

Wisconsin Department of Natural Resources 2025 Comprehensive Survey Report for Bullhead Lake, Manitowoc County

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Photo Credit: DNR



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Introduction

Bullhead Lake is a 70 acre seepage lake in west central Manitowoc County near the border of Calumet County. Bullhead Lake is considered a simple warm dark lake with a maximum depth of 40 feet, a mean depth of approximately 13 feet and 1.25 miles of shoreline. Bullhead Lake has one public boat launch located in the southwest corner of the lake on a property that is owned by the Manitowoc County Parks Department. Parts of the shoreline of the lake are highly developed whereas other shoreline areas remain natural. Bullhead Lake is part of a watershed that is dominated by agricultural lands and the lake is considered impaired due to excess phosphorus which has caused eutrophication, excess algal growth and a downgraded biological community. Water quality monitoring indicated an average trophic state over the last 5 years of 66 which is considered eutrophic and poor.

Current fishing regulations for Bullhead Lake follow statewide default regulations for all species except for panfish, which have a 10 aggregate bag limit regulation that was implemented April 1, 2026.

Fisheries surveys have been conducted on Bullhead Lake since the 1950s using a combination of fyke netting and electrofishing as the primary gears to sample the fish community. Within the last 30 years, spring fyke netting surveys have been conducted in 1999 and 2017 with spring electrofishing surveys being conducted in 1998, 1999, 2011 and 2017. Results from these fish surveys have shown that largemouth bass and northern pike are the dominant gamefish found in the lake whereas bluegill, black crappie and yellow perch are the dominant panfish found in the lake. Other species found in Bullhead Lake include black bullhead, brown bullhead, central mudminnow, common carp, green sunfish, pumpkinseed, walleye, white sucker, yellow bass and yellow bullhead.

In 2025, the Wisconsin Department of Natural Resources (DNR) conducted a comprehensive fish survey of Bullhead Lake to assess the current status of the fishery and provide direction for future fisheries management of this lake. Comprehensive fish surveys include both spring fyke netting and spring electrofishing surveys, with each gear targeting different species in the lake. Primary sampling objectives of these surveys were to characterize species composition, relative abundance, growth and size structure. The following report is a brief summary of the activities conducted, general status of fish populations, and future management options for Bullhead Lake.

Survey Effort

As part of the 2025 comprehensive fish survey, Bullhead Lake was sampled according to spring netting I (SNI) and spring electrofishing II (SEII) protocols as outlined in DNR Fisheries Monitoring Protocols. The primary objective for the SNI survey is to count and measure adult northern pike, walleye and panfish. The primary objective of the SEII survey is to count and measure adult largemouth bass and panfish. Other gamefish and/or panfish may be sampled in each survey but are not the primary focus.

Fyke nets were deployed shortly after ice-out in areas of the lake that contained spawning habitat or were likely travel areas for northern pike and walleye. All newly captured gamefish were given a partial fin clip. Length was measured for all gamefish and panfish species. Age structures (i.e., fin rays and fin spines) were collected from a subsample of northern pike and walleye for age and growth analyses. Spring electrofishing took place in late spring when water temperatures reached 60-70°F and largemouth bass and panfish moved shallow to spawn. Age structures (i.e., fin spines or otoliths) were collected from a subsample of largemouth bass and bluegill for age and growth analyses. All species encountered were collected and enumerated and all gamefish and panfish species were measured for length.

Table 1 provides information about survey dates, water temperatures and effort for the SNI and SEII surveys that were completed in 2025. Figure 1 shows maps of the fyke netting locations (yellow dots in A) and electrofishing stations (yellow lines in B) that were part of the 2025 comprehensive fish survey of Bullhead Lake. It should be noted that net #2 was moved to the location noted as net #2A on March 21, 2025, after the ice along the south shore melted and allowed for a net to be set along this shoreline.

Table 1. Survey information for the 2025 comprehensive fish survey Bullhead Lake, Manitowoc County.

Site Location	Survey Dates	Water Temperature (°F)	Target Species	Gear	Number of Nets	Effort
Bullhead Lake	3/18/2025 – 3/23/2025	38 - 40	Northern pike/Walleye/Panfish	Fyke Net	5	25 net nights
Bullhead Lake	5/19/2025	61	Largemouth bass/Panfish	Boomshocker	NA	2.25 miles dip all

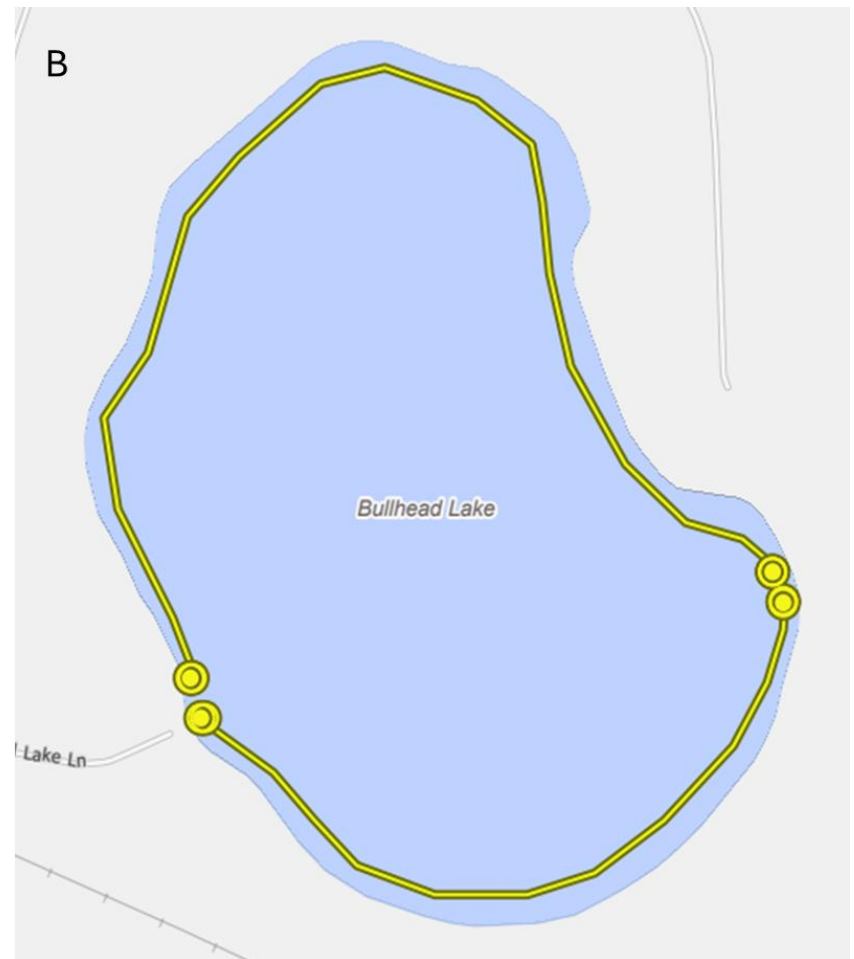
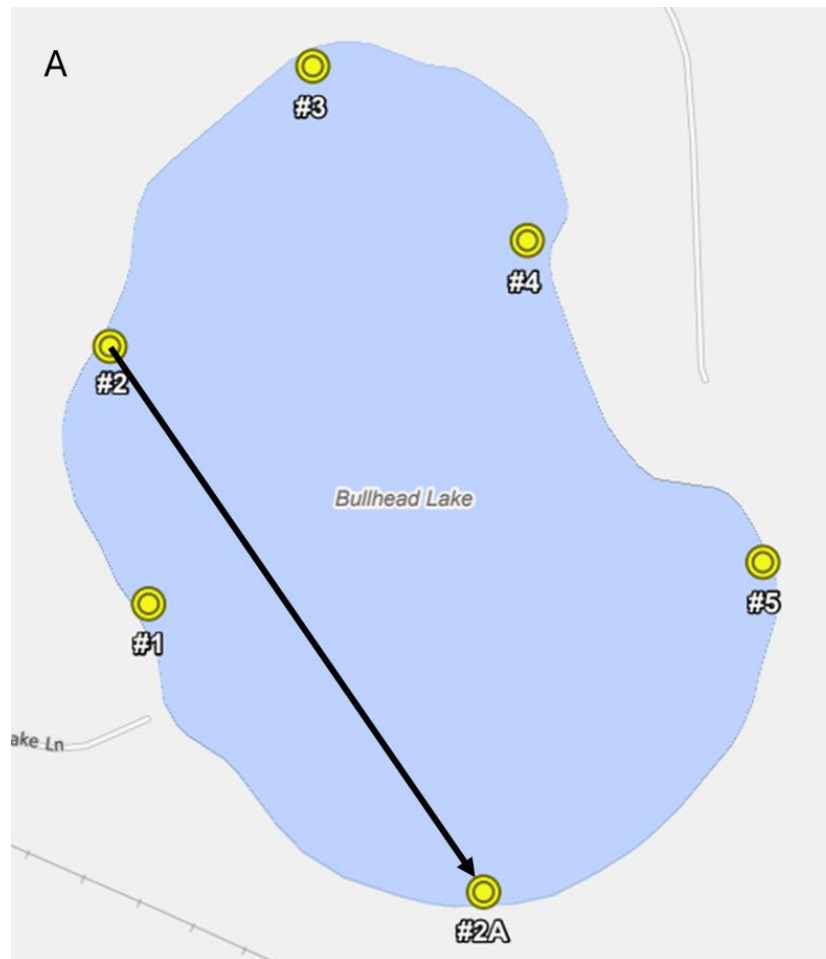


