

North and South Scott Lakes

Van Buren County; T 1S, R 15W, Sec 36 and T 2S, R 15W, Sec 1
Black River Watershed; Last Surveyed 2013

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Environment

North Scott Lake and South Scott Lake are 76-acre and 118-acre lakes (respectively) located near Bloomingdale in Van Buren County (T 1S, R 15W, Sec 36 and T 2S, R 15W, Sec 1). North Scott Lake is connected to South Scott Lake through a wetland and channel on the south side. Both lakes have outlets on the west side that drain into the Lower Jephtha Lake Drain, and ultimately flow to the South Branch Black River to the Black River and into Lake Michigan at South Haven. The fisheries of the two lakes have been managed together because of their connection. South Scott Lake is deeper than North Scott Lake and as a result water temperatures are often cooler. The geology of the watershed is moraine with medium-textured glacial till. The watershed of the two lakes combined is 1,560 acres (Figure 1; MGLP 2019). The watershed has relatively low disturbance with forested and wetland making up 50% of the watershed land use based on 2011 coverage maps (27% and 23% respectively; USGS 2014). Agriculture, urban, and water were the next largest land uses making up 22%, 12%, and 12% respectively with only small amounts of grassland (3%) or other (1%) land uses. There is a Department of Natural Resources (DNR) managed boating access site on the north shore of North Scott Lake that can be accessed off 24th Avenue. The boat ramp is gravel surfaced and the parking area has seven parking spaces available.

History

The first survey on record for the Scott Lakes was a gill netting effort conducted on October 14-16, 1887. Yellow Perch, Black Crappies, Northern Pike, Largemouth Bass, sunfish, and bullheads were reported as present. Food was noted as plentiful with minnows and crayfish being abundant. A shoreline seine effort (800 ft by 15 ft) was conducted on October 16, 1957, shortly after a public boating access site was purchased. A total of 1,015 fish were captured, and Bluegills ($n = 881$) made up the majority of the catch. Pumpkinseeds, Yellow Perch, Largemouth Bass, Black Crappies, Warmouth, Grass Pickerel, and Common Carp were also present. Bluegills were considered overabundant and exhibited slow growth. The lake was treated with Rotenone in 1958 to reduce Bluegill abundance and control Common Carp. A barrier was installed in the outlet and a pike spawning marsh was constructed. The lakes were restocked with Largemouth Bass and Northern Pike following treatment (Table 1). A seine survey was conducted on May 18, 1959. The rotenone treatment apparently was successful at removing most of the existing fish community, as only one Largemouth Bass that was under 6 inches was collected during the survey. There was no evidence of newly planted Northern Pike. Seine surveys were again conducted in 1960, 1961, and 1962. The Bluegill population had rebounded significantly and was again the most abundant fish species observed, making up 83% of the 9,961 fish captured across the three years of surveys. Only six of these Bluegills were above 7 inches in total length and less than 1% were above 6 inches. Ninety-three Largemouth Bass up to 14 inches were caught, and two bass were 15 inches or larger ($n = 95$). Growth rates for Largemouth Bass in the Scott Lakes were well above the state average. Northern Pike were captured in 1960 ($n = 23$) but only one was collected in 1961 and none were caught in 1962. Northern Pike were stocked again in 1963 at a larger size. The Northern Pike spawning marsh

was operated at some level during the 1960's; however, issues with landowner permission resulted in inconsistent operations and variable rearing success. The lease for the spawning marsh expired in 1969, concluding rearing operations at the marsh.

North and South Scott Lakes were surveyed again on October 5, 1971. This survey was conducted using four fyke net and two gill net sets. Bluegill was the most abundant fish species captured, but with lower catch rates than past surveys. Bluegills over 8 inches were caught for the first time and made up 13% of the 143 Bluegills captured. Size structure improved, and additional Bluegill population reductions were not recommended. Only six Largemouth Bass and no Northern Pike were captured in the survey. Golden Shiner, Lake Chubsucker, and Spotted Gar were documented in the catch for the first time. A two-hour shoreline electrofishing effort was conducted on October 9, 1979. Improved Bluegill size structure continued to be observed. Twenty-two fish over 8 inches were collected making up 6% of the population, and Bluegills in the 6.0-7.9-inch range were abundant. Largemouth Bass ($n = 97$) were abundant and only 7% were 14 inches or larger. No Northern Pike were captured, but anglers reported that some pike were being caught and harvested. Growth rates for all game species were close to the statewide averages. North and South Scott Lakes were intensively managed for Northern Pike in the 1980s and 1990s. Northern Pike spring fingerlings (average length = 3.2 inches) were stocked in 1984, 1986, 1988, 1990, 1991, and 1992 at an average of 2,500 fish (12.3/acre) per stocking year. An early spring trap net survey was completed in 1987 to evaluate the status of the Northern Pike population. Seven Northern Pike were caught in South Scott Lake. None were collected in North Scott Lake. Forage was determined to be abundant and could support additional stocking, but habitat for natural reproduction was determined to be limited. The Northern Pike stocking rate was increased from 10 fish per acre to 15 fish per acre in an attempt to increase the population density. Largemouth Bass over 19 inches, Black Crappies over 13 inches, and Bluegills over 8 inches were available to anglers in good numbers. Yellow Perch were also present in low numbers but were mostly small with no fish over 10 inches caught.

A general fish survey was conducted in 1994 to again evaluate Northern Pike stocking success and assess the relative abundance, size structure, and growth of other game species. Trap net, gill net and electrofishing surveys were conducted. These sampling efforts indicated a good Largemouth Bass, Bluegill, and Black Crappie fishery, with growth varying from average to above average. Bluegills up to 10 inches were caught. Black Crappie numbers were much greater than past surveys, and fish from 5.6 to 12.3 inches were captured. Six Northern Pike were captured in South Scott Lake and five were captured in North Scott Lake. These fish ranged from 12 to 25 inches. Too few Northern Pike were captured to calculate growth indices, but the fish caught were larger than the state average for their respective ages. Anglers were reported to be catching Northern Pike only during the ice fishing season and few were observed in open water.

One more attempt was made to improve the Northern Pike fishery. A total of 175 fall fingerlings (average length 11.2 inches) and 204 adult fish (average length 24.2 inches) were stocked. Northern Pike surveys were conducted using trap nets in spring 2004 to evaluate stocking success. Only four Northern Pike were collected ranging from 15.4 to 28.8 inches. Although too few Northern Pike were collected to calculate growth rates, the individuals caught were growing faster than the state average. Northern Pike stocking was discontinued because of poor survival in the Scott Lakes, as well as a concurrent statewide reduction of Northern Pike stocking due to concerns regarding rearing marsh impacts on wetlands and poor performance of Northern Pike in controlling stunted panfish populations.

The DNR no longer rears Northern Pike for stocking, and existing populations are maintained entirely by natural reproduction.

North Scott Lake was surveyed again in 2013 as part of the DNR's Status and Trends Program (see Diana 2013). Although the timing of the survey was not ideal for capturing Northern Pike, 12 Northern Pike were captured ranging from 23 to 36 inches, representing year classes from age 6 through age 10. All were natural recruits. Bluegills were caught in high numbers with particularly high catch rates of one- and two-inch fish. High densities of Bluegills and other sunfish species often result in limited prey resources and reduced growth; however, growth was average at the time of the 2013 survey. Management recommendations included monitoring of the Bluegill population. Predator stocking was not recommended as the predator:prey ratio was in the acceptable range.

Current Status

Methods

North and South Scott Lakes were surveyed in 2021 as part of the DNR's Status and Trends program (Wehrly et al. In Revision). Netting efforts took place May 17-21, 2021. Two graded-mesh gill net sets were conducted overnight for two days on each lake (total of 8 net nights). Three large-mesh fyke nets were deployed for three overnight sets on each lake for a total of 18 net nights. Two small-mesh fyke nets were set for two nights for a total of four net nights on each lake (combined effort = 8 net nights). Two beach seine hauls were conducted on North Scott Lake and three seine hauls were conducted on South Scott Lake on May 19, 2021, to quantify minnow and inshore prey species (total of 5 hauls). Three 10-minute electrofishing transects were performed on May 21, 2021, for a total of 30 minutes of electrofishing on each lake (combined effort = one hour). All fish were identified, counted, measured for total length, and aging structures were collected from 10 fish in each inch class for all sportfish. Weights for all fish species were calculated using the length-weight regression equations compiled by Schneider et al. (2000).

