2024 LATE SPRING PANFISH SURVEY REPORT

WATER: BISHOP LAKE COUNTY: FOREST

INTRODUCTION AND SURVEY OBJECTIVES

The DNR conducted a late spring fyke net survey of Bishop Lake during 2024. This survey is designed to assess the summer spawning panfish populations (bluegill, pumpkinseed and rock bass) within the lake. Bishop Lake is located in the township of Nashville, with boat access off of County Hwy M.

General Waterbody Characteristics: Lake Class: Simple - Cool - Dark

Acres: 288
Shoreline Miles: 3.0
Maximum Depth (feet): 12
Lake Type: Drainage
Public Access: Boat Landing
Regulations: Statewide Regulations

WISCONSIN DNR CONTACT INFO.

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Table 1. Summary of all surveys conducted during 2024

SURVEY INFORMATION				
Species	**Survey Date(s)**	**Gear Used**	**Effort**	**Water Temp. (°F)**
Bluegill, Pumpkinseed, Hybrid Sunfish, Rock Bass	5/28-5/30/2024	Fyke Net	6 Net-Nights	60-61

FISH METRIC DESCRIPTIONS

Catch per unit effort (CPUE) is the number of fish per mile (electrofishing) or per net-night (netting) and is used to index abundance when we are unable to get a Population Estimate.

Relative stock density (RSD) is an index used to describe size structure of fish populations. It is calculated by dividing the number of fish larger than a certain length by the number of stock size fish for a given species. Stock size is a length set for each species and is used to offset potential large year classes of juvenile fish. Example: RSD6 is the percentage of fish (above stock length) that were greater than 6 inches during the survey.

Length frequency distribution (LFD) is a graphical representation of the number of fish captured by inch group. 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 length at age is used to index growth. Structures are taken from a subsample of fish captured. These structures can be used to estimate the age of that particular fish. The mean length at each age is then used to characterize growth of the entire population.

SURVEY METHODS

- Surveys are designed to evaluate each species when they are particularly vulnerable to our gear.
- Standard fyke nets and/or electrofishing gear is used to capture fish.
- Data is collected from the target species of each survey to gather population metrics.
- Fish metrics are compared to previous surveys of this water, and the mean/median values for waters in this “area” (Florence and Forest Counties).

Table 2. Summary of applicable fish metrics for this survey

PANFISH ABUNDANCE AND SIZE STRUCTURE									
Species	**CPUE (catch/net-night)**	**RSD6**	**RSD7**	**RSD8**	**RSD9**	**RSD10**	**RSD11**	**RSD12**	**RSD13**
Bluegill	70.0	82.0	27.3	1.0	0.0				
Pumpkinseed	69.3	87.5	10.4	0.0					
Bluegill x PKS Hybrid	6.14	—							
Bullhead (All spp.)	65.9	100	100	92.9	66.5	21.8	4.7	0.6	0.0
Black Crappie	7.14	87.0	66.7	37.0	16.7	9.3	1.9	0.0	

GEAR USED DURING THIS SURVEY

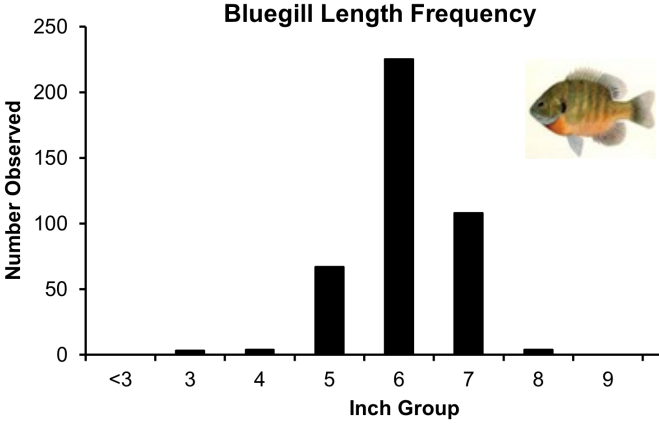
- **Fyke Nets** are set in areas where we anticipate fish to congregate. Fish traveling along the shoreline will be met by a “lead”, which is similar to a fence. The lead directs the fish toward the trap end of the net. Fish travel through a series of funnels and eventually become trapped. Fish are then removed from the net and placed in holding tanks to gather data before being returned to the lake.

