WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2021 Electrofishing Summary Report
Pigeon Lake, Waupaca County
293300

Introduction And Objectives

In 2021, the Wisconsin Department of Natural Resources (DNR) conducted a one night electrofishing survey of Pigeon Lake 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 Pigeon Lake.

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Lake Information
Acres: 173
Max. Depth: 10 feet
Shoreline Miles: 7.0 miles
Public Access: 5 boat landings
Lake Class: Simple - Riverine

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
Pigeon Lake	06/01/2021	69	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

- Pigeon 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 species 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	179	119.3	61st	Moderate	>7.0 inches	1.5	26th	Low
pumpkinseed	24	16.0	69th	Moderate - High	>7.0 inches	0.7	55th	Moderate
largemouth bass	26	17.3	55th	Moderate	>14.0 inches	0.0	-	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	179	4.6	2.0 - 7.3	3.0 and 6.0	150	37	25	37th	Moderate
largemouth bass	24	3.6	2.7 - 7.2	8.0 and 12.0	21	2	10	21st	Low
pumpkinseed	26	8.9	4.0 - 13.4	3.0 and 6.0	18	1	6	2nd	Low

Full Summary

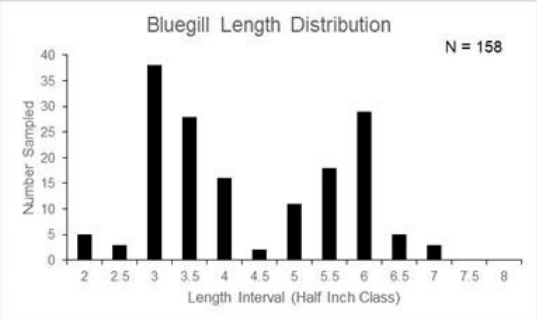
- A total of 521 fish from 13 different species were captured in the electrofishing survey. The most frequently encountered and common species were bluegills (179), largemouth bass (26), pumpkinseeds (24), common carp (234) and white sucker (32).

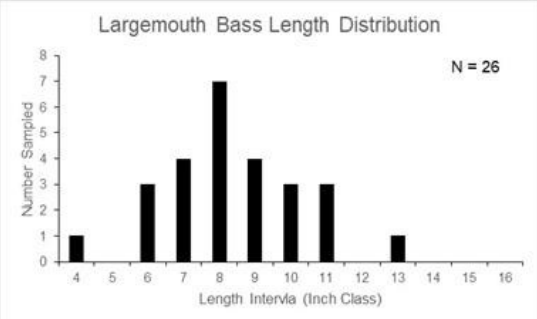
- Other species sampled in lower abundance include black bullhead (6), common shiner (6), golden shiner (1), green sunfish (2), northern pike (3), pumpkinseed x bluegill (3), shorthead redhorse (4),and yellow perch (1).

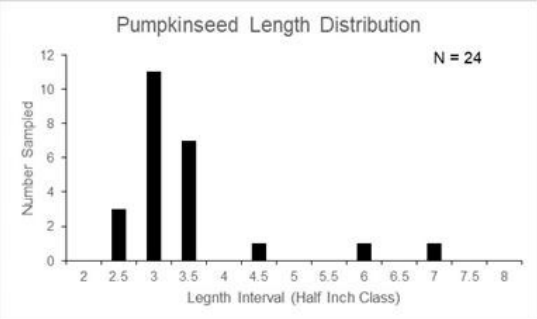
- Common carp remain in the lake and have been an ongoing problem since the water levels were brought back up in the spring of 2019. The dam was drawn down to do repairs to the structure. The catch per mile showed common carp densities in the spring of 2021 was higher than the previous fall when 2,404 common carp were removed with electrofishing gear. In the fall of 2021 another carp removal project was set to take place. While doing the surveys, DNR observed many dying and dead carp. These fish were sent in for testing and the results showed that Koi herpes was the cause of the die-off. The DNR will continue monitoring common carp to determine if other actions need to be taken to control population

- Largemouth bass were the dominant gamefish species captured in our survey. Largemouth bass were found in moderate densities but lacked size structure, with no fish ≥ 14-inches captured. Moderate numbers of smaller largemouth bass that should grow to sizes desired by anglers in the next couple of years were also captured. Recent stockings should help to improve the largemouth bass fishery and provide a good fishing opportunity in the coming years. Size structure is low, but should turn around as Pigeon Lake is in the early stages of restoration after the drawdown. Abundant forage is available for largemouth bass including various bullhead and sucker species as well as panfish.

- Three northern pike were captured in the electrofishing survey. However, fyke netting is a more appropriate sampling gear to assess the northern pike population. In the near future, a fyke netting survey will be used to evaluate the northern pike fishery post drawdown and stocking.







- Pumpkinseeds and bluegills were the dominant panfish species captured in our survey. The densities of pumpkinseeds were moderate and size structure was low, with few pumpkinseeds ≥ 6.0-inches captured. Bluegills were captured in moderate densities, with poor size structure as PSD was 25 and 1.5 bluegills≥ 7.0 inches were captured per mile of electrofishing. The densities of panfish in Pigeon Lake was good considering the recovery of the lake started in 2019. These fish should grow into more desirable sizes in the coming years. Bluegill size structure is not optimal, but it has good numbers of smaller fish less than quality size and Pigeon Lake should be a good bluegill fishery in the coming years. Continue to maintain predator densities at current levels to prevent bluegill from becoming overabundant and stunting.

- It takes a few years for fisheries to restore to previous conditions following a drawdown, but the major concern is getting the numbers of common carp to lower levels than have been observed over the last couple of years. In many draw down situations, it takes several years for the fishery to recover to former levels. Many fish metrics observed in this survey do not indicate a great fishery but it will continue to recover over the next few years.

- Continue to work with the City of Clintonville and other groups to add additional fish sticks/large woody habitat to Pigeon Lake.