WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2024 Comprehensive Summary Report
Pigeon Lake, Manitowoc County

WBIC: 64000

Introduction And Objectives

In 2024, the Wisconsin Department of Natural Resources (DNR) conducted a comprehensive fish survey of Pigeon Lake in order 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 Pigeon Lake.

DNR Contact
Jason Breeggemann
Senior Fisheries Biologist
2984 Shawano Ave
Green Bay, WI 54313
Phone: 920-420-4619
Email:
jason.breeggemann@wisconsin.gov

Lake Information
Lake Type: Seepage
Acres: 77
Max Depth: 67 feet
Mean Depth: 20 feet
Shoreline Miles: 1.6
Public Access: 1 Public Boat Launch
Lake Class: Complex Cool Clear

Regulations
Statewide regulations, except 25 panfish in total may be kept, but no more than 10 of any one species.

SURVEY INFORMATION

Site Location	Survey Dates	Water Temperature (°F)	Target Species	Gear	Number of Nets	Effort
Pigeon Lake	3/5/2024 - 3/17/2024	38 - 42	Northern Pike/ Walleye	Fyke Net	5	60 net nights
Pigeon Lake	5/23/2024	67	Bass/Panfish	Boomshocker	NA	0.7 miles

Survey Method

- Pigeon 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., otoliths, fin rays) were collected from a subsample of northern pike and bluegill for age and growth analyses.
- Spring electrofishing took place in late spring when water temperatures reached 60-70ºF when largemouth bass and panfish moved shallow to spawn. All species encountered were collected and enumerated and all gamefish and panfish species were measured for length. Fin spines were removed from a subsample of largemouth bass for age and growth analyses.

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 by the number and size of fish per net night. For electrofishing, we quantify CPUE as the number and size of fish 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.
- **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.
- **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 age at length is an index used to assess fish growth.** Calcified structures (e.g., otoliths, spines or fin rays) are collected from a specified length bin of interest (e.g., 7.0 - 7.5 inches for bluegill). Mean age is compared to statewide data by percentile with growth characterized by the following benchmarks: slow (<33rd percentile); moderate (33rd to 66th percentile); and fast (>66th percentile).
- **Mean Length at Age is another 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.

Figure 1. Northern pike captured in DNR survey of Pigeon Lake. Photo credit DNR.

Northern Pike

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

2024 SIZE STRUCTURE METRICS

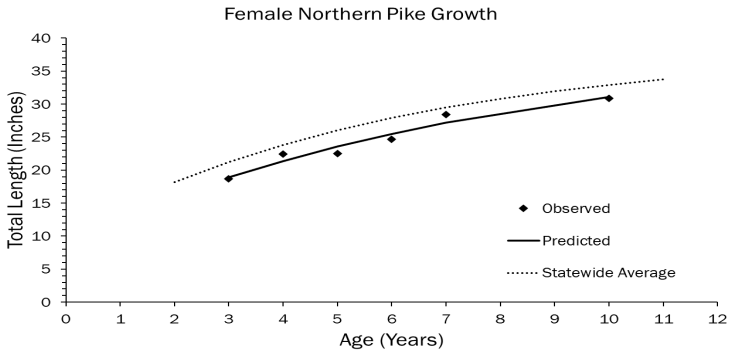
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
22	22.2	14.6 - 30.9	14 and 21	24	14	58	69th	High

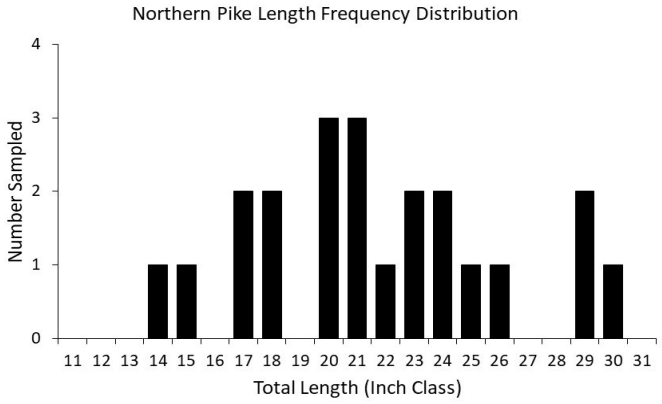
RELATIVE ABUNDANCE (CPUE = NUMBER PER NET NIGHT)

