



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2023 SEII Summary Report Lawrence Pond, Marquette County WBIC: 167000

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Introduction And Objectives

In 2023, the Wisconsin Department of Natural Resources (DNR) conducted a one night electrofishing survey of Lawrence Pond 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. The following report is a brief summary of that survey including the general status of the fish populations and future management options for Lawrence Pond.

SURVEY INFORMATION

Site Location	Survey Dates	Water Temperature (°F)	Target Species	Gear
Lawrence Pond	05/15/2023	67	Bass and Panfish	Electroshocking

DNR Contact

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Lake Information

Acres: 221
Max. Depth: 12 ft
Shoreline Miles: 6.9
Public Access: 2
Lake Class: Simple Riverine

Regulations:

Minimum length, Bag

Panfish: no minimum, 25 bag
Largemouth Bass: 14 inch, 5 bag
Northern Pike: 26 inch, 2 bag
Walleye: 15 inch, 3 bag

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 more plump than average.

Survey Method

- Lawrence Pond 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.
- Boom shocker was used to electrofish 5 miles of shoreline. Gamefish were collected throughout and all fish were collected and measured in 2 half mile stations.

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	514	5.4	2.2 – 10.2	514	97th	95th	High
Pumpkinseed	12	6.2	3.6 – 8.0	12	63rd	50th	Moderate
Black crappie	12	8.4	3.7 – 9.2	12	69th	-	Moderate
Yellow perch	17	5.1	3.0 – 8.8	17	66th	-	Moderate
Largemouth bass	777	12.3	3.0 – 18.6	155	99th	95th	High
Northern pike	34	18.8	5.5 – 24.0	6.8	91st	-	High
Walleye	8	20.3	14.3 – 24.6	1.6	16th	-	Low



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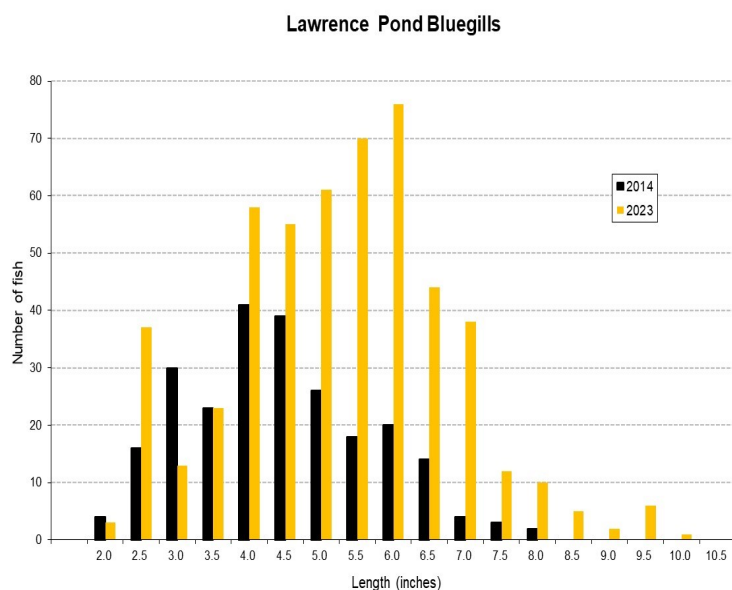
Lawrence Pond Bluegill

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
514	5.4	2.2 – 10.2	3 and 6	474	194	41	59th	Moderate

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)					
2014	2023	Historical Average	2023 Lake Class Ranking	2023 Statewide Percentile Rank	2023 Abundance Rating
237	514	375.5	95th	97th	High

SIZE STRUCTURE (PSD) TRENDS		
PSD by Year		Historical Average
2014	2023	
20	41	30.5

AVERAGE BLUEGILL AGE AT 6 INCHES					
Sex	Count	Average Age	Age Range	Lake Class Rating	Regional Rating
Male	4	5	5	Average	Average
Female	6	4.3	4 - 5	Average	Above Average
All	10	4.6	4 - 5	Average	Above Average



Lawrence Pond Pumpkinseed

SIZE STRUCTURE METRICS		
Total Number Measured	Average Length (inches)	Length Range (inches)
12	6.2	3.6 – 8.0

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)					
2014	2023	Historical Average	2023 Lake Class Rating	2023 Statewide Percentile Rank	2023 Abundance Rating
12	12	12	50th	63rd	Moderate

Lawrence Pond Black Crappie

SIZE STRUCTURE METRICS		
Total Number Measured	Average Length (inches)	Length Range (inches)
12	8.4	3.7 – 9.2

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)				
2014	2023	Historical Average	2023 Statewide Percentile Rank	2023 Abundance Rating
1	12	6.5	69th	Moderate

AVERAGE BLACK CRAPPIE AGE AT 8 INCHES					
Sex	Count	Average Age	Age Range	Lake Class Rating	Regional Rating
All	6	4.3	4 - 5	Average	Average

Lawrence Pond Yellow Perch

SIZE STRUCTURE METRICS		
Total Number Measured	Average Length (inches)	Length Range (inches)
17	5.1	3.0 – 8.8

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)				
2014	2023	Historical Average	2023 Statewide Percentile Rank	2023 Abundance Rating
40	17	28.5	66th	Moderate



