 7.3 inches and 9% of the perch over 5 inches were also over 8 inches (Figure 24). Just because larger perch were not captured in the last survey does not mean they do not exist in the population, but they are likely not abundant in high numbers. Anglers may catch a larger fish from time to time, but it may not be a regular occurrence. Yellow perch provide a good forage base for walleye, muskellunge and northern pike, which is likely one of the reasons why few survive long enough to reach a desirable size for anglers.

Directed effort toward yellow perch remains low at 4.7% which was very similar to what it was in the previous creel survey at 2.5%. Anglers reported catching perch as the projected catch was over 2,000 fish and estimated harvest was 341, both values were substantially higher than estimated during the 2012 creel survey, so anglers are finding a few fish of harvestable size (Tables 1 & 2+).

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