Figure 1. Map of fyke net locations shown as the yellow dots in A and electrofishing stations shown as yellow lines in B as part of the 2025 comprehensive fish survey of Bullhead Lake, Manitowoc County. It should be noted that net #2 was moved to the location noted as net #2A on March 21, 2025, after the ice along the south shore melted and allowed for a net to be set along this shoreline.

Metric Descriptions

- **Catch per unit effort (CPUE) is an index used to measure fish population relative abundance, which simply refers to the number of fish captured per unit of distance or time.** For netting surveys, we typically quantify CPUE as the number and size of fish per net night. For electrofishing, we quantify CPUE as the number caught per mile of water electrofished. CPUE indexes are compared to statewide data by percentiles and within lake trends. For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state. Percentiles for lake class specific CPUEs are presented in text and not shown in the tables.
- **Total abundance is an estimate of the actual number of a given species within a waterbody.** Total abundance is estimated by giving individuals in a population an identifiable mark such as a fin clip and then using the proportion of marked and unmarked individuals in a follow up survey(s) to estimate the total abundance.
- **Proportional Stock Density (PSD) is an index used to describe the size structure of fish populations.** It is calculated by dividing the number of quality size fish by the number of stock size fish for a given species. PSD values between 40 - 60 generally describe a balanced fish population. Percentiles for PSD values presented in tables are statewide percentiles. Lake class specific percentiles are not available for PSD metrics.
- **Length frequency distribution (LFD) is a graphical representation of the number or percentage of fish captured by half-inch or one-inch size intervals.** Smaller fish (or younger age classes) may not always be represented in the length frequency due to different habitat usage or sampling gear limitations.
- **Mean Length at Age is an index used to assess fish growth.** Calcified structures (e.g., otoliths, spines, or fin rays) are collected from fish of all sizes that are present in the sample. Mean lengths at ages are calculated as the average length of all fish of a given age.

Results

Northern Pike

Northern pike spawn in shallow vegetated areas shortly after ice out when water temperatures are 35 - 40°F. Fyke netting is the preferred gear for sampling northern pike. All results presented for northern pike are from spring fyke netting surveys.

Table 2. Size structure metrics for northern pike captured in the 2025 fyke netting survey of Bullhead Lake.

2025 Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	2025 Statewide Percentile Rank	2025 Size Rating
48	24.3	21.1 – 28.9	14 and 21	48	48	100	100th	Very High

Table 3. Relative abundance (CPUE) trends for northern pike captured in fyke netting surveys of Bullhead Lake.

2025 Total Number Captured	1999	2017	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
143	0.2	3.9	5.7	3.9	82nd	High

Table 4. Size structure (proportional stock density [PSD]) trends for northern pike captured in fyke netting surveys of Bullhead Lake.

1999	2017	2025	Historical Median
63	75	100	75

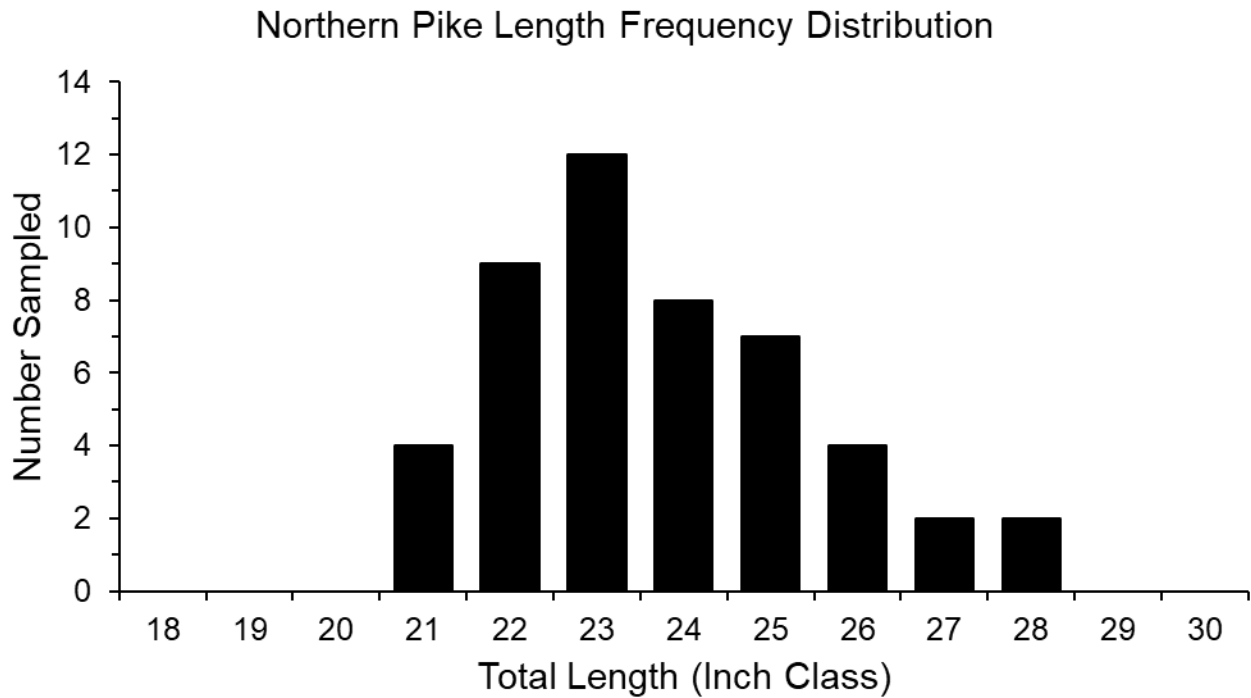


Figure 2. Length frequency distribution depicting the number of northern pike captured in one inch size intervals in the 2025 fyke netting survey of Bullhead Lake.

