WISCONSIN DEPARTMENT OF NATURAL RESOURCES
2023 SEII Summary Report
Harrisville Pond, Marquette County
WBIC: 165700

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Introduction And Objectives

In 2023, the Wisconsin Department of Natural Resources (DNR) conducted a one night electrofishing survey of Harrisville 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 Harrisville Pond.

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Lake Information
Acres: 245
Max. Depth: 10 ft
Shoreline Miles: 7.2
Public Access: 1
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

SURVEY INFORMATION

Site Location	Survey Dates	Water Temperature (°F)	Target Species	Gear
Harrisville Pond	05/10/2023	67	Bass and Panfish	Electroshocking

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

- Harrisville 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 2 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)

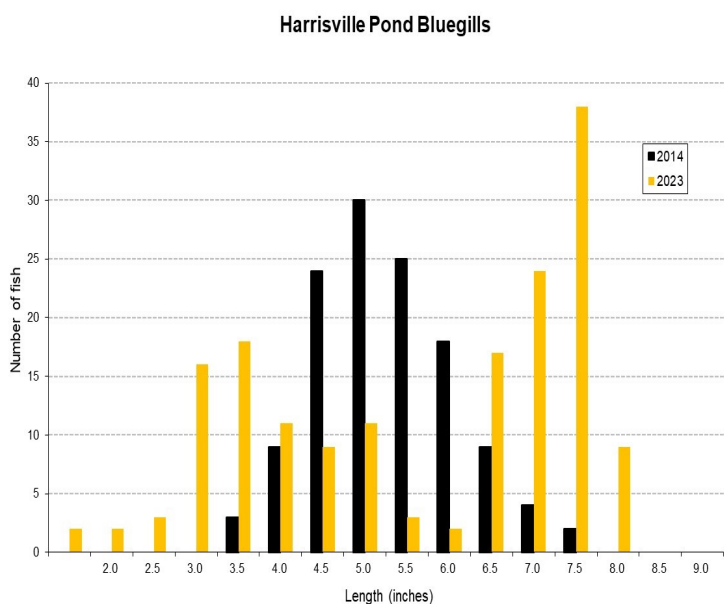| Species	Total Number Captured	Average Length (Inches)	Length Range (inches)	CPUE/Mile	Statewide Percentile	Lake Class Percentile	Overall Abundance Rating
Bluegill	165	5.8	1.5 –8.3	165	73rd	63rd	Moderately High
Pumpkinseed	79	4.8	2.5 –7.6	79	96th	97th	High
Black crappie	1	6.9	6.9	1	12th	-	Low
Rock bass	12	6.8	4.1 –9.0	12	69th	97th	High
Largemouth bass	34	13.8	4.0 –18.3	17	56th	50th	Moderate
Northern pike	5	18.8	8.4 -29.8	2.5	63rd	-	Moderate
Smallmouth bass	2	15.3	14.8 –15.8	1	25th	33rd	Low

Harrisville 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
165	5.8	1.5 –8.3	3 and 6	158	90	57	77th	Moderately High

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

2014	2023	Historical Average	2023 Lake Class Ranking	2023 Statewide Percentile Rank	2023 Abundance Rating
123	165	144	63rd	73rd	Moderate

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Average
2014	2023	
27	57	42

AVERAGE BLUEGILL AGE AT 6 INCHES

Sex	Count	Average Age	Age Range	Lake Class-Rating	Regional Rating
Male	7	5.4	5 - 6	Average	Average
Female	3	5.3	5 - 6	Average	Average
All	10	5.4	5 - 6	Average	Average

Harrisville Pond Bluegills

Harrisville Pond Pumpkinseed

SIZE STRUCTURE METRICS

Total Number Measured	Average Length (inches)	Length Range (inches)	PSD 2014	PSD 2023	Historical Average	Percentile Rank	Size Rating
79	4.8	2.5 – 7.6	17	30	23.5	46th	Moderate

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

2014	2023	Historical Average	2023 Lake Class Rating	2023 Statewide Percentile Rank	2023 Abundance Rating
46	79	62.5	97th	96th	High

Harrisville Pond Black Crappie

SIZE STRUCTURE METRICS

Total Number Measured	Average Length (inches)	Length Range (inches)
1	6.9	6.9

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

2014	2023	Historical Average	2023 Statewide Percentile Rank	2023 Abundance Rating
1	1	1	12th	Low

Harrisville Pond Rock Bass

SIZE STRUCTURE METRICS

Total Number Measured	Average Length (inches)	Length Range (inches)
12	6.8	4.1 – 9.0

