# Gravel Lake 2016 Survey Report

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## Introduction

Gravel Lake is a 296-acre natural lake located four miles northwest of the village of Marcellus. The lake is nearly circular in shape and has a maximum depth of 51 ft. Approximately 35% of the lake (by surface area) is less than 10 ft deep, with the widest shoals found along the southwest shoreline (Figure 1). Sand is the predominant substrate nearshore, whereas marl and organic substrates are common offshore. A small stream flows from a wetland into the east side of the lake. A dam on the outlet helps maintain a court-appointed lake level during the summer.

The surficial geology of the Gravel Lake watershed consists of end moraines and deposits of glacial outwash sand and gravel. These materials are relatively porous, which facilitates infiltration of precipitation and reduces surface runoff. Darcy groundwater maps show low to moderate potential for groundwater inflow to the lake. Michigan's Aquatic Habitat Viewer indicates that agriculture (71%) and forests (16%) are the predominant land uses within the watershed. Residential and vacation homes line almost the entire shoreline of Gravel Lake. The Michigan Department of Natural Resources (MDNR) boat ramp on the western shore provides public access to the lake.

Limnological sampling was conducted at the deepest point in Gravel Lake on August 1, 2016. As expected, the lake was thermally stratified (Figure 2). The epilimnion extended from the surface to a depth of 18 ft. Water temperatures within the epilimnion were relatively uniform, ranging from 81.2 °F to 79.7 °F. The metalimnion (zone of thermal change) extended from 18 ft to 42 ft. Water temperatures declined from 79.7 °F to 50.1 °F. The cold waters of the hypolimnion extended from 42 ft to the bottom of the lake. The dissolved oxygen concentration followed a clinograde curve, with the highest oxygen concentrations occurring near the surface (Figure 2). The dissolved oxygen concentration dropped below 3 ppm (minimum concentration necessary for most warmwater fish species) by 26 ft.

The first fisheries survey of Gravel Lake was conducted in 1886. Yellow Perch and Bluegills were collected during this initial sampling effort, and the researchers observed shiners and juvenile Largemouth Bass along the shoreline. The first recorded stocking occurred in 1890 when Walleye fry were released into the lake (Table 1). Juvenile Bluegills, Largemouth Bass, and Yellow Perch were stocked in Gravel Lake during 1933-1945. Throughout the state, annual stocking programs for these species were discontinued after research indicated that spawning habitat (i.e., aquatic vegetation for Yellow Perch, and sand, gravel, or firm mud for Bluegills and Largemouth Bass) was abundant in Michigan lakes and that supplemental stocking had minimal effects on the quality of the fishery (Cooper 1948). Walleye fry and juvenile Smallmouth Bass also were stocked in Gravel Lake in the 1930s and early 1940s.

Michigan Department of Conservation (predecessor of MDNR) personnel used a large seine to collect fish in October 1957. No Walleye or Smallmouth Bass were captured. Largemouth Bass, Yellow Perch, and Bluegills were the most common species in the catch. Anglers reported very good fishing for Yellow Perch and slow fishing for Largemouth Bass during the 1957 season. Only two Northern Pike were captured in the seine, and anglers indicated that few pike had been caught in recent years.

During November 1965, trap nets and fyke nets were used to assess the fish community after biologists had received complaints of too many small panfish. Bluegills were the most abundant species in the catch,

followed by bullheads, Pumpkinseeds, and Yellow Perch. The data did not substantiate angler complaints, as the average sizes were satisfactory for Bluegills (6.2 inches), Pumpkinseeds (6.4 inches), and Yellow Perch (7.7 inches). Only eight Largemouth Bass were captured during the 1965 sampling effort.

MDNR completed an electrofishing survey on Gravel Lake in October 1979. Juvenile Bluegills and Yellow Perch composed the bulk of the catch. As expected, electrofishing was an efficient technique for capturing Largemouth Bass, and 96 bass were collected. Analysis of scale samples indicated that growth rates were average for Bluegills, Yellow Perch, and Largemouth Bass.

The Gravel Lake Association (GLA) initiated a fall fingerling Walleye stocking program in 2007 (Table 1). From 2007 through 2012, the GLA stocked 1,000 fall fingerlings each year except 2010. In 2013, the annual stocking number was increased to 1,500 fall fingerlings. During 2007-2014, the mean annual stocking density was 3.4 fall fingerlings/acre, which is one of the highest sustained stocking densities recorded in southwest Michigan. The GLA submitted a public waters fish stocking permit application to stock 1,500 fall fingerling Walleyes in the lake again in 2015. However, MDNR biologists were becoming concerned about the potential effects of the Walleye stocking program on the native populations of Largemouth Bass and panfish. The application was denied, and MDNR scheduled a survey for spring 2016 to assess the existing Walleye population and the status of the fish community in Gravel Lake.

## Methods

Eight trap nets were deployed at various locations throughout Gravel Lake on March 13, 2016. The nets were checked on March 15 and removed on March 17. The total trap net effort was 32 net nights. On March 24, 2016, nighttime electrofishing gear was used to capture Walleyes along the entire shoreline of Gravel Lake (including the canal at the northwest end of the lake). Electrofishing time was 121 minutes. Total lengths were recorded for all fish captured in the trap nets and for the Walleyes collected with electrofishing gear. A dorsal fin ray sample was collected from each Walleye for age determination and to mark the fish for the mark-recapture population estimate. Weights for all fish species were calculated using the length-weight regression coefficients compiled by Schneider et al. (2000).

Two methods were used to generate Walleye population estimates for Gravel Lake. The first method was the Schumacher-Eschmeyer (SE) method, which is a multiple-census technique. This method incorporated recapture data from the March 17 trap net lifts and the March 24 electrofishing effort into the calculation of population size. The second method was the Chapman modification of the Peterson (C-CP) method. The CP formula treated the entire trap netting period as a single marking period and the electrofishing effort as a single recapture period. Formulas for both methods and associated 95% confidence interval calculations followed the description by Clark et al. (2004). As the Walleyes were captured nearshore during spawning season, all captured fish were considered adults.

## Results

The trap net catch included 178 unmarked Walleyes and 17 recaptured Walleyes. The trap net catch-per effort (CPE) including recaptures was 6.1 Walleyes/net night. Forty-three unmarked Walleyes and 25 marked Walleyes were collected during the electrofishing sampling. For the entire survey effort, the Walleye catch consisted of 221 unmarked fish and 42 recaptures.

The SE and CP adult population estimation methods yielded similar results. The SE population estimate was 505 adult Walleyes (1.7/acre) with a 95% confidence interval of 423-627 adults. The CP population estimate was 475 adult Walleyes (1.6/acre) with a 95% confidence interval of 331-619 adults. The number of legal (i.e., 15 inches or larger) Walleyes in the lake was estimated to be 326 (1.1/acre; 95% confidence interval = 210-721) with the SE method. The CP estimate for legal Walleyes was 279 fish (0.9/acre; 95% confidence interval = 202-357).

Total lengths for captured Walleyes ranged from 11 inches to 29 inches (Figure 3). Seventy-seven percent of the Walleyes met or exceeded the minimum size limit of 15 inches, and 19% of the Walleyes were 20 inches or larger. Due to staffing limitations at the MDNR-Fisheries Division office in Plainwell, the dorsal fin ray samples were sent to another MDNR office for analysis. The samples were analyzed and assigned ages were written on the sample envelopes. The samples were sent back to the Plainwell office for cataloging and data entry, but the samples were lost in transit. Thus, no growth data are available for Gravel Lake Walleyes.

Fourteen additional fish species (plus hybrid sunfish) were captured in the trap nets (Table 2). Aside from Walleye, Largemouth Bass (n = 108) was the most abundant species in the catch. Only 6% of the bass were of legal size (i.e., 14 inches or larger), and the maximum size was 15 inches (Figure 4). During the electrofishing survey, the sampling crew observed numerous Largemouth Bass in the 10-13 inch range. They also observed about 20 Smallmouth Bass with an estimated maximum size of 14 inches.

As expected, Bluegill (n = 92) was the most common panfish species during the survey. The Bluegill size structure was impressive. Ninety percent of the Bluegills were 8 inches or larger (Figure 5). Though less abundant than Bluegills, the other panfish species (Pumpkinseed, Yellow Perch, Black Crappie, and Hybrid Sunfish) also had high average lengths.

An adult Muskellunge was captured during the 2016 survey. Muskellunge are not native to Gravel Lake, and there are no records of this species being stocked in the lake. The fish probably was caught a few miles away in Bankson Lake and illegally transferred to Gravel Lake by an angler. No Northern Pike were collected during the survey.

