

**Wisconsin Department of Natural Resources**  
**2025 Comprehensive Summary Report**  
**Weyauwega Lake, Waupaca County**  
**WBIC 257700**



Photo Credit: Elliot Hoffman



Elliot Hoffman - Senior Fisheries Biologist  
Paige Kudingo - Fisheries Biologist  
647 Lakeland Rd. Shawano, WI  
Phone: 920-420-9581  
Email: [Elliot.Hoffman@Wisconsin.gov](mailto:Elliot.Hoffman@Wisconsin.gov)  
[Paige.Kudingo@Wisconsin.gov](mailto:Paige.Kudingo@Wisconsin.gov)  
January 2026

## Introduction

In 2025, the Wisconsin Department of Natural Resources (DNR) conducted a comprehensive fish survey of the Weyauwega Lake in order to provide insight and direction for the future fisheries management of this system. Comprehensive fish surveys include both spring fyke netting and spring electrofishing surveys. The primary sampling objectives of these surveys are to characterize species composition, relative abundance and size-structure. The following report is a brief summary of the activities conducted, the general status of fish populations and future management options for the Weyauwega Lake.

## Survey Effort

Table 1. Survey information for Weyauwega Lake

Site Location	Survey Dates	Water Temperature (°F)	Target Species	Gear	Number of Nets	Net-nights
Weyauwega Lake	3/17/2025 - 3/26/2025	32 - 40	Northern Pike	Fyke Net	6	52 net-nights
Weyauwega Lake	5/14/2025	70	Bass and Panfish	Boomshocker	-	2.25 Miles

Table 2. Relative Abundance — catch per unit effort (CPUE)

Species	Protocol	Total Number Captured	CPUE	Units	Lake Class Percentile
Northern pike	Spring Netting I	342	6.6	fish/net-night	50 - 75th
Largemouth bass	Spring Electrofishing II	84	37.3	fish/mile	50-75th
Black crappie	Spring Netting I	4,706	90.5	fish/net-night	75-90th
Bluegill	Spring Electrofishing II	468	468	fish/mile	90 - 95th
Pumpkinseed	Spring Electrofishing II	269	269	fish/mile	100th
Yellow perch	Spring Netting I	1	0.02	fish/net-night	0

## 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 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.
- **Total abundance is a metric that describes population size and is estimated by mark and recapture.** In our study, all captured (insert species) were given a partial caudal fin (i.e., tail fin) clip and released. Each time the nets were checked, all (insert species) were examined for a partial caudal fin clip. The number of previously captured individuals (i.e., fin clipped) was recorded, and proportions of marked individuals to unmarked individuals were used to estimate the total abundance of the (insert species) population.
- **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 scales) 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).
- **Relative weight is an index used to assess the plumpness (i.e., condition) of fish.** It is calculated by comparing the observed weight of a fish to the standard weight (i.e., predicted average weight) of that fish, given its length. A relative weight of 93 means it has average plumpness/weight compared to other fish of the same length. Relative weights above 93 mean it is plumper than average.

## Survey Method

- Weyauwega 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 of the spring fyke netting I survey is to count and measure adult walleye and northern pike while marking adult northern pike to estimate northern pike abundance. The primary objective of the spring

electrofishing II survey is to count and measure adult largemouth bass, smallmouth bass and panfish. Other species of fish may be sampled during each survey but are considered bycatch as part of that survey.

- Boom shockers were used to electrofish 2.25 miles of shoreline. Gamefish were collected and measured throughout, and panfish were collected and counted along 1.0 miles of shoreline.
- Fyke nets were deployed in areas of the lake that contained spawning habitat or were likely travel areas for northern pike, and muskellunge. All newly captured individuals were marked with a fin clip or PIT tag. Aging structures (spines/otoliths) were taken from a sample of northern pike, bluegill, and black crappie for age and growth analyses.

## Results

### Northern Pike

Northern Pike (*Esox lucius*) are a common predatory fish species found across many Wisconsin waterbodies. Northern pike spawn in areas of emergent vegetation at approximately 34-40° F water temperatures. Fyke netting is the preferred sampling gear for northern pike. All results presented for northern pike are from spring fyke netting surveys.