The relative stock density for each fish species was assessed using catch-per-unit-effort (CPUE) calculated as the number of fish caught per net night (gill, fyke, and trap nets), per hour of electrofishing (boomshocker), or per seine haul. CPUE data from this survey were compared to a summary of CPUE data from lakes surveyed in the Status and Trend Program from 2001 through 2021 on a statewide and regional level for the Southern Lake Michigan Management Unit (SLMMU). Age structures (scales, spines, or fin rays) were collected from ten fish in each inch class for game species. Weighted age compositions and growth index were calculated according to methods described Schneider (2000b). Growth indices for age classes represented by a minimum of five fish were averaged to provide a mean index of fish growth (Schneider et al. 2000a). For Largemouth Bass and Northern Pike, growth index scores between +1 and -1 are considered similar to the state average while scores less than -1 and greater than +1 are considered below or above the state average, respectively. For panfish species, growth index scores of -0.5 to +0.5 are considered average. Bluegill size structure was rated using a scoring system based on the mean length, growth index, and the proportion of fish >6 inches, >7 inches, and >8 inches (Schneider 2000a, Schneider 1990). Due to differences in size selectivity between gear types, separate scores were calculated for Bluegills captured using large-mesh gill nets and electrofishing gear.

Limnological sampling was conducted on August 11, 2021, and included a temperature and oxygen profile and a shoreline development and woody cover survey. Temperature and dissolved oxygen concentrations were recorded at one-foot increments at the deepest spot in the lake. Shoreline surveys were conducted along seven 1,000-foot transects on North Scott Lake (including the island). Shoreline surveys on South Scott Lake also covered seven transects for a total of 7,000 feet. The number of docks (large/over 2 boat slips and small/1-2 boat slips), dwellings, submerged trees and the percent of the shoreline that was armored (riprap or seawalls) were recorded for each transect. Hourly water temperatures were recorded on each lake from March 23 through October 28, 2020, using an Onset Hobor Water Temp Pro v2 temperature logger that was deployed at a depth of 2.5 feet.

Results

Mean monthly water temperature in the two lakes ranged from 43.5 F in March to 83.7 F in July (Figure 2). South Scott Lake was slightly cooler than North Scott Lake throughout the period monitored. The temperature and dissolved oxygen profile was taken at the deepest part of North and South Scott Lake (37 feet and 54 feet respectively). Oxygen dropped below 3 ppm at a depth of 12 feet on North Scott Lake (Figure 3) and 13 feet on South Scott Lake (Figure 4). Below this depth oxygen levels are too low for fish to consistently use as habitat. The thermocline was at 15 feet of depth on both lakes. Secchi depth on North Scott Lake was 12 feet resulting in light penetration down to 24 feet. Secchi depth on South Scott Lake was slightly clearer at 15.5 feet resulting in light penetration down to 31 feet.

North Scott Lake had a total of 7,400 feet of shoreline that contained 65 small docks (8.8/1,000 feet), five large docks (0.7/1,000 feet), 84 houses (11.4/1000 feet), and 17 submerged trees (2.3/1,000 feet). Only 4.4% of the shoreline was armored with riprap or seawalls. South Scott Lake had a total of 7,000 feet of shoreline that contained 82 small docks (11.7/1,000 feet), one large dock (0.1/1,000 feet), 99 houses (14.1/1,000 feet), and two submerged trees (0.3/1,000 feet). Riprap or seawalls armored 25.7% of the shoreline.

A total of 2,872 fish of 23 different species were collected with an estimated weight of 1,048 pounds (Table 2). More fish were collected on North Scott Lake (1,744 fish; 21 species) than on South Scott Lake (1,128 fish; 18 species). The relative abundance and sizes of fish were similar between the two lakes. The species that were not caught on both lakes were only seen in low numbers and were likely present in both lakes. As a result, catch was combined and the fish community of the two lakes was assessed as one fishery. Bluegills were the most abundant fish captured ($n = 1,202$) making up 42% of the total catch by number. Growth rates for Bluegills were average at +0.3 and +0.5 on North and South Scott Lakes respectively (Figure 5). The mean size of Bluegills captured in large-mesh fyke nets was 7.4 inches, and 25% of the Bluegills captured were 8 inches or larger (Figure 6). Bluegill index scores rated size structure as 3.5 (satisfactory) based on growth index scores but were 5.8 (excellent) and 4.8 (good) based on large-mesh fyke nets and electrofishing catch respectively. Other sunfish caught included Pumpkinseeds (379 fish), Hybrid Sunfish (157 fish), Warmouth (149 fish), and Green Sunfish (five fish), making up an additional 24% of the catch by numbers. Combined with Bluegill, sunfish made up 66% of the fish captured in the 2021 survey.

Sixty-six Black Crappies were captured ranging from 5 to 11 inches and averaging 8.4 inches. The spatial distribution of crappies was patchy, with 34 fish collected in one electrofishing transect. Black

Crappie growth rates were slightly above average, scoring +0.7 in North Scott Lake and +0.9 in South Scott Lake. Black Crappies from three-year classes were captured ranging from age 2 to age 4 (Figure 7). The age-3 year class made up 82% of the Black Crappie captured. Yellow Perch growth rates were average scoring -0.5 at North Scott Lake and -0.1 at South Scott Lake. Yellow Perch were long-lived with fish up to 9 years old in the catch. Yellow Perch ranged from 2 to 12 inches. Forty-three percent of perch caught were greater than 8 inches in length and 20% were greater than 10 inches.

Largemouth Bass was the most abundant predator species in the Scott Lakes. A total of 276 Largemouth Bass were captured, averaging 10 inches in length and ranging from 2 to 21 inches. Largemouth Bass age-1 through age-10 were captured and growth rates were average, scoring -0.6 at North Scott and -0.4 at South Scott Lake (Figure 8). Lengths at age were similar to the statewide averages through age-5. At age 6, the growth indices in both lakes were below -1. Insufficient numbers of fish older than age 6 were collected to assess growth of those cohorts. Only 14 (6%) of Largemouth Bass captured in electrofishing were greater than the 14-inch minimum size limit (Figure 9).

Eleven Northern Pike were captured in the 2021 survey, with the catch split nearly equally between the two lakes. Total lengths ranged from 20 inches to 36 inches. Six year classes were present from age 3 to age 15. Too few Northern Pike were captured to calculate growth rates, but fish that were captured were slightly larger in each age class than the statewide average. Spotted Gar were caught in high numbers (165 fish) and three Bowfin were also observed adding to the predator biomass. The spotted Gar ranged from 16 to 31 inches and averaged 22.7 inches.

Many species of prey fish were captured including minnows and shiners. Total catch of minnows was relatively low. Bluntnose Minnow was the most abundant minnow species with 104 individuals caught in the six seine hauls. The other nongame prey fish were Golden Shiner (n = 32), Lake Chubsucker (n = 16), Blackchin Shiner (n = 12), Banded Killifish (n = 13), Blacknose Shiner (n = 2), Brook Silverside (n = 1) and Tadpole Madtom (n = 1). Abundance of small panfish was much greater than minnows and likely provide the most utilized forage in the Scott Lakes. Predators (Largemouth Bass, Northern Pike, Spotted Gar, Bowfin, and Grass Pickerel) made up 56% of the total fish biomass, which is slightly above the range of 20-50% recommended by Schneider (2000).

