WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2021 Electrofishing Summary Report
Cloverleaf Chain of Lakes, Shawano County

299000

Introduction And Objectives

In 2021, the Wisconsin Department of Natural Resources (DNR) conducted a one night electrofishing survey of Cloverleaf Chain of Lakes in order to provide insight and direction for the future fisheries management of this water body. The 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 Cloverleaf Chain of Lakes.

DNR Contact

Elliot Hoffman - Fisheries Technician Advanced
647 Lakeland Road
Shawano, WI 54166
Phone: 920-420-9581
Email: Elliot.hoffman@wisconsin.gov

Lake Information

Acres: 316
Max. Depth: 52 feet
Shoreline Miles: 5.15 miles
Public Access: 2 boat landings
Lake Class: Complex - Warm - Dark

Regulations

Statewide default regulations; 25 panfish may be kept, except 5 or fewer may be bluegill or pumpkinseed over 7 inches

SURVEY INFORMATION

Site Location	Survey Dates	Water Temperature (°F)	Target Species	Total Miles Shocked	Number of Stations	Gear	Number of Netters
Cloverleaf Chain of Lakes	06/01/2021	70	All	1.5	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).

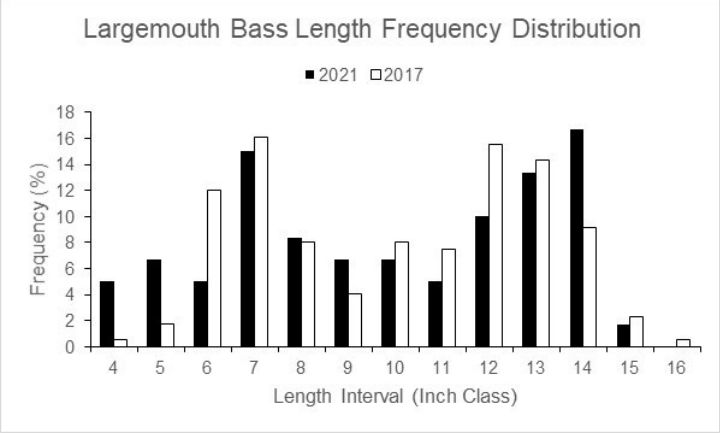
Survey Method

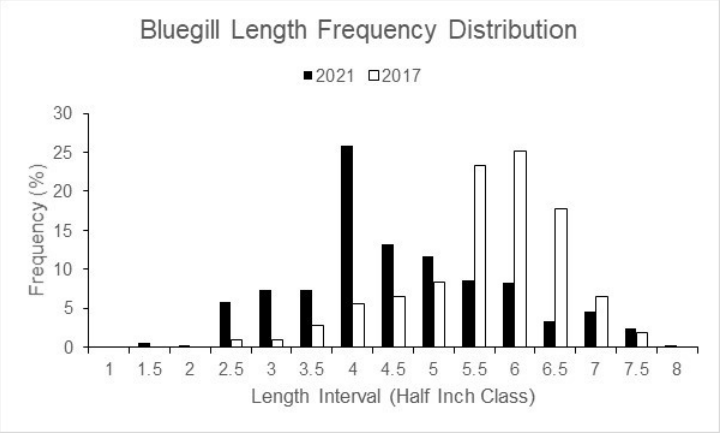
- Cloverleaf Chain of Lakes was sampled according to Spring Electrofishing II protocols as outlined in DNR Fisheries Monitoring Protocols. The primary objective for these sampling periods is to count and measure bass and panfish. Other gamefish/panfish may be sampled but are considered by-catch as part of this survey.
- Boom shockers were used to electrofish 1.5 miles of shoreline. Gamefish were collected and measured throughout, and panfish were collected and counted along 1.5 miles as well.

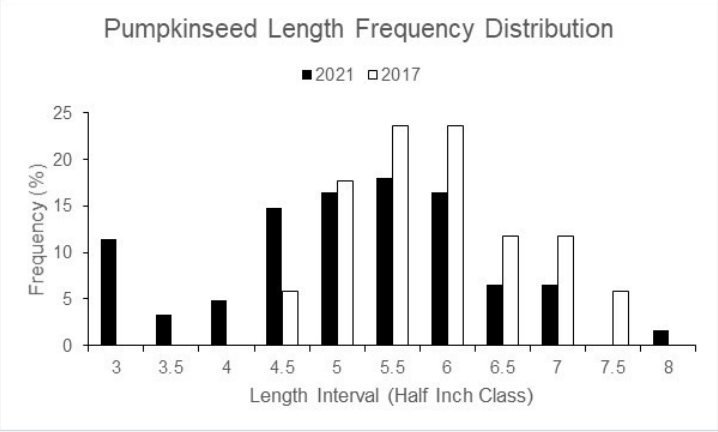
RELATIVE ABUNDANCE - CATCH PER UNIT EFFORT (CPUE)