## Discussion

The trap net catch-per-effort (CPE) for Walleyes in Gravel Lake was slightly below the median value of 6.7 fish/net night reported by Hanchin (2017) for waters surveyed under MDNR's Large Lakes Survey Program (LLSP; Figure 6). The Gravel Lake Walleye population density estimates for adults and legal-sized fish also were slightly below the medians of 2.4/acre and 1.5/acre listed by Hanchin (2017; Figure 7). However, the percentage of the total catch (by number) composed by Walleyes was higher in Gravel Lake (33.4%) than the median value of 24.2% for LLSP lakes (Figure 8).

Although the LLSP database includes some of the most robust data in the state for Walleyes, there are some caveats when using LLSP data as benchmarks for the Gravel Lake population. (1) The LLSP lakes were substantially larger than Gravel Lake. The LLSP lakes varied in size from 1,709 acres to 20,075 acres. The difference in lake size is important, as Hanchin (2017) found a positive correlation between lake surface area and Walleye abundance. (2) With the exception of the Muskegon Lake/Muskegon River complex, all of the LLSP waters were located in the Upper Peninsula or the northern Lower Peninsula. Thus, these waters are within a colder climate zone than Gravel Lake. (3) Several of the LLSP Walleye

populations (e.g., Portage-Torch lakes and the Michigamme Reservoir) have access to the Great Lakes or major river systems. Walleyes in these waters can move to other areas to find forage.

Walleye population estimates were calculated for nine medium-sized lakes (surface area between 100 acres and 500 acres) in northern Michigan during 2008-2018 (P. Hanchin, MDNR – Fisheries Division, personal communication). Estimated adult Walleye population densities for these lakes ranged from 0.86/acre to 2.89/acre with a median value of 1.88/acre (Figure 9). During 2014-2017, MDNR assessed Walleye abundance with late winter-early spring surveys in three other lakes in southwest Michigan: Magician (Cass County), Gun (Barry/Allegan counties), and Lincoln (Kent County). The trap net CPE for adult Walleyes during these surveys ranged from 0.9 fish/net night to 2.1 fish/net night. Thus, the CPE values suggest that all three lakes had lower population densities of Walleyes than Gravel Lake. This conclusion is supported by a mark-recapture analysis on Gun Lake that yielded a population estimate of 0.36 Walleyes/acre (Diana 2017). Overall, it appears that the Walleye population density in Gravel Lake is high relative to other lakes in southwest Michigan and is more typical of medium-sized lakes in the northern part of the state.

The average length for Gravel Lake Walleyes (recaptures excluded) was 17.6 inches. Average lengths for LLSP lakes varied from 14.0 inches to 25.1 inches with a median value of 16.4 inches (Hanchin 2017; Figure 10). Thus, the size structure of the Gravel Lake Walleye population was comparable to most Walleye populations in northern Michigan. However, Gravel Lake Walleyes had a smaller average size than observed for the other southwest Michigan populations (Figure 11).

Hanchin (2017) found a significant negative relationship between adult Walleye population density and the percentage of legal-sized fish in the catch. The mean growth index for Walleyes also declined with increasing population density, and all LLSP populations with at least 3 adults/acre exhibited slow growth. The Gravel Lake population density was below 3 adults/acre, and the percentage of legal-sized fish in the catch (77%) was above the median percentage (72.6%) for LLSP lakes (Hanchin 2017). No length-at-age data are available for Gravel Lake. However, the size structure of the Gravel Lake catch suggests that the inverse relationship between population density and growth noted for northern lakes also applies to southwest Michigan lakes. Walleye CPEs were highest in Gravel Lake and the Gravel Lake Walleye population had the lowest average fish size (Figure 11).

The annual stocking density for Walleyes in Gravel Lake was higher in 2013 and 2014 than in previous years. Henderson and Morgan (2002) found that most male Walleyes reach sexual maturity at age 2 or age 3, whereas most females did not spawn for the first time until age 4 or age 5. Thus, some of the males from the 2014 stocking and nearly all the females from the 2013 and 2014 stockings would not have been moving nearshore to spawn during the 2016 survey. If the survey had been conducted a few years later, it is likely that the population estimate would have been higher.

Inland lake fish communities in southern Michigan differ from those found in northern Michigan. Whereas Walleyes naturally are the most abundant predator in many northern lakes, Largemouth Bass are the predominant predators in southern lakes. The goal of Walleye stocking in southern Michigan is not to replace Largemouth Bass as the top predator, but to add another (less common) game fish species to diversify fishing opportunities.

Multiple studies have documented Walleye predation on Yellow Perch (e.g., Nielsen 1980 and Lyons 1987), and research in New York waters has shown negative correlations between Walleye abundance and perch recruitment (Rudstam et al. 1996). Yellow Perch were abundant during previous surveys on

Gravel Lake. However, few perch were captured during the 2016 trap net survey and zero perch were observed during the electrofishing sampling.

In the 1990s, MDNR stocked fall fingerling Walleyes in select lakes in an effort to improve the size structure of stunted Bluegill populations (Schneider and Lockwood 2002). Walleye predation apparently reduced Bluegill abundance and intraspecific competition, as Bluegill growth and catch rates of 7 inch and larger Bluegills began to improve in most lakes a few years after stocking. These changes occurred despite low CPEs and presumably low population densities of adult Walleyes. The trap net CPEs from the Schneider and Lockwood (2002) study cannot be directly compared to the Gravel Lake 2016 survey because their surveys were conducted primarily during May-June. The lake with highest Walleye CPE during the Schneider and Lockwood (2002) study also had below average growth for Walleyes.

Northern Pike and Walleye spawning seasons overlap, and late winter/early spring is the best time to capture Northern Pike. The absence of Northern Pike in the 2016 catch suggest that pike either are extirpated from the lake or are very rare. Historic surveys indicate that Northern Pike abundance has been low in this system for the past 100 years. Pike spawn over dense vegetation in marshes. As noted during the 1957 fisheries survey, spawning habitat appears to be the major factor limiting abundance of this species in Gravel Lake.

The timing of the 2016 Gravel Lake survey was not optimal for collection of Largemouth Bass and Bluegills. The trap net data and qualitative observations during the electrofishing effort on March 24 suggest that Largemouth Bass are abundant in the lake. However, legal-sized fish seem to be rare. The scarcity of legal-sized bass could be due to poor growth or intensive harvest of fish as soon as they reach 14 inches. It is unusual for 8-inch and 9-inch fish to compose such a high percentage of the Bluegill catch (Figure 5). Stunting is not an issue, and it appears that Bluegill growth in Gravel Lake is above average for Michigan populations.

Private fish stocking by the GLA has created a popular Walleye fishery. Although the adult Walleye population density was below the threshold of 3.0 fish/acre that Hanchin (2017) found was associated with poor growth of Walleyes in large lakes, other indicators suggest that the Gravel Lake Walleye population is at or slightly above the carrying capacity for this system. (1) The Walleye population density in Gravel Lake was similar to population densities in medium-sized lakes in northern Michigan where the climate is more favorable for Walleyes. (2) The Walleye CPE in Gravel Lake was much higher than observed in other southwest Michigan lakes. (3) The percentage of the total catch composed by Walleyes in Gravel Lake was above the median for LLSP lakes and considerably higher than observed for other lakes in southwest Michigan. (4) The average length for Walleyes in Gravel Lake was similar to or higher than many lakes in the northern part of the state, but it was 1.2-4.1 inches lower than recorded for local lakes with comparable growing seasons. (5) Few Yellow Perch were collected during the 2016 survey. (6) The high percentage of 8 inch or larger Bluegills in the 2016 catch is consistent with a low density Bluegill population with exceptional growth.

## Management Recommendations

The fish community appears to be at a point where we are gaining relatively high catch rates for Walleyes and excellent size structure of the Bluegill population but experiencing reductions in panfish abundance and average size of Walleyes. The standard biennial Walleye stocking rate for southwest Michigan lakes is 4 fall fingerlings/acre. It appears feasible to exceed that stocking rate slightly in Gravel Lake. However, the information presented in the preceding paragraph indicates that past annual stocking rates of 3 fall

fingerlings or higher cannot be maintained without adverse effects on Walleye growth and native fish species abundance. The recommended density for future stocking is 750 fish (2.5/acre) annually or 1,500 fish (5/acre) biennially.