Analysis and Discussion

The shoreline of the Scott Lakes has an average level of development with 11.4 houses/1,000 feet (North Scott) and 14.1 houses/1,000 feet (South Scott) being close to the median for the Southern Lake Michigan Management Unit (SLMMU; 15.9) and statewide (9.4) when compared to data from lakes surveyed in the Status and Trend Program from 2002 through 2007. The number of docks was also close to the median for SLMMU (17.3 houses/1,000 feet) and statewide (7.7 houses/1,000 feet) at 9.5 and 11.8 docks/1,000 feet on North and South Scott Lakes respectively. Only 4.4% of the North Scott Lake shoreline was armored, which is well below the median for the SLMMU of 14.3%, but not below the 25th percentile of 2.2%. South Scott Lake shoreline armoring was 25.7% and closer to the SLMMU and statewide medians. Woody habitat was somewhat limited at North and Scott Lakes with 2.3 and 0.3 submerged trees/1,000 feet respectively, which places North Scott Lake below the 25th percentile compared to statewide data of 2.5 but is similar to the median of 3.4 for SLMMU. Weed treatments have been conducted in targeted locations since at least 2007, limiting vegetative habitat along parts of the shoreline.

Nursery habitat is especially important in the Scott Lakes as the abundance of predators is high. Natural shorelines with wetland fringe and native vegetation are vital habitats for juvenile fish. Vegetation and woody habitat are directly related to growth rates of Bluegill and Largemouth Bass (Schindler et al. 2000). Shoreline development is related to increased angling pressure, decreased water quality, and decreased woody habitat. Both Largemouth Bass and Bluegill production decreases when vegetation is absent or densities are too low (Wiley et al. 1984; Savino et al. 1992). Largemouth Bass recruitment has also been shown to decline when vegetation coverage is low (Durocher et al. 1984; Miranda and Pugh. 1997). Vegetation and woody habitat increases survival of young-of-year Largemouth Bass by providing refuge from predation and access to quality prey. Because woody habitat is low in the Scott Lakes, vegetation and natural shorelines may play a larger role and should be protected.

The Scott Lakes have a good diversity of sportfish available to anglers. Growth rates for all game species were similar to or above state averages. The Bluegill population creates a quality fishery in North and South Scott Lakes. CPUE of Bluegills were 29.4 fish per net night in large-mesh fyke nets and 17.9 fish per net night in small mesh fyke nets. CPUE was near the medians for large mesh fyke nets for SLMMU (35.2 per net night) and statewide (13.4 per net night). Small mesh fyke net CPUE was also near the medians for both SLMMU (20.0 fish per net night) and statewide (15.3 fish per net night). The abundance of Bluegills observed was average for Michigan lakes which allows for Bluegills to experience growth rates in the range that is considered average. Mean length at age was greater than the statewide average for each year class and mean growth indices were positive. As a result, Bluegill size structure was ranked from satisfactory to excellent using different indices and the abundance of fish over 8 inches was high. In 2023, a Bluegill measuring 10.2 inches was caught in South Scott Lake and met the minimum entry requirements for the DNR's Master Angler Program. Other panfish species also contribute to the fishery. Pumpkinseed and Hybrid Sunfish were captured in lower numbers and tended to be smaller than Bluegills, ranging from 1-8 inches.

Black Crappie CPUEs varied by gear type. Only 13 fish were caught in large-mesh fyke nets which are generally used to evaluate crappie populations. More Black Crappies were captured in electrofishing (N = 42) for a CPUE of 42 fish per hour which is much higher than the 75th percentile for SLMMU (12 fish per hour) and statewide (15 fish per hour). Black Crappies can shift habitats during spring surveys due to temperature fluctuations and spawning behavior. This situation may have led to the discrepancy in catch rates among gears and between electrofishing transects. Size structure is average with slightly above average growth. Black Crappies have variable spawning success resulting in uneven year classes. Often a fishery is carried by a single strong cohort, increasing the size structure of the population as it ages. This scenario appears to be the case in the Scott Lakes as 82% of the Black Crappies observed were three years old with few fish in other year classes observed. The three-year-old fish averaged 8.2 inches in length in 2021. This year class will continue to grow and produce bigger fish each year until they are harvested or succumb to natural mortality. A population with growth similar to the statewide average grows 0.8 to 1 inch per year. The age 3 cohort should create quality fishing opportunities for Black Crappies in North and South Scott Lake for a few years. It is expected that another strong cohort should occur that will create future recruits to the fishery. North and South Scott Lakes have the potential to produce large Black Crappies, and a Master Angler Program Black Crappie was caught in 2001 that was 14.5 inches.

Yellow Perch also provide an average fishery in North and South Scott Lakes. Gill nets are deployed to evaluate Yellow Perch catch rates, and CPUE in 2021 was 4.6 fish per net night. This catch rate was close to the median for SLMMU surveys (3.4 fish per net night) and statewide surveys (2.8 fish per net night). Yellow Perch size structure was good and fish of desirable size for harvest were abundant. Yellow Perch up to 12 inches were caught and fish over 10 inches made up 20% of the total catch.

Largemouth Bass are the most numerous predators in this system. The catch rate from electrofishing was 227 fish per hour, which is much higher than the 75th percentile for surveys conducted from 2001-2021 in SLMMU (147 fish/hour) and statewide (103 fish/hour). The high density is likely causing intraspecific competition for resources and slower growth. Although Largemouth Bass growth was in the range considered average, growth indices were negative. There also was a drop in abundance and growth once fish reach 14 inches. The length frequency distribution and observed growth pattern could be due to harvest as larger fish are selectively harvested, especially in age classes where fast-growing fish reach 14 inches and are vulnerable to harvest but slow-growing fish are too small to legally harvest. Anglers have shifted towards catch and release angling for Largemouth Bass and as a result the impacts of harvest have been reduced in many lakes in Michigan. Hooking mortality could still be a concern; however, hooking mortality would affect both sub-legal and legal bass. The decrease in growth could also be caused by a shortage of suitable prey for large sizes of Largemouth Bass. Without creel data it is difficult to determine if shifting harvest regulations would allow for more Largemouth Bass to survive to older age classes. Because the total Largemouth Bass population density in the Scott Lakes is so high, even the low relative abundance of legal-sized fish equates to a good abundance of larger fish of harvestable size surviving and recruiting to the fishery relative to other Michigan lakes. Bass up to 21 inches were captured in the survey indicating the presence of memorable sized fish (>20 inches; Willis et al. 1993; Gablehouse 1984). A Master Angler Program Largemouth Bass (total length = 23.5 inches) was caught in North Scott Lake in 1998. Largemouth Bass tournament activity on the Scott Lakes is relatively low. There have been 21 tournaments over the last seven years averaging three tournaments per year (range of 1-5). Tournament activity may be limited by the small size of the boating access site.

North and South Scott Lakes have been managed for Northern Pike for some time. Northern Pike were stocked at high rates for many years with little success. Northern Pike populations observed in the 2021 survey were maintained entirely by natural reproduction as all fish that were captured were too young to have originated from the final stocking in 2003. CPUE of Northern Pike in gill nets was 1.3 fish per net night. This CPUE is at the 25th percentile for SLMMU lakes (1.3 fish per net night) and just below the 25th percentile for statewide surveys (1.5 fish per net night). The Northern Pike population is a low-density population with larger fish present. No Master Angler quality Northern Pike were collected during the 2021 survey; however, five fish in the 30-36-inch range were caught. This low-density population appears to be growing well and providing some opportunity to catch large pike without the need for stocking.

Spotted Gar were very abundant, especially in North Scott Lake. The catch rates for Spotted Gar were among the highest in the state. Spotted Gar are currently a species of special concern due to their limited range in Michigan. They are an important native predator. It should be noted that because of their protected status, it is not legal to harvest Spotted Gar using archery gear or spearing. The abundance of Spotted Gar in North and South Scott Lakes is one of the factors contributing to the high predator to prey ratio. Spotted Gar feed readily on juvenile Bluegills and are most likely contributing to preventing the Bluegill population from becoming stunted. Bowfin were also present and feed similar to Spotted Gar

in shallow warm water habitat and feed on fish species in habitats not fully utilized by most sportfish. Although some anglers view gar and Bowfin as negatively affecting game species, there is little evidence to support this claim, and simplification of fisheries by removing non-desired predators could cause panfish overpopulation, stunting, and balance issues (Scarnecchia 1992).

