Wisconsin Department of Natural Resources

2025 Electrofishing Summary Report
Kusel, Waushara County
WBIC: 189600

Lake Information

Acres: 74

Max. Depth: 29 ft

Shoreline Miles: 2.3

Public Access: 2

Lake Class: Complex - Warm - Clear

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Introduction

In 2025, the Department of Natural Resources (DNR) conducted a one night electrofishing survey of Kusel Lake in order to provide insight and direction for the future fisheries management of this water body. Primary sampling objectives of this survey is to do a final evaluation of the experimental panfish regulation enacted April 1, 2016. The following report is a brief summary of that survey including the general status of the fish populations, effectiveness of regulation and future management options for Kusel Lake.

Survey Effort

Table 1. Survey information for Kusel Lake.

Site Location	Survey Dates	Water Temperature (°F)	Target Species	Total Miles Shocked	Number of Netters	Net Nights
Kusel Lake	5/12/2025	68	Bass and Panfish	1.9	2	Boomshocker

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

Species	Total Number Captured	Average Length (Inches)	Length Range (inches)	CPUE/ Mile	Statewide Percentile	Lake Class Percentile	Overall Abundance Rating
Bluegill	692	5.2	2.4 - 9.1	692	99th	99th	High
Black Crappie	11	8.5	5.5 - 10.5	11	66th	-	Moderate
Pumpkinseed	14	6.3	3.4 - 7.9	14	66th	70th	Moderate
Yellow Perch	12	5.6	4.2 - 7.1	12	57th	-	Moderate
Largemouth Bass	140	10.8	3.0 - 20.5	64	91st	82nd	High
Northern Pike	2	17.2	15.1 - 19.2	0.9	-	-	-
Walleye	2	7.2	6.3 - 8	0.9	-	-	-

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 they are plumper than average.

Survey Method

Kusel Lake was sampled according to spring electroshocking (SEII) protocols as outlined in DNR Fisheries Monitoring Protocols. The primary objective for these sampling periods is to count and measure adult bass and panfish. Other gamefish/panfish may be sampled but are considered by-catch as part of this survey. A boom shocker was used to electrofish 1.9 miles of shoreline. Panfish were collected in 1.0 miles and gamefish were collected and measured throughout.

Results

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.

Figure 1. Bluegill length frequency from Kusel Lake.