## References


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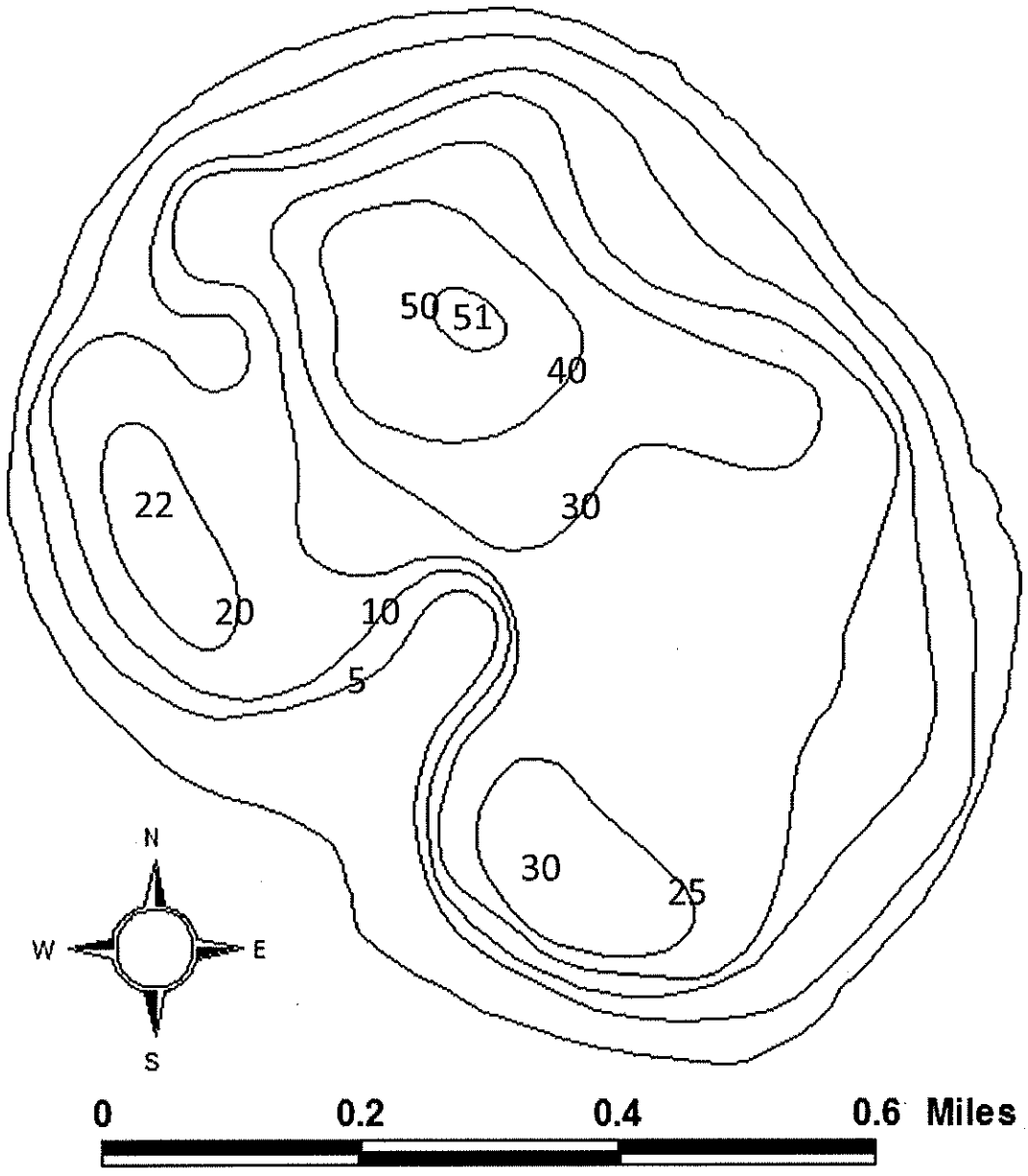
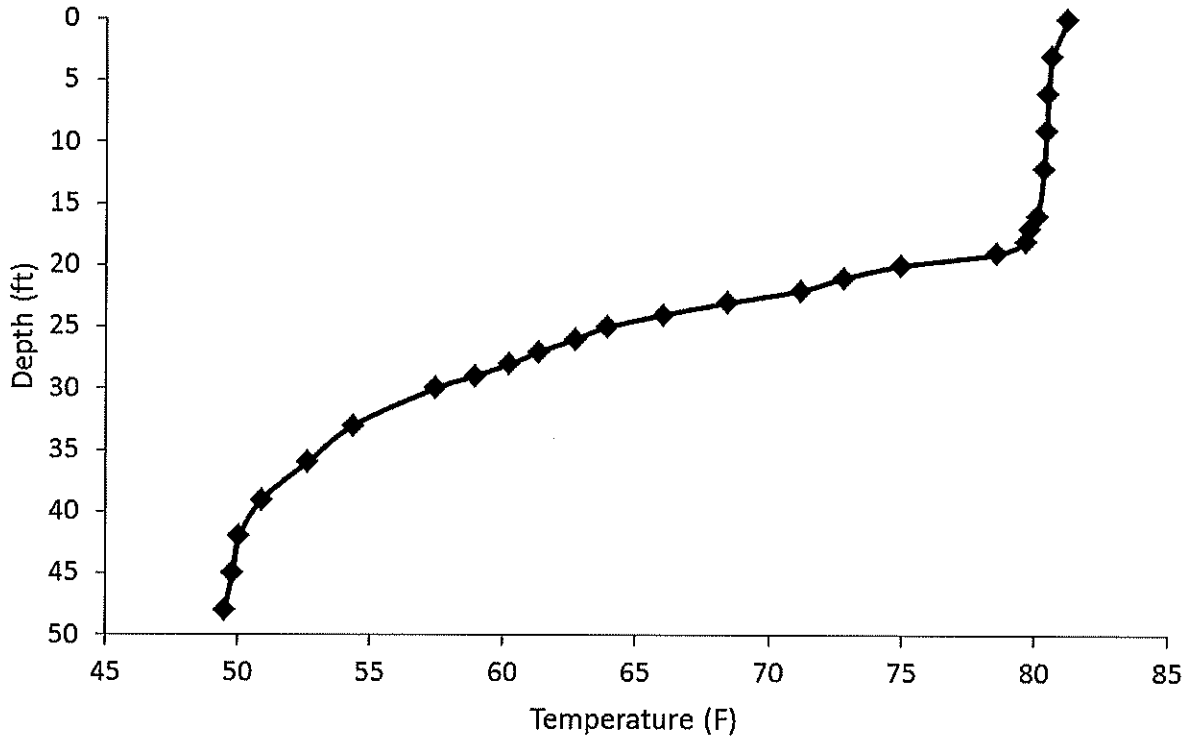



Figure 1.–Bathymetry of Gravel Lake. Depths are in feet.



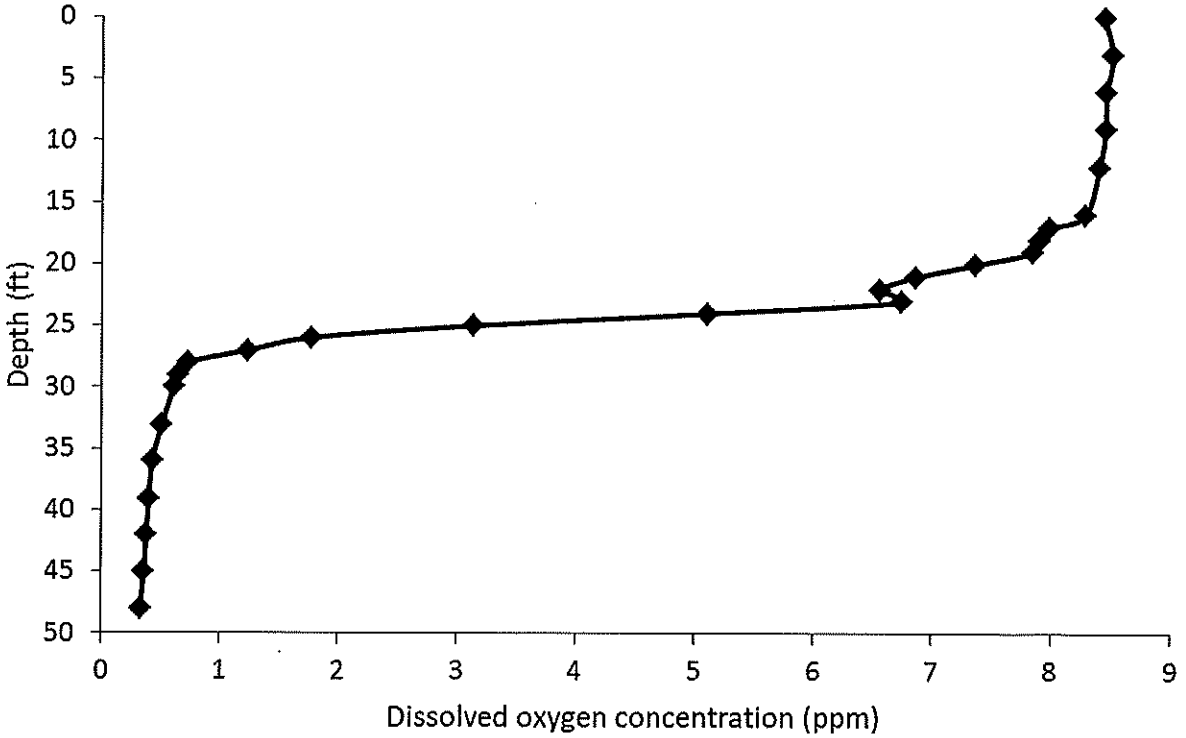




Figure 2.–Temperature and dissolved oxygen profiles for Gravel Lake on August 1, 2016.