Stocking of predators such as Walleye can create fisheries and reduce densities of Bluegill when prey availability is limiting growth. However, no additional predator stockings are advised in the Scott Lakes. Predators (Largemouth Bass, Northern Pike, Spotted Gar, Bowfin, and Grass Pickerel) made up 56% of the total fish biomass, which is above the range of 20-50% recommended by Schneider (2000). The predator to prey ratio is considered high, but prey fish seem to be readily available with high catch rates of panfish and the presence of several minnow species. Predator growth rates generally were average, but older Largemouth Bass did exhibit slower growth. DNR recommends no predator stocking be approved for the Scott Lakes.

Management Direction

No stocking is recommended for North and South Scott Lakes. The lakes currently maintain a diverse fishery through natural reproduction. Growth rates for all game species are close to the state average and good numbers of legal and preferable sized fish are available. Bluegill populations are kept in check by the high predator population. Predator stocking could intensify competition and reduce growth of native predators already present in the lakes. Northern Pike have maintained a low-density population through natural recruitment. Existing wetlands in North and South Scott Lake are important spawning habitat for Northern Pike. These wetlands should be protected from alteration, development, or broad-spectrum herbicide treatments to ensure this population persists. Many other fish species use these wetlands for spawning, refugia, and feeding. Shoreline modification is moderate on North and Scott Lakes likely leading to the quality fishery observed in this survey. DNR will continue to review Michigan Department of Environment, Great Lakes, and Energy (EGLE) permit applications and recommend best management practices to reduce impacts to the natural shoreline in the Scott Lakes. DNR will work with the lake association to understand the need for aquatic vegetated habitat and strike a balance between invasive vegetation control and promoting quality fish habitat.

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Table 1. Fish stocked in North and South Scott Lakes in Van Buren County.

| Lake | Year | Species | Number | Average Length (inches) |
|------------------------|------|-----------------|--------|----------------------------|
| North Scott Lake | 1933 | Largemouth Bass | 1,000 | Fingerling |
| North Scott Lake | 1958 | Largemouth Bass | 5,500 | Fingerling |
| South Scott Lake | 1958 | Largemouth Bass | 6,000 | Fingerling |
| North/South Scott Lake | 1959 | Largemouth Bass | 4,114 | Fingerling (114 large) |
| North/South Scott Lake | 1959 | Northern Pike | 3,112 | Fingerling |
| North Scott Lake | 1963 | Northern Pike | 120 | Sublegal |
| North Scott Lake | 1984 | Northern Pike | 1,500 | 3.9 |
| North Scott Lake | 1986 | Northern Pike | 2,002 | 3.5 |
| North Scott Lake | 1988 | Northern Pike | 2,000 | 3.15 |
| North Scott Lake | 1990 | Northern Pike | 3,000 | 3.35 |
| North Scott Lake | 1991 | Northern Pike | 6,000 | 2.17 |
| North Scott Lake | 1992 | Northern Pike | 3,000 | 2.64 |
| North Scott Lake | 2003 | Northern Pike | 169 | 11.36 |
| North Scott Lake | 2003 | Northern Pike | 204 | 24.18 |

Table 2. Fish captured across all gears in the 2021 survey of North and South Scott Lakes.

| Species | South Scott Lake | | | | North Scott Lake | | | |
|--------------------|------------------|--------------|----------------------|-----------------------|------------------|--------------|----------------------|-----------------------|
| | Number | Weight (lbs) | Mean Length (inches) | Length Range (inches) | Number | Weight (lbs) | Mean Length (inches) | Length Range (inches) |
| Banded Killifish | 13 | 0.1 | 2.5 | 2 - 2 | 0 | 0 | - | - |
| Black Crappie | 8 | 3.3 | 8.8 | 5 - 11 | 58 | 18.6 | 8.3 | 5 - 10 |
| Blackchin Shiner | 0 | 0.0 | - | - | 12 | 0.1 | 2.4 | 1 - 2 |
| Blacknose Shiner | 0 | 0.0 | - | - | 2 | 0.0 | 2.0 | 1 - 2 |
| Bluegill | 409 | 73.2 | 5.2 | 1 - 9 | 793 | 110.8 | 5.0 | 1 - 8 |
| Bluntnose Minnow | 12 | 0.0 | 1.5 | 1 - 1 | 92 | 0.4 | 2.2 | 1 - 3 |
| Bowfin | 3 | 12.7 | 22.5 | 20 - 26 | 0 | 0.0 | - | - |
| Brook Silverside | 0 | 0.0 | - | - | 1 | - | 3.5 | 3 - 3 |
| Brown Bullhead | 12 | 12.7 | 13.2 | 11 - 14 | 13 | 12.9 | 12.9 | 10 - 13 |
| Golden Shiner | 9 | 1.0 | 6.9 | 6 - 8 | 23 | 2.9 | 7.3 | 5 - 9 |
| Grass Pickerel | 6 | 1.4 | 10.7 | 9 - 11 | 13 | 2.5 | 9.4 | 5 - 12 |
| Green Sunfish | 1 | 0.1 | 5.5 | 5 - 5 | 4 | 0.6 | 6.0 | 5 - 6 |
| Hybrid Sunfish | 64 | 18.9 | 7.2 | 3 - 8 | 93 | 22.0 | 6.5 | 2 - 8 |
| Lake Chubsucker | 7 | 3.2 | 8.9 | 6 - 10 | 9 | 3.6 | 8.5 | 5 - 10 |
| Largemouth Bass | 135 | 86.0 | 9.6 | 2 - 21 | 141 | 104.3 | 10.4 | 2 - 19 |
| Northern Pike | 5 | 39.0 | 31.9 | 27 - 36 | 6 | 29.3 | 27.0 | 20 - 34 |
| Pumpkinseed | 108 | 31.4 | 6.9 | 2 - 8 | 271 | 67.7 | 6.5 | 1 - 8 |
| Spotted Gar | 109 | 165.9 | 22.5 | 16 - 31 | 56 | 91.4 | 23.0 | 19 - 31 |
| Tadpole Madtom | 0 | 0.0 | - | - | 1 | 0.0 | 2.5 | 2 - 2 |
| Warmouth | 82 | 19.5 | 6.4 | 1 - 8 | 67 | 16.7 | 6.6 | 2 - 8 |
| White Sucker | 0 | 0.0 | - | - | 1 | 2.1 | 17.5 | 17 - 17 |
| Yellow Bullhead | 75 | 43.2 | 10.6 | 7 - 12 | 54 | 26.1 | 10.0 | 7 - 12 |
| Yellow Perch | 70 | 20.5 | 7.9 | 2 - 12 | 34 | 4.0 | 6.1 | 2 - 9 |
| Grand Total | 1,128 | 531.9 | 8.6 | 1 - 36 | 1,744 | 516.1 | 6.7 | 1 - 34 |

