



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

SEII Summary Report Twin Lakes, Marquette County

East Basin: 103100

West Basin: 117000

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Introduction And Objectives

In 2022, the Wisconsin Department of Natural Resources (WDNR) conducted a one night electrofishing survey of Twin Lakes 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 Twin Lakes.

DNR Contact

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Lake Information

Acres: 39

Max. Depth: 24 ft

Shoreline Miles: 1.82

Public Access: 1

Lake Class:

East Basin – Simple Harsh No Fishery

West Basin – Complex Warm Dark

Regulations:

Minimum length, Bag

Panfish: no minimum, 25 bag

Largemouth Bass: 14 inch, 5 bag

Smallmouth Bass: 14 inch, 5 bag

Walleye: 15 inch, 5 bag

Northern Pike: 26 inch, 2 bag

SURVEY INFORMATION

Site Location	Survey Dates	Water Temperature (°F)	Target Species	Gear
Twin Lakes East Basin	05/20/2022	67	Bass and Panfish	Electroshocking
Twin Lakes West Basin	05/20/2022	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

- Twin Lakes 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 shockers were used to electrofish 1.82 miles of shoreline. Gamefish were collected and measured throughout, and panfish were collected and counted along 1.82 miles.
- East basin = .95 miles
- West basin = .87 miles

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
East Basin: Bluegill	108	6.0	3.3 – 9.2	113.7	60th		Moderate
East Basin: Yellow perch	52	7.0	3.9 – 10.2	54.7	89th		High
East Basin: Largemouth bass	126	9.5	4.7 – 21.2	132.6	88th		High
West Basin: Bluegill	71	6.3	2.7 – 7.9	81.6	49th	36th	Moderate
West Basin: Yellow perch	49	7.3	3.3 – 10.0	56.3	90th	-	High
West Basin: Largemouth bass	62	11.3	5.7 – 20.7	71.3	93rd	84th	High



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Twin Lakes East Basin Bluegill Data

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
108	6.0	3.3 – 9.2	3 and 6	108	69	64	83rd	High

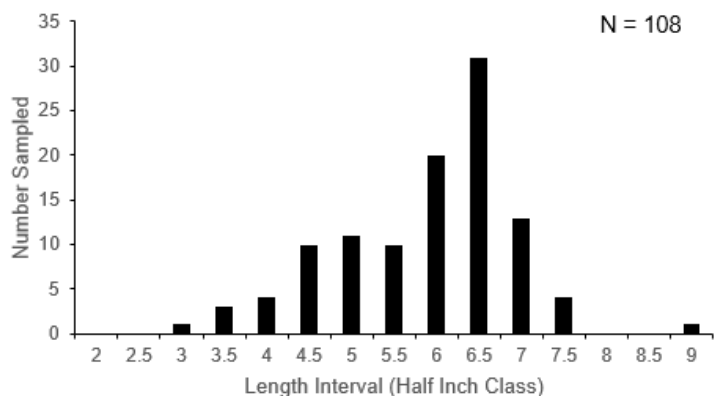
RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2015	2022	Historical Median	Lake Class Percentile	2022 Statewide Percentile Rank	2022 Abundance Rating
114	7.5	113.7	60.6	93rd	60th	Moderate

AVERAGE BLUEGILL AGE AT 6 INCHES

Sex	Count	Average Age	Age Range
Male	12	5	3 – 6
Female	11	5.7	5 – 7
All	23	5.3	3 – 7

Bluegill Length Distribution



Twin Lakes West Basin Bluegill Data

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
71	6.3	2.7 – 7.9	3 and 6	70	62	89	97th	High

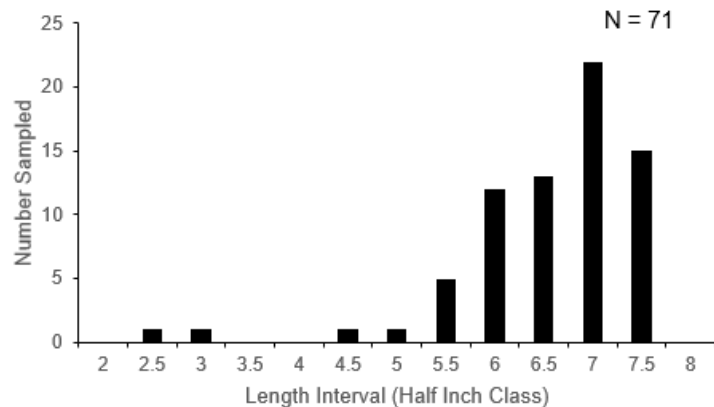
RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2015	2022	Historical Median	Lake Class Percentile	2022 Statewide Percentile Rank	2022 Abundance Rating
80	18	81.6	49.8	36th	49th	Moderate

