



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2022 Electrofishing Summary Report Cedar Lake, Waupaca County 283800

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Introduction And Objectives

In 2022, the Wisconsin Department of Natural Resources (DNR) conducted a one night electrofishing survey of Cedar Lake in order to provide insight and direction for the future fisheries management of this water body. Primary sampling objectives of this survey were to characterize species composition, relative abundance, and size structure of bass and panfish species. The following report is a brief summary of that survey including the general status of the fish populations, and future management options for Cedar Lake.

DNR Contact

Elliot Hoffman - Fisheries Biologist Senior
647 Lakeland Road
Shawano, WI 54166
Phone: 920-420-9581
Email: Elliot.hoffman@wisconsin.gov

Lake Information

Acres: 45.2
Max. Depth: 50 feet
Shoreline Miles: 1.1 miles
Public Access: 1 boat landing
Lake Class: Complex - Warm - Clear

Regulations

Statewide default regulations

SURVEY INFORMATION

Site Location	Survey Dates	Water Temperature (°F)	Target Species	Total Miles Shocked	Number of Stations	Gear	Number of Netters
Cedar Lake	05/31/2022	70	All	1.18	3	Boomshocker	2

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.
- 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).

Survey Method

- Cedar Lake was sampled according to Spring Electrofishing II protocols as outlined in DNR Fisheries Monitoring Protocols. The primary objective for these sampling periods is to count and measure bass and panfish. Other gamefish/panfish may be sampled but are considered by-catch as part of this survey.
- Boom shockers were used to electrofish 1.18 miles of shoreline. Gamefish were collected and measured throughout, and panfish were collected and counted along 1.18 miles as well.

RELATIVE ABUNDANCE - CATCH PER UNIT EFFORT (CPUE)

Species	Total Number Captured	CPUE Total (number per mile)	Statewide Percentile	Overall Abundance Rating	Length Index	Length Index CPUE	Length Index Statewide Percentile	Length Index Abundance Rating
Black Crappie	1	0.8	6th	Low	> 8.0 inches	0.8	24th	Low
Bluegill	353	299.2	90th	High	>7.0 inches	37.3	89th	Moderate - High
Largemouth Bass	54	45.8	84th	Moderate - High	>14.0 inches	11.0	88th	Moderate - High
Northern Pike	5	4.2	79th	Moderate - High	>21.0 inches	0.8	64th	Moderate
Pumpkinseed	25	21.2	76th	Moderate - High	>7.0 inches	5.9	89th	Moderate - High
Rock Bass	8	6.8	52nd	Moderate	>7.0 inches	1.7	39th	Moderate
Yellow Perch	17	14.4	61st	Moderate	>8.0 inches	0	-	Low



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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.

YEAR 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
54	11.6	3.6 - 19.8	8.0 and 12.0 inches	44	27	61	53rd	Moderate

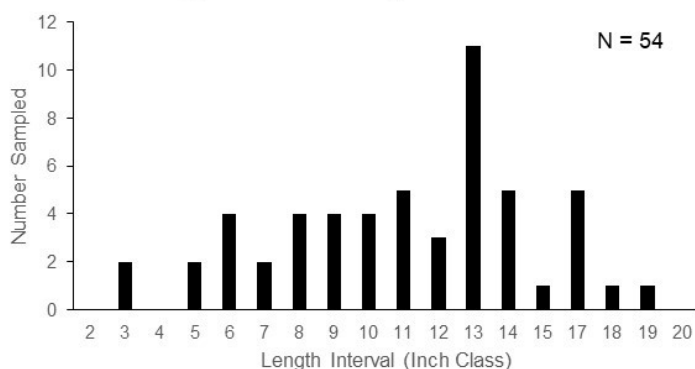
RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2013	2021	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
54	61	45.8	53.4	84th	Moderate - High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2013	2022	
32	61	47

Largemouth Bass Length Distribution



Bluegill

- Bluegill (*Lepomis macrochirus*) are 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

YEAR 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
260	4.9	1.4 - 8.5	3.0 and 6.0	212	99	47	67th	Moderate - High

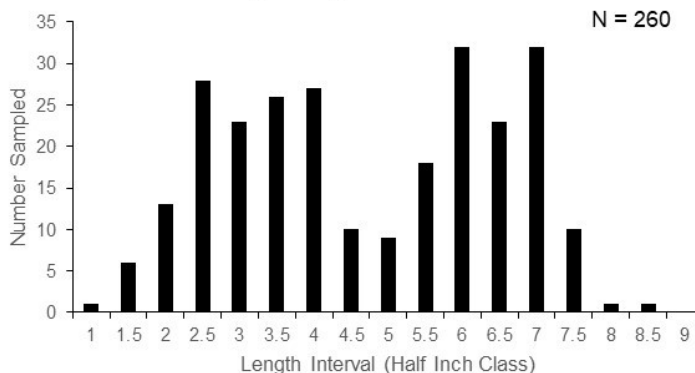
RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2013	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
353	97.0	299.2	198.2	90th	High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2013	2022	
32	47	40

Bluegill Length Distribution





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Pumpkinseed

- Pumpkinseed (*Lepomis gibbosus*) are a common panfish species distributed widely across many Wisconsin waterbodies. Pumpkinseed 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.