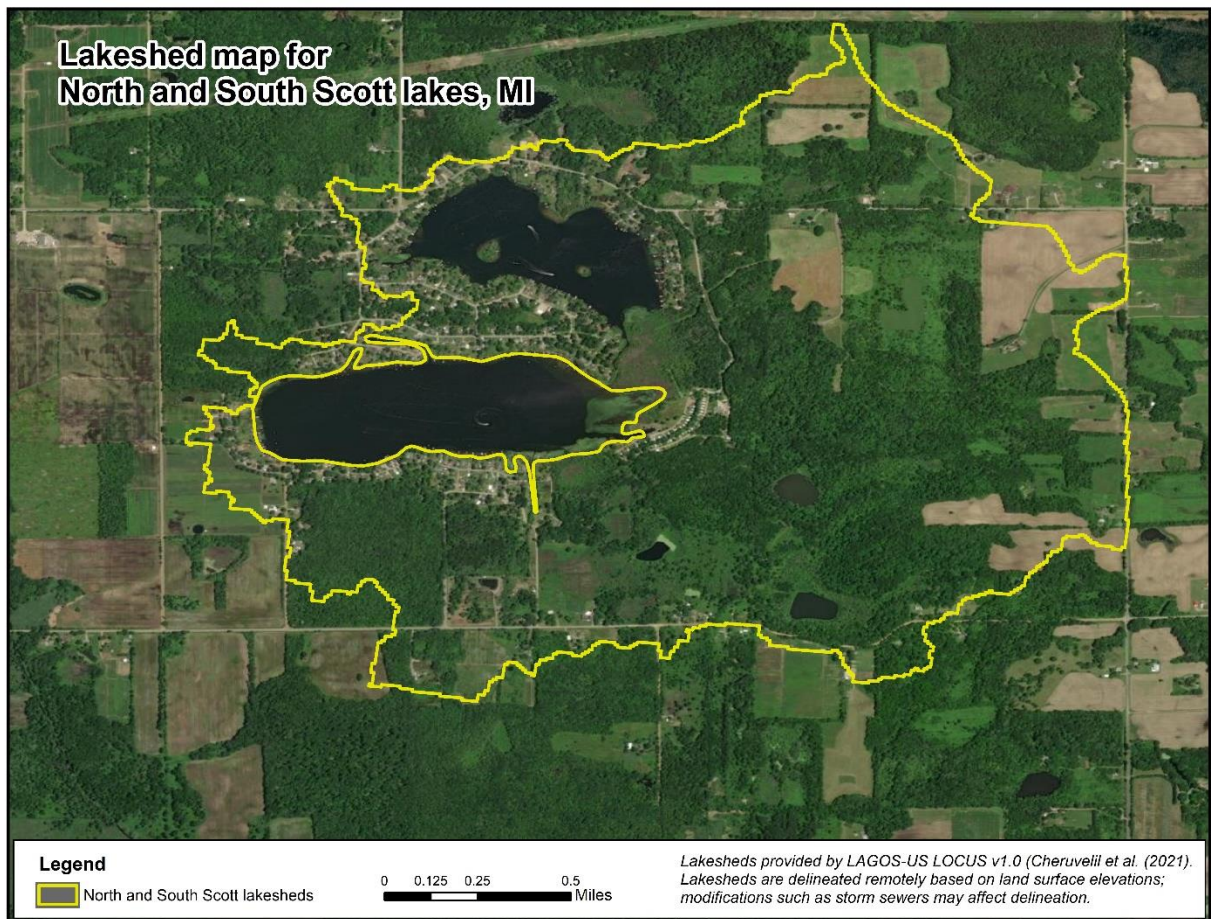


Figure 1. Watershed map of North and South Scott Lakes combined.

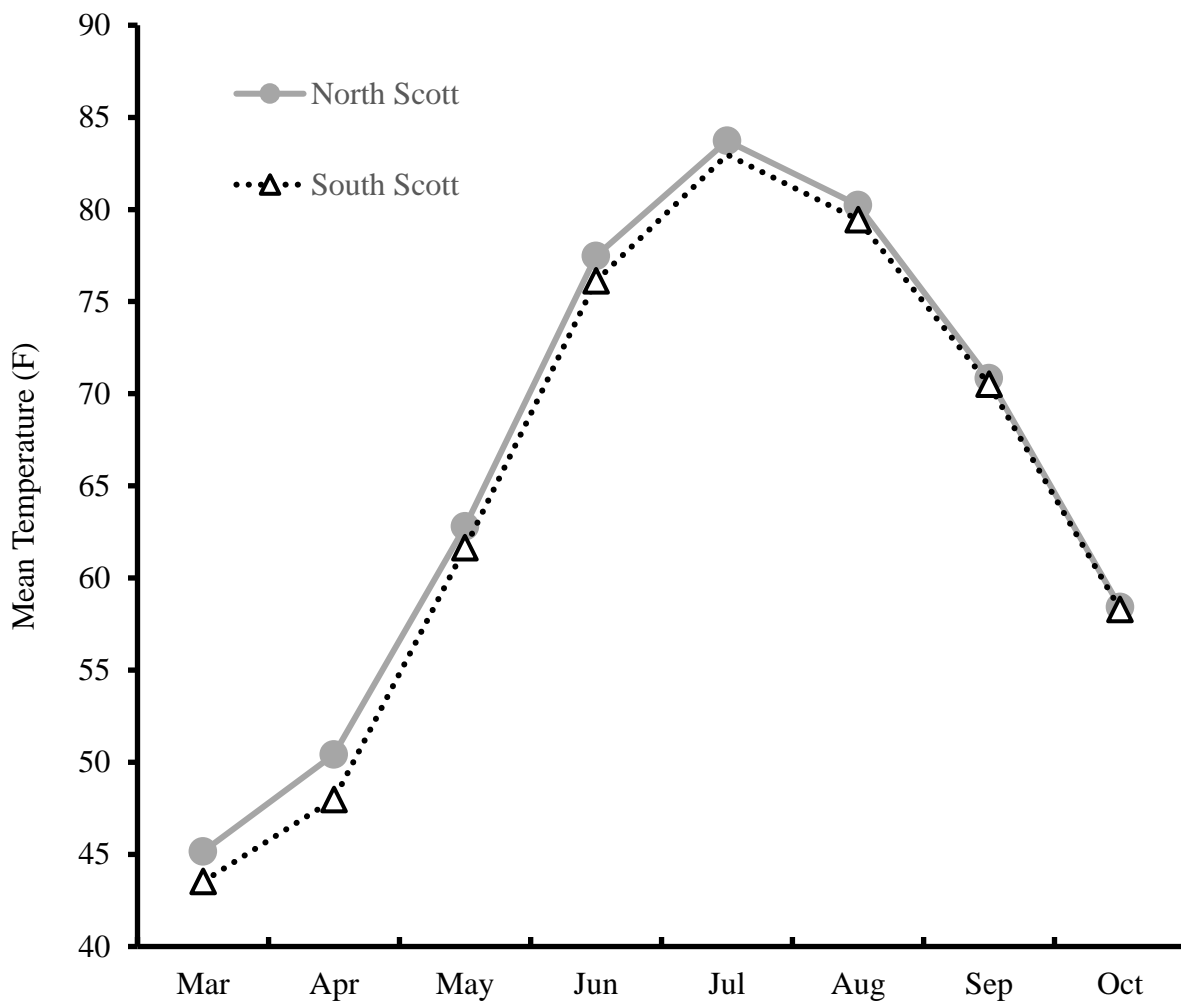


Figure 2. Average monthly water temperature recorded by temperature loggers deployed at 3 feet of depth in North and South Scott Lakes from March through October 2021.

