WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2022 Electrofishing Summary Report
Kinney Lake, Waupaca County
294900

Introduction And Objectives

In 2022, the Wisconsin Department of Natural Resources (DNR) conducted a one night electrofishing survey of Kinney 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 Kinney Lake.

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Lake Information
Acres: 65.9
Max. Depth: 10 feet
Shoreline Miles: 2.0 miles
Public Access: 1 boat landing
Lake Class: Simple - Warm - Dark

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**
Kinney Lake	5/17/2022	70	All	1.45	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

- Kinney 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 1.45 miles of shoreline. Gamefish were collected and measured throughout, and panfish were collected and counted along 1.45 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	2	1.4	17th	Low	> 8.0 inches	1.4	37th	Moderate
bluegill	564	389.0	95th	High	>7.0 inches	0.7	19th	Low
Largemouth bass	46	31.7	74th	Moderate - High	>14.0 inches	9.0	83rd	Moderate - High
Pumpkinseed	100	69.0	95th	High	>7.0 inches	3.4	83rd	Moderate - High
Yellow perch	14	9.7	51st	Moderate	>8.0 inches	0	-	Low

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

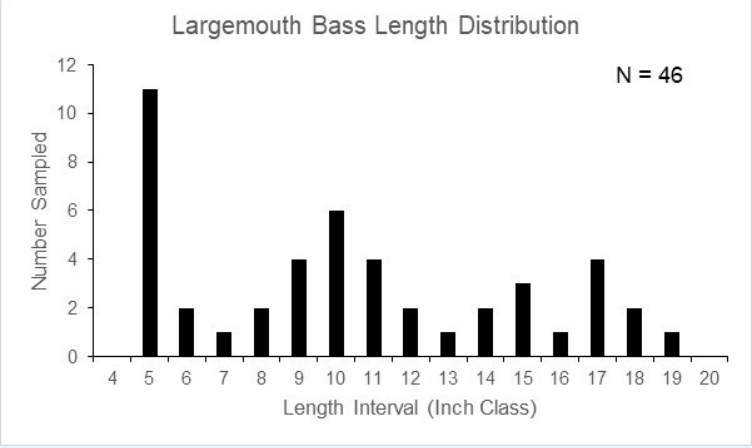
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
46	10.8	5.0 - 19.0	8.0 and 12.0 inches	32	16	50	36th	Moderate

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2010	2012	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
46	40.0	25.7	31.7	31.7	74th	Moderate - High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year			Historical Median
2010	2012	2022	
35	91	50	50



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

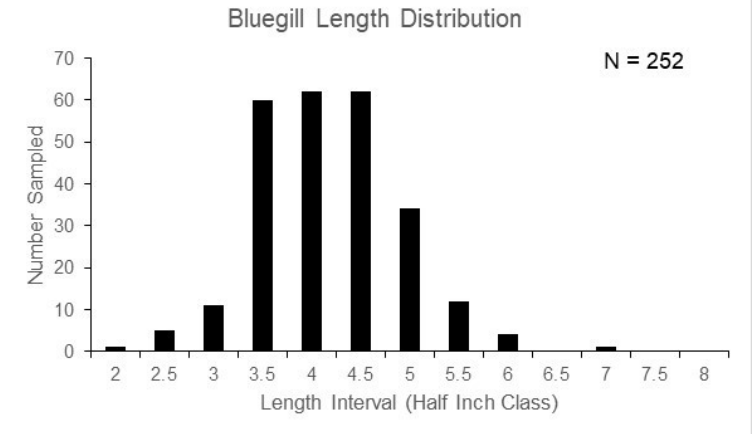
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
252	4.3	2.3 - 7.3	3.0 and 6.0	246	5	2	3rd	Low

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2010	2012	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
564	97.0	68.4	389.0	97.0	95th	High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year			Historical Median
2010	2012	2022	
27	44	2	27



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

2022 SIZE STRUCTURE METRICS

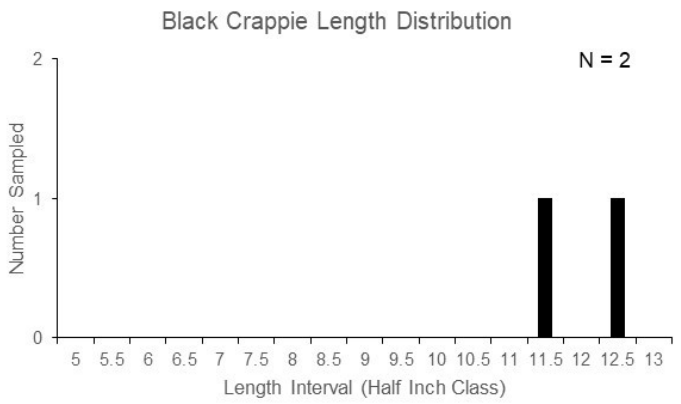
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
2	12.1	11.5 - 12.6	5.0 an 8.0	2	2	100	-	High

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2010	2012	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
2	1.0	0.7	1.4	1.0	17th	Low