Weyauwega Lake supports a high abundance of northern pike with 2025 catch rates at 6.3 fish per net-night. A catch rate of 6.3 per net-night ranks in the 84th percentile when compared to northern pike catch rates statewide. When compared to past surveys, the 2025 northern pike catch rates are slightly higher than the historical median. The population estimate shows a higher density, while having 4.8 northern pike per acre. Population estimates are a better indicator of density when ample data is able to be collected.

The size-structure of northern pike in the 2025 survey was moderate with a PSD of 38 which ranks in the 44th percentile when compared to lakes statewide. The length ranges of male (10 - 26 inches) and female (14 - 37 inches) northern pike are within the ranges commonly found statewide; however, there were a number of individuals measuring in the lower end of the range that brought the overall PSD score down. Size-structure trends over the last several surveys show a stable northern pike size-structure.

Aging structures were collected from 150 individuals, showing that growth is moderate, and above average for larger fish when compared to statewide data. Exploitation is a concern with northern pike in Weyauwega Lake, as growth shows potential to grow to larger sizes, while having an ample forage base to support large fish.

Figure 1. Northern pike length frequency from fyke netting.

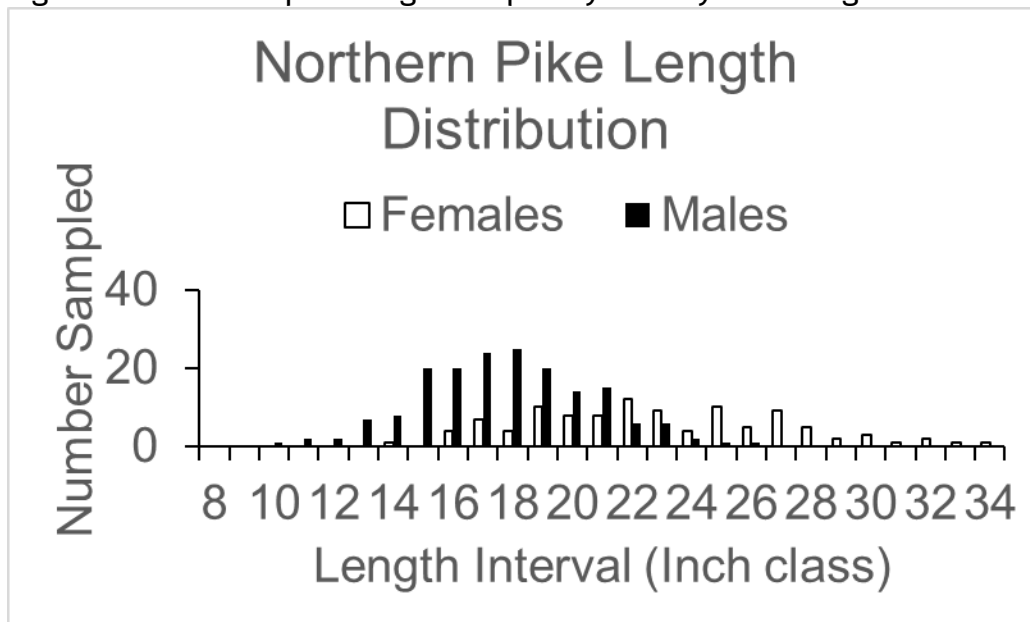


Table 3. 2025 size-structure metrics for northern pike on Weyauwega Lake

Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number
302	19.0	9.0-38.0	14.0 and 21.0	273	103

Table 4. Fyke netting number per net-night for northern pike on Weyauwega Lake

Total Sampled	2005	2010	2018	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
302	6.0	5.1	7.5	6.3	5.6	84	High

Table 5. Proportional stock density for northern pike on Weyauwega Lake

2005	2010	2018	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
55	35	42	38	40	44	Moderate

Table 6. Adult abundance (population estimate) for northern pike on Weyauwega Lake

Marked	Captured	Recaptures	Population Estimate (95% CI)	Number per Acre	Abundance Rating
289	323	34	1,216(878-1,975)	4.8	High

Table 7. Growth metrics for northern pike on Weyauwega Lake.