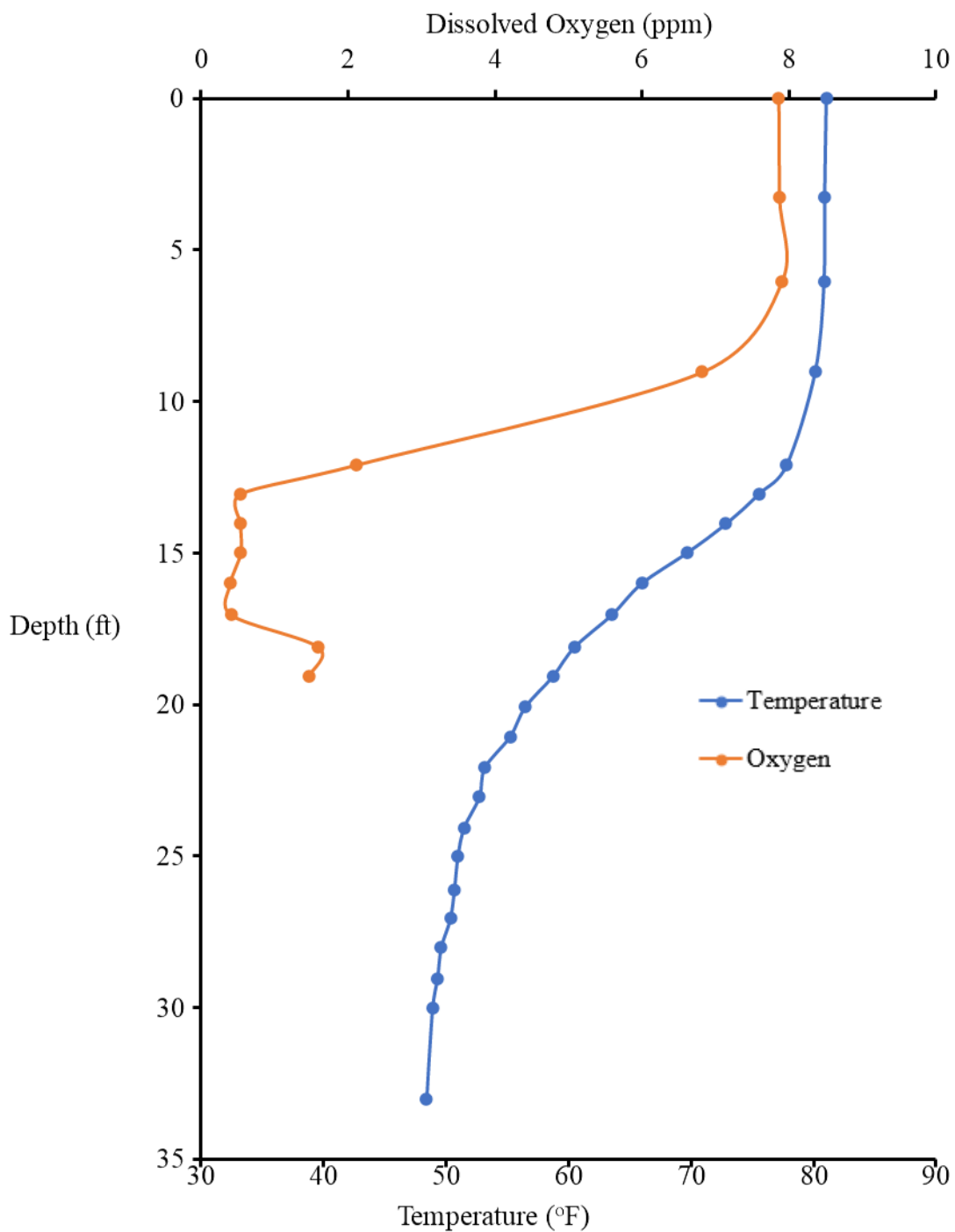


Figure 3. Temperature and dissolved oxygen profile by depth in North Scott Lake collected on August 11, 2023.

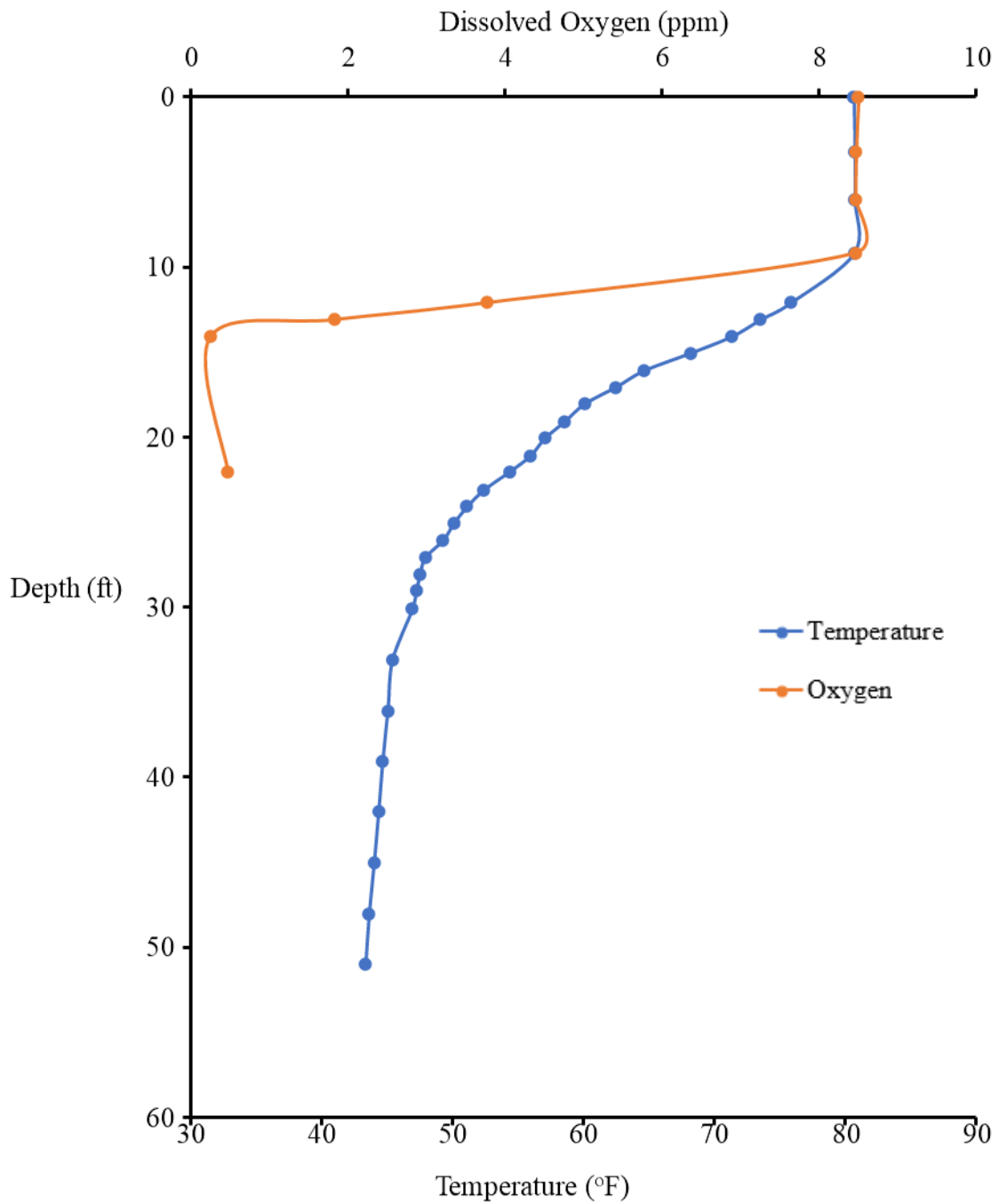


Figure 4. Temperature and dissolved oxygen profile by depth in South Scott Lake collected on August 11, 2023.