2024 Total Sampled	2014	2024	Historical Median	2024 Statewide Percentile Rank	2024 Abundance Rating
24	0.5	0.4	0.45	16th	Low

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2014	2024	
52	58	55





Species Summary

- Catch rates of northern pike were low during the 2024 survey with a CPUE of 0.4 fish/net night. This catch rate ranks in the 16th percentile when compared to lakes statewide and the 25th percentile when compared to complex cool clear lakes. Catch rates of northern pike in 2024 were nearly identical to catch rates from the 2014 survey when catch rates were 0.5 pike/net night.
- Size structure of northern pike was moderate - high, with a PSD of 58. This ranks in the 69th percentile for lakes across the state. The size structure increased slightly from the 2014 survey, which had a PSD of 52.
- Almost all of the northern pike that were captured were female (i.e., 18), with only one male and three immature northern pike also being captured.
- Given that only one male northern pike was captured, only female pike were included in the growth analysis. Growth rates for female northern pike in Pigeon Lake are below the statewide average.

Walleye

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

2024 SIZE STRUCTURE METRICS

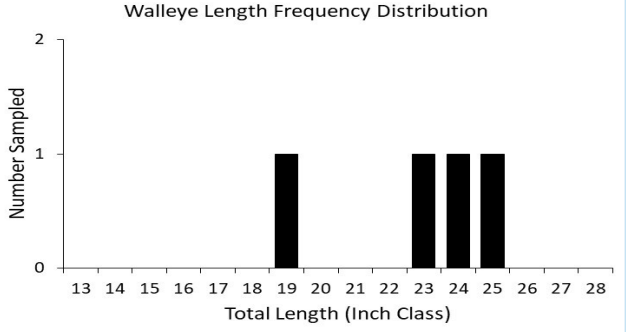
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
4	23.2	19.5 - 25.2	10 and 15	4	4	100	100th	High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2014	2024	
93	100	97

RELATIVE ABUNDANCE (CPUE = NUMBER PER NET NIGHT)

2024 Total Sampled	2014	2024	Historical Median	2024 Statewide Percentile Rank	2024 Abundance Rating
5	0.91	0.08	0.5	5th	Low



Species Summary

- Catch rates of walleye were very low in 2024 at 0.08 walleye/net night. A catch rate 0f 0.08 walleye/net night ranks out in the 5th percentile for lakes in Wisconsin and the 1st percentile for complex cool clear lakes. The catch rate of walleye in 2024 was lower than the catch rate from the 2014 fyke netting survey, which had a catch rate of 0.91 walleye/net night.
- The size structure of walleye captured in 2024 was very high, with a PSD of 100. Size structure has increased slightly in 2024 compared to 2014, when walleye PSD was 93. The lack of smaller and adult walleye in the 2024 survey likely indicates poor survival of stocked walleye.

Figure 2. Walleye captured in DNR fyke netting survey. Photo credit DNR.

Largemouth Bass

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

2024 SIZE STRUCTURE METRICS

Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
24	11.5	7.1-15.2	8 and 12	22	10	46	29th	Low - Moderate

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2014	2024	
82	46	64

2024 RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

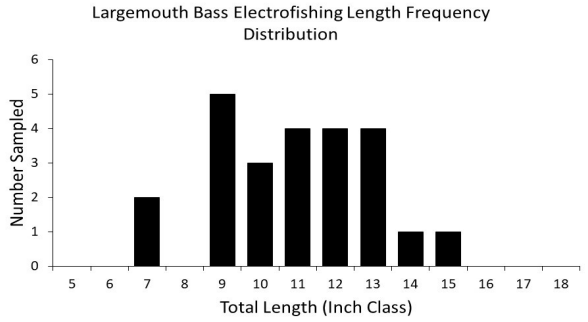
CPUE Total	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	Length Index Percentile Rank	Length Index Abundance Rating
34.3	76th	Moderate - High	≥ 14.0 inches	2.9	50th	Moderate

