

Como Lake

Montcalm County, 9N/8W/21
Grand River Watershed, Last Surveyed 2024

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Environment

Como Lake is an 18-acre natural lake located approximately 1 mile southwest of the city of Greenville in southwestern Montcalm County in Michigan's Lower Peninsula (Figure 1). The western shore of Como Lake is developed with residential homes, but the rest of the lake remains undeveloped with natural shorelines. Eighty-seven percent of the shoreline remains forested. The watershed (area that drains to the lake; also known as lakeshed) around Como Lake is dominated by forest (69%), water (17%), and urban lands (3%; Figure 2).

Como Lake does not have a depth contour map, but the deepest point of the lake by sonar reading in 2024 was 12.5 feet. The lake is shallow and has gradual drop-offs around most of the shoreline. There is a small public access to the lake, located within the city of Greenville's Forest Home Cemetery. The access site has a small sand and loose gravel opening in the shoreline to launch small watercraft and includes parking space for one or two vehicles without trailers.

Fishery Resource

History

The fisheries management history for Como Lake is sparse. There are no historical paper files for the lake, which indicates that the lake has never been surveyed by the Michigan Fish Commission, Michigan Department of Conservation, or Michigan Department of Natural Resources. The only historical fisheries data for the lake are stocking records for Bluegill in 1937, 1939, 1941, and 1942, Largemouth Bass in 1941 and 1942, bullheads in 1937, and sunfish (exact species unknown) in 1937. These records are not surprising, given that stocking bass and panfish species in the late 1930s and early 1940s was a common fisheries management practice for other lakes in central Michigan. This practice was discontinued statewide in 1945 after research indicated that supplemental stocking was not necessary to maintain fishing opportunities for these species (Cooper 1948).

Current status of the fish community

Methods

In May 2024, Como Lake was surveyed as part of the DNR's Status and Trends Program (STP). The STP uses standardized protocols and a variety of sampling gear including small-mesh fyke nets, large-mesh fyke nets, experimental gill nets, seines, and nighttime electrofishing to assess fish populations in lakes across the state (Wehrly et al. 2010). This standardized methodology allows the DNR to develop benchmarks for fish abundance and growth that can be compared to other similar lakes within fisheries management units, Great Lakes basins, and across the state. Effort in the 2024 survey consisted of 4 net nights of small-mesh fyke nets, 9 net nights of large-

mesh fyke nets, 4 net nights of experimental gill nets, and 1 seine haul (Table 1). All fish captured in Como Lake were measured for total length, and spine or scale samples for age estimation and growth analysis were collected from the first 10 individuals per game fish species per inch group. For the purpose of this report, game fish species include: Black Crappie, Bluegill, Largemouth Bass, and Yellow Perch. Weights for each fish species were estimated using the length-weight regression coefficients from Schneider et al. (2000b). Weighted age frequency distributions were estimated using the procedures described by Schneider (2000b). Mean lengths-at-age for Como Lake game species were compared to statewide averages presented in Schneider et al. (2000a). Bluegill size structure was rated using an index based on the mean length and the proportion of fish ≥ 6 inches, ≥ 7 inches, and ≥ 8 inches collected using large-mesh fyke nets (Schneider 1990). Water quality, shoreline development, and nearshore habitat were assessed in August 2024 following STP methods (Wehrly et al. 2010). The timing of the STP surveys and the variety of gear used were ideal for capturing mature adults in the Centrarchidae family (e.g., Bluegill and Largemouth Bass).

Results

A total of 1,860 fish were captured during the 2024 survey (Table 2). Fish were not individually marked, so there is the potential that individuals were captured more than once. Bluegills dominated the catch with 1,415 fish captured, representing nearly 76% of the catch by number and 32% of the catch by weight (Table 2). Bluegills ranged in length from 0.9-8.9 inches with 79% of the fish being less than 6 inches in length (Figure 3). Eight age classes of Bluegill were captured during the survey (ages 0-7; Figure 4). Age-1 fish were particularly abundant, composing 77% of the Bluegill catch. Mean lengths were lower than statewide averages for age-2, but above average for ages 3 through 6 (Table 3). The mean growth index for Bluegill was +0.5 and indicative of good growth. The Schneider Index for Bluegills collected during the survey in large-mesh fyke nets was 6.0 which is excellent.