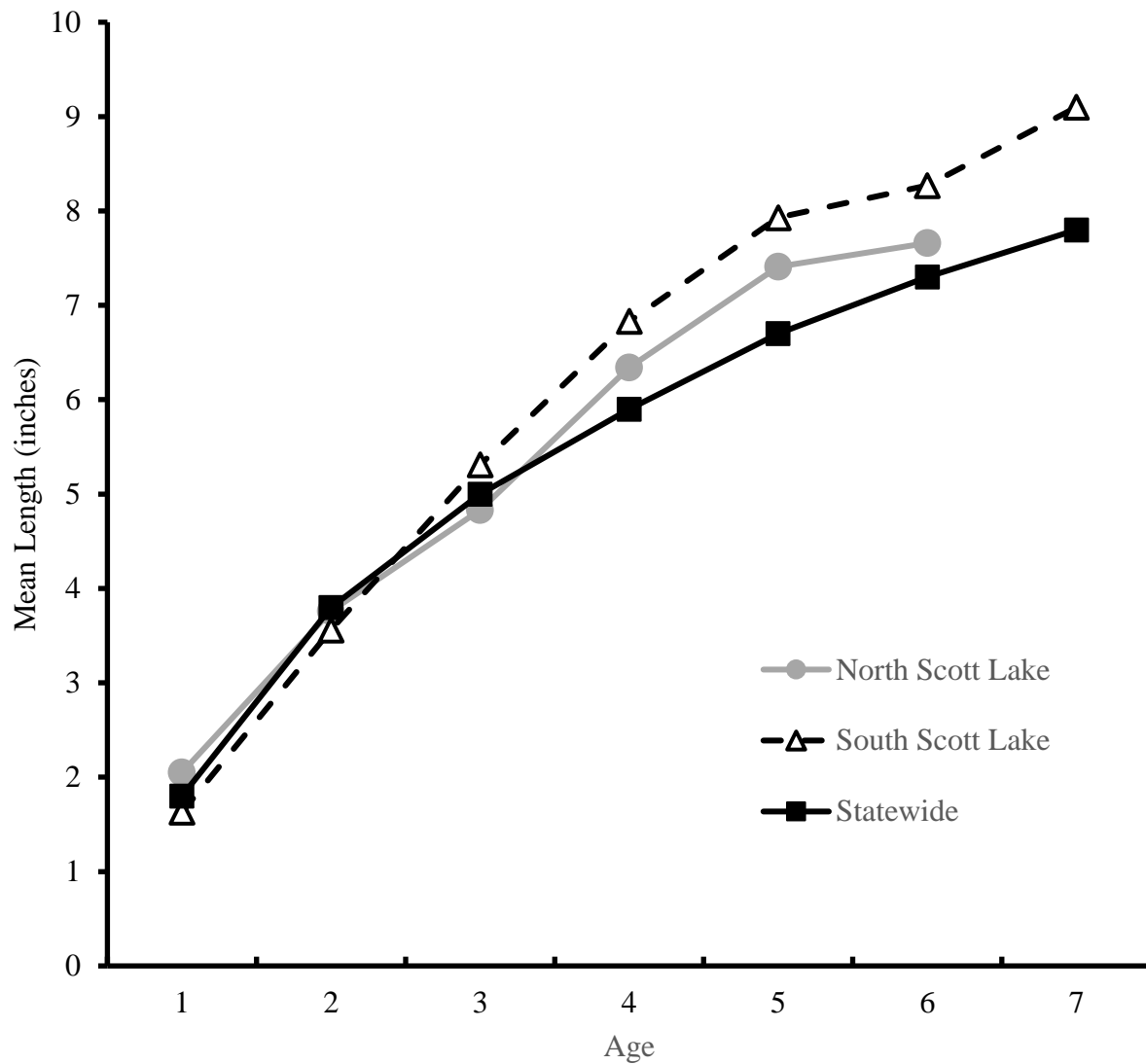


Figure 5. Mean lengths at age for Bluegills captured in the 2021 fish survey conducted on North and South Scott Lakes compared to the statewide averages. Statewide averages are from Schneider et al. (2000a).

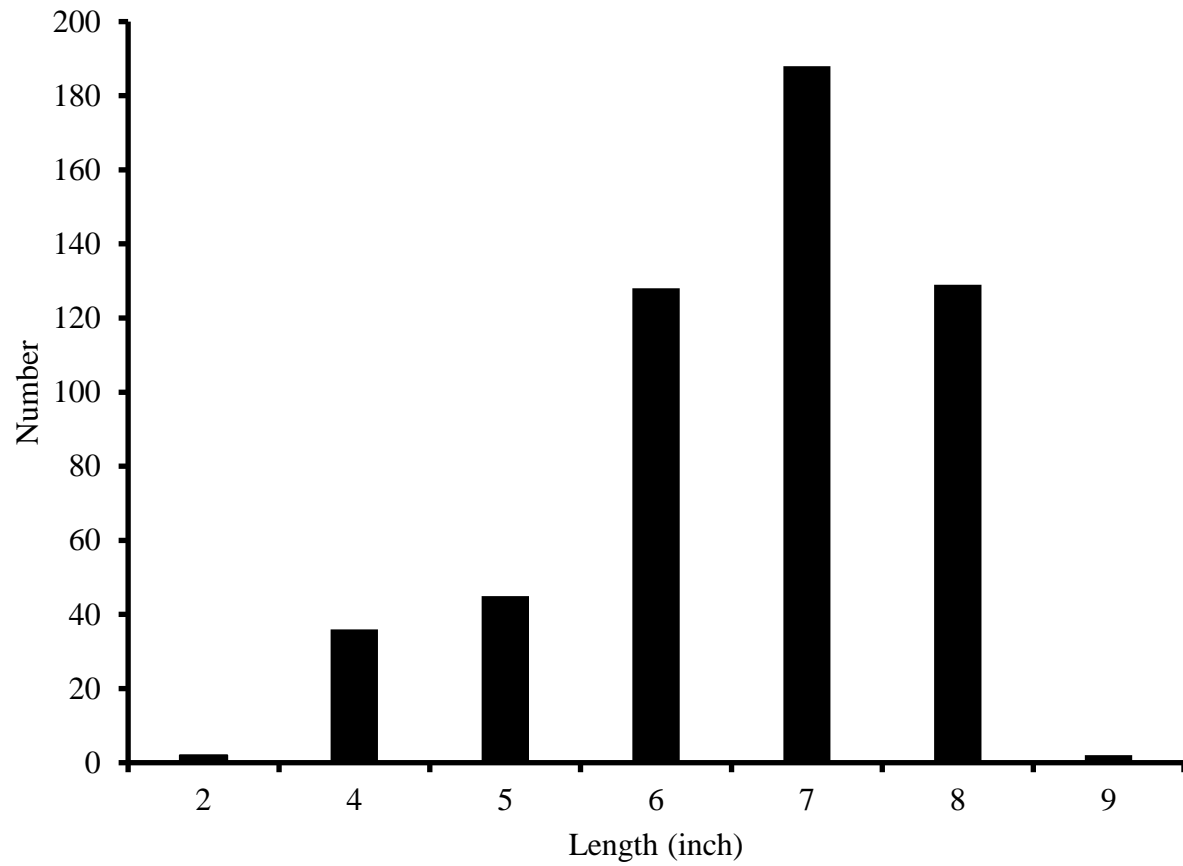


Figure 6. Length frequency by inch group for Bluegills captured by electrofishing in the 2021 fish survey of North and South Scott Lakes.

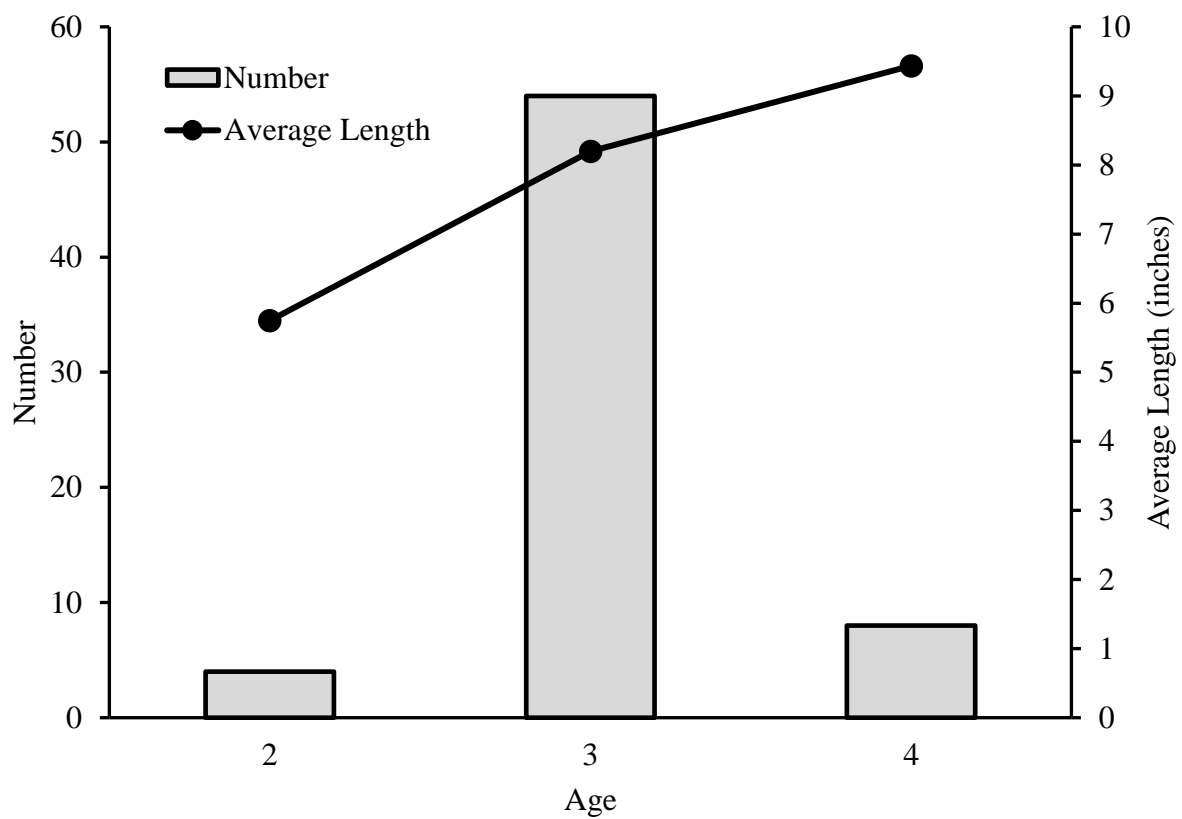


Figure 7. Number of Black Crappies captured in each age class and mean length at age from the 2021 fish survey on North and South Scott Lakes.

