WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2022 Electrofishing Summary Report
Kolpack Lake, Shawano County
189400

Introduction And Objectives

In 2022, the Wisconsin Department of Natural Resources (DNR) conducted a one night electrofishing survey of Kolpack Lake in order to provide insight and direction for the future fisheries management of this water body following a large fish kill. 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 Kolpack Lake.

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Lake Information
Acres: 19.4
Max. Depth: 19 feet
Shoreline Miles: 0.62 miles
Public Access: 1 boat landing
Lake Class: Simple - Warm - Clear

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
Kolpack Lake	06/01/2022	70	All	0.62	1	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
- Kolpack 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 0.62 miles of shoreline. Gamefish were collected and measured throughout, and panfish were collected and counted along 0.62 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	9	14.5	72nd	Moderate - High	> 8.0 inches	3.2	56th	Moderate
Bluegill	159	256.5	86th	Moderate - High	>7.0 inches	0	-	Low
Northern pike	3	4.8	83rd	Moderate - High	>21.0 inches	0	-	Low
Pumpkinseed	86	138.7	98th	High	>7.0 inches	0	-	Low
Yellow perch	9	14.5	61st	Moderate	>8.0 inches	1.6	79th	Moderate - High

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

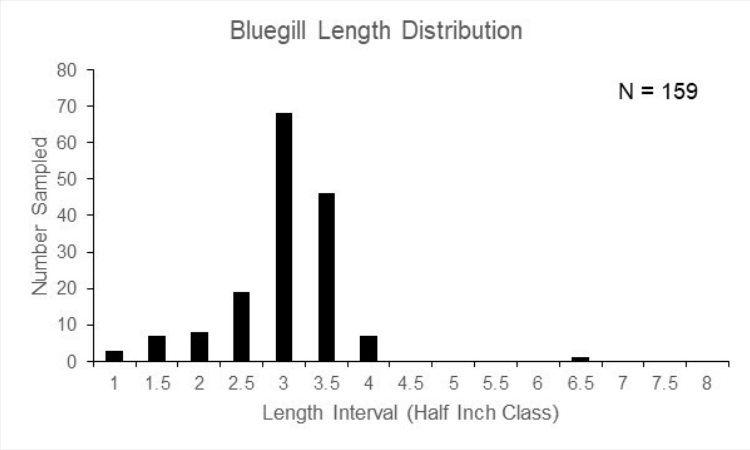
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
159	3.2	1.4 - 6.5	3.0 and 6.0	122	1	1	2nd	Low

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2005	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
159	118.8	256.5	187.7	86th	Moderate - High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2005	2022	
4	1	25



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

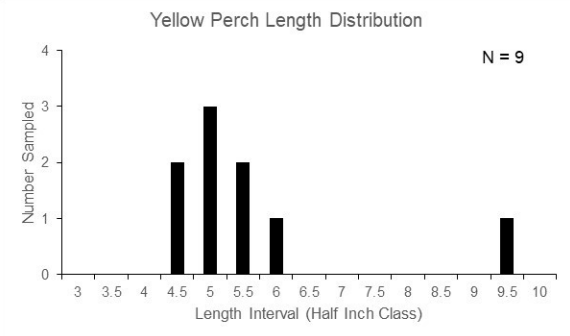
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
9	5.8	4.6 - 9.7	5.0 and 8.0	7	1	14	74th	Moderate - High

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2020	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
9	0	14.5	7.3	61st	Moderate

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2020	2022	
0	14	7



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

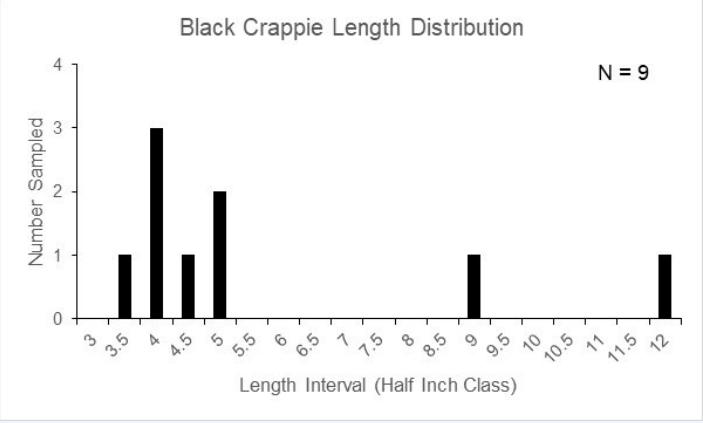
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
9	5.8	3.8 - 12.4	5.0 an 8.0	4	2	50	61st	Moderate