Number Sampled	Length Bin (Inches)	Sex	Mean Age	Age Range	Percentile Rank	Growth Rating
7	18.0 – 18.9	M	3.9	3 - 5	29	Slow
4	18.0 – 18.9	F	3.5	3 - 4	24	Slow
6	21.0 – 21.9	M	4.2	3 - 6	40	Moderate
5	21.0 – 21.9	F	4.4	3 - 5	22	Slow
2	26.0 – 26.9	M	5	5	66	Moderate
5	26.0 – 26.9	F	4.6	4 - 5	60	Moderate

## Largemouth Bass

Largemouth bass (*Micropterus salmoides*) are a common predatory fish species found in many Wisconsin waterbodies. Largemouth bass typically spawn in shallow nearshore areas consisting of sand/mud or gravel substrate at approximately 60-70°F water temperatures. Electrofishing is the preferred sampling gear for largemouth bass. All results presented for largemouth bass are from spring electrofishing surveys.

Weyauwega Lake supports a moderate-high density largemouth bass population with catch rates of 37.3 fish per mile of electrofishing. A catch rate of 37.3 fish per mile ranks in the 50-75th percentile among other simple riverine lakes in Wisconsin. Relative abundance comparisons among years indicate that CPUE increased slightly from the 2018 survey. Further, the CPUE of largemouth bass greater than 14 inches ranked 95th when compared to statewide values.

The size-structure of largemouth bass in the Weyauwega Lake was high with a PSD value of 98, which ranks in the 99th percentile when compared to statewide values. When compared to recent surveys on the Upper Red Lake, largemouth bass PSD values have remained relatively stable, indicating that the size-structure of largemouth bass has been fairly consistent over the last several years.

The current status of the largemouth bass population on Weyauwega Lake looks to be positive. Moderate relative abundance and a moderate size-structure results in angling opportunities to catch largemouth bass of all sizes. Lack of new largemouth bass recruits into system is something that will be monitored in upcoming surveys.

Figure 2. Largemouth bass length frequency from electrofishing.

