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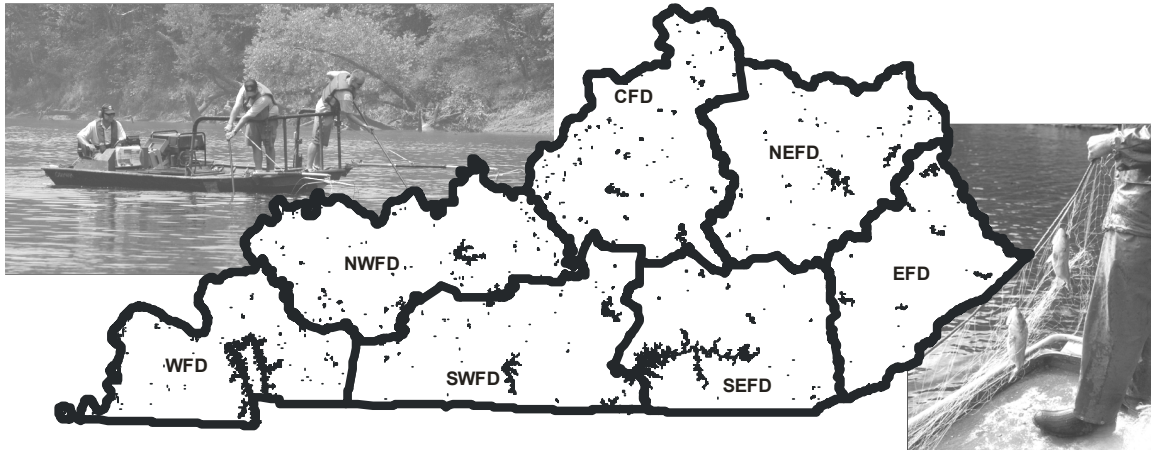
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ANNUAL PERFORMANCE REPORT

District Fisheries Management

Projects 1-4



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WESTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Sampling conditions for each survey event are listed in Table 1.

Kentucky Lake

During the spring, 828 black bass were collected by diurnal electrofishing (120 PPS, DC current). During this sampling period, 710 Largemouth Bass (94.7 fish/hr) were collected from Blood River, Jonathan Creek, and Big Bear (Table 2). The catch rate (fish/hr) for Largemouth Bass was highest in Big Bear (102.0 fish/hr). Unlike previous years, Sugar Bay was not sampled. This was done to avoid interference with the ongoing snorkel surveys of the bass spawning habitat in that embayment.

The spring bass data was used to complete the lake specific assessment (Table 3). The lake specific assessment suggests that the Largemouth Bass population rated “Good”. The catch rate of age-1 Largemouth Bass in the sample was in the top quartile indicating a good spawn in 2022. This is very encouraging as our year classes have been inconsistent in recent years. Our habitat plan is focused on increasing recruitment of Largemouth Bass in the reservoir by placing shoreline cover in the form of small laydowns and artificial bass spawning beds. We are hopeful that improving habitat can help the bass population to return to its previous highs from 2008 to 2014.

The size structure parameters used to assess the fishery by standards set in the Kentucky Lake Fish Management Plan (KLFMP) showed an above-average catch of <8.0-in bass (Table 4). The catch rate of intermediate-size bass (12.0-14.9 in) which was 31.9 fish/hr was well above the plan recommendation. The increase from last year was expected due to the strong year classes of 2020 and 2021. The catch rate of harvestable-size bass (≥ 15.0 in) decreased slightly from the previous year’s data and fell below the plan recommendation. The catch rate of trophy-size Largemouth Bass (≥ 20.0 in) was also below the average for the last 10 years and was below the KLFMP recommendation. The dominant size group of adult Largemouth was around 14.0 in (Table 2).

Proportional Size Distribution (PSD) values were calculated for black bass collected from each embayment sampled during the spring (Table 5). The average PSD and RSD_{15} values for Largemouth Bass were 80 and 26, respectively. These average values were used in the KLFMP assessment. The PSD value is above the assessment preferred range (55-75; Table 4) and indicates a higher proportion of larger fish in the population. The RSD_{15} falls inside the targeted range (RSD_{15} of 20-40).

During October, 574 black bass were collected by diurnal electrofishing (120 PPS, DC current) from three embayments; Blood River, Jonathan Creek, and Sugar Bay (Table 6). Largemouth Bass comprised 57% (57.0 fish/hr) of the sample in Blood River and Jonathan Creek. Smallmouth Bass comprised 40% (40.5 fish/hr) of the 2023 sample for those two embayments, but the proportions in Blood River were virtually equal. Based on length frequency it appears that most of those Smallmouth were young-of-year, but this may be due to sampling bias.

Length and weight data were recorded from all bass collected during the fall sample to calculate relative weight values. The mean relative weight for harvestable-size Largemouth Bass was 93 (Table 7). This value was down from the 2021 estimated relative weight value of 94 and is just outside the preferred range of 95-105. The relative weight of Largemouth Bass is one parameter that is being watched as an indicator of the effects of the population of Silver and Bighead carp in the lake. If Silver and Bighead carp numbers increase, they could impact the plankton levels and hence the upper levels of the food chain.

Length-weight equations for black bass species at Kentucky Lake are:

Largemouth Bass	$\text{Log}_{10}(\text{weight}) = -3.47880 + 3.16323 \times \text{Log}_{10}(\text{length})$
Smallmouth Bass	$\text{Log}_{10}(\text{weight}) = -3.48509 + 3.14160 \times \text{Log}_{10}(\text{length})$

Otoliths were collected from a subsample of Smallmouth Bass and Largemouth Bass (<10.0 in) during fall sampling in 2023. Otoliths were used to age bass so that the catch rate and growth of age-0 fish could be evaluated. The catch rates of age-0 Smallmouth and Largemouth bass during the fall sample were 38.3 and 43.8 fish/hr, respectively (Tables 8 and 9). The 2023 year class appears to be above average, with below-average growth, although growth did improve slightly from the prior year. The mean length of the age-0 Largemouth Bass was (4.8 in) at time of capture in the fall. The catch rate of age-0 Largemouth Bass ≥ 5.0 in was 21.0 fish/hr. This year we also collected independent subsamples from each embayment to test for differences in bays which have our experimental spawning habitat. See below for a longer description of those methods.

Because of a string of several weak bass spawns, WFD started placing experimental, shallow-water habitat in Kentucky Lake and Lake Barkley in spring 2019. Habitat consisted of shallow-water laydowns (sometimes referred to as spawning benches) and artificial spawning beds. Artificial spawning beds are bowl-shaped structures that provide preferred substrate for bass. The artificial beds were initially constructed with plastic sides, but we have since changed our design to concrete. Habitat was placed at water elevations slightly below winter pool in areas that were perceived as lacking good habitat. Our goal is to provide sufficient habitat at lower water elevations because it is possible that bass are sometimes ready to spawn before water is high enough to reach good shoreline habitat in the spring. Increased habitat resources could lead to a reduction in competition. To help determine how fish use these structures we conducted 11 weekly snorkel surveys from March 30 – June 9, 2023, at Sugar Bay on Kentucky Lake (Table 10). We rated the relative amount of observed eggs and fry at 75 sites and collected egg and fry samples to help with identification. An additional rating of “cleaned off” was used to track beds that had been brushed clean of debris but had no eggs or fry. Summary percentages of usage are in Tables 11, 12 and 13.

In 2023, we replaced a subset of our survey sites with new sites within Sugar Bay. About 43% of the survey sites were used at least once by spawning bass including 8% of sites that were used twice by bass. About 67% of artificial beds next to laydowns were used by bass, while artificial beds without laydowns were used at a rate of 29%. The usage rate of laydowns without artificial beds was also 67%. Once water temperatures started to warm up closer to 70F sunfish started to use our spawning habitat. About 52% of all experimental habitat sites were used at least once by sunfish. Almost 51% of sites with artificial spawning beds were used by sunfish.

Usage rates of artificial beds continued a declining trend in 2023 for bass and sunfish (Table 13). However, bass used laydowns at higher rates than the previous two years. Increased usage of laydowns by bass could potentially be attributed to the new survey locations which had generally been placed deeper and on steeper banks. Sunfish usage rates across the board were lower than usual. We can speculate that declining usage of artificial beds is simply due to unfavorable environmental factors. However, it also appears we could be seeing these structures become less effective as they age.

Determining what effect our experimental habitat has on the bass populations of Kentucky Lake and Lake Barkley is very difficult. Many bass that use our habitat to spawn would presumably spawn in the same general area whether our habitat was available or not. This makes it difficult to estimate the amount of additional bass fry produced as a result of our habitat. We can, however, compare bass recruitment among areas with the added shallow-water habitat and areas without it. As stated in the sections below, we have not yet seen any differences in recruitment among these areas. Unless we start to see increased recruitment in areas that we have added experimental habitat, it will be challenging to say that this strategy has been successful. We plan to continue this survey effort to see what trends arise.

To further understand the timing and duration of the bass spawn, shoreline seining was conducted in Blood River on June 14, Sugar Bay on June 16, and in Jonathan Creek on June 20, 2023. A 50-foot seine with ¼-in mesh was used to collect YOY Largemouth and Smallmouth bass until 100 of each species were collected from each embayment. We had a tough time finding Smallmouth Bass in Jonathan Creek, so there is no corresponding data for them in that embayment. Each bass was measured for total length in mm and the sagittal otoliths were removed. Otoliths were mounted convex side up using thermoplastic cement, sanded with 1200 grit sandpaper, and polished with 0.3-micron alumina powder.

Each otolith was aged independently by two readers using a compound microscope at 100x-400x magnification. Reader agreement was typically within a few days, but if the difference between readers was less than 10% of the fish's estimated age, the counts were averaged and accepted. To determine hatch dates we used the equation [(ordinal date collected)-(average ring count)-5] (Dicenzo and Bettoli, 1995). To determine what dates bass were spawned (when spawning activity took place on the nest), we used the equation [(hatch date)-3] (Heidinger, 1976). The results of the hatch date and spawn date analysis are provided in Tables 14 and 15.

Differences in spawn dates between species and embayments were initially compared with an F-test for variances. Then, depending on equal or unequal variance, the spawn dates were compared using appropriate T-tests. In 2023, the average Largemouth Bass spawn date in Sugar Bay (April 22±1.6 days) was significantly different than in Blood River (April 25±1.5 days; $p=0.022$). However, that difference was only 2.7 days, and there were no differences between Jonathan Creek and Blood River or Sugar Bay. The average Smallmouth Bass spawn date in Sugar Bay (April 18±1.5 days) was significantly different than Blood River (April 27±1.7 days; $p<0.005$). When all embayments were combined, the average Smallmouth Bass spawn date (April 23±1.3 days) was not significantly different than the average Largemouth Bass spawn date (April 23±0.9 days; $p=0.385$).

During the fall of 2023, otoliths from a subsample of Largemouth and Smallmouth bass less than 10.0 in were removed to estimate mean length for age-0 bass and to test for differences among embayments. Each embayment's otoliths were collected and analyzed independently to avoid any growth bias that could have arisen by combining the age samples from multiple embayments. Differences in mean lengths between embayments were initially compared with an F-test for variances. Then, depending on equal or unequal variance, comparisons were made using appropriate T-tests. Age-0 Largemouth Bass in Jonathan Creek, Blood River, and Sugar Bay averaged 4.99, 4.73, and 4.95 inches in total length, respectively. There were no statistical differences in mean length between embayments for Largemouth Bass. Although Largemouth Bass in Sugar Bay hatched statistically earlier than in Blood River, the 2.7-day difference was likely not biologically meaningful and did not lead to statistically different lengths. Smallmouth Bass in Jonathan Creek, Blood River, and Sugar Bay averaged 4.53, 4.13, and 4.56 in, respectively. The mean length of age-0 Smallmouth Bass in Blood River (4.13 in) was statistically shorter than those in Sugar Bay and Jonathan Creek. (4.56 in, 4.53 in; $p < .001$). Unfortunately, we failed to collect more than a single Smallmouth Bass during June in Jonathan Creek, so we were unable to estimate the hatch dates for that embayment. However, the earlier Smallmouth Bass hatch dates observed in Sugar Bay are supportive of the hypothesis that earlier hatch dates lead to longer mean lengths in the fall. This experimental habitat project has thus far yielded inconsistent results for Largemouth Bass, but the results for Smallmouth Bass are encouraging. This project will continue in future years.

Trap nets were fished for crappie, White Bass, Yellow Bass, and Redear Sunfish in Blood River and Jonathan Creek embayments for 80 net-nights (nn) during October and November. In addition, Sledd Creek was sampled for 40 nn. Length frequencies of all species collected are provided in Table 16. Crappie otoliths were collected from a subsample of the entire population and used to assign ages and calculate mean lengths at age. The combined sampling effort yielded 642 crappie (5.4 fish/nn), of which 1.9 fish/nn (46%) were White Crappie and 3.6 fish/nn (54%) were Black Crappie (Table 17). The Blood River and Jonathan Creek data are listed as "sub-total" on Table 16 and only data from these two embayments were used in the proceeding assessments. The total catch rate of crappie >age 0 was 6.2 fish/nn which is well below the goal of 20.0 fish/nn set in the KLFMP (Table 18). The low total catch rate reflects the weak spawns in 2016, 2017, and 2020. The catch rate of 1.2 fish/nn for age-0 crappie this fall likely indicates a weak spawn in 2023.

The number of crappie ≥ 8.0 in and ≥ 10.0 in collected in trap nets was 3.2 and 1.0 fish/nn, respectively (Table 18). The KLFMP objective for crappie is to maintain a catch rate of at least 10.0 fish/nn for crappie ≥ 8.0 in, and 4.0 fish/nn for crappie ≥ 10.0 in. Neither objective was met this year.

Crappie at Kentucky Lake had average growth rates in 2023. The growth management objective in the KLFMP is for age-2 crappie collected in the fall to reach 9.5 inches in length. The average length of the age-2 crappie collected this year was 9.5 in (Table 18). However, White Crappie growth was above average at 10.9 in.

Another management objective in the KLFMP is to maintain a catch rate of age-1 crappie of at least 11.0 fish/nn (Table 18). The catch rate for this age group of crappie was 4.2 fish/nn. This indicates a slightly below-average spawn in 2022 and is well below the management objective. To help improve the year classes we continue

to evaluate the crappie hatch on a daily and weekly level to help provide advice to the Tennessee Valley Authority and the U. S. Army Corps of Engineers who manage the water levels and flows. For a discussion of the potential effects of environmental factors on the spawn, please refer to the 2017 Annual Performance Report.

These parameters are also used as part of the calculation for ranking the crappie fishery at Kentucky Lake. Overall, the crappie population at Kentucky Lake rated "Poor" this year (Table 18). However, the 2023 creel survey indicated decent catch and harvest rates by crappie anglers (Table 64).

The fall trap netting data was used to calculate proportional size distributions and length-weight equations for crappie. PSD and RSD₁₀ values are reported in Table 19

The mean relative weights of keeper-size (>10.0 in) White Crappie and Black Crappie were (103) and (91), respectively (Table 20). The relative weights for White Crappie are a great improvement over the last few years and represent excellent condition. Low numbers of adults and anecdotally high numbers of shad were likely the main drivers for this increase in condition factor. This is in stark contrast to 2017 when skinny crappie were a major source of complaints and concerns. Relative weights for White and Black crappie in 2017 were (89) and (85), respectively. The relative weights for Black Crappie in 2023 were much lower than for White Crappie, but the reasons are not well understood. A similar relationship was observed in Hayes Center State Lake in Nebraska, (Ellison, 1984). The differences in that system were attributed to differences in ontogenetic diet shifts with Black Crappie relying on non-fish prey for longer periods of time than White Crappie. It's possible that a similar phenomenon occurred at Kentucky Lake, but it has not been studied.

Length-weight equations for White and Black crappie are listed below.

White Crappie	$\text{Log}_{10}(\text{weight}) = -3.76140 + 3.51008 \times \text{Log}_{10}(\text{length})$
Black Crappie	$\text{Log}_{10}(\text{weight}) = -3.93521 + 3.65440 \times \text{Log}_{10}(\text{length})$

Tables 21-26 list the back-calculated lengths at age for all White Crappie, all Black Crappie, and male and female crappie of each species separately. The mean length at capture and Von Bertalanffy growth parameters for the present year are provided on Table 27. Von Bertalanffy growth parameters were calculated in F.A.M.S. (Fisheries Analysis and Modeling Simulator) by entering the length at capture and assigning it an age of 0.8 for the current year. (i.e. 2-year-old fish were entered as 2.8-year-old fish to reflect the percentage of growth between annulus formation and date of capture in the fall). The age frequencies for White and Black crappie collected are listed in Tables 28 and 29, respectively.

During the spring of 2023, ichthyoplankton sampling was conducted in the Jonathan Creek embayment of Kentucky Lake. Weekly sampling began March 30 and ran through June 9, 2023. Samples were conducted using a rectangular neuston net with a 1000-micron mesh size, towed 50 feet behind a boat, at a speed of 1.5 mph. Tow duration was generally 5 minutes but occasionally shortened depending on an a priori assessment of the expected concentration of ichthyoplankton and *leptodora* to prevent clogging. A General Oceanics flowmeter was attached inside the mouth of the net to record the volume of water sampled during each run. Sampling began just after dusk and always followed the same site order. Each sampling event started closest to the main lake site and then progressed farther into the embayment (Appendix A).

Ichthyoplankton samples were preserved immediately in 95% ethanol and stored in mason jars. All larval fish were sorted and identified to the lowest practical taxon using "A Practical Key to Identify Families, Genera, and Species of Fish Larvae Commonly Collected in Tennessee Reservoirs" (Sammons, 1999), "Preliminary Guide to the Identification of Larval Fishes in the Tennessee River" (TVA, 1976), and "Early Development of Four Cyprinids Native to the Yangtze River, China" (Chapman, and Wang, 2006; Bolu Yi, et al. 1988). Once identified, fish were counted and measured for total length. In cases of more than 100 individuals in a sample, a random subsample of at least 30 individuals was measured and used to extrapolate the lengths of the fish from the entire sample. Larval crappies were not identified to species due to overlapping myomere counts between both species and their hybrids (Spier and Ackerson, 2004).

The geometric mean and median of the 6 sample sites were used to evaluate overall densities during each week (Table 30). The standard error and coefficients of variation of the mean and geometric mean were used to

evaluate sample accuracy. In 2023, the peak weekly density of crappie occurred on May 10th and was 5.5 crappie/1000m³ (Table 31). This peak density was in the typical early- to mid-May range but was only greater than the 2016 peak density (Table 32). Based on these results, the crappie spawn in Jonathan Creek in 2023 appears to have been quite poor. This will still need to be verified by trap netting age-1 crappie in 2024. After tracking the crappie spawn since 2015 using ichthyoplankton nets, we have noticed a trend that the peak crappie catch rate in the spring is a good predictor of age-0 catch rates in fall trapnets (Regression $R^2=0.94$, $p<0.001$; Figure 1) and age-1 catch rates in trapnets the following fall ($R^2=0.85$, $p=0.001$; Figure 2). This result supports the hypothesis that crappie year class strength is set at or prior to the larval phase.

To determine the hatch dates of crappies more precisely, based on growth rates, all crappie that were 7.0–12.0 mm in total length were assumed to represent a one-week cohort (Table 31). Crappie in this size range appeared to be fully recruited to the gear and were best represented in the sample. It is possible that crappie shorter than 7.0 mm were not located in the pelagic sample sites yet, and that crappie over 12.0 mm were more likely to avoid capture. This length range was also chosen because a 7.0 mm crappie would grow to 12.1 mm in one week (our sample interval), based on a growth rate of 0.81 mm per day after swim up. This was our estimated daily growth rate from daily otolith ring counts of Jonathan Creek crappie collected in 2023 (next section).

In addition to weekly cohorts, we also estimated daily cohorts of hatched crappie. All crappie that were captured outside of the 7.0– to 12.0-mm length range were excluded from the hatch date analysis to minimize the effects of gear bias and the longer exposure to natural mortality of older fish (Table 33). A hatch date was then back-calculated for each individual fish using the assumed growth rate (0.81 mm/day) and the total length of each fish. A total length at hatch (4.0 mm) was factored into the regression for hatch date. This technique has been employed in other systems (Mitzner 1991). An incubation period of 95 hours (based on temperature) was also factored into the regression so that the day when fertilization occurred could be estimated.

The estimated hatching densities indicated that the spawn in Jonathan Creek lasted at least 45 days and extended at least until late May (Table 33). It is possible that crappie did spawn after our sampling window, however, crappie catches started declining and the literature reports most crappie spawns to be relatively short (1-2 months; Mitzner 1991 and Travnicek, et. al.1996). There seems to have been one main peak in spawning activity in 2023 along with one lesser peak about 4 weeks later. However, the overall crappie density in 2023 was very low compared to most years. The highest amount of spawning occurred from April 23 to April 26. Similar to prior years' surveys, we found higher densities of larval crappie farther into the embayment, west of the Highway 68 bridge (Table 30; Appendix A).

In June 2023 an effort was made to capture YOY crappie using a benthic otter trawl. Crappie were identified to species using dorsal fin counts, and otoliths were collected from a subsample of approximately 100 crappie for daily ring count analysis. The subsample was collected randomly without regard to crappie species or size. Crappie trawling has typically been conducted in the fall to assess year class strength. However, an earlier sample was necessary for accurate daily ring counts since those counts can become unreliable in fish >100 days old (Sweatman and Kohler, 1991). Trawling runs were conducted in Jonathan Creek because this is where the larval sampling occurred during the spring. To evaluate whether hatching periods and growth rates differed by embayment, trawling was also conducted at Blood River embayment. Otoliths were mounted convex side up using thermoplastic cement, sanded with 1200 grit sandpaper, and polished with 0.3-micron alumina powder.

Each otolith was aged independently by two readers using a compound microscope at 100x-400x magnification. Reader agreement was typically within a few days, but if the difference between readers was less than 10% of the fish's estimated age, the counts were averaged and accepted. We were able to estimate an average daily growth rate for both species of crappie by using the equation described by Sweatman and Kohler (1991) [(total length mm-4mm)/#days old-4 days]. This growth rate estimate was coupled with the larval data to provide an estimate of crappie hatch dates in Jonathan Creek as described earlier (Table 33). There is no way to practically differentiate between crappie species in the larval samples. Therefore, the estimated growth rate used in the larval hatch date back calculation combined both species together. Our estimated growth rate of 0.81 mm/day was similar to 2022 (0.86 mm/day) and a bit higher than the 0.71 mm/day average since 2015.

Because the collection of Black Crappie was so low (n=28 of 196; Table 34), both Black and White crappie were combined when making comparisons across embayments. Differences in growth rates and hatch dates between

embayments were initially compared with an F-test for variances. Then, depending on equal or unequal variance, comparisons were made using appropriate T-tests. In 2023, there were no differences in growth rate of YOY crappie in Blood River (0.80mm/day) and Jonathan Creek (0.81mm/day; $p=0.15$). Additionally, the average crappie hatch date in Jonathan Creek (May 11 ± 1.2 days) was significantly different than in Blood River (May 2 ± 1.0 days; $p < 0.01$).

The catfish population was sampled at Kentucky Lake during June by using low pulse (15 PPS) electrofishing along the main lake river channel. A chase boat was utilized to help collect catfish around the electrofishing boat. One dipper was used in each boat. A total of 115 catfish were collected during 60 electrofishing runs (Table 35). Each run lasted 300 seconds, for a total sample time of 5.0 hours over a five-day period. Blue Catfish had the highest catch rate at 14.5 fish/hr and made up 61% of the catfish collected. The catch rate was lower than observed in some previous years, but consistent with the last five years' results. Relative weight values are listed in Table 36. The relative weight values are all high, suggesting the fish are healthy.

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Lake Barkley

Black bass were collected during 10.0 hours of diurnal electrofishing (120 PPS, DC current) during the spring at sampling sites historically used on Lake Barkley. A total of 666 black bass were collected at a rate of 66.6 fish/hr (Table 37). Spotted and Smallmouth bass combined for about 11% of the total black bass sampled. The catch rate of small (≤ 8.0 in; 16.6 fish/hr) Largemouth Bass was below our long-term average dating back to 1997 while being similar to our current ten-year average (14.8 fish/hr). Catches of intermediate-size (8.0-11.9 in) Largemouth Bass were slightly above the current ten-year average, while the catch rates of large (≥ 15.0 in) and larger (≥ 18.0 in) Largemouth Bass continue to be below both long-term and ten-year averages for these size groups. Recruitment to age 1 for Largemouth Bass has been below the historical average for all but 2 years out of the last 10. All of these below-average year classes seem to have reduced the overall number of large bass currently in the system. In 2021, the recruitment of Largemouth Bass (catch rate of age-1 fish in the spring; 41.7 fish/hr) was the 5th highest since 1997. The long-term average for age-1 Largemouth Bass in the spring is 26.3 fish/hr, so we are optimistic that this strong 2020 cohort will provide a boost to the larger size classes in the next year or two. The overall Largemouth Bass catch rate was 59.1 fish/hr which is below the historical average (117.3 fish/hr) but about equal to the average of the past ten years (Table 38). The overall Smallmouth Bass catch rate was 6.3 fish/hr which is the highest since Smallmouth Bass started getting consistently netted in our spring sample at Lake Barkley in 2005.

An additional 2.5-hour electrofishing sample was conducted to assess any effects of additional shallow-water habitat at Jake Fork and Taylor Bay at Lake Barkley (Table 37). Age-1 catch rate of Largemouth Bass in Jake Fork and Taylor Bay was 22.9 fish/hr which was 4th of the 8 bays sampled (range= 17.5-41.4 fish/hr). Age-1 catch rate of Smallmouth Bass in Jake Fork and Taylor Bay was 8.4 fish/hr which was 2nd of the 8 bays sampled (range= 0.0-18.0 fish/hr). Based on this one year, it's difficult to say whether the habitat is having significant effects. This was the first time we monitored Jake Fork and Taylor Bay in the spring. We will continue this monitoring effort as we assess any effects that the experimental structures may have on bass recruitment.

The overall PSD and RSD₁₅ values for Largemouth Bass at Lake Barkley, along with values for individual embayments are listed in Table 39. The PSD value (68) is within the objective goal (PSD of 55-75) established in the Barkley Lake Fish Management Plan (BLFMP). This value indicates a balanced bass fishery. The RSD₁₅ (25) was also within the set goal (20-40).

The lake specific assessment score for Lake Barkley was "Fair" (Table 40). The score was "Fair" or "Poor" for most of the last decade. Seasonal flooding as well as the occasional drought may have affected sampling in some years which in turn negatively influenced the assessment score. However, spring catch rates of most size classes of Largemouth Bass have generally been below average during this time as well. The fishery showed improvement in these ratings in 2017 and was rated as "Good". However, generally low catch rates overall have since negatively affected the score. We calculated age-3 Largemouth Bass mean length at capture as outlined by Murphy and Willis (1996) in addition to the traditional method. This method uses a weighted average based on the age-length key and includes all sampled fish per age class. Although differences are slight, we do feel that this calculation more accurately describes this metric, as all spring-sampled bass are included in the calculation. The annual mortality of Largemouth Bass older than a year was 36% as determined using catch-curve regression of fall-caught Largemouth Bass in FAMS (Table 40).

Black bass were sampled in October to collect length-weight data to assess condition factors and to determine the strength of the 2023 year class. A total of 1,048 bass were collected from Little River, Eddy Creek, Taylor Bay, and Jake Fork Bay with about 83% being Largemouth Bass (Table 41). For historical comparisons, only data from Little River and Eddy Creek were used in the standardized population parameters of Lake Barkley bass. Largemouth Bass were caught at a rate of 161.7 fish/hr which is the fifth highest catch rate going back to 1998. The catch rate of small fish (<8.0 in; 123.3 fish/hr) was more than double the historical average (45.6 fish/hr) and made up the majority of the fall catch. Catch rates of all other sizes of Largemouth Bass were all below their respective historical averages, however, some of these size classes made improvements in 2023. Relative weights were determined for all bass, but few adult Smallmouth Bass were collected (Table 42). Relative weights for all size groups of Largemouth Bass were good this year. The relative weight for harvestable-size (≥ 15.0 in) Largemouth Bass from Lake Barkley was 101 which is within the acceptable range. The length-weight equations for black bass at Lake Barkley are:

Largemouth Bass	$\text{Log}_{10}(\text{weight}) = -3.5433 + 3.2366x \text{Log}_{10}(\text{length})$
Smallmouth Bass	$\text{Log}_{10}(\text{weight}) = -3.526 + 3.1821x \text{Log}_{10}(\text{length})$

Mean length of the age-0 cohort of Largemouth Bass was 5.0 in (Table 43). This average length ranks the 2023 cohort 25th largest out of the 36 years this has been measured, and these fish fall right on our 5.0-in goal. It has been suggested that bass which reach at least 5.0 in by the fall will have a better chance of survival during their first winter. This year's total catch rate of age-0 Largemouth Bass from Little River and Eddy Creek (123.7 fish/hr) was the highest ever recorded at Lake Barkley and well above the historical average (39.6 fish/hr). This year's catch rate of age-0 Largemouth Bass over 5.0 in (57.1 fish/hr) was the third highest ever recorded at Lake Barkley and double the average catch rate since 2001 (26.4 fish/hr). This year we again collected age-0 length and catch data on Smallmouth Bass. Mean length of the age-0 cohort of Smallmouth Bass was 4.5 in (Table 44). Total catch rate of age-0 Smallmouth Bass was 24.9 fish/hr, while the catch rate of age-0 Smallmouth Bass over 5.0 in was 7.0 fish/hr. Based on the numbers of Largemouth and Smallmouth bass over 5.0 in last fall we are optimistic that the recruitment of this year class will be very good.

Taylor Bay and Jake Fork Bay (test bays) were sampled in the fall of 2023 to continue assessing potential effects of shallow-water habitat on black bass reproduction. As stated in the Kentucky Lake section, we have been placing this habitat to try to combat bad spawning years and overall low bass abundance recently. The additional habitat at lower lake elevations in the test bays may provide more preferred areas for bass to spawn and areas for bass to spawn earlier in the year. Bass spawned earlier should, theoretically, be longer when sampled in the fall. Two of the metrics we're using to assess the effectiveness of experimental habitat are catch rate and average length of age-0 fish as compared to Little River and Eddy Creek (control bays), which both have no experimental habitat and are sampled every fall. In test bays there were totals of 211 artificial spawning beds and 235 laydowns during the spawning season in 2023. Differences in average lengths between embayments were initially compared with ANOVA to test for any differences. If differences were present, we then used an F-test for variances, and then comparisons were made using appropriate T-tests. Age-0 Largemouth Bass displayed no significant differences in average length among test bays (5.0 in) and control bays (5.0 in and 4.7 in; ANOVA $p=0.17$). Age-0 Largemouth Bass at Jake Fork and Taylor Bay were caught at 108.5 fish/hr which is greater than Little River (88.6 fish/hr) but less than Eddy Creek (158.4 fish/hr). Age-0 Largemouth Bass over 5.0 in were caught following a similar pattern (45.0 fish/hr at test bays vs 32.4 and 81.4 fish/hr at control bays). The average length of age-0 Smallmouth Bass in Jake Fork and Taylor Bay was 4.9 in; statistically greater than Little River (4.4 in; $p<0.01$) and Eddy Creek (4.4 in; $p=0.02$). Age-0 Smallmouth Bass showed no differences in average length among the two control bays ($p=0.71$). Age-0 Smallmouth Bass at Jake Fork and Taylor Bay were caught at 19.5 fish/hr which is greater than Eddy Creek (16.0 fish/hr) but less than Little River (33.6 fish/hr). Experimental shallow-water habitat produced some interesting points within the 2023 cohort, but overall results were mixed. We will continue monitoring test bays to see if any trends develop in the coming years.

Trap nets were fished for crappie in Little River and Donaldson Creek embayments for 78 net-nights (nn) during October and November. A total of 517 crappie were collected at a rate of 6.6 fish/nn (Table 45). Additionally, Crooked Creek (LBL) was sampled for another 40 net-nights. Crooked Creek (4.2 fish/nn) also provided a fair sample and will remain on the sampling schedule in the future if possible. Overall catch rates were down in 2023, with age-0, age-1, and keeper-sized fish all falling near or below historical averages for Lake Barkley.

White Crappie accounted for 62% of the total catch and were caught at 3.6 fish/nn. Black Crappie accounted for the remaining 38% of the total catch and were collected at a rate of 2.2 fish/nn (Table 45). The mean relative weights for keeper-size (>10.0 in) Black and White crappie were 100 and 102, respectively (Table 46). For historical comparisons, only data from Little River and Donaldson Creek were used in the standardized population parameters of Lake Barkley crappie in Table 47. The catch rate of harvestable-size (≥ 10.0 in) crappie was 0.8 fish/nn, which is lower than the ten-year average of 0.9 fish/nn. The catch rate of quality-size (≥ 8.0 in) crappie was 3.6 fish/nn, which is almost equal to the management objective (3.7 fish/nn) set in the BLFMP. The catch rate of age-1 crappie (3.4 fish/nn) was below average this year and was also below the management objective (4.8 fish/nn).

The length-weight equations of White and Black crappie from Lake Barkley are:

White Crappie	$\text{Log}_{10}(\text{weight}) = -3.5654 + 3.2783 \times \text{Log}_{10}(\text{length})$
Black Crappie	$\text{Log}_{10}(\text{weight}) = -3.5308 + 3.2925 \times \text{Log}_{10}(\text{length})$

Crappie collected in trap nets in Little River and Donaldson Creek were used to determine stock densities. The PSD (91) of White Crappie was well above the historic average of 57, while the RSD_{10} (24) of White Crappie was just below the historic average of 27. These metrics suggest the population of White Crappie was lacking many shorter fish during the fall sampling period (Table 48). The PSD (62) of Black Crappie was above the historic average of 55, while the RSD_{10} (3) of Black Crappie was lower than the historic average of 20. These metrics suggest a more balanced population of Black Crappie but without many fish over 10.0 in during the fall sampling period.

Otoliths from 322 crappie were used for age and growth analysis. Ages ranged from 0-8 years for White Crappie and 0-3 years for Black Crappie (Tables 49 and 50). Growth continues to be good as crappie generally reached 10.0 in between age 1 and 2 at capture. There did not appear to be any major differences in growth patterns between male and female White Crappie (Tables 51 and 52) or Black Crappie (Tables 53 and 54). Von Bertalanffy growth curve parameters and mean length at capture are provided in Table 55. Von Bertalanffy growth parameters were calculated in FAMS (Fisheries Analysis and Modeling Simulator) by assigning ages of 0.8 to represent the amount of growth at the time of sampling, i.e. a fish aged at 2 years old was assigned an age of 2.8 to allow for a calculation of length at age instead of length at capture. Separate parameters for Black Crappie could not be calculated due to the limited number of age cohorts available in the sample.

Age frequencies were estimated by combining catch data with age data. Seventeen percent of White Crappies captured in Little River and Donaldson Creek were age-0 fish while age-1 fish made up 66% of the catch (Table 56). Few White Crappies age 3 and older were collected. Fourteen percent of Black Crappies captured in Little River and Donaldson Creek were age 0 while age-1 fish made up 71% of the catch. Few Black Crappies older than age 2 were collected (Table 57). The age-1 catches made up the majority of both species, however, even these age-1 year classes were caught at below-average catch rates in 2023. In addition, preliminary catch data of age-0 White Crappie suggests a poor spawn in 2023. Although not collected well due to gear biases towards smaller fish, anglers are still catching good limits of the healthy age-2 cohort of White Crappie.

The lake specific assessment of the crappie population yielded a rating of “Fair” at Lake Barkley in 2023 (Table 58). Mostly below-average catch rates led to this score not being any higher. The average lengths of age-2 White Crappie and Black Crappie at capture were 11.0 in and 10.3 in, respectively. In addition, we calculated age-2 crappie mean length at capture as outlined by Murphy and Willis (1996) for all years. This method uses a weighted average based on the age-length key and includes all sampled fish per age class. Although differences are slight, we do feel that this calculation more accurately describes this metric, as all crappie are included in the calculation. The average length of age-2 crappie continues to be good. We are hopeful that the good age-2 year class will continue providing good fishing and that we will have another good spawn in 2024 since the last two have not been great.

The catfish population was sampled along the main lake river channel at Lake Barkley in July with low-pulse (15 PPS) electrofishing while utilizing a chase boat to collect fish further away from the electrofishing boat. One dipper was always positioned in each boat for a total of two dippers. A total of 732 catfish were collected during 60 electrofishing runs (Table 59). Each run lasted 300 seconds, for a total sample time of 5.0 hours over a three-day period. Blue Catfish had the highest catch rate at 135.6 fish/hr and made up 93% of the catfish collected. Flathead Catfish and Channel Catfish are likely underrepresented using this method as these fish were often observed but were much harder to approach and dip than Blue Catfish. Relative weight values were all within or greater than ideal values of 95-105, except for Flathead Catfish 12.0-19.9 in, and are listed in Table 60.

Literature Cited

Murphy, B. R. and D. W. E. Willis. 1996. Fisheries techniques, second edition. American Fisheries Society, Bethesda, MD.