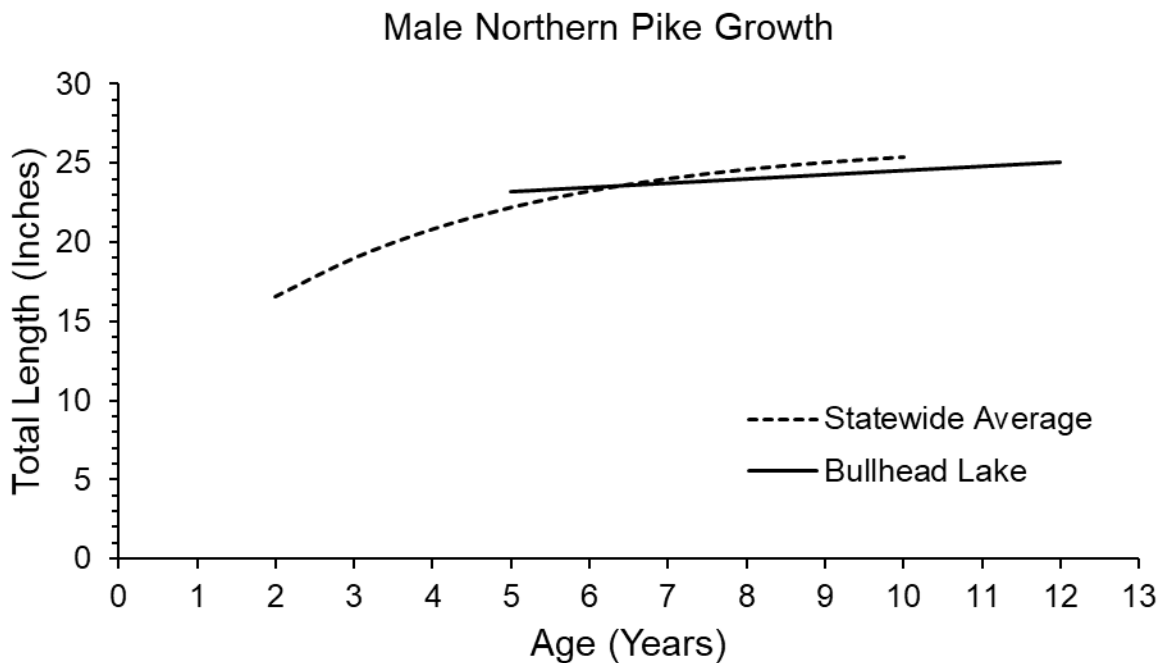


Figure 3. Predicted length at age (solid line) for male northern pike captured in the 2025 fyke netting survey of Bullhead Lake. Dashed lines represent the statewide average lengths at age for male northern pike.

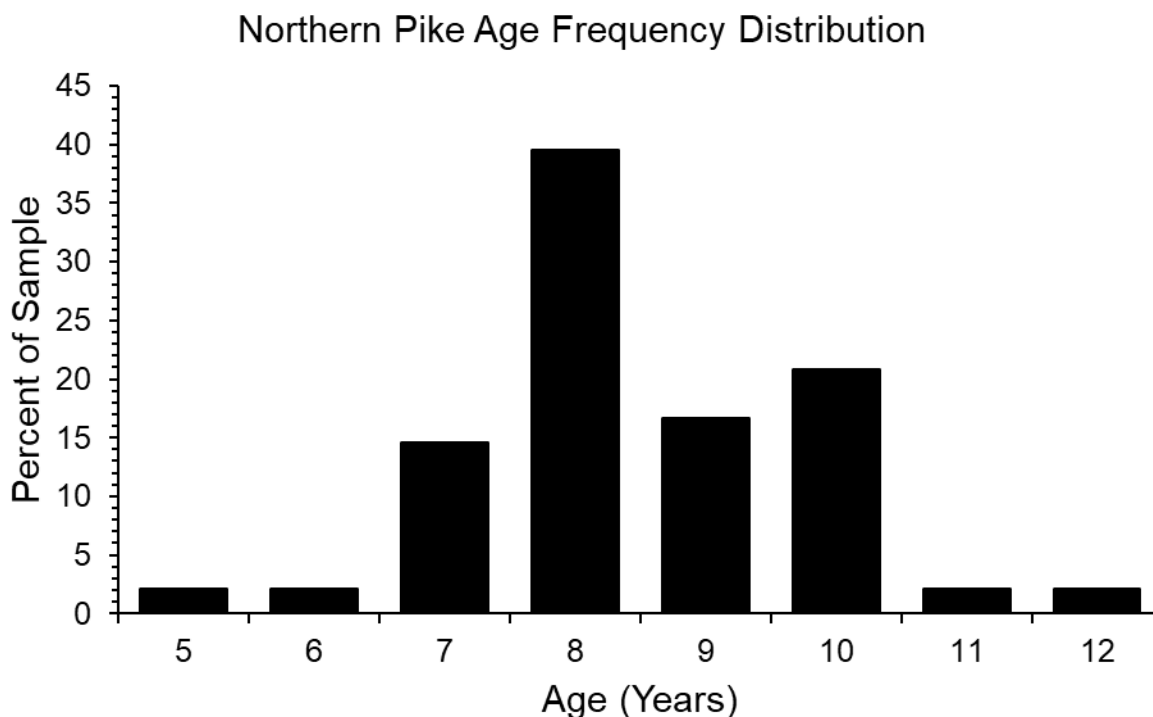


Figure 4. Age frequency distribution for northern pike captured in the spring 2025 fyke netting survey of Bullhead Lake.

Catch rates of northern pike in the spring 2025 fyke netting survey were high at 5.7 northern pike per net night (Table 3). This catch rate ranks out in the 82nd percentile for all lakes in Wisconsin and ranks out just below the 90th percentile for simple warm dark lakes (Table 3). Northern pike catch rates in the 2025 fyke netting survey were higher than catch rates in previous fyke netting surveys (Table 3). Despite high catch rates of northern pike with 143 encounters in fyke nets, only 48 unique individual northern pike were captured including just 2 female northern pike (Table 2). This means that the majority of the encounters were recaptures of the same northern pike (noted by the presence of a partial fin clip that is given on the first encounter with a northern pike) on multiple days and the population density may not be as high as catch rates indicate. A Schnabel mark recapture model estimated that there are currently 49 adult northern pike (range 38 – 68) in Bullhead Lake. The population estimate results in an estimated density of just 0.71 adult northern pike per acre, which is a low density for a predator like northern pike.

Size structure of northern pike in the 2025 fyke netting survey was high with a PSD of 100, an average size of 24.3 inches and northern pike as large as 28.9 inches being captured (Table 2; Figure 2). Since only two female northern pike were captured, only growth rates for male northern pike were calculated (Figure 3). Male northern pike in Bullhead Lake are growing very close to the statewide average, reaching about 23 inches long by age 5 and reaching an average maximum size of 26 – 27 inches (Figure 3). Given that male northern pike are only growing near the statewide average, the large size structure is likely a direct result of the age structure

of the population with all northern pike sampled being 5+ years old and the majority of the northern pike captured being 7+ years old (Figure 4). The lack of young northern pike in the population is concerning given northern pike only live to be 10 - 12 years old in most waters.

Walleye

Walleye spawn in shallow areas with rocky substrates typically dominated by cobble and gravel when water temperatures are 40 - 50°F. Fyke netting is the preferred gear for sampling walleye. All results presented for walleye are from spring fyke netting surveys.

Table 5. Size structure metrics for walleye captured in the 2025 fyke netting survey of Bullhead Lake.