AVERAGE BLUEGILL AGE AT 6 INCHES

Sex	Count	Average Age	Age Range
Male	12	5	3 – 6
Female	11	5.7	5 – 7
All	23	5.3	3 – 7

Bluegill Length Distribution





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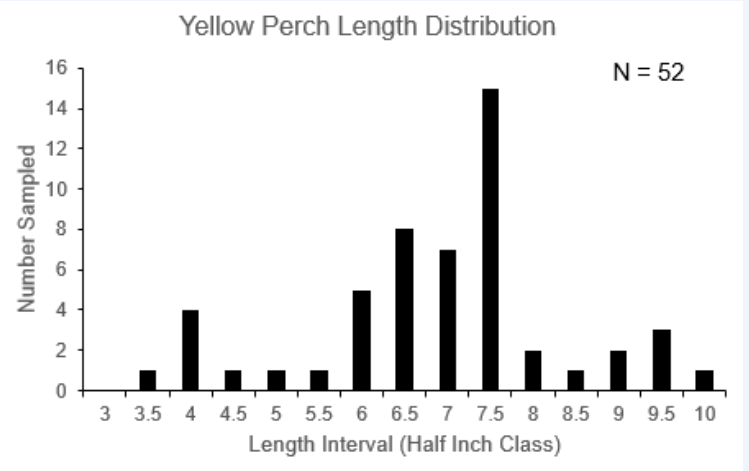
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Twin Lakes East Basin Yellow Perch Data

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
52	7.0	3.9 – 10.2	5 and 8	46	9	20	81st	High

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)					
Total Sampled	2015	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
61	11.3	54.7	33	89th	High

AVERAGE YELLOW PERCH AGE AT 8 INCHES			
Sex	Count	Average Age	Age Range
Male	4	6.3	6 – 7
Female	5	4.2	4 – 5
All	9	5.1	4 – 7

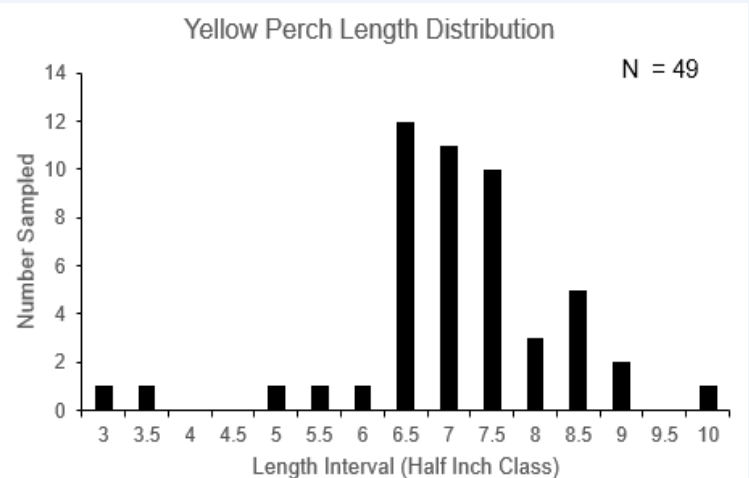


Twin Lakes West Basin Yellow Perch Data

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
49	7.3	3.3 – 10.0	5 and 8	47	11	23	84th	High

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)					
Total Sampled	2015	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
51	4	56.3	30.2	90	High

AVERAGE YELLOW PERCH AGE AT 8 INCHES			
Sex	Count	Average Age	Age Range
Male	4	6.3	6 – 7
Female	5	4.2	4 – 5
All	9	5.1	4 – 7





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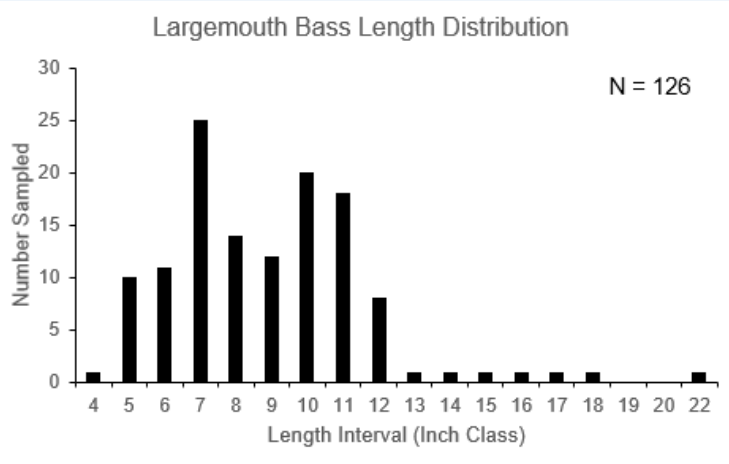
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Twin Lakes East Basin Largemouth Bass Data