Kentucky Lake Creel Survey

A random, non-uniform probability, roving creel survey was conducted on the Kentucky portion (51,000 a) of Kentucky Lake from February 21 to December 31, 2023. The Kentucky portion of the lake was divided into ten creel areas (Appendix B). The survey was conducted six hours per day, with the goal of 5 days per week. Each day a start time was randomly chosen to conduct an angler count of the whole area. The remaining time was dedicated to creeling anglers actively fishing. The overall temporal sampling scheme was twenty days per month, consisting of six weekend days and fourteen weekdays. Varying time period probabilities were assigned to each month. Higher geographic probabilities, resulting in more frequent interviews, were assigned to the Blood River and Jonathan Creek areas from February through April and October through December than were assigned to the other eight areas. Equal probabilities were assigned to all areas from May through September. An angler attitude questionnaire concerning fishing on Kentucky Lake was conducted by the creel clerk throughout the survey period (Appendix C).

During the 2023 creel, the typical angler was a male (93%) resident (74%) who was casting (62%) or still fishing (35%) from a boat (95%; Table 61). The percentage of resident anglers remained much higher than normal in 2023, continuing a trend from the most recent survey in 2020. The average fishing trip for all anglers was 4.6 hours. There was a decline in the number of trips (98,550). This is the lowest number of trips ever recorded in a Kentucky Lake creel survey. We also recorded the lowest amount of angler effort since the 1998 survey. However, the overall catch rate (1.5 fish/hr) did improve and was slightly above the historical average for Kentucky Lake. Length frequencies of all harvested or released fish are given in Table 62.

Table 63 provides fish catch and harvest statistics for the 2023 creel survey. Crappie anglers accounted for 32% of fishing trips to Kentucky Lake in 2023 (22% in 2020, 33% in 2017, 33% in 2015). Of the crappie anglers, 36% used a spider rig (defined as 3 or more poles per angler) for fishing. The overall catch and harvest total estimates for crappie were below average. Crappie anglers caught 1.4 fish/hr which is above the long-term average of 1.1 fish/hr. Of the crappie caught by this group, 44% were harvested (Table 64). This lower proportion of legal-size crappie corresponds to fall trap netting data which showed a large proportion of age-1 and age-2 crappie in the 7.0- to 9.0-in range with older, longer fish being poorly represented. Fifty-one percent of the crappie were caught in March and April (Table 64). As part of our efforts to evaluate harvest by method, crappie anglers were recorded as using the following methods: casting, still fishing with 1-2 poles, spider rigging with 3 poles, spider rigging with 4-5 poles, or spider rigging with >5 poles. During this survey, 36% of crappie anglers used 3 or more poles. The percentage of crappie anglers using more than 5 poles decreased to 4% in 2023 compared to about 25% in 2020 and 2017 (Table 66). There is seemingly an ongoing trend in crappie fishing right now to use only one or two poles in conjunction with advanced live-imaging sonar to target individual fish. We are attempting to monitor the use of live-imaging and its potential effects on catch and harvest rates in our creel surveys starting in 2024.

Black bass anglers accounted for 45% of all fishing trips to Kentucky Lake during 2023 (36% in 2020, 42% in 2017, 41% in 2015; Table 63). There were 43,924 black bass fishing trips in the 2023 creel. During older surveys, any bass that was currently in the livewell was recorded as harvested. However, during recent surveys, anglers with bass in the livewell were asked if they intended to release them at the end of the day. In all cases, tournament anglers indicated that they intended to release their fish after the weigh-in. Additionally, some non-tournament anglers simply chose to keep fish in the livewell for photographic or “mock tournament” purposes but indicated that they would release them at the end of the day. As a comparison with previous surveys, bass kept in livewells by anglers were reported as harvested, even though they would be released at the end of the day. The harvest rate, which included tournament bass and “mock tournament” bass, was estimated to be 0.08 bass/hr for anglers actually targeting bass (Table 67). However, when tournament and “mock tournament” harvested bass were removed from the actual harvest, the harvest rate dropped to 0.004 bass/hr. Largemouth Bass accounted for 89% of the black bass actually harvested (Table 68). Black bass anglers caught 0.8 fish/hr which is above the long-term average of 0.6 fish/hr

About 8% of all trips were taken to catch panfish during 2023 (15% in 2020, 6% in 2017, 10% in 2015; Table 63). The overall catch and harvest total estimates for panfish were below average. Panfish anglers caught 2.8 fish/hr which is approaching the long-term average of 3.3 fish/hr. Panfish catch rates vastly improved upon the 2020 catch rate of 1.2 panfish/hr. About 57% of the total panfish harvest occurred in May (Table 69). Bluegill and Redear

Sunfish accounted for 100% of the panfish harvested. About 41% of Bluegill caught were harvested, while 85% of the Redear Sunfish caught were harvested (Table 70).

About 6% of all trips were taken to catch catfish during 2023 (14% in 2020, 8% in 2017, 6% in 2015; Table 63). The overall catch and harvest total estimates for catfish were below average. Catfish anglers caught 0.3 fish/hr which is below the long-term average of 0.5 fish/hr. The catfish fishery remains highly harvest oriented. Almost 68% of the catfish caught were harvested (Table 71). Total catfish catch peaked in May (Table 71). These were likely anglers targeting Channel Catfish in the embayments. The total catch of Channel Catfish was four times higher than the catch of Blue Catfish (Table 72).

About 1% of the anglers fishing Kentucky Lake during 2023 sought *Morones* (Table 63). This group includes White Bass, Yellow Bass, Striped Bass, and their hybrids. It is likely that most anglers were fishing for White or Yellow bass, however, positive ID on this genus is difficult for anglers, leading to some misidentification. Approximately 49% of the *Morones* caught were White Bass, with Yellow Bass making up an additional 41%. (Table 73). Striped Bass made up 10% of *Morones* caught, marking the highest percentage for any Kentucky Lake creel survey for the species. Similar to the prior survey in 2020, the highest catches of *Morones* occurred during April when no anglers reported they were targeting *Morones* (Table 74).

An angler attitude survey was also given to anglers willing to participate (n=330; Appendix C). About 21% of black bass anglers reporting being somewhat or very dissatisfied with black bass fishing. Slightly more anglers (33%) reported somewhat or very dissatisfied with the crappie fishing. In 2023, exactly 50% of the crappie anglers surveyed used live forward-facing sonar, an increasing trend we will monitor going forward. Of the tournament anglers surveyed (n=126), 87% would support requiring tournaments to post information on the department website, while 78% would support requiring tournaments to report effort and catch statistics to the department.

Lake Beshear

Largemouth Bass were collected by diurnal electrofishing (120 PPS, DC current) during April at Lake Beshear. Three-hundred-and-thirty-four Largemouth Bass were collected at a rate of 133.6 fish/hr (Table 75). The catch rate of harvestable-size (≥ 12.0 in) Largemouth Bass was 50.0 fish/hr (Table 76). This year's sample falls above the objective in the Lake Beshear Fish Management Plan (LBFMP) to maintain a catch rate of at least 45.0 fish/hr for harvestable-size Largemouth Bass. The catch of age-1 fish was high this year (33.4 fish/hr). Other objectives are to maintain high catch rates of bass ≥ 15.0 and ≥ 20.0 in. Ideally, these catch rates should be greater than 30.0 and 3.0 fish/hr, respectively. The catch rates per hour for these length groups of bass were 40.0 and 5.2 fish/hr, respectively. Lake Beshear continues to provide a quality bass fishery with good numbers of bass ≥ 15.0 in. The fishery rated as "Good" in 2023 thanks in part to strong recruitment and solid numbers of trophy-size fish (Table 77). The mean length at age 3 was only 10.4 in which is below average. This parameter will be monitored closely in the future as the low mean length could indicate overcrowding at that size. Otoliths were removed from a subsample of Largemouth Bass to determine age frequency and mean length at age. Fish up to age 13 were observed (Table 78). The mean length at age and Von Bertalanffy growth curve parameters are provided on Table 79.

Largemouth Bass were also collected by diurnal electrofishing (120 PPS, DC current) in October (Table 75). The catch rate (155.2 fish/hr) was down slightly from last year, but again the catch was skewed towards smaller fish. Relative weight data (Table 80) suggests that larger bass (≥ 15.0 in) are healthy regarding their length-weight ratio. The average relative weight value was 91 for these larger bass and 79 for all sizes of bass. However, the reduced body weights of the smaller fish are indicative of a lack of smaller forage and should be monitored closely to see if this trend continues. The length-weight equation for Largemouth Bass at Lake Beshear is:

$$\text{Log}_{10}(\text{weight}) = -3.55476 + 3.18309 \times \text{Log}_{10}(\text{length})$$

Otoliths were removed from a subsample of Largemouth Bass ≤ 10.0 in to determine the mean fall length of the age-0 cohort and determine their catch rate. The catch rate for age-0 Largemouth Bass was 97.7 fish/hr (Table 81). The average length of an age-0 bass was 4.6 in. The catch rate of age-0 Largemouth Bass ≥ 5.0 in was 32.0

fish/hr. These are above-average catch rates and may be partly to blame for the low relative weights of the smaller bass in this lake.

Lake Pennyrile

Electrofishing for all species of sportfish at Lake Pennyrile was conducted on May 3, 2023. Largemouth Bass were captured at a rate of 91.0 fish/hr (Table 82). This catch rate is equal to the 10-year average of 90.5 fish/hr (Table 83). The majority of Largemouth Bass were still below 12.0 in. Only 3 (3.3%) bass were 12.0 in or larger, while only 2 (2.2%) bass were over 15.0 in from this year's sample. The catch rate of Largemouth Bass 8.0-11.9 in was 35.0 fish/hr which is below the management objective of 80.0 fish/hr (Table 83). As in previous years, most bass were stunted less than 10.0 in. These high catch rates of small and intermediate-size Largemouth Bass are desirable in order to maintain good numbers of large sunfish in this system. The lake specific assessment score for the Largemouth Bass population was "Good" in 2023 (Table 84).

The catch rate of large-size (≥ 8.0 in) Bluegill was below average at 1.0 fish/hr; however, we had a good catch of Bluegill in the 6.0- to 7.9-in range (Table 85). The catch rate of large (≥ 8.0 in) Redear Sunfish was below average at 13.0 fish/hr. Similar to Bluegill, we had a high catch rate in the 6.0- to 7.9-in range. We will continue to monitor the panfish populations at Lake Pennyrile in 2024.

PSD and RSD values for Largemouth Bass, Bluegill and Redear Sunfish are listed in Table 86. The PSD value for Largemouth Bass (8) suggests a population heavily skewed toward small bass. The Largemouth Bass fishery is stunted which is our goal when managing for large panfish. The PSD values for Bluegill (33) and Redear Sunfish (38) suggest population that shifted towards more smaller fish in 2023.

Lake George

Lake George (Marion, KY, Crittenden Co.) was drained in spring 2022 due to a failure in the levee. Agencies familiar with the situation will determine when/if the lake will be re-filled.

Lake Blythe

Electrofishing for all species of sportfish in Lake Blythe (Hopkinsville, KY, Christian Co.) was conducted on May 9, 2023. Catch rates of bass were well above what they had been in the previous survey in 2022 but were heavily skewed toward smaller fish (Table 87). Due to only having 3 previous surveys on file for this lake, it is unknown if this has happened before. Ninety-one largemouth bass were captured at a rate of 91.0 fish/hr (Table 87). Of these 91 fish, 3 of them were greater than 12.0 inches in length. The catch rate of bluegill was 287.0 fish/hr (Table 87). The catch rate of redear sunfish was 37.0 fish/hr (Table 87).

Ballard County Wildlife Management Area Lakes

On May 1, 2023, the Gravel Pit Pond on Ballard County Wildlife Management Area lakes was sampled with electrofishing. Unlike other lakes on the area, this lake does not connect with the river during flooding events. The length frequency of all species collected is provided on Table 88. The Largemouth Bass population is skewed toward smaller fish, but that seems to have allowed for some very nice Bluegill in the fishery. Unfortunately, some members of the public stocked both White and Black crappie into the lake. The crappie we collected were all removed, but we expect to continue to see excessive crappie reproduction in this small lake.

West Kentucky Wildlife Management Area Lakes

On May 1, 2023, The Handicap Access Pond on West Kentucky Wildlife Management Area was sampled with electrofishing. This pond has a boat ramp, but only half of the lake is accessible due to a bridge/fishing pier

which crosses the lake. The length frequency of all fish collected is provided in Table 89. The Largemouth Bass, Bluegill, and Redear Sunfish populations all looked good, but future samples may be warranted to evaluate for overfishing. The crappie and Gizzard Shad observed were deemed undesirable and were removed.

USFWS (Clarks River National Wildlife Refuge) Lakes

On May 10, 2023, two small USFWS lakes were sampled with electrofishing. The pond in Benton Kentucky is a small public fishing lake which we have sampled nearly annually. The Largemouth Bass catch rate was 13.0 fish/hr which is a major increase from the prior year (Table 90). The Bluegill catch rate was 434.0 fish/hr. The catfish length distributions looked good.

We also sampled a smaller pond which was newly acquired by the USFWS near Symsonia Kentucky. The catch rate of bass in this pond was only 42.0 fish/hr (Table 91). This pond was supplemented with 350 Largemouth Bass from our hatcheries in the fall of 2021 and the stocking appears to have increased the population compared to the prior years. The wide range of species is indicative of prior flooding and connection with the nearby river. However, the USFWS have made efforts to prevent future flooding. Both the Symsonia pond and the Benton pond are being managed for large sunfish and high catch rates of bass.

Table 1. Yearly summary of sampling conditions by waterbody, species sampled, and date for 2023.

Water body	Location	Species	Date	Effort	Gear	Weather	Water temp. °F	Water level	Secchi (in)	Water conditions	Pertinent sampling comments
Barkley	Little River	black bass	4/10/2023	2.5 hr	electrofishing	sunny	59.8	357.7	31	stable	fair sample, bushes not flooded yet, USACE dipper
Kentucky	Johnathan Creek	black bass	4/11/2023	2.5 hr	electrofishing	sunny	60.0	357.6		rising slightly	fair sample
Barkley	Donalsdon & Fords Bays	black bass	4/12/2023	2.5 hr	electrofishing	sunny, calm	61.9	357.7	32	stable	fair sample, bushes not flooded yet, USACE dipper
Kentucky	Blood River	black bass	4/13/2023	1.75 hr	electrofishing	sunny	63.0				fair sample
Lake Beshear		black bass	4/17/2023	2.5 hr	electrofishing	sunny, w indy	61.0	normal	43	stable	fair sample, rookie dipper, age sample
Barkley	Eddy Bay	black bass	4/18/2023	2.5 hr	electrofishing	sunny	63.5	358.1	30	rising slightly	fair sample, USACE dipper
Barkley	Taylor Bay/Jake's Fork	black bass	4/19/2023	2.5 hr	electrofishing	sunny	62.7	358.1	24	stable	fair sample, USACE dipper
Kentucky	Big Bear	black bass	4/24/2023	2.5 hr	electrofishing	sunny, light w ind	62.1			rising slightly	fair sample
Barkley	Nickell, Willow , Demumbers	black bass	4/25/2023	2.5 hr	electrofishing	sunny	62.9	358.4		rising slightly	fair sample, USACE dipper
CNWR pond	Symsonia	community	4/26/2023	0.5 hr	electrofishing	sunny	65.7	normal	15		fair sample
West Ky WMA	Handicap pond	community	5/1/2023	0.32 hr	electrofishing	sunny, w indy	63.0	normal		normal	ramp side only
Ballard WMA	Gravel pit	community	5/1/2023	0.25 hr	electrofishing	sunny, w indy	66.0	normal		normal	1 dipper, crappie removed
Lake Pennyriale		community	5/3/2023	1.0 hr	electrofishing	sunny	61.6	normal		stable	good sample for sunfish and bass
Lake Blythe		community	5/9/2023	1.0 hr	electrofishing	sunny	69.2	normal			Stained w ater, 1 dipper
CNWR pond	Benton	community	5/10/2023	0.5 hr	electrofishing	sunny	73.7	normal		stable	fair sample
Kentucky	Jonathan Creek	crappie	3/30/2023	6 tow s	neustonic tow net	dusk					5 min tow s
Kentucky	Jonathan Creek	crappie	4/6/2023	6 tow s	neustonic tow net	dusk					5 min tow s
Kentucky	Jonathan Creek	crappie	4/14/2023	6 tow s	neustonic tow net	dusk		357.8			5 min tow s
Kentucky	Jonathan Creek	crappie	4/20/2023	6 tow s	neustonic tow net	dusk		358.1			5 min tow s
Kentucky	Jonathan Creek	crappie	4/28/2023	6 tow s	neustonic tow net	dusk		358.4			5 min tow s
Kentucky	Jonathan Creek	crappie	5/4/2023	6 tow s	neustonic tow net	dusk		359.0			5 min tow s
Kentucky	Jonathan Creek	crappie	5/10/2023	6 tow s	neustonic tow net	dusk		359.3			5 min tow s
Kentucky	Jonathan Creek	crappie	5/18/2023	6 tow s	neustonic tow net	dusk		359.2			5 min tow s
Kentucky	Jonathan Creek	crappie	5/26/2023	6 tow s	neustonic tow net	dusk		360.0			lots of zooplankton, cut tow duration to 4 min
Kentucky	Jonathan Creek	crappie	6/2/2023	6 tow s	neustonic tow net	dusk		359.3			5 min tow s
Kentucky	Jonathan Creek	crappie	6/9/2023	6 tow s	neustonic tow net	dusk		359.2			5 min tow s
Kentucky	Blood River	black bass	6/14/2023		50' seine						only bass w ere enumerated
Kentucky	Sugar Bay	black bass	6/16/2023		50' seine						only bass w ere enumerated
Kentucky	Johnathan Creek	black bass	6/20/2023		50' seine						only bass w ere enumerated, SMB tough to find
Kentucky	Blood River	crappie	6/21/2023		benthic trawl						fish w ere somewhat easy to find
Kentucky	Jonathan Creek	crappie	6/23/2023		benthic trawl						fish w ere more difficult to find but not bad
Kentucky	Fenton	catfish	6/30/2023	1.66 hr	low pulse	sunny	84.0	359.3		w indy	no w eights due to w ind
Barkley	Cravens Bay	catfish	7/5/2023	1.67 hr	electrofishing	sunny, calm	83.8	359.4		stable	fair sample, low pulse w ith chase boat
Kentucky	Patterson Landing	catfish	7/7/2023	1.66 hr	low pulse	sunny/w indy	84.6	359.0			
Barkley	Nickel Branch	catfish	7/10/2023	1.67 hr	electrofishing	sunny, light w ind	84.0	359.0		stable	fair sample, low pulse w ith chase boat
Kentucky	Little Bear	catfish	7/11/2023	1.66 hr	low pulse	sunny/light w ind	82.8	359.1		20,000 cfs	low discharge
Barkley	Devils Elbow	catfish	7/18/2023	1.67 hr	electrofishing	sunny	84.1	358.6		falling slightly	fair sample, low pulse w ith chase boat
Kentucky	Blood River	black bass	10/2/2023	2.23 hr	electrofishing	sunny	80.0	355.2		stable	runs in smaller test pockets
Barkley	Little River	black bass	10/3/2023	1.92 hr	electrofishing	sunny	71.9	355.2	20	falling slightly	fair sample

Table 1 (cont).

Water body	Location	Species	Date	Effort	Gear	Weather	Water temp. °F	Water level	Secchi (in)	Water conditions	Pertinent sampling comments
Kentucky	Jonathan Creek	black bass	10/4/2023	2.0 hr	electrofishing	mostly sunny	76.1	355.2	25	stable	shad w r taken
Barkley	Taylor Bay	black bass	10/6/2023	2.0 hr	electrofishing	partly cloudy	73.2	355.1		stable	fair sample, experimental habitat sample
Kentucky	Sugar Bay	black bass	10/9/2023	2.0 hr	electrofishing	sunny	72.0	355.1		stable	fair sample, shad Wr also collected
Barkley	Eddy Bay	black bass	10/10/2023	2.0 hr	electrofishing	sunny, calm	67.3	355.2		stable	fair sample
Lake Beshear		black bass	10/11/2023	2.5 hr	electrofishing	cloudy	70.0	normal			fair sample
Kentucky	Blood River	black bass	10/12/2023	1.75 hr	electrofishing	sunny	66.4			stable	extra day for more Wr samples on big fish
Barkley	Crooked Creek	crappie	10-16 - 10/20	40 nn	trapnet	variable	61.0	355.2	22	stable	fair sample
Kentucky	Sledd Creek	crappie	10/16 - 10/20	40 nn	trapnet	sunny	63.0			stable	fair sample. moronids and redear also measured
Barkley	Donaldson Bay	crappie	10-24 - 10-27	40 nn	trapnet	variable	65.0	355	22	stable	fair sample
Kentucky	Jonathan Creek	crappie	10/24 - 10/27	40 nn	trapnet	sunny, windy				steady	fair sample. moronids and redear also measured
Barkley	Little River	crappie	10-31 - 11-3	39 nn	trapnet	variable	51.0	355.3	11	stable	fair sample, strong current at spots, cool water
Kentucky	Blood River	crappie	10-31 - 11-3	38 nn	trapnet	sunny, windy	60.3			steady	fair sample. moronids and redear also measured

Table 2. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 7.5 hours (15- 30-minute runs) of diurnal electrofishing at Kentucky Lake during April 2023.

Area	Inch class																					Total	CPUE	SE		
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22					
Blood River																										
Smallmouth Bass		5	9	10	3	4	1	5	1	2	1	2	2	1		1								47	18.8	13.7
Spotted Bass																										
Largemouth Bass	1	4	6	39	24	17	8	5	7	11	10	27	32	15	6	3	3	3		1				222	88.8	16.3
Jonathan Creek																										
Smallmouth Bass		3	9	6						1	2		1		1									23	9.2	3.0
Spotted Bass																										
Largemouth Bass		5	17	28	18	8	3	2	7	15	30	31	21	22	13	7	3	1	1			1		233	93.2	12.5
Big Bear																										
Smallmouth Bass		4	14	19	5	1		2				1												46	18.4	6.1
Spotted Bass											1	1												2	0.8	0.5
Largemouth Bass	1	9	18	29	24	21	9	5	4	12	25	36	27	13	7	8	6	1						255	102.0	15.1
Total																										
Smallmouth Bass		12	32	35	8	5	1	7	2	4	2	3	2	2		1								116	15.5	4.9
Spotted Bass						1						1												2	0.3	0.2
Largemouth Bass	2	18	41	96	66	46	20	12	18	38	65	94	80	50	26	18	12	5	1	1	1		710	94.7	8.0	

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Table 3. Lake specific assessment for Largemouth Bass collected at Kentucky Lake from 2014-2023. This table includes the parameter estimates and the individual scores as well as the total score and assessment rating. The final two columns list the instantaneous mortality (Z) and % annual mortality (A). Only data collected from Blood River, Big Bear, Jonathan Creek, and Sugar Bay were used for historical comparison.

Year	Mean	****Mean	CPUE age 1	Length group			Total score	Assessment rating	Z	A
	length	length		12.0-14.9 in	≥15.0 in	≥20.0 in				
	age 3 at capture	age 3 at capture		CPUE	CPUE	CPUE				
2023	12.7**	13.4**	37.0	31.9	15.2	0.4				
Score	2		4	4	2	1	13	G		
2022	12.7**	13.4**	27.7	15.7	19.8	0.7				
Score	2		3	2	3	1	11	F		
2021	12.7**	13.4**	36.5	10.4	12.0	0.3				
Score	2		4	1	1	1	9	F		
2020	12.7	13.4	4.3	17.7	8.0	0.4		***0.356	30	
Score	2		1	2	1	1	7	P		
2019	13.2**		3.3	11.9	8.1	0.9				
Score	2		1	1	1	1	6	P		
2018	13.2**		24.7	7.9	12.2	1.3				
Score	2		2	1	1	2	8	F		
2017	13.2**		95.8	14.1	16.4	1.1				
Score	2		4	2	3	2	13	G		
2016	13.2	13.7	4.0	25.9	19.1	0.8		***0.41	33.7	
Score	2		1	4	3	1	11	F		
2015	13.9**		10.2	22.0	15.6	1.2				
Score	4		1	3	2	2	12	G		
2014	13.9**		32.6	15.0	15.7	0.9				
Score	4		2	1	2	1	10	F		
Average	13.0	13.6	27.6	17.2	14.2	0.8	10.0		0.383	31.850

Data from 1985 to 2013 is listed in previous annual reports.

Assessment quartiles were updated in 2015, previous years' APR's will list rating based on old assessment ranges.

** age and growth data was not collected this year, therefore used previous age data set estimates.

*** mortality rates were calculated from fall caught and aged fish.

****Mean length calculated using a weighted average applied to the entire sample

Rating

5-7 = Poor (P)

8-11 = Fair (F)

12-16 = Good (G)

17-20 = Excellent (E)

(Kentucky Bass Database.xls)

Table 4. Spring diurnal electrofishing CPUE (fish/hr) of each length group of Largemouth Bass collected at Kentucky Lake during May 2014-2023.

Year	Mean length		Length group																	
	age 3 at capture (in)	*Mean length age 3 at capture (in)	Age 1		<8.0 in		12.0-14.9 in		≥15.0 in		≥18.0 in		≥20.0 in		Total		PSD	RSD ₁₅		
			CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023			37.0	5.8	35.9	5.2	31.9	3.9	15.2	1.7	2.7		0.4	0.3	94.7	8.0	80	26		
2022			27.7	6.3	27.6	6.3	15.7	2.2	19.8	2.7	4.0		0.7	0.5	86.3	9.5	61	34		
2021			36.5	4.1	31.1	3.4	10.4	1.7	12.0	2.8	1.2	0.6	0.3	0.2	62.3	7.1	72	38		
2020	12.7	**13.4	4.3	1.5	4.6	1.6	17.7	3.5	8.0	2.1	2.6	0.7	0.4	0.2	34.9	7.0	85	26		
2019			3.3	0.6	3.5	0.6	11.9	1.6	8.1	1.0	3.5	0.6	0.9	0.3	33.8	3.0	66	27		
2018			24.7	3.5	23.7	3.4	7.9	1.1	12.2	1.5	5.0	0.9	1.3	<0.1	66.7	5.3	47	28		
2017			95.8	10.6	66.4	7.1	14.1	1.7	16.4	1.7	3.3	0.7	1.1	0.3	136.3	11.8	44	23		
2016	13.2	**13.7	4.0	0.7	11.8	2.0	25.9	2.4	19.1	2.4	2.9	0.7	0.8	0.3	63.2	5.7	88	37		
2015			10.2	1.1	3.9	0.7	22.4	2.1	14.1	1.3	5.3	0.6	1.1	0.3	60.4	4.2	65	25		
2014			32.6	6.2	26.4	5.5	15.0	1.4	15.7	1.7	4.2	0.6	0.9	0.3	78.1	7.1	59	30		
Average	13.0	13.6	27.6		23.5		17.3		14.1		3.5		0.8		71.7		66.7	29.4		
KLFMP	≥ 12.0 in		≥ 30.0				> 21.0		≥ 18.0				≥ 2.0				55-75	20-40		

(Kentucky Bass Database.xls)

Data for 1985-2013 is listed in previous annual reports; KLFMP - Kentucky Lake Fish Management Plan objective goal.

*Mean length calculated using a weighted average applied to the entire spring sample

**Mean length in spring estimated by backcalculating lengths of fall aged fish and then estimating length frequency from spring sample

Table 5. PSD and RSD₁₅ values calculated for Largemouth Bass collected during diurnal electrofishing at Kentucky Lake during April 2023; 95% confidence limits are shown in parentheses.

Area	≥ Stock size*	PSD	RSD ₁₅
Blood River	131	76 (± 7)	24 (± 7)
Jonathan Creek	156	80 (± 7)	23 (± 6)
Big Bear	157	83 (± 6)	31 (± 6)
Total	441	80 (± 4)	26 (± 4)

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*Stock size = 8.0 in

Table 6. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.05 hours of diurnal electrofishing at Kentucky Lake during October 2023.

Area / Species	Inch class																		Total	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				
Blood River																						
Smallmouth Bass	3	33	40	13	2		2	5	4	1			1							104	50.7	13.4
Spotted Bass																						
Largemouth Bass	13	14	23	21	12	6	2	3	1	2	2	4	1		1					105	51.2	10.7
Jonathan Creek																						
Smallmouth Bass		17	17	14	2		3	1	1		3	2								60	30.0	8.6
Spotted Bass		1	6																	7	3.5	1.5
Largemouth Bass	5	25	12	23	17	7	3	3	3	1	2	8	5	5	3	2	1	1		126	63.0	17.6
Sugar Bay																						
Smallmouth Bass	1	14	33	17	2	1	1	2	2				1	1				1		76	38.0	5.9
Spotted Bass																						
Largemouth Bass		18	28	27	11	4		1		1	3	1	1					1		96	48.0	8.2
*TOTAL																						
Smallmouth Bass	3	50	57	27	4		5	6	5	1	3	2	1							164	40.5	9.3
Spotted Bass		1	6																	7	1.7	0.8
Largemouth Bass	18	39	35	44	29	13	5	6	4	3	4	12	6	5	4	2	1	1		231	57.0	9.1

wfdwrk.d23

*TOTAL only for Blood River and Jonathan Creek for historical comparisons

Table 7. Number of bass and mean relative weight (W_r) for each length group of black bass collected at Kentucky Lake during October 2023. Standard errors provided in parentheses.

Species	Area	Length group						Total	
		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in		No.	W_r
		No.	W_r	No.	W_r	No.	W_r		
Largemouth Bass	Blood River	25	95 (1)	30	94 (1)	14	94 (2)	69	95 (1)
	Jonathan Creek	10	92 (2)	15	86 (2)	12	92 (2)	37	90 (1)
	Sugar Bay	35	94 (1)	45	92 (1)	26	93 (1)	14	90 (3)
	*Total	35	94 (1)	45	93 (1)	26	93 (1)	106	93 (1)

Species	Area	Length group						Total	
		7.0-10.9 in		11.0-13.9 in		≥ 14.0 in		No.	W_r
		No.	W_r	No.	W_r	No.	W_r		
Smallmouth Bass	*Total	24	84 (1)	9	81 (1)	4	88 (2)	17	90 (3)

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*Only Blood River and Jonathan Creek results were used for historical comparisons

Table 8. CPUE (fish/hr) and mean length (in) of age-0 Smallmouth Bass collected in the fall, and CPUE of age-1 Smallmouth Bass collected the following spring during diurnal electrofishing at Kentucky Lake (Jonathan Creek and Blood River only).

Year class	Age 0 ^A		Age 0 ^A		Age 0 ≥5.0 in ^A		Age 1 ^B	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.3	0.1	38.4	8.5	8.2			
2022	4.3	0.1	22.7	7.6	4.0	1.0	12.3	3.4
2021	4.0	<0.1	49.7	8.8	4.4		7.6	4.4
2020	4.7	0.1	39.8	12.0	13.4		4.8	1.9
2019	4.3	0.1	30.1	6.3	3.4			
Average	4.3		36.1		6.7			

^A Data collected by fall (October) diurnal electrofishing. Mean lengths were determined by analysis of otoliths removed from a subsample of SMB <8.0 in and extrapolated to the entire catch of the fall sample.

^B Data from diurnal electrofishing samples collected the following spring (April/May).
wfdwrky.dxx, wfdwragk.dxx, wfdpsdky.dxx

Table 9. CPUE (fish/hr) and mean length (in) of age-0 Largemouth Bass collected in the fall, and CPUE of age-1 Largemouth Bass collected the following spring during diurnal electrofishing at Kentucky Lake (Jonathan Creek and Blood River only for historical comparison).

Year class	Age 0 ^A		Age 0 ^A		Age 0 ≥5.0 in ^A		Age 1 ^B	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.8	0.1	43.8	7.2	21.0	4.7		
2022	4.7	0.1	48.1	5.2	17.8	2.7	39.0	5.8
2021	4.4	0.1	47.3	7.3	17.6	1.8	27.7	6.3
2020	5.3	0.1	76.7	12.6	38.5	10.6	36.5	4.1
2019	3.9	0.1	37.1	5.9	5.4	1.8	**4.3	1.5
2018	5.7	0.1	18.6	2.8	13.0	2.5	3.3	0.6
2017	5.9	0.1	28.9	5.2	18.2	3.6	24.7	3.5
2016	6.4	0.1	58.4	7.4	47.9	5.3	95.8	10.6
2015	4.6	0.1	32.6	8.6	9.1	1.5	4.0	0.7
2014	4.1	0.1	20.2	7.9	3.8	1.0	10.2	1.1
Average	5.0		41.2		19.2		30.1	

^A Data collected by fall (October) diurnal electrofishing. Mean lengths were determined by analysis of otoliths removed from a subsample of LMB <8.0 in and extrapolated to the entire catch of the fall sample. Since 2010, bass up to 10.0 in have been collected for analysis.

^B Data from diurnal electrofishing samples collected the following spring (April/May).

**2020 spring sample only used 1 dipper due to covid19 pandemic

Data from 1990 to 2013 is listed in previous year reports.

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Table 10. Lake conditions and spawning activity rating for each survey site during snorkel surveys in Sugar Bay, 2023. WFD laydowns were placed by KDFWR staff and Natural laydowns were pre-existing laydowns that were monitored. Rating 0-5 was based on relative density of observed eggs or fry, c=cleaned off (bed brushed clean of debris), blank=not found/out of the water. LMB=Largemouth Bass, SMB=Smallmouth Bass, SF=sunfish.

			March	April	April	April	April	May	May	May	May	June	June
Conditions			30	7	14	20	28	4	11	18	26	2	9
Air temp (F)			55	50	60	60	50	55	70	80	70	85	75
Water temp (F)			57	60	64	65	63	63	70	73	72	81	77
Secchi (in)			39	48	48	50	48	35	58	66		61	45
Elevation (ft)			356	356	358	358	358	359	359	359	360	359	359
Weather			sunny, cool	overcast, cool	mostly sunny	sunny, windy	overcast, cool	sunny, calm	overcast, storms inbound		sunny, windy	sunny, calm	sunny, calm
Site ID	Laydown	Artificial Spawning Bed	March 30	April 7	April 14	April 20	April 28	May 4	May 11	May 18	May 26	June 2	June 9
K3-CSB-6		Concrete		0	0	c	c	0	0	0	0	0	0
K3-CSB-7	WFD	Concrete	LMB 5	LMB 1	c	0	0	0	0	0	0	c	0
K3-CSB-8	WFD	Concrete	0	0	LMB 2	c	LMB 4	0	0	SF 3	SF 2	c	c
K3-CSB-9		Concrete	0	0	0	c	0	c	c	SF 3	c	0	0
K3-CSB-9.9	WFD		0	0	LMB 3	c	c	c	0	SF 4	SF 3	SF 3	c
K3-CSB-10		Concrete	0	0	0	0	0	0	0	SF 1	c	0	0
K3-CSB-11		Concrete	0	0	c	c	0	0	0	c	c	c	0
K3-CSB-12	WFD	Concrete	c	c	c	0	c	0	c	0	c	c	0
K3-CSB-13		Concrete	0	0	0	0	0	0	0	0	0	0	0
K3-CSB-14	WFD	Concrete	0	LMB 3	0	LMB 3	LMB 4	0	0	0	0	0	0
K3-CSB-15		Concrete		0	0	0	0	0	0	0	0	0	0
K3-CSB-15.9	WFD		c	LMB 5	c	LMB 4	0	0	0	0	0	0	0
K3-CSB-16		Concrete	0	0	0	0	0	0	0	0	0	0	0
K3-CSB-16.9	WFD		0	0	0	0	c	0	0	0	0	0	0
K3-CSB-17	WFD	Concrete	0	LMB 4	c	c	LMB 3	0	c	c	0	0	0
K3-CSB-18		Concrete	0	0	c	c	c	c	c	c	c	0	c
K3-CSB-19	WFD	Concrete	0	LMB 1	0	LMB 4	0	0	c	c	c	0	c
K3-CSB-19.9	WFD		c	LMB 2	LMB 3	c	c	c	SF 4	SF 5	SF 4	SF 3	0
K3-CSB-20		Concrete	0	0	0	c	0	c	c	SF 5	SF 3	SF 3	c
K3-CSB-20.9	WFD		0	LMB 3	c	c	LMB 1	0	c	c	SF 2	0	0
K3-CSB-21		Concrete	0	0	0	0	0	0	c	SF 5	c	c	c
K3-CSB-22		Concrete	0	0	0	SMB 1	SMB 1	c	0	c	c	0	0
K3-CSB-22.9	WFD		c	c	c	c	SF 4	c	c	c	c	SF 4	SF 2
K3-CSB-23		Concrete	0	0	LMB 1	0	c	0	0	0	0	0	0
K3-CSB-24	WFD	Concrete	0	LMB 4	0	LMB 5	LMB 4	0	c	c	0	0	0

Table 10 (cont).