2022 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
25	6.2	3.4 - 7.8	3.0 and 6.0	25	17	68	84th	Moderate - High

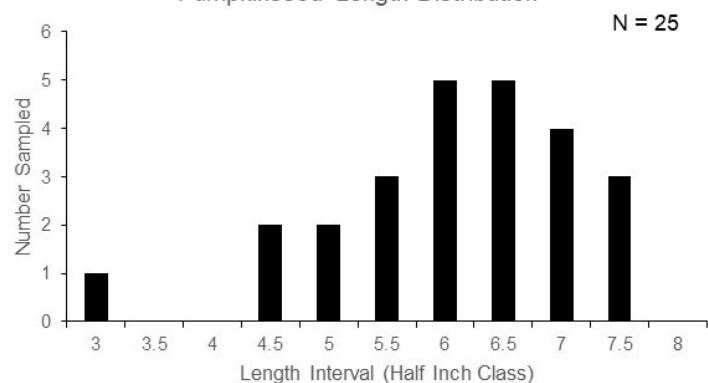
RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2013	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
25	31.0	21.2	26.1	76th	Moderate - High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2013	2022	
31	68	50

Pumpkinseed Length Distribution



Yellow Perch

- Yellow Perch (*Perca flavescens*) are a common panfish species found throughout many Wisconsin waterbodies. Typically yellow perch spawn in areas of emergent or submergent vegetation or submerged brush at approximately 45-50°F water temperatures. Electrofishing and fyke netting can be effective sampling gear for yellow perch and therefore, results from both gears are presented for yellow perch.

2022 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
17	5.3	3.1 - 7.8	5.0 and 8.0	8	0	0	-	Low

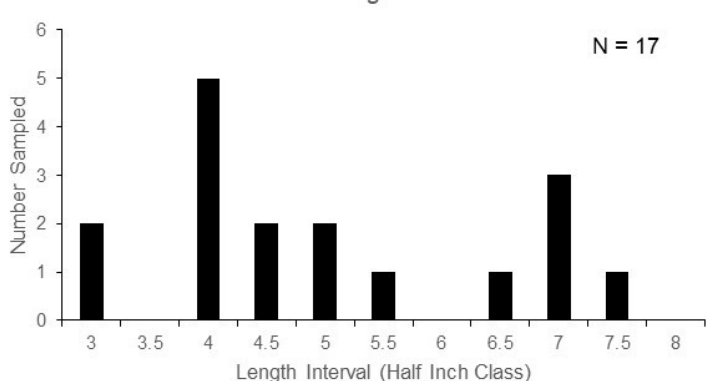
RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2013	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
17	17.0	14.4	15.7	61st	Moderate

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2013	2022	
0	0	0

Yellow Perch Length Distribution





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Full Summary

Largemouth Bass

Cedar Lake supports a moderate - high density largemouth bass population with a catch rate of 45.8 per mile of electrofishing. A catch rate of 45.8 per mile ranks in the 84th percentile when compared to other lakes statewide. Relative abundance comparisons from the past survey indicate that density of largemouth bass has slightly decreased since 2013. However, size structure of largemouth bass in Cedar Lake has improved slightly since the last survey. Size structure of largemouth bass is moderate with a PSD value of 61, which ranks in the 53rd percentile when compared to lakes statewide. There are also a decent number of preferred size (15 inches or greater) bass present. Maintaining a balanced fishery between the bluegill and largemouth bass is critical for Cedar Lake as bluegills are the main prey species for the largemouth bass.

Bluegill

Cedar Lake supports a high density bluegill population with catch rates 299.2 bluegill per mile of electrofishing from the boomshocker survey. A catch rate of 299.2 per mile ranks in the 90th percentile when compared to catch rates statewide. Catch rates of bluegill greater than 7.0 inches was 37.3 per mile which ranks in the 89th percentile and above average when compared to other lakes statewide. Size structure of bluegill in Cedar Lake was characterized as moderate - high. Length data which resulted in a PSD value of 47 is ranked in the 67th percentile when compared to other lakes throughout the state. Population trends from the previous survey in 2013 indicate that densities of bluegill in Cedar Lake have increased significantly. The size structure has also shown a positive trend there were a limited number of fish in the preferred size (8 inches).

Pumpkinseed

Cedar Lake supports a moderate to high density pumpkinseed population with a catch rate of 21.2 per mile of electrofishing, which ranks in 76th percentile when compared to other lakes in the state. Furthermore catch rates of pumpkinseed greater than 7.0 inches is 5.9 per mile of electrofishing, which ranks in the 89th percentile. Abundance levels of pumpkinseed have slightly decreased since the last survey in 2013, while size structure has increased. Size structure metrics indicate a PSD value of 68, which ranks in the 84th percentile when compared to lakes statewide.

Yellow Perch

Yellow perch densities in Cedar Lake are at moderate levels with sampling of 14.4 yellow perch per mile of electrofishing, which ranks in the 61st percentile statewide. However, size structure of yellow perch in Cedar Lake is low with no fish over 8.0 inches captured in the surveys. Historically there has been moderate densities of yellow perch, and the size structure has been poor, with fish not being observed greater than 8.0 inches.

Other Species

Cedar Lake supports a fishery similar to many other lakes in the area of central Wisconsin with the main fish species being bass and panfish. Other species captured in our survey but in low densities include, black crappie, brown bullhead, golden shiner, green sunfish, hybrid pumpkinseed /bluegill, rock bass, warmouth and yellow bullhead. Cedar Lake supports a moderate to high density northern pike population, with the potential to see some larger sized fish. Fyke netting is the preferred sampling gear for northern pike, and that type of survey would be needed in order to get a better understanding of the northern pike fishery in the future.

Habitat

Cedar Lake is relatively undeveloped and has good amounts of emergent and submergent vegetation throughout the lake. Future management of the lake would be to preserve the existing habitat and potentially add woody structures for habitat.