ELECTROFISHING CPUE (NUMBER PER MILE) TRENDS

2024 Total Sampled	2014	2024	Historical Median	2024 Statewide Percentile Rank	2024 Abundance Rating
24	47.8	34.3	41.1	76th	Moderate - High

LARGEMOUTH BASS GROWTH METRICS

Total Number	Length Bin	Mean	Age Range	Percentile	Growth Rating
4	12.0-12.9	5.25	5 - 6	36th	Slow - Moderate



Species Summary

- Catch rates of largemouth bass in 2024 were moderate - high at 34.3 bass/mile of electrofishing. This catch rate ranks out in the 76th percentile compared to lakes statewide and the 91st percentile for complex cool clear lakes. Catch rates of largemouth bass in 2024 were lower than catch rates in 2014 when catch rates were 47.8 bass/mile of electrofishing.
- Size structure of largemouth bass in 2024 was low - moderate with a PSD of 46. This PSD ranks in the 29th percentile when compared to lakes in Wisconsin. Additionally, the mean age of largemouth bass that were 12.0 - 12.9 inches long was 5.25, indicating slow - moderate growth among bass in Pigeon Lake.
- It should be noted that 11 largemouth bass between 13.9 - 19.9 inches long (mean length = 17.2 inches) were captured in the 2024 spring fyke netting survey indicating largemouth bass do have the potential to reach larger sizes than what was observed in the spring electrofishing survey.

Black Crappie

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

2024 SIZE STRUCTURE METRICS

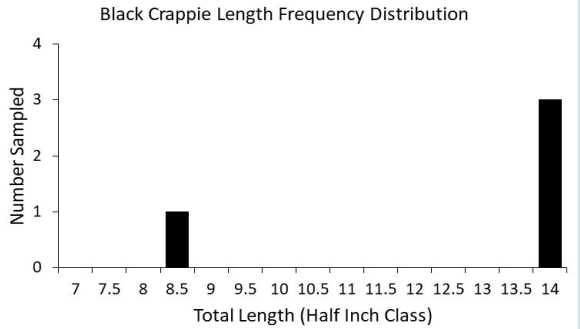
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
4	12.9	8.7 - 14.5	3 and 6	4	4	100	100	Very High

RELATIVE ABUNDANCE (CPUE = NUMBER PER NET NIGHT)

2024 Total Sampled	2014	2024	Historical Median	2024 Statewide Percentile Rank	2024 Abundance Rating
4	0.2	0.1	0.125	8th	Low

FYKE NETTING SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2014	2024	
70	100	85



Species Summary

- Catch rates of black crappie in 2024 were low at just 0.1 crappies/net night. This catch rate ranks out in the 8th percentile compared to lakes statewide and the 5th percentile for complex cool clear lakes. Catch rates of black crappie in 2024 were similar to catch rates from the 2014 survey when catch rates were 0.2 crappies/net night.
- Despite crappies being found in low densities, they can grow to large sizes in Pigeon lake as the average size crappie that was captured was 12.9 inches and three crappies ≥14 inches were captured. Results from the 2014 survey also showed that crappies can grow to larger sizes in Pigeon Lake as the PSD from the 2014 survey was 70.

Figure 3. Black crappie captured in DNR fyke netting survey of Pigeon Lake. Photo credit DNR.

Bluegill

- Bluegill typically spawn in nearshore areas with sand or gravel substrate when water temperatures are 67 - 80ºF. Electrofishing is the preferred gear for sampling bluegill, but fyke nets can also be a useful gear for sampling bluegill, especially larger bluegill. Therefore, results from both electrofishing and fyke netting will be presented for bluegill.