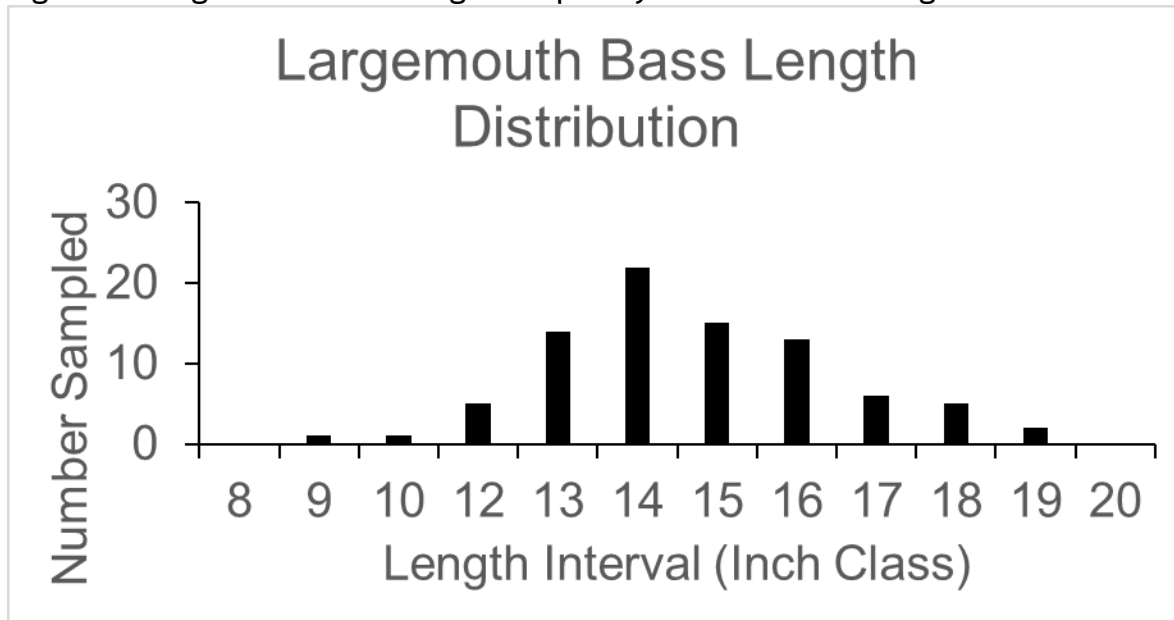


Table 8. 2025 size-structure metrics for largemouth bass on Weyauwega Lake

Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number
84	15	9.8-19.8	8.0 and 12.0	84	82

Table 9. Electrofishing number per mile for largemouth bass on Weyauwega Lake

2013	2015	2018	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
2.0	4.7	22.7	37.3	21.7	50-75	Moderate - High

Table 10. Proportional stock density for largemouth bass on Weyauwega Lake

2013	2015	2018	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
68	99	85	98	80	95	High

## Black Crappie

Black crappie (*Pomoxis nigromaculatus*) are a common panfish species distributed widely across many Wisconsin waterbodies. Black crappie typically spawn in nearshore areas consisting of detritus, sand/mud or gravel substrate at approximately 58-68° F water temperatures. Electrofishing and fyke netting can be effective sampling gear for black crappie, and therefore, results from both gears are presented for black crappie.

Weyauwega Lake supports a high-density black crappie population with catch rates of 90.5 fish per net-night from the fyke netting survey and 10 fish per mile of electrofishing from the boom shocking survey. Catch rates of 90.5 per net-night rank in the 50th - 75th percentiles when looking at similar complex riverine systems.

The size-structure of black crappie in Weyauwega Lake based on the fyke netting survey, most individuals captured ranged from 4-8 inches in length. Length data from the fyke netting survey resulted in a PSD value of 7 which is in the 4th percentile when compared to fyke netting data statewide.

Population trends from previous fyke netting surveys on Weyauwega Lake indicate that the size-structure has declined from the 2010 survey and is similar to the 2018 survey. Moreover, relative abundance estimates have increased from the 2018 survey. In coming years harvestable size black crappie will be available from the large year class of younger fish,

Growth metrics calculated from age estimates indicate that black crappie in Weyauwega Lake grow at average rates for both male and female individuals of all sizes. The large abundance of 5-8-inch black crappie should have a fish population within the next couple of years.

Figure 3. Black Crappie length frequency from fyke netting.