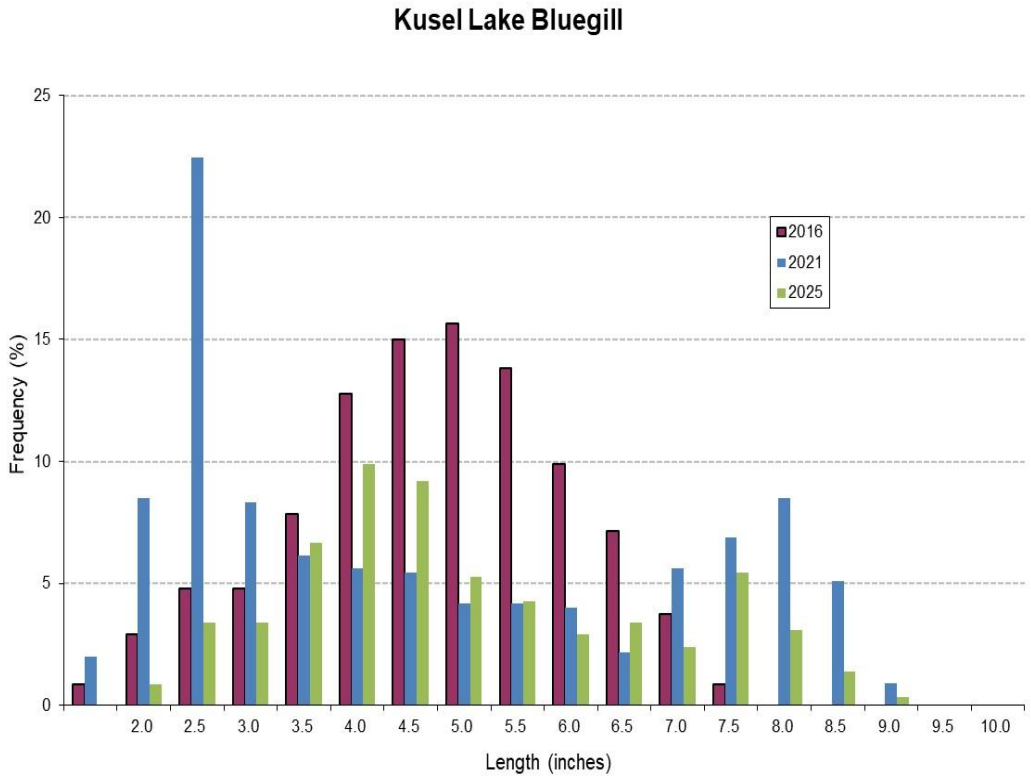

Table 3. 2025 size structure metrics for bluegill on Kusel Lake.

Total Number Measured	**Average Length (inches)**	**Length Range (inches)**	**Stock and Quality Size (inches)**	**Stock Number**	**Quality Number**
363	5.2	2.4 – 9.1	3 and 6	338	111

Table 4. Electrofishing number per mile for bluegill greater than or equal to 3 inches on Kusel Lake.

2016	**2021**	**2025**	**Historical Average**	**2025 Statewide Percentile Rank**	**2025 Abundance Rating**
537	370	644	517	99th	High

Table 5. Proportional stock density for bluegill on Kusel Lake.

2016	2021	2025	**Historical Median**	**2025 Statewide Percentile Rank**	**2025 Abundance Rating**
23	50	33	35	50th	Moderate

Table 6. 2025 size structure metric for other panfish from Kusel Lake.

Specie	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number
Black Crappie	8.5	5.5 - 10.5	5 and 8	11	8
Pumpkinseed	6.3	3.4 - 7.9	3 and 6	14	10
Yellow Perch	5.6	4.2 - 7.1	5 and 8	9	0

Table 7. Electrofishing per mile for other panfish from Kusel Lake.

Specie	Stock Size inches	Historical Average	2025 Statewide Percentile Rank	2025 Lake Class Percentile	2025 Abundance Rating
Black Crappie	5	9.7	66th	-	Moderate
Pumpkinseed	3	10.7	66th	70th	Moderately High
Yellow Perch	5	10	57th	-	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.

Figure 2. Largemouth bass length frequency from Kusel Lake.