Site ID	Laydown	Artificial Spawning Bed	March 30	April 7	April 14	April 20	April 28	May 4	May 11	May 18	May 26	June 2	June 9
K3-CSB-25	WFD	Concrete	0	LMB 5	c	0	0	c	0	0	0	c	0
K3-CSB-26	WFD	Concrete	c	LMB 3	c	LMB 4	0	c	c	c	0	0	0
K3-CSB-27		Concrete	0	LMB 3	0	0	0	0	0	c	0	0	0
K3-CSB-27.9	WFD		0	c	SMB 1	c	c	0	0	0	0	SF 4	0
K3-CSB-28	Natural	Concrete	0	0	0	0	c	0	0	c	0	0	SF 1
K3-CSB-28.9	WFD		c	SMB 1	0	SMB 3	0	0	c	c	c	0	c
K3-CSB-29		Concrete	0	0	0	0	0	0	0	0	0	c	c
K3-CSB-29.9	WFD		c	SMB 3	c	LMB 4	SF 4	SF 3	SF 3	c	c	c	0
K3-CSB-30		Concrete	0	0	0	0	SMB 1	0	0	0	SF 3	0	0
K3-CSB-31		Concrete	0	LMB 4	0	0	0	0	0	0	c	0	0
K3-CSB-32		Concrete	0	0	SMB 2	0	0	0	c	0	c	c	0
K3-CSB-33	Natural	Concrete	0	0	0	0	0	0	c	SF 4	SF 3	SF 4	c
K3-PSB-23	WFD	Plastic		0	LMB 3	LMB 4	0	c	c	SF 3	c	c	0
K3-PSB-22		Plastic		0	0	c	0	0	0	SF 3	0	c	0
K3-PSB-20	WFD	Plastic		0	0	c	0	0	c	c	SF 5	SF 3	c
K3-CSB-42		Concrete	0	0	c	SF 3	SF 4	c	SF 3	c	0	c	0
K3-CSB-41		Concrete	0	0	0	0	0	0	0	0	0	0	0
K3-CSB-40		Concrete	0	0	0	0	0	0	0	SF 3	SF 3	SF 4	0
K3-CSB-39		Concrete	0	0	0	0	c	c	SF 4	SF 2	0	c	c
K3-CSB-38		Concrete	0	LMB 4	0	0	0	0	0	0	0	0	0
K3-CSB-37	WFD	Concrete	c	0	SMB 2	0	c	SF 3	c	0	c	0	0
K3-CSB-36		Concrete	0	SMB 2	0	SMB 4	0	0	0	0	0	0	0
K3-CSB-35.9	WFD		c	SMB 3	SMB 3	SMB 4	0	0	0	0	0	0	0
K3-CSB-35		Concrete	c	0	c	0	0	0	0	0	0	0	0
K3-CSB-34.9	WFD		0	0	c	c	c	c	SF 3	0	SF 3	c	0
K3-CSB-34		Concrete	0	0	LMB 3	LMB 3	0	c	SF 5	0	SF 4	c	SF 3
K3-CSB-33.9	WFD		0	0	0	0	0	0	0	0	0	0	0
K3-PSB-39	WFD	Plastic	0	0	0	0	0	0	0	0	0	0	0
K3-CSB-50		Concrete	0	c	LMB 4	LMB 3	0	0	c	c	c	0	0
K3-CSB-49		Concrete	0	0	0	0	0	0	0	SF 3	0	SF 5	0
K3-CSB-48		Concrete	0	0	0	0	0	0	0	SF 5	SF 3	SF 5	SF 1
K3-CSB-47		Concrete	0	0	0	LMB 4	0	LMB 3	LMB 3	c	0	c	SF 5
K3-CSB-46		Concrete	0	0	0	0	0	c	0	SF 5	0	SF 5	0
K3-PSB-38		Plastic		0	0	0	0	c	c	SF 4	c	SF 3	c
K3-CSB-45		Concrete	0	0	LMB 3	LMB 2	0	0	SF 5	SF 4	SF 3	0	0
K3-CSB-44		Concrete	0	c	0	0	0	0	0	0	0	SF 4	0
K3-CSB-43		Concrete	0	0	c	c	0	0	0	0	0	c	c
K3-PSB-37		Plastic			0	0	0	0	0	0	0	0	0

Table 10 (cont).

Site ID	Laydown	Artificial Spawning Bed	March 30	April 7	April 14	April 20	April 28	May 4	May 11	May 18	May 26	June 2	June 9
K3-PSB-35		Plastic			0	0	0	0	0	0	0	0	0
K3-PSB-36		Plastic			0	0	0	c	0	SF 4	0	0	0
K3-PSB-34		Plastic	0	0	c	c	c	0	c	SF 2	c	SF 4	c
K3-PSB-33.9		Plastic	0	0	0	0	0	0	SF 1	SF 1	SF 4	SF 3	c
K3-PSB-33		Plastic	0	0	c	0	0	0	0	c	SF 4	c	0
K3-PSB-31		Plastic		0	0	0	0	0	0	0	0	0	0
K3-PSB-30		Plastic	0	0	SMB 3	SMB 3	0	0	0	0	SF 3	SF 4	0
K3-PSB-29		Plastic	0	0	c	c	0	0	c	SF 1	c	0	0
K3-PSB-28		Plastic	0	0	0	0	0	0	0	c	0	0	0
K3-PSB-27		Plastic	0	0	0	0	c	c	SF 3	SF 2	c	SF 3	c
K3-PSB-26		Plastic	0	0	0	0	0	0	c	SF 3	0	SF 4	0
K3-PSB-25		Plastic	0	0	LMB 4	0	0	c	SF 3		0	c	0

*Species or species group determined by presence of adult fish or identification of eggs or larvae collected

Table 11. Number of survey sites (includes all styles of spawning habitat) located and the percentage of each spawning activity rating among sites that were located during snorkel surveys in spring of 2023.

	March 30	April 7	April 14	April 20	April 28	May 4	May 11	May 18	May 26	June 2	June 9
# sites located	65	71	75	75	75	75	75	74	75	75	75
Cleaned off (%)	15.4	7.0	24.0	24.0	18.7	25.3	29.3	25.7	26.7	25.3	21.3
1 (%)	0.0	4.2	2.7	1.3	4.0	0.0	1.3	4.1	0.0	0.0	2.7
2 (%)	0.0	2.8	4.0	1.3	0.0	0.0	0.0	4.1	2.7	0.0	1.3
3 (%)	0.0	8.5	9.3	8.0	1.3	4.0	8.0	9.5	12.0	9.3	1.3
4 (%)	0.0	5.6	2.7	10.7	8.0	0.0	2.7	6.8	5.3	10.7	0.0
5 (%)	1.5	2.8	0.0	1.3	0.0	0.0	2.7	6.8	1.3	4.0	1.3
Total (%)	16.9	31.0	42.7	46.7	32.0	29.3	44.0	56.8	48.0	49.3	28.0

Table 12. Number of artificial spawning beds located and the percentage of each spawning activity rating among beds that were located during snorkel surveys in 2023.

	March 30	April 7	April 14	April 20	April 28	May 4	May 11	May 18	May 26	June 2	June 9
# beds located	53	59	63	63	63	63	63	62	63	63	63
Cleaned off (%)	7.6	5.1	15.9	15.9	11.1	20.6	25.4	21.0	22.2	23.8	17.5
1 (%)	0.0	3.4	1.6	1.6	3.2	0.0	0.0	1.6	0.0	0.0	3.2
2 (%)	0.0	1.7	4.8	1.6	0.0	0.0	0.0	1.6	1.6	0.0	0.0
3 (%)	0.0	5.1	4.8	6.4	1.6	3.2	3.2	9.7	9.5	4.8	1.6
4 (%)	0.0	6.8	1.6	7.9	6.4	0.0	1.6	6.5	1.6	4.8	0.0
5 (%)	1.9	1.7	0.0	1.6	0.0	0.0	3.2	6.5	1.6	4.8	1.6
Total (%)	9.4	23.7	28.6	34.9	22.2	23.8	33.3	46.8	36.5	38.1	23.8

Table 13. Percentage of different habitat types that held black bass eggs or fry during at least one snorkel survey in 2020-2023.

	2020	2021	2022	2023
Overall	50.8%	47.1%	39.7%	42.7%
Sites with a bed	54.7%	50.9%	43.4%	38.1%
Beds with a laydown	66.7%	63.2%	44.4%	66.7%
Sites with only a laydown	38.5%	33.3%	26.7%	66.7%
Sites with only a bed	46.9%	44.1%	42.9%	29.2%
Plastic beds	58.3%	52.8%	44.4%	16.7%
Concrete beds	47.1%	47.1%	41.2%	46.7%

Table 14. Estimated hatch dates of Largemouth Bass in Sugar Bay, Blood River, and Johnathan Creek at Kentucky Lake, derived using daily ring counts of juveniles in 2023. "# hatch" represents the time when bass actually hatched on the nest. "# spawned" represents the estimated time when eggs were fertilized. Elevation (mean feet above sea level) and mean daily discharge (cubic feet/second) at Kentucky Dam also provided. Daily mean temperature readings (1 meter below surface) taken at Hancock Biological Station in main channel. Environmental variables were provided by TVA and Murray State University.

Largemouth Bass							Environmental variables		
Sugar Bay		Blood River		Johnathan Creek		Elevation	Discharge (cfs)	Temp. F	
#hatch	#spawned	#hatch	#spawned	#hatch	#spawned				
8-Apr		1				357.56	53350	61.02	
9-Apr		1				357.67	53723	60.98	
10-Apr		1		1		357.58	53885	61.52	
11-Apr	1	3		1		357.59	46278	63.45	
12-Apr	1	6		2		357.59	37119	63.50	
13-Apr	1	4	1			357.66	36479	63.64	
14-Apr	3	5	1	5	1	357.80	28942	63.86	
15-Apr	6	3	2	2		358.00	23536	64.09	
16-Apr	4	4		1	3	357.88	23064	63.81	
17-Apr	5	9	5	10		357.95	20688	63.34	
18-Apr	3	6	2	7	3	358.01	28671	63.54	
19-Apr	4	6	1	6	10	357.99	26091	64.13	
20-Apr	9	3	10	4	6	357.81	25680	64.17	
21-Apr	6	2	7	4	9	358.03	25603	64.49	
22-Apr	6	6	6	5	10	357.88	21063	64.44	
23-Apr	3	4	4	3	6	358.20	17743	64.17	
24-Apr	2	1	4	2	12	358.30	16464	64.04	
25-Apr	6		5	1	4	358.41	28660	64.29	
26-Apr	4	3	3		4	358.39	37198	65.05	
27-Apr	1	2	2	3	3	358.32	44497	64.85	
28-Apr		3	1	4	3	358.63	27919	64.38	
29-Apr	3	1		2		358.79	25023	64.49	
30-Apr	2	2	3	3	3	358.96	24487	63.79	
1-May	3	5	4	4	3	359.01	23582	63.27	
2-May	1	4	2	8	5	359.05	23398	63.10	
3-May	2	4	3	7	2	359.01	23395	63.30	
4-May	5	3	4	5	2	358.91	23133	64.81	
5-May	4	1	8	7	5	359.00	23483	64.02	
6-May	4	2	7		3	359.04	15469	64.13	
7-May	3	1	5	1	1	359.07	14824	65.53	

Table 14 (cont).

	Largemouth Bass						Environmental variables		
	Sugar Bay		Blood River		Johnathan Creek		Elevation	Discharge (cfs)	Temp. F
	#hatch	#spawned	#hatch	#spawned	#hatch	#spawned			
8-May	1	2	7		1	1	359.22	15813	65.98
9-May	2				1		359.24	35312	67.69
10-May	1		1			2	359.40	35980	69.13
11-May	2	1			1		359.53	36604	69.51
12-May		1					359.61	36283	68.86
13-May				1	2	1	359.68	42687	69.22
14-May	1			1			359.71	48233	71.01
15-May	1						359.71	46599	73.35
16-May			1		1		359.40	47299	73.26
17-May			1				359.32	43509	73.81

Table 15. Estimated hatch dates of Smallmouth Bass in Sugar Bay and Blood River at Kentucky Lake, derived using daily ring counts of juveniles in 2023. "# hatch" represents the time when bass actually hatched on the nest. "# spawned" represents the estimated time when eggs were fertilized. Elevation (mean feet above sea level) and mean daily discharge (cubic feet/second) at Kentucky Dam also provided. Temperature readings (1 meter below surface) taken at Hancock Biological Station in main channel. Environmental variables were provided by TVA and Murray State University.

Smallmouth Bass						
Sugar Bay		Blood River		Environmental variables		
#hatch	#spawned	#hatch	#spawned	Elevation	Discharge (cfs)	Temp. F
6-Apr	2		1	355.89	50635	62.13
7-Apr				356.91	51795	61.70
8-Apr	1			357.56	53350	61.02
9-Apr	2	2	1	357.67	53723	60.98
10-Apr		6	1	357.58	53885	61.52
11-Apr	1	6		357.59	46278	63.45
12-Apr	2	6	1	357.59	37119	63.50
13-Apr	6	9	1	357.66	36479	63.64
14-Apr	6	6		357.80	28942	63.86
15-Apr	6	6	1	358.00	23536	64.09
16-Apr	9	5		357.88	23064	63.81
17-Apr	6	7	1	357.95	20688	63.34
18-Apr	6	6	5	358.01	28671	63.54
19-Apr	5	3	2	357.99	26091	64.13
20-Apr	7	4	2	357.81	25680	64.17
21-Apr	6	4	4	358.03	25603	64.49
22-Apr	3	4	3	357.88	21063	64.44
23-Apr	4	3	4	358.20	17743	64.17
24-Apr	4	1	3	358.30	16464	64.04
25-Apr	4	1	6	358.41	28660	64.29
26-Apr	3		7	358.39	37198	65.05
27-Apr	1	2	6	358.32	44497	64.85
28-Apr	1	1	3	358.63	27919	64.38
29-Apr		2	3	358.79	25023	64.49
30-Apr	2	2	5	358.96	24487	63.79
1-May	1	2	1	359.01	23582	63.27
2-May	2	1	1	359.05	23398	63.10
3-May	2		2	359.01	23395	63.30
4-May	2	1	3	358.91	23133	64.81
5-May	1	3	2	359.00	23483	64.02
6-May		1	5	359.04	15469	64.13
7-May	1		3	359.07	14824	65.53
8-May	3		2	359.22	15813	65.98
9-May	1		5	359.24	35312	67.69
10-May		1	3	359.40	35980	69.13
11-May			2	359.53	36604	69.51
12-May		1	5	359.61	36283	68.86
13-May	1		4	359.68	42687	69.22
14-May			2	359.71	48233	71.01
15-May	1		2	359.71	46599	73.35

Table 16. Species composition, relative abundance, and CPUE (fish/nn) with standard error (SE) of crappie collected by trap nets fished during 118 net-nights of effort at three embayments of Kentucky Lake during October-November 2023. The Sub-Total is used for historical comparison and excludes the data for an embayment which historically had not been sampled. White Bass, Yellow Bass, and Redear Sunfish were also collected this year.

Area	Species	Inch class												Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13				14
Blood River	White Crappie	6	17	7		1	6	13	1		1	1			53	1.4	0.3
	Black Crappie	11	3	1	2	11	22	6	6	5	7	5	1	1	81	2.1	0.4
	White Bass			1	1	1				1			1		5	0.1	0.1
	Yellow Bass	1	3	2	41	44	69	39	37	9	1				246	6.5	1.6
	Redear Sunfish	3	17	2	9	3	5	4	1						44	1.2	0.3
Jonathan Cr.	White Crappie	4	11	4	5	11	31	42	14	19	12	2	2		157	3.9	0.5
	Black Crappie	12	15	4	22	71	52	46	41	6	8	5	2		284	7.1	0.9
	White Bass				1	1	2	2	1		1				8	0.2	0.1
	Yellow Bass		3	8	26	35	49	43	28	3	1				196	4.9	1.0
	Redear Sunfish	7	56	2	7	18	12	8	11	2					123	3.1	0.8
	Blacknose Crappie							1							1	<0.1	<0.1
Sub-Total	White Crappie	10	28	11	5	12	37	55	15	19	13	3	2		210	2.7	0.3
	Black Crappie	23	18	5	24	82	74	52	47	11	15	10	3	1	365	4.7	0.6
	White Bass			2	2	3	2	1		2			1		13	0.2	0.1
	Yellow Bass	1	6	10	67	79	118	82	65	12	2				442	5.7	1.0
	Redear Sunfish	10	73	4	16	21	17	12	12	2					167	2.1	0.4
Sledd Creek	White Crappie	3	4							2	1				10	0.3	0.2
	Black Crappie	5	14	4		1	8	11	5	2	7				57	1.4	0.3
	White Bass																0.0
	Yellow Bass			8	16	42	128	38	28	9	1				270	6.8	0.7
	Redear Sunfish		2				2	7	5						16	0.4	0.2
TOTAL	White Crappie	13	32	11	5	12	37	55	15	21	14	3	2		220	1.9	0.2
	Black Crappie	28	32	9	24	83	82	63	52	13	22	10	3	1	422	3.6	0.4
	White Bass			2	2	3	2	1		2			1		13	0.1	<0.1
	Yellow Bass	1	6	18	83	121	246	120	93	21	3				712	6.0	0.8
	Redear Sunfish	10	75	4	16	21	19	19	17	2					183	1.6	0.3

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Table 17. Crappie population parameters used to manage the population at Kentucky Lake, with values determined from fall trap netting at Blood River and Jonathan Creek.

Year	Total CPUE			CPUE (fish/nn)			Mean length (in) age 2 at capture						CPUE (fish/nn)			CPUE (fish/nn)			CPUE (fish/nn)		
	(fish/nn) excluding			age 0									>8.0 in			age 1			>10.0 in		
	age 0			age 0																	
	WC	BC	Crappie	WC	BC	Crappie	WC	*WC	BC	*BC	Crappie	*Crappie	WC	BC	Crappie	WC	BC	Crappie	WC	BC	Crappie
2023	2.1	4.1	6.2	0.6	0.6	1.2	10.9		8.9		9.5	1.4	1.8	3.2	1.6	2.6	4.2	0.5	0.5	1.0	
2022	1.7	3.3	4.9	3.1	1.9	5.0	10.4	11.0	8.3	8.4	8.6	8.7	0.4	1.2	1.6	1.5	1.9	3.4	0.2	0.7	0.9
2021	2.3	2.6	4.9	5.1	1	6.1	9.6	9.5	8.4	8.4	9	8.8	1.1	1.8	2.9	1.2	0.3	1.50	0.5	0.5	1.1
2020	3.6	6.0	9.5	1.2	0.5	1.7	10.4	10.3	9.4	9.6	9.8	9.8	1.0	1.7	2.7	3.2	4.5	7.7	0.3	1.1	1.4
2019	3.5	6.7	10.2	4.4	4.6	9.0	9.1	9.1	7.9	8.5	8.0	8.5	1.5	5.0	6.6	2.0	1.4	3.4	1.2	1.9	3.0
2018	2.8	5.6	8.4	1.4	1.7	3.1	10.7	10.6	9.5	9.5	9.9	9.8	2.2	4.3	6.5	0.7	0.9	1.6	1.5	1.2	2.6
2017	3.6	9.6	13.1	0.4	0.7	1.1	9.6	9.5	8.2	8.3	8.9	8.7	3.4	7.3	10.6	0.3	1.2	1.5	1.1	1.2	2.4
2016	1.7	6.3	8.0	0.2	0.7	0.9	10.0	9.8	9.3	8.6	9.7	8.9	1.4	3.8	5.3	0.8	2.1	2.9	0.5	0.9	1.4
2015	7.7	15.0	22.7	2.2	2.1	4.3	9.7	9.4	8.8	8.0	9.2	8.4	4.4	4.9	9.3	4.1	5.8	9.9	1.2	0.5	1.7
2014	3.6	6.7	10.3	1.7	1.2	2.9	10.3	10.1	8.8	8.0	9.7	8.8	1.7	2.3	3.9	2.4	4.3	6.7	1.2	1.1	2.3
Average	3.2	6.6	9.8	2.0	1.5	3.5	10.0	10.0	8.7	8.6	9.2	9.0	1.8	3.4	5.3	1.8	2.5	4.3	0.8	1.0	1.8
KLFMP	≥ 20.0			≥ 8.0			≥ 9.5 in						≥ 10.0			≥ 10.0			≥ 4.0		

*Mean length calculated using a weighted average applied to the entire fall trapnet sample

Data from 1985 to 2013 is listed in previous annual reports.

KLFMP - Kentucky Lake Fish Management Plan objective goal.

Kentucky Lake Crappie Database

Table 18. Lake specific assessment for crappie collected at Kentucky Lake (Blood River and Jonathan Creek) from 2013-2022. This table includes the individual scores for each parameter, as well as the total scores and assessment ratings. The final columns list the instantaneous mortality (Z) and annual mortality (A).

Year	CPUE age 1 and older	CPUE age 1	CPUE age 0	CPUE ≥8.0 in	Mean length age 2 at capture	*Mean length age 2 at capture	Total score	Assessment rating	Instantaneous Mortality (Z)	Annual Mortality (A)
2023	6.2	4.2	1.2	3.2	9.5	9.5	6	P	0.403	59
Score	1	1	1	1	2					
2022	4.9	3.4	5.0	1.6	8.6	8.7	7	P	0.939	60.9
Score	1	1	3	1	1					
2021	4.9	1.5	6.1	2.9	9.4	8.8	9	F	0.701	50.4
Score	1	1	4	1	1					
2020	9.5	7.7	1.7	2.7	10.4	9.8	8	F		
Score	1	2	1	1	3					
2019	10.2	3.4	9.0	6.6	8.0	8.5	9	F	0.643	47.4
Score	1	1	4	2	1					
2018	8.4	1.6	3.1	6.5	9.9	9.8	9	F	0.504	39.6
Score	1	1	2	2	3					
2017	13.1	1.5	1.1	10.6	8.9	8.7	9	F	0.805	55.3
Score	1	1	1	3	1					
2016	8.0	2.9	0.9	5.3	9.7	8.9	7	P	1.072	65.8
Score	1	1	1	1	2					
2015	22.7	9.9	4.3	9.3	9.2	8.4	6	P	0.925	60.3
Score	4	3	3	3	1					
2014	10.5	6.7	2.9	3.9	9.7	8.8	14	G	0.910	59.7
Score	1	1	2	1	2					
2013	9.9	2.3	5.5	8.7	9.4	9.5	7	P	0.657	48.2
Score	1	1	3	2	1					
Average	10.2	4.1	4.0	5.8	9.3	9.0	8	P	0.8	54.2

*Mean length calculated using a weighted average applied to the entire fall trapnet sample

Rating

1 - 7 = Poor (P)

8 - 12 = Fair (F)

13 - 17 = Good (G)

18 - 20 = Excellent (E)

Assessment Quartiles updated in 2016.

Kentucky Lake Crappie Database

Table 19. Proportional stock density (PSD) and relative stock density (RSD₁₀) of White and Black crappie collected with trap nets (118 net-nights) at Kentucky Lake (Blood River, Jonathan Creek and Sledd Creek) during October and November 2023. 95% confidence intervals are shown in parentheses.

Location	Species	≥ 5.0 in	PSD	RSD ₁₀
Blood River	White Crappie	23	70 (± 20)	9 (± 11)
	Black Crappie	66	47 (± 12)	29 (± 11)
Jonathan Creek	White Crappie	138	66 (± 7)	25 (± 7)
	Black Crappie	253	43 (± 9)	8 (± 3)
Sub Total	White Crappie	161	66 (± 6)	23 (± 5)
	Black Crappie	319	44 (± 6)	13 (± 4)
Sledd Creek	White Crappie	3		
	Black Crappie	34	74 (± 14)	26 (± 15)
Total	White Crappie	164	67 (± 7)	23 (± 6)
	Black Crappie	353	46 (± 5)	14 (± 4)

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Table 20. Number of fish and mean relative weight (W_r) values for each length group of Black and White crappie collected at Kentucky Lake during trapnetting in October and November 2023. Standard errors provided in parentheses

Species	Area	Length group					
		5.0-7.9 in		8.0-9.9 in		>10.0 in	
		No.	W_r	No.	W_r	No.	W_r
White Crappie	Blood River	7	97 (2)	14	99 (2)	2	101 (4)
	Jonathan Creek	47	92 (1)	56	99 (1)	35	103 (2)
	Sledd Creek	0		2	102 (1)	1	107 (0)
	Total	54	93 (1)	72	99 (1)	38	103 (1)

Species	Area	Length group					
		5.0-7.9 in		8.0-9.9 in		>10.0 in	
		No.	W_r	No.	W_r	No.	W_r
Black Crappie	Blood River	35	96 (1)	12	97 (1)	19	91 (2)
	Jonathan Creek	144	89 (1)	87	93 (1)	21	90 (1)
	Sledd Creek	9	88 (4)	16	93 (1)	9	93 (1)
	Total	188	91 (1)	115	94 (1)	49	91 (1)

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Table 21. Mean back-calculated length (in) at each annulus of White Crappie from an aged subsample, including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Kentucky Lake (Blood River, Jonathan Creek) in fall 2023.

Year class	N	Age								
		1	2	3	4	5	6	7	8	9
2022	65	4.0								
2021	29	4.4	8.1							
2019	1	4.0	7.7	10.9	11.9					
2015	1	4.4	7.4	8.7	9.6	10.4	11.8	12.4	13.1	
2014	1	3.9	6.4	7.5	8.6	9.5	10.3	11.7	12.5	13.3
Mean	97	4.1	8.0	9.0	10.0	10.0	11.1	12.1	12.8	13.3
Smallest		2.8	6.2	7.5	8.6	9.5	10.3	11.7	12.5	13.3
Largest		8.5	10.6	10.9	11.9	10.4	11.8	12.4	13.1	13.3
SE		0.1	0.2	1.0	1.0	0.5	0.8	0.4	0.3	
Low 95% CI		4.0	7.6	7.1	8.1	9.1	9.6	11.4	12.2	
High 95% CI		4.3	8.4	11.0	11.9	10.9	12.6	12.8	13.4	

* Intercept = 0.

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Table 22. Mean back-calculated length (in) at each annulus of MALE White Crappie from an aged subsample including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Kentucky Lake (Blood River, Jonathan Creek) in fall 2023.

Year class	N	Age								
		1	2	3	4	5	6	7	8	9
2022	30	4.3								
2021	20	4.3	8.0							
2019	1	4.0	7.7	10.9	11.9					
2014	1	3.9	6.4	7.5	8.6	9.5	10.3	11.7	12.5	13.3
Mean	52	4.3	7.9	9.2	10.2	9.5	10.3	11.7	12.5	13.3
Smallest		3.0	6.2	7.5	8.6	9.5	10.3	11.7	12.5	13.3
Largest		8.5	9.9	10.9	11.9	9.5	10.3	11.7	12.5	13.3
SE		0.1	0.3	1.7	1.6					
Low 95% CI		4.0	7.4	5.9	7.0					
High 95% CI		4.5	8.5	12.5	13.5					

* Intercept = 0.

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Table 23. Mean back-calculated length (in) at each annulus of FEMALE White Crappie from an aged subsample including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Kentucky Lake (Blood River, Jonathan Creek) in fall 2023.

Year class	N	Age							
		1	2	3	4	5	6	7	8
2022	23	4.0							
2021	9	4.5	8.3						
2015	1	4.4	7.4	8.7	9.6	10.4	11.8	12.4	13.1
Mean	33	4.1	8.2	8.7	9.6	10.4	11.8	12.4	13.1
Smallest		3.0	7.0	8.7	9.6	10.4	11.8	12.4	13.1
Largest		6.2	10.6	8.7	9.6	10.4	11.8	12.4	13.1
SE		0.1	0.3						
Low 95% CI		3.9	7.6						
High 95% CI		4.4	8.9						

* Intercept = 0.

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Table 24. Mean back-calculated length (in) at each annulus of Black Crappie from an aged subsample, including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Kentucky Lake (Blood River, Jonathan Creek) in fall 2023.

Year class	N	Age								
		1	2	3	4	5	6	7	8	9
2022	64	3.7								
2021	36	4.0	6.7							
2020	4	3.7	6.8	9.2						
2019	19	4.0	7.2	9.1	10.6					
2018	2	4.0	7.0	9.5	10.9	11.9				
2017	1	4.0	6.7	8.8	10.2	11.5	12.0			
2015	1	3.7	5.0	6.6	7.7	8.6	9.3	10.0	10.9	
2014	3	3.9	6.5	8.2	9.2	10.1	11.0	11.8	12.6	13.2
Mean	138	3.8	6.8	8.9	10.3	10.6	10.9	11.4	12.2	13.2
Smallest		2.6	5.0	6.6	7.7	8.6	9.3	10.0	10.9	12.6
Largest		8.1	8.9	11.5	12.8	12.5	12.0	12.0	13.0	13.5
SE		0.1	0.1	0.2	0.2	0.5	0.4	0.5	0.4	0.3
Low 95% CI		3.7	6.6	8.6	9.9	9.7	10.0	10.4	11.3	12.6
High 95% CI		3.9	7.0	9.3	10.8	11.6	11.7	12.3	13.1	13.8

* Intercept = 0.

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Table 25. Mean back-calculated length (in) at each annulus of MALE Black Crappie from an aged subsample including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Kentucky Lake (Blood River, Jonathan Creek) in fall 2023.

Year class	N	Age					
		1	2	3	4	5	6
2022	16	4.0					
2021	12	4.1	6.9				
2020	2	3.5	6.7	8.8			
2019	8	4.1	7.7	9.9	11.2		
2018	1	3.8	6.9	9.7	11.3	12.5	
2017	1	4.0	6.7	8.8	10.2	11.5	12.0
Mean	40	4.0	7.2	9.6	11.1	12.0	12.0
Smallest		3.0	5.4	8.3	10.1	11.5	12.0
Largest		8.1	8.9	11.5	12.8	12.5	12.0
SE		0.1	0.2	0.2	0.3	0.5	
Low 95% CI		3.7	6.8	9.1	10.6	10.9	
High 95% CI		4.3	7.5	10.1	11.7	13.1	

* Intercept = 0.

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Table 26. Mean back-calculated length (in) at each annulus of FEMALE Black Crappie from an aged subsample including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Kentucky Lake (Blood River, Jonathan Creek) in fall 2023.

Year class	N	Age								
		1	2	3	4	5	6	7	8	9
2022	25	3.9								
2021	24	3.9	6.7							
2020	2	3.9	6.9	9.5						
2019	11	3.9	6.8	8.5	10.2					
2018	1	4.2	7.0	9.3	10.5	11.3				
2015	1	3.7	5.0	6.6	7.7	8.6	9.3	10.0	10.9	
2014	3	3.9	6.5	8.2	9.2	10.1	11.0	11.8	12.6	13.2
Mean	67	3.9	6.7	8.5	9.8	10.1	10.6	11.4	12.2	13.2
Smallest		2.6	5.0	6.6	7.7	8.6	9.3	10.0	10.9	12.6
Largest		5.8	8.5	9.7	11.6	11.3	11.2	12.0	13.0	13.5
SE		0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.4	0.3
Low 95% CI		3.8	6.4	8.1	9.3	9.2	9.2	10.4	11.3	12.6
High 95% CI		4.0	6.9	8.9	10.4	10.9	10.9	12.3	13.1	13.8

* Intercept = 0.

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Table 27. Mean length (in) at capture and standard error (SE) of Black and White crappie. Otoliths were collected from Kentucky Lake (Blood River, Jonathan Creek) in fall 2023.

Species	N	Mean length at capture																Von Bertalanffy growth parameters				
		1		2		3		4		5		6		7		8		9		L _{inf} (in)	K	t ₀
Crappie spp.	576	7.4	0.1	9.5	0.1	11.0	0.3	12.0	0.2	13.0	0.5	12.5				12.5	1.0	13.5	0.4	13.22	0.509	0.215
Black Crappie	366	7.0	0.1	8.9	0.1	11.0	0.3	12.0	0.2	13.0	0.5	12.5				11.5		13.5	0.6	12.88	0.576	0.499
White Crappie	210	8.1	0.1	10.9	0.1			12.5								13.5		13.5		13.48	0.657	0.384

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Table 28. Age frequency and CPUE (fish/nn) of White Crappie collected in trap nets fished for 78 net-nights in Kentucky Lake (Blood River and Jonathan Creek) during October and November 2023.

Age	Inch class												Total	%	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13				
0	10	28	10	1									49	23	0.6	0.2
1			1	4	12	37	55	14	1	2			126	60	1.6	0.2
2								2	18	11	2		33	16	0.4	0.1
3													0	0		
4											1		1	0	<0.1	<0.1
5													0	0		
6													0	0		
7													0	0		
8												1	1	0	<0.1	<0.1
9												1	1	0	<0.1	<0.1
Total	10	28	11	5	12	37	55	16	19	13	3	2	211		2.7	
%	5	13	5	2	6	18	26	8	9	6	1	1				

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Table 29. Age frequency and CPUE (fish/nn) of Black Crappie collected in trap nets fished for 78 net-nights in Kentucky Lake (Blood River and Jonathan Creek) during October and November 2023.

Age	Inch class													Total	%	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	13	14					
0	23	18	3												44	12	0.6	0.1
1			3	24	82	66	9	12	2	1					199	54	2.6	0.3
2						8	43	35	5	1					92	25	1.2	0.2
3									2	2					4	1	0.1	<0.1
4									2	9	7	2			20	5	0.3	0.1
5											1	1			2	1	<0.1	<0.1
6											1				1	<1	<0.1	<0.1
7															0	0		
8									1						1	<1	<0.1	<0.1
9											1	1	1		3	1	<0.1	<0.1
Total	23	18	6	24	82	74	52	47	11	14	10	4	1	366		4.7		
%	6	5	2	7	22	20	14	13	3	4	3	1	<1					

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Table 30. Length frequency, density (fish/1000M³), median density, and geometric mean density (standard error given in parentheses) of each 0.5 mm class of crappie collected during nocturnal neustonic tow net sampling (66 tows) at 6 sample sites in the Jonathan Creek embayment of Kentucky Lake from March 30 - June 9, 2023. See Appendix A for sample site locations.

Date	Location	mm class											*CPUE	*Geometric				
		5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10		10.5	11	11.5	*Median	Mean
3/30/2023	JC002															0.0	0.0	0.0
	JC003															0.0		
	JC004															0.0		
	JC006															0.0		
	JC007															0.0		
	JC005															0.0		
4/6/2023	JC002															0.0	0.0	0.0
	JC003															0.0		
	JC004															0.0		
	JC006															0.0		
	JC007															0.0		
	JC005															0.0		
4/14/2023	JC002															0.0	0.0	0.0
	JC003															0.0		
	JC004															0.0		
	JC006															0.0		
	JC007															0.0		
	JC005															0.0		
4/20/2023	JC002															0.0	0.0	0.0
	JC003															0.0		
	JC004															0.0		
	JC006															0.0		
	JC007															0.0		
	JC005															0.0		
4/28/2023	JC002															0.0	0.0	1.65 (1.80)
	JC003							3.6								3.6		
	JC004															0.0		
	JC006															0.0		
	JC007															0.0		
	JC005										3.4					3.4		
5/4/2023	JC002															0.0	0.0	1.30 (1.53)
	JC003															0.0		
	JC004															0.0		
	JC006										3.8					3.8		
	JC007															0.0		
	JC005															0.0		
5/10/2023	JC002															0.0	6.5	5.55 (14.05)
	JC003															0.0		
	JC004										3.7					3.7		
	JC006										3.6					7.3		
	JC007									3.9	3.9	3.9	7.9	3.9	3.9	35.5		
	JC005									4	4		12			19.9		
5/18/2023	JC002															0.0	5.3	4.12 (11.50)
	JC003															0.0		
	JC004							4.2				4.2				16.7		
	JC006					8.6										8.6		
	JC007															0.0		
	JC005							9.3		4.7	4.7			9.3		28.0		
5/26/2023	JC002															0.0	3.0	2.49 (3.41)
	JC003							4								4.0		
	JC004															0.0		
	JC006							4.1								4.1		
	JC007															0.0		
	JC005												4.2			8.4		

Table 30 (cont).

Date	Location	mm class											*CPUE	*Median	*Geometric			
		5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10			10.5	11	11.5	Mean
6/2/2023	JC002															0.0	0.0	0.00
	JC003															0.0		
	JC004															0.0		
	JC006															0.0		
	JC007															0.0		
	JC005															0.0		
6/9/2023	JC002															0.0	0.0	1.94 (4.24)
	JC003															0.0		
	JC004										3.5	3.5				10.5		
	JC006															0.0		
	JC007							3.6								3.6		
	JC005															0.0		

*includes all lengths of yoy crappie collected

Table 31. Geometric mean density (#/1000m³) for pelagic larval fish captured in neuston tow nets from March 30 - June 9, 2023 (six tows per sample night). Standard errors given in parentheses. Temperature (°F) and water elevation (feet above sea level) also provided.

Day	Geometric mean (standard error)				Temp	Elevation	
	Pomoxis spp.		Clupeid spp.	Lepomis spp.			Atherinid spp.
	7.0-12.0 mm	Total catch	Total catch	Total catch			Total catch
3/30/2023	0.00	0.00	0.00	0.00	0.00	57.1	355.9
4/6/2023	0.00	0.00	0.00	0.00	0.00	60.3	356.2
4/14/2023	0.00	0.00	0.00	0.00	0.00	63.5	357.8
4/20/2023	0.00	0.00	3.22 (6.30)	0.00	0.00	65.2	358.1
4/28/2023	1.65 (1.80)	1.65 (1.80)	5.01 (4.01)	0.00	0.00	62.5	358.4
5/4/2023	1.30 (1.53)	1.30 (1.53)	27.69 (23.58)	0.00	1.28 (1.40)	62.5	359.0
5/10/2023	5.04 (14.32)	5.55 (14.05)	62.94 (55.30)	0.00	0.00	69.5	359.3
5/18/2023	3.94 (11.05)	4.12 (11.50)	282.00 (1443.05)	2.29 (2.34)	5.33 (16.41)	73.2	359.2
5/26/2023	2.25 (2.23)	2.49 (3.41)	883.23 (1123.95)	19.44 (27.80)	161.46 (175.38)	72.0	360.0
6/2/2023	0.00	0.00	2191.54 (6639.76)	69.96 (63.18)	2716.54 (2811.78)	80.7	359.3
6/9/2023	1.83 (2.94)	1.94 (4.24)	1792.95 (7117.65)	9.71 (11.49)	663.14 (1055.91)	76.6	359.2

Table 32. Peak geometric mean density (#/1000m³) and standard errors (SE) for pelagic larval crappie captured in neuston tow nets at the Jonathan Creek embayment of Kentucky Lake from 2015-2023. Catch rates of age-0 crappie (fish/net-night) in fall trapnets and age-1 crappie from the following year from Kentucky Lake also reported.