Ninety-eight Black Crappie were captured and they ranged from 6.0-12.9 inches with 94% being at least 7 inches in length (Figure 5). Eight age classes of Black Crappie were present in Como Lake (ages 3-10; Figure 6). The crappie in this system exhibit slow growth. Mean lengths for all year classes were more than 1 inch below the statewide averages, and the mean growth index was -1.6 (Table 3).

Largemouth Bass ($n = 71$) was the dominant predator species in Como Lake. Largemouth Bass ranged in length from 6.0-16.9 inches with only 6% of the fish being ≥ 14 inches, the legal size for harvest (Figure 7). Six age-classes (age 2-7) of Largemouth Bass were present (Figure 8). Largemouth Bass in Como Lake were growing similarly to other waters across the state and had a mean growth index of +0.4 (Table 3).

Hybrid sunfish and Yellow Perch were also captured in Como Lake. Thirty-one hybrid sunfish were netted with almost all (94%) being at least 6 inches in length. Similarly, 18 Yellow Perch were caught, and all were at least 8 inches in length (Table 3). The only other fish species

captured during the 2024 survey was Yellow Bullhead. A total of 125 Yellow Bullhead ranging in length from 7.0-11.9 inches were captured.

On August 7, 2024, water quality and shoreline sampling were completed on Como Lake. The dissolved oxygen and temperature profiles were taken in 12.5 feet of water. Due to the small size and shallow nature of Como Lake, the lake was not stratified. The water temperature was 78 F throughout the water column and dissolved oxygen concentrations were around 7 mg/L. Water chemistry sampling was completed at the same location as the temperature and dissolved oxygen profile. Total alkalinity was 22 mg/L, which is indicative of a softwater lake with limited buffering capacity. Total nitrogen was 0.479 mg/L, total phosphorus was 0.006 mg/L, and the chlorophyll a concentration was 0.0014 mg/L. The Secchi depth was 12.5 feet, indicating light penetration from the surface to the bottom.

Eleven dwellings (16.7/mile) were counted along the shoreline of the lake. Each dwelling also had a small dock. None of the shoreline was armored with seawalls or riprap. Thirty-eight submerged trees (57.7/mile) were observed in nearshore areas.

Analysis and Discussion

Compared to other lakes in the Southern Lake Michigan Management Unit (SLMMU), Como Lake appears to have a similar population density of Bluegills 4 inches or larger based upon catch-per-unit-effort (CPUE). The CPUE provides an index of relative abundance and facilitates comparisons across lakes and sampling years. Bluegill CPUE was compared to CPUE data from other STP surveys in SLMMU and statewide from 2001 to 2021. The Bluegill CPUEs for large-mesh fyke nets in Como Lake in 2024 was 35 Bluegills/net night. This value is nearly identical to the 50th percentile for other lakes in SLMMU and greater than the 75th percentile for lakes statewide. Over 1,000 Bluegill were captured in small-mesh fyke nets and were less than 4 inches in length. This equates to a CPUE of 263 Bluegill per net night which is over three times higher than the 75th percentile of other lakes in SLMMU. The size structure of the 317 Bluegill captured in large-mesh fyke nets was excellent. There are few Bluegill populations in other lakes in SLMMU that are categorized as excellent using the Schneider scale.

The Largemouth Bass population was skewed towards smaller individuals. This pattern could be representative of the population, but it also could be slightly misleading due to the gear used to capture fish in Como Lake. Largemouth Bass are typically captured the most effectively when using electrofishing gear at night during the month of May in southwestern Michigan. However, due to the small size of Como Lake, electrofishing was not included as part of the STP survey protocol, nor would it have been feasible to launch the electrofishing boat at the Como Lake public access site. Thus, larger individuals may have been present, but under sampled during this survey.

The water clarity of Como Lake was excellent and the Secchi depth was 12.5 feet, which was the deepest point of the lake. Due to the shallow depth of Como Lake, the lake does not appear to

stratify as there were relatively similar water temperatures from the surface to the bottom. Additionally, there was suitable oxygen levels for fish species present throughout the water column. Based on the phosphorus, chlorophyll, and Secchi depth results, Como Lake would be considered an oligotrophic or low-nutrient system (Shaw et al. 2004). However, it is important to recognize that nutrient levels and water clarity vary over time, and repeated measurements are necessary to confidently assign a trophic status to a lake.

Most of the shoreline of Como Lake remains undeveloped and forested which typically correlates to high water quality. Consequently, logs are abundant and provide cover for fish and basking locations for turtles. The absence of seawalls and riprap means that frogs and turtles can move freely between the lake and adjacent uplands. Five turtle species were observed during the 2024 survey, including the state threatened Spotted Turtle.

