2023 Spring Electrofishing II (SEII) Survey Summary Report

Rockville Flowage (WBIC 58400)

Manitowoc County

Introduction and Objectives

In 2022, the Department of Natural Resources conducted a one night electrofishing survey of Rockville Flowage in order to provide insight and direction for the future fisheries management of this lake. 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 the activities conducted, general status of fish populations and future management options for Rockville Flowage.

Acres: 76
Lake Type: Impoundment
Regulations: Statewide Default Regulations.

Shoreline Miles: 4.6
Public Access: 1 Public Boat Launch
Lake Class: Simple Riverine

Maximum Depth (feet): 6

WISCONSIN DNR CONTACT INFO.

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Fish Metric Descriptions

PSD, CPUE, LFD, and Mean Age at Length

Proportional Stock Density (PSD) is an index used to describe 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.

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 electrofishing surveys, we typically quantify CPUE by the number and size of fish per mile of shoreline. CPUE indexes are compared to statewide data by percentiles. For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state.

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) are collected from a specified length bin of interest (e.g., 5.5 - 6.4 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

- Rockville Flowage was sampled according to spring electrofishing (SEII) protocols as outlined in the statewide lake assessment plan. The primary objective for this sampling period was to count and measure adult bass and panfish. Other gamefish and panfish may be sampled but are considered by-catch as part of this survey.
- 1.68 miles of shoreline were sampled. All fish captured were identified to species and gamefish and panfish were measured for length.
- Fish metrics used to describe fish populations include proportional stock density, catch per unit effort, length frequency distributions and mean age at length.

Figure 1. Bluegill captured in DNR survey. Photo credit DNR.

SPRING ELECTROFISHING II SURVEY INFORMATION

Site Location	Survey Date	Water Temperature (°F)	Target Species	Total Miles Shocked	Gear	Number of Netters
Rockville Flowage	5/17/2023	63	Bass and Panfish	1.68	Boomshocker	2

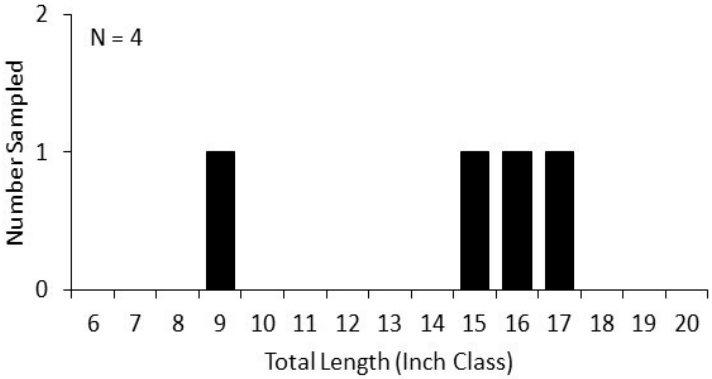
SIZE STRUCTURE METRICS

Species	Total	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
BLUEGILL	16	4.9	2.2 - 7.9	3.0 and 6.0	11	5	45	65th	Moderate
PUMPKINSEED	21	3.8	2.6 - 5.1	3.0 and 6.0	15	0	0	-	Low
LARGEMOUTH BASS	4	14.8	9.0 - 17.5	8.0 and 12.0	4	3	75	74th	Moderate - High
NORTHERN PIKE	10	23.3	17.5 - 32.4	14.0 and 21.0 inches	10	7	70	92nd	High

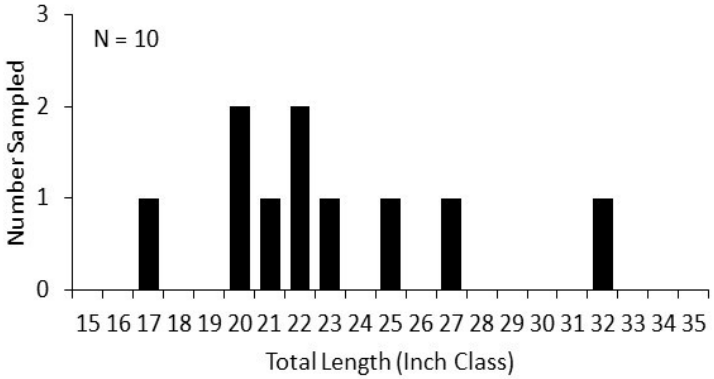
ABUNDANCE METRICS

Species	CPUE Total (number per mile)	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	Length Index Percentile Rank	Length Index Abundance Rating
BLUEGILL	9.5	12th	Low	≥ 7.0 inches	1.8	27th	Low - Moderate
PUMPKINSEED	12.5	63rd	Moderate	≥ 7.0 inches	0.0	-	Low
LARGEMOUTH BASS	2.4	18th	Low	≥ 14.0 inches	1.8	38th	Moderate
NORTHERN PIKE	6.0	89th	High	≥ 26.0 inches	1.2	97th	Very High