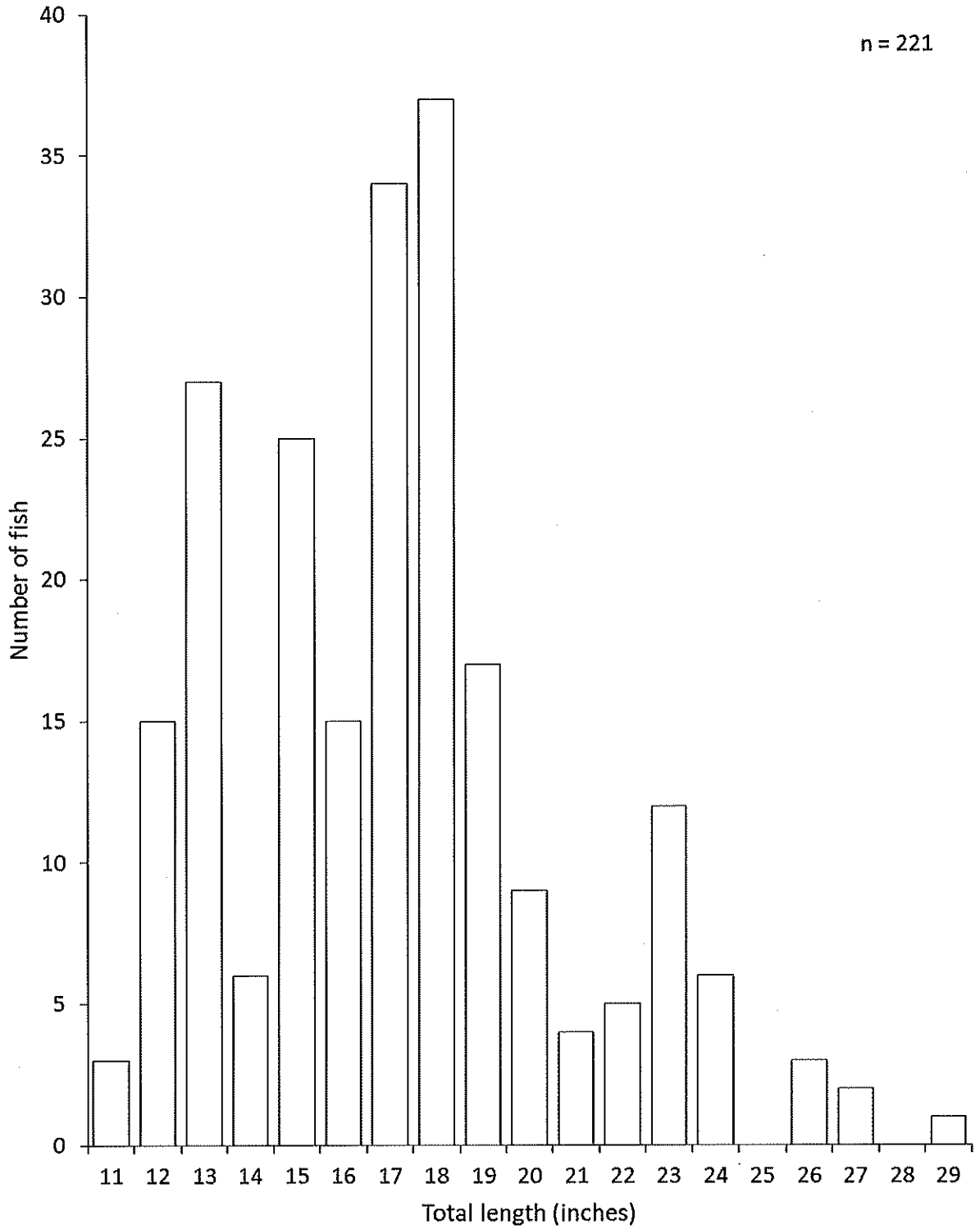



Figure 3.–Length frequency distribution for Walleyes (recaptures omitted) collected in Gravel Lake with trap nets and nighttime electrofishing gear during March 13-24, 2016.

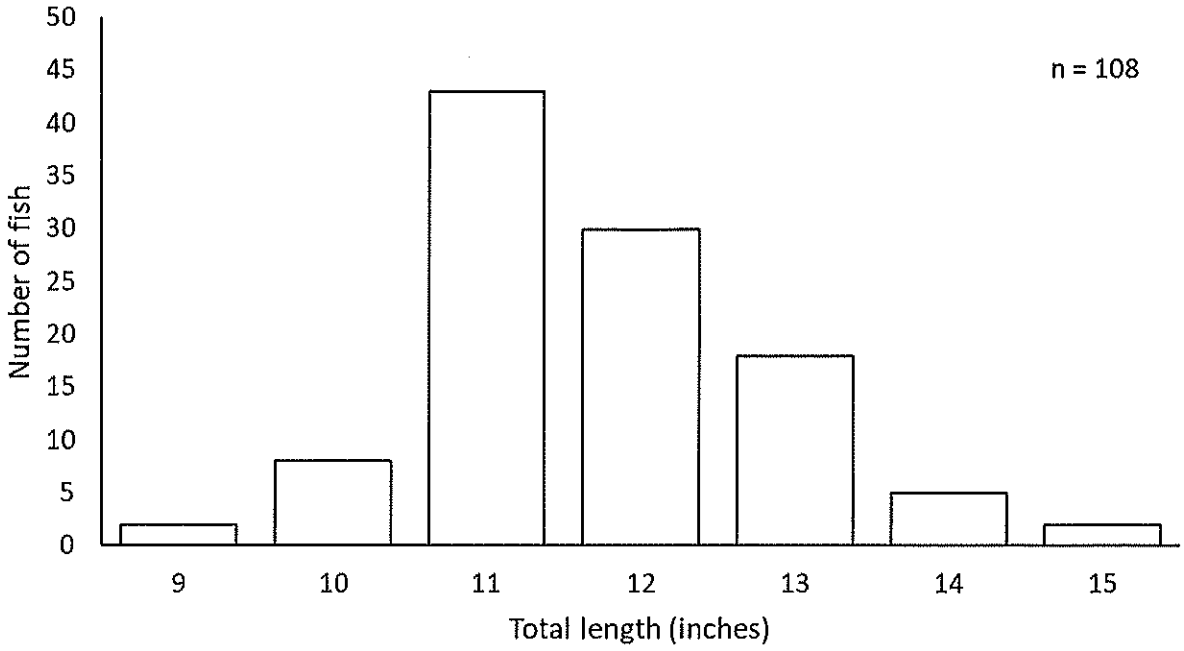



Figure 4.–Length frequency distribution for Largemouth Bass captured in Gravel Lake with trap nets during March 13-17, 2016.