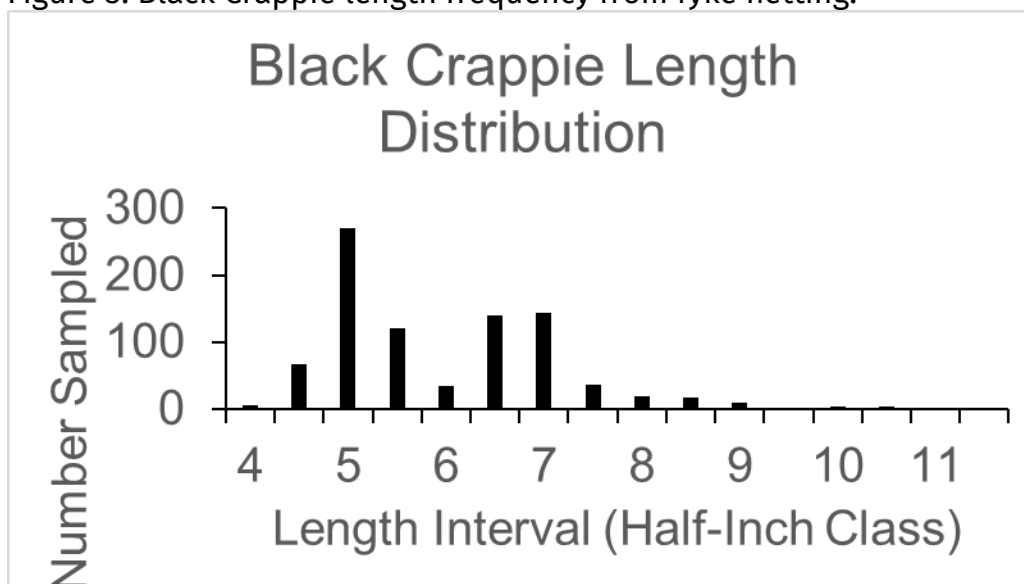


Table 11. 2025 size-structure metrics for black crappie on Weyauwega Lake

<b>Gear</b>	<b>Total Number Measured</b>	<b>Average Length (inches)</b>	<b>Length Range (inches)</b>	<b>Stock and Quality Size (inches)</b>	<b>Stock Number</b>	<b>Quality Number</b>
Fyke Net	3832	6.2	4.2-11.7	5.0 and 8.0	802	57
Electrofishing	10	8.1	7.2-9.3	5.0 and 8.0	8	4

Table 12. Fyke netting number per net-night for black crappie on Weyauwega Lake

<b>Total Sampled</b>	<b>2005</b>	<b>2010</b>	<b>2018</b>	<b>2025</b>	<b>Historical Median</b>	<b>2025 Statewide Percentile Rank</b>	<b>2025 Abundance Rating</b>
4706	22.7	3.9	1.0	90.3	3.9	100	High

Table 13. Fyke net Proportional stock density for black crappie on Weyauwega Lake

<b>2005</b>	<b>2010</b>	<b>2018</b>	<b>2025</b>	<b>Historical Median</b>	<b>2025 Statewide Percentile Rank</b>	<b>2025 Abundance Rating</b>
65	76	3	7	36	4	Low

## Bluegill

Bluegill (*Lepomis macrochirus*) is a very common panfish species distributed widely across many Wisconsin waterbodies. Bluegill typically spawn in nearshore areas consisting of sand/mud or gravel substrate at approximately 67-80° F water temperatures. Electrofishing and fyke netting can be effective sampling gear for bluegill, and therefore, results from both gears are presented for bluegill.

Weyauwega Lake supports a high-density bluegill population with catch rates of 278 fish per net-night from the fyke netting survey and 468 fish per mile of electrofishing from the boom shocking survey. Catch rates of 162 per net-night and 411 per mile rank in the 90-95th percentiles. Catch rates of bluegills greater than 7 inches in the electrofishing survey was 49 per mile, which ranks in the 93rd percentile and is very high when compared to lakes statewide.

The size-structure of bluegills in Weyauwega Lake was characterized as moderate - high based on the electrofishing survey. Length data from the fyke netting survey resulted in a PSD value of 51, which is in the 42nd percentile when compared to bluegill fyke netting data statewide. Length data collected from the electrofishing survey resulted in a PSD value of 55, which is in the 76th percentile when compared to statewide values.

Population trends from previous electrofishing surveys on the Weyauwega Lake indicate that size-structure has generally remained similar over recent surveys and is similar to levels sampled prior to the drawdown.

Growth metrics calculated from age estimates indicate that bluegill in Weyauwega Lake have moderate - slow growth in the first four years when compared to growth

rates from bluegill populations across the state. Growth metrics were in the slow rating for females and males above 7.0 inches.

Figure 4. Bluegill length frequency from electrofishing.