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Date	May 12	May 19	May 19	May 19	May 20	April 21	June 3	May 26	May 10
Peak density	70.5	3.9	32.0	27.7	150.2	15.1	84.8	84.8	5.6
SE	27.2	1.4	20.3	35.1	161.3	3.5	77.4	95.8	14.1
Catch age 0	4.3	0.9	1.1	3.1	9.0	1.7	6.1	5.0	1.2
Catch age 1	2.9	1.5	1.6	3.4	7.7	1.5	3.4	4.2	

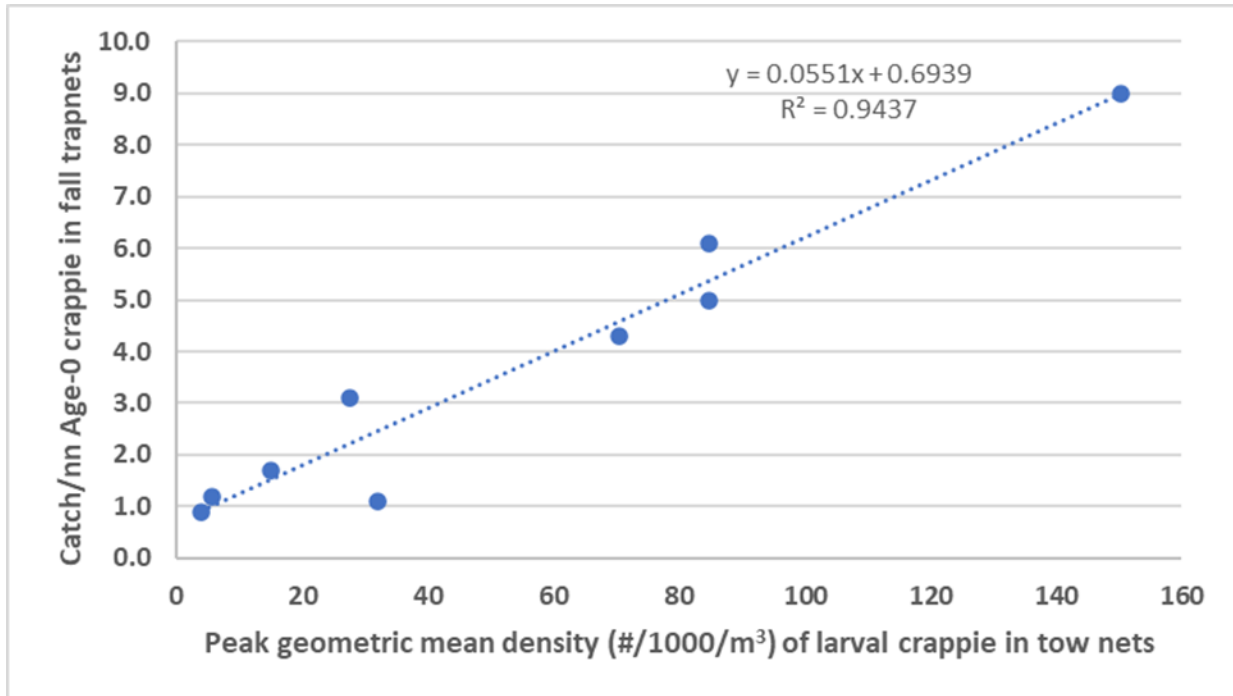


Figure 1. Peak geometric mean density (#/1000m³) of pelagic larval crappie captured in neuston tow nets at Jonathan Creek, Kentucky Lake from 2015-2023 plotted against the catch rates of age-0 crappie (fish/net-night) in fall trapnets from Kentucky Lake in both Jonathan Creek and Blood River. Line of best fit shown.

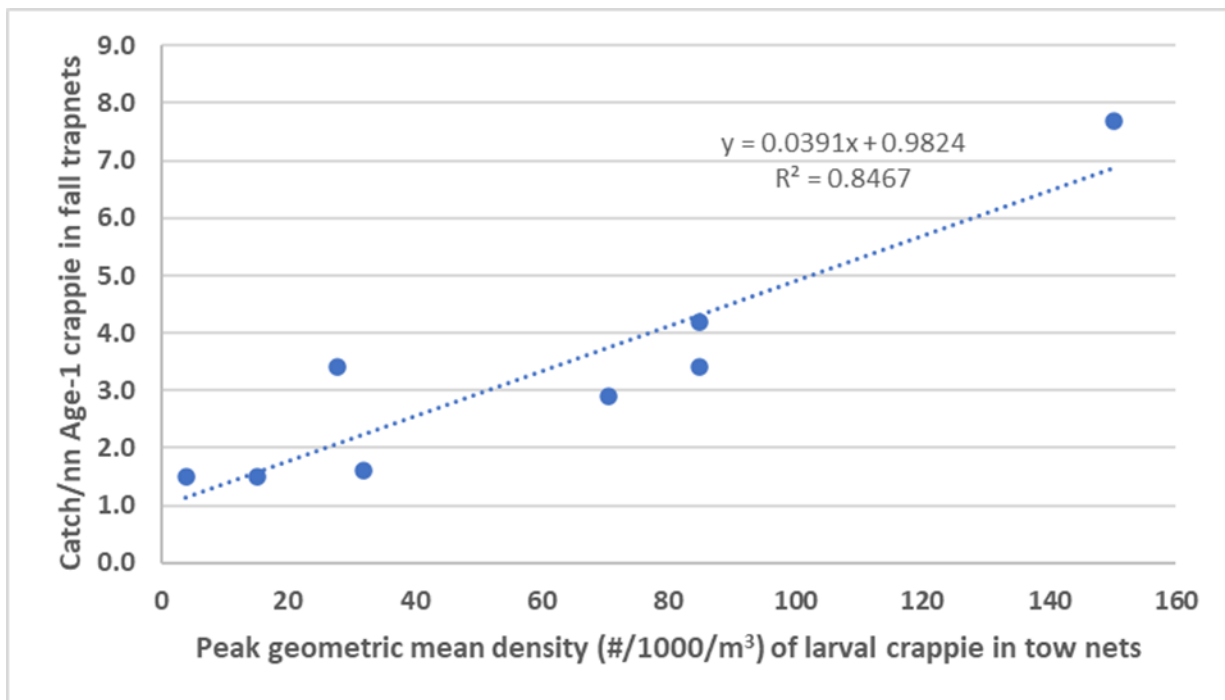


Figure 2. Peak geometric mean density (#/1000m³) of pelagic larval crappie captured in neuston tow nets at Jonathan Creek, Kentucky Lake from 2015-2022 plotted against the catch rates of age-1 crappie (fish/net-night) in fall trapnets from Kentucky Lake in both Jonathan Creek and Blood River from following year. Line of best fit shown.

Table 33. Estimated crappie hatch dates in Jonathan Creek, derived using larval fish lengths back calculated using a growth rate derived from the daily ring counts of juveniles in 2023. Hatch dates from Jonathan Creek and Blood River derived solely from daily ring counts of juveniles are also provided. "# hatch" represents the time when crappie actually hatched on the nest. "#spawned" represents the estimated time when crappie eggs were fertilized. Elevation (mean feet above sea level) and mean daily discharge (cubic feet/second) at Kentucky Dam also provided. Temperature readings (1 meter below surface) taken at Hancock Biological Station in main channel. Environmental variables were provided by TVA and Murray State University.

	Jonathan Creek		Blood River		Environmental variables				
	Back calculated estimate larval crappie	Back calculated estimate larval crappie	Juvenile daily ring count	Juvenile daily ring count	Juvenile daily ring count	Juvenile daily ring count	Elevation	Discharge (cfs)	Temp. F
	# hatch / 1000m ³	# spawned / 1000m ³	# hatch	# spawned	# hatch	# spawned			
14-Apr		1.28					357.80	28942	63.86
15-Apr		1.29					358.00	23536	64.09
16-Apr							357.88	23064	63.81
17-Apr	1.28					1	357.95	20688	63.34
18-Apr	1.29						358.01	28671	63.54
19-Apr						1	357.99	26091	64.13
20-Apr		1.30			1	3	357.81	25680	64.17
21-Apr						1	358.03	25603	64.49
22-Apr					1	8	357.88	21063	64.44
23-Apr	1.30	1.44		1	3	1	358.20	17743	64.17
24-Apr		3.30		1	1	9	358.30	16464	64.04
25-Apr		1.44		1	8	6	358.41	28660	64.29
26-Apr	1.44	4.55	1	2	1	8	358.39	37198	65.05
27-Apr	3.30	1.31	1	2	9	7	358.32	44497	64.85
28-Apr	1.44		1	1	6	9	358.63	27919	64.38
29-Apr	4.55		2	2	8	6	358.79	25023	64.49
30-Apr	1.31		2		7	3	358.96	24487	63.79
1-May		1.31	1	5	9	8	359.01	23582	63.27
2-May		1.48	2	1	6	3	359.05	23398	63.10
3-May				5	3	9	359.01	23395	63.30
4-May	1.31	1.31	5	2	8	4	358.91	23133	64.81
5-May	1.48	2.67	1	5	3	2	359.00	23483	64.02
6-May		1.31	5	8	9	3	359.04	15469	64.13
7-May	1.31	2.93	2	6	4	2	359.07	14824	65.53
8-May	2.67		5	7	2	2	359.22	15813	65.98
9-May	1.31		8	8	3		359.24	35312	67.69
10-May	2.93		6	5	2	1	359.40	35980	69.13
11-May			7	3	2	3	359.53	36604	69.51
12-May		1.32	8	11			359.61	36283	68.86
13-May			5	4	1		359.68	42687	69.22
14-May		1.31	3	7	3		359.71	48233	71.01
15-May	1.32	1.31	11	3			359.71	46599	73.35

Table 33 (cont).

	Jonathan Creek				Blood River		Environmental variables		
	Back calculated estimate larval crappie	Back calculated estimate larval crappie	Juvenile daily ring count	Juvenile daily ring count	Juvenile daily ring count	Juvenile daily ring count	Elevation	Discharge (cfs)	Temp. F
	# hatch / 1000m ³	# spawned / 1000m ³	# hatch	# spawned	# hatch	# spawned			
16-May			4	1			359.40	47299	73.26
17-May	1.31		7	3			359.32	43509	73.81
18-May	1.31		3				359.26	44424	75.27
19-May			1				359.24	45979	73.94
20-May			3				359.38	42035	73.72
21-May							359.38	33021	73.89
22-May				1			359.43	33624	74.46
23-May							359.58	33375	75.79
24-May		1.28		1			359.63	33805	76.26
25-May		1.28	1				359.53	36629	77.14
26-May							359.51	36126	75.58
27-May	1.28		1				359.49	25656	75.81
28-May	1.28	1.29					359.51	25777	76.12
29-May							359.42	25276	76.68
30-May							359.33	25060	78.04
31-May	1.29						359.26	22889	78.94

Table 34. Estimated hatch dates of Black and White crappie in Jonathan Creek and Blood River, derived using daily ring counts of juveniles in 2023. "# hatch" represents the time when crappie actually hatched on the nest. Elevation (mean feet above sea level) and mean daily discharge (cubic feet/second) at Kentucky Dam also provided. Temperature readings (1 meter below surface) taken at Hancock Biological Station in main channel. Environmental variables were provided by TVA and Murray State University.

	Jonathan Creek		Blood River		Environmental variables		
	White Crappie #hatch	Black Crappie #hatch	White Crappie #hatch	Black Crappie #hatch	Elevation	Discharge (cfs)	Temp. F
20-Apr			1		357.81	25680	64.17
21-Apr					358.03	25603	64.49
22-Apr			1		357.88	21063	64.44
23-Apr			3		358.20	17743	64.17
24-Apr			1		358.30	16464	64.04
25-Apr			6	2	358.41	28660	64.29
26-Apr		1	1		358.39	37198	65.05
27-Apr	1		8	1	358.32	44497	64.85
28-Apr	1		6		358.63	27919	64.38
29-Apr	2		8		358.79	25023	64.49
30-Apr	1	1	7		358.96	24487	63.79
1-May	1		6	3	359.01	23582	63.27
2-May	2		6		359.05	23398	63.10
3-May			3		359.01	23395	63.30
4-May	3	2	7	1	358.91	23133	64.81
5-May	1		2	1	359.00	23483	64.02
6-May	3	2	8	1	359.04	15469	64.13
7-May	1	1	2	2	359.07	14824	65.53
8-May	4	1	1	1	359.22	15813	65.98
9-May	6	2	2	1	359.24	35312	67.69
10-May	6		1	1	359.40	35980	69.13
11-May	6	1	1	1	359.53	36604	69.51
12-May	8				359.61	36283	68.86
13-May	5		1		359.68	42687	69.22
14-May	3		2	1	359.71	48233	71.01
15-May	11				359.71	46599	73.35
16-May	4				359.40	47299	73.26
17-May	6	1			359.32	43509	73.81
18-May	3				359.26	44424	75.27
19-May	1				359.24	45979	73.94
20-May	3				359.38	42035	73.72
21-May					359.38	33021	73.89
22-May					359.43	33624	74.46
23-May					359.58	33375	75.79
24-May					359.63	33805	76.26
25-May	1				359.53	36629	77.14
26-May					359.51	36126	75.58
27-May	1				359.49	25656	75.81

Table 35. Length frequency and CPUE (fish/hr) of Channel, Blue, and Flathead catfish collected from Kentucky Lake in June and July 2023 using low pulse (15 PPS) electrofishing along the main river channel. A chase boat was used. A total of 5.0 hours of sampling consisting of 60- 300-second runs.

Species	Inch class																				Total	CPUE	SE					
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26				27	29	30	33	37
Blue Catfish				4	11	27	8		1	1		2	2	2	2	1	1		2	1		1	1	1	2	70	14.5	3.2
Channel Catfish	1	1			1	1		1	1																	6	1.2	0.5
Flathead Catfish	1	1	1	3	3	4	1	1	2		5	2	3		2	1	1	2	2	1	2				1	39	8.1	1.4

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Table 36. Mean relative weight (W_r) values for each length group of Blue, Channel, and Flathead catfish collected from Kentucky Lake during June and July 2023. Fish were collected using low pulse (15 PPS) electrofishing. Standard errors are in parentheses.

Species	Length group							
	12.0-19.9 in		20.0-29.9 in		≥ 30.0 in		Total	
	N	W_r	N	W_r	N	W_r	N	W_r
Blue Catfish	36	124 (2)	9	108 (3)	4	120 (5)	49	120 (2)

Flathead Catfish	Length group							
	12.0-19.9 in		20.0-29.9 in		≥ 30.0 in		Total	
	N	W_r	N	W_r	N	W_r	N	W_r
	12	103 (3)	11	108 (3)	1	109	25	105 (2)

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Table 37. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 10.0 hours (20- 30-minute runs) of diurnal electrofishing at Lake Barkley in April 2023 at standard spring locations (Sub-Total). The Taylor Bay/Jake Fork area is saturated with experimental bass habitat, so that 2.5 hour sample is presented seperately.

Area	Species	Inch class																			Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Lower																								
Donaldson Cr.	Smallmouth Bass			1	1	1					3	1		1							8	8.0	4.0	
	Spotted Bass			2	1	1															4	4.0	4.0	
	Largemouth Bass	2	3	1	2	8	7	13	4	5	3	2	2	4	2	2	1			3	64	64.0	20.0	
Fords	Spotted Bass		1																		1	0.7	0.7	
	Largemouth Bass	7	7	2	4	6	4	7	4	4	3	2	5	8	7	2	1			1	74	49.3	5.8	
Middle																								
Eddy Cr.	Smallmouth Bass		1	2		1					2	1		1							8	3.2	1.9	
	Spotted Bass			1						1											2	0.8	0.8	
	Largemouth Bass	4	26	7	2	2	3	10	2	4	21	28	32	29	13	6	7	2	2	2	202	80.8	4.8	
Little River	Smallmouth Bass	1	7	2	2			2	1	2	1		2								20	8.0	1.3	
	Spotted Bass		1	1						1	1	1									5	2.0	1.6	
	Largemouth Bass	9	6	4	2	9	10	4	2	5	8	6	5	5	4	4	5	5	3		96	38.4	3.8	
Upper																								
Nickell Cr.	Smallmouth Bass			2	2	1		1	1	1	1				2						11	11.0	11.0	
	Largemouth Bass	5	4	6	1	3	3	1		8	5	7	11	3	3	1	1				62	62.0	6.0	
Willow Cr.	Smallmouth Bass	2	3							1			1								7	7.0	1.0	
	Largemouth Bass	2	4	3	3	2	3	3	1	7	8	12	10	3	1	1					63	63.0	7.0	
Demumbers Cr.	Smallmouth Bass			3	6																9	18.0	0.0	
	Largemouth Bass	1	6	6	4		2	3				3	1	2	1	1					30	60.0	0.0	
Sub-Total																								
	Smallmouth Bass	1	10	13	11	3		3	2	3	8	2	2	3	2						63	6.3	0.8	
	Spotted Bass		2	4	1	1				2	1	1									12	1.2	0.1	
	Largemouth Bass	4	52	37	24	18	31	39	33	15	50	55	64	63	38	24	18	10	7	8	1	591	59.1	5.0
Experimental Habitat																								
Taylor Bay/Jake Fork	Smallmouth Bass			13	7	1						1		1	1						24	9.6	4.7	
	Largemouth Bass	14	14	9	5	5	4	5	2	5	6	6	10	4	4	4	3	1	1		102	40.8	4.7	

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Table 38. Spring diurnal electrofishing CPUE (fish/hr) of each length group of Largemouth Bass collected at Lake Barkley during late April/early May since 2014 at standard spring locations. Mean length at capture of age-3 fish also provided.

Year	Mean length age 3 at capture	Mean length age 3 at capture***	Age 1		Length group										Total	
			CPUE	SE	<8.0 in	8.0-11.9 in	12.0 -14.9 in	≥15.0 in	≥20.0 in	CPUE	SE					
2023			23.7	2.9	16.6	1.8	13.7	2.4	18.2	3.0	10.6	1.4	0.9	0.3	59.1	1.2
2022			18.7	2.9	15.1	2.9	9.3	1.6	12.8	2.0	10.7	2.0	1.3	0.4	47.9	5.0
2021			41.7	4.5	35.7	4.2	9.4	1.4	11.8	2.6	12.2	2.5	0.4	0.2	69.1	6.1
2020*			2.5	0.9	2.8	1.0	1.7	0.6	6.5	2.0	9.6	1.3	0.5	0.2	20.7	3.2
2019**	12.9	13.1	14.6	4.0	11.7	3.5	8.7	2.4	16.9	3.9	16.0	3.1	1.5	0.7	53.3	10.4
2018			10.9	1.4	10.8	1.4	11.0	2.2	5.7	1.1	17.4	2.9	1.1	0.4	44.9	5.8
2017			26.5	5.1	19.0	3.8	11.7	2.5	9.7	1.3	26.8	3.5	1.7	0.5	67.2	6.2
2016			10.8	1.8	6.6	1.2	6.0	1.2	14.9	2.3	22.2	3.2	1.0	0.4	49.7	4.9
2015**	13.4	13.6	10.3	1.3	8.5	1.3	15.1	2.1	29.7	4.0	26.3	3.0	1.7	0.4	79.6	7.1
2014			22.2	3.7	21.4	3.6	13.5	1.7	22.8	2.5	23.5	4.1	1.4	0.3	81.2	7.5
Average	13.2	13.3	18.2		14.8		10.0		14.9		17.5		1.2		57.3	

(Revised_Barkley_Bass_Database.xlsx)

Data is available since 1985 in previous annual reports

* Only one dipper was used due to covid19 protocols in 2020

** Back-calculated fall age data used in 2015 and 2019

*** Mean length calculated using a weighted average applied to the spring sample

Table 39. PSD and RSD₁₅ values calculated for Largemouth Bass collected during 10.0 hours (20- 30-minutes runs) of spring diurnal electrofishing at each area of Lake Barkley in April 2023 at standard spring locations. 95% confidence intervals are shown in parentheses.

Area	≥ Stock size*	PSD	RSD ₁₅
Donaldson	48	40 (±14)	25 (± 12)
Fords	48	60 (±14)	40 (±14)
Eddy Creek	158	77 (±7)	20 (±6)
Little River	66	68 (±11)	39 (±12)
Nickell	43	72 (±14)	19 (±12)
Willow	49	71 (±13)	10 (±9)
Demumbers	13	62 (±28)	31(±26)
Total	425	68 (±4)	25 (±4)

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*Stock size = 8.0 in

Table 40. Lake specific assessment for Largemouth Bass collected at Lake Barkley from 2014-2023. This table includes the parameter estimates and the individual scores as well as the total scores and assessment ratings. The final two columns list the instantaneous mortality rate (Z) and the annual mortality (A).

Year	Mean length age 3 at capture	Mean length age 3 at capture***	CPUE age 1	Length group			Total score	Assessment rating	Z	A
				12.0-14.9 in CPUE	≥15.0 in CPUE	≥20.0 in CPUE				
2023	13.1	13.1	23.7	18.2	10.6	0.9			0.441	35.7
Score	3		3	1	1	1	9	F		
2022	13.1	13.1	18.7	12.8	10.7	1.3			0.400	33.0
Score	3		3	1	1	1	9	F		
2021	13.1	13.1	41.7	11.8	12.2	0.4			0.429	34.9
Score	3		4	1	1	1	10	F		
2020*	13.1	13.1	2.5	6.5	9.6	0.5			0.241	21.4
Score	3		1	1	1	1	7	P		
2019**	13.1	13.1	14.6	16.9	16.0	1.5			0.378	31.4
Score	3		2	1	1	2	9	F		
2018	13.5	13.6	10.9	5.7	17.4	1.1			0.329	28.0
Score	4		1	1	1	1	8	F		
2017	13.5	13.6	26.5	9.7	26.8	1.7			0.322	27.5
Score	4		3	1	3	2	13	G		
2016	13.5	13.6	10.8	14.9	22.2	1.0			0.402	33.1
Score	4		1	1	2	1	9	F		
2015**	13.5	13.6	9.39	29.7	26.3	1.7			0.472	37.8
Score	4		1	3	2	2	12	G		
2014	12.2	13.5	22.2	22.8	23.5	1.4			0.649	47.8
Score	1		3	2	2	2	10	F		
Average	12.9	13.4	18.1	14.9	17.5	1.1	9.6		0.406	33.1

Older data is listed in previous annual reports.

(Revised _Barkley_bass_Database.xlsx)

* Only one dipper w as used due to covid19 protocols in 2020

** Used back calculated lengths from fall

*** Mean length calculated using a w eighted average applied to the spring sample

Rating

5-7 = Poor (P)

8-11 = Fair (F)

12-16 = Good (G)

17-20 = Excellent (E)

Table 41. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 5.92 hours of diurnal electrofishing (11- 30-minute runs, 1- 25-minute run) for black bass in each area of Lake Barkley in October 2023. Sub-Total uses only data collected from Little River and Eddy Creek for historical comparison.

Area / Species	Inch class																	Total	CPUE	SE		
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				19	
Eddy Creek																						
Smallmouth Bass		10	11	11	1	2	2	1		1	1									40	20.0	5.4
Spotted Bass		2		2																4	2.0	1.4
Largemouth Bass	14	82	58	55	77	33	8	9	14	9	9	11	15	22	5	2	4	2	429	214.5	13.4	
Little River																						
Smallmouth Bass		24	24	14	2	3	6	4				2	2	1	1					83	43.2	16.7
Spotted Bass		2	9	1										1						13	6.8	3.2
Largemouth Bass	7	60	41	20	28	12	5	7	4	1	5	3	3	9	3		2		210	109.4	23.5	
Sub-Total																						
Smallmouth Bass		34	35	25	3	5	8	5		1	1	2	2	1	1				123	31.4	9.3	
Spotted Bass		4	9	3										1					17	4.3	1.8	
Largemouth Bass	21	142	99	75	105	45	13	16	18	10	14	14	18	31	8	2	6	2	639	163.0	23.6	
Taylor Bay/Jake Fork Bay																						
Smallmouth Bass		4	18	13	4					1										40	20.0	9.8
Largemouth Bass	10	80	37	31	24	16	14	5	3	2	1	1	2	2	1				229	114.5	10.3	
Total																						
Smallmouth Bass		38	53	38	7	5	8	5	1	1	1	2	2	1	1				163	27.2	5.3	
Spotted Bass		4	9	3										1					17	2.8	0.7	
Largemouth Bass	31	222	136	106	129	61	27	21	21	12	15	15	20	33	9	2	6	2	868	144.7	11.8	

w fdw rb.d23, w fdw rb1.d23

Table 42. Number of fish and mean relative weight (W_r) values for each length group of Largemouth and Smallmouth bass collected at Lake Barkley during 5.92 hours of diurnal electrofishing (11- 30-minute runs, 1- 25-minute run) for black bass in each area of Lake Barkley in October 2023. Sub-Total uses only data collected from Little River and Eddy Creek for historical comparison. Standard errors are in parentheses.

Species	Area	Length group						Total	
		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in		No.	W_r
		No.	W_r	No.	W_r	No.	W_r		
Largemouth Bass	Eddy Creek	40	100 (1)	40	101 (1)	48	102 (1)	128	101 (1)
	Little River	17	96 (2)	11	101 (3)	14	98 (3)	42	98 (1)
	Sub-Total	57	99 (1)	51	101 (1)	62	101 (1)	170	100 (1)
	Taylor Bay/Jake Fork Bay	24	96 (2)	4	96 (1)	3	96 (2)	31	96 (1)
	Total	81	98 (1)	55	101 (1)	65	101 (1)	201	100 (1)

Species	Area	Length group						Total	
		7.0-10.9 in		11.0-13.9 in		≥ 14.0 in		No.	W_r
		No.	W_r	No.	W_r	No.	W_r		
Smallmouth Bass	Eddy Creek	5	88 (3)	2	85 (7)			7	87 (3)
	Little River	13	90 (2)	2	86 (3)	4	93 (3)	19	90 (1)
	Sub-Total	18	89 (1)	4	86 (3)	4	93 (3)	26	89 (1)
	Taylor Bay/Jake Fork Bay	1	96					1	96
	Total	19	90 (1)	4	86 (3)	4	93 (3)	27	90 (1)

wfdwrb.d23, wfdwrb1.d23

Table 43. CPUE (fish/hr) and mean length (in) of age-0 Largemouth Bass collected in the fall and CPUE of age-1 Largemouth Bass collected the following spring during diurnal electrofishing at Lake Barkley.

Year class	Age 0 ^A		Age 0 ^A		Age 0 \geq 5.0 in ^A		Age 1 ^B	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	5.0	0.1	123.7	19.4	57.1	13.6		
2022	3.9	0.1	80.3	12.6	12.8	1.7	23.7	2.9
2021	5.1	0.1	47.5	8.6	23.0	3.3	18.7	2.9
2020	4.9	0.1	99.4	15.3	42.5	10.0	41.7	4.5
2019	4.1	0.1	98.7	17.5	16.9	2.8	2.5*	0.9*
2018	6.2	0.2	11.4	2.8	8.6	1.7	14.6	4.0
2017	4.9	0.1	26.0	5.2	11.1	3.4	10.9	1.4
2016	5.5	0.1	22.3	4.7	12.6	3.5	26.5	5.1
2015	5.1	0.1	39.1	8.9	17.5	4.4	10.8	1.8
2014	4.8	0.1	24.6	4.4	10.8	1.9	9.4	2.0
2013	5.9	0.1	60.1	7.1	47.8	5.2	22.2	3.7
Average	5.0		57.5		23.7		18.1	

^A Data collected by fall (October) diurnal electrofishing. Mean lengths were determined by analysis of otoliths, removed from a subsample of LMB <12.0 in.

^B Data collected during the following spring (April/May) diurnal electrofishing sample.

* Only one dipper used because of covid19 protocols in spring 2020

wfdwrb.dxx, wfdwrb1.dxx, wfdpsdb.dxx

Table 44. CPUE (fish/hr) and mean length (in) of age-0 Smallmouth Bass collected in the fall and CPUE of age-1 Smallmouth Bass collected the following spring during diurnal electrofishing at Lake Barkley.

Year class	Age 0 ^A		Age 0 ^A		Age 0 \geq 5.0 in ^A		Age 1 ^B	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.5	0.1	24.9	7.6	7.0	2.5		
2022	3.9	0.1	22.0	6.4	2.0	0.9	3.8	1.1
2021	4.5	0.1	24.5	6.5	6.5	2.6	1.2	0.5
2020	4.5	0.1	42.5	20.7	13.8	5.8	3.3	1.0
2019	4.1	0.1	18.9	3.6	2.4	0.7	0.5*	0.3*
Average	4.3		26.6		6.3		2.9	

^A Data collected by fall (October) diurnal electrofishing. Mean lengths were determined by analysis of otoliths, removed from a subsample of SMB <12.0 in.

^B Data collected during the following spring (April/May) diurnal electrofishing sample.

* Only one dipper used because of covid19 protocols in spring 2020

wfdwrb1.dxx, wfdpsdb.dxx

Table 45. Length frequency and CPUE (fish/nn) of each inch class of White and Black crappie collected by trap nets (118 net-nights) at Lake Barkley in October-November 2023. Sub-Total is shown for comparisons with historical data which included only Little River and Donaldson Creek.

Area	Species	Inch class														Total	CPUE	SE
		2	3	4	5	6	7	8	9	10	11	12	13	14	15			
Little River	White Crappie	19	12	2	1	3	6	67	50	26	9	5			1	201	5.2	1.0
	Black Crappie	4	6	4	1		7	12	8		1					43	1.1	0.2
Donaldson Creek	White Crappie	4	11	2	5	2	6	27	29	10	6	4				106	2.7	0.5
	Black Crappie	9	64	52	10	3	6	15	7		1					167	4.3	0.6
Sub-Total	White Crappie	23	23	4	6	5	12	94	79	36	15	9		1	307	3.9	0.6	
	Black Crappie	13	70	56	11	3	13	27	15		2				210	2.7	0.4	
Crooked Creek	White Crappie		3	1	4	2	4	28	56	10	4	2				114	2.9	0.4
	Black Crappie		4	1	3		15	19	6	1	2	1				52	1.3	0.3
Total	White Crappie	23	26	5	10	7	16	122	135	46	19	11		1	421	3.6	0.4	
	Black Crappie	13	74	57	14	3	28	46	21	1	4	1			262	2.2	0.3	

wfdtpntb.d23, wfdtpnb1.d23

Table 46. Number of fish and mean relative weight (W_r) values for each length group of Black and White crappie collected by trap nets (118 net-nights) at Lake Barkley in October-November 2023.

Species	Area	Length group							
		5.0-7.9 in		8.0-9.9 in		≥10.0 in		Total	
		No.	W_r	No.	W_r	No.	W_r	No.	W_r
White Crappie	Little River	10	94 (3)	117	99 (1)	41	100 (1)	168	99 (1)
	Donaldson Bay	12	97 (1)	55	104 (1)	20	105 (1)	87	103 (1)
	Crooked Creek	10	95 (4)	84	104 (1)	16	103 (2)	110	103 (1)
	Total	32	95 (2)	256	102 (<1)	77	102 (1)	365	101 (<1)

Species	Area	Length group							
		5.0-7.9 in		8.0-9.9 in		≥10.0 in		Total	
		No.	W_r	No.	W_r	No.	W_r	No.	W_r
Black Crappie	Little River	8	99 (5)	19	98 (1)	1	97	28	98 (2)
	Donaldson Bay	17	103 (3)	22	102 (1)	1	100	40	102 (1)
	Crooked Creek	18	94 (2)	23	103 (2)	4	100 (6)	45	99 (1)
	Total	43	98 (2)	64	101 (1)	6	100 (4)	113	100 (1)

wfdtpntb.d23

Table 47. Crappie population parameters used to manage the population at Lake Barkley from 2014-2023, with values determined from fall trap netting. To allow for historical comparisons, only data from Little River and Donaldson Creek are presented.

Year	Total CPUE (fish/nn) excluding age 0			CPUE (fish/nn) age 2			Mean length (in) age 2 at capture				CPUE (fish/nn) >8.0 in			CPUE (fish/nn) age 1			CPUE (fish/nn) ≥10.0 in		
	WC	BC	Crappie	WC	BC	Crappie	WC	BC	Crappie	Crappie*	WC	BC	Crappie	WC	BC	Crappie	WC	BC	Crappie
2023	3.3	0.8	4.1	0.6	0.1	0.6	11.1	10.3	10.9	10.8	3.0	0.6	3.6	2.6	0.8	3.4	0.8	<0.1	0.8
2022	7.7	0.5	8.1	0.2	<0.1	0.3	11.3	10.9	11.2	11.2	1.6	0.2	1.8	7.4	0.4	7.8	0.5	0.1	0.5
2021	3.8	0.5	4.3	0.5	0.2	0.7	11.1	9.6	10.5	10.5	2.1	0.3	2.4	3.2	0.3	3.5	0.7	0.1	0.8
2020	2.6	0.8	3.4	0.1	0.1	0.2	10.7	10.4	10.5	10.7	1.5	0.4	1.8	2.4	0.7	3.1	0.3	0.1	0.4
2019	3.5	0.8	4.3	0.3	0.3	0.6	10.1	9.3	9.7	10.0	0.7	0.3	1.0	3.1	0.5	3.6	0.4	0.2	0.5
2018	1.8	0.5	2.3	0.1	<0.1	0.1	11.8	10.9	11.5	11.5	1.1	0.2	1.3	1.5	0.5	2.0	0.5	0.1	0.6
2017	1.5	1.6	3.1	0.6	0.4	1.0	11.2	9.9	10.7	10.5	1.4	1.0	2.4	0.7	1.1	1.7	1.0	0.3	1.3
2016	6.2	3.5	9.7	2.0	0.6	2.6	10.6	9.5	10.3	9.9	3.6	1.3	4.9	4.1	2.6	6.7	1.4	0.4	1.8
2015	11.4	3.1	14.4	0.3	1.6	1.9	11.6	9.9	10.5	10.1	3.2	1.9	5.1	10.8	1.4	12.2	0.9	0.9	1.8
2014	1.5	2.1	3.5	0.1	0.0	0.1	11.8	9.6	11.4	11.5	1.3	0.6	1.9	1.1	1.9	3.0	0.7	0.1	0.8
Average	4.3	1.4	5.7	0.5	0.4	0.8	11.1	10.0	10.7	10.7	2.0	0.7	2.6	3.7	1.0	4.7	0.7	0.2	0.9

*Mean length calculated using a weighted average applied to the whole fall trapnet sample

Data is available from 1985 in previous annual reports.

Revised_Barkley_Crappie_Database

Table 48. Proportional stock density (PSD) and relative stock density (RSD₁₀) of White and Black crappie collected by trap nets (118 net-nights) at Lake Barkley in October-November 2023. Sub-Total uses only data collected from Little River and Donaldson Creek. Numbers in parentheses represent 95% confidence intervals.

Location	Species	≥ Stock size*	PSD	RSD ₁₀
Little River	White Crappie	168	94 (±4)	24 (±7)
	Black Crappie	29	72 (±17)	3 (±7)
Donaldson	White Crappie	89	85 (±7)	22 (±9)
	Black Crappie	42	55 (±15)	2 (±5)
Sub-Total	White Crappie	257	91 (±3)	24 (±5)
	Black Crappie	71	62 (±11)	3 (±4)
Crooked Creek	White Crappie	110	91 (±5)	15 (±7)
	Black Crappie	47	62 (±14)	9 (±8)
Total	White Crappie	367	91 (±3)	21 (±4)
	Black Crappie	118	62 (±9)	5 (±4)

wfdtpntb.d23, wfdtpnb1.d23

*Stock size = 5.0 in

Table 49. Mean back-calculated length (in) at each annulus of White Crappie including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) in October-November 2023.

Year class	N	Age							
		1	2	3	4	5	6	7	8
2022	104	4.3							
2021	43	4.7	8.4						
2020	4	4.4	8.9	11.4					
2019	1	4.0	7.9	11.1	11.9				
2015	1	4.9	8.6	10.9	12.5	13.4	13.9	14.4	14.9
Mean	153	4.4	8.4	11.3	12.2	13.4	13.9	14.4	14.9
Smallest		2.8	6.1	10.8	11.9	13.4	13.9	14.4	14.9
Largest		6.9	11.2	12.0	12.5	13.4	13.9	14.4	14.9
SE		0.1	0.2	0.2	0.3				
Low 95% CI		4.3	8.1	10.9	11.6				
High 95% CI		4.5	8.8	11.7	12.8				

*Intercept = 0

wfdtnagb.d23

Table 50. Mean back-calculated length (in) at each annulus of Black Crappie including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) in October-November 2023.

Year class	N	Age		
		1	2	3
2022	81	4.2		
2021	8	4.6	8.0	
2020	1	4.9	9.0	11.4
Mean	90	4.3	8.1	11.4
Smallest		2.8	6.3	11.4
Largest		6.3	9.6	11.4
SE		0.1	0.4	
Low 95% CI		4.1	7.4	
High 95% CI		4.4	8.9	

*Intercept = 0

wfdtnagb.d23

Table 51. Mean back-calculated length (in) at each annulus of MALE White Crappie including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) in October-November 2023.