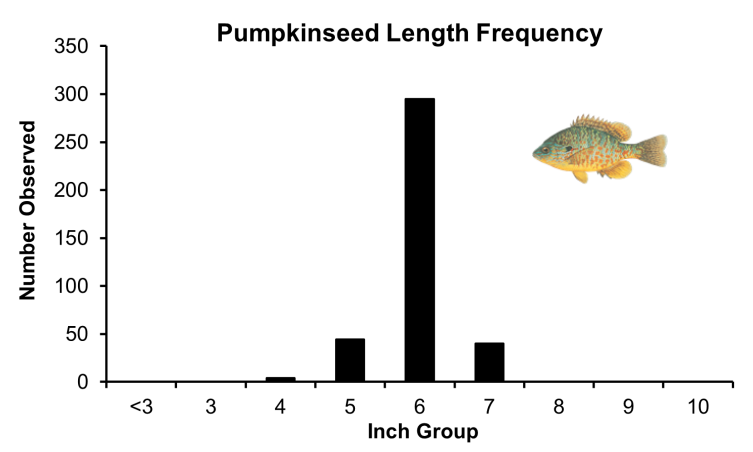
Photo Credit: Carl Sundberg

BLUEGILL

During this survey, a total of 490 bluegill were captured, which is a relative abundance of 70.0 bluegill/net-night. This puts the Bishop Lake bluegill population above both the mean (65.6/net-night) and the median (39.8/net-night) relative abundance of bluegill for this area.

Every bluegill captured was measured to assess size structure. The mean length of bluegill during this survey was 6.61 inches. Approximately 82.0% of the bluegill were ≥ 6 inches and 1.0% ≥ 8 inches in length. These data show that the size structure of this bluegill population is lower than area average of 61.6% ≥ 6 inches and 9.4% ≥ 8 inches.





PUMPKINSEED

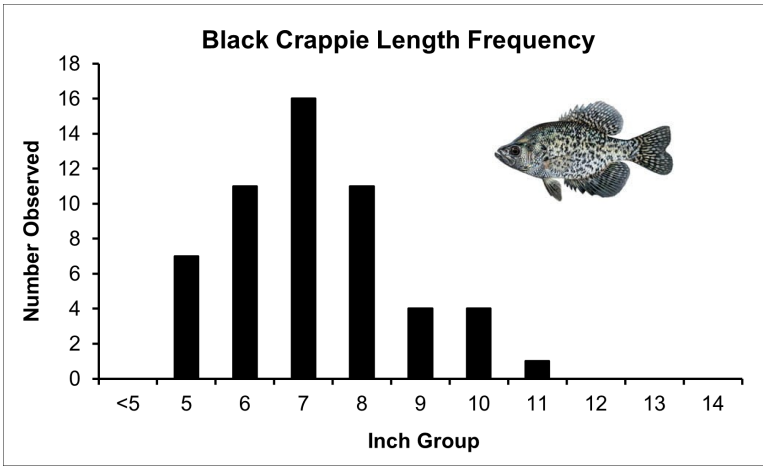
A total of 485 pumpkinseed were captured during this survey, giving them a relative abundance of 69.3 fish/net-night. This suggests that pumpkinseed are likely the second most abundant panfish species in Bishop Lake.

Pumpkinseed size structure was high, with 87.5% of the catch being ≥ 6 inches. This is surprising given the high abundance of pumpkinseed in Bishop Lake.

BLACK CRAPPIE

Black crappie relative abundance during this survey was 7.14 fish/net-night. This survey is not designed to properly assess black crappie. An early spring fyke net survey would be needed to accurately assess the black crappie population.

Black crappie size structure is low, with only 37.1% of the catch being ≥ 8 inches and 9.3% ≥ 10 inches. Black crappie size structure may be low due to the abundance of other panfish in Bishop Lake, or it may indicate a more abundant black crappie population than we observed.



OTHER SPECIES

During this survey, one fish species was captured that was not detailed in this summary. Northern pike relative abundance was 1.0 fish/net-night.

SURVEY NOTES

- The public launch to Bishop Lake provides adequate angler access.
- The 2024 survey was the first panfish netting survey conducted on Bishop Lake since 2000. Bluegill relative abundance increased significantly in the 2024 survey compared to 2000 (15.6 fish/net-night) while size structure decreased (73.1% and 10.9% ≥ 6 and 8 inches, respectively). Black crappie relative abundance slightly increased in 2024 compared to 2000 (5.2 fish/net-night) and black crappie size structure decreased (49.3% and 47.8% ≥ 8 and 10 inches, respectively).
- The survey indicated abundant panfish populations with slightly below average size structure, but with some large fish still available for harvest.
- Bishop Lake has an abundant bullhead population.
- Previous surveys on the lake show the presence of largemouth bass, yellow perch, rock bass and white sucker, none of which were captured in this survey.
- Bishop Lake has a history of fish kill and low oxygen.
- Bishop Lake has historically been stocked with northern pike, largemouth bass, bluegill, and yellow perch, however, no stocking has occurred in Bishop Lake since 1950.
- The current statewide regulations are appropriate for this water.
- Bishop Lake is on an 8 year sampling rotation. A bass electrofishing survey was planned for 2025 but did not occur. The next survey is scheduled for 2033.