2024 SIZE STRUCTURE METRICS

Gear	Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
Fyke Netting	66	6.6	4.0-8.6	3 and 6	66	39	59	51st	Moderate
Electrofishing	80	4.6	2.9-8.2	3 and 6	79	7	9	11th	Low

FYKE NETTING CPUE (NUMBER PER NET NIGHT) TRENDS

2024 Total Sampled	2014	2024	Historical Median	2024 Statewide Percentile Rank	2024 Abundance Rating
66	3.9	1.1	2.5	21st	Low

ELECTROFISHING CPUE (NUMBER PER MILE) TRENDS

2024 Total Sampled	2014	2024	Historical Median	2024 Statewide Percentile Rank	2024 Abundance Rating
80	85.5	114.3	99.9	60th	Moderate

2024 ELECTROFISHING CPUE (NUMBER PER MILE)

CPUE Total	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	Length Index Percentile Rank	Length Index Abundance Rating
114.3	60th	Moderate	≥ 7.0 inches	5.7	48th	Moderate

FYKE NETTING SIZE STRUCTURE (PSD) TRENDS

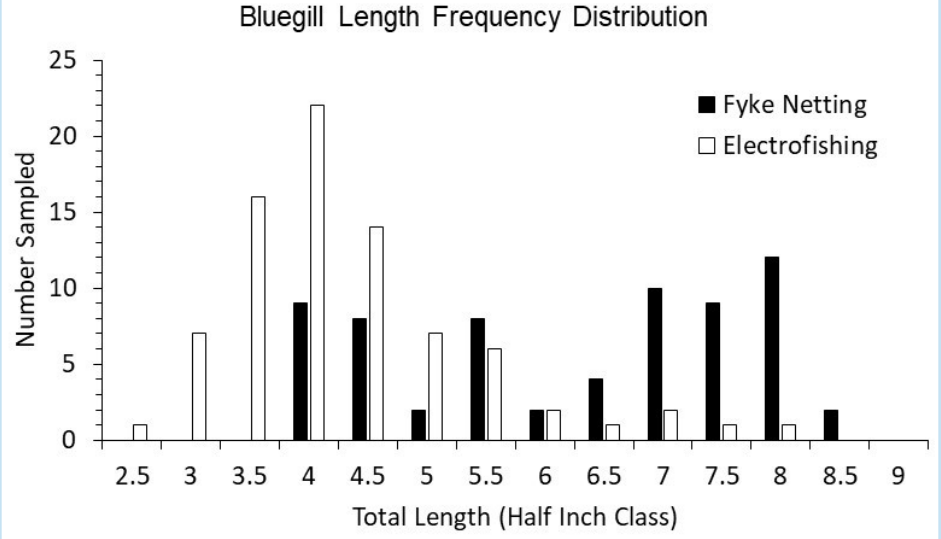
PSD by Year		Historical Median
2014	2024	
45	59	52

ELECTROFISHING SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2014	2024	
16	9	12.5

2024 BLUEGILL GROWTH METRICS

Total Number Sampled	Length Bin (inches)	Mean Age	Age Range	Percentile Rank	Growth Rating
7	6.0 - 6.9	5.2	4 - 7	38th	Slow - Moderate



Species Summary

- Catch rates of bluegill in the spring 2024 electrofishing were moderate, whereas, size structure was low in this survey. Catch rates of bluegill in the electrofishing survey were 114.3 bluegill/mile of electrofishing, which ranks out in the 60th percentile for all lakes in Wisconsin and the 60th percentile for complex cool clear lakes. Bluegill PSD in the 2024 electrofishing survey was just 9. Despite a small decline in bluegill PSD in the 2024 electrofishing survey compared to the 2014 survey, it should be noted that the maximum size of bluegill captured in the 2014 electrofishing survey was just 7.1 inches compared to 8.2 inches in the 2024 electrofishing survey. Also, four bluegill ≥7 inches were captured in the 2024 electrofishing survey compared to just one in the 2014 electrofishing survey. Furthermore, the catch rate of bluegill ≥7.0 inches in the 2024 electrofishing survey was 5.7 per mile of electrofishing, which ranks out in the 48th percentile for lakes in Wisconsin.
- Catch rates of bluegill in the 2024 fyke netting survey were low at just 1.1 bluegill/ net night, which ranks out in the 21st percentile for lakes in Wisconsin. Catch rates in the 2024 fyke netting survey were only about 30% of the catch rates observed in the 2014 fyke netting survey. Bluegill size structure in the 2024 fyke netting survey was moderate with a PSD of 59, which ranks out in the 51st percentile for lakes in Wisconsin.
- Bluegill growth in 2024 was slow - moderate with it taking bluegill an average of 5.2 years to reach 6.0 - 6.9 inches.