2025 Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	2025 Statewide Percentile Rank	2025 Size Rating
5	15.8	13.3 – 23.6	10 and 15	5	1	20	10th	Low

Table 6. Relative abundance (CPUE) trends for walleye captured in fyke netting surveys of Bullhead Lake.

2025 Total Number Captured	1999	2017	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
5	0.7	0.1	0.2	0.2	10th	Low

Table 7. Size structure (proportional stock density [PSD]) trends for walleye captured in fyke netting surveys of Bullhead Lake.

1999	2017	2025	Historical Median
59	100	20	59

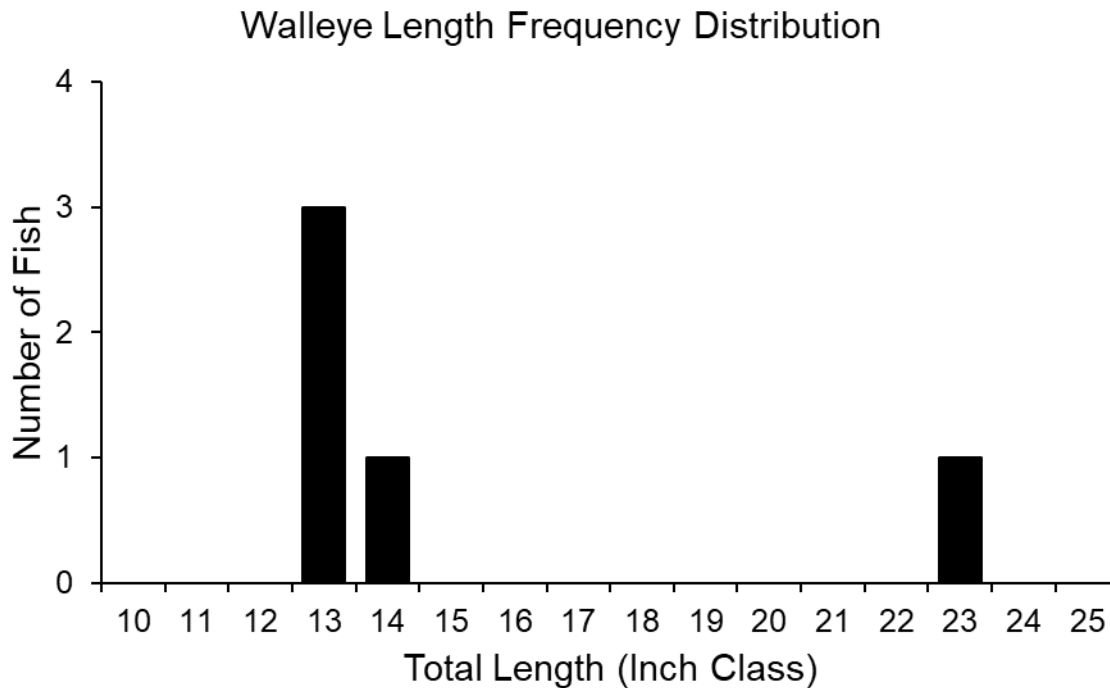


Figure 5. Length frequency distribution depicting the number of walleye captured in one inch size intervals in the 2025 fyke netting survey of Bullhead Lake.

Catch rates of walleye in the spring 2025 fyke netting survey were low at just 0.2 walleye per net night (Table 6). This catch rates ranks out in the 10th percentile for all lakes in Wisconsin and ranks out just above the first quartile for simple warm dark lakes (Table 6). Catch rates of walleye in the 2025 fyke netting survey were similar to catch rates in the 1999 and 2017 fyke netting surveys (Table 6). It should be noted that in 2025, fyke nets were pulled when water temperatures were only 40 degrees so the fyke nets may have been pulled too early in the spring when water temperatures were too cold to get a fully representative sample of the adult walleye population.

Size structure of walleye in the 2025 fyke netting survey was low with a PSD of just 20 and an average size of just 15.8 inches (Table 5; Figure 5). Walleye PSD in the 2025 fyke netting survey was much lower than walleye PSD in previous fyke netting surveys (Table 7). It is encouraging to see the number of small, immature walleye that were captured in the 2025 fyke netting survey. Historically, the DNR stocked only small fingerling walleyes into Bullhead Lake. Starting in 2023, the DNR switched to stocking large fingerling walleyes into Bullhead Lake. The four walleye between 13 – 15 inches that were captured were estimated to be age 2 from a dorsal fin spines that was collected from each of these walleye. These four walleye were likely from the 2023 stocking given the lack of documented natural reproduction of walleye in Bullhead Lake. It is still too early to tell if the switch to large fingerling walleyes will provide better survival and a better adult population of walleye because the 2023 stocked fish are still too small to adequately be sampled in the spring surveys. However, the abundance of walleye from this one stocking (i.e., 4 collected in 2025)

compared to the low abundance of walleye from several years of small fingerling stocking (i.e., only 1 sampled in 2025), provides some initial evidence that stocked large fingerling walleye may survive better than small fingerlings. Future monitoring will be necessary to determine if large fingerlings survive better and may improve the adult walleye population in Bullhead Lake.

Largemouth Bass

Largemouth bass typically spawn in nearshore areas with sand or gravel substrate when water temperatures are 60 - 70°F. Electrofishing is the preferred gear for sampling largemouth bass. All results presented for largemouth bass are from the spring electrofishing survey.

Table 8. Size structure metrics for largemouth bass captured in the 2025 electrofishing survey of Bullhead Lake.

2025 Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	2025 Statewide Percentile Rank	2025 Size Rating
272	10.4	4.9 – 16.7	8 and 12	208	103	50	35th	Low - Moderate

Table 9. Relative abundance of largemouth bass captured in the 2025 electrofishing survey of Bullhead Lake.

CPUE Total	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	2025 Statewide Length Index Percentile Rank	Length Index Abundance Rating
217.6	99th	Very High	≥14.0 inches	26.4	98th	Very High

Table 10. Relative abundance (CPUE) trends for largemouth bass captured in electrofishing surveys of Bullhead Lake.

2025 Total Number Captured	1998	1999	2011	2017	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
272	126.9	132.7	94.7	104.0	217.6	126.9	99th	Very High

Table 11. Size structure (proportional stock density [PSD]) trends for largemouth bass captured in electrofishing surveys of Bullhead Lake.