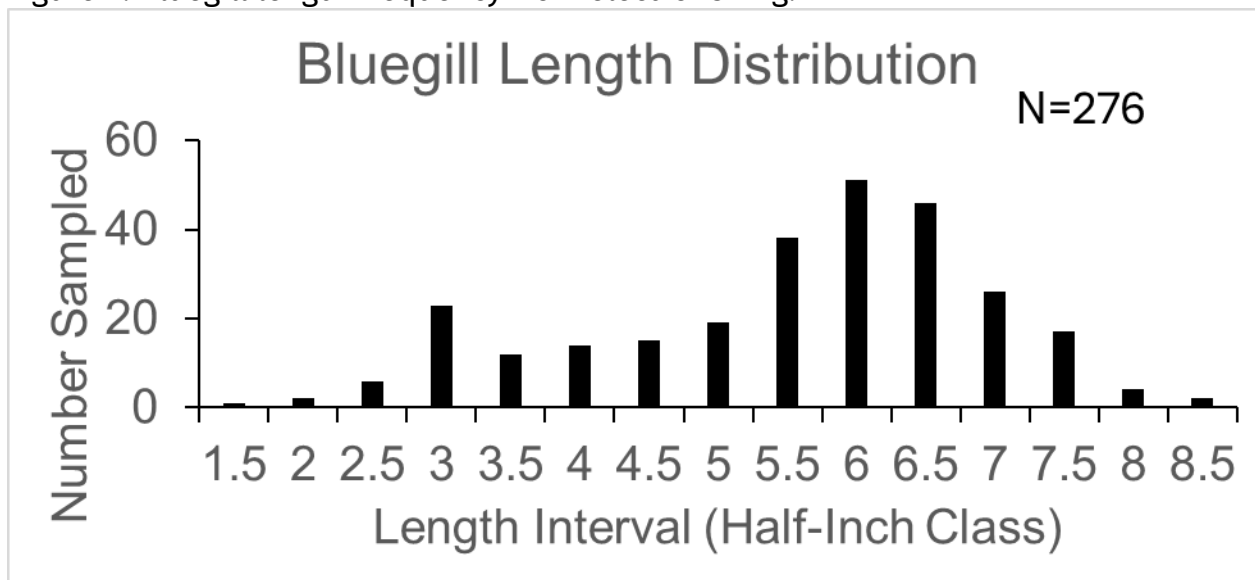


Table 14. 2025 size-structure metrics for bluegill on Weyauwega Lake.

Gear	Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number
Fyke Net	713	5.8	3.4 – 8.2	3.0 and 6.0	713	366
Electrofishing	276	5.7	1.8 – 8.9	3.0 and 6.0	267	146

Table 15. Fyke netting number per net-night for northern pike on Weyauwega Lake

Total Sampled	2010	2018	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
14,438	0.4	0.4	277.7	6.2	99	High

Table 16. Fyke net Proportional stock density for bluegill on Weyauwega Lake

2005	2010	2018	2025	Historical Median	2021 Statewide Percentile Rank	2021 Abundance Rating
95	86	65	51	86	42	Moderate

Table 17. Electrofishing number per mile for bluegill on Weyauwega Lake

CPUE Total	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	Length Index Percentile Rank	Length Index Abundance Rating
468	90-95th	Very High	≥ 7.0 inches	49	93rd	High

Table 18. Electrofishing number per mile historical trend for bluegill on Weyauwega Lake

CPUE by Year					Historical Median
2010	2013	2015	2018	2025	
135	3.3	17.3	78	468	73

Table 19. Electrofishing proportional stock density historical trend for bluegill on Weyauwega Lake

PSD by Year					Historical Median
2010	2013	2015	2018	2025	
51	0	20	63	55	53

Table 20. Growth metrics for bluegill on Weyauwega Lake

Sample (n)	Length Bin (inches)	Sex	Mean Age	Age Range	Percentile Rank	Growth Rating
14	6.0 - 6.9	M	6.5	3 - 4	72nd	Fast
11	6.0 - 6.9	F	6.4	3 - 5	59th	Moderate
12	7.0 - 7.9	M	7.4	3 - 6	51st	Moderate
5	7.0 - 7.9	F	7.4	4 - 7	17th	Slow
3	8.0 - 8.9	M	8.3	5 - 8	14th	Slow
1	8.0 - 8.9	F	8	7	-	-

## Pumpkinseed

Pumpkinseed (*Lepomis gibbosus*) is a common panfish species distributed widely across many Wisconsin waterbodies. Pumpkinseeds typically spawn in nearshore areas consisting of sand or gravel substrate at approximately 60-70°F water temperatures. Electrofishing and fyke netting can be effective sampling gear for pumpkinseed, and therefore, results from both gears are presented for pumpkinseed. Weyauwega Lake supports a high-density pumpkinseed population with catch rates of 126 fish per net-night from the fyke netting survey and 269 fish per mile of electrofishing from the boom shocking survey. Catch rates of 126 per net-night and 33 per mile rank in the 99th percentiles. Catch rates of pumpkinseed greater than 7 inches in the electrofishing survey was 5.0 per mile which ranks in the 89th percentile and is moderate-high when compared to lakes statewide.