Figure 4. Bluegill captured in a DNR survey. Photo credit DNR.

Figure 5. Bluegill captured in a DNR survey. Photo credit DNR.

Yellow Perch

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

2024 SIZE STRUCTURE METRICS

Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
46	8.7	6.3-11.8	5 and 8	46	30	65	91st	High

RELATIVE ABUNDANCE (CPUE = NUMBER PER NET NIGHT)

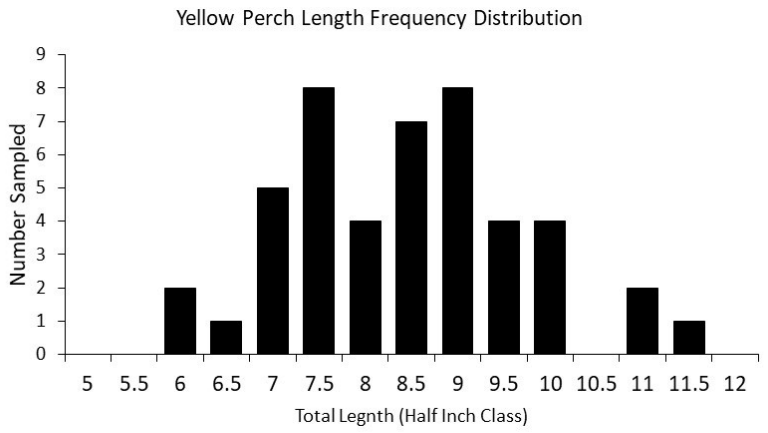
2024 Total Sampled	2014	2024	Historical Median	2024 Statewide Percentile Rank	2024 Abundance Rating
46	2.6	0.8	1.7	34th	Low - Moderate

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2014	2024	
23	65	44

Species Summary

- Catch rates of yellow perch in 2024 were low - moderate at 0.8 perch/net night. This catch rate ranks out in the 34th percentile compared to lakes statewide and the 20th percentile for complex cool clear lakes. Catch rates of yellow perch in 2024 declined compared to catch rates from the 2014 survey when catch rates were 2.6 perch/ net night.
- Results from the 2024 survey indicated that yellow perch size structure was high with a PSD of 65, which ranks out in the 91st percentile for lakes in Wisconsin. Yellow perch PSD increased significantly compared to the 2014 survey when the PSD was just 23. Furthermore, the maximum size of yellow perch captured in the 2014 fyke netting survey was 10.3 inches compared to 11.8 inches in the 2024 fyke netting survey. Only two yellow perch ≥10 inches were captured in the 2014 fyke netting survey compared to seven in the 2024 fyke netting survey.



Rock Bass

- Rock bass typically spawn in nearshore areas with sand or gravel substrates when water temperatures are 55 - 60ºF. Fyke netting is the preferred gear for sampling rock bass. All results presented for rock bass are from the spring fyke netting survey.