1998	1999	2011	2017	2025	Historical Median
24	19	67	65	50	50

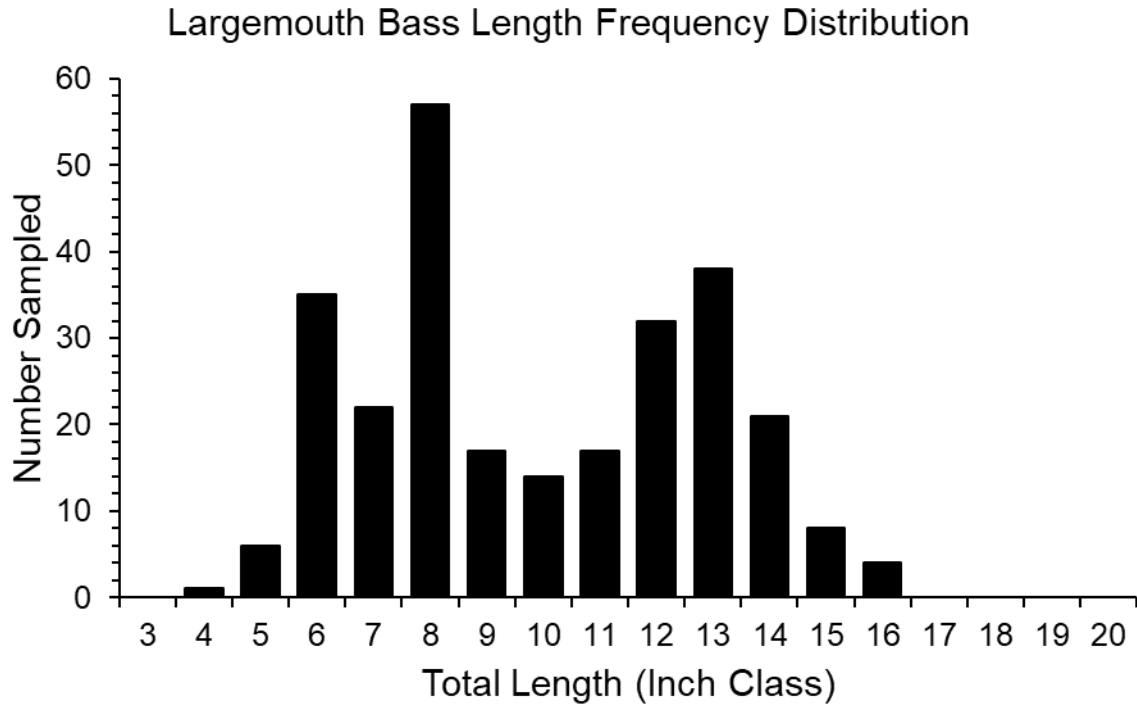


Figure 6. Length frequency distribution depicting the number of largemouth bass captured in one inch size intervals in the 2025 electrofishing survey of Bullhead Lake.

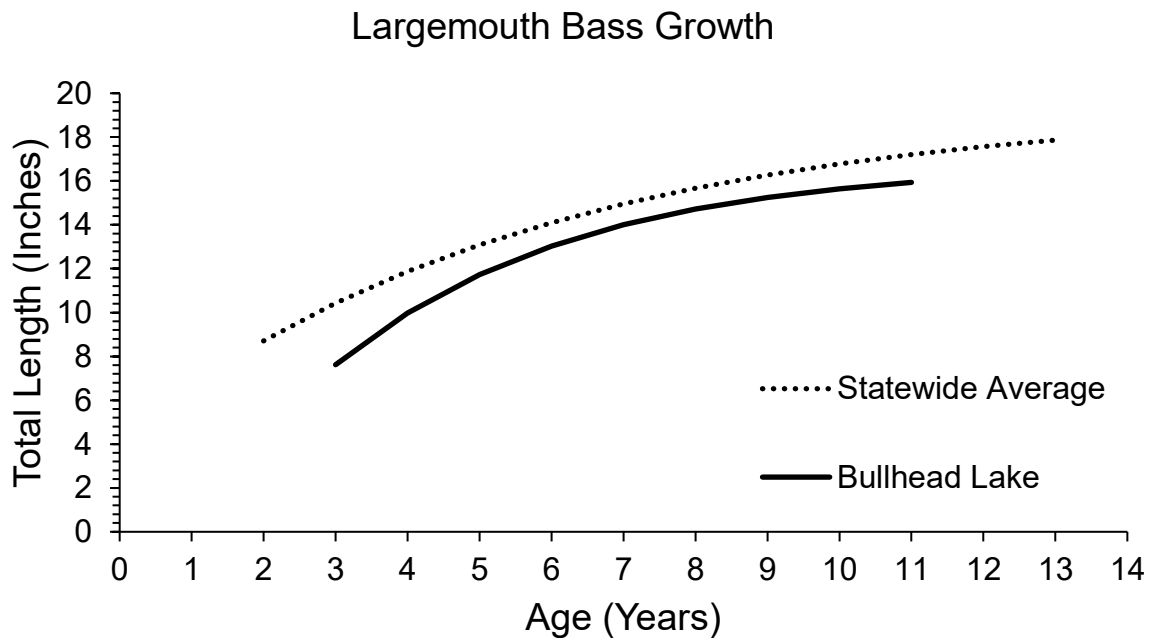


Figure 7. Predicted length at age (solid line) for largemouth bass captured in the 2025 electrofishing survey of Bullhead Lake. Dashed lines represent the statewide average lengths at age for largemouth bass.

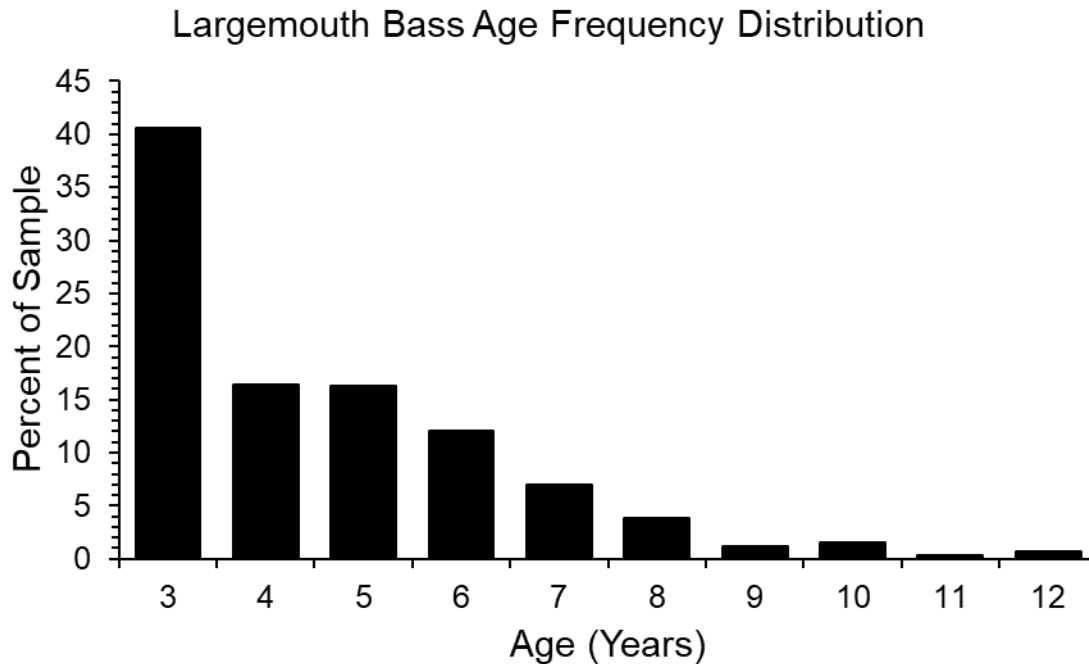


Figure 8. Age frequency distribution for largemouth bass captured in the spring 2025 electrofishing survey of Bullhead Lake.

Catch rates of largemouth bass in the spring 2025 electrofishing survey were very high at 217.6 largemouth bass per mile of shoreline (Table 9; Table 10). This catch rates ranks out in the 99th percentile for all lakes in Wisconsin and ranks out at the 100th percentile for simple warm dark lakes (Table 9; Table 10). Even though Bullhead Lake has a long history of having very high catch rates of largemouth bass in electrofishing surveys, catch rates of largemouth bass in the 2025 electrofishing survey were nearly double the catch rates observed in historical electrofishing surveys (Table 10). The increase in catch rates could be driven by really strong year classes of largemouth bass in recent years as the vast majority of the largemouth bass captured were estimated to be ≤ 5 years old (Figure 8).