Year class	N	Age			
		1	2	3	4
2022	39	4.4			
2021	30	4.7	8.4		
2020	1	4.6	7.6	10.8	
2019	1	4.0	7.9	11.1	11.9
Mean	71	4.6	8.4	10.9	11.9
Smallest		3.4	6.7	10.8	11.9
Largest		6.9	11.2	11.2	11.9
SE		0.1	0.2	0.1	
Low 95% CI		4.4	7.9	10.7	
High 95% CI		4.7	8.8	11.2	

*Intercept = 0

wfdtnagb.d23

Table 52. Mean back-calculated length (in) at each annulus of FEMALE White Crappie including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) in October-November 2023.

Year class	N	Age								
		1	2	3	4	5	6	7	8	
2022	53	4.4								
2021	13	4.5	8.5							
2020	3	4.4	9.3	11.6						
2015	1	4.9	8.6	10.9	12.5	13.4	13.9	14.4	14.9	
Mean	70	4.4	8.6	11.4	12.5	13.4	13.9	14.4	14.9	
Smallest		2.8	6.1	10.9	12.5	13.4	13.9	14.4	14.9	
Largest		6.7	11.1	12.0	12.5	13.4	13.9	14.4	14.9	
SE		0.1	0.3	0.3						
Low 95% CI		4.3	7.9	10.9						
High 95% CI		4.6	9.3	12.0						

*Intercept = 0
wfdtnagb.d23

Table 53. Mean back-calculated length (in) at each annulus of MALE Black Crappie including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) in October-November 2023.

Year class	N	Age	
		1	2
2022	40	4.2	
2021	6	4.5	7.9
Mean	46	4.3	7.9
Smallest		3.3	6.3
Largest		6.3	9.4
SE		0.1	0.5
Low 95% CI		4.1	7.0
High 95% CI		4.4	8.8

*Intercept = 0
wfdtnagb.d23

Table 54. Mean back-calculated length (in) at each annulus of FEMALE Black Crappie including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) in October-November 2023.

Year class	N	Age		
		1	2	3
2022	36	4.3		
2021	2	4.6	8.4	
2020	1	4.9	9.0	11.4
Mean	39	4.3	8.6	11.4
Smallest		2.8	7.1	11.4
Largest		5.7	9.6	11.4
SE		0.1	0.8	
Low 95% CI		4.2	7.1	
High 95% CI		4.5	10.1	

*Intercept = 0

wfdtnagb.d23

Table 55. Von Bertalanffy growth curve parameters, mean length (in) at capture, and standard error (SE) of Black and White crappie. Otoliths were collected from Lake Barkley (Little River, and Donaldson Creek) in fall 2023.

Species	N	Mean length at capture Age at capture								Von Bertalanffy growth parameters				
		1	SE	2	SE	3	SE	4	SE	8	SE	L_{inf} (in)	K	t_0
Crappie spp.	517	8.7	0.1	10.8	0.1	12.3	0.3	12.5		15.5		16.88	0.242	-1.273
Black Crappie	210	8.1	0.2	10.1	0.6									
White Crappie	307	8.9	0.1	10.9	0.1	12.3	0.3	12.5		15.5		17.10	0.223	-1.59

wfdtnagb.d23, wfdtpntb.d23

Table 56. Age frequency and CPUE (fish/nn) of White Crappie collected during 118 net-nights at Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) in October-November 2023. Little River and Donaldson Creek also shown separately for historical comparison.

Little River and Donaldson Creek

Age	Inch class												Total	%	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	15					
0	23	23	4	2										52	17	0.7	0.3
1				4	5	11	94	74	16					204	66	2.6	0.4
2							1	5	20	14	5			45	15	0.6	0.1
3										1	3			4	1	0.1	<0.1
4											1			1	<0.1	<0.1	<0.1
8												1		1	<0.1	<0.1	<0.1
Total	23	23	4	6	5	12	94	79	36	15	9	1		307		3.9	0.6
%	7	7	1	2	2	4	31	26	12	5	3	<0.1					

Lake Barkley Total

Age	Inch class												Total	%	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	15					
0	23	26	5	4										58	14	0.5	0.2
1				6	7	15	122	127	21					298	71	2.5	0.3
2						1		8	25	18	7			59	14	0.5	0.1
3										1	3			4	1	<0.1	<0.1
4											1			1	<0.1	<0.1	<0.1
8												1		1	<0.1	<0.1	<0.1
Total	23	26	5	10	7	16	122	135	46	19	11	1		421		3.6	0.4
%	5	6	1	2	2	4	29	32	11	5	3	<0.1					

wfdtpntb.d23, wfdtpnb1.d23, wfdtnagb.d23

Table 57. Age frequency and CPUE (fish/nn) of Black Crappie collected during 118 net-nights at Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) in October-November 2023. Little River and Donaldson Creek also shown separately for historical comparison.

Little River and Donaldson Creek

Age	Inch class											Total	%	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12				
0	13	70	52	9	2							146	69	1.9	0.3
1			4	2	2	13	26	13				60	28	0.8	0.1
2							1	2		2		5	2	0.1	<0.1
3												0	0	0.0	
Total	13	70	56	11	4	13	27	15	0	2	0	211		2.7	0.4
%	6	33	27	5	2	6	13	7	0	1	0				

Lake Barkley Total

Age	Inch class											Total	%	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12				
0	13	74	53	12	2							154	59	1.3	0.2
1			4	2	2	28	45	19				100	38	0.8	0.1
2							1	2	1	4		8	3	0.1	<0.1
3											1	1	<0.1	<0.1	<0.1
Total	13	74	57	14	4	28	46	21	1	4	1	263		2.2	0.3
%	5	28	22	5	2	11	17	8	<0.1	2	<0.1				

wfdtpntb.d23, wfdtpnb1.d23, wfdtnagb.d23

Table 58. Lake specific assessment for crappie collected at Lake Barkley (Little River and Donaldson Creek) from 2014-2023. This table includes the parameter estimates and the individual scores as well as the total scores and assessment ratings. The final columns list the instantaneous mortality (Z) and annual mortality (A).

Year	CPUE		CPUE		Mean length	*Mean length	Total score	Assessment rating	Z	A
	age 1 and older	CPUE age 1	CPUE age 0	CPUE ≥ 8.0 in	age 2 at capture	age 2 at capture				
2023	4.1	3.4	2.5	3.6	10.9	10.8			1.14	67.9
Score	2	2	2	2	3		11	F		
2022	8.1	7.8	8.5	1.8	11.2	11.2			2.59	92.5
Score	4	4	4	1	4		17	G		
2021	4.3	3.5	16.2	2.4	10.5	10.5			1.25	71.4
Score	2	2	4	1	2		11	F		
2020	3.4	3.1	9.8	1.8	10.5	10.7			1.59	79.7
Score	1	2	4	1	2		10	F		
2019	4.3	3.6	17.0	1.0	9.7	10.0			1.6	79.8
Score	2	2	4	1	1		10	F		
2018	2.3	2.0	7.6	1.3	11.5	11.5			1.03	64.4
Score	1	2	3	1	4		11	F		
2017	3.1	1.7	7.9	2.4	10.7	10.5			0.95	61.3
Score	1	1	3	1	3		9	F		
2016	9.7	6.7	1.5	4.9	10.3	10.0			1.472	77.0
Score	4	4	1	3	2		14	G		
2015	14.5	12.2	5.0	5.1	10.5	10.1			0.68	49.3
Score	4	4	3	4	2		17	G		
2014	3.5	3.0	9.2	1.9	11.2	11.5			0.91	59.7
Score	1	2	3	1	4		11	F		
Average	5.7	4.7	8.5	2.6	10.7	10.7	12.1		1.321	70.30

Rating

- 1 - 7 = Poor (P)
- 8 - 12 = Fair (F)
- 13 - 17 = Good (G)
- 18 - 20 = Excellent (E)

*Mean length calculated using a weighted average applied to the entire fall trapnet sample (Revised_Barkley_Crappie_Database.xlsx)

Table 59. Length frequency and CPUE (fish/hr) of Channel, Blue, and Flathead catfish collected from Lake Barkley in July 2023 using low pulse (15 PPS) electrofishing along the main lake river channel. A chase boat was used during a total of 5.0 hours of sampling (60- 300-second runs).

Species	Inch class																																						Total	CPUE	SE
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	36	37	38									
Blue Catfish		18	99	64	20	10	80	97	67	49	56	26	16	15	15	3	13	14	3	3	4	1		2									1	1	1	678	135.6	18.1			
Channel Catfish	2	5	12	1	1		2		1	2	3	1	2																							32	6.4	1.4			
Flathead Catfish							1	2		1		1		2	1	1	1	1	2		1		2	1		1						2	1	1	22	4.4	1.1				

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Table 60. Mean relative weight (W_r) values of each length group of Blue, Channel, and Flathead catfish collected from Lake Barkley during July 2023. Fish were collected using low pulse (15 PPS) electrofishing.

Species	Length group							
	12.0-19.9 in		20.0-29.9 in		≥ 30.0 in		Total	
	N	W_r	N	W_r	N	W_r	N	W_r
Blue Catfish	225	99 (0)	37	101 (1)	3	122 (18)	265	100 (1)

Channel Catfish	Length group							
	11.0-15.9 in		16.0-23.9 in		≥ 24.0 in		Total	
	N	W_r	N	W_r	N	W_r	N	W_r
Channel Catfish	7	106 (5)	2	103 (4)			9	105 (4)

Flathead Catfish	Length group							
	12.0-19.9 in		20.0-29.9 in		≥ 30.0 in		Total	
	N	W_r	N	W_r	N	W_r	N	W_r
Flathead Catfish	4	89 (4)	9	93 (2)	4	117 (12)	17	98 (4)

wfdcatb.d23

Table 61. Fishery statistics derived from a creel survey at Kentucky Lake (51,000 acres) from February through December 2023.

<u>Fishing Trips</u>	No. of fishing trips (per acre)	98,550	(1.9)
<u>Fishing Pressure</u>	Total angler-hours (S.E.)	449,112	(25663)
	Angler-hours/acre	8.8	
<u>Catch / Harvest</u>	No. of fish caught (S.E.)	674,149	(72,230)
	No. of fish harvested (S.E.)	166,569	(22,584)
	Lb of fish harvested	122,532	
<u>Harvest Rates</u>	Fish/hour	0.37	
	Fish/acre	3.27	
	Pounds/acre	2.40	
<u>Catch Rates</u>	Fish/hour	1.5	
	Fish/acre	13.22	
<u>Miscellaneous Characteristics (%)</u>	Male	92.54	
	Female	7.46	
	Resident	74.37	
	Non-resident	25.63	
<u>Method (%)</u>	<u>Non-Crappie Anglers</u>		
	Still fishing	16.95	
	Casting	54.31	
	Trolling	2.92	
	Trotline/Jugging	0.14	
	<u>Crappie Anglers Only</u>		
	Casting	4.00	
	Still fishing (1-2 poles)	60.00	
	Spider Rig (3 Poles)	12.00	
	Spider Rig (4-5 Poles)	20.00	
	Spider Rig (>5 Poles)	4.00	
<u>Mode (%)</u>	Boat	95.12	
	Bank	3.05	
	Dock	0.95	
	Kayak	0.88	

Table 62. Length distribution for each species of fish harvested or released (lengths of released fish were estimated by anglers) at Kentucky Lake (51,000 acres) from February through December 2023.

Species		Inch class																			
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
White Crappie	H									12,013	23,024	22,106	11,012	2,669	751	334					
	R	815	1,304	2,118	7,577	8,799	10,592	17,110	39,026	4,970	2,607	1,548	1,304	815	570	81					
Black Crappie	H									3,216	9,040	4,346	2,608	1,391	522	87	86				
	R		167	333	1,167	1,083	583	4,334	7,084	917	333	583	250	167	83						
Largemouth Bass	H														576	360	360			71	
	R							2,234	579	8,938	2,483	21,435	23,752	29,131	21,931	12,662	6,290	3,641	1,572	745	331
Smallmouth Bass	H														87	86					
	R							3,351	319	4,867	1,676	10,771	6,303	7,420	5,825	3,351	2,713	1,755	1,117	798	80
Spotted Bass	H																				
	R									235	117		587	470	236						
Bluegill	H			212	212	1,482	13,765	20,329	6,671	847											
	R	564	3,196	15,700	18,802	13,538	7,145	3,949	658		94										
Redear Sunfish	H									1,002	501	877	501								
	R					99	99	99	99					99							
Longear Sunfish	H																				
	R	214	321	5,458	5,351	1,926	1,177	321	642	322											
Warmouth	H																				
	R		141		1,381	1,998		282	142												
Green Sunfish	H																				
	R				534	1,513															
Channel Catfish	H									80	241	723	482	562	803	803	884	1,285	723	1,205	80
	R			83		165				248	413	496	330	165	165	248	83	743	330	496	248
Blue Catfish	H															114	171	568	227	227	114
	R																80				
Flathead Catfish	H																				62
	R									58											58
White Bass	H							162	243	1,542	893	1,866	325	325	80						
	R	227	76	303	2574	4,543	4,543	8,707	4,543	6,739	2,347	6,057	1,893	1,287	909	228					
Yellow Bass	H					56	834	1,502	667	1,947	556	56									
	R	129	451	2,062	4,382	3,544	12,308	8,055	2,320	2,578	516	320									
Striped Bass	H																				
	R				94		1,130	1,036	283	188		753		1,130	1,036	1,036	471	1,318			377
Sauger	H														499	299	200	200			
	R					94				1,503	563	2,066	2,160	1,690	751				94		
Yellow Perch	H														57						
	R					83	83			83		83									
Drum	H																				78
	R					62	185	62	309	803	124	556	309	185	185	803	185	741	371		556
Skipjack Herring	H				97	390	438	341								49					
	R				64		64			1,663	576	960	128	192		128		63			
Shad	H																				
	R									178											
Gar	H																				
	R															110					
Buffalo	H																				
	R																				118
Suckers	H																				
	R																				

Table 62 (cont).

Species	Inch class																			Total
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
White Crappie	H																			71,909
	R																			99,236
Black Crappie	H																			21,296
	R																			17,084
Largemouth Bass	H																			1,367
	R	331																		135,724
Smallmouth Bass	H																			173
	R		80																	50,346
Spotted Bass	H																			0
	R																			1,645
Bluegill	H																			43,518
	R																			63,646
Redear Sunfish	H																			2,881
	R																			495
Longear Sunfish	H																			0
	R																			15,732
Wormouth	H																			0
	R																			3,944
Green Sunfish	H																			0
	R																			2,047
Channel Catfish	H	161	80	161	402	161														7,871
	R	413			330				83					83						4,379
Blue Catfish	H	284	114	171	455	114	114					57	55							1,647
	R	80							80							80				240
Flathead Catfish	H																			62
	R																			116
White Bass	H																			5,436
	R																			44,976
Yellow Bass	H																			5,618
	R																			36,665
Striped Bass	H																			0
	R	283	188	283	283	188														9,040
Sauger	H																			1,198
	R																			8,921
Yellow Perch	H																			57
	R																			332
Drum	H	40																		78
	R	247	124	62	247	62	60													5,496
Skipjack Herring	H																			1,315
	R																			3838
Shad	H																			0
	R																			178
Gar	H																			0
	R		110															110		220
Buffalo	H																			0
	R																			118
Suckers	H																			0
	R		35																	0

Table 63. Fish harvest statistics derived from a creel survey at Kentucky Lake (51,000 acres) from February through December 2023.

	Black bass group	Largemouth Bass	Smallmouth Bass	Spotted Bass	Crappie group	White Crappie	Black Crappie	Catfish group	Channel Catfish	Flathead Catfish	Blue Catfish	Panfish group	Bluegill	Redear Sunfish	Longear Sunfish	Warmouth	Green Sunfish
No. caught	189,667	137,422	50,599	1,645	209,526	171,145	38,381	17,241	13,958	178	3,105	132,263	107,164	3,376	15,732	3,944	2,047
(per acre)	(3.7)	(2.7)	(1.0)	(T)	(4.1)	(3.4)	(0.8)	(0.3)	(0.3)	(T)	(0.1)	(2.6)	(2.1)	(0.1)	(0.3)	(0.1)	(T)
No. harvested	1,540	1,367	173	0	93,205	71,909	21,296	11,683	8,836	62	2,785	46,398	43,518	2,881	0	0	0
(per acre)	(T)	(T)	(T)	(0.0)	(1.8)	(1.4)	(0.4)	(0.2)	(0.2)	(T)	(0.1)	(0.9)	(0.9)	(0.1)	(0.0)	(0.0)	(0.0)
% of total no. harvested	0.9	0.8	0.1	0.0	56.0	43.2	12.8	7.0	5.3	(T)	1.7	27.9	26.1	1.7	0.0	0.0	0.0
Lb. harvested	3,309	2,994	315	0	72,505	54,616	17,889	25,436	14,362	195	10,878	14,221	12,644	1,577	0	0	0
(per acre)	(0.1)	(0.1)	(T)	(0.0)	(1.4)	(1.1)	(0.4)	(0.5)	(0.3)	(T)	(0.2)	(0.3)	(0.2)	(T)	(T)	(0.0)	(0.0)
% of total lb. harvested	(2.7)	2.4	0.3	0.0	59.2	44.6	14.6	20.8	11.7	0.2	8.9	11.6	10.3	1.3	0.0	0.0	0.0
Mean length (in)		16.2	15.5	-		11.6	11.5		17.7	20.0	22.0		7.6	9.1	-	-	-
Mean weight (lb)		2.2	1.8	-		0.8	0.9		1.8	3.2	4.1		0.3	0.5	-	-	-
No. of fishing trips for that species	43,924				31,065			5,460				7,554					
% of all trips	44.6				31.5			5.5				7.7					
Hours fished for that species	200,172				141,571			24,884				34,427					
(per acre)	(3.9)				(2.8)			(0.5)				(0.7)					
No. harvested fishing for that species	727				88,644			6,512				38,244					
Lb harvested fishing for that species	1,583				69,455			15,712				11,983					
No./hour harvested fishing for that species	(T)				0.6			0.3				1.1					
% success fishing for that species	1.0				54.9			48.7				65.3					

T = < 0.05

Table 64. Monthly crappie angling success at Kentucky Lake (51,000 acres) from February through December 2023

	Total no crappie caught	Total no. crappie harvested	No. crappie fishing trips	Hours fished for crappie	Crappie caught by crappie anglers	Crappie caught/hour by crappie anglers	Crappie harvested by crappie anglers	Crappie harvested/hour by crappie anglers
Feb	21,229	9,474	2,437	11,104	21,230	1.91	9,475	0.85
Mar	31,640	18,570	6,478	29,520	31,497	1.07	18,498	0.63
Apr	74,760	33,464	13,534	61,677	71,734	1.16	30,438	0.49
May	7,355	3,448	1,410	6,426	6,551	1.02	2,758	0.43
Jun	6,129	2,159	815	3,714	5,920	1.59	2,159	0.58
Jul	1,728	864	302	1,377	1,727	1.25	863	0.63
Aug	531	0	134	611	0	0.00	0	0.00
Sept	3,136	1,311	255	1,163	2,574	2.21	1,030	0.89
Oct	12,172	4,514	1,216	5,542	12,136	2.19	4,477	0.81
Nov	17,238	6,564	1,959	8,926	16,611	1.86	6,108	0.68
Dec	33,607	12,838	2,526	11,512	33,607	2.92	12,838	1.12
Total	209,526	93,205	31,065	141,571	203,587	1.44	88,644	0.63
Mean	19,048	8,473	2,824	12,870	18,508		8,059	

* harvest which excluded crappie kept in a livewell, but which the angler stated they intended to release as part of an organized tournament

Table 65. Crappie catch and harvest statistics derived at Kentucky Lake (51,000 acres) from February through December 2023.

	White Crappie			Black Crappie			Total	
	Harvested	Released		Harvested	Released			
	≥10.0 in	<10.0 in	≥10.0 in	≥10.0 in	<10.0 in	≥10.0 in		
*Total no. of crappie	71,909	11,895	87,341	171,145	21,296	2,333	14,751	38,381
% of crappie harvested by number	77%				23%			
*Total weight of crappie (lb)	54,616	20,424	2,780	77,820	17,889	4,510	714	23,114
% of crappie harvested by weight	75%				25%			
Mean length (in)	11.6				11.5			
Mean weight (lb)	0.77				0.86			
*Catch rate (fish/hr)	0.38				0.09			
*Harvest rate (fish/hr)	0.16				0.05			

* Includes effort and catch of non-crappie anglers

Table 66. Crappie angling methods at Kentucky Lake (51,000 acres) from February through December 2023.

Year	Casting	Still-fishing	Spider Rig	Spider Rig	Spider Rig
2023	4.0%	60.0%	12.0%	20.0%	4.0%
2020	10.0%	24.0%	12.0%	29.0%	25.0%
2017	37.3%	11.6%	14.2%	10.8%	26.2%
2015	7%	29.3%	37.6%	11.7%	14.8%
Mean	14.5%	31.2%	18.9%	17.9%	17.5%

Table 67. Monthly black bass angling success at Kentucky Lake (51,000 acres) from February through December 2023.

Month	Total no. bass caught	Total no. bass harvested	*Total no. bass harvested	No. black bass fishing trips	Hours fished by bass anglers	Bass caught by bass anglers	Bass caught/hour by bass anglers	Bass harvested by bass anglers	*Bass harvested by bass anglers	Bass harvested/hour by bass anglers	*Bass harvested/hour by bass anglers
Feb	877	58	58	271	1,234	760	0.62	0	0	0.00	0.00
Mar	28,783	4,142	0	6,852	31,228	28,139	0.90	4,142	0	0.13	0.00
Apr	67,462	9,612	356	15,790	71,957	53,222	0.74	8,900	0	0.12	0.00
May	24,709	460	460	6,032	27,488	19,308	0.70	345	345	0.01	0.01
Jun	19,988	0	0	3,979	18,131	19,083	1.05	0	0	0.00	0.00
Jul	6,850	926	185	2,374	10,821	6,541	0.60	863	123	0.08	0.01
Aug	4,958	212	0	1,206	5,496	4,710	0.86	213	0	0.04	0.00
Sept	12,405	1,872	140	2,594	11,821	11,796	1.00	1,732	0	0.15	0.00
Oct	11,617	407	259	2,351	10,714	11,137	1.04	370	259	0.03	0.02
Nov	6,621	57	0	1,287	5,865	6,450	1.10	57	0	0.01	0.00
Dec	5,397	245	82	1,189	5,418	5,151	0.95	164	0	0.03	0.00
Total	189,667	17,993	*1540	43,924	200,172	166,297	0.83	16,786	*727	0.08	0.00
Mean	17,242	1,636	*140	3,993	18,197	15,118		1,526	*66		

* harvest which excluded bass kept in a livewell, but which the angler stated they intended to release

Table 68. Black bass catch and harvest statistics derived at Kentucky Lake (51,000 acres) from February through December 2023.

	Largemouth Bass			Smallmouth Bass			Spotted Bass					
	Harvest	Release	Total	Harvest	Release	Total	Harvest	Release	Total			
	≥15.0 in	12.0-14.9 in	≥15.0 in	≥15.0 in	12.0-14.9 in	≥15.0 in	12.0-14.9 in	≥15.0 in				
Total no. of bass	12,601	73,070	37,756	137,422	5,321	24,344	10,786	50,599	71	1,211	0	1,645
*Total no. of bass	(*1,367)		(*47,503)		(*173)		(*15,719)		(*0)		(*0)	
% of bass harvested by number	70%				30%				0%			
Total weight of bass (lb)	26,698	93,874	48,506	187,058	11,039	24,769	10,972	57,107	66	905	0	1,243
*Total weight of bass (lb)	(*2,994)		(*63,685)		(*315)		(*17,304)		(*0)		(*0)	
% of bass harvested by weight	71%				29%				0.0			
Mean length (in)	16.1				17.1				13.0			
Mean weight (lb)	2.18				2.43				0.93			
**Catch rate (fish/hr)	0.31				0.11				0.00			
**Harvest rate (fish/hr)	0.003				<0.001				0.000			

* harvest which excluded bass kept in a livewell, but which the angler stated they intended to release

** Includes effort and catch of non-bass anglers

Table 69. Monthly panfish angling success at Kentucky Lake (51,000 acres) from February through December 2023.

Month	Total no. panfish caught	Total no. panfish harvested	No. panfish fishing trips	Hours fished by panfish anglers	Panfish caught by panfish anglers	Panfish caught/hour by panfish anglers	Panfish harvested by panfish anglers	Panfish harvested/hour by panfish anglers
Feb	468	175	0	0	-	-	-	-
Mar	1,071	0	0	0	-	-	-	-
Apr	28,836	11,392	2,105	9,594	13,706	1.43	8,366	0.87
May	79,759	26,663	4,543	20,705	70,910	3.42	23,790	1.15
Jun	10,029	5,571	623	2,840	8,288	2.92	5,293	1.86
Jul	802	247	0	0	-	-	-	-
Aug	2,869	177	89	407	2,373	5.83	142	0.35
Sept	4,400	1,170	85	388	1,030	2.66	468	1.21
Oct	2,405	407	108	493	555	1.13	185	0.38
Nov	970	514	0	0	-	-	-	-
Dec	654	82	0	0	-	-	-	-
Total	132,263	46,398	7,554	34,427	96,862	2.81	38,244	1.11
Mean	12,024	4,218	687	3,130	16,144		6,374	

Table 70. Panfish catch and harvest statistics derived from Kentucky Lake (51,000 acres) from February through December 2023.

	Bluegill				Redear Sunfish			
	Harvested	Released		Total	Harvested	Released		Total
		6.0-7.9 in	≥8.0 in			6.0-7.9 in	≥8.0 in	
Total no. of panfish	43,519	20,683	4,701	107,164	2,881	198	297	3,376
% of panfish harvested by number	94%				6%			
Total weight of panfish (lb)	12,644	1,987	453	18,759	1,577	94	142	1,814
% of panfish harvested by weight	89%				11%			
Mean length (in)	7.6				9.1			
Mean weight (lb)	0.27				0.53			
*Catch rate (fish/hr)	0.24				0.01			
*Harvest rate (fish/hr)	0.097				0.006			

* includes effort and catch of non-panfish anglers

Table 71. Monthly catfish angling success at Kentucky Lake (51,000 acres) from February through December 2023.

Month	Total no. catfish caught	Total no. catfish harvested	No. catfish fishing trips	Hours fished by catfish anglers	Catfish caught by catfish anglers	Catfish caught/hour by catfish anglers	Catfish harvested by catfish anglers	Catfish harvested/hour by catfish anglers
Feb	117	0	0	0	-	-	-	-
Mar	500	71	0	0	0	0.00	0	0.00
Apr	3,026	1,068	2,406	10,965	534	0.05	534	0.05
May	5,402	4,367	1,018	4,641	1,264	0.27	1,264	0.27
Jun	3,482	2,786	575	2,621	2,089	0.80	2,019	0.77
Jul	185	123	86	393	0	0.00	0	0.00
Aug	496	319	156	712	425	0.60	283	0.40
Sept	3,136	2,387	893	4,070	2,434	0.60	2,153	0.53
Oct	555	333	162	739	296	0.40	259	0.35
Nov	342	228	0	0	0	0.00	0	0.00
Dec	0	0	0	0	-	-	-	-
Total	17,241	11,683	5,460	24,884	7,042	0.28	6,512	0.26
Mean	1,567	1,062	482	2,195	782		724	

Table 72. Catfish catch and harvest statistics derived from Kentucky Lake (51,000 acres) from February through December 2023.

	Blue Catfish				Channel Catfish				Flathead Catfish			
	Harvest	Release		Total	Harvest	Release		Total	Harvest	Release		Total
		12.0-14.9 in	≥15.0 in			12.0-14.9 in	≥15.0 in			12.0-14.9 in	≥15.0 in	
Total no. of catfish	2,785	0	320	3,105	8,836	991	3,222	13,958	62	0	58	178
% of catfish harvested by number	24%				76%				1%			
Total weight of catfish (lb)	10,878	0	5,238	16,116	14,362	2,062	6,698	25,013	195	0	120	434
% of catfish harvested by weight	42.8%				56.5%				0.8%			
Mean length (in)	22.0				17.7				20.0			
Mean weight (lb)	4.11				1.77				3.16			
*Catch rate (fish/hr)	0.01				0.03				<0.01			
*Harvest rate (fish/hr)	0.006				0.020				<0.001			

* Includes effort and catch of non-catfish anglers

Table 73. Morone catch and harvest statistics derived from Kentucky Lake (51,000 acres) from February through December 2023.

	White Bass			Yellow Bass			Hybrid Striped Bass			Striped Bass					
	Harvest	Release	Total	Harvest	Release	Total	Harvest	Release	Total	Harvest	Release	Total			
	12.0-14.9 in		≥15.0 in				12.0-14.9 in		≥15.0 in		≥15.0 in	12.0-14.9 in	≥15.0 in		
Total no. of <i>Morone</i>	5,436	9,237	1,137	50,412	5,618	36,666	42,284	0	0	0	0	0	1883	5463	10077
% of <i>Morone</i> harvested by number	49.2%			50.8%			0.0%			0.0%					
Total weight of <i>Morone</i> (lb)	3303	3654	450	21096	1736	5559	7294	0	0	0	0	0	2528	7332	13525
% of <i>Morone</i> harvested by weight	65.5%			34.5%			0.0%			0.0%					
Mean length (in)	11.5			9.6			-			-					
Mean weight (lb)	0.67			0.36			-			-					
*Catch rate (fish/hr)	0.11			0.09			-			0.02					
*Harvest rate (fish/hr)	0.012			0.013			-			0.000					

* includes effort and catch of non-morone anglers

Table 74. Monthly Morone angling success at Kentucky Lake (51,000 acres) from February through December 2023.

Month	Total no. Morone caught	Total no. Morone harvested	No. Morone fishing trips	Hours fished by Morone anglers	Morones caught by Morone anglers	Morones caught/hour by Morone anglers	Morones harvested by Morone anglers	Morones harvested/hour by Morone anglers
Feb	2,632	351	54	247	351	1.42	351	1.42
Mar	4,357	286	0	0	-	-	-	-
Apr	20,114	1,780	0	0	-	-	-	-
May	12,412	1,149	157	714	1,724	2.41	0	0.00
Jun	8,079	975	48	218	836	3.83	418	1.91
Jul	8,207	2,530	302	1,377	4,011	2.91	1,975	1.43
Aug	4,002	0	0	0	-	-	-	-
Sept	6,741	2,106	128	581	1,544	2.66	515	0.89
Oct	6,290	629	189	862	925	1.07	74	0.09
Nov	13,014	1,085	168	765	571	0.75	457	0.60
Dec	16,926	164	297	1,354	9,485	7.00	0	0.00
Total	102,773	11,054	1,365	6,221	19,447	3.13	3,790	0.61
Mean	9,343	1,005	122	556	2,431		474	

Table 75. Length frequency, CPUE (fish/hr), and standard error (SE) of Largemouth Bass collected during diurnal electrofishing at Lake Beshear during 2023.

Season	Inch class																				Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
Spring	7	28	38	12	9	33	22	37	23	7	10	7	12	18	18	25	15	7	5	1	334	133.6	6.9
Fall	57	107	71	8	13	46	20	22	16	11	6	4	1	2	1	2	1				388	155.2	19.7

wfdpsdlb.d23 and wfdwrlb.d23

Table 76. Spring diurnal electrofishing CPUE (fish/hr) of each length group of Largemouth Bass collected at Lake Beshear during April or May of 2014 to 2023.

Year	Mean length age 3 at capture	*Mean length age 3 at capture	Age 1		Length group												Total		PSD	RSD ₁₅
			CPUE	SE	<8.0 in	≥12.0 in	12.0-14.9 in	≥15.0 in	≥18.0 in	≥20.0 in	CPUE	SE								
2023		10.4	33.4	2.9	37.6	4.0	50.0		9.6	3.4	40.4	6.8	21.2		5.2	1.5	133.6	6.9	52	42
2022	13.8	13.8	34.4	7.6	35.6	7.9	50.9		9.2	1.2	42.0	5.4	25.2		6.8	1.6	134.0	11.0	52	43
2021	13.8	13.8	23.2	5.6	26.0	6.4	45.2	8.2	8.8	3.0	36.4	5.6	18.8	2.9	6.0	1.1	100.4	11.7	61	49
**2020	13.8	13.8	3.2	1.5	3.2	1.5	28.0	3.4	3.2	1.9	24.8	3.8	16.0	3.4	4.8	2.3	38.8	3.4	79	70
2019	13.8	13.8	4.0	2.2	4.0	2.2	28.0	4.8	4.8	1.4	23.2	3.7	16.0	3.9	4.8	1.0	36.8	5.0	85	71
2018	13.8	13.8	6.0	1.3	6.8	0.8	43.6	2.7	5.6	1.0	38.0	3.0	24.4	2.0	8.0	1.8	59.6	4.6	83	72
2017 ^A	13.8	13.8	6.4	1.3	20.0	3.9	43.6	3.1	12.0	2.4	31.6	4.6	19.2	4.2	4.8	2.4	72.8	5.9	69	50
2016 ^{AB}	13.8	13.8	30.4	4.0	16.4	3.4	67.2	8.3	10.8	2.3	56.4	7.0	32.8	4.8	5.6	1.2	102.8	6.5	78	65
2015 ^B	13.8	13.8	4.4	1.5	4.4	1.5	78.4	4.5	17.6	3.5	60.8	3.4	28.0	3.0	8.0	0.6	91.6	3.9	90	70
2014 ^A	13.3	13.4	1.9	0.9	3.2	1.4	61.6	5.6	18.0	2.3	43.6	6.1	20.4	2.3	4.4	1.2	83.6	6.8	77	54
Average	13.6	12.5	14.7		15.7		49.7		10.0		39.7		22.2		5.8		85.4		72.5	58.5
LBFMP	≥ 12.0 in		≥ 10.0				≥ 45.0		≥ 15.0		≥ 30.0				≥ 3.0				55 - 75	20 - 40

(Lake Beshear Bass Database.xls)

Data for 1985-2013 is listed in previous year reports.

^A Age and growth data was not collected. Previous year data used for age estimates.

^B Age and growth data was collected in the Fall. Mean length age 3 was calculated from back calculations. Spring CPUE age 1 was determined from back-calculations and extrapolation with spring data. Mortality was determined from fall age frequency data.

LBFMP - Lake Beshear Fish Management Plan objective goal.

* Mean length calculated using a weighted average applied to entire catch

** Only one dipper used due to covid19 pandemic restrictions

Table 77. Lake specific assessment for Largemouth Bass collected at Lake Beshear from 2014-2023. This table includes the parameter estimates and the individual scores as well as the total scores and assessment ratings. The final two columns list the instantaneous mortality (Z) and annual mortality (A).

Year	Mean	*Mean	CPUE age 1	Length group			Total score	Assessment rating	Z	A
	length	length		12.0-14.9 in	≥15.0 in	≥20.0 in				
	age 3 at capture	age 3 at capture		CPUE	CPUE	CPUE				
2023		10.4	33.4	9.6	40.4	5.2			0.304	26.2
Score	1		4	2	3	4	14	G		
2022	13.8	13.8	34.4	9.2	42	6.8				
Score	3		4	2	4	4	17	E		
2021	13.8	13.8	23.2	8.8	36.4	6.0				
Score	3		4	2	3	4	16	G		
**2020	13.8	13.8	3.2	3.2	24.8	4.8				
Score	3		1	1	1	3	9	F		
2019	13.8	13.8	4	4.8	23.2	4.8				
Score	3		2	1	1	3	10	F		
2018	13.8	13.8	6.0	5.6	38.0	8				
Score	3		3	1	3	4	14	G		
2017	13.8	13.8	6.4	12.0	31.6	4.8			0.349	29.4
Score	3		3	3	2	3	14	G		
2016	13.8	13.8	30.4	10.8	56.4	5.6			0.423	34.5
Score	3		4	2	4	4	17	E		
2015 ^B	13.8	13.8	4.4	17.6	60.8	8.0			0.457	36.7
Score	3		2	4	4	4	17	E		
2014 ^A	13.3	13.4	1.9	18.0	43.6	4.4			0.145	13.5
Score	3		1	4	4	3	15	G		
Average	13.6	13.6	14.7	10.0	39.7	5.8	14.3		0.3	28.1

Data from 1985 to 2013 is listed in previous year reports.

**only one dipper used in spring 2020 due to covid19 pandemic restrictions

^A age and growth data was not collected. Previous year data used for age estimates.

^B age and growth data was collected in the Fall. Mean length age-3 was calculated from back calculations.

Spring CPUE age-1 was determined from back-calculations and extrapolation with spring data. Mortality was determined from fall age frequency data.

*Mean length calculated using a weighted average applied to the entire spring sample

Assessment Quartiles were updated in 2016

Rating

1-7 = Poor (P)

8-11 = Fair (F)

12-16 = Good (G)

17-20 = Excellent (E)

Lake Beshear Bass Data Base

Table 78. Age frequency and CPUE (fish/hr) of Largemouth Bass collected during 2.5 hours of electrofishing at Lake Beshear during April 2023.