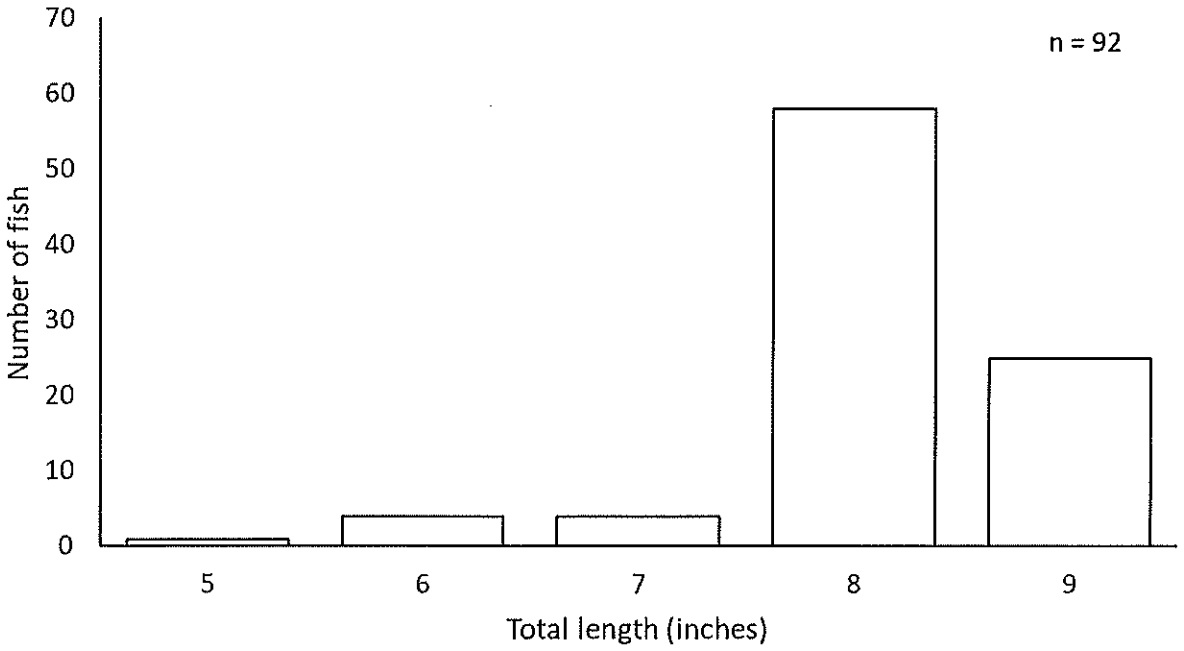



Figure 5.–Length frequency distribution for Bluegills captured in Gravel Lake with trap nets during March 13-17, 2016.

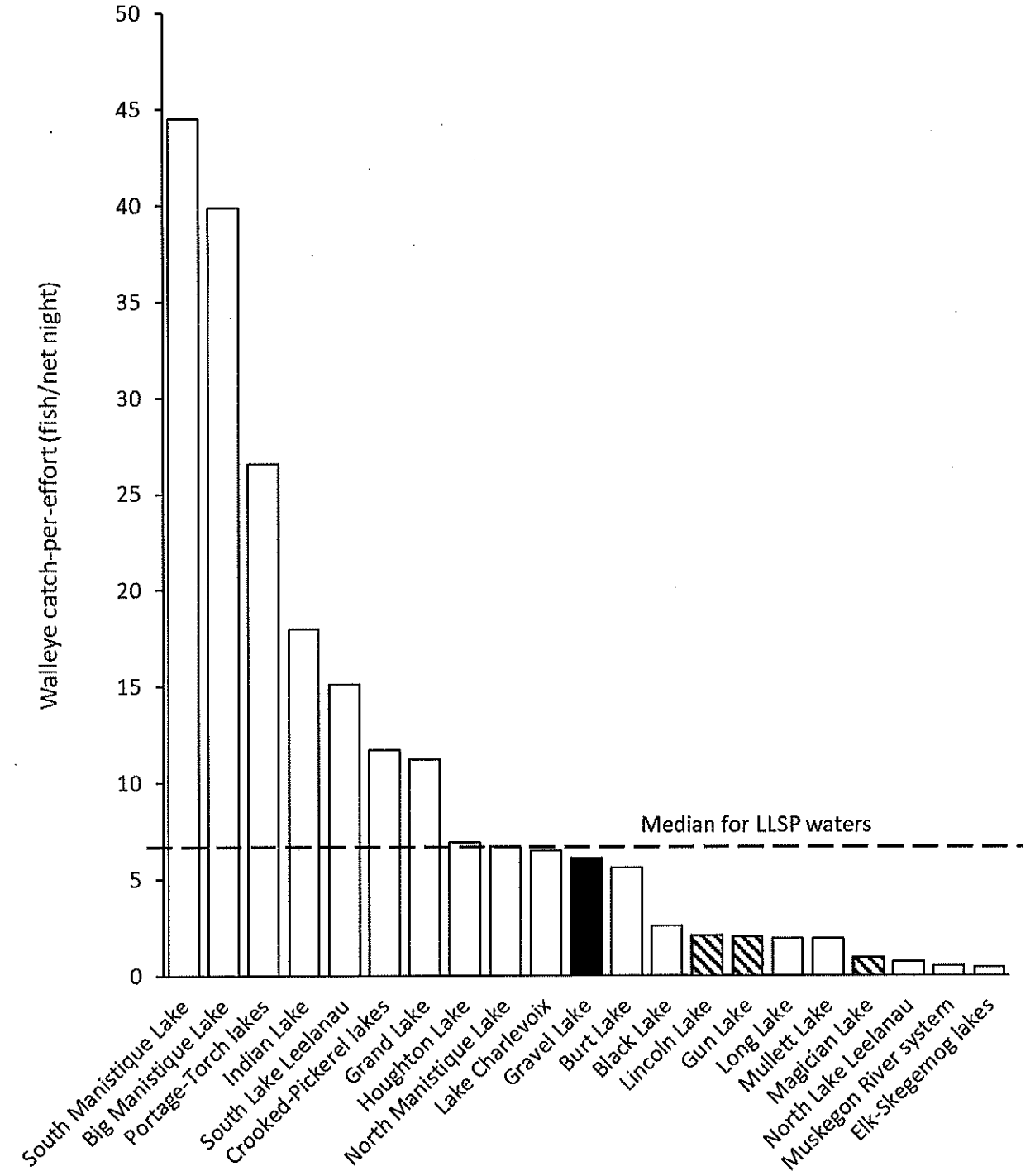



Figure 6.–Walleye catch-per-effort in trap nets in Gravel Lake (black; 2016 survey), waters surveyed as part of the Michigan Department of Natural Resources' Large Lakes Survey Program (LLSP) during 2001-2010 (white), and other southwest Michigan lakes surveyed by the Michigan Department of Natural Resources during 2014-2017 (striped). The LLSP data is from Hanchin (2017).