Size structure of largemouth bass was low - moderate in the 2025 electrofishing survey with the average size largemouth bass captured in 2025 being just 10.4 inches and largemouth bass having a PSD of 50 (Table 8; Figure 6). A largemouth bass PSD of 50 ranks out in the 35th percentile for all lakes in Wisconsin and the PSD of largemouth bass in 2025 was the median PSD in all historical electrofishing surveys completed in Bullhead Lake (Table 8; Table 11). Largemouth bass in Bullhead Lake are growing much slower than the statewide average growth rates for largemouth bass (Figure 7).

Bluegill

Bluegill typically spawn in nearshore areas with sand or gravel substrate when water temperatures are 67 - 80°F. Electrofishing is the preferred gear for sampling bluegill. All results presented for bluegill are from the spring electrofishing survey.

Table 12. Size structure metrics for bluegill captured in the 2025 fyke netting and electrofishing surveys of Bullhead Lake.

2025 Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	2025 Statewide Percentile Rank	2025 Size Rating
66	4.8	2.3 – 9.1	3 and 6	58	13	22	32nd	Low - Moderate

Table 13. Relative abundance of bluegill captured in the 2025 electrofishing survey of Bullhead Lake.

CPUE Total	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	2025 Statewide Length Index Percentile Rank	Length Index Abundance Rating
52.8	37th	Low - Moderate	≥7.0 inches	6.4	52nd	Moderate

Table 14. Relative abundance (CPUE) trends for bluegill captured in electrofishing surveys of Bullhead Lake.

2025 Total Number Captured	1998	1999	2011	2017	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
66	51.5	72.0	17.6	37.6	52.8	51.5	37th	Low - Moderate

Table 15. Size structure (proportional stock density [PSD]) trends for bluegill captured in electrofishing surveys of Bullhead Lake.

1998	1999	2011	2017	2025	Historical Median
14	29	40	57	22	29

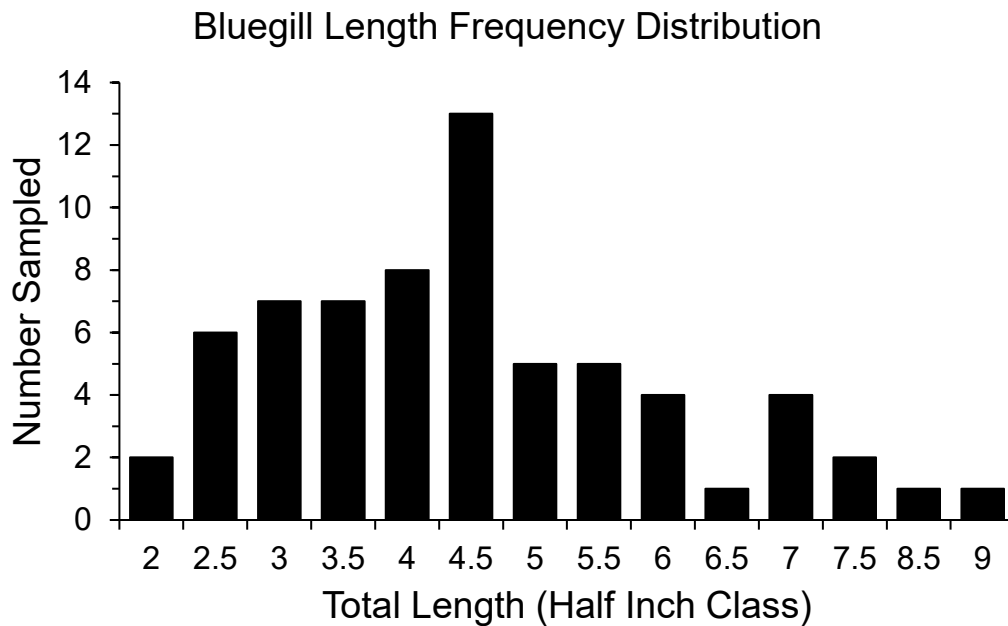


Figure 9. Length frequency distribution depicting the number of bluegill captured in half inch size intervals in the 2025 electrofishing survey of Bullhead Lake.

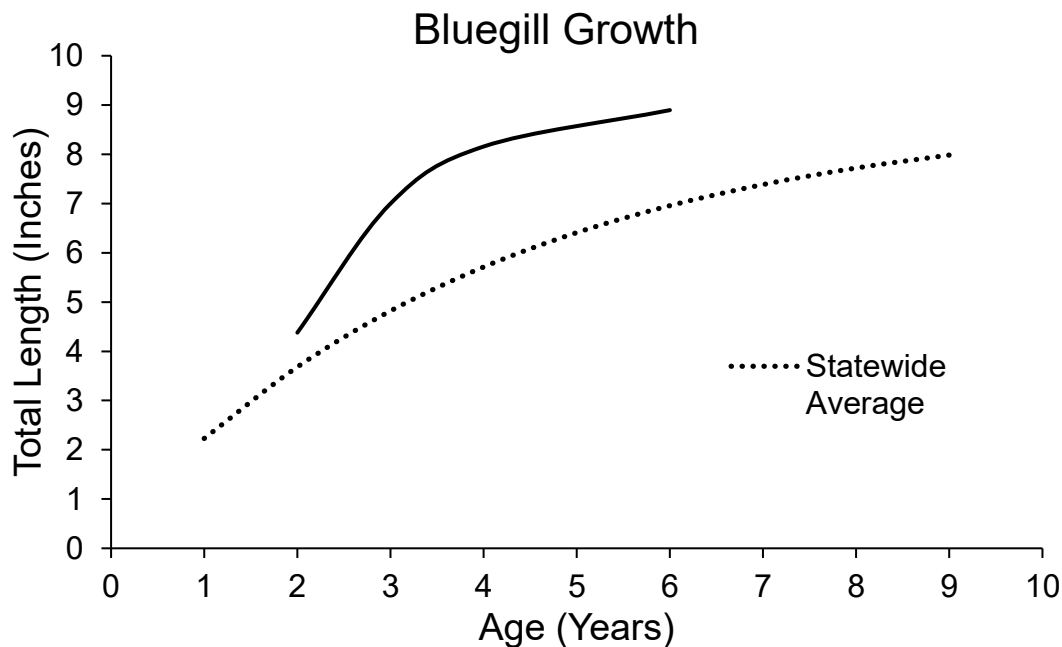


Figure 10. Predicted length at age (solid line) for bluegill captured in the 2025 electrofishing survey of Bullhead Lake. Dashed lines represent the statewide average lengths at age for bluegill.

Both catch rates and size structure of bluegill were low – moderate in the 2025 electrofishing survey of Bullhead Lake. Catch rates of bluegill in the electrofishing

survey were 52.8 bluegill per mile of electrofishing, which ranks out in the 37th percentile for all lakes in Wisconsin and ranks in between the first quartile and median for simple warm dark lakes (Table 13). Catch rates of bluegill in the 2025 electrofishing survey were the median catch rate for historical electrofishing surveys of Bullhead Lake (Table 14). The average size bluegill captured in the 2025 electrofishing survey was just 4.8 inches with bluegill PSD being 22, which ranks out in the 32nd percentile for lakes in Wisconsin (Table 12; Figure 9). Despite a low average size and PSD, bluegill are growing very fast in Bullhead Lake, reaching 7 inches long by age 3 and 8 inches long by age 4 with bluegill as large as 9.1 inches being captured in the 2025 electrofishing survey (Figure 9; Figure 10). The smaller average size and PSD in a population with very fast growth rates indicates a population dominated by younger bluegill. In the previous two electrofishing surveys, bluegill PSDs were more indicative of a balanced population with PSDs ranging from 40 – 57 in 2011 and 2017 (Table 15).

Black Crappie

Black crappie typically spawn in nearshore areas with sand or gravel substrate, often near emergent vegetation when water temperatures are 58 - 68°F. Fyke netting is the preferred gear for sampling black crappie. All results presented for black crappie are from the spring fyke netting survey.