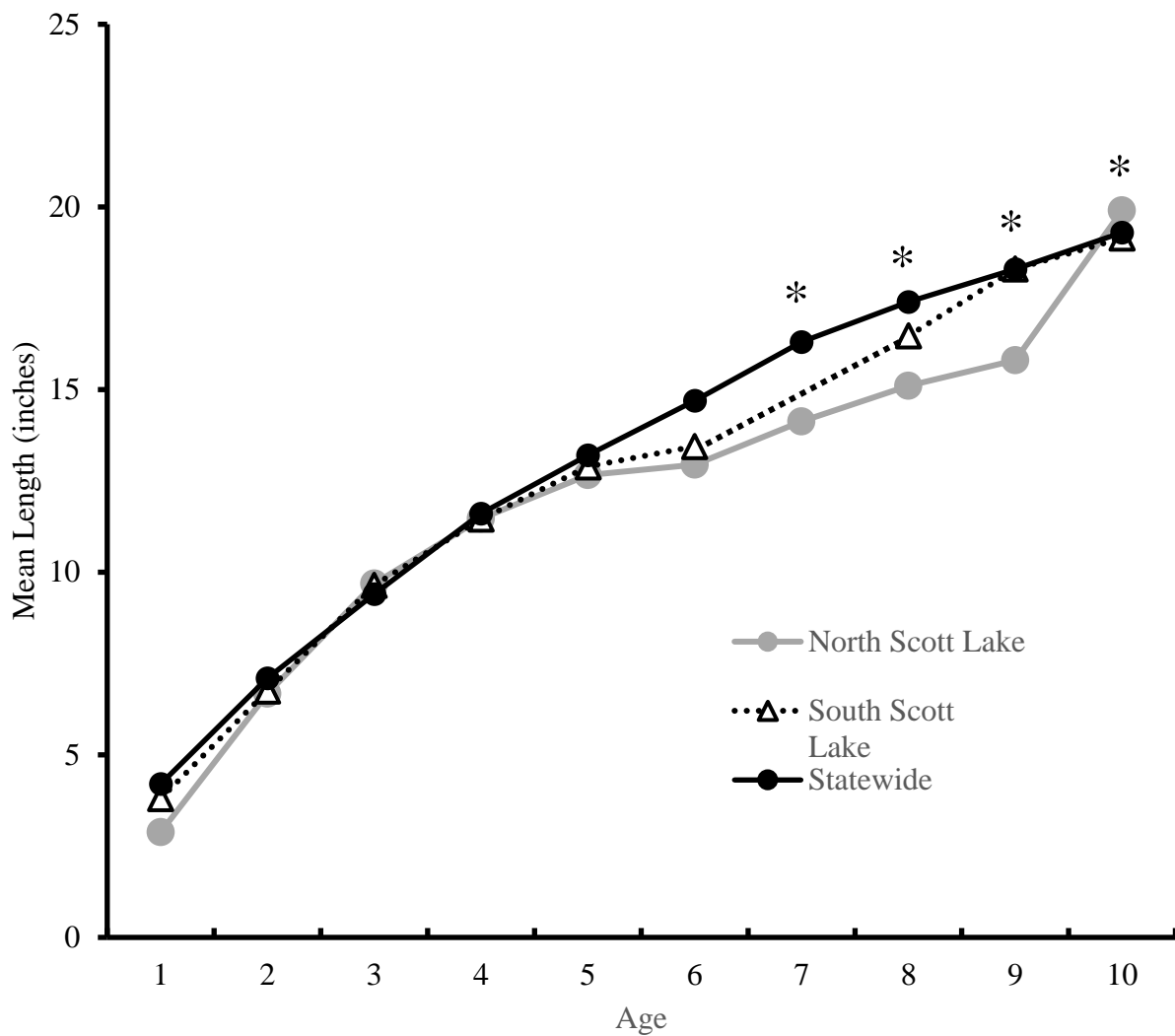


Figure 8. Mean lengths at age for Largemouth Bass in North and South Scott Lakes in the 2021 fish survey compared to the statewide averages. Statewide averages are from Schneider et al. (2000a). Year classes with an asterisk contained less than 10 fish and

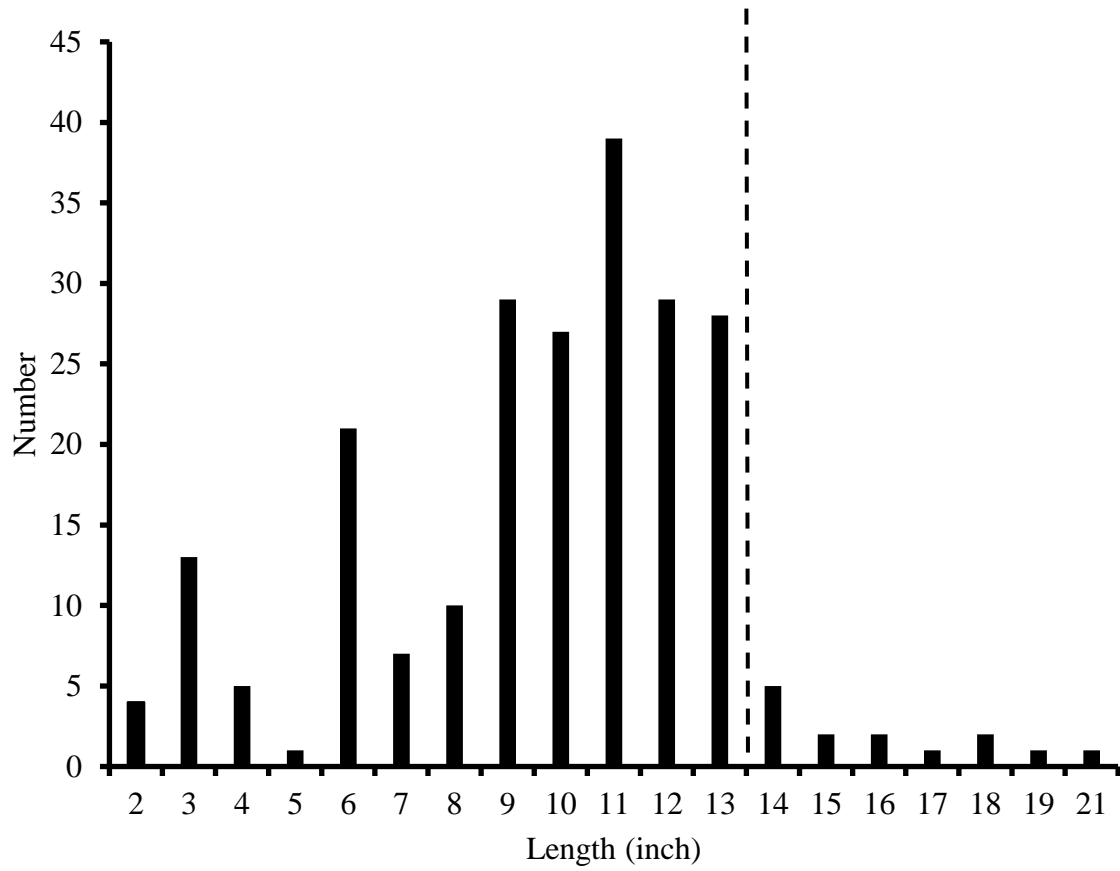


Figure 9. Length frequency by inch group of Largemouth Bass captured by electrofishing in the 2021 fish survey of North and South Scott Lakes. The dotted line indicates the minimum size limit for harvest.

Received September 28, 2023; October 31, 2023

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