Age	Inch class																				Total	%	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22					
1	7	28	38	11																	84	25	33.6	2.9	
2				2	8	33			2												45	13	18.0	3.8	
3					1		20	22	12	3											58	17	23.2	4.0	
4							2	15	7	4	7	6	4	4	2						51	15	20.4	3.5	
5									2		3	1	8	13	5	8					40	12	16.0	2.3	
6													2	6	8	2	1				19	6	7.6	1.5	
7															3	5	2	1			11	3	4.4	1.0	
8															3		2	2			7	2	2.8	1.0	
9																5		3	1		9	3	3.6	0.5	
10																	2	1	1		4	1	1.6	0.5	
11																	4		2		6	2	2.4	0.9	
12																	2				2	1	0.8	3.6	
13																						1	0	0.4	0.4
Total	7	28	38	13	9	33	22	37	23	7	10	7	12	19	19	26	14	8	4	1	337		134.8		
%	2	8	11	4	3	10	7	11	7	2	3	2	4	6	6	8	4	2	1	<1					

wfdpsdlb.d23, wfdaglb.d23

Table 79. Mean length (in) at capture and standard error (SE) of Largemouth Bass. Otoliths were collected from Lake Beshear in 2023.

Species	N	Mean length at capture																								Von Bertalanffy growth parameters			
		Age at capture																								L _{inf} (in)	K	t ₀	
Largemouth Bass		5.1	0.1	8.4	0.1	10.4	0.1	12.8	0.2	16.3	0.3	18.2	0.2	18.6	0.3	18.9	0.5	19.5	0.4	20.3	0.5	20.2	0.4	19.5	0.0	22.5	22.21	0.242	0.031

wfdpsdlb.d23, wfdaglb.d23

Table 80. Number of fish and mean relative weight (W_r) values for each length group of Largemouth Bass collected at Lake Beshear during 2.5 hours of diurnal electrofishing (5- 30-minute runs) in October 2023. Standard errors are in parentheses.

Species	Area	Length group						Total	
		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in		No.	W_r
		No.	W_r	No.	W_r	No.	W_r		
Largemouth Bass	Lake Beshear	103	77 (1)	20	82 (2)	7	91 (3)	130	79 (1)

wfdwrlb.d23

Table 81. CPUE (fish/hr) and mean length (in) of age-0 Largemouth Bass collected in the fall, and CPUE of age-1 Largemouth Bass collected the following spring during diurnal electrofishing at Lake Beshear.

Year class	Age 0 ^A		Age 0 ^A		Age 0 ≥ 5.0 in ^A		Age 1 ^B	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.6	0.1	97.7	22.4	32.0	14.4		
2022	4.6	<0.1	101.6	26.9	30.8	12.1	33.4	2.9
2021	4.8	0.1	83.6	6.1	34.8	8.3	34.4	7.6
2020	5.1	0.1	60.8	25.0	36.0	17.7	23.2	5.6
2019	4.7	0.1	63.2	9.9	26.4	10.3	*3.2	1.5
2018	5.3	0.1	50.7	4.3	29.6		4.0	2.2
2017	4.1	0.1	38.0	2.9	6.5	1.9	6.0	1.3
2016	4.4	0.1	50.5	6.0	10.0	4.0	6.4	1.3
2015	3.9	0.1	34.5	7.0	3.5	1.5	30.4	4.0
2014	4.8	0.1	24.8	4.4	11.0	1.9	4.4	1.5
2013	4.1	0.1	25.0	7.0	4.5	2.6	1.9	0.9
2012	6.3	0.1	34.0	8.8	33.2	7.4	33.8	9.6
2011	5.0	0.1	41.6	14.8	23.6	7.6	27.6	5.5
2010	4.9	0.1	54.0	4.6	22.0	4.5	11.7	2.2
Average	4.8		54.3		21.7		18.1	

^A Data collected by fall (October) diurnal electrofishing. Mean lengths were determined by analysis of otoliths removed from a subsample of LMB <10.0 in, which were extrapolated to the entire catch of the fall sample, and length frequencies.

^B Data collected during the following spring (April/May) diurnal electrofishing sample.
WFDWRLB.Dxx, WFDWRAGB.Dxx, WFDPSDLB.Dxx

* Only one dipper was used due to covid19 protocols in 2020

Table 82. Species composition, relative abundance, and CPUE (fish/hr) of fish collected during 1.0 hour (4- 900-sec runs) of diurnal electrofishing at Lake Pennyryle on May 3, 2023.

Species	Inch class																							Total	CPUE	SE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	20	23			
Yellow Bullhead						1	4	2	2															9	9.0	3.8
Channel Catfish							1										1	1			1		1	5	5.0	2.5
Topminnow			2																					2	2.0	2.0
Warmouth	1	2	11	12	30	15	4																	75	75.0	12.7
Bluegill	7	38	107	43	33	45	45	1																319	319.0	60.6
Longear Sunfish		18	17	7	3																			45	45.0	5.7
Redear Sunfish		3	7	27	28	20	33	13																131	131.0	17.5
Largemouth Bass			3	31	11	5	3	9	11	9	6	1									2			91	91.0	15.2
White Crappie										1														1	1.0	1.0

wfdpsdp.d23

Table 83. Spring, diurnal electrofishing CPUE (fish/hr) of each length group of Largemouth Bass collected at Pennyryle Lake from 2014-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2022	53.0	8.1	35.0	10.0	1.0	1.0	2.0	1.2	2.0	1.2	91.0	15.2
2022	64.0	6.7	50.0	3.5	6.0	2.0	2.0	1.2	0.0		122.0	9.6
2021	13.0	3.4	18.0	6.2	1.0	1.0	1.0	1.0	0.0		33.0	10.4
2020*	35.0	7.6	75.0	11.8	3.0	1.9	1.0	1.0	1.0	1.0	114.0	13.1
2019	10.0	2.0	9.0	5.3	5.0	3.0	1.0	1.0	0.0		25.0	7.9
2018	29.0	5.0	63.0	16.8	7.0	2.5	2.0	2.0	1.0	1.0	101.0	21.3
2017	35.0	11.0	67.0	9.7	4.0	1.6	5.0	1.9	1.0	1.0	111.0	18.4
2016	44.0	9.7	62.0	6.2	13.0	3.0	3.0	1.9	1.0	1.0	122.0	10.0
2015	44.0	3.6	68.8	8.1	8.8	2.9	3.2	1.5	0.8	0.8	124.8	10.6
2014	17.0	3.0	36.0	5.2	7.0	3.0	1.0	1.0	0.0		61.0	8.2
Mean	34.4		48.4		5.6		2.1		0.7		90.5	

wfdpsdp.dxx

Data from 1990 to 2013 is listed in previous year reports.

* Only one dipper was used due to covid19 protocols in 2020

Table 84. Lake specific assessment for Largemouth Bass collected at Pennyrile Lake from 2014-2023. This table includes the parameter estimates and the individual scores as well as the total scores and assessment ratings. The final columns list the instantaneous mortality (Z) and annual mortality (A) in years when age and growth was collected.

Year	CPUE				Mean length	Total score	Assessment rating	Z	A
	age 1	12.0-14.9 in	≥15.0 in	≥20.0 in	age 3 at capture				
2023	47.0	1.0	2.0	2.0	10.5				
Score	4	1	2	4	4	15	G		
2022	32.0	6.0	2.0		10.5				
Score	2	1	2		4	9	F		
2021	11.0	1.0	1.0		10.5				
Score	1	1	1		4	7	P		
2020*	33.0	3.0	1.0	1.0	10.5				
Score	2	1	1	3	4	11	F		
2019	9.0	5.0	1.0		10.5				
Score	1	1	1		4	7	P	0.164	15.1
2018	29.0	7.0	2.0	1.0	11.7				
Score	2	2	2	3	4	13	G		
2017	28.0	4.0	5.0	1.0	11.7				
Score	2	1	4	3	4	14	G		
2016	38.0	13.0	3.0	1.0	11.7				
Score	3	3	3	3	4	16	G		
2015	36.0	8.8	3.2	0.8	11.7				
Score	3	2	3	3	4	15	G		
2014	19.8	7.0	1.0		11.7				
Score	1	2	1		4	8	F		
Average	28.3	5.6	2.1	0.8	11.1				

Rating

- 1 - 7 = Poor (P)
- 8 - 12 = Fair (F)
- 13 - 17 = Good (G)
- 18 - 20 = Excellent (E)

* Only one dipper was used due to covid19 protocols in 2020

Table 85. Spring, diurnal electrofishing CPUE (fish/hr) for each length group of Bluegill and Redear Sunfish collected at Lake Pennyrite from 2014-2023.

Species	Year	Length group								Total	
		<3.0 in		3.0-5.9 in		6.0-7.9 in		≥8.0 in		CPUE	SE
		CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
Bluegill	2023	45.0	16.2	183.0	14.0	90.0	35.8	1.0	1.0	319.0	60.0
	2022	20.0	4.3	132.0	31.3	135.0	58.6	4.0	2.8	291.0	96.0
	2021	33.0	18.7	28.0	1.6	97.0	12.0	22.0	2.6	180.0	30.1
	2020*	6.0	2.6	101.0	28.1	70.0	9.0	8.0	3.7	185.0	35.6
	2019	17.0	5.3	54.0	3.5	37.0	7.9	10.0	4.2	118.0	15.2
	2018	35.0	12.8	94.0	20.8	134.0	9.0	27.0	7.7	290.0	35.2
	2017	6.0	2.6	87.0	13.3	42.0	22.5	19.0	9.2	154.0	35.4
	2016	45.0	16.4	65.0	3.4	51.0	12.3	41.0	18.4	202.0	49.1
	2015	30.4	3.0	84.0	11.4	64.8	13.9	32.0	5.7	211.2	14.1
	2014	0.0		12.0	4.3	15.0	6.6	0.0		27.0	7.9
	Mean	23.7		84.0		73.6		16.4		197.7	

Species	Year	Length group								Total	
		<3.0 in		3.0-5.9 in		6.0-7.9 in		≥8.0 in		CPUE	SE
		CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
Redear Sunfish	2023	3.0	1.9	62.0	10.9	53.0	5.3	13.0	3.8	131.0	17.5
	2022	0.0		56.0	6.7	97.0	38.8	34.0	11.6	187.0	48.4
	2021	2.0	2.0	19.0	6.8	28.0	10.5	13.0	8.5	62.0	22.0
	2020*	0.0		63.0	14.8	34.0	9.3	10.0	6.0	107.0	16.2
	2019	0.0		14.0	1.2	21.0	2.5	15.0	7.2	50.0	6.2
	2018	2.0	1.2	33.0	12.8	24.0	5.4	27.0	4.1	86.0	19.1
	2017	0.0		15.0	3.0	14.0	10.4	25.0	18.4	54.0	30.4
	2016	0.0		16.0	5.9	15.0	3.0	30.0	7.4	61.0	15.8
	2015	0.8	0.8	12.0	2.5	4.8	1.5	32.8	15.3	50.4	18.1
	2014	0.0		8.0	5.4	17.0	5.7	8.0	3.7	33.0	12.5
	Mean	0.8		29.8		30.8		20.8		82.1	

wfdpsdp.dxx

Data from 1990 to 2013 is listed in previous year reports.

* Only one dipper was used due to covid19 protocols in 2020

Table 86. PSD and RSD values obtained for Largemouth Bass, Bluegill, and Redear Sunfish collected during 1.0 hour of diurnal electrofishing (4 - 900-sec runs) at Lake Pennyrile on May 3, 2023. 95% confidence intervals are in parentheses.

Species	≥ Stock size*	PSD	RSD**
Largemouth Bass	38	8 (±9)	5 (±7)
Bluegill	274	33 (±6)	0 (±1)
Redear Sunfish	121	38 (±9)	

* Largemouth stock size = 8.0 in, Bluegill stock size = 3.0 in, Redear Sunfish stock size= 4.0 in.

** Largemouth = RSD₁₅, Bluegill = RSD₈, Redear Sunfish = RSD₉.

wfdpsdp.d23

Table 87. Species composition, relative abundance, and CPUE (fish/hr) of fish collected during 1.0 hours (4- 900-sec runs) of diurnal electrofishing at Lake Blythe (Christian Co) on May 9, 2023.

Species	Inch class																	Total	CPUE	SE	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	17	23	29				
Common Carp																	1	1	1.0	1.0	
Channel Catfish																	1	1	1.0	1.0	
Warmouth					1	2	1	2											6	6.0	3.8
Bluegill	3	3	10	31	61	120	57	2											287	287.0	59.9
Longear Sunfish		1	2	13	17	4													37	37.0	17.5
Redear Sunfish			3		6	2	19	7											37	37.0	6.8
Largemouth Bass			1	9	28	12	15	15	3	5			2		1				91	91.0	24.9
White Crappie							1	11	3	1									16	16.0	5.9
Black Crappie								1	1					1					3	3.0	1.0

wfdpsdbl.d23

Table 88. Species composition, relative abundance, and CPUE (fish/hr) of sportfish collected from Ballard Wildlife Management Area lakes on 1 May 2023. The entire accessible shoreline was sampled with electrofishing.

Area	Inch class													Total	CPUE	SE		
	1	3	4	5	6	7	8	9	10	11	12	16	23					
Gravel Pit Pond																		
Channel Catfish														1	1	4.0	0.0	
Green Sunfish				1	1										2	8.0	0.0	
Warmouth					1	1									2	8.0	0.0	
Bluegill	1	3	11	14	8	15									52	208.0	0.0	
Largemouth Bass				1	9			2	13	4	2	1			32	128.0	0.0	
White Crappie						3	12	5	2						22	88.0	0.0	
Black Crappie				1			1			1					3	12.0	0.0	

wfdpsdbc.d23

Table 89. Species composition, relative abundance, and CPUE (fish/hr) of sportfish collected from West Kentucky Wildlife Management Area lakes on 1 May 2023. The entire accessible shoreline was sampled with electrofishing.

Area	Inch class																Total	CPUE	SE	
	1	2	3	4	5	6	7	8	9	10	11	12	13	15	17	20				21
Handicap Access Pond																				
Gizzard Shad								6	7	2								15	45.5	0.0
Green Sunfish			2															2	6.1	0.0
Bluegill	2	14	18	23	18	22	9											106	321.2	0.0
Redear Sunfish				1	7	13	10	1										32	97.0	0.0
Largemouth Bass			3	2	1	2	2	3	2	2	2	6	2	1	1	1	1	29	87.9	0.0
White Crappie						2												2	6.1	0.0
Black Crappie									1									1	3.0	0.0

wfdpsdwk.d23

Table 90. Species composition, relative abundance, and CPUE (fish/hr) of fish collected during 0.5 hours (2- 900-sec runs) of diurnal electrofishing at Clarks River National Wildlife Refuge Benton pond (36.855573, -88.334829) on 10 May, 2023.

Species	Inch class																			Total	CPUE	SE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Largemouth Bass	2				5	5	3	11	20	13	4	1					1			65	130.0	10.0
Bluegill	45	19	22	11	32	88														217	434.0	234.0
Spotted Sucker																		1	1	2	4.0	4.0
Green Sunfish	2				2															4	8.0	8.0
Warmouth							1													1	2.0	2.0
Catfish										1		2	4	3	1	2	2			15	30.0	2.0

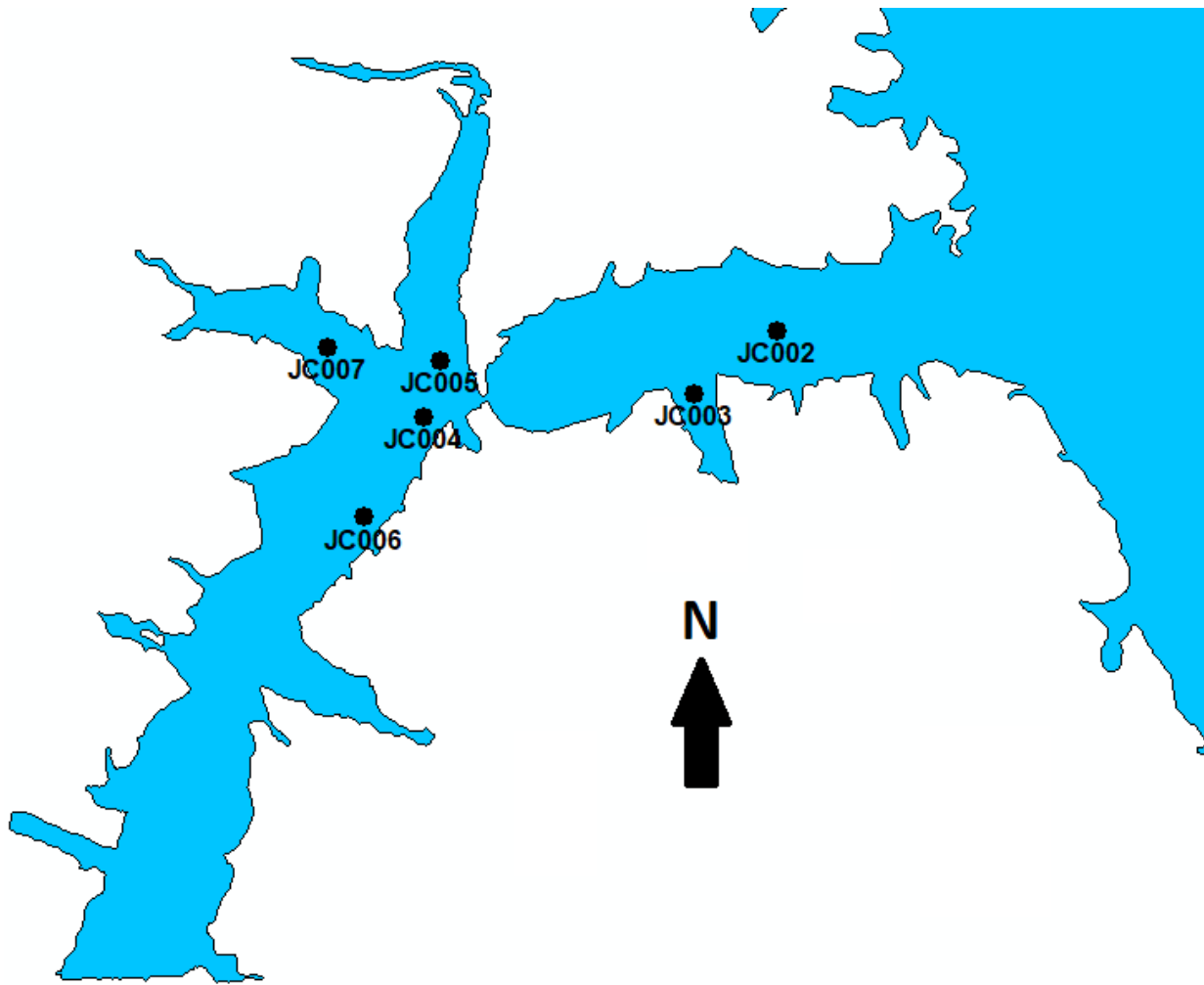
wfdusfwc.d23

Table 91. Species composition, relative abundance, and CPUE (fish/hr) of fish collected during 0.5 hours (2- 900-sec runs) of diurnal electrofishing at Clarks River National Wildlife Refuge Symsonia pond (36.963681, -88.523353) on April 26, 2023.

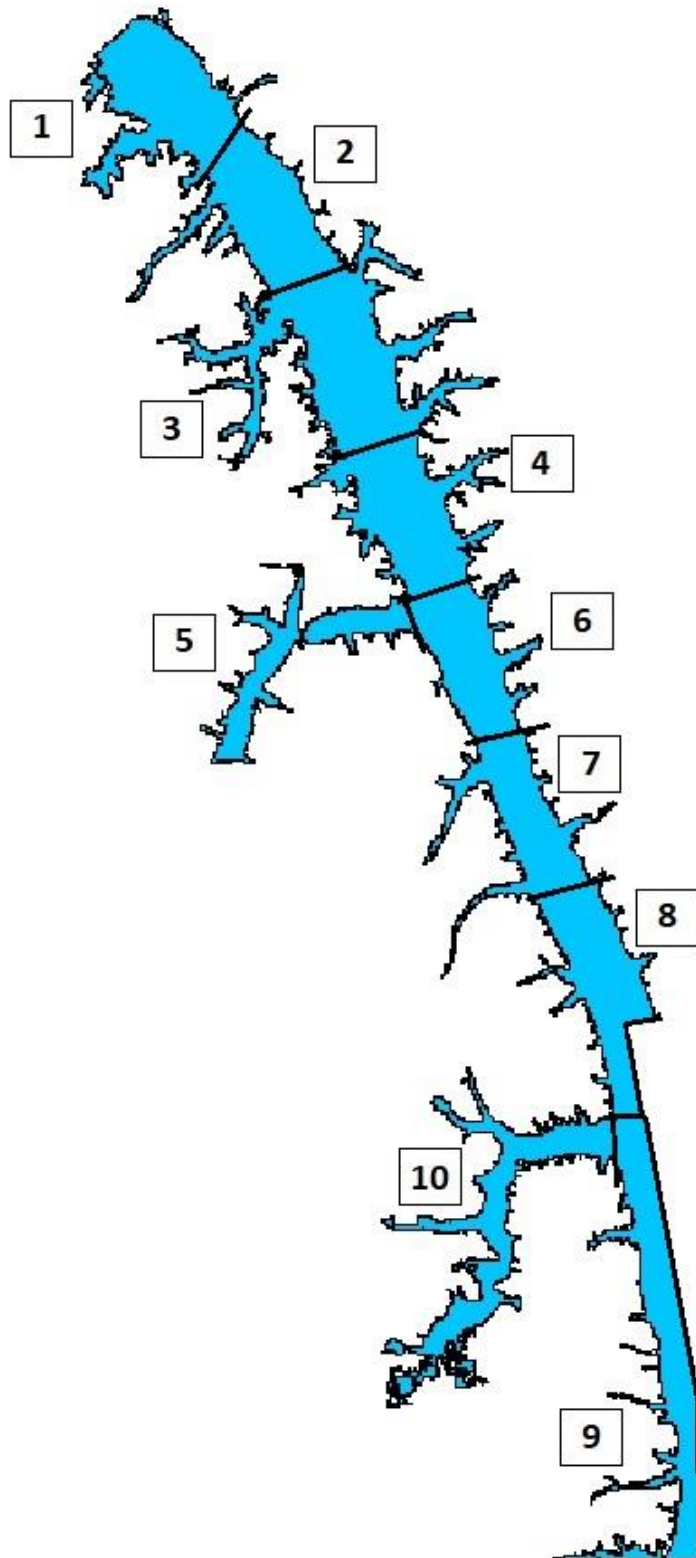
Species	Inch class																				Total	CPUE	SE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	20	21	22	31			
Spotted Gar																	1		1	2	4.0	0.0	
Gizzard Shad									1	1	1	5	2						1	11	22.0	14.0	
Silver Carp																				1	2.0	2.0	
Bullhead Minnow			2																	2	4.0	0.0	
Smallmouth Buffalo														1						1	2.0	2.0	
Bigmouth Buffalo													2	1	1	1	1			6	12.0	8.0	
Spotted Sucker														1						1	2.0	2.0	
Brook Silverside				1																1	2.0	2.0	
Green Sunfish		2		3																5	10.0	6.0	
Warmouth							1													1	2.0	2.0	
Orange Spotted Sunfish		1	1																	2	4.0	0.0	
Bluegill	13	55	54	27	11	4	1													165	330.0	94.0	
Longear Sunfish		1	3																	4	8.0	8.0	
Redear Sunfish				1	1	1	2	1												6	12.0	8.0	
Largemouth Bass					1	1				2	3	4	1	3	2	2	1	1		21	42.0	6.0	
White Crappie						1	3		2	1		1								8	16.0	8.0	
Black Crappie								2	1	1										4	8.0	8.0	

wfdpsdsy.d23

Appendix A. 2023 Larval fish sample sites in Jonathan Creek embayment, Kentucky Lake



Appendix B. Kentucky Lake Creel Survey Areas 2023.



Appendix C. KENTUCKY LAKE ANGLER ATTITUDE SURVEY 2023

1. Have you been surveyed this year? Yes - stop survey No – continue

2. Name _____ (Optional) and Zip Code

3. On average, how many times do you fish Kentucky Lake in a year? N=330

First time here 1.8% 1-4 22.4% 5-10 7.9% More than 10 67.9%

4. Which species of fish do you fish for at Kentucky Lake (**check all that applies**)? N=330

Redear 13.9% Bluegill 28.8% Black bass 62.1% Crappie 50.3% Catfish 26.4% White Bass 7.0% Yellow Bass 4.8% Striped Bass 2.1% Silver Carp 0.3% Gar 0.3% Sauger 0.6% Hybrid Striped Bass 0.3%

5. Which one species do you fish for most at Kentucky Lake (**check only one**)? N=330

Redear 0.6% Bluegill 5.2% Black bass 53.3% Crappie 30.0% Catfish 9.1% White Bass 1.2% Yellow Bass 0.6%

Answer the following questions for each species you fish for – (see question 4)

Redear Anglers

6. In general, what level of satisfaction or dissatisfaction do you have with Redear fishing at Kentucky Lake?
N=46

Very satisfied 6.5% Somewhat satisfied 37.0% Neutral 23.9% Somewhat dissatisfied 23.9%
Very dissatisfied 8.7%

6a. If you responded with somewhat or very dissatisfied in question (6) – what is the single most important reason for your dissatisfaction? N=15

Number of fish 86.7% Size of fish 0.0% Not happy with regulations 0.0% Poor weather 13.3%

Bluegill Anglers

7. In general, what level of satisfaction or dissatisfaction do you have with the Bluegill fishing at Kentucky Lake? N=95

Very satisfied 23.2% Somewhat satisfied 42.1% Neutral 17.9% Somewhat dissatisfied 12.6%
Very dissatisfied 4.2%

7a. If you responded with somewhat or very dissatisfied in question (7) – what is the single most important reason for your dissatisfaction? N=16

Number of fish 81.3% Size of fish 18.8% Not happy with regulations 0.0%

Black Bass Anglers

8. In general, what level of satisfaction or dissatisfaction do you have with the black bass fishing at Kentucky Lake? N=204

Very satisfied 19.6% Somewhat satisfied 43.6% Neutral 16.2% Somewhat dissatisfied 15.2%
Very dissatisfied 5.4%

8a. If you responded with somewhat or very dissatisfied in question (8) – what is the single most important reason for your dissatisfaction? N=42

Number of fish 71.4% Size of fish 7.1% Not happy with regulations 0.0% Lake levels 4.8% Asian carp 4.8%
Poor weather 2.4% No grass anymore 2.4% Poor knowledge 2.4% Doesn't fish enough 2.4%
Cormorants 2.4%

Crappie Anglers

9. In general, what level of satisfaction or dissatisfaction do you have with crappie fishing at Kentucky Lake?
N=165

Very satisfied 19.4% Somewhat satisfied 31.5% Neutral 15.8% Somewhat dissatisfied 24.2%

Very dissatisfied 9.1%

9a. If you responded with somewhat or very dissatisfied in question (9) – what is the single most important reason for your dissatisfaction? N=55

Number of fish 87.3% Size of fish 0.0% Not happy with regulations 0.0% Asian carp 5.5% Poor weather 1.8%
Bad time of year 3.6% Lake levels 1.8%

Catfish Anglers

10. In general, what level of satisfaction or dissatisfaction do you have with the catfish fishing at Kentucky Lake? N=87

Very satisfied 41.4% Somewhat satisfied 37.9% Neutral 12.6% Somewhat dissatisfied 5.7%
Very dissatisfied 2.3%

10a. If you responded with somewhat or very dissatisfied in question (10) – what is the single most important reason for your dissatisfaction? N=7

Number of fish 85.7% Size of fish 0.0% Not happy with regulations 0.0% Too much commercial fishing 0.0%
Water levels 14.3%

White Bass Anglers

11. In general, what level of satisfaction or dissatisfaction do you have with the White Bass fishing at Kentucky Lake? N=23

Very satisfied 26.1% Somewhat satisfied 47.8% Neutral 17.4% Somewhat dissatisfied 8.7%
Very dissatisfied 0.0%

11a. If you responded with somewhat or very dissatisfied in question (11) – what is the single most important reason for your dissatisfaction? N=2

Number of fish 50.0% Size of fish 0.0% Not happy with regulations 0.0% Asian carp 50.0%

All Anglers

12. When you fish for crappie at Kentucky Lake, do you use some form of real-time, forward-facing sonar like livescope or a similar system? N=166

Yes 50.0% No 50.0%

12a. If “Yes”, how often do you use it while crappie fishing? N=83

Always 72.3% Frequently 9.6% Occasionally 7.2% Rarely 10.8% Never 0.0%

13. When you fish for crappie at Kentucky Lake, how often do you release keeper size fish (>10")? N=164

Always 3.7% Frequently 22.0% Occasionally 32.9% Rarely 12.8% Never 28.7%

13a. If you release them, what is the number one reason you release a keeper size crappie? N=119

Only caught a few 37.0% Release large females 15.1% Release large fish 18.5%

Too close to the size limit 4.2% Only keep larger fish 5.0% Only practice catch and release 10.1%

Release everything under 11" 0.8% Only keeps fish when guiding 0.8% Only keep fish out of cold water

1.7%

Only keeps a few per trip 0.8% Freezer is already full 0.8% Don't eat fish 0.8% Culling 0.8%

Already caught a limit 3.4%

14. If you fish for catfish in Kentucky Lake, which is more important to you: catching trophy fish, or catching more keeper size fish to eat? N=87 Trophy fish 9.2% Catching keeper fish to eat 65.5% Both equally important 16.1% No opinion 9.2%

15. If you fish for catfish, would you support or oppose a statewide 12-inch minimum size limit on catfish? N=87
 Support 78.2% Oppose 19.5% No Opinion 2.3%

16. Are you satisfied with the current size and creel limits on all sport fish at Kentucky Lake? N=330 Yes 87.9% No 12.1%

16a. If you responded “No” to Question 16, which species are you dissatisfied with and what size and creel limits would you prefer? N=40

LMB minimum size 14” 5.0%	LMB minimum size 18” 5.0%	LMB minimum size 20” 2.5%
LMB slot limit 2.5%	LMB creel limit 3/day 2.5%	SMB minimum size 14” 5.0%
SMB minimum size 18” 12.5%	SMB minimum size 21” 2.5%	SMB minimum size 24” 2.5%
SMB slot limit 2.5%	SMB creel limit 3/day 2.5%	Crappie minimum size 8” 2.5%
Crappie minimum size 9” 2.5%	Crappie minimum size 11” 17.5%	Crappie minimum size 12” 25.0%
Crappie slot limit 5.0%	Crappie slot limit 10-12” 2.5%	Crappie slot limit 10-14” 2.5%
Crappie slot limit 9-14” 2.5%	Crappie creel limit 15/day 22.5%	Crappie creel limit 10/day 7.5%
RES minimum size 10” 2.5%	RES creel limit 20/day 2.5%	RES creel limit 15/day 2.5%
RES creel limit 10/day 2.5%	Catfish minimum size 16” 2.5%	Yellow Bass creel limit 30/day 2.5%
BLG creel limit 30-40/day 2.5%	BLG creel limit 20/day 2.5%	Bass tournaments limit 3/angler 2.5%

17. Have you participated in an organized fishing tournament on any body of water within the last 12 months? N=330 Yes 38.2% No 61.8%

17a. If “Yes”, were any of the tournaments an alternative format (catch, photo, release; onboard weighing, etc) N=126 Yes 4.8% No 95.2%

17b. To help us learn more about fishing tournaments in Kentucky, would you support or oppose a regulation requiring tournaments to post upcoming tournament dates and locations on our website? N=126 Support 86.5% Oppose 7.9% No Opinion 5.6%

17c. Would you support or oppose a regulation requiring tournaments to report their fishing effort and catch to our department? N=126 Support 77.8% Oppose 15.1% No Opinion 7.1%

18. Silver carp are the most abundant of the 4 invasive Asian carp species in Kentucky Lake and often jump when disturbed. Based on your personal experience on the water, how do you feel the abundance of silver carp has changed in Kentucky Lake in the past two years? N=330 Increasing 7.9% Decreasing 65.5% No Change 13.9% No Opinion 12.7%

19. Are you aware that invasive Asian carps are generally considered to be excellent fish to eat? N=329 Yes 74.5% No 25.5%

20. Are you aware that commercial harvest of invasive Asian carps occurs on Kentucky Lake? N=329 Yes 90.0% No 10.0%

NORTHWESTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Table 1 presents a summary of conditions encountered while sampling at state-owned or managed lakes and ACOE reservoirs during the 2023 field season.

Nolin River Lake

Black Bass Sampling

Diurnal boat electrofishing to survey the black bass population at Nolin River Lake was conducted in April 2023 (Tables 2-5, 9). Largemouth Bass accounted for around 79% of black bass collected. Catch rates were high across the board for 2023. Total CPUE for Largemouth Bass increased significantly from 2022, as did catch rates for 8.0- to 11.9, 12.0- to 14.9, and ≥ 15.0 -in fish, which were all the highest ever recorded for Nolin River Lake. The catch rate for fish ≥ 20.0 in remained on the high end of previous collections. A subsample of Largemouth Bass was sacrificed for age and growth analysis. Largemouth Bass were found up to age 13. Mean length age 3 at capture is 13.1 in, a slight increase from the last age sample in 2017. Additionally, fin clips were collected from each fish sacrificed for age and growth. A subsample of 50 was submitted for genetic profiling; 49 of which were successfully processed. Forty-four of forty-nine (89.8%) Largemouth Bass were determined to be pure Northern Largemouth Bass ($\geq 95\%$). The averages across 49 samples were 97.5% Largemouth Bass and 2.5% Florida Bass. Nolin River Lake has one of the purest Largemouth Bass (Northern) populations in Kentucky, suggesting there have been no introductions of Florida Bass to Nolin River Lake. A total of 137 Largemouth Bass were collected from Nolin River Lake and transferred to PFH for use as future brood stock pending genetic testing.

Diurnal boat electrofishing to survey the black bass population at Nolin River Lake was conducted in October 2023 (Tables 6-8). Catch rates for Largemouth Bass were significantly lower than the spring sample and previous fall samples. Average relative weights (W_t) were slightly lower than 2022. There appears to be sufficient forage available to produce improved body condition. This will be monitored closely moving forward.

Variability exists concerning catch rates among and between years but can be attributed to environmental variables at time of sampling rather than changes in the population. The Largemouth Bass population at Nolin River Lake is relatively stable and performing consistently well (2023 Statewide Assessment Rating = Excellent; Table 9). The size limit changed to a straight 15.0-in minimum, removing the one fish under 15.0 in that went into effect in 1996.

Crappie Sampling

Trap netting to assess the crappie populations at Nolin River Lake was conducted during November (Tables 10-17). Once again, 2023 sampling resulted in low catch rates due to stable weather/water conditions during sampling. A total of 84 crappie (61 White Crappie) were collected during 80 net-nights (nn) of sampling for a total CPUE of 0.8 fish/nn. All catch rates used in the population assessment are much lower than typical collections and, as such, should be taken into consideration when looking at the statewide assessment. Weights were taken and otoliths removed from a representative sample of each inch class. Growth rates remain high, posting another record high for mean length age 2 at capture. Body condition is very good for all three length groups and is evident when handling fish. The crappie population at Nolin River Lake is stable and performing much better than the data acknowledges. Recent surveys have yielded poor catches, however, anecdotal information from anglers describes a population with great numbers of large fish (≥ 12.0 in) and good numbers of smaller fish (≥ 8.0 in) available to anglers. Timing, net locations, and associated variables will be re-evaluated in an attempt to increase catch to corroborate angler information. Low catch rates dictated a "Poor" ranking based on the statewide assessment for 2023 (Table 17).

Additionally, anglers have been asking questions for several years about changing the minimum length limit for crappie at Nolin River Lake to 10.0 in. We used all pertinent available data to model different length limit scenarios in FAMS. After consulting with Steve Sammons on our results we made the decision to move forward with a

proposal to increase the minimum length limit at Nolin River Lake to 10.0 in, while keeping the creel limit set at 20 fish per angler per day. This regulation change will go through the full regulation process and likely not be official until March 1, 2026.

White Bass

Gill netting to assess the White Bass population at Nolin River Lake was conducted during November (Tables 18-22). Catch rates remain high and within the historic range no matter the weather/water conditions. A total of 287 White Bass were collected during seven net-nights of effort, for a total CPUE of 41.0 fish/nn. Approximately 57% of fish collected were ≥ 13.0 in. Relative weights remained excellent for all length groups, due to the abundance of shad available in recent years. Weights were taken and otoliths removed from a representative sample of each inch class. Data points to highly successful spawns in 2021 and 2023. Mean length at age 2+ increased from recent collections and is tied for the highest recorded at Nolin in the last 20+ years. No fish older than age 4 were collected this year, hopefully suggesting improved utilization. Previous collections routinely included fish ages 5-7. The White Bass population at Nolin is relatively stable and high performing, offering quality year-round opportunities in the headwaters and within the lake (2023 Statewide Assessment Rating = Excellent; Table 22).

Walleye Sampling

NWFD and SWFD made two trips to Nolin River Lake in search of Walleye brood stock. Searches along the face of the dam and tailwater came up empty. Over 100 male Walleye were collected and released in the upper river from Bacon Creek to above the mouth of Roundstone Creek. No confirmed female Walleye were collected. Forty males were sent to MCFH for brood stock.

Gill netting to assess the Walleye population at Nolin River Lake was conducted concurrently with the White Bass survey (Tables 23-27). Total CPUE (8.3 fish/nn) is on the high end of collections over the past 30+ years, but still relatively low. Relative weights by length group were good (95-100) indicating fish are finding sustainable forage and suitable habitat from spring through fall. Weights were taken and otoliths removed from a representative sample of each inch class. Approximately 69% of fish collected were age 0 (40/58), indicating a very successful 2023 year-class. Without the atypical number of age-0s, CPUE would likely have been 3.0-4.0 fish/nn based on the 25-year average age 0 collection. Mean length age 2+ at capture increased to an all-time high but is still far below the desired range. Despite ample forage availability and good relative weights, overall abundance and growth is less than desired. The general condition of the population is below average and is subject to further evaluation and discussion by the KDFWR Percid Management Team concerning the future of this fishery (2023 Statewide Assessment Rating = Fair, Table 27).