Table 16. Relative abundance (CPUE) trends for black crappie captured in fyke netting surveys of Bullhead Lake.

2025 Total Number Captured	1999	2017	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
1	0.8	2.2	0.04	0.8	3rd	Very Low

Table 17. Size structure (proportional stock density [PSD]) trends for black crappie captured in fyke netting surveys of Bullhead Lake.

1999	2017	2025	Historical Median
29	62	NA	46

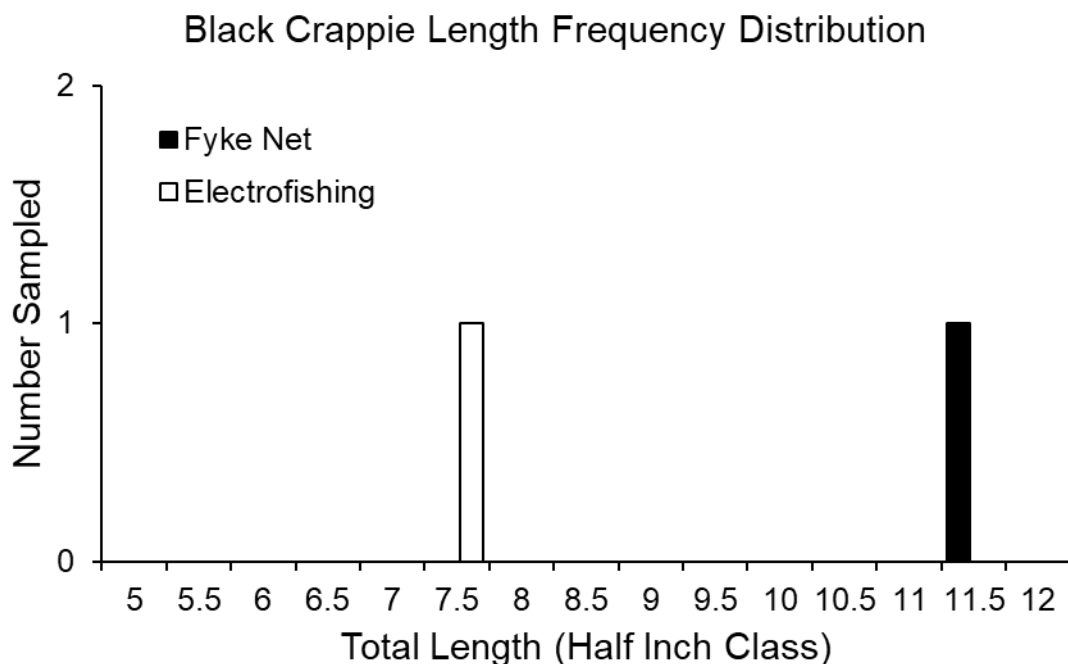


Figure 11. Length frequency distribution depicting the number of black crappie captured in half inch size intervals in the 2025 fyke netting survey (black bars) and electrofishing survey (white bars) of Bullhead Lake.

Catch rates of black crappie in the spring 2025 fyke netting survey were very low at just 0.04 black crappie per net night (Table 16). This catch rates ranks out in the 3rd percentile for all lakes in Wisconsin and ranks out in the 1st percentile for simple warm dark lakes (Table 16). Catch rates of black crappie in the 2025 fyke netting survey were much lower than in the 1999 or 2017 fyke netting surveys (Table 16). Given that only one black crappie was captured in the 2025 fyke netting survey, it is difficult to gauge size structure of the crappie population. It should be noted that the one black crappie that was captured in the 2025 fyke netting survey was large at 11.6 inches long, indicating that crappies have the potential to reach large sizes in Bullhead Lake (Figure 11). It should also be noted that one smaller black crappie that was approximately 7.5 inches long and likely from a younger year class was captured in the 2025 electrofishing survey of Bullhead Lake (Figure 11). Not only were black crappies more abundant in previous surveys of Bullhead Lake, they also showed a more balanced fishery with PSDs ranging from 29 – 62 in previous fyke netting surveys (Table 17).

Yellow Perch

Yellow perch typically spawn in nearshore areas with abundant vegetation or coarse woody habitat when water temperatures are 45 - 50°F. Fyke netting is the preferred gear for sampling yellow perch. All results presented for yellow perch are from the spring fyke netting survey.

Table 18. Relative abundance (CPUE) trends for yellow perch captured in fyke netting surveys of Bullhead Lake.

2025 Total Number Captured	1999	2017	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
1	0.25	1.1	0.04	0.25	4th	Very Low

Table 19. Size structure (proportional stock density [PSD]) trends for yellow perch captured in fyke netting surveys of Bullhead Lake.

1999	2017	2025	Historical Median
29	13	NA	21

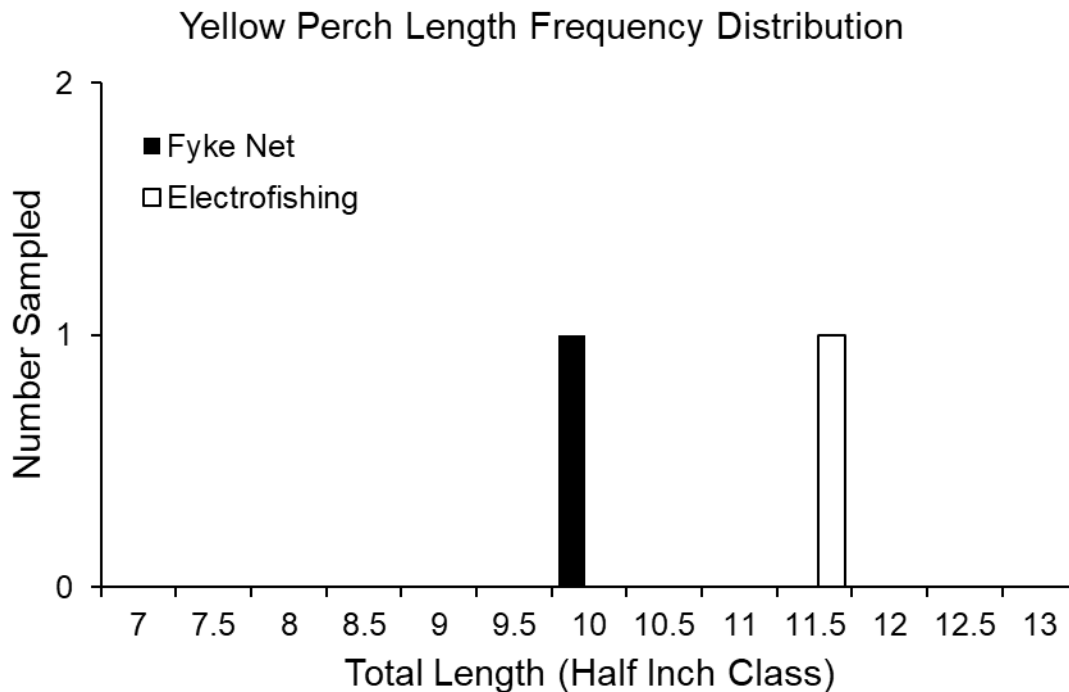


Figure 12. Length frequency distribution depicting the number of yellow perch captured in half inch size intervals in the 2025 fyke netting survey (black bars) and electrofishing survey (white bars) of Bullhead Lake.