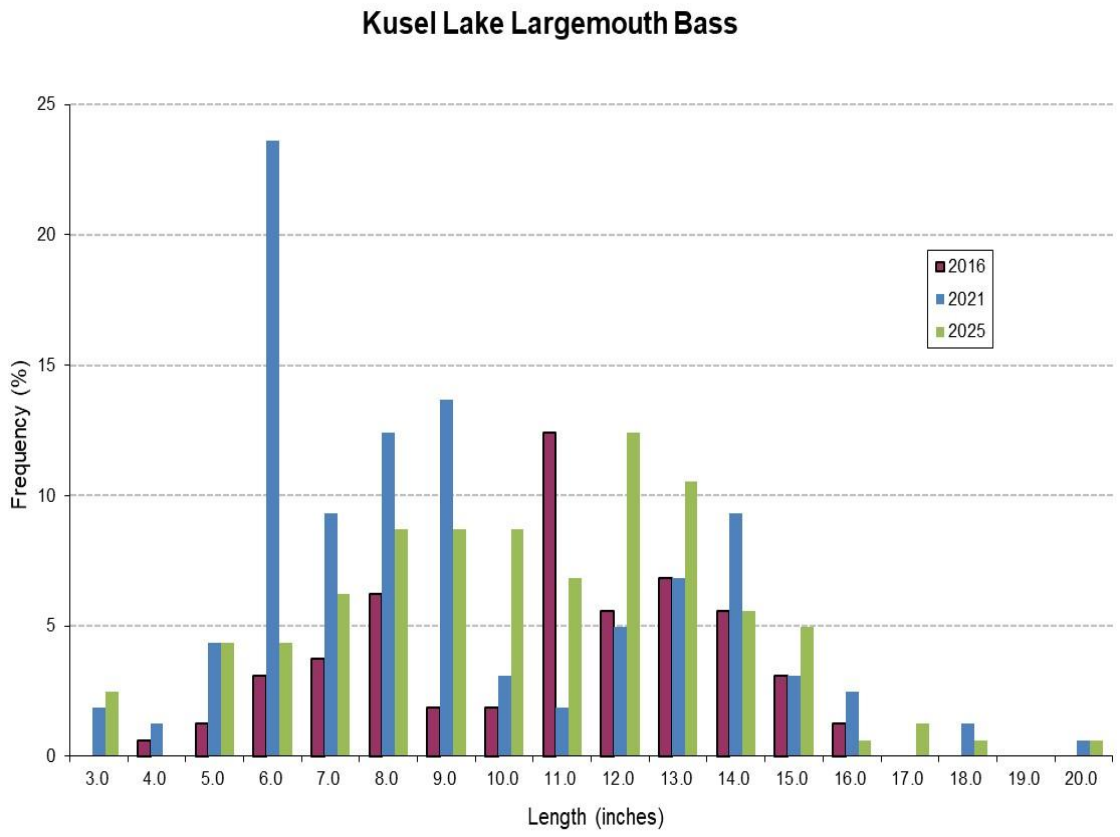

Table 10. 2025 size structure metrics for largemouth bass on Kusel Lake.

Total Number Measured	**Average Length (inches)**	**Length Range (inches)**	**Stock and Quality Size (inches)**	**Stock Number**	**Quality Number**
140	10.8	3.1 - 20.0	8 and 12	112	59

Table 11. Electrofishing number per mile for largemouth bass greater than or equal to 8 inches on Kusel Lake.

2016	2021	2025	**Historical Average**	**2025 Statewide Percentile Rank**	**2025 Abundance Rating**
31	42	51	41.3	90th	High

Table 12. Proportional stock density for largemouth bass on Kusel Lake.

2016	**2021**	**2025**	**Historical Median**	**PSD**	**Percentile Rank**	**Size Rating**
50	48	53	50.3	53	40th	Moderate

Table 13. Average age for Kusel Lake largemouth bass at 14 inches.

Sex	Count	Average Length	Average Age	Age Range	Lake Class Rating	Regional Rating
Male	5	14.2	7.6	7 - 10	Average	Slightly Below
Female	3	14.5	6.3	6 - 7	Above Average	Average
All	8	14.3	7.1	6 - 10	Average	Slightly Below

Discussion/Recommendations

Bluegill

At 644 per mile, abundance of bluegill 3 inches and larger has gone up from the 537 per mile in 2016 and significantly from the 370 per mile in 2021. This abundance ranks in the 99th percentile statewide. Current size structure PSD=33 is higher than PSD= 23 in 2016, but lower than PSD= 50 in 2021. This ranks in the 50th percentile compared statewide, but lower than the PSD 40-60 we would like to see. Age structures from 2021 show slightly slower than average growth for fish less than 6 inches and above average growth for fish larger. An ideal management option would be to decrease the abundance to near 350 per mile and increase size structure (PSD = 50). The experimental regulation for Kusel Lake expires April 1, 2026 and the new regulation will be a year round 10 bag for panfish.

Largemouth Bass

Abundance of 51 per mile has continued to increase when compared to the previous surveys and is slightly lower than the 75 per mile we would like to see in this area of the state and especially in Kusel Lake. Size structure of PSD = 53 is similar to the previous two surveys of PSD=50 in 2016 and PSD=48 in 2021. Size structure is currently ranking in the 40th percentile statewide. Age structures show average growth rates of 14 inch fish with it taking 7.1 years for largemouth bass to reach 14.3 inches. An ideal management option would be to maintain abundance at 50 to 60 per mile and increase the size structure PSD $\geq$ 65%, one method of accomplishing this might be to investigate rule changes. More abundant largemouth bass could also help attain the goal of decreasing panfish abundance.

Other species

We also sampled 12 yellow bullheads, but they are not listed on the front page.

Habitat

A reminder that nearshore habitat is critical to the fisheries populations in our lakes. Kusel benefitted from higher than average water levels for a good stretch from 2016 to about 2023. The higher than average water flooded back bays, shoreline trees and plants. All of this provided great habitat for spawning fish, young fish, adult fish, turtles, birds and bugs. As the water levels recede, much of this habitat will be left high and dry. So please consider leaving downed trees and aquatic plants in front of your property if at all possible.