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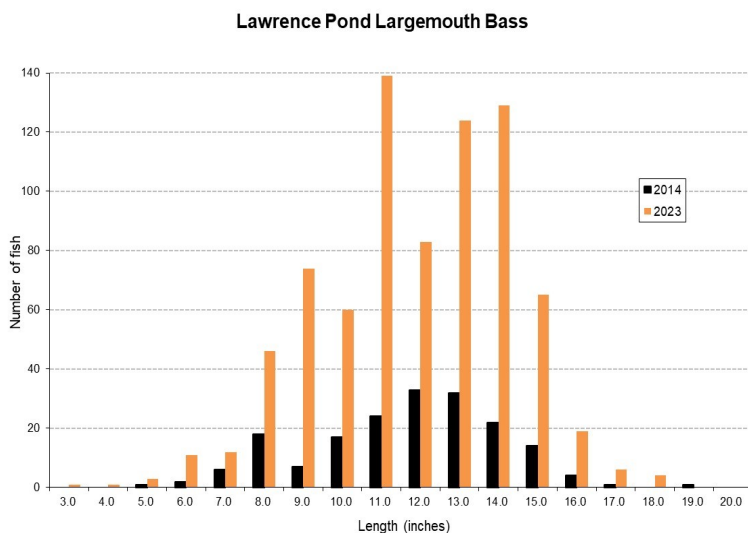
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Lawrence Pond Largemouth Bass

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
777	12.3	3.0 – 18.6	8 and 12	749	430	57	46th	Moderate

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)					
2014	2023	Historical Median	2023 Lake Class Ranking	2023 Statewide Percentile Rank	2023 Abundance Rating
40	155	97.5	95th	99th	High

SIZE STRUCTURE (PSD) TRENDS						
PSD by Year		RSD14 by Year		Historical PSD Average	2023 Statewide PSD Percentile Rank	2023 PSD Abundance Rating
2014	2023	2014	2023			
62	57	24	30	59.5	46th	Moderate



AVERAGE LMB AGE AT 12 INCHES					
Sex	Count	Average Age	Age Range	Lake Class Rating	Regional Rating
All	9	4.7	4 - 5	Average	Average

Lawrence Pond Northern Pike

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
30	19.4	15.0 – 22.5	14 and 21	30	11	37	64th	Moderate

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)				
2014	2023	Historical Average	2023 Statewide Percentile Rank	2023 Abundance Rating
3.7	6.8	5.3	91st	High

AVERAGE NP AGE AT 18 INCHES					
Sex	Count	Average Age	Age Range	Lake Class Rating	Regional Rating
All	5	3.6	3 - 5	Below Average	Average

Lawrence Pond Walleye

SIZE STRUCTURE METRICS		
Total Number Measured	Average Length (inches)	Length Range (inches)
8	20.3	14.3 – 24.6

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)				
2014	2023	Historical Average	2023 Statewide Percentile Rank	2023 Abundance Rating
3.7	1.6	2.7	16th	Low



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Summary

Bluegill

- Abundance has more than doubled since the 2014 survey. At 514 per mile it ranks in the 97th percentile statewide and 95th compared to lakes in same lake class. The current abundance level is higher than average for area lakes.
- Size structure is fair at PSD = 41% and ranks in the 59th percentile.
- Age structures show slightly above average growth with an average age of fish in the 6 inch range = 4.6 years.
- Management goals should be to maintain an abundance from 300-500 fish per mile and maintain a size structure between PSD 40-60%. Growth rates do not appear affected by the high abundance levels. At these abundance levels the goal is to maintain at or improve on the average growth as compared to lakes statewide.

Pumpkinseed

- Abundance has remained unchanged since 2014 from 12/mile to 12/mile ranking in the 63rd percentile statewide and 50th percentile compared to same lake class..
- There were not enough fish sampled to get a valid size structure metric.

Black Crappie

- The SEI survey provided limited insight into the black crappie fishery, but we can compare to other SEI surveys. During the survey black crappie were observed spawning near some downed, during a gamefish only station.
- Abundance has increased substantially since the 2014 survey. At 12 per mile it ranks in the 63rd percentile statewide, but not enough fish sampled to get a valid size structure metric (PSD).
- Age structures show average growth with the average age of fish in the 8 inch range = 4.3 years.

Yellow Perch

- Abundance has decreased since the 2014 survey. At 17 per mile it ranks in the 66th percentile statewide.
- There were not enough fish sampled to get a valid size structure metric.

Largemouth Bass

- Abundance increased to 155 per mile, almost 4 fold since 2014, this ranks in the 99th percentile statewide and 95th compared to lakes in the same lake class.
- Size structure of PSD = 57 is in the moderate level and relatively unchanged from the last survey in 2014, ranking in the 46th percentile.
- Age structures show average growth, average age of fish in the 12 inch range = 4.7 years, and maintaining these growth rates at the high abundance should continue to produce a stable population.

Northern Pike

- Abundance increased since the 2014 survey at 6.8 per mile is considered high and ranks in the 64th percentile statewide.
- Size structure of PSD = 37 is considered moderate and in the 64th percentile statewide.
- Age structures show below average growth compared to lakes in the same lake class for fish in the 18 inch range.

Walleye

- Walleyes are present in Lawrence Pond due to private stocking efforts, but at 1.6 per mile the abundance is considered low. Abundance has declined since the 2014 survey and ranks in the 16th percentile statewide.
- There were not enough fish sampled to get a valid size structure metric..