2024 SIZE STRUCTURE METRICS

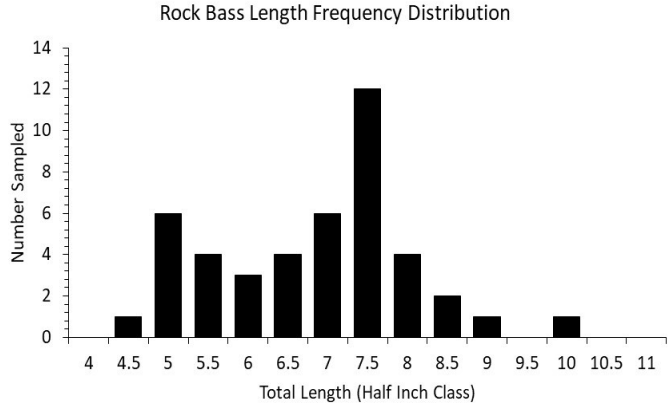
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
44	7.1	4.9 - 10.1	4 and 7	44	26	59	62nd	Moderate

RELATIVE ABUNDANCE (CPUE = NUMBER PER NETNIGHT)

2024 Total Sampled	2014	2024	Historical Median	2024 Statewide Percentile Rank	2024 Abundance Rating
44	4.9	0.7	2.8	39th	Low - Moderate

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2014	2024	
40	59	50



Species Summary

- Catch rates of rock bass in 2024 were low - moderate at 0.7 rock bass/net night. This catch rate ranks out in the 39th percentile compared to lakes statewide. Catch rates of rock bass in 2024 declined compared to catch rates from the 2014 survey when catch rates were 4.9 rock bass/net night.
- Results from the 2024 survey indicated that rock bass size structure was moderate with a PSD of 59, which ranks out in the 62nd percentile for lakes in Wisconsin. Rock bass PSD increased compared to the 2014 survey when the PSD was just 40.

Stocking History 2001 - Present

Species	Year	Age	Mean Length (inches)	Number Stocked
WALLEYE	2023	LARGE FINGERLING	6	2000
WALLEYE	2023	LARGE FINGERLING	7.95	398
WALLEYE	2021	LARGE FINGERLING	6	1000
WALLEYE	2019	SMALL FINGERLING	1.8	5033
WALLEYE	2018	LARGE FINGERLING	6	2000
WALLEYE	2017	SMALL FINGERLING	1.7	2788
WALLEYE	2016	LARGE FINGERLING	6	1998
WALLEYE	2015	SMALL FINGERLING	1.7	3333
WALLEYE	2013	SMALL FINGERLING	2	2995
WALLEYE	2012	LARGE FINGERLING	6	997
WALLEYE	2011	SMALL FINGERLING	1.9	3306
WALLEYE	2010	LARGE FINGERLING	7	1400
WALLEYE	2009	SMALL FINGERLING	1.8	3000
WALLEYE	2008	LARGE FINGERLING	6	2015
WALLEYE	2006	LARGE FINGERLING	6	2010
WALLEYE	2005	SMALL FINGERLING	1.4	3835
WALLEYE	2004	LARGE FINGERLING	6	2000
LARGEMOUTH BASS	2003	SMALL FINGERLING	2.2	1925
WALLEYE	2003	SMALL FINGERLING	1.5	7700
WALLEYE	2002	SMALL FINGERLING	2.2	7550
LARGEMOUTH BASS	2002	LARGE FINGERLING	5	882
WALLEYE	2001	SMALL FINGERLING	1.6	7700
LARGEMOUTH BASS	2001	LARGE FINGERLING	1.3	3850

Full Summary

Northern Pike:

- Catch rates of northern pike in the 2024 fyke netting survey were low when compared to lakes throughout Wisconsin including Complex Cool Clear lakes, but similar to catch rates in previous surveys.
- Interestingly, very few male northern pike were captured in the 2024 or 2014 fyke netting surveys. It is hypothesized that the male northern pike may be moving into Little Pigeon Lake to spawn before the ice has melted enough to set nets on Pigeon Lake since there is much more high quality spawning and nursery habitat in Little Pigeon Lake compared to Pigeon Lake.
- Northern pike showed good size structure with a PSD of 58 and nearly 20% of the northern pike captured being ≥26 inches. However, the dominance of female northern pike in the sample may be skewing the size structure since female northern pike grow faster and reach larger sizes than male pike.
- Growth rates of female northern pike were below the statewide average.
- Anglers have noted the high number of sub-legal northern pike that are caught while fishing, especially during winter. While preparing for the spring electrofishing survey, DNR staff watched anglers catch several small northern pike from the dock at the boat launch in a short amount of time. This provides additional evidence that the fyke nets may have missed some of the spawning population, particularly spawning males.
- Consider changing the northern pike regulation to the 25 - 35 inch protected slot limit with a bag limit of 2 to protect the fastest growing, largest northern pike in the lake. Alternatively, a bag limit of 5 northern pike with no size limit may also be considered as the slot limit may not be highly effective in a lake like Pigeon lake where growth rates of northern pike are slower because few northern pike would grow into the protected slot limit.