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
126	9.5	4.7 – 21.2	8 and 12	79	15	19	6th	Low

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)						
Total Sampled	2015	2022	Historical Median	Lake Class Percentile	2022 Statewide Percentile Rank	2022 Abundance Rating
154	35	132.6	83.8	100%	88th	High

AVERAGE LARGEMOUTH BASS AGE AT 8 INCHES			
Sex	Count	Average Age	Age Range
All	5	5.8	5 – 6

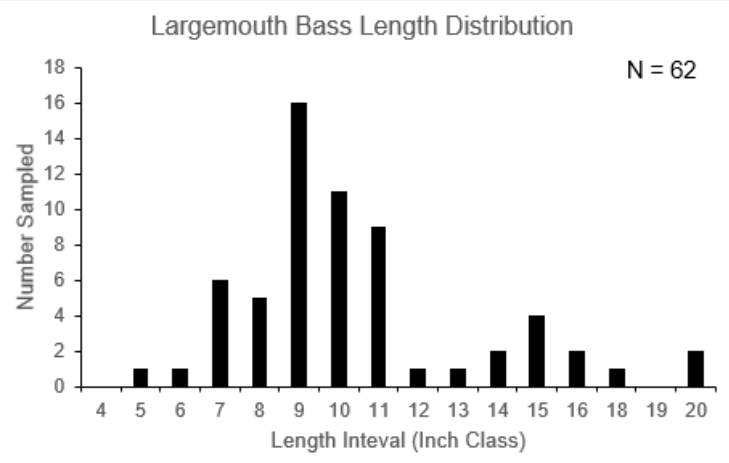


Twin Lakes West Basin Largemouth Bass Data

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
62	11.3	5.7 – 20.7	8 and 12	54	13	24	9th	Low

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)						
Total Sampled	2015	2022	Historical Median	Lake Class Percentile	2022 Statewide Percentile Rank	2022 Abundance Rating
73	22	71.3	46.7	84th	93rd	High

AVERAGE LARGEMOUTH BASS AGE AT 12 INCHES			
Sex	Count	Average Age	Age Range
All	5	5.8	5 – 6





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Full Summary

Bluegill

Abundance has increased dramatically since 2015 averaging 97.7 fish/mile across both east and west basins. Good size structure (PSD=64-89) existed in both basins falling in the 83rd percentile. Bluegill in Twin Lakes have average growth rates taking 5 years to reach 6 inches. A good management strategy would be to maintain the catch per effort at 100 per mile and size structure of PSD>40.

Yellow Perch

Abundance has increased dramatically since 2015 averaging 55.5 fish/mile across the basins and ranking at the 89th percentile statewide. The size structure was high (PSD=20-23). Growth rates were average with fish taking 5 years to reach 8 inches.

Largemouth Bass

Abundance is high at 102 per mile (88-93rd percentile) across both basins. This high average catch a generally lower average PSD = 21.5, but the outlook is good for producing more fish in the preferred to memorable range (15-20) and even larger sizes. Growth rates are slightly below average with fish not reaching 12 inches until almost 6 years of age. For future management, target abundance at less than 100 per mile and size structure in the PSD=20-40 range.

Carp

An unusual catch for local lakes is an abundance of common carp. Common carp abundance was similar in both basins from 11.6/mile in East Basin to 13.8/mile in West Basin. The 23 total carp sampled ranged in size from 11.6 - 18.6 inches and averaged 13.8 inches. Growth rates are very slow with 11 - 12 inch fish being 14-18 years old.

Habitat

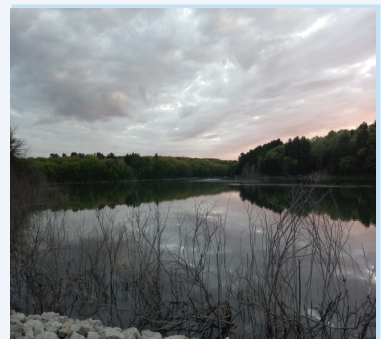
Lake conditions were much different in 2015 then 2022 so this should be kept in mind when comparing to 2015. In 2015, water levels were much lower which resulted in having to use the mini-boomshocker to sample. Visual observations definitely did confirm much better fishery habitat existed in 2022 over 2015. The lakes were compared separately in the report, but most likely act as one lake with fish moving between them. Good nearshore habitat is and currently with the high water. Habitat management should encourage maintaining the wood in the lake as well as native plants. One example, yellow perch are rely on wood/plants to lay their eggs on and without this habitat they struggle to reproduce and numbers drop.



Dip net of fish sampled in Twin Lakes survey 2022.



Tom Meronek holding a beautiful 20.7 inch Bass.



Twin Lakes showing increased water levels and flooded shoreline habitat.

Photos by DNR