The size-structure of pumpkinseed in Weyauwega Lake was characterized as moderate based on data from the electrofishing survey. Length data from the fyke netting survey resulted in a PSD value of 13, which is in the 15th percentile when compared to pumpkinseed fyke netting data statewide. Length data collected from the electrofishing survey resulted in a PSD value of 34, which is in the 51st percentile when compared to statewide values.

Population trends from previous surveys on Weyauwega Lake indicate that size-structure has increased over recent electrofishing surveys. Relative abundance has fluctuated looking at data from the fyke netting survey whereas electrofishing survey data indicate relative abundance has been increasing since the 2015 survey.

Heavy vegetation and a high presence of snails provide a habitat that pumpkinseed prefer. Abundant forage and cover is most likely a contributing factor to higher numbers of pumpkinseed in Weyauwega Lake.

Figure 5. Pumpkinseed length frequency from electrofishing.

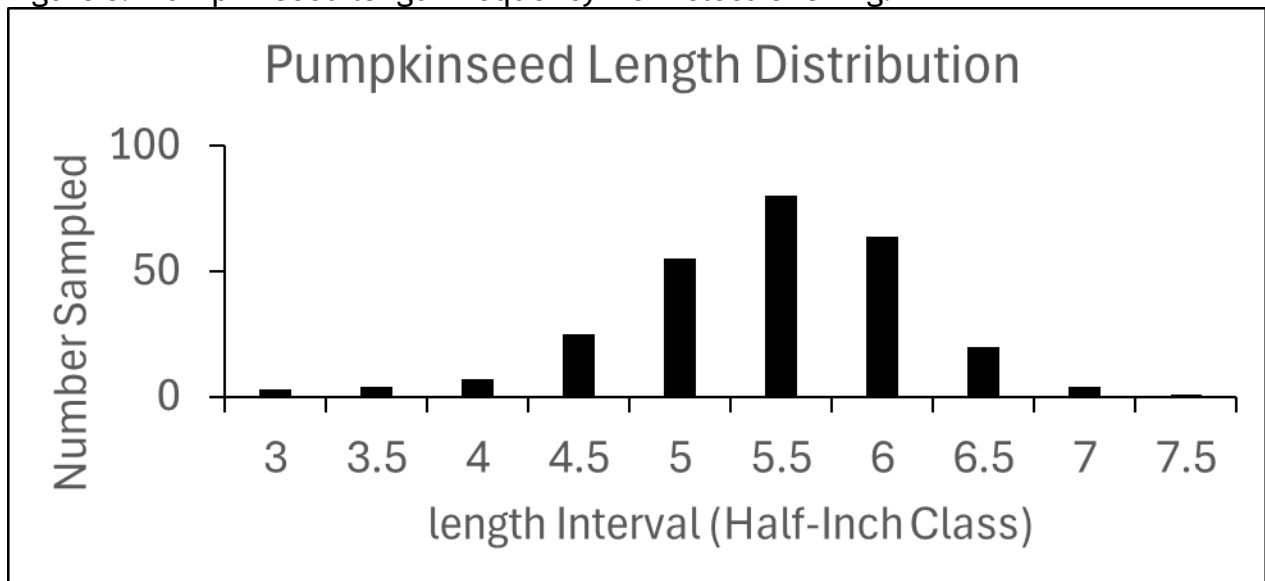


Table 21. Year size-structure metrics for pumpkinseed on Weyauwega Lake

Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number
302	19.0	9.0-38.0	14.0 and 21.0	273	103

Table 22. Fyke netting number per net-night for pumpkinseed on Weyauwega Lake

Total Sampled	2005	2010	2018	2025	Historical Median	2025 Statewide Percentile Rank	2025 Abundance Rating
302	6.0	5.1	7.5	6.3	5.6	84	High

Table 23. Fyke net size-structure (population size distribution) for pumpkinseed on Weyauwega Lake