Como Lake is a small natural lake that supports a healthy balance of predator and prey fish species. The growth rates of the most abundant fish species (Bluegill) and the top predator (Largemouth Bass) indicate that the fishery has a suitable predator-prey balance. Schneider (2000a) observed that predators typically compose 20-50% of the biomass in lakes with strong fisheries. Largemouth Bass, the primary predator in Como Lake, made up 20.5% of the biomass during the 2024 survey. There was a robust age structure of Largemouth Bass in Como Lake, especially given the likelihood that older Largemouth Bass were missed. Supplemental stocking of fish species into Como Lake would likely not improve the fishery of the lake and could actually disrupt the predator prey ratio that currently exists in the lake.

Management Direction

1. Continue to manage Como Lake as a warmwater fishery with focus on Bluegill, Black Crappie, and Largemouth Bass.
2. Avoid stocking additional fish species into Como Lake.
3. Protect natural shoreline areas from modification that would negatively affect habitat for fish and other aquatic organisms. Tools for accomplishing this management objective include conservation easements (as opportunities arise), review of Michigan Department of Environment, Great Lakes, and Energy permit applications, and outreach to riparian landowners.

References

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Tables and Figures

Table 1. Sampling period and total effort for each gear used during the 2024 Como Lake fish community survey.

Sampling Period	Gear	Effort
May 13-15	Experimental Gill Net	4 net nights
May 13-15	Small-Mesh Fyke Net	4 net nights
May 13-16	Large-Mesh Fyke Net	9 net nights
May 14	Seine	1 haul

Table 2. Numbers, calculated weights, total length ranges, and percentage legal or harvestable for all fish species collected on Como Lake during May 2024.

Species	Number	Percent by Number	Weight (lb.)	Percent by Weight	Length Range (in.)	Percent Legal or Harvestable Size
Black Crappie	98	5.3	35.3	11.9	6.0-12.9	94
Bluegill	1,415	76.0	93.5	31.6	0.1-8.9	21
Hybrid Sunfish	31	1.7	10.8	3.8	2.0-9.9	94
Largemouth Bass	71	3.8	60.7	20.5	6.0-16.9	6
Pumpkinseed	46	2.5	15.7	5.3	3.0-8.9	93
Warmouth	57	3.1	16.5	5.6	1.0-8.9	89
Yellow Bullhead	125	6.7	56.4	19.1	7.0-11.9	N/A
Yellow Perch	18	0.9	7.4	2.2	8.0-11.9	100

* Harvestable size is 6 inches for Bluegill, Pumpkinseed, Warmouth, and hybrid sunfish, and 7 inches for Black Crappie and Yellow Perch.

Table 3. Lengths at age for Como Lake game fish collected in 2024 relative to statewide averages. Statewide average lengths and growth index equations are from Schneider et al. (2000a).

Black Crappie	Number Aged	Length Range (in.)	Weighted Mean Length (in.)	State Average Length (in.)
Age-3	3	6.4-7.1	N/A	7.5
Age-4	12	6.5-8.0	7.4	8.6
Age-5	4	7.2-8.9	N/A	9.4
Age-6	7	8.5-10.6	9.1	10.2
Age-7	8	8.4-9.8	9.1	10.8
Age-8	6	8.2-10.7	9	11.4
Age-9	3	10.1-10.7	N/A	11.9
Age-10	1	12.8	N/A	N/A
Bluegill	Number Aged	Length Range (in.)	Weighted Mean Length (in.)	State Average Length (in.)
Age-0	11	0.9-1.9	1.5	N/A
Age-1	10	2.0-2.4	2.2	1.8
Age-2	7	3.0-3.3	3.1	3.8
Age-3	16	5.2-6.5	6	5
Age-4	9	6.2-8.0	7.1	5.9
Age-5	9	7.2-8.0	7.7	6.7
Age-6	6	7.9-8.3	8.1	7.3
Age-7	1	8.5	N/A	7.8
Largemouth Bass	Number Aged	Length Range (in.)	Weighted Mean Length (in.)	State Average Length (in.)
Age-2	8	6.9-8.7	7.9	7.1
Age-3	10	9.5-11.8	10.2	9.4
Age-4	20	10.5-13.7	11.9	11.6
Age-5	15	11.6-14.5	12.8	13.2
Age-6	4	12.8-14.5	13.4	14.7
Age-7	1	16.5	N/A	16.3
Yellow Perch	Number Aged	Length Range (in.)	Weighted Mean Length (in.)	State Average Length (in.)
Age-4	3	9.1-9.2	N/A	7.5
Age-5	3	8.3-9.6	N/A	8.5
Age-6	5	8.7-10.3	9.3	9.4
Age-7	3	10.1-10.7	N/A	10.3
Age-8	3	8.7-10.5	N/A	11.1
Age-9	1	11.4	N/A	11.6

Figure 1. Como Lake, Montcalm County lakeshed boundary.