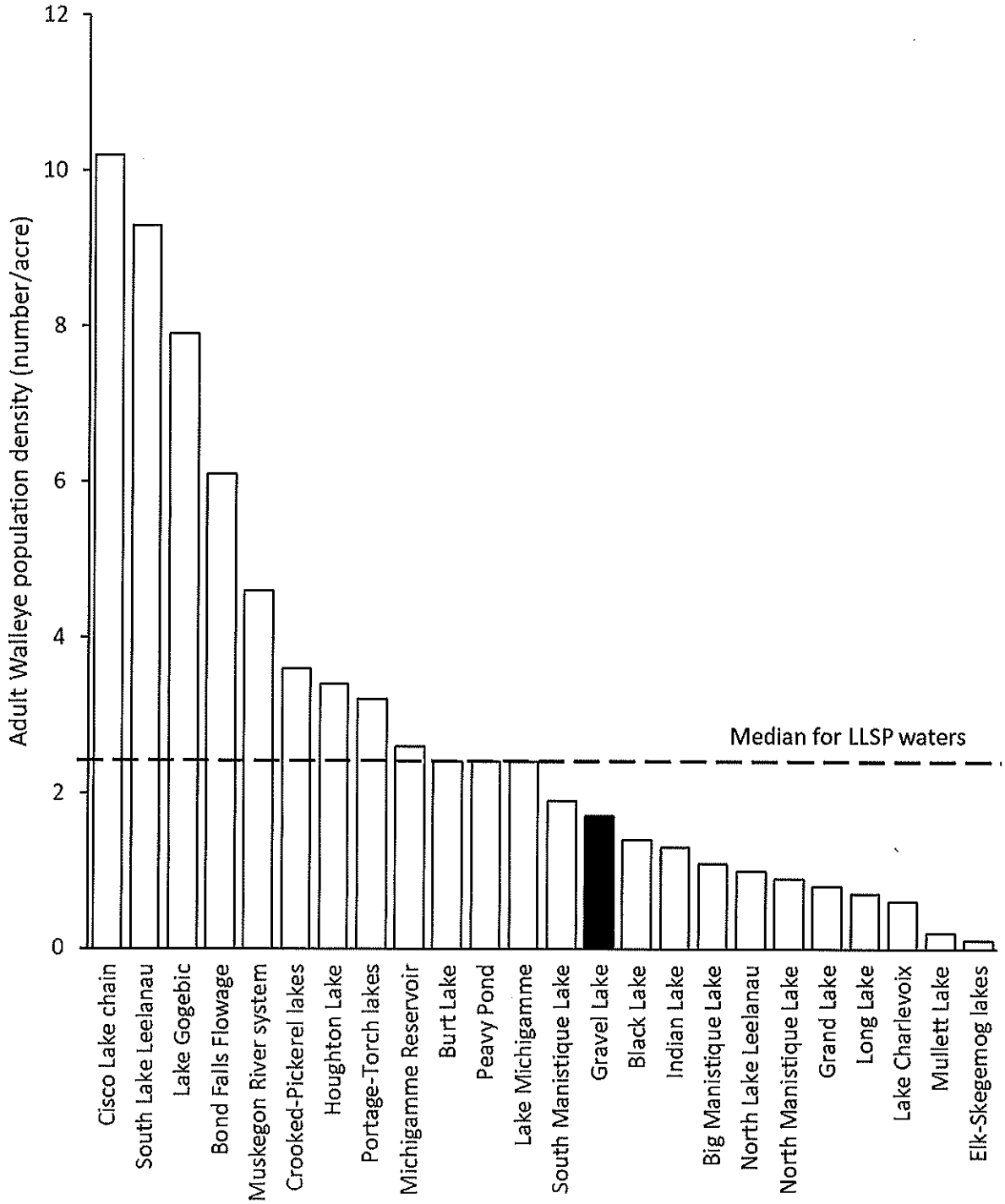



Figure 7.–Adult Walleye population density (number/acre) in Gravel Lake compared to population densities recorded for waters surveyed as part of Michigan Department of Natural Resources' Large Lakes Survey Program (LLSP) during 2001-2010. The LLSP data is from Hanchin (2017).

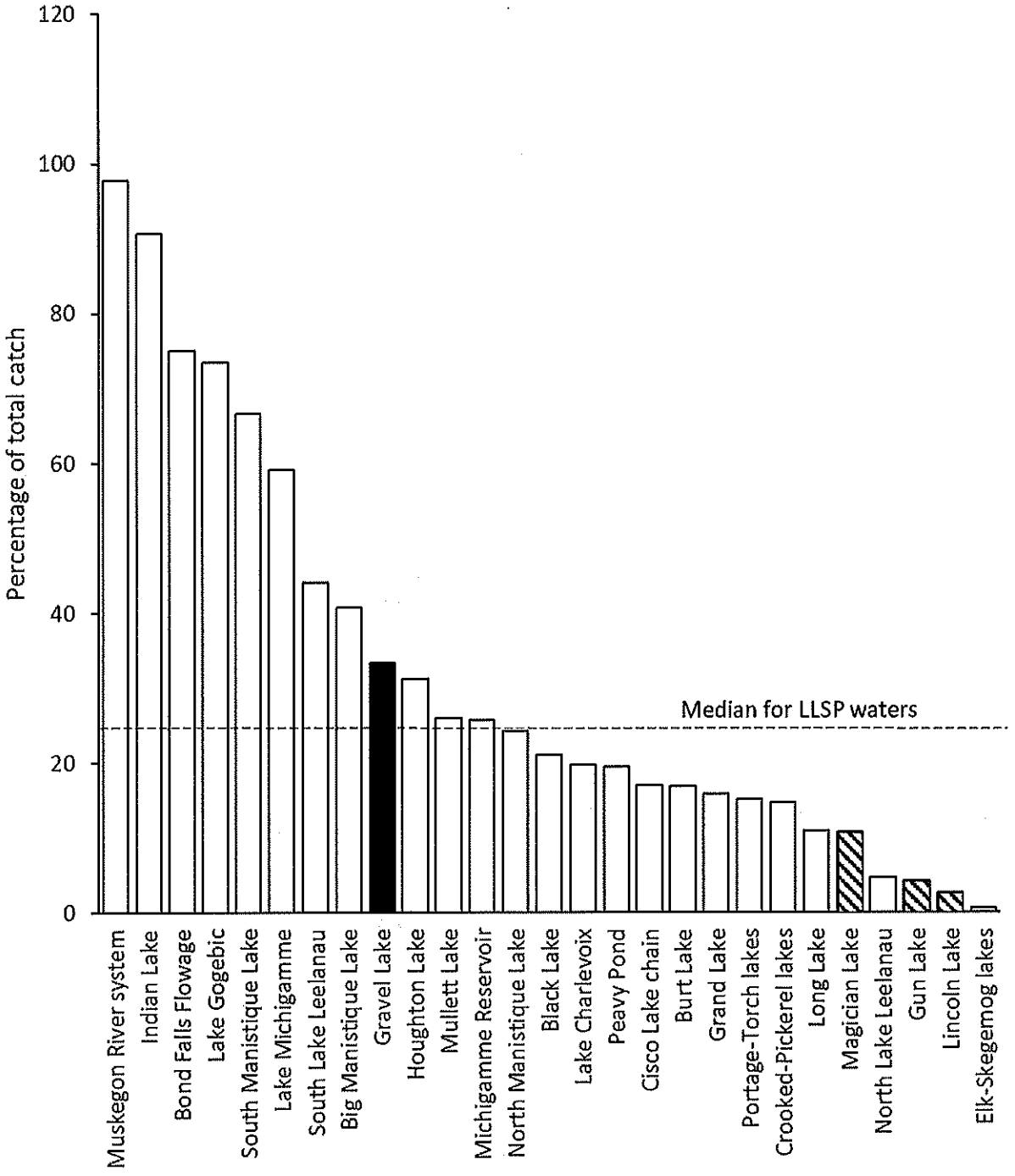



Figure 8.–Percentage of the total survey catch (by number) composed of Walleyes in Gravel Lake (black; 2016 survey), waters surveyed as part of the Michigan Department of Natural Resources' Large Lakes Survey Program (LLSP) during 2001-2010 (white), and other southwest Michigan lakes surveyed by the Michigan Department of Natural Resources during 2014-2017 (striped). The LLSP data is from Hanchin (2017).