Channel Catfish Sampling

Channel Catfish were assessed via gill netting along with White Bass and Walleye (Tables 28 and 29). A total of 44 Channel Catfish were collected ranging from 8.0 to 31.0 in. Total CPUE of 6.3 fish/nn is very similar to recent collections. Relative weights by length group are lower than the 2020 sample and a little concerning. Additional investigation is needed to determine what is causing the poor body condition given other suitable environmental conditions.

Rough River Lake

Black Bass Sampling

Diurnal boat electrofishing to survey the black bass population at Rough River Lake was conducted in April 2023 (Tables 30-33, 37). Largemouth Bass accounted for around 89% of black bass collected. In general, catch rates were slightly down for 2023 compared to recent collections. A subsample of Largemouth Bass was sacrificed for age and growth. Bass were collected up to age 10. Mean length age 3 at capture is 12.8 in, a decrease from the last age sample in 2019. Additionally, fin clips were collected from each fish sacrificed for age and growth. A subsample of 50 Largemouth Bass was submitted for genetic profiling. Only one Largemouth Bass was determined to be pure Northern Largemouth Bass ($\geq 95\%$). The averages across 50 samples were 85.5% Largemouth Bass and 14.5% Florida Bass. These values are similar to previous DNA analyses from 1988, 1991, and 2005. This and the relatively

low variance in the 2023 sample suggests that the introduction of Florida Bass genetics occurred prior to 1988 and possibly much longer ago.

Diurnal boat electrofishing to survey the black bass population at Rough River Lake was conducted in October 2023 (Tables 34-36). The 2023 fall survey was very similar to the 2022 fall survey. Catch rates for Largemouth Bass were significantly higher than the spring sample. Sublegal (< 15.0-in) fish made up 93% of the catch. Again, typical numbers of larger fish were not present in this survey. Average relative weights are slightly lower than 2022, but within the range of previous collections. There appears to be sufficient forage available to produce improved body condition, however, relative weights have been consistently in the upper 80s to low 90s through time.

Variability exists concerning catch rates among and between years but can be attributed to environmental variables at time of sampling rather than changes in the population. The Largemouth Bass population at Rough River Lake is relatively stable and performs consistently in the 'Good' range through time (2023 Statewide Assessment Rating = Good; Table 37). The size limit changed to a straight 15.0-in minimum, removing the one fish under 15.0 in that went into effect in 1996.

Crappie Sampling

The crappie population was not directly assessed in 2023. It is scheduled to be surveyed during fall 2024.

However, anglers have been asking questions for several years about changing the minimum length limit for crappie at Rough River Lake to 10.0 in. We used all pertinent available data to model different length limit scenarios in FAMS. After consulting with Steve Sammons on our results we made the decision to move forward with a proposal to increase the minimum length limit at Rough to 10.0 in, while keeping the creel limit set at 20 fish per angler per day. This regulation change will go through the full regulation process and likely not be official until March 1, 2026.

Hybrid Striped Bass Sampling

The hybrid striped bass population was not directly assessed in 2023. It is scheduled to be surveyed during fall 2025.

Catfish Sampling

The Channel Catfish population was not directly assessed in 2023. It is scheduled to be surveyed during fall 2025.

Dam Mitigation Project

Rough River Lake USACE is in the process of a major dam remediation project. Several phases of construction have been completed. Through intensive monitoring the USACE determined that previous efforts were insufficient. After much deliberation it was determined the next phase of remediation will include construction of a new outlet tower, conduit, outlet works, tailwater interface, and a concrete cutoff wall across the full length of the dam. This is a very large and complex project that is projected to require 6- to 8-years of construction. Project funding has been allocated in the U.S. President's budget, but still requires congressional approval prior to project initiation. To reduce immediate risk associated with the status of the dam, USACE announced a five-foot reduction in summer pool (490 vs 495 MSL) and a delayed start to annual spring filling (April 1 vs March 15). USACE is allowing dock owners to extend their walkways to access the lake safely. This will result in less open water across much of an already narrow lake. The delayed start to hold water will directly impact crappie and bass spawning and angling. Whether the impacts will negatively affect the populations is yet to be seen and will be monitored over the next several years.

Lake Malone

Largemouth Bass Sampling

Diurnal boat electrofishing to assess the Largemouth Bass population at Lake Malone was conducted in April (Tables 38-40, 43) and October 2023 (Tables 41 and 42). Spring catch rates fluctuated slightly but are similar to

previous collections. Total CPUE bounced back up from 2022 due to increases in catch rates for fish < 8.0 and 8.0-11.9 in. Fewer fish over 20.0 in were collected than usual, especially given the 2022 catch rate for ≥ 15.0 -in fish.

Fall's total catch rate was lower than the spring collection, as is typical. Fewer fish greater than 15.0 in were collected during this survey compared to the spring. Average relative weight for fish ≥ 15.0 in was slightly higher than the three previous collections, but relative weights for the smaller length groups declined. Lake Malone is the lake most likely to produce 8+ pound Largemouth Bass in the Northwestern Fishery District, but only if sufficient forage is available. Mean relative weight values for all length groups were lower than desired. This may indicate a need to remove bass from within or below the protected slot. An alternative would be to remove the protective slot and utilize different size and creel limits. Overall, the Largemouth Bass population at Lake Malone has been relatively stable and performing well for the last two decades (2023 Statewide Assessment Rating = Good to Excellent; Table 43).

Channel Catfish Sampling

The Channel Catfish population at Lake Malone was not surveyed during 2023. It is scheduled to be surveyed with baited tandem hoop nets during 2024.

Mauzy Lake

Largemouth Bass Sampling

Diurnal boat electrofishing to evaluate the Largemouth Bass population was conducted in April (Tables 39, 44-45, 47) and October 2023 (Tables 42 and 46). Spring survey conditions were fair with significant aquatic vegetation present. The total spring catch rate was the lowest since 2003. Several fish ≥ 15.0 in were captured, which is an increase from the previous two surveys. However, no fish ≥ 20.0 in were captured for the third consecutive year. PSD increased again from 2022 but is a bit higher than we would like. There was an increase in catch of age-1 fish that will hopefully work through the length groups and increase the number of fish available for anglers. Fall catch rate was dramatically higher; an increase of over 200%. This is due to the elimination of excessive aquatic vegetation. Relative weights were lower than the two previous collections. The complete absence of aquatic vegetation for the first time in years likely lowered the successful foraging efforts for the Largemouth Bass. It may take time for fish condition and size to stabilize as the Bluegill and bass assimilate to their new environment. Overall, the Largemouth Bass population at Mauzy Lake has been unstable and performing subpar for about a decade (2023 Statewide Assessment Rating = Fair to Good; Table 47).

Excessive aquatic vegetation (Eurasian watermilfoil) continued to be an issue during the spring and summer. Grass Carp were stocked in 2020 (140) and 2021 (200) but had no noticeable positive impact. Small-scale herbicide treatments have been utilized to try and keep some fishing accesses open over the past several years. However, a significant amount of vegetation continually remained. NWFDF staff conducted a vegetation assessment in April and prepared several treatment plans with assistance from Aquatic Control. Approximately 40 acres of vegetative coverage was present during summer 2023. Eurasian Watermilfoil was topped out in thick mats throughout much of the lake. In June, ProcellaCOR EC was determined to be the best treatment option. Product was obtained and a detailed treatment plan was developed. The lake was divided into individual treatment zones and polygons were loaded into a Lowrance sonar unit. ProcellaCOR EC was applied at 2 PDU/acre-foot over 40 surface acres using two battery operated ATV sprayers operating out of one work boat. Product was distributed evenly throughout each treatment zone over approximately six hours on the water. One section of approximately one acre was not treated because staff ran out of herbicide. Two weeks post treatment there was approximately 95% control. Thirty days post treatment there was 100% eradication with no milfoil present anywhere in the lake. The untreated section was also completely eradicated. There was no regrowth of milfoil for the remainder of 2023. ProcellaCOR EC is a very effective temporary control agent for Eurasian watermilfoil. Case studies and aquatic vegetation professionals have seen extended control through multiple growing seasons. NWFDF staff will complete multiple vegetation assessments during 2024 and beyond to document the longevity of this single treatment.

Bluegill/Redear Sunfish Sampling

Due to excessive aquatic vegetation, Bluegill/Redear Sunfish surveys were unable to be completed during the appropriate time window during 2023. The population is scheduled to be assessed again in 2024.

Channel Catfish Sampling

The Channel Catfish population at Mauzy Lake was surveyed during October using tandem hoop nets baited with cheese logs (Table 48). The population was last surveyed in 2010. Nets were set for three nights and a total of 89 Channel Catfish were collected. Fish appeared in good health and were distributed nicely from 12.0 to 27.0 in. Fish were not sacrificed for age and growth statistics this year. Mauzy Lake is on the odd-year stocking schedule and received catfish again in 2023.

Lake Renovation Plans

A full-scale lake renovation is still being assessed for Mauzy Lake, despite significant improvements in aquatic vegetation control. Plans to dredge and deepen extensive shallow areas, upgrade existing bank fishing access, install fish habitat, lime the lake basin, renovate the fishery, and construct a headwater wetland are in progress. Mauzy Lake is wholly contained within a WMA and renovation efforts can be easily accomplished.

Carpenter Lake

Largemouth Bass

Diurnal boat electrofishing to survey the Largemouth Bass population at Carpenter Lake was completed in April (Tables 39, 49-51, 53) and October 2022 (Tables 42 and 52). Total catch rate declined from 2022 and was the lowest recorded since 2023. Catch rates by length group were similar to previous collections, although, catch rate of fish 8.0-11.9 in was the lowest on record. Ten bass over 20.0 in were collected during the spring survey. A subsample of Largemouth Bass was sacrificed for age and growth. Fish ranged from age 1 to age 11. The largest fish collected (21.2 in) was 11 years old. Mean length age 3 at capture was 10.7 in, a decrease from the last age sample in 2018, but within the range of samples at Carpenter Lake through the years. As expected, utilization appears to be very low based on the age of fish sampled and the extremely low annual mortality rate calculated. Additionally, fin clips were collected from each fish sacrificed for age and growth. A subsample of 50 was submitted for genetic profiling. Clips will be processed in 2024 and data reported in the 2024 APR. Bass catch rate increased during the fall survey (CPUE 110.0 to 165.0 fish/hr). Body condition remains good and within the range established in previous surveys. The Largemouth Bass population at Carpenter Lake is stable and performing well (2023 Statewide Assessment Rating = Good; Table 53).

Bluegill/Redear Sunfish Sampling

Electrofishing to assess the Bluegill and Redear Sunfish populations was conducted in May (Tables 54-58). Total catch rate for Bluegill dropped back down again in 2023, which has been the pattern for many years. Again, no Bluegill greater than 8.0 in were collected. Bluegill PSD is within the desired range for balanced predator/prey population management. The Bluegill population at Carpenter Lake has been underperforming for a while. Steps will be taken to work toward improvement (2023 Statewide Assessment Rating = Fair-Good; Table 58).

Seventy-two Redear Sunfish were collected in May in conjunction with Bluegill sampling. Total catch rate dropped back down from 2022 to be more in line with previous collections. Redear Sunfish > 10.0 in were not documented in 2023, but anglers continue to report catching some fish over 10.0 in. Due to historically low sample catches, a statewide assessment rating has not been produced for Redear Sunfish at Carpenter Lake. If catch rates increase and stabilize, an assessment will be initiated.

Gizzard Shad are likely negatively affecting the Bluegill and Redear Sunfish populations. After two failed shad eradication efforts, saugeye were stocked at a rate of 85 fish/acre in May 2019. The stocking rate was increased to 100 fish/acre in 2020 and 2021. The stocking rate was increased again to 150 fish/acre for 2022 and 2023. Anglers report catching a few saugeye throughout the year from approximately 10.0 to 20.0 in. A handful of fish have been

captured during standardized bass survey events. Fish representing each year-class have been collected annually. Twelve saugeye were collected during the 2023 fall bass survey, ranging from 8.1 to 21.9 in. Nighttime electrofishing events will be attempted in 2024 to try to get a better idea of how the population is progressing. There are plenty of small Gizzard Shad, crappie, and Bluegill for the saugeye to forage on. Growth appears to be very good thus far, although relative abundance seems to remain low. This could be due to predation on stocked fingerlings by small bass and crappie.

Grass Carp (300) were stocked in 2021 to help manage excessive aquatic vegetation (coontail) but have subsequently eliminated all aquatic vegetation in the lake. Multiple Grass Carp were documented during Largemouth Bass and Bluegill surveys. Several carp will be removed via electrofishing during 2024 to allow for some aquatic vegetation to regrow. The fish will be sacrificed for blood donation by staff from the Center for Mollusk Conservation.

New Kingfisher Lake

Largemouth Bass

Diurnal electrofishing to assess the Largemouth Bass population at New Kingfisher Lake was conducted in April (Tables 39, 59-60, 62) and October (Tables 42 and 61). Spring catch rates decreased across the board from 2022, except for an increase in CPUE for fish ≥ 20.0 in, which was due to one extra fish captured this year. Catch rates for fish greater than 15.0 in and greater than 20.0 in remain high and the Largemouth Bass fishery should continue to grow over the next few years as multiple year-classes develop and stabilize. Bass PSD is within the desirable range. The fall survey produced more, smaller fish than the spring survey. Multiple big fish captured in the spring were missing from the fall collection. The increased catch can be attributed to more fish less than 8.0 in than documented in the spring. Relative weights are a bit low for fish less than 12.0 in, but good for the larger length groups. The Largemouth Bass population at New Kingfisher Lake is performing well and continuing to improve (2023 Statewide Assessment Rating = Good; Table 62).

Bluegill/Redear Sunfish Sampling

The sunfish population was sampled via electrofishing in May (Tables 55, 63-65). One Redear Sunfish (9.5 in) was collected in New Kingfisher Lake in 2023. Bluegill catch rates dropped across the board from 2022 but are more in line with where we want to be. No Bluegill greater than 8.0 in were collected in 2023. Bluegill PSD remains borderline low. Results from the 2024 survey will dictate next management steps. Fish were not collected for age and growth analysis in 2023. Reduced catch overall and lack of larger fish resulted in a drop in assessment rating (2023 Statewide Assessment Rating = Poor-Fair; Table 65).

A shad eradication project was completed on New Kingfisher Lake on 24 January 2023. Numerous Gizzard Shad and small crappie were observed deceased over the next several days. Gizzard Shad were documented in both spring and fall surveys at New Kingfisher Lake, evidence that the shad eradication was unsuccessful.

Channel Catfish Sampling

The Channel Catfish population was not surveyed in 2023. It is scheduled to be surveyed with baited tandem hoop nets in 2024. New Kingfisher Lake is stocked on the even-year schedule. It is scheduled to receive Channel Catfish in 2024.

Old Kingfisher Lake

Largemouth Bass

Diurnal electrofishing to assess the Largemouth Bass population at Old Kingfisher Lake was conducted in April (Tables 39, 66-67, 69) and October (Tables 42 and 68). A total of 57 bass were collected during the spring survey for a total CPUE of 150.4 fish/hr, a small increase from 2022. PSD increased this year but remains in the desired range (59) for a balanced predator-prey relationship. Fish were not sacrificed for age and growth analysis in 2023. Fall sampling yielded an increased catch of Largemouth Bass, primarily due to increased numbers of fish < 10.0 in.

Only two fish over 15.0 in were captured during this survey event. Relative weights for 8.0- to 11.9 and 12.0- to 14.9-in fish declined from 2022 but continue to be acceptable. The Largemouth Bass population at Old Kingfisher Lake is still evolving; however, it does have some quality fish available for anglers (2023 Statewide Assessment Rating = Fair-Good; Table 69).

Bluegill/Redear Sunfish Sampling

The sunfish population at Old Kingfisher Lake was surveyed via electrofishing in May (Tables 55, 70-72). Total Bluegill CPUE decreased significantly from 2022 and from previous collections. The decrease occurred across all length groups. However, current Bluegill PSD is within the established range for a balanced predator-prey relationship. Bluegill were not collected for age and growth analysis in 2023. As the Largemouth Bass population grows and stabilizes, sunfish growth and size structure will improve. The Bluegill population at Old Kingfisher Lake is providing a decent opportunity for anglers to catch fish and should improve with time (2023 Statewide Assessment Rating = Fair-Good; Table 72). Only six Redear Sunfish were collected during the standardized survey, ranging from 7.3 to 9.4 in.

A shad eradication project was completed on Old Kingfisher Lake on 24 January 2023. Numerous Gizzard Shad and small crappie were observed deceased over the next several days. Gizzard Shad were documented in both spring and fall surveys, evidence that the shad eradication was unsuccessful.

Channel Catfish Sampling

The Channel Catfish population was not surveyed in 2023. It is scheduled to be surveyed with baited tandem hoop nets in 2024. Old Kingfisher Lake is stocked on the even-year schedule. It is scheduled to receive Channel Catfish in 2024.

Washburn Lake

Largemouth Bass

Diurnal electrofishing to assess the Largemouth Bass population at Washburn Lake was conducted in April (Tables 39, 73-74, 76) and October (Tables 42 and 75). Total spring CPUE (360.0 fish/hr) is slightly above the long-term average (346.6 fish/hr). Once again, the high number of 8.0- to 11.9-in fish seen in 2022 did not translate to a noticeable increase in fish 12.0-14.9 in. Fish 12.0-20.0 in were noticeably missing once again, with only two fish captured ≥ 15.0 in. PSD remains very low (12). Recruitment remains high with numerous 3.0- to 6.0-in fish captured during the fall survey. Relative weights are low for fish 8.0-12.0 in, which makes sense given the number of small fish collected. Small bass may need to be removed in 2024 to facilitate growth. There seems to be just one large fish (≥ 20.0 in) present in the lake. Whether or not that one fish is captured dramatically influences the assessment. The Largemouth Bass population at Washburn Lake needs attention. Multiple options are being explored to help the fishery (2023 Statewide Assessment Rating = Fair-Good; Table 76).

Bluegill/Redear Sunfish Sampling

The sunfish population at Washburn Lake was sampled via electrofishing in May (Tables 55, 77-81). Total CPUE for Bluegill increased dramatically in 2023; more than doubling the previous record high set in 2022. Record highs were set for all length groups except for fish ≥ 10.0 in. Bluegill PSD is 46, closer to where we would like it to be. Age and growth data was not collected in 2023. The Bluegill population at Washburn Lake is performing decently and remains the only NWFDF state lake to hold 8.0-in Bluegill (2023 Statewide Assessment Rating = Fair-Good; Table 80).

Total CPUE for Redear Sunfish increased from 2022 back to near the long-term average. There was quite a jump in Redear ≥ 8.0 in collected during this survey. Redear Sunfish ≥ 10.0 in have still not been found to date. Age and growth data was not collected in 2023. The Redear Sunfish population in Washburn Lake is performing fairly well and providing a supplemental fishery. Once the bass population improves and stabilizes it should continue to improve (2023 Statewide Assessment Rating = Good-Excellent; Table 81).

Channel Catfish Sampling

Channel catfish were sampled on two occasions during October using tandem hoop nets (Table 82). Three tandem net sets were baited with cheese logs and fished for three nights. A total of seven channel catfish were collected over both survey events and could have included two recaptures. In 2020 a total of 81 individual Channel Catfish were collected over two survey events. Given the high variability of catch with hoop nets, we are unsure if some of the missing fish have been harvested or simply were not captured this time around. Channel Catfish were last stocked in 2019 and Washburn was removed from the Channel Catfish stocker list for 2020 to evaluate the success of spawning boxes. Eight Channel Catfish spawning boxes were installed during May 2020. Additional boxes will be added during spring 2024. We will monitor box utilization via GoPro camera and the catfish population via hoop nets and fin clips to document natural reproduction and recruitment.

Lake Renovation

Washburn Lake would benefit greatly from another full renovation. Plans to dredge and deepen extensive shallow areas, create more bank fishing access, install fish habitat, lime the lake, renovate the fishery, create a headwater wetland, and replace the existing water control structure have been created. The current water control tower leaks profusely and could fail at any time, requiring plans to be in place to move forward with a renovation when necessary. The lakeshore that adjoins the county road needs to be stabilized and parking added for angler safety. This renovation will require more planning, cooperation, and financial commitment than the renovation at Mauzy Lake due to the proximity of private landowners and county roads serving as two of the lake boundaries.

Table 1. Annual summary of sampling conditions by waterbody, species sampled, and date for Northwestern Fishery District lakes during 2023.

Water body	Species	Date	Time (24hr)	Gear	Weather	Water temp. F	Water level	Secchi (in)	Conductivity (μ s)	Conditions	Pertinent sampling comments
Nolin River	WAE	3/1	900	EF	-	53.4	503.8	20	360	Fair	Saw 40-50 males, 17-24"
Nolin River	WAE	3/9	1000	EF	-	54.5	511.1	20	351	Fair	Saw 25 males, 17-22"
Nolin River Lake	LMB	4/12 - 4/14	900	EF	Sunny, 62-70F, slight breeze	61.3 - 68.0	511.6 - 512.0	25 - 40	-	Good	Conductivity meter broken
Nolin River Lake	LMB	10/25 - 10/26	900	EF	Partly to mostly sunny, wind ~10mph, 60s	64.5 - 67.8	511.1 - 510.4	33 - 36	-	Good	Most fish > 12" more offshore, 5+ ft deep
Nolin River Lake	Crappie	11/ - 11/1	930	TN	Sunny to Cloudy w/ some drizzle, 60s	57.3 - 63.3	507.1 - 505.4	13 - 38	-	Poor	Limited draw, pretty stable weather, few fish
Nolin River Lake	WB/WAE	11/15 - 11/17	900	GN	Sunny, few clouds, 60s	56.4 - 61.4	502.8 - 501.5	32 - 40	-	Good	
Rough River Lake	LMB	5/1 - 5/4	900	EF	Sunny to cloudy, light breeze to windy, 60s	60.6 - 64.6	483.4 - 483.6	18 - 26	-	Fair	
Rough River Lake	LMB	10/23 - 10/24	900	EF	Sunny, upper 60s	61.7 - 67.5	486.9 - 486.6	28 - 36	227	Good	
Lake Malone	LMB	4/18	900	EF	Mostly sunny, light breeze, 50-60F	63.9	pool	26 - 30	-	Good	
Lake Malone	LMB	10/18	900	EF	Sunny, light breeze, 55F	64.3	pool	25 - 28	77	Good	
Mauzy	LMB	4/25	830	EF	Partly sunny, 53F	63.2	pool	48	-	Fair	
Mauzy	LMB	10/16	900	EF	Cloudy, breezy, 53F	64.2	pool	44	135	Fair	All milfoil eliminated
Mauzy	CCF	10/27 - 10/30	900	HN	Cloudy, wind ~12mph, 42F	61	pool	36	-	Good	
Carpenter	LMB	4/19	1030	EF	Sunny, 70F	65.7	pool	28	-	Good	
Carpenter	BG	5/17	830	EF	Sunny, 65F	73.6	pool	31	-	Good	Very few lily pads
Carpenter	LMB	10/17	830	EF	Cloudy, light breeze, 52F	63.1	pool	20	197	Good	Captured 12 saugeye, 8.1 - 21.9"
New Kingfisher	LMB	4/19	930	EF	Sunny, 64F	64.9	pool	36	-	Good	
New Kingfisher	BG	5/17	1030	EF	Sunny, calm, 70F	75.9	pool	38	-	Good	
New Kingfisher	LMB	10/17	1045	EF	Mostly cloudy, light breeze, 57F	62.6	pool	18	209	Good	
Old Kingfisher	LMB	4/19	830	EF	Sunny, 63F	65.6	pool	30	-	Good	
Old Kingfisher	BG	5/17	1230	EF	Sunny, calm, 70F	76.9	pool	24	-	Good	
Old Kingfisher	LMB	10/17	1330	EF	Mostly cloudy, light breeze, 60F	61.6	pool	18	99	Good	
Washburn	LMB	4/25	1300	EF	Sunny, 62F	67.1	pool	37	-	Good	
Washburn	BG	5/15	900	EF	Sunny, 70F	78.0	pool	10	-	Fair	Heavy algal bloom, difficult to see
Washburn	CCF	10/16 - 10/19	900	HN	Cloudy, misty, 60F	58 - 62	pool	39	164	Fair	
Washburn	LMB	10/19	1030	EF	Cloudy, misty, 60F	62.1	pool	39	164	Good	
Washburn	CCF	10/27 - 10/30	1300	HN	Cloudy, wind ~12mph, 54F	61.1	pool	-	-	Good	

Table 2. Species composition, length frequency, and CPUE (fish/hr) of black bass collected during 5.0 hours of 30-minute diurnal electrofishing runs at Nolin River Lake in April 2023.

Area	Species	Inch class																				Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				22
Upper	Largemouth Bass		2	4	9	35	47	19	18	45	83	100	118	67	25	19	9	10	4	3	1	3	621	310.5	21.8
	Spotted Bass			2	1		2	1		2	7	10	8	1									34	17.0	5.9
Mid	Largemouth Bass		2	2	15	32	29	14	11	9	30	56	92	81	24	15	9	10	6	3	1		441	220.5	20.2
	Spotted Bass	1	2	4	9	15	11	7	10	25	44	54	17	6									205	102.5	7.4
Lower	Largemouth Bass	1		1	4	13	21	11	9	9	23	42	44	33	18	4	3	2	6	3			247	247.0	85.0
	Spotted Bass				2	1			1	4	8	15	5	2									38	38.0	20.0
Total	Largemouth Bass	1	4	7	28	80	97	44	38	63	136	198	254	181	67	38	21	22	16	9	2	3	1309	261.8	21.5
	Spotted Bass	1	2	6	12	16	13	8	11	31	59	79	30	9									277	55.4	13.9

nwd1psd.d23

Table 3. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples in each area of Nolin River Lake during April 2023; 95% confidence intervals are in parentheses.

Area	Species	\geq Stock size ^a	PSD	RSD ^b
Upper	Largemouth Bass	524	69 (\pm 3)	14 (\pm 3)
	Spotted Bass	31	84 (\pm 13)	3 (\pm 6)
Mid	Largemouth Bass	361	82 (\pm 4)	19 (\pm 4)
	Spotted Bass	174	70 (\pm 7)	3 (\pm 3)
Lower	Largemouth Bass	207	75 (\pm 14)	22 (\pm 14)
	Spotted Bass	35	86 (\pm 12)	6 (\pm 8)
Total	Largemouth Bass	1092	74 (\pm 2)	16 (\pm 2)
	Spotted Bass	240	74 (\pm 5)	4 (\pm 2)

^a Largemouth Bass = 8.0 in, Spotted Bass = 7.0 in

^b Largemouth Bass = RSD₁₅, Spotted Bass = RSD₁₄

nwd1psd.d23

Table 4. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Nolin River Lake during 2000-2023.

Year	Length group										Total	
	< 8.0 in		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in		≥ 20.0 in		CPUE	SE
2023	43.4	6.3	56.2	9.6	126.6	10.7	35.6	3.7	2.8	0.6	261.8	21.5
2022	21.8	4.1	56.0	10.3	58.4	7.8	20.8	3.5	1.4	0.8	157.0	21.7
2021	37.8	4.2	24.2	3.4	46.3	4.6	33.7	1.8	2.3	0.6	142.0	7.9
2017	36.2	8.8	46.2	8.0	60.6	4.0	21.0	2.3	1.6	0.4	164.0	17.4
2016	19.6	5.3	23.8	6.0	37.1	6.6	12.0	2.6	1.6	0.6	92.4	14.0
2014	21.4	2.3	29.2	2.5	64.0	5.4	15.0	1.7	1.4	0.6	129.6	6.9
2012	76.9	9.6	52.7	6.4	53.8	4.7	16.0	2.1	0.2	0.2	199.3	14.8
2009	30.0	5.7	25.1	4.3	36.0	3.6	5.3	1.1	0.7	0.3	96.4	7.1
2008	50.4	7.9	45.8	5.4	34.2	4.3	11.3	1.6	3.6	1.0	141.8	11.2
2007	53.3	10.0	17.3	2.2	27.6	4.9	8.2	1.3	0.7	0.5	106.4	14.2
2006	17.8	2.8	15.8	1.5	23.6	2.7	7.6	1.5	0.4	0.4	64.7	5.7
2005	27.1	5.0	27.1	4.1	25.3	3.9	14.2	2.3	0.4	0.3	93.8	10.1
2004	23.7	1.6	16.4	3.7	16.2	2.4	8.9	2.6	0.4	0.3	65.3	6.8
2003	12.9	3.7	10.2	2.3	8.9	2.2	7.6	2.0	0.0		39.6	9.2
2002	4.0	1.3	9.8	2.6	8.0	3.1	8.0	1.6	0.0		29.8	5.4
2001	5.5	1.7	27.0	7.4	18.0	3.3	9.0	2.8	0.0		59.5	11.7
2000	9.5	3.1	35.0	6.3	41.5	5.1	14.0	4.3	0.5	0.5	100.0	13.1

nwd1psd.d23

Table 5. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected at Nolin River Lake in April

Year class	No.	Age															
		1	2	3	4	5	6	7	8	9	10	11	12	13			
2022	40	6.6															
2021	38	6.0	10.0														
2020	26	7.2	11.3	13.0													
2019	25	6.3	11.3	13.2	14.3												
2018	15	7.4	12.2	13.5	14.5	15.2											
2017	9	6.6	12.8	14.9	16.0	17.1	18.0										
2016	5	6.3	11.0	13.4	15.0	16.1	17.1	18.4									
2015	6	8.4	11.6	14.2	15.4	16.8	17.8	18.5	19.3								
2014	1	9.4	14.9	15.8	16.5	16.9	17.8	18.5	18.9	19.3							
2013	1	4.5	6.5	10.2	11.8	13.2	14.5	15.6	16.7	17.8	19.2						
2010	1	7.7	10.4	12.1	13.3	14.2	15.1	15.9	16.8	17.3	17.7	18.5	18.8	19.3			
Mean		6.7	11.1	13.4	14.7	16.0	17.4	18.1	18.7	18.1	18.4	18.5	18.8	19.3			
No.		167	127	89	63	38	23	14	9	3	2	1	1	1			
Smallest		3.1	6.5	10.2	11.2	12.1	14.5	15.6	16.7	17.3	17.7	18.5	18.8	19.3			
Largest		12.1	19.0	20.2	20.5	20.9	21.5	21.3	22.0	19.3	19.2	18.5	18.8	19.3			
SE		0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.6	0.6	0.8						
95% CI (±)		0.3	0.3	0.3	0.4	0.6	0.7	0.5	1.2	1.2	1.4						

nwd1lmba.d23

Table 6. Species composition, length frequency, and CPUE (fish/hr) of black bass collected during 4.0 hours of 30-minute diurnal electrofishing runs at Nolin River Lake in October 2023.

Area	Species	Inch class																			Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Upper	Largemouth Bass	2	29	7	3	2	5	8	12	11	16	16	27	25	25	15	1	6	2	1	1	214	107.0	15.2
	Spotted Bass	2	29	15	7	2	2	5	1	2	6	4	10	3								88	44.0	8.1
Mid	Largemouth Bass		1	1	2	2	1	1	3	1	2	7	9	13	12	1	4	1	1	1		63	31.5	6.6
	Spotted Bass	2	16	9	11	33	23	8	4	4	2	11	8	5								136	68.0	4.7
Total	Largemouth Bass	2	30	8	5	4	6	9	15	12	18	23	36	38	37	16	5	7	3	2	1	277	69.3	16.2
	Spotted Bass	4	45	24	18	35	25	13	5	6	8	15	18	8								224	56.0	6.3

nwd1lmb.d23

Table 7. Number of fish and mean relative weight (Wr) for length groups of Largemouth Bass collected at Nolin River Lake during October 2023. Standard errors are in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in	
		No.	Wr	No.	Wr	No.	Wr
Largemouth Bass	Upper	47	85 (1)	68	86 (1)	51	90 (1)
Largemouth Bass	Middle	7	79 (3)	29	86 (1)	20	88 (2)
Largemouth Bass	Total	54	85 (1)	97	86 (1)	71	90 (1)

nwd1lmb.d23

Table 8. Indices of year class strength at age 0 and age 1 and mean lengths (in) of Largemouth Bass collected during fall electrofishing samples at Nolin River Lake.

Year class	Area	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.2	0.2	13.0	4.8	3.0	0.7		
2022	Total	4.4	0.2	29.0	11.0	9.3	1.4	44.7	6.5
2021	Total							36.6	6.6
2020	Total							46.3	5.4

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nwd1psd.d23

nwd1lmb.d22

nwd1psd.d22

nwd1psd.d21

Table 9. Population assessment for Largemouth Bass based on spring electrofishing at Nolin River Lake from 2000-2023 (scoring based on statewide assessment).

Year	Mean length					Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
	age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in				
2023	13.1 (3)*	44.7 (4)	126.6 (4)	35.6 (4)	2.8 (4)			19	Excellent
2022		36.6 (3)	58.4 (4)	20.8 (4)	1.4 (4)			≥ 16	G - E
2021		46.3 (4)	46.3 (4)	33.7 (4)	2.3 (4)			> 17	Excellent
2017	12.9 (3)	58.8 (4)	60.6 (4)	21.0 (4)	1.6 (4)	0.968	58.7	19	Excellent
2016		23.1 (3)	37.1 (4)	12.0 (2)	1.6 (4)			> 14	G - E
2014		22.2 (2)	64.0 (4)	15.0 (3)	1.4 (4)			> 14	G - E
2012	13.4 (4)	82.9 (4)	53.8 (4)	16.0 (3)	0.2 (2)	0.582	44.1	17	Excellent
2009	12.6 (3)	29.2 (3)	36.0 (4)	5.3 (1)	0.7 (3)			14	Good
2008	12.6 (3)	49.7 (4)	34.2 (4)	11.3 (2)	3.6 (4)	0.553	42.5	17	Excellent
2007	12.6 (3)	51.6 (4)	27.6 (3)	8.2 (2)	0.7 (3)	0.609	45.0	15	Good
2006	12.6 (3)	17.0 (2)	23.6 (3)	7.6 (2)	0.4 (2)	0.447	36.0	12	Fair
2005	13.1 (3)	26.2 (3)	25.3 (3)	14.2 (3)	0.2 (2)	0.617	46.0	14	Good
2004	13.1 (3)	22.9 (3)	16.2 (1)	8.9 (2)	0.4 (2)	0.684	49.5	11	Fair
2003	13.1 (3)	11.3 (1)	8.9 (1)	7.6 (2)	0.0 (1)	0.534	41.4	8	Poor
2002	13.1 (3)	3.8 (1)	8.0 (1)	8.0 (2)	0.0 (1)			8	Poor
2001	13.1 (3)	5.0 (1)	18.0 (2)	9.0 (2)	0.0 (1)			9	Fair
2000	13.1 (3)	9.0 (1)	41.4 (4)	14.0 (3)	0.5 (3)			14	Good

*Used psd file and spring age file to create age freq key, input those values into Mean Length at Age Excel tool to get Mean Length age 3 at capture value

Table 10. Species composition, length frequency, and CPUE (fish/nn) for crappie collected in 80 net-nights of sampling at Nolin River Lake during November 2023.

Species	Inch class											Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13			
White Crappie	8				2	15	17	3	6	9	1	61	0.8	0.2
Black Crappie				1	6	3	5	6	1	1		23	0.3	0.1

nwd1tn.d23

Table 11. PSD and RSD₁₀ values calculated for crappie collected in trap nets from Nolin River Lake during November 2023; 95% confidence limits are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₀
White Crappie	53	96 (± 5)	36 (± 13)
Black Crappie	23	70 (± 20)	34 (± 20)

nwd1tn.d23

Table 12. Number of fish and mean relative weight (Wr) for each length group of crappie collected at Nolin River Lake during November 2023. Standard errors are in parentheses.

Species	Length group					
	5.0 - 7.9 in		8.0 - 9.9 in		≥ 10.0 in	
	No.	Wr	No.	Wr	No.	Wr
White Crappie	2	90 (9)	32	104 (2)	19	92 (2)
Black Crappie	7	104 (2)	8	107 (2)	8	100 (4)

nwd1tn.d23

Table 13. Mean back calculated lengths (in) at each annulus for White Crappie collected at Nolin River Lake in November 2023.

Year class	No.	Age					
		1	2	3	4	5	6
2023							
2022	31	4.5					
2021	2	4.9	8.1				
2020	2	4.0	7.8	9.9			
2019	2	3.1	4.7	8.9	11.1		
2018	8	2.9	5.4	8.6	10.4	11.5	
2017	1	2.5	5.2	6.9	8.6	9.8	11.3
Mean		4.1	6.0	8.7	10.4	11.3	11.3
No.		46	15	13	11	3	1
Smallest		2.5	4.3	6.9	8.6	9.8	11.3
Largest		6.3	9.0	10.5	11.7	12.2	11.3
SE		0.1	0.4	0.3	0.2	0.3	
95% CI (±)		0.3	0.8	0.5	0.5	0.5	

nwd1wca.d23

Table 14. Age-frequency and CPUE (fish/nn) per inch class of White Crappie trap netted for 80 net-nights at Nolin River Lake in November 2023.