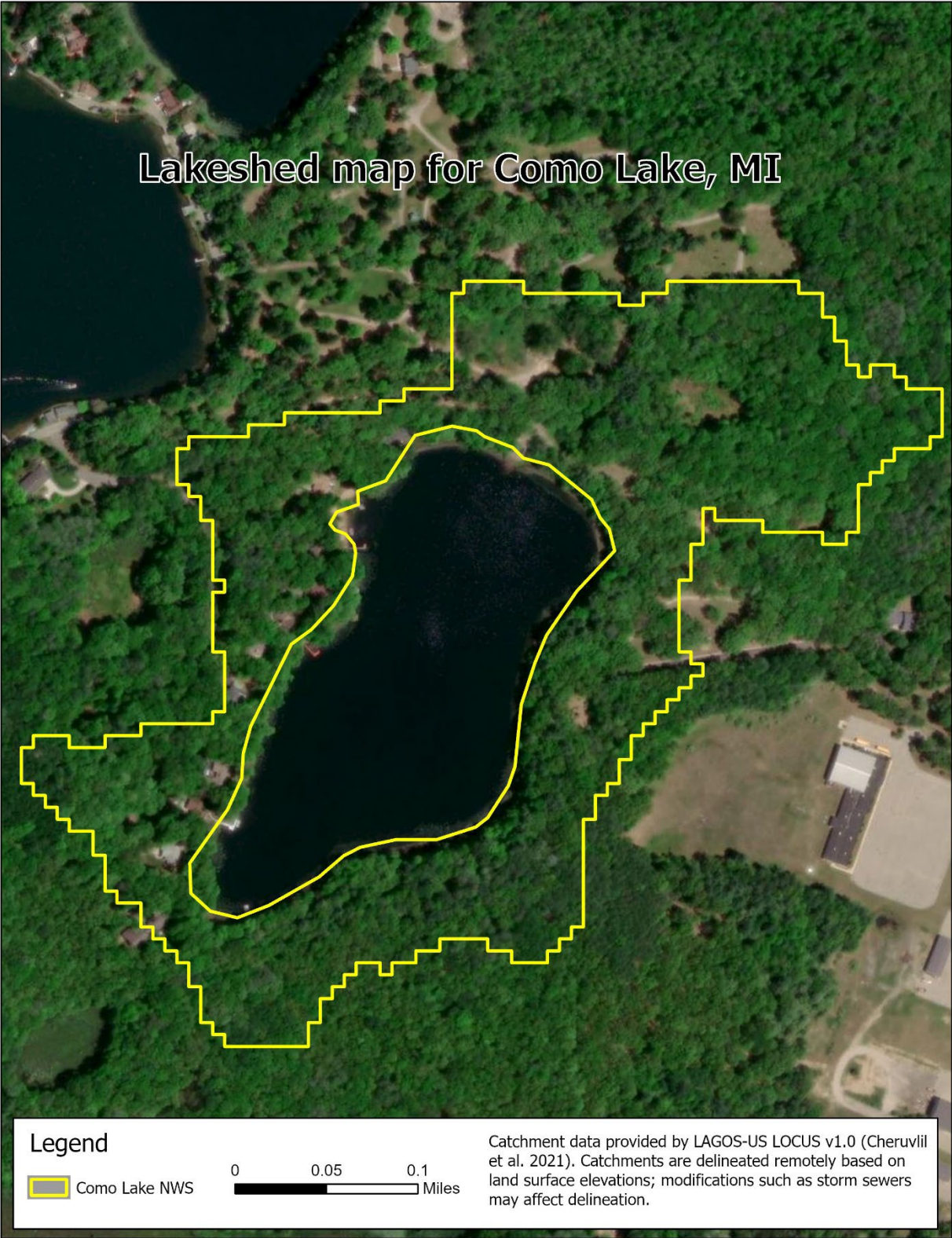


Figure 2. Land cover within the Como Lake, Montcalm County lakeshed as of 2021.