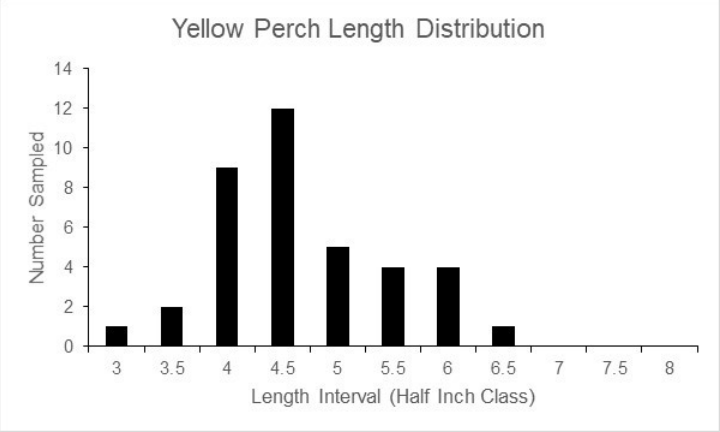
Species	Total Number Captured	CPUE Total (number per mile)	Statewide Percentile	Overall Abundance Rating	Length Index	Length Index CPUE	Length Index Statewide Percentile	Length Index Abundance Rating
bluegill	325	216.7	81st	Moderate - High	>7.0 inches	16.0	72nd	High
largemouth bass	60	40.0	81st	Moderate - High	>14.0 inches	7.3	77th	Moderate - High
pumpkinseed	61	40.7	90th	High	>7.0 inches	3.3	83rd	Moderate - High
yellow perch	38	25.3	75th	Moderate - High	>8.0 inches	0	-	Low

SIZE STRUCTURE METRICS									
Species	**Total**	**Average Length (inches)**	**Length Range (inches)**	**Stock and Quality Size (inches)**	**Stock Number**	**Quality Number**	**PSD**	**Percentile Rank**	**Size Rating**
bluegill	325	4.8	1.8 - 8.3	3.0 and 6.0	303	20	20	29th	Low
largemouth bass	61	10.4	4.1 - 15.1	8.0 and 12.0	41	25	31	53rd	Moderate
pumpkinseed	60	5.4	3.1 - 8.2	3.0 and 6.0	61	19	61	47th	Moderate
yellow perch	38	4.9	3.2 - 6.7	5.0 and 8.0	14	0	0	-	Low









Full Summary

Bluegill
Bluegill were captured in moderate to high densities. Sixteen bluegills >7.0-inches were captured per mile of electrofishing. Since the regulation change the average size of bluegills has decreased but the number of fish >7.0-inches per mile of electrofishing has increased. Bluegill size structure has shown slight improvement since the regulation change, as bluegill were captured in moderate to high densities and exhibited a poor PSD of 20. We will continue to monitor panfish population metrics post-regulation. Population metrics resulting from regulation changes can often take time to be observed.

Largemouth Bass
Largemouth bass were the dominant gamefish species captured in our survey. Largemouth bass were found in moderate to high densities and have average size structure with a PSD value of 61. Furthermore, a high-density of harvestable size fish with 7.3 >14.0-inches captured per mile of electrofishing. Of concern is the fact that there are no largemouth bass greater than 16.0-inches. Future survey work should include ageing of largemouth bass to determine if growth rates or overharvest is the driving factor behind the lack of larger fish.

Pumpkinseeds
Densities of pumpkinseeds were high and size structure was average with 3.3 per mile >7.0-inches captured. Pumpkinseeds in the Cloverleaf Chain of Lakes had a PSD value of 31 which ranks 47th when compared to other lakes statewide.

Yellow Perch
Yellow perch densities in Cloverleaf Chain of Lakes are at moderate to high levels with sampling of 25.3 yellow perch per mile of electrofishing, which ranks in the 75th percentile statewide. However, size structure of yellow perch in Cloverleaf Chain of Lakes is low with no fish over 8.0 inches captured in the surveys. Historically, there has been moderate densities of yellow perch, and the size structure has been poor with fish not being observed greater than 8.0 inches.

Other Species and Infomation
Other species sampled in lower abundance include black crappie (11), bowfin (7), brook silverside (5), brown bullhead (3), common carp (2), longnose gar (1), northern pike (1), walleye (3), and yellow bullhead. Cloverleaf Chain of Lakes will be survey in 2022 as a comprehensive survey to look at all fish species. Continue to work with the Belle Plaine Sportsman's club and other groups to add additional fish sticks and woody debris to Cloverleaf Chain of Lakes.