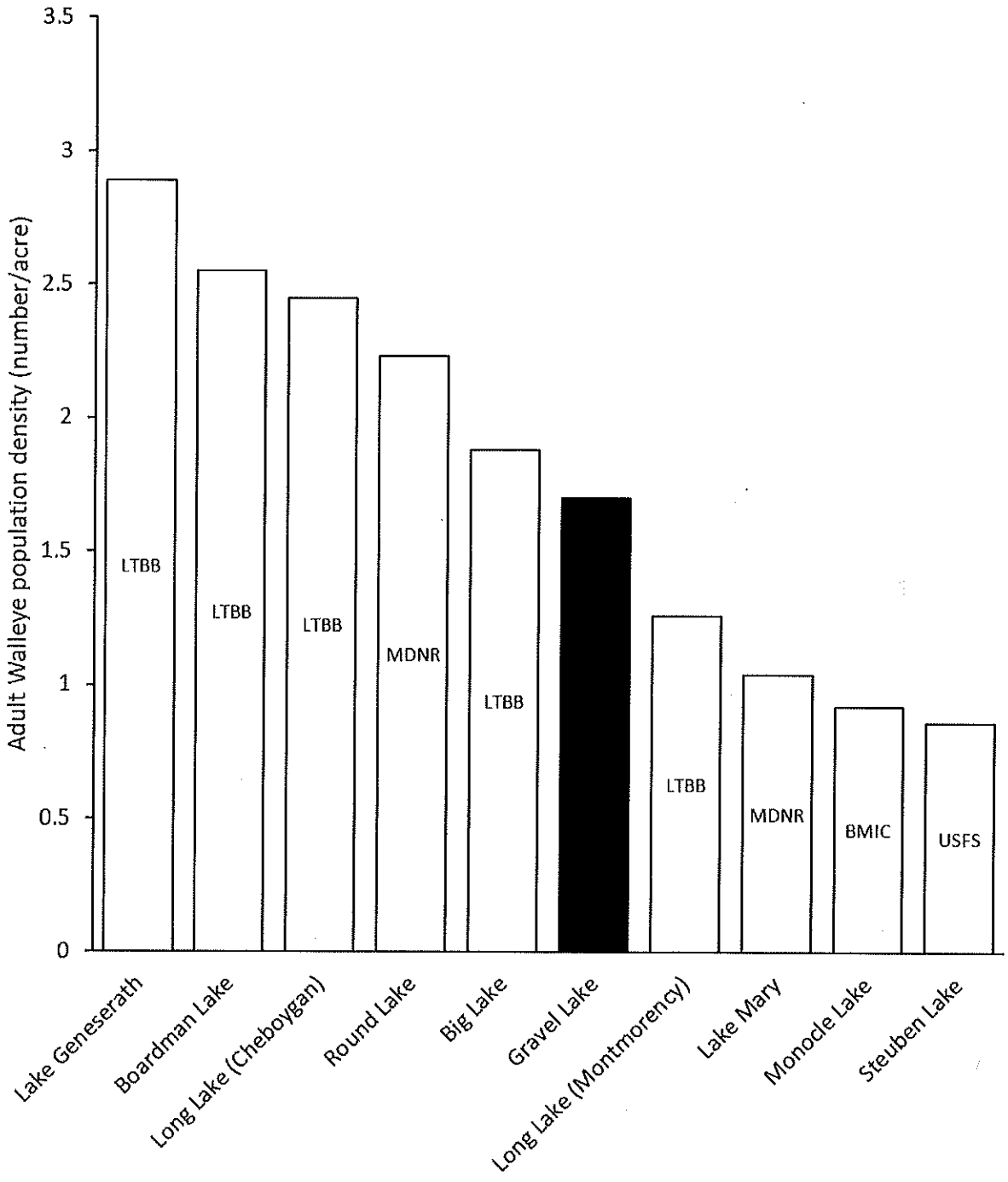



Figure 9.–Adult Walleye population density (number/acre) in Gravel Lake compared to population densities recorded for medium-sized lakes (surface area between 100 acres and 500 acres) in northern Michigan by various agencies during 2008-2018. Date source abbreviations: BMIC = Bay Mills Indian Community, LTBB = Little Traverse Bay Bands of Odawa Indians, MDNR = Michigan Department of Natural Resources, and USFS = United States Forest Service.

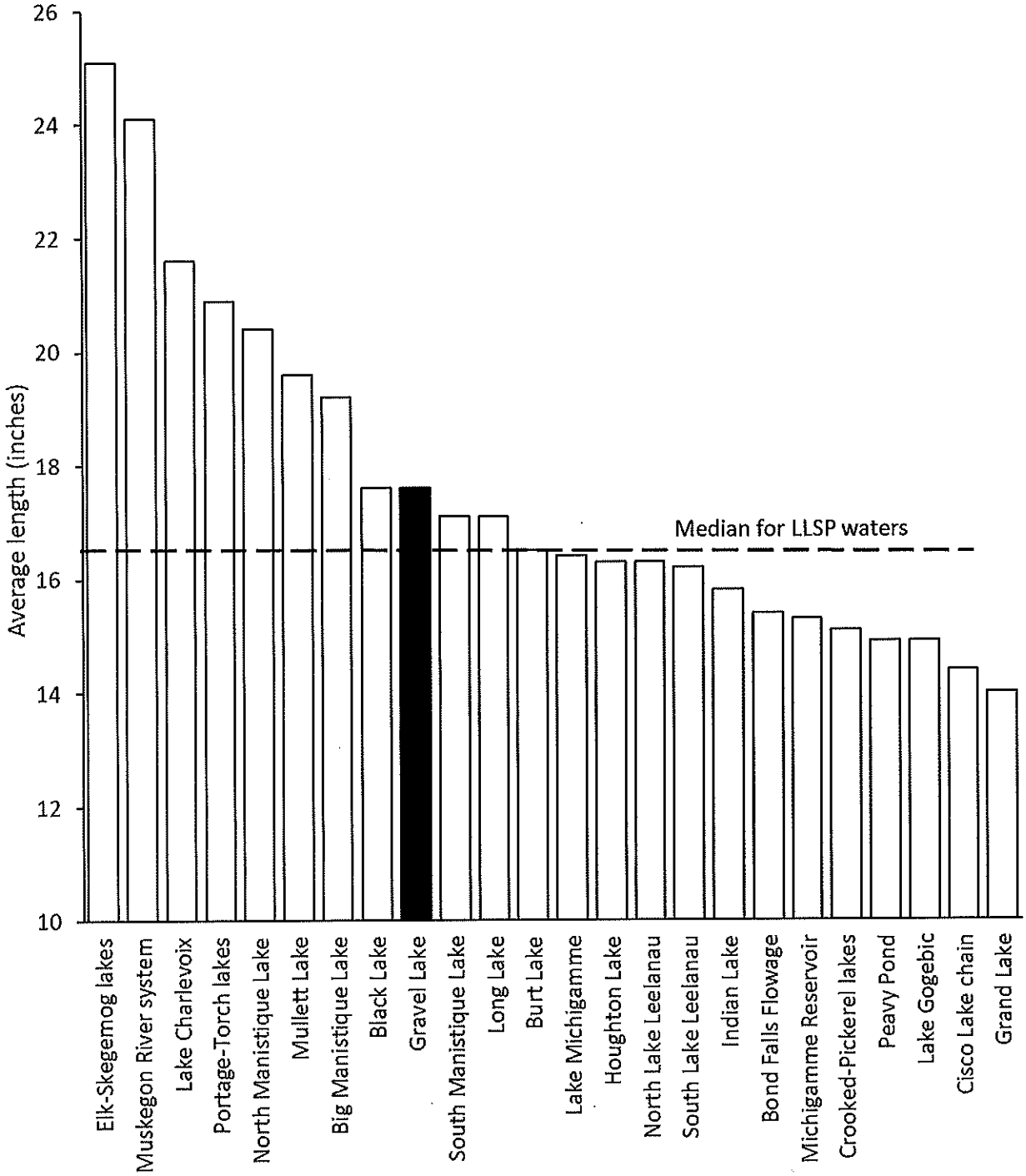



Figure 10.–Average (mean) length for Walleyes collected in Gravel Lake in 2016 compared to Walleye average lengths recorded for waters surveyed as part of the Michigan Department of Natural Resources' Large Lakes Survey Program (LLSP) during 2001-2010. The LLSP data is from Hanchin (2017).