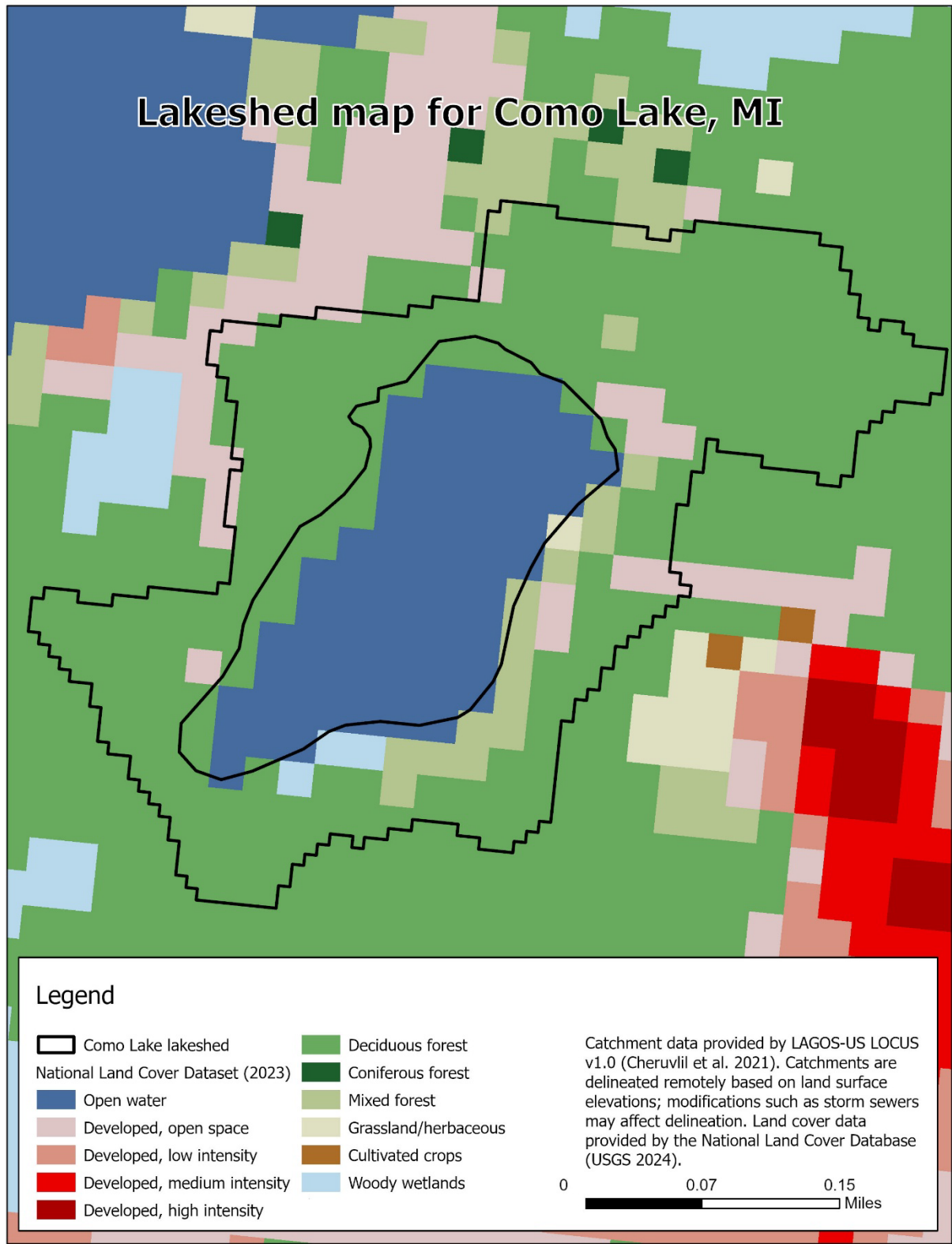


Figure 3. Length frequency distribution for Bluegills captured in Como Lake during May 13-16, 2024.