2005	2010	2018	2025	Historical Median	2021 Statewide Percentile Rank	2021 Abundance Rating
55	35	42	38	40	44	Moderate

Table 24. Electrofishing number per mile for pumpkinseed on Weyauwega Lake

CPUE Total	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	Length Index Percentile Rank	Length Index Abundance Rating
269	99th	Very High	≥ 7.0 inches	5	89th	Moderate - High

Table 25. Electrofishing number per mile historical trend for pumpkinseed on Weyauwega Lake

CPUE by Year					Historical Median
2010	2013	2015	2018	2025	
109	0	32.7	121	269	66.4

Table 26. Electrofishing proportional stock density for pumpkinseed on Weyauwega Lake

PSD by Year					Historical Median
2010	2013	2015	2018	2025	
34	0	11	11	34	27

## Discussion/Recommendations

### Northern Pike

Weyauwega Lake supports a northern pike population with moderate size-structure. Although there were individuals captured up to 36 inches, the majority of the sample consisted of 16 - 27-inch fish. Results from age and growth analyses show that the northern pike are able to grow at a faster rate than the statewide average and grow up to 26.0 inches in less than 5 years. Weyauwega Lake consists of ample spawning area for northern pike, shallow muck bottom with an abundance of emergent and submergent vegetation that provides excellent habitat. Heavy fishing pressure and harvest may be limiting the number of large northern pike. The DNR has met with local user groups and is proposing a protected slot limit.

### Largemouth Bass

The largemouth bass population has remained relatively consistent over the past several surveys, maintaining a moderate - high density and a high size-structure. Overall, the largemouth bass population is healthy, with optimal numbers of

individuals to maintain positive population characteristics and help keep panfish populations from becoming even more overabundant through predation. The largemouth bass population provides a high-action fishery with an above-average proportion of fish 14-inches or greater available for anglers. Population levels should be maintained for largemouth bass. Abundant cover and a high forage base creates excellent conditions to grow largemouth bass to preferred (15.0 inches) and memorable size (20.0 inches).

### **Black Crappie**

The black crappie population provides for an action angling opportunity. The 2025 survey results indicate that black crappie population levels were moderate - high when compared to waterbodies throughout Wisconsin. Further, the catch rate of black crappie greater than 8.0 inches was low compared to black crappie catch rates statewide. However, the 2025 survey results also show there are low densities of 9–12-inch black crappie. Growth rates are moderate, and the large year class of smaller fish will provide a harvestable opportunity in the next couple of years. Slow growth many times is a result of an abundance of smaller fish within a system. Protection of predators can sometimes have a positive impact on controlling panfish numbers and potentially increasing growth rates.

### **Bluegill**

Bluegill densities in the 2025 Weyauwega Lake survey appear to have increased since past surveys. Relative abundance has shown very high densities of bluegill and size-structure metrics have remained moderate. Growth was assessed on bluegill using age estimates from otolith cross sections, and results indicate bluegills have average growth in the Weyauwega Lake compared to waterbodies statewide until they reach 6-7 inches. In particular female bluegill slow down to well below average when compared to statewide data. Although size-structure of bluegill could still improve, the Weyauwega Lake does provide a high-action bluegill fishery with a good number of > 7-inch individuals. Similar to black crappie, bluegill populations could be improved by helping to protect predators within Weyauwega Lake. Heavy vegetation and high densities of smaller bluegill can be a limiting factor for predator-prey interactions, thus slowing down growth.

### **Pumpkinseed**

The pumpkinseed population has seen a positive improvement compared to previous surveys with a high relative abundance and moderate size-structure rating observed in the 2025 survey. Similar to black crappie and bluegill populations, pumpkinseed could be improved by helping to protect predators within Weyauwega Lake. Heavy vegetation and high densities of smaller pumpkinseed can be a limiting factor for the predator-prey interactions, thus slowing down growth. However, recent survey data indicate the pumpkinseed population is trending positively in Weyauwega Lake. Improvements and protection to nearshore habitat, such as the addition of tree drops or fish sticks, could benefit both panfish and predatory species in Weyauwega Lake.