SIZE STRUCTURE (PSD) TRENDS

PSD by Year			Historical Median
2010	2012	2022	
100	100	100	100



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

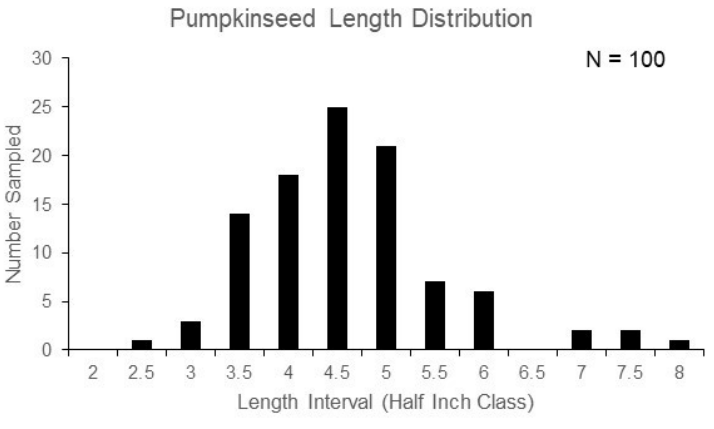
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
100	4.8	2.7 - 8.2	3.0 and 6.0	99	11	11	22nd	Low

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2010	2012	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
100	1.0	8.8	69.0	8.8	95th	High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year			Historical Median
2010	2012	2022	
60	42	11	42



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

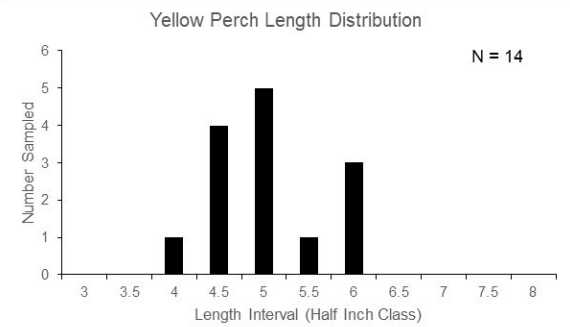
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
14	5.2	4.4 - 6.2	5.0 and 8.0	9	0	0	-	Low

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2010	2012	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
14	3.0	2.9	9.7	3.0	51st	Moderate

SIZE STRUCTURE (PSD) TRENDS

PSD by Year			Historical Median
2010	2012	2022	
0	0	0	0



Full Summary

Largemouth Bass

Kinney Lake supports a moderate to high density largemouth bass population with a catch rate of 31.7 per mile of electrofishing. A catch rate of 31.7 per mile ranks in the 74th percentile when compared to other lakes statewide. Relative abundance comparisons from the past survey indicate that density of largemouth bass has rebounded to historical levels since the fish kill in 2020. The current statewide regulation should be sufficient to maintain and even enhance the largemouth bass population. This is critical to developing a balanced fishery between the bluegill and largemouth bass.

Bluegill

Kinney Lake supports a high density bluegill population with catch rates 389.0 bluegill per mile of electrofishing from the boomshocker survey. A catch rate of 389.0 per mile ranks in the 95th percentile when compared to catch rates statewide. Catch rates of bluegill greater than 7.0 inches was 0.7 per mile which ranks in the 19th percentile and below average when compared to other lakes statewide. Size structure of bluegill in Kinney Lake was characterized as low. Length data which resulted in a PSD value of 2 is ranked in the 3rd percentile when compared to others lakes throughout the state. Population trends from the previous surveys indicate that densities of bluegill have begun to rebound since the fish kill in 2020. However the size structure is still low, with high densities of 3 - 5 inch bluegill. Historically, the lake has had high densities and low size structure of bluegills. Stocking to increase the predators in Kinney Lake could give the bluegills a chance to grow to larger sizes by keeping densities lower. Winterkill lakes such as Kinney Lake often experience unstable populations and are difficult to manage, hence management changes are not recommended.

Pumpkinseed

The lake supports a high density pumpkinseed population with a catch rate of 69.0 per mile of electrofishing, which ranks in 95th percentile when compared to other lakes in the state. Furthermore catch rates of pumpkinseed greater than 7.0 inches is 3.4 per mile of electrofishing, which ranks in the 93rd percentile. Abundance levels of pumpkinseed have increased since the last survey in 2012 and are above the historical levels observed in the past. Size structure metrics indicate a PSD value of 11, which ranks in the 22nd percentile when compared to lakes statewide. In a few years many of these fish will grow into larger sized harvestable sized pumpkinseed.

Yellow Perch

Yellow perch densities in Kinney Lake are at moderate levels with sampling of 9.7 yellow perch per mile of electrofishing, which ranks in the 51st percentile statewide. However, size structure of yellow perch in Kinney Lake is low with no fish over 8.0 inches captured in the surveys. Historically there have been low densities of yellow perch, and the size structure has been poor, with fish not being observed greater than 8.0 inches.

Other Species and Information

The other species captured in our survey was golden shiner, black bullhead and warmouth. There were 25 warmouth, which is another panfish species that is not as common but none of them were larger than 5 inches.