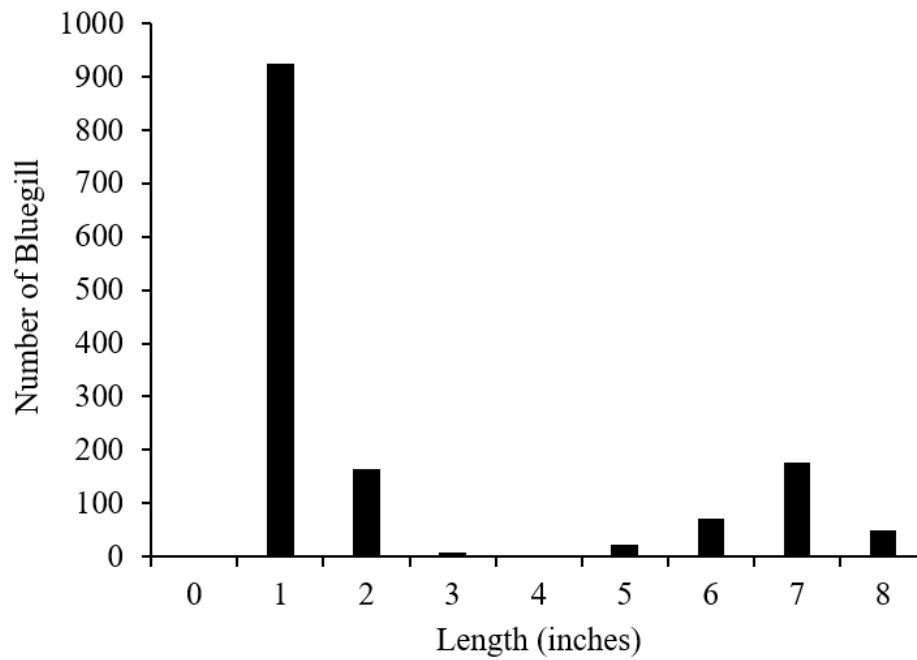


Figure 4. Age frequency distribution for Bluegills captured in Como Lake during May 13-16, 2024.

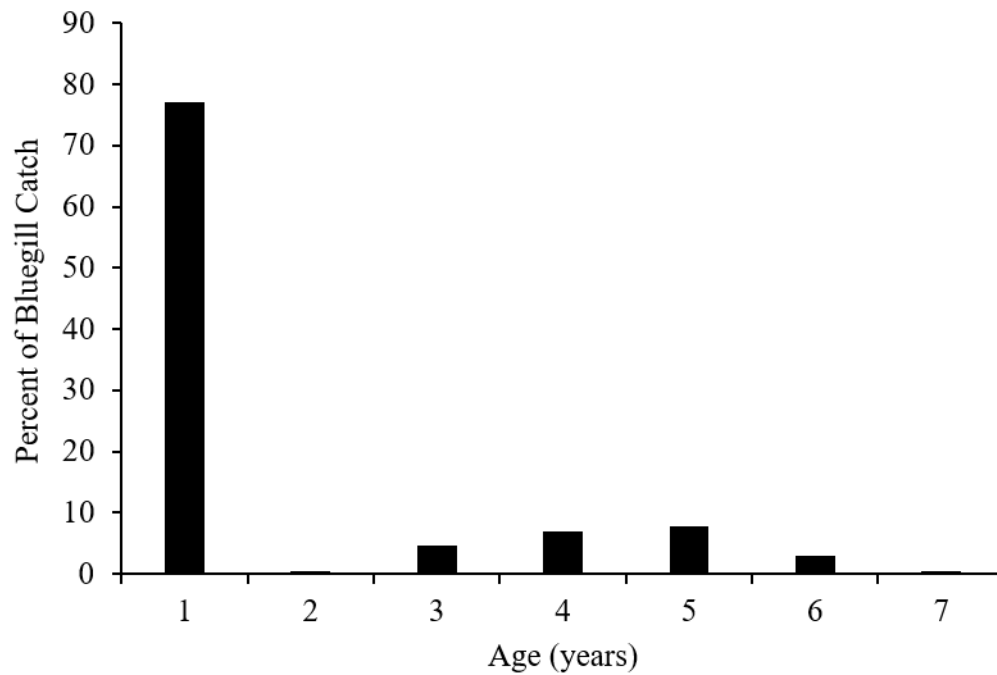


Figure 5. Length frequency distribution for Black Crappie captured in Como Lake during May 13-16, 2024.