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2020	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
9	6.3	14.5	10.4	72nd	Moderate - High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2005	2022	
0	50	41



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

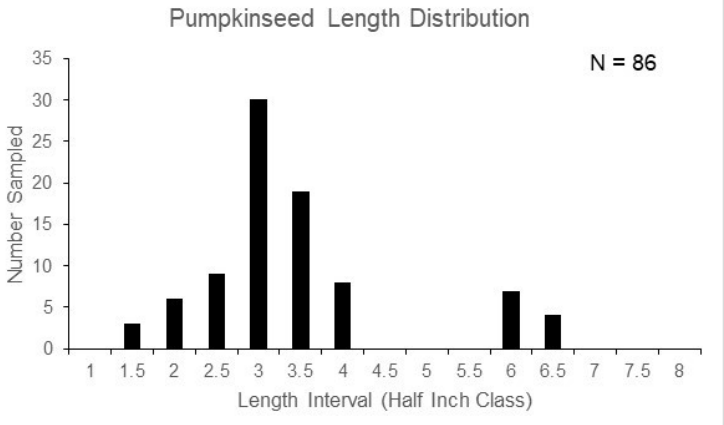
Total Number Measured	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
86	3.6	1.9 - 6.5	3.0 and 6.0	68	11	16	30th	Low

RELATIVE ABUNDANCE (CPUE = NUMBER PER MILE)

Total Sampled	2020	2022	Historical Median	2022 Statewide Percentile Rank	2022 Abundance Rating
86	13.8	138.7	76.3	98th	High

SIZE STRUCTURE (PSD) TRENDS

PSD by Year		Historical Median
2020	2022	
9	16	13



Summary

Bluegill

Kolpack Lake supports a moderate to high density bluegill population with catch rates 256.5 bluegill per mile of electrofishing from the boomshocker survey. A catch rate of 256.5 per mile ranks in the 86th percentile when compared to catch rates statewide. Catch rates of bluegill greater than 7.0 inches was 0 per mile leading to a size structure characterized as low. This length data resulted in a PSD value of 1 and is ranked in the 2nd percentile when compared to others lakes throughout the state. Population trends from the previous surveys indicate that densities of bluegill in Kolpack Lake have rebounded since the fish kill in 2021. Historically Kolpack Lake has had high densities and low size structure of bluegills. Increasing predators in Kolpack Lake may give the bluegills a chance to grow to larger sizes if densities remain in check. In the fall of 2022, 996 northern pike large fingerlings were stocked along with 550 largemouth bass large fingerlings. Additional survey work will help us determine management in the future.

Pumpkinseed

Kolpack Lake supports a high density pumpkinseed population with a catch rate of 138.7 per mile of electrofishing, which ranks in 98th percentile when compared to other lakes in the state. Furthermore catch rates of pumpkinseed greater than 7.0 inches is 0 per mile of electrofishing. The high densities of smaller sized pumpkinseed will grow to catchable size in a few years. Abundance levels pf pumpkinseed have increased since the last survey in 2005. which is typical to see in the recovery of a lake after experiencing a winterkill. Size structure metrics indicate a PSD value of 16, which ranks in the 30th percentile when compared to lakes statewide.

Yellow Perch

Yellow perch densities in Kolpack Lake are at moderate levels with sampling of 14.5 yellow perch per mile of electrofishing, which ranks in the 61st percentile statewide. However, size structure of yellow perch in Kolpack Lake is difficult to determine based on the small sample size with only 1 fish over 8.0 inches captured in the survey. Yellow perch along with the other panfish species will continue to grow and recover the population within the next few years. The growing yellow perch population, along with the stocking of predator fish, will hopefully help the predator- prey relationship in Kolpack Lake in the coming years.

Other Species

Only 3 northern pike were sampled in the spring of 2022, of which all of them were in the 15.0 inch range. Subsequently 996 northern pike were stocked into Kolpack Lake to reestablish a population to help keep balance between the panfish population. A follow up survey should help determine survival and contribution to the fishery of these stocked fish. Another common fish missing from this survey was largemouth bass, none were sampled in Kolpack in the spring of 2022. Subsequently 550 large fingerling largemouth bass were stocked to reestablish a population in Kolpack Lake. These additional predators will hopefully restore the predator-prey balance.

Habitat

Kolpack Lake association also maintains and operates an aerator during the winter months, which with some modifications can hopefully prevent a winterkill again in the future. In addition, they should take every opportunity to add wood such as tree drops to the lake to improve all around spawning and juvenile rearing habitat for both predator and prey species.