Similar to black crappie, catch rates of yellow perch in the spring 2025 fyke netting survey were very low at just 0.04 yellow perch net night (Table 18). This catch rates ranks out in the 4th percentile for all lakes in Wisconsin and ranks out between the 5th and 10th percentile for simple warm dark lakes (Table 18). Catch rates of yellow perch in the 2025 fyke netting survey were lower than catch rates in the previous two fyke netting surveys of Bullhead Lake (Table 18). Given that only one yellow perch was captured in the 2025 fyke netting survey, it is difficult to gauge size structure of the perch population. It should be noted that the one yellow perch that was captured in the 2025 fyke netting survey was large at 10.2 inches long, indicating that perch have the potential to reach large sizes in Bullhead Lake (Figure 12). It should also be noted that one larger yellow perch that was nearly 12 inches long was captured in the 2025 electrofishing survey of Bullhead Lake (Figure 12). Size structure of yellow perch in historical fyke netting surveys of Bullhead Lake was much lower with PSDs of 29 and 13 in the 1999 and 2017 fyke netting surveys, respectively, indicating yellow perch populations in these years were dominated by smaller individuals (Table 19).

Discussion

Despite high catch rates of northern pike in the 2025 fyke netting survey of Bullhead Lake, the majority of the captures were recaptures of previously handled northern pike, only 48 unique northern pike were captured and a Schnabel mark-recapture model estimated that there are just 50 adult northern pike in Bullhead Lake. Furthermore, the age and size structure showed a northern pike population comprised of primarily older, larger individuals. No northern pike < age 5 or <21 inches long were captured. It's possible that predation pressure from the very high-density largemouth bass population or declines in spawning and nursery habitat could be limiting northern pike recruitment in Bullhead Lake. The northern pike population should be monitored closely in future surveys to ensure there is adequate natural reproduction in some years to sustain the population.

Bullhead Lake continues to support a low-density adult walleye fishery that is sustained through stocking as only one walleye >15 inches was captured in the 2025 fyke netting survey of Bullhead Lake. Historically, the DNR only stocked small fingerling walleye into Bullhead Lake. Starting in 2023, the DNR switched to stocking large fingerling walleye into Bullhead Lake with the hope that large fingerling walleye would survive better than small fingerlings and create a higher density adult population (Table 22). It is encouraging that four walleye from the 2023 stocking were already captured in the 2025 fyke netting survey before they were mature. This provides evidence that the large fingerlings may survive much better than the small fingerlings and a higher number of adults may recruit to the fishery in the future as walleye from future large fingerling stockings grow to fishable sizes.

Bullhead Lake supports a very high-density largemouth bass population that is showing significant signs of density dependent stunting as shown by the below average growth rates and poor size structure of the population. Given the declines observed in other species in the lake, it is possible that largemouth bass predation is limiting populations of other gamefish and panfish. The largemouth bass minimum length limit should be removed to allow for harvest of smaller largemouth bass. A reduction in largemouth bass densities will hopefully improve growth rates and the quality of the largemouth bass population as well as reduce predation pressure on other species in the Bullhead Lake.

Bullhead Lake supports a low density, quality bluegill population that is growing very fast with bluegill growing to 9+ inches long. Intense predation from largemouth bass is likely contributing to the low density of the bluegill population. Angler harvest may be driving the lack of larger bluegill in the population. A new panfish regulation with a 10 aggregate bag limit for all panfish species combined was implemented on April 1, 2026. This new regulation will hopefully reduce some angler harvest, resulting in more, larger bluegill in the fishery in the future.

Only two black crappie and two yellow perch were captured in 2025 surveys of Bullhead Lake. Catch rates of these two species were much lower than in previous surveys. One possible explanation for the lower catch rates of these two species was the very early spring and low temperatures during the fyke netting survey as fyke nets were pulled before water temperatures exceeded 40°F. Both yellow perch and

black crappie spawn at warmer temperatures so they may not have moved into the shallower areas of the lake by the time the fyke nets were pulled. A second possible explanation is that the very-high density largemouth bass population could be exerting significant predation pressure on these two species resulting in declines in their populations. Future surveys should monitor these populations to ensure adequate numbers of individuals persist in these populations to sustain a fishery.

Recommendations

1. Continue to monitor the density and age structure of the northern pike population. The lack of young, small northern pike in the sample is concerning and indicative of declining spawning and nursery habitat or potential excessive predation of small northern pike by the overabundant bass population.
2. Continue to evaluate walleye stocking to ensure stocking results in a fishable population of walleye in Bullhead Lake. Future comprehensive surveys should include more targeted fyke netting effort a little later in the spring when water temperatures are above 40°F and walleye are more likely to move shallow to spawn. This will ensure significant netting effort takes place at optimal walleye spawning temperatures to fully evaluate stocking.
3. Remove the 14 inch minimum length limit for largemouth bass to allow for harvest of smaller largemouth bass to reduce the density of the bass population. Given the poor growth rates of largemouth bass in Bullhead Lake, this regulation can be changed using a bag limit exemption laid out in NR 20.35 and does not need to go through the spring hearings process. Following the process laid out in NR 20.35 would allow the regulation to go into effect at an earlier date.
4. A new panfish regulation with a total aggregate bag limit of 10 panfish will go into effect on April 1, 2026. The goal of this regulation is to protect panfish from overharvest and improve the size structure of the panfish population, particularly bluegill.
5. Conduct another comprehensive fish survey of Bullhead Lake in the next 5 years to monitor populations of fish species that were captured in very low numbers in the 2025 survey.
6. Consider adding wood along the shoreline to provide additional habitat for a variety of fish species in Bullhead Lake.
7. Consider deploying a year-round remote creel kiosk at the boat landing to better gauge angler catch and harvest, particularly for species in which data was lacking from the comprehensive fish survey such as black crappie and yellow perch or species in which additional information is wanted such as information on catch rate and size structure of angler catches of northern pike. Data from a remote creel could provide additional insight on the status of these populations.

Table 20. Stocking history of Bullhead Lake, Manitowoc County from 2000 – 2025.

Species	Year	Age Class	Mean Length (Inches)	Number Stocked
WALLEYE	2025	Large Fingerling	7.7	346
YELLOW PERCH	2025	Yearling	7.0	300
WALLEYE	2023	Large Fingerling	8.0	348
YELLOW PERCH	2022	Yearling	7.5	465
WALLEYE	2019	Small Fingerling	1.8	4,633
WALLEYE	2017	Small Fingerling	1.7	2,432
WALLEYE	2015	Small Fingerling	1.7	1,504
YELLOW PERCH	2015	Adult	8.0	500
WALLEYE	2013	Small Fingerling	2.0	2,340
YELLOW PERCH	2013	Yearling	5.0	1,200
WALLEYE	2012	Yearling	6.0	397
WALLEYE	2011	Small Fingerling	1.9	2,570
YELLOW PERCH	2011	Yearling	6.0	1,100
YELLOW PERCH	2010	Yearling	6.0	850
WALLEYE	2009	Small Fingerling	1.8	2,245
YELLOW PERCH	2009	Yearling	6.0	500
YELLOW PERCH	2008	Large Fingerling	6.0	541
YELLOW PERCH	2008	Small Fingerling	3.0	500
YELLOW PERCH	2006	Large Fingerling	5.0	1,000
WALLEYE	2005	Small Fingerling	1.4	3,335
YELLOW PERCH	2005	Large Fingerling	5.0	1,000
FATHEAD MINNOW	2005	Adult	3.0	40,000
YELLOW PERCH	2004	Large Fingerling	5.0	500
FATHEAD MINNOW	2004	Adult	3.0	200,000
WALLEYE	2003	Small Fingerling	1.5	6,695
YELLOW PERCH	2002	Adult	6.0	600
WALLEYE	2001	Small Fingerling	1.6	6,700