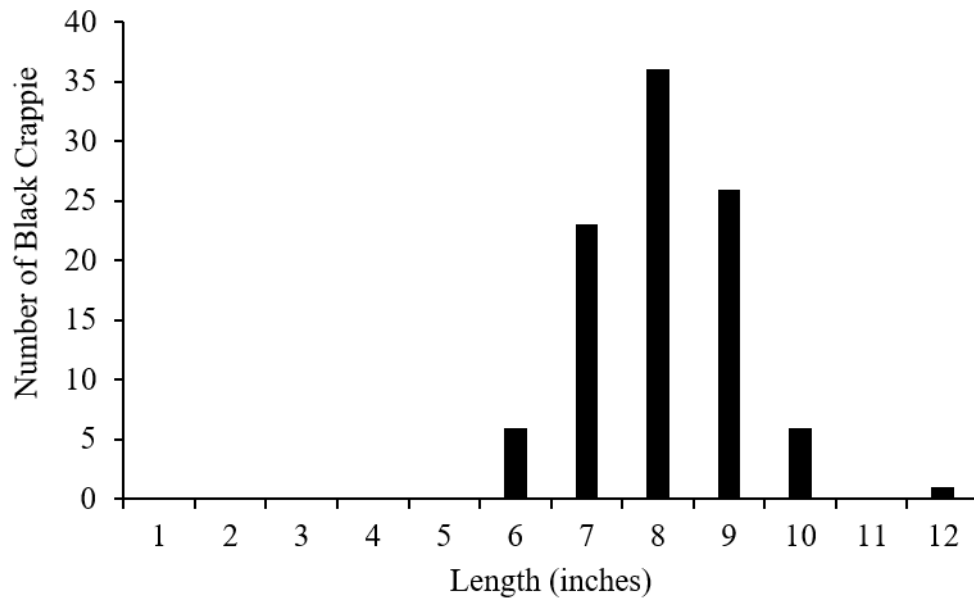


Figure 6. Age frequency distribution for Black Crappie captured in Como Lake during May 13-16, 2024.

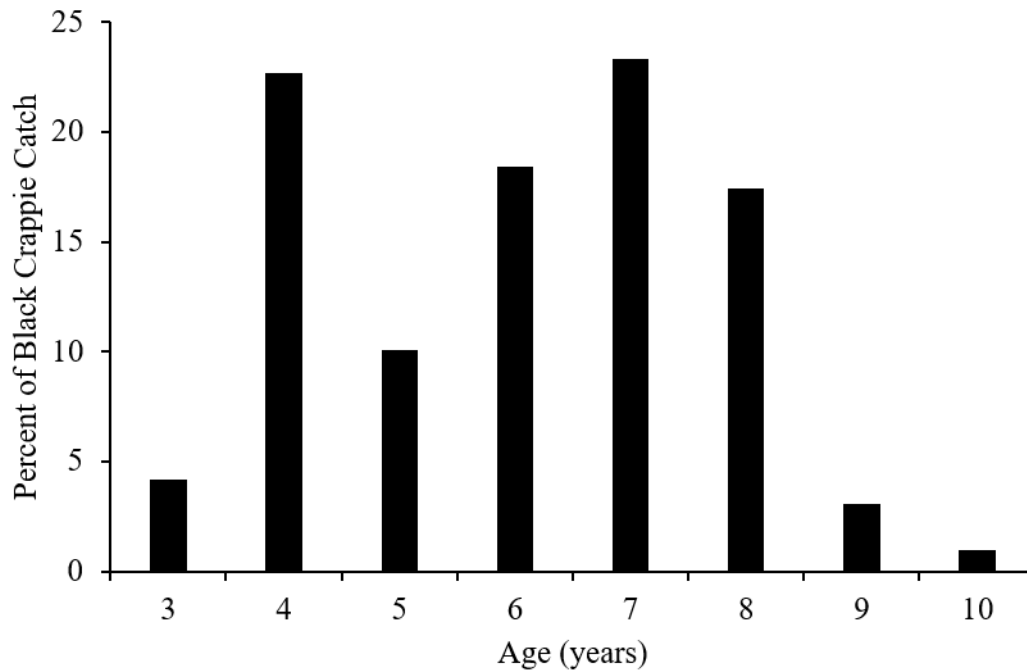


Figure 7. Length frequency distribution for Largemouth Bass captured in Como Lake during May 13-16, 2024.