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

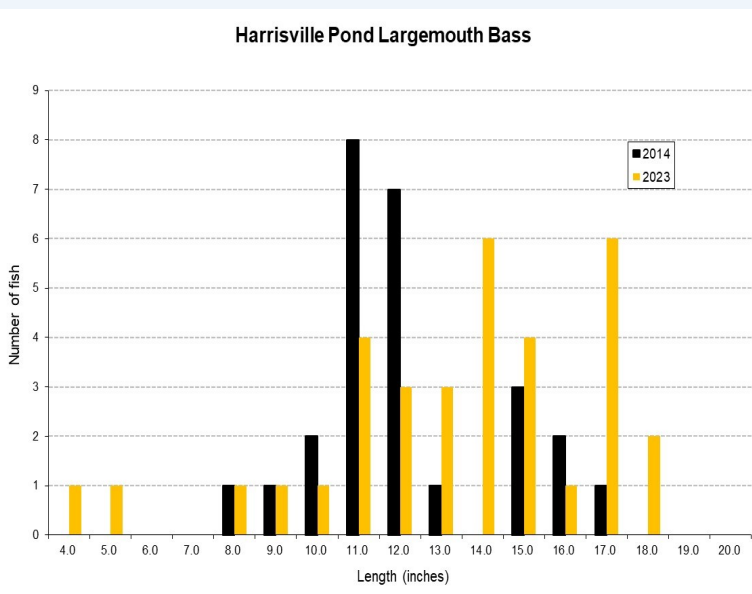| 2014	2023	Historical Average	2023 Lake Class Rating	2023 Statewide Percentile Rank	2023 Abundance Rating
1	12	6.5	97th	69th	Moderately High

Harrisville 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
34	13.8	4.0 - 18.3	8 and 12	32	25	78	78th	Moderately High

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

2014	2023	Historical Average	2023 Lake Class Ranking	2023 Statewide Percentile Rank	2023 Abundance Rating
12.5	17	14.8	50th	56th	Moderate

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			
54	78	23	59	65	78th	Moderately High

AVERAGE LMB AGE AT 12 INCHES

Sex	Count	Average Age	Age Range	Lake Class Rating	Regional Rating
All	3	3.3	3 - 4	Above Average	Above Average

Harrisville Pond Largemouth Bass

Harrisville 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
5	18.8	8.4 – 29.8	14 and 21	4	1	Too Few	-	-

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

2014	2023	Historical Average	2023 Statewide Percentile Rank	2023 Abundance Rating
2	2.5	2.25	63rd	Moderate

Harrisville Pond Smallmouth Bass

SIZE STRUCTURE METRICS

Total Number Measured	Average Length (inches)	Length Range (inches)
2	15.3	14.8 – 15.8

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

2014	2023	Historical Average	2023 Statewide Percentile Rank	2023 Abundance Rating
0.5	1	0.75	25th	Low

Summary

Bluegill

- Abundance has increased slightly since the 2014 survey. At 165 per mile it ranks in the 73rd percentile statewide and 63rd compared to lakes in same lake class.
- Size structure is good at PSD = 57% and ranks in the 77th percentile.
- Age structures show average growth with an average age of fish in the 6 inch range = 5.4 years.
- The current abundance level is good for lakes in this area of the state. Management goals should be to maintain an abundance from 150 – 250 fish per mile and maintain a size structure between PSD 40-60%. Maintenance of these parameters should help keep growth comparable to lakes statewide. Notably, pumpkinseed abundance is likely influencing growth of bluegill.

Pumpkinseed

- Abundance has increased since 2014 from 46/mile to 79/mile ranking in the 96th percentile statewide and 97th percentile compared to same lake class.
- Size structure is fair with a PSD = 30 and ranks in the 46th percentile compared statewide.
- The current abundance is high and a slight reduction in abundance perhaps closer to 50/mile may lead to an increased size structure (PSD = 40-60). This could benefit the fishery allowing for decreased competition with bluegill, increasing their growth. The best management would include more harvest of pumpkinseed.

Black Crappie

- This sample provided no insight into the black crappie fishery. There were not enough fish sampled to get a valid size structure metric. We captured only 1 fish or 1 per mile and this catch rate ranks in the 12th percentile statewide. .

Largemouth Bass

- Abundance was at 17 per mile, increased slightly since 2014. This ranks in the 56th percentile statewide and 50th compared to lakes statewide.
- Size structure of PSD = 78 is at the moderately high level and increased 45% from the last survey in 2014, ranking in the 78th percentile.
- Age structures show above average growth with an average age of fish in the 12 inch range = 3.3 years.
- Largemouth bass abundance is low for lakes in this area of the state. Ideal management would be to increase bass numbers to 50 –75 per mile and maintain size structure PSD = 50-70. The above average growth rates can likely be maintained even at higher abundance.

Northern Pike

- This type of survey is not designed to assess the northern pike population but comparisons among surveys can be made. Currently, at 2.5 per mile. This abundance is moderate is unchanged from the 2014 survey and ranks in the 63rd percentile statewide.
- Surveys from the past show that Harrisville Pond has the potential to grow large northern pike up to the 40 inch range. There have not been concerns from the public on the northern pike management in Harrisville Pond. However, DNR will review the schedule and strive to survey the lake with nets and obtain a larger dataset of age structures to help determine if a rule change is needed and supported by data.

Smallmouth Bass

- Harrisville Pond is not your typical smallmouth bass lake, but they do exist at low numbers. One fish was sampled in the 2014 survey and 2 fish in 2023. There is potentially some minimal spawning success in the lake itself or in Westfield Creek which forms Harrisville Pond. There were not enough fish sampled to get a valid size structure metric.

Other Species Sampled

Black bullhead (4), brown bullhead (9), common carp (9), golden shiners (4), green sunfish (1), white suckers (32) and yellow bullhead (15).