Walleye:

- Catch rates of walleye in the 2024 fyke netting survey were low when compared to lakes throughout Wisconsin and dropped compared to catch rates in the 2014 fyke netting survey. Several factors likely contributed to the low number of walleye captured in 2024 including fewer large fingerling walleye stocked in recent years and a very early ice out in 2024 which resulted in the fyke netting survey being conducted before the walleye spawn. The 2024 fyke netting survey occurred approximately 1 month earlier in the year than the 2014 fyke netting survey.
- Walleye are able to attain large sizes in Pigeon Lake as all walleye captured were >19 inches long.
- Starting in 2023, the DNR began stocking large fingerling walleye instead of small fingerling walleye. Continue to monitor the walleye population in the future to evaluate survival of stocked walleye.

Largemouth Bass:

- Catch rates of largemouth bass in 2024 were moderate - high when compared to lakes throughout Wisconsin but lower than catch rates in the 2014 electrofishing survey .
- Size structure of largemouth bass was low - moderate with the majority of the largemouth bass captured in the spring electrofishing survey being between 9 - 14 inches. Some larger bass were captured in the spring fyke netting survey indicating bass have the potential to reach larger sizes in Pigeon Lake.
- Growth rates of largemouth bass were slow - moderate compared to lakes throughout Wisconsin.
- Consider changing the largemouth bass regulation to a 14 - 18 inch protected slot limit or a no size limit regulation to allow for harvest of the overabundant, smaller largemouth bass and protect the larger bass in the population.

Bluegill:

- Catch rates of bluegill were low - moderate in the electrofishing and fyke netting survey and remained similar to catch rates from the 2014 survey.
- Size structure of bluegill increased in the 2024 fyke netting survey compared to the 2014 survey and the maximum size of bluegill captured increased in both the 2024 electrofishing and fyke netting surveys compared to the 2014 surveys. This indicates the more restrictive panfish regulation that went into effect in 2016 may have resulted in increases in the quality of the bluegill fishery.
- A 10 aggregate panfish regulation was proposed and supported at the 2025 spring hearings and should go into effect on April 1, 2026. By keeping a more restrictive panfish regulation such as a 10 aggregate bag limit for panfish, the quality of the panfish population will hopefully continue to increase in the future

Black Crappie:

- Catch rates of black crappie in the 2024 fyke netting survey were low compared to lakes throughout Wisconsin, but similar to catch rates in the 2014 fyke netting survey.
- Size structure of the crappies that were captured in 2024 was impressive with all crappies captured being >8 inches including three that were >14 inches.

Yellow Perch:

- Pigeon Lake supports a quality yellow perch fishery with low - moderate densities of yellow perch that show good size structure.
- The average size yellow perch captured in the 2024 fyke netting survey was just under nine inches including seven that were ≥10 inches long.

Rock Bass:

- Rock bass provide an additional opportunity for anglers fishing Pigeon Lake as this lake supports a low - moderate density rock bass population with good size structure.

Habitat:

- Pigeon Lake has a highly developed shoreline throughout most of the lake with limited coarse woody habitat. Additions of woody habitat may benefit fish populations by providing cover for small fish to escape predation, ambush locations for predators and spawning habitat for species like yellow perch.
- It is also recommended to continue to monitor for invasive plants such as Eurasian water milfoil and manage invasive plants as necessary. High densities of invasive plants can inhibit the ability of predators to forage effectively and can allow panfish to become overabundant and stunted. A diverse mix of native plants found in moderate densities is most desirable.