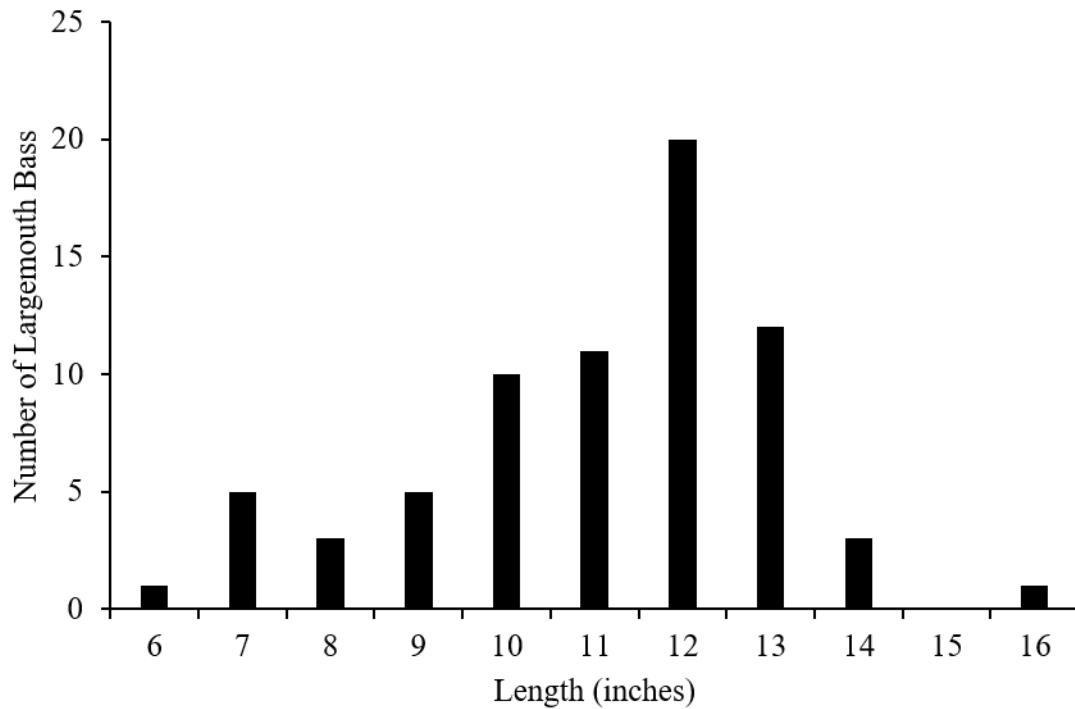
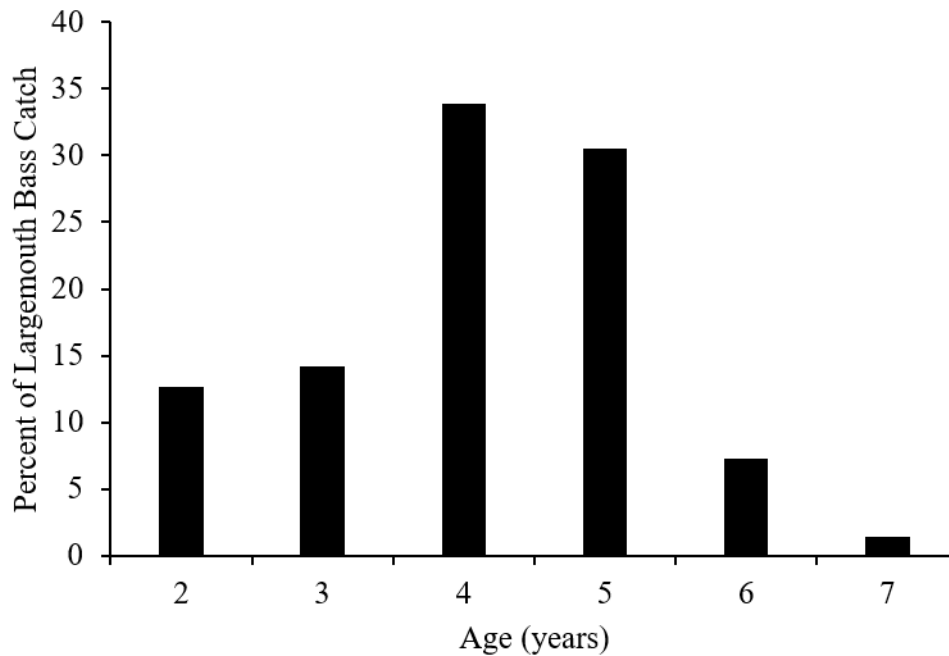


Figure 8. Age frequency distribution for Largemouth Bass captured in Como Lake during May 13-16, 2024.



Literature Path

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