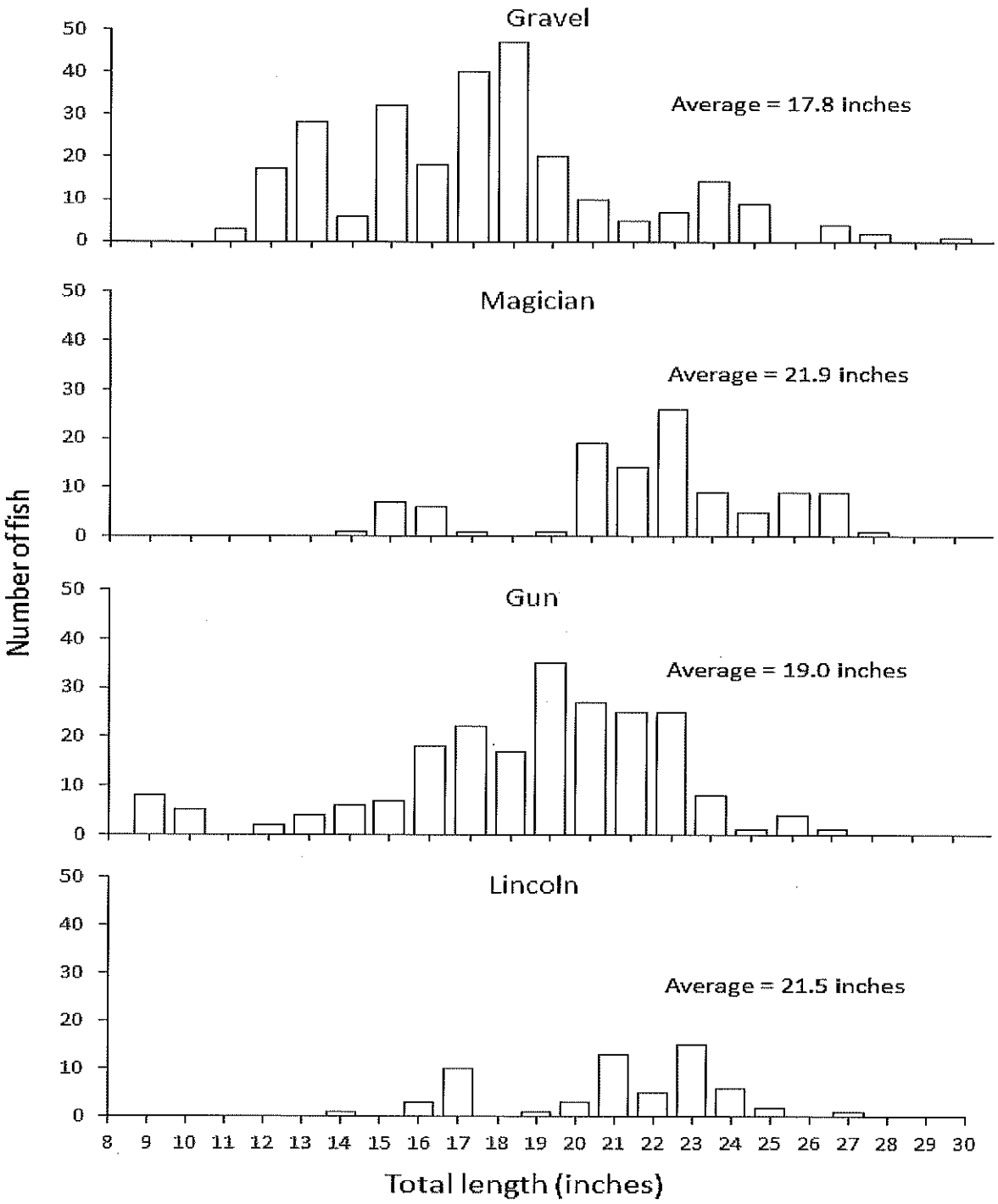



Figure 11.–Length frequency distributions for Walleyes (recaptures included) collected in late winter-early spring surveys conducted during 2014-2017. Trap nets and electrofishing gear were used on all four lakes. Large-mesh fyke nets also were used on Magician, Gun, and Lincoln lakes. Recaptured fish are included.

Table 1.–Fish stocking in Gravel Lake, 1890-2017.

| Year | Species | Life stage | Number | Number/acre | Average length (inches) |
|---|---|---|---|---|---|
| 1890 | Walleye | Fry | 200,000 | 676 | --- |
| 1905 | Lake Trout | Fry | 12,000 | 41 | --- |
| | Walleye | Fry | 200,000 | 676 | --- |
| 1910 | Largemouth Bass | Spring fingerling | 4,000 | 14 | --- |
| | Smallmouth Bass | Fry | 4,000 | 14 | --- |
| 1933 | Bluegill | Spring fingerling | 5,000 | 17 | --- |
| | Smallmouth Bass | Spring fingerling | 1,500 | 5 | --- |
| | Walleye | Fry | 40,000 | 135 | --- |
| 1934 | Bluegill | Spring fingerling | 7,000 | 24 | --- |
| | Walleye | Fry | 120,000 | 405 | --- |
| 1935 | Bluegill | Spring fingerling | 10,000 | 34 | --- |
| | Largemouth Bass | Spring fingerling | 500 | 2 | --- |
| | Walleye | Fry | 85,000 | 287 | --- |
| | Yellow Perch | Fall fingerling | 5,000 | 17 | --- |
| 1936 | Bluegill | Spring fingerling | 35,000 | 118 | --- |
| | Largemouth Bass | Spring fingerling | 400 | 1 | --- |
| | Walleye | Fry | 90,000 | 304 | --- |
| 1937 | Bluegill | Spring fingerling | 25,000 | 84 | --- |
| | Walleye | Fry | 180,000 | 608 | --- |
| 1938 | Bluegill | Spring fingerling | 25,000 | 84 | --- |
| | | Fall fingerling | 20,000 | 68 | --- |
| | Largemouth Bass | Spring fingerling | 1,000 | 3 | --- |
| | Smallmouth Bass | Spring fingerling | 1,000 | 3 | --- |
| | Yellow Perch | Fry | 250,000 | 845 | --- |
| | | Spring fingerling | 10,000 | 34 | --- |
| 1939 | Bluegill | Spring fingerling | 100,000 | 338 | --- |
| | Largemouth Bass | Spring fingerling | 1,000 | 3 | --- |
| | Smallmouth Bass | Spring fingerling | 2,000 | 7 | --- |
| | Walleye | Fry | 500,000 | 1,689 | --- |
| | Yellow Perch | Fall fingerling | 5,000 | 17 | --- |
| 1940 | Bluegill | Spring fingerling | 20,000 | 68 | --- |
| | Largemouth Bass | Yearling | 2,500 | 8 | --- |
| | | Spring fingerling | 2,000 | 7 | --- |
| | Smallmouth Bass | Spring fingerling | 2,000 | 7 | --- |
| | Walleye | Fry | 250,000 | 845 | --- |
| 1941 | Bluegill | Spring fingerling | 50,000 | 169 | --- |
| | Largemouth Bass | Spring fingerling | 500 | 2 | --- |
| | Smallmouth Bass | Spring fingerling | 1,000 | 3 | --- |

Table 1.–Continued.

| Year | Species | Life stage | Number | Number/acre | Average length (inches) |
|---|---|---|---|---|---|
| 1942 | Bluegill | Spring fingerling | 10,000 | 34 | --- |
| | Largemouth Bass | Spring fingerling | 1,000 | 3 | --- |
| | Smallmouth Bass | Spring fingerling | 3,000 | 10 | --- |
| 1943 | Bluegill | Spring fingerling | 5,000 | 17 | --- |
| | Largemouth Bass | Spring fingerling | 1,000 | 3 | --- |
| | Smallmouth Bass | Spring fingerling | 500 | 2 | --- |
| | Walleye | Yearling | 384 | 1 | --- |
| 1944 | Bluegill | Spring fingerling | 10,000 | 34 | 1.50 |
| | Largemouth Bass | Spring fingerling | 1,000 | 3 | 2.25 |
| 1945 | Largemouth Bass | Spring fingerling | 3,000 | 10 | 3.50 |
| 2007 | Walleye* | Fall fingerling | 1,000 | 3 | 6.98 |
| 2008 | Walleye* | Fall fingerling | 1,000 | 3 | 7.00 |
| 2009 | Walleye* | Fall fingerling | 1,000 | 3 | 5.91 |
| 2011 | Walleye* | Fall fingerling | 1,000 | 3 | 7.00 |
| 2012 | Walleye* | Fall fingerling | 1,000 | 3 | 7.00 |
| 2013 | Walleye* | Fall fingerling | 1,500 | 5 | 7.72 |
| 2014 | Walleye* | Fall fingerling | 1,500 | 5 | 7.00 |
| 2016 | Walleye* | Fall fingerling | 1,000 | 3 | 7.00 |
| 2017 | Walleye* | Fall fingerling | 1,500 | 5 | 7.00 |

* Private plant under permit

Table 2.–Numbers, weights, and lengths for fish species collected in trap nets on Gravel Lake during March 13-17, 2016. Recaptured fish are included in the Walleye totals.

| Species | Number | Percent by number | Weight (lbs) | Percent by weight | Length range (inches) | Percent legal or harvestable[1] |
|---|---|---|---|---|---|---|
| Walleye[2] | 195 | 33.4 | 443.3 | 49.3 | 11-29 | 86 |
| Largemouth Bass | 108 | 18.5 | 103.1 | 11.5 | 9-15 | 6 |
| Bluegill | 92 | 15.8 | 43.5 | 4.8 | 5-9 | 99 |
| White Sucker | 33 | 5.7 | 109.9 | 12.2 | 17-23 | --- |
| Yellow Perch | 29 | 5.0 | 14.4 | 1.6 | 7-12 | 100 |
| Brown Bullhead | 27 | 4.6 | 29.2 | 3.2 | 12-14 | --- |
| Bowfin | 22 | 3.8 | 86.0 | 9.6 | 18-26 | --- |
| Yelllow Bullhead | 22 | 3.8 | 19.1 | 2.1 | 9-14 | --- |
| Hybrid Sunfish | 21 | 3.6 | 10.3 | 1.1 | 7-9 | 100 |
| Pumpkinseed | 17 | 2.9 | 7.4 | 0.8 | 5-8 | 94 |
| Black Crappie | 9 | 1.5 | 6.4 | 0.7 | 7-11 | 100 |
| Warmouth | 4 | 0.7 | 1.6 | 0.2 | 5-8 | 75 |
| Smallmouth Bass | 2 | 0.3 | 2.8 | 0.3 | 13-14 | 50 |
| Muskellunge | 1 | 0.2 | 22.5 | 2.5 | 42 | 100 |
| Grass Pickerel | 1 | 0.2 | 0.2 | 0.0 | 10 | --- |
| Green Sunfish | 1 | 0.2 | 0.2 | 0.0 | 6 | 100 |
| Total | 584 | | 899.9 | | | |

[1] Harvestable size is 6 inches for Bluegills, Pumpkinseeds, Hybrid Sunfish, and Warmouths, and 7 inches for Black Crappies and Yellow Perch.
[2] Additional Walleyes were collected during the electrofishing survey on March 24, 2016.