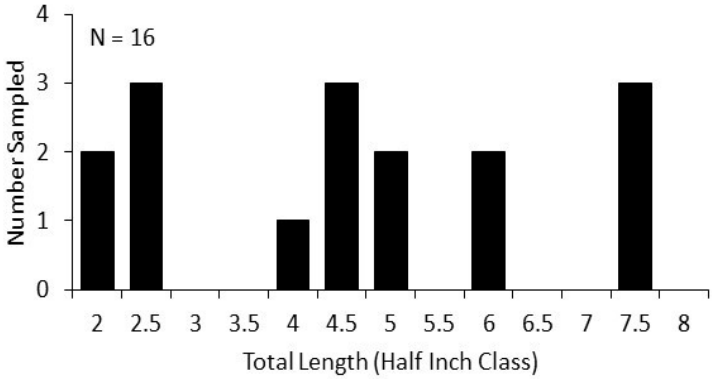
Largemouth Bass Length Frequency Distribution



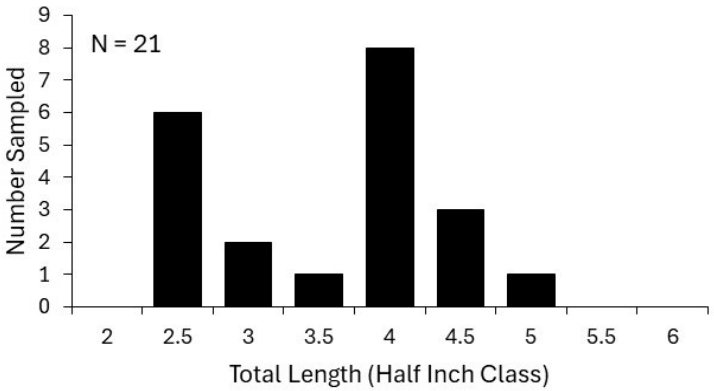
Northern Pike Length Frequency Distribution



Bluegill Length Frequency Distribution



Pumpkinseed Length Frequency Distribution



Summary and Management Recommendations

- A total of 137 fish from 10 different species were captured in the electrofishing survey. The most frequently encountered and common species were common carp (40), black bullhead (25) and pumpkinseed (21).
- Other species sampled in lower abundance include bluegill (16), northern pike (10), rock bass (8), white sucker (7), yellow bullhead (5), largemouth bass (4) and black crappie (1).
- One non-native species (i.e., the common carp) was captured in this survey and found to be abundant in Rockville Flowage.
- Catch rates of largemouth bass were low as only four largemouth bass were captured as part of this survey. However, what was thought to be the best largemouth bass habitat was not sampled because the boomshocker would not fit under a bridge, meaning densities of largemouth bass could be higher in more upstream areas. Size structure of largemouth bass was moderate to high with a PSD of 75 and a catch rate of legal size largemouth bass (i.e., ≥14.0 inches) at 1.8 largemouth bass per mile of shoreline. Ages were estimated from all four largemouth bass using dorsal fin spines. Two age classes were present in the sample as the 9.0 inch largemouth bass was estimated to be age two and the three largemouth bass between 15.9 - 17.5 inches were estimated to be age five. Largemouth bass in Rockville Flowage appear to grow well, reaching 16 - 17 inches in five years.
- Despite electrofishing being a poor gear for sampling northern pike, 10 northern pike were captured in this survey. Both catch rates and size structure of northern pike were high. Reports from local anglers also indicate that Rockville Flowage supports a very good northern pike fishery. Abundant northern pike spawning habitat and forage contribute to the high quality northern pike fishery in the flowage.
- Bluegill were also found in very low densities as only 16 were captured in this survey. Similar to largemouth bass, what was thought to be the best bluegill habitat was unable to be sampled because the boomshocker would not fit under a bridge, meaning densities of bluegill could be higher in more upstream portions of the flowage. Bluegill size structure was found to be moderate with a PSD of 45 and a catch rate of bluegills ≥7.0 inches at 1.8 per mile of electrofishing. Otoliths were collected from the four bluegills that were between 5.3 - 6.5 inches long to get an approximate age at 6 inches. Bluegill are growing very quickly in Rockville Flowage, reaching 6 inches in about 3 years of age.
- Pumpkinseed were the most abundant panfish species sampled with 21 being captured. However, all pumpkinseed that were captured were <5.5 inches long, meaning this species is providing a low quality fishery.
- One black crappie that was 10.9 inches long was captured. Its possible that this black crappie originated from a stocking in the Kiel Flowage, which is the next impoundment upstream.
- Consider working on a lake management plan for Rockville Flowage. This plan should include a point intercept survey of aquatic plants, depth, and substrate. It is recommended that ways to increase depth and flush sediments in the flowage itself be discussed as part of this management plan. The vast majority of the panfish and gamefish captured in this survey were captured in the main river channel. Habitat outside of the main river channel was very poor as it was very shallow (1 - 2 feet deep) and almost exclusively soft sediment. Flushing soft sediment and increasing depth should improve habitat in the flowage and increase numbers of panfish and gamefish. Also, consider adding fish sticks along the shoreline to increase habitat for gamefish and panfish.