Age	Inch class											Total	%	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12	13					
0	8												8	13.1	0.1	0.1
1					2	15	17	3	1				38	62.3	0.5	0.1
2									2				2	3.3	<0.1	<0.1
3									1	1			2	3.3	<0.1	<0.1
4										2			2	3.3	<0.1	<0.1
5									2	5	1		8	13.1	0.1	<0.1
6										1			1	1.6	<0.1	<0.1
Total	8	0	0	0	2	15	17	3	6	9	1		61			
(%)	13.1				3.3	24.6	28.0	4.9	9.8	14.7	1.6			100.0		

nwd1tn.d23, nwd1wca.d23

Table 15. Mean back calculated lengths (in) at each annulus for Black Crappie collected at Nolin River Lake in November 2023.

Year class	No.	Age				
		1	2	3	4	5
2023						
2022	14	4.3				
2021	6	4.3	8.6			
2020	1	4.6	9.5	11.4		
2018	2	3.5	6.0	9.0	10.5	11.4
Mean		4.2	8.1	9.8	10.5	11.4
No.						
Smallest		2.4	4.6	8.0	9.5	10.4
Largest		5.2	9.5	11.4	11.5	12.4
SE		0.1	0.5	1.0	1.0	1.0
95% CI (±)		0.3	1.1	2.0	2.0	1.9

nwd1bca.d23

Table 16. Age-frequency and CPUE (fish/nn) per inch class of Black Crappie trap netted for 80 net-nights at Nolin River Lake in November 2023.

Age	Inch class							Total	%	CPUE	SE
	6	7	8	9	10	11	12				
0	1							1	4.2	<0.1	<0.1
1		6	3	4	2			15	62.5	0.2	0.1
2				1	3	1		5	20.8	0.1	<0.1
3							1	1	4.2	<0.1	<0.1
4											
5					1		1	2	8.3	<0.1	<0.1
Total	1	6	3	5	6	1	2	24			
(%)	4.2	25.0	12.5	20.8	25.0	4.2	8.3		100.0		

nwd1tn.d23, nwd1wca.d23

Table 17. Population assessment for White Crappie based on fall trap net sampling at Nolin River Lake from 2001-2023 (scoring based on statewide assessment).

Year	CPUE (excluding age 0)	CPUE age 1	CPUE age 0	CPUE ≥ 8.0 in	Mean length age 2+ at capture	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
2023*	0.7 (1)	0.5 (1)	0.1 (1)	0.6 (1)	11.5 (4)	0.473	37.7	8	Poor*
2022*	1.3 (1)	0.3 (1)	0.2 (1)	1.1 (1)	11.4 (4)	0.457	36.7	8	Poor*
2019	9.7 (3)	9.3 (4)	2.0 (3)	3.5 (3)	10.9 (4)	1.784	83.2	17	Excellent
2018*	1.6	0.2	36.4	1.6	10.7				
2017									
2016	5.6 (2)	2.6 (2)	5.6 (4)	3.3 (3)	10.7 (4)	1.386	75	15	Good
2015									
2014	14.0 (3)	9.5 (4)	1.5 (2)	10.4 (4)	10.2 (3)	1.406	75.5	16	Good
2013									
2012	6.7 (3)	4.5 (3)	1.1 (2)	3.2 (2)	10.1 (3)	1.277	72.1	13	Good
2011	5.7 (2)	4.4 (3)	1.6 (3)	3.5 (3)	10.9 (4)	1.106	66.9	15	Good
2010	6.7 (3)			6.0 (4)					
2009	14.1 (3)	11.7 (4)	1.2 (2)	8.9 (4)	10.4 (4)	1.519	78.1	17	Excellent
2008	6.0 (2)	3.5 (3)	2.4 (3)	4.8 (3)	10.4 (4)	1.238	71.0	15	Good
2007	7.4 (3)	3.7 (3)	0.4 (1)	6.1 (4)	10.4 (4)	1.252	71.4	15	Good
2006	5.9 (2)	3.2 (2)	2.0 (3)	4.4 (3)	9.7 (3)	1.273	72	13	Good
2005	8.8 (3)	3.6 (3)	1.4 (2)	7.4 (4)	9.7 (3)	1.130	67.7	15	Good
2004	8.6 (3)	4.2 (3)	5.1 (4)	6.9 (4)	9.7 (3)	1.266	71.8	17	Excellent
2003	13.2 (3)	8.0 (4)	2.0 (3)	8.7 (4)	9.8 (3)	1.501	77.7	17	Excellent
2002	12.0 (3)	10.0 (4)	4.3 (4)	8.8 (4)	9.5 (2)	1.402	75.4	17	Excellent
2001	10.2 (3)	4.8 (3)	2.6 (3)	3.9 (3)	9.1 (2)	1.133	67.8	14	Good

*Poor sampling conditions/few fish captured/incomplete data

Table 18. Length frequency and CPUE (fish/nn) for White Bass collected in 7 net-nights of gill net sampling at Nolin River Lake during November 2023.

Species	Inch class										Total	CPUE	SE
	7	8	9	10	11	12	13	14	15	16			
White Bass	1	4	34	40	11	34	73	73	14	3	287	41.0	11.4

Table 19. Number of fish and the mean relative weight (Wr) for each length group of White Bass collected at Nolin River Lake during November 2023. Standard errors are in parentheses.

Length group					
6.0-8.9 in		9.0-11.9 in		≥12.0 in	
No.	Wr	No.	Wr	No.	Wr
5	102 (2)	83	106 (1)	189	100 (1)

Table 20. Mean back calculated lengths (in) at each annulus for White Bass collected at Nolin River Lake in November 2023.

Year class	No.	Age			
		1	2	3	4
2023	29	9.7			
2022	20	9.9			
2021	47	9.5	12.5		
2020	15	8.0	11.6	13.5	
2019	3	6.1	10.3	13.0	14.3
Mean		9.2	12.2	13.4	14.3
No.					
Smallest		3.3	7.7	11.9	13.3
Largest		11.8	14.1	15.3	15.0
SE		0.2	0.2	0.2	0.5
95% CI (±)		0.4	0.3	0.4	1.0

Table 21. Age-frequency and CPUE (fish/nn) per inch class of White Bass gill netted for 7 net-nights at Nolin River Lake in November 2023.

Age	Inch class										Total	Age %	CPUE	SE
	7	8	9	10	11	12	13	14	15	16				
0	1	4	34	40							79	27.5	11.3	3.9
1					11	22	10				43	15.0	6.1	1.5
2						12	55	48	8		124	43.2	17.7	5.4
3							8	22	6	1	36	12.5	5.2	1.7
4								3		2	5	1.8	0.7	0.3
Total	1	4	34	40	11	34	73	73	14	3	287			
(%)	0.3	1.4	11.8	14.0	3.8	12.0	25.4	25.4	4.9	1.0		100.0		

nwd1wba.d23, nwd1gn.d23

Table 22. Population assessment for White Bass based on fall gill netting at Nolin River Lake from 2000-2023 (scoring based on statewide assessment).

Year	CPUE (excluding age 0)	Mean length age 2+	CPUE \geq 12.0 in	CPUE age 1	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
2023	29.7 (4)	13.9 (4)	28.1 (4)	6.1 (3)	0.660	48.3	15	Excellent
2020	23.9 (4)	13.2 (2)	16.7 (4)	15.6 (4)	0.805	55.3	14	Excellent
2015	26.5 (4)	13.0 (2)	16.9 (4)	6.0 (3)	0.691	59.9	13	Good
2013	38.1 (4)	13.0 (2)	25.8 (4)	14.0 (4)	0.567	43.3	14	Excellent
2011	21.6 (4)	13.1 (2)	17.5 (4)	7.5 (4)	0.585	44.3	14	Excellent
2009	33.2 (4)	13.2 (2)	19.4 (4)	15.6 (4)	0.614	45.9	14	Excellent
2007	37.9 (4)	13.9 (4)	26.6 (4)	16.0 (4)	0.921	60.2	16	Excellent
2006	7.9 (3)	13.3 (2)	4.3 (3)	5.4 (3)	1.336	73.7	11	Good
2003	18.7 (4)	13.4 (3)	6.2 (3)	15.3 (4)	1.056	65.2	14	Excellent
2002	10.2 (3)	13.3 (2)	5.3 (3)	5.2 (3)	0.929	60.5	11	Good
2001*	2.5 (1)	13.6 (3)	1.6 (2)	1.1 (1)	0.681	49.4	8	Fair
2000*	3.9 (2)	13.8 (4)	2.8 (2)	1.1 (1)	0.468	37.4	9	Fair

*Few fish collected, incomplete data

Table 23. Length frequency and CPUE (fish/nn) for Walleye collected during fall gill net samples at Nolin River Lake from 1991-2023.

Year	Inch class																				Total	CPUE	SE	
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25				26
2023				2	14	17	7		1	5	4	2	3	2		1						58	8.3	3.3
2020				4	5			1	2	1	9	13	10	6	2	1						54	6.0	1.5
2015					3	1		2	12	8	3	3		1								33	3.0	0.6
2013				7	4	1	2	10	18	5	8	3	5	5	3		1					72	6.0	1.2
2011				1	4	1		3	13	10	11	5	4	5	2		1					60	4.3	0.8
2009			3	7	7	2	3	8	26	21	15	10	10	5	2	3	1					123	8.8	1.3
2007			1	1	1			2	11	3			1	3	1						1	25	2.3	0.6
2006			2	6	4		1	5	22	14	18	21	10	4								107	7.1	1.4
2003	1			4	1		1	1	4	1	3	2	3	3	2	4	1	1				32	2.3	0.4
2002					1		1	1	2	2	3	5	6	6	3		1	1				32	2.7	1.0
2001					1						2	1	3	1			1		1			10	2.6	1.0
2000						1	1	1	3		2	1			1							10	1.3	0.3
1998				2	5	3	2	1	8	8	12	7	5	1								54	7.7	2.6
1996						1	2	8	8	3	1		3	1								27	3.0	1.6
1991			1	5	40	18	1	1	7	18	19	14	6	5	4			2			1	142	10.1	-

nwd1gn.d23

Table 24. Number of fish and mean relative weight (Wr) for each length group of Walleye collected at Nolin River Lake during fall gill netting from 1991-2023. Standard errors are in parentheses.

Year	Length group					
	10.0-14.9 in		15.0-19.9 in		≥20.0 in	
	No.	Wr	No.	Wr	No.	Wr
2023	39	100 (1)	16	95 (2)	1	95 (-)
2020	8	92 (4)	39	94 (1)	3	94 (5)
2015	18	87 (1)	15	85 (1)	0	
2013	35	95 (1)	26	89 (1)	4	88 (2)
2011	26	92 (1)	38	90 (1)	3	85 (1)
2009	43	91 (1)	56	90 (1)	6	94 (4)
2007	10	90 (2)	4	80 (3)	2	74 (2)
2006	32	95 (1)	67	92 (1)	0	
2003	7	90 (2)	12	89 (3)	8	91 (2)
2002	5	89 (3)	11	88 (1)	0	
2001	1	-	4	83 (6)	0	
2000	13	84 (2)	3	83 (3)	0	
1998	21	94 (2)	28	89 (1)	0	
1996	92	90 (1)	5	87 (2)	0	
1991	36	91 (1)	47	84 (1)	4	81 (4)

nwd1gn.d23

Table 25. Mean back calculated lengths (in) at each annulus for Walleye collected at Nolin River Lake in November 2023.

Year class	No.	Age				
		1	2	3	4	5
2023	39	11.1				
2022	9	10.9				
2021	7	11.5	16.0			
2019	1	11.4	14.5	16.3	18.5	
2018	1	10.2	12.7	15.4	17.5	20.3
Mean		11.1	15.4	15.9	18.0	20.3
No.		57	18	9	1	1
Smallest		9.3	12.7	15.4	17.5	20.3
Largest		13.3	17.7	16.3	18.5	20.3
SE		0.3	0.5	0.5	0.5	
95% CI (+)		0.5	0.9	0.9	0.5	

nwd1wea.d23

Table 26. Age-frequency and CPUE (fish/nh) per inch class of Walleye gill netted for 7 net-nights at Nolin River Lake in November 2023.

Age	Inch class													No.	CPUE	SE	Age %
	9	10	11	12	13	14	15	16	17	18	19	20	21				
0	2	14	17	7										40	5.7	2.2	69.0
1						1	5	3						9	1.3	0.6	15.5
2								1	2	3	1			7	1.0	0.6	12.1
3															0.0	0.0	0.0
4											1			1	0.1	0.1	1.7
5													1	1	0.1	0.1	1.7
Total	2	14	17	7	0	1	5	4	2	3	2	0	1	58			
(%)	3.4	24.1	29.3	12.1	0.0	1.7	8.6	6.9	3.4	5.2	3.4	0.0	1.7				100

nwd1gn.d23, nwd1wea.d23

Table 27. Population assessment for Walleye based on fall gill netting at Nolin River Lake from 1991-2023 (scoring based on statewide assessment).

Year	CPUE	Mean length	CPUE	CPUE	Instantaneous	Annual	Total score	Assessment rating
	(excluding age 0)	age 2+ at capture	≥ 20.0 in	age 1	mortality (z)	mortality (A)%		
2023	2.6 (2)	18.1 (2)	0.1 (1)	1.3 (2)	0.749	52.7	7	Fair
2020	5.0 (3)	17.2 (1)	0.3 (2)	0.6 (1)	-	-	7	Fair
2015	2.5 (2)	15.6 (1)	0.0 (1)	1.4 (2)			6	Poor
2013	5.0 (3)	16.0 (1)	0.3 (2)	2.5 (3)			9	Fair
2011	3.8 (2)	16.3 (1)	0.1 (1)	1.5 (2)	0.543	41.9	6	Poor
2009	7.6 (4)	16.6 (1)	0.5 (2)	3.7 (4)	0.599	45.1	11	Good
2007	2.0 (1)	15.9 (1)	0.2 (2)	1.0 (2)	0.532	41.3	6	Poor
2006	6.3 (3)	16.6 (1)	0.0 (1)	1.7 (3)	1.152	68.4	8	Fair
2003	1.9 (1)	16.9 (1)	0.6 (3)	0.4 (1)			6	Poor
2002	2.6 (2)	17.5 (2)	0.4 (2)	0.3 (1)			7	Fair
2001	1.0 (1)	17.8 (2)	0.3 (2)	0.0 (1)			6	Poor
2000	1.3 (1)	16.2 (1)	0.1 (1)	0.8 (1)			4	Poor
1998	6.3 (3)	15.5 (1)	0.0 (1)	1.7 (3)			8	Fair
1996	3.0 (2)	15.0 (1)	0.0 (1)	2.1 (3)			7	Fair
1991	5.7 (3)	15.8 (1)	0.5 (2)	2.2 (3)			9	Fair

Table 28. Length frequency and CPUE (fish/nn) for Channel Catfish collected in 7 net-nights of gill netting at Nolin River Lake during October 2023.

Species	Inch class																	Total	CPUE	SE		
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	25				26	31
Channel Catfish	1		1	2	3	5	1	3	2	2	8	4	2	4	1	2	1	1	1	44	6.3	2.4

nwd1gn.d23

Table 29. Number of fish and mean relative weight (Wr) for each length group of Channel Catfish collected at Nolin River Lake during November 2023. Standard errors are in parentheses.

Length group					
11.0-15.9 in		16.0-23.9 in		≥24.0 in	
No.	Wr	No.	Wr	No.	Wr
14	79 (2)	25	82 (2)	3	83 (5)

nwd1gn.d23

Table 30. Species composition, length frequency, and CPUE (fish/hr) of black bass collected in 5.0 hrs of electrofishing at Rough River Lake during April 2023.

Area	Species	Inch class																			Total	CPUE	SE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
North Fork	Largemouth Bass	10	39	32	11	10	10	14	16	25	31	27	19	5	10	3	4	4	1	271	135.5	23.0	
	Spotted Bass			1		2	2	2	4	7	2	1								21	10.5	3.9	
South Fork	Largemouth Bass	18	31	27	23	14	15	13	29	26	34	23	23	5	5	5	6	2		300	100.0	11.0	
	Spotted Bass		1	4	3	3	6	5	9	10	7	2	2							52	17.3	6.6	
Total	Largemouth Bass	28	70	59	34	24	25	27	45	51	65	50	42	10	15	8	10	6	1	571	114.2	12.0	
	Spotted Bass		1	5	3	5	8	7	13	17	9	3	2							73	14.6	4.2	

nwd2psd.d23

Table 31. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples on each arm of Rough River Lake during April 2023; 95% confidence intervals are in parentheses.

Area	Species	\geq Stock size ^a	PSD	RSD ^b
North Fork	Largemouth Bass	169	62 (\pm 7)	16 (\pm 6)
	Spotted Bass	20	50 (\pm 22)	-
South Fork	Largemouth Bass	187	56 (\pm 8)	13 (\pm 5)
	Spotted Bass	44	47 (\pm 16)	5 (\pm 6)
Total	Largemouth Bass	356	58 (\pm 6)	14 (\pm 4)
	Spotted Bass	64	48 (\pm 12)	3 (\pm 4)

^a Largemouth Bass = 8.0 in, Spotted Bass = 7.0 in

^b Largemouth Bass = RSD₁₅, Spotted Bass = RSD₁₄.

nwd2psd.d23

Table 32. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Rough River Lake during 2000-2023.

Year	Length group										Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	43.0	6.6	29.6	3.4	31.4	4.1	10.2	1.9	0.4	0.3	114.2	12.0
2021	52.2	8.6	25.0	3.7	44.2	3.8	14.5	1.3	0.3	0.2	135.8	12.2
2019	61.8	9.0	48.0	4.2	27.6	3.3	15.8	3.4	0.9	0.4	153.1	12.6
2016	30.7	7.5	18.4	2.9	29.3	4.7	23.3	2.5	2.0	0.8	101.8	9.0
2013	20.9	3.1	49.6	5.0	32.4	3.6	31.3	3.6	3.3	0.6	134.2	8.1
2012	25.8	4.3	52.4	11.7	29.3	4.3	32.0	7.2	3.6	1.4	139.6	22.3
2009	29.1	3.2	47.8	4.2	42.7	4.3	17.6	2.5	0.7	0.3	137.1	7.0
2007	26.4	3.5	27.3	4.7	27.8	4.1	13.1	1.2	0.2	0.2	94.7	8.9
2006	21.1	2.6	28.7	10.1	28.2	4.4	11.3	2.8	0.4	0.3	89.3	16.7
2005	26.9	6.2	34.0	7.6	38.9	5.2	14.2	2.5	0.7	0.3	114.0	41.7
2004	31.1	3.9	35.6	5.1	12.9	2.2	9.8	1.1	0.2	0.2	89.3	9.5
2003	61.6	7.0	27.8	6.9	20.0	5.6	18.4	3.2	0.7	0.3	127.8	15.4
2002	7.3	1.7	7.1	2.3	2.0	0.9	1.6	0.4	0.0	0.0	18.0	3.8
2001	30.7	7.5	21.3	4.5	16.4	5.0	3.1	1.7	0.0	0.0	71.6	11.2
2000	15.1	3.5	32.9	4.3	21.8	2.8	5.3	2.1	1.8	1.0	75.1	6.4

^a Unable to sample due to high water some years

nwd2psd.d23

Table 33. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected at Rough River Lake in April 2023.

Year class	No.	Age										
		1	2	3	4	5	6	7	8	9	10	
2022	31	6.3										
2021	39	6.2	9.8									
2020	23	6.7	11.2	12.7								
2019	16	6.9	11.2	13.1	14.3							
2018	13	7.0	11.6	13.5	14.9	16.0						
2017	13	6.9	11.8	14.1	15.5	16.7	17.7					
2016	2	5.8	11.6	14.2	15.7	17.1	18.0	19.1				
2015	2	7.8	11.5	13.6	15.4	16.6	17.5	18.3	19.0			
2014	2	7.6	10.3	12.7	14.4	15.9	17.1	18.3	19.5	20.7		
2013	1	6.3	8.7	10.9	12.9	14.7	16.0	17.0	18.0	18.8	19.8	
Mean		6.6	10.8	13.2	14.8	16.4	17.5	18.3	19.0	20.0	19.8	
No.												
Smallest		3.4	7.5	9.6	11.2	13.9	15.6	17.0	18.0	18.8	19.8	
Largest		11.2	13.7	15.8	17.4	19.3	19.3	19.2	20.0	21.0	19.8	
SE		0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.07		
95% CI (±)		0.3	0.3	0.3	0.4	0.5	0.5	0.7	0.7	1.2		

nwd2lmba.d23

Table 34. Species composition, length frequency, and CPUE (fish/hr) of black bass collected in 4.0 hrs of electrofishing at Rough River Lake during October 2023.

Area	Species	Inch class																			Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
North Fork	Largemouth Bass	1	25	21	30	38	10	2	21	40	67	50	25	7	7	4	2	1	3		354	354.0	56.0	
	Spotted Bass		4	5	1		1	1		3	5										20	20.0	4.0	
South Fork	Largemouth Bass	1	20	34	34	31	29	15	36	48	90	103	55	40	19	10	8	1	2	5	1	582	194.0	13.2
	Spotted Bass		9	19	4	3	8	8	7	12	6	5	2									83	27.7	7.3
Total	Largemouth Bass	2	45	55	64	69	39	17	57	88	157	153	80	47	26	14	10	2	5	5	1	936	234.0	29.8
	Spotted Bass		13	24	5	3	9	9	7	15	11	5	2									103	25.8	5.5

nwd2lmb.d23

Table 35. Number of fish and mean relative weight (Wr) for length groups of Largemouth Bass collected at Rough River Lake during October 2023. Standard errors are in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in	
		No.	Wr	No.	Wr	No.	Wr
Largemouth Bass	North Fork	130	87 (1)	82	85 (1)	17	90 (2)
Largemouth Bass	South Fork	187	85 (1)	197	84 (1)	46	89 (2)
Largemouth Bass	Total	317	86 (1)	279	84 (1)	63	89 (1)

nwd2lmb.d23

Table 36. Indices of year class strength at age 0 and age 1 and mean lengths (in) of Largemouth Bass collected during fall electrofishing samples at Rough River Lake from 2022-2023.

Year class	Area	Age 0		Age 0		Age 0 ≥ 5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	5.3	0.1	66.8	18.5	41.3	11.3		
2022	Total	4.4	0.1	130.8	24.5	37.8	9.0	44.6	6.4

nwd2lmb.d23

nwd2psd.d23

nwd2lmb.d22

Table 37. Population assessment for Largemouth Bass based on spring electrofishing at Rough River Lake from 2000-2023 (scoring based on statewide assessment).

Year	Mean length age 3	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
2021		57.7 (4)	44.2 (4)	14.5 (3)	0.3 (2)			≥ 14	Good
2019	13.2 (3)	46.0 (4)	27.6 (3)	15.8 (3)	0.9 (3)			16	Good
2016		33.8 (3)	29.3 (3)	23.3 (4)	2.0 (4)			≥ 15	G-E
2013	12.3 (2)		32.4 (4)	31.3 (4)	3.3 (4)			≥ 15	G-E
2012		36.4 (3)	29.3 (3)	32.0 (4)	3.6 (4)			≥ 15	G-E
2009	12.6 (3)	28.4 (3)	42.7 (4)	17.6 (3)	0.7 (3)	0.884	58.7	16	Good
2007	13.6 (4)	27.1 (3)	27.8 (3)	13.1 (3)	0.2 (2)	0.576	42.3	15	Good
2006	13.6 (4)	22.0 (2)	28.2 (3)	11.3 (2)	0.4 (2)	0.773	53.8	13	Good
2005	13.6 (4)	28.0 (3)	38.9 (4)	14.2 (3)	0.7 (3)	0.759	53.2	15	Good
2004	13.6 (4)	38.8 (3)	12.9 (1)	9.8 (2)	0.2 (2)	0.862	57.8	12	Fair
2003	12.5 (3)	44.3 (4)	20.0 (2)	18.4 (3)	0.7 (3)	0.797	54.9	15	Good
2002	12.5 (3)	7.9 (1)	2.0 (1)	1.6 (1)	0.0 (1)			7	Poor
2001	12.5 (3)	28.0 (3)	16.4 (2)	3.1 (1)	0.0 (1)			10	Fair
2000	12.5 (3)	10.5 (1)	21.8 (2)	5.3 (1)	1.8 (4)			11	Fair

Table 38. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 2.5 hours of 30-minute diurnal electrofishing runs at Lake Malone in April 2023.

Species	Inch class																	Total	CPUE	SE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20	21
Largemouth Bass	5	31	41	26	18	52	56	50	42	20	24	30	32	18	15	28	9	4	1	502	200.8	22.6

nwd3psd.d23

Table 39. PSD and RSD₁₅ values obtained for Largemouth Bass collected in spring electrofishing samples at NWF D state-owned lakes from 2021-2023; 95% confidence intervals are in parentheses.

Lake	Species	Year	≥ Stock size	PSD	RSD ₁₅
Malone	Largemouth Bass	2023	381	48 (± 5)	28 (± 5)
		2022	343	70 (± 5)	42 (± 5)
		2021	339	69 (± 5)	33 (± 5)
Mauzy	Largemouth Bass	2023	47	64 (± 14)	19 (± 11)
		2022	147	42 (± 8)	1 (± 2)
		2021	145	15 (± 6)	1 (± 2)
Carpenter	Largemouth Bass	2023	78	71 (± 10)	50 (± 11)
		2022	117	74 (± 8)	40 (± 9)
		2021	103	51 (± 9)	37 (± 9)
New Kingfisher	Largemouth Bass	2023	48	67 (± 13)	42 (± 13)
		2022	85	52 (± 11)	29 (± 10)
		2021	50	44 (± 14)	36 (± 13)
Old Kingfisher	Largemouth Bass	2023	29	59 (± 19)	14 (± 13)
		2022	25	48 (± 20)	32 (± 19)
		2021	29	28 (± 17)	14 (± 13)
Washburn	Largemouth Bass	2023	89	12 (± 7)	-
		2022	63	16 (± 9)	-
		2021	102	7 (± 2)	5 (± 4)
nwd3psd.d23	nwd3psd.d22	nwd3psd.d21			
nwd4psd.d23	nwd4psd.d22	nwd4psd.d21			
nwd5psd.d23	nwd5psd.d22	nwd5psd.d21			
nwd6psd.d23	nwd6psd.d22	nwd6psd.d21			
nwd7psd.d23	nwd7psd.d22	nwd7psd.d21			
nwd8psd.d23	nwd8psd.d22	nwd8psd.d21			

Table 40. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Lake Malone from 2003-2023.

Year	Length group										Total	
	< 8.0 in		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in		≥ 20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	48.4	4.8	80.0	16.4	29.6	4.9	42.8	3.8	2.0	1.6	200.8	22.6
2022	17.2	4.5	41.6	7.1	37.6	4.8	58.0	7.9	7.2	1.7	154.4	18.1
2021	12.8	2.3	42.0	11.7	49.2	4.8	44.4	2.6	2.0	1.1	148.4	16.3
2018	5.6	1.7	37.6	7.2	60.4	7.2	59.2	7.8	10.8	2.6	162.8	17.8
2017	14.0	3.2	32.0	6.8	44.8	8.1	37.2	9.2	5.6	1.3	128.0	16.8
2015	18.8	2.7	81.6	7.7	60.8	5.3	42.8	7.2	8.4	1.2	204.0	17.2
2014	9.6	1.3	44.4	9.6	23.2	4.6	29.8	3.3	5.0	0.6	107.0	16.7
2012	46.4	18.4	123.6	18.1	48.8	10.9	48.8	10.3	2.8	1.0	267.6	44.5
2011	45.6	10.3	56.0	7.3	35.2	7.7	34.4	6.8	4.0	1.1	171.2	26.8
2010	37.2	8.8	49.6	5.0	49.6	5.4	62.0	7.1	3.6	1.6	198.4	16.3
2009	10.0	1.4	29.6	4.4	51.2	7.6	37.2	3.6	5.6	0.4	128.0	11.7
2008	18.8	6.5	78.8	6.6	77.2	5.0	43.6	8.1	6.4	1.5	218.4	12.4
2007	29.2	4.0	80.4	10.4	30.8	2.0	37.6	10.3	3.6	1.3	178.0	17.8
2006	31.6	3.7	81.6	14.3	22.4	2.1	28.0	5.9	5.2	1.6	163.6	19.8
2005	32.4	4.8	69.2	14.3	32.0	8.7	53.6	5.7	8.4	1.2	187.2	30.1
2004	28.4	3.9	53.6	5.7	26.4	4.2	53.2	3.9	6.0	1.6	161.6	12.8
2003	57.0	3.3	76.5	6.8	35.0	5.0	57.5	4.9	9.5	2.8	226.0	12.1

nwd3psd.d23

Table 41. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 2.5 hours of 30-minute diurnal electrofishing runs at Lake Malone in October 2023.

Species	Inch class																	Total	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20
Largemouth Bass	30	31	21	11	24	57	38	38	49	37	25	14	14	11	18	9	8	6	441	176.4	32.3

nwd3lmb.d23

Table 42. Number of fish and mean relative weight (Wr) for length groups of Largemouth Bass collected in fall electrofishing samples at NWFHD state-owned lakes from 2021-2023; 95% confidence intervals are in parentheses.

Lake	Year	Length group					
		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in	
		No.	Wr	No.	Wr	No.	Wr
Malone	2023	182	83 (1)	76	85 (1)	66	91 (1)
	2022	162	86 (1)	68	88 (2)	56	87 (1)
	2021	108	87 (1)	80	87 (1)	68	90 (1)
Mauzy	2023	122	81 (1)	25	83 (1)	18	87 (2)
	2022	43	86 (1)	35	88 (1)	5	92 (2)
	2021	55	84 (1)	21	85 (1)	1	88 (-)
Carpenter	2023	55	88 (1)	40	92 (2)	21	100 (2)
	2022	40	89 (1)	15	89 (2)	29	96 (2)
	2021	49	86 (1)	33	88 (1)	42	94 (1)
New Kingfisher	2023	33	88 (1)	23	91 (1)	5	104 (3)
	2022	34	92 (1)	25	89 (1)	10	101 (3)
	2021	26	88 (1)	14	92 (2)	19	97 (2)
Old Kingfisher	2023	37	89 (1)	12	88 (2)	2	99 (1)
	2022	35	92 (2)	9	95 (2)	4	93 (12)
	2021	10	88 (2)	1	85 (-)	1	109 (-)
Washburn	2023	46	82 (1)	7	89 (4)	1	97 (-)
	2022	35	85 (3)	-	-	1	96 (-)
	2021	58	80 (1)	4	91 (4)	-	-
nwd3lmb.d23							
nwd4lmb.d23							
nwd5lmb.d23							
nwd6lmb.d23							
nwd7lmb.d23							
nwd8lmb.d23							
nwd3lmb.d22							
nwd4lmb.d22							
nwd5lmb.d22							
nwd6lmb.d22							
nwd7lmb.d22							
nwd8lmb.d22							
nwd3lmb.d21							
nwd4lmb.d21							
nwd5lmb.d21							
nwd6lmb.d21							
nwd7lmb.d21							
nwd8lmb.d21							

Table 43. Population assessment for Largemouth Bass based on spring electrofishing at Lake Malone from 2003-2023 (scoring based on statewide assessment).

Year	Mean length				Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating	
	age 3 at capture	CPUE age 1	CPUE 12.0 - 14.9 in	CPUE ≥ 15.0 in					CPUE ≥ 20.0 in
2023		44.4 (3)	29.6 (3)	42.8 (4)	2.0 (3)		≥ 14	G - E	
2022		11.6 (2)	37.6 (3)	58.0 (4)	7.2 (4)		≥ 14	G - E	
2021	12.8 (4)*	9.6 (2)	49.2 (4)	44.4 (4)	2.0 (3)	0.398	32.8	17	Excellent
2018		5.6 (1)	60.4 (4)	59.2 (4)	10.8 (4)		≥ 14	G - E	
2017		12.8 (2)	44.8 (4)	37.2 (4)	5.6 (4)		≥ 15	G - E	
2015	11.4 (3)*	10.3 (2)	60.8 (4)	42.8 (4)	8.4 (4)		≥ 16	G - E	
2014		7.8 (2)	23.2 (2)	29.8 (4)	5.0 (4)		≥ 13	F - G	
2012		31.2 (3)	48.8 (4)	48.8 (4)	2.8 (3)		≥ 15	G - E	
2011		41.2 (3)	35.2 (3)	34.4 (4)	4.0 (4)		≥ 15	G - E	
2010	10.4 (2)	15.1 (2)	49.6 (4)	62.0 (4)	3.6 (3)	0.397	32.7	15	Good
2009	10.3 (2)	8.8 (2)	51.2 (4)	37.2 (4)	5.6 (4)	0.293	25.4	16	Good
2008	10.3 (2)	16.4 (2)	77.2 (4)	43.6 (4)	6.4 (4)	0.357	30.0	16	Good
2007	10.3 (2)	29.2 (3)	30.8 (3)	37.6 (4)	3.6 (3)	0.330	28.1	15	Good
2006	11.5 (4)	20.2 (2)	22.4 (2)	28.0 (4)	5.2 (4)	0.526	40.9	16	Good
2005	11.5 (4)	19.0 (2)	32.0 (3)	53.6 (4)	8.4 (4)	0.387	32.0	17	Excellent
2004	11.5 (4)	19.0 (2)	26.4 (3)	53.2 (4)	6.0 (4)	0.365	31.1	17	Excellent
2003	11.5 (4)	35.0 (3)	35.0 (3)	48.0 (4)	8.5 (4)	0.416	34.1	18	Excellent

*Using excel back calc tool

Table 44. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 0.75 hours of 15-minute diurnal electrofishing runs at Mauzy Lake in April 2023.

Species	Inch class														Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
Largemouth Bass	1	24	19	9	2	6	4	3	4	4	10	7	7	2	102	136.0	14.1

nwd4psd.d23

Table 45. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Mauzy Lake from 2003-2023.

Year	Length group										Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in		CPUE	SE
2023	73.3	11.6	22.7	1.3	28.0	6.1	12.0	2.3	0.0	-	136.0	14.1
2022	36.0	9.4	84.0	23.7	62.0	13.1	1.0	1.0	0.0	-	183.0	45.8
2021	24.0	0.0	123.0	16.4	20.0	2.3	2.0	1.2	0.0	-	169.0	17.5
2020	96.0	18.0	413.0	59.5	49.0	7.6	6.0	2.6	3.0	1.0	564.0	79.4
2018	35.0	2.5	162.0	10.4	18.0	1.2	19.0	3.0	8.0	3.3	234.0	11.5
2017	110.7	17.3	212.0	14.0	40.0	4.6	12.0	2.3	5.3	1.3	374.7	34.7
2015	40.0	12.1	133.0	21.8	20.0	7.8	15.0	1.9	5.0	3.8	208.0	37.1
2014	65.0	7.2	110.0	3.5	21.0	3.4	35.0	5.7	13.0	6.8	231.0	8.4
2013	80.0	24.3	98.7	19.6	13.3	4.8	34.7	4.8	4.0	2.3	226.7	25.3
2012	96.0	16.5	42.0	2.6	20.0	4.9	40.0	9.1	15.0	3.4	198.0	12.8
2011	48.0	11.6	21.3	3.5	58.7	2.7	40.0	4.6	10.7	3.5	168.0	8.0
2010	26.7	3.5	78.7	13.1	21.3	2.7	44.0	10.1	17.3	8.1	170.7	26.7
2009 ^a												
2008	104.0	31.4	147.0	16.3	21.0	5.0	83.0	9.3	7.0	1.9	355.0	48.2
2007	46.0	5.3	49.0	12.3	40.0	2.8	64.0	17.5	0.0	-	199.0	31.0
2006	68.0	14.1	40.0	4.0	24.0	4.0	60.0	4.6	0.0	-	192.0	21.2
2005	52.0	8.6	25.0	6.6	147.0	11.5	21.0	7.9	4.0	1.6	245.0	22.3
2004	20.0	9.2	132.0	2.3	5.3	1.3	6.7	1.3	0.0	-	164.0	10.6
2003 ^b	98.6	18.7	163.2	31.9	73.6	6.1	20.8	6.4	2.8	2.8	356.3	58.7

^a Lake drawn down for repairs in 2009

^b Lake renovated in 2003

nwd4psd.d22

Table 46. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 1.0 hour of 15-minute diurnal electrofishing runs at Mauzy Lake in October 2023.

Species	Inch class																Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
Largemouth Bass	6	62	42	12	33	56	31	18	17	14	2	9	4	7	3	4	320	320.0	40.1

Table 47. Population assessment for Largemouth Bass based on spring electrofishing at Mauzy Lake from 2003-2023 (scoring based on statewide assessment).

Year	Mean length age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
2023		73.3 (4)	28.0 (3)	12.0 (2)	0.0 (1)			≥ 11	F - G
2022	11.4 (3) ^b	34.0 (2)	62.0 (4)	1.0 (1)	0.0 (1)			11	Fair
2021		10.0 (2)	20.0 (2)	2.0 (1)	0.0 (1)			≥ 7	Poor
2020		71.0 (4)	49.0 (4)	6.0 (2)	3.0 (3)			≥ 14	Good
2018	9.8 (1) ^b	27.0 (2)	18.0 (1)	19.0 (3)	8.0 (4)			11	Fair
2017		78.7 (4)	40.0 (3)	12.0 (2)	5.3 (4)			≥ 14	G - E
2015	10.2 (2) ^b		20.0 (2)	15.0 (2)	5.0 (4)			≥ 13	Good
2014		40.0 (2)	21.0 (2)	35.0 (4)	13.0 (4)			≥ 13	Good
2013		63.1 (3)	13.3 (1)	34.7 (4)	4.0 (4)			≥ 13	Good
2012	13.6 (4) ^a	74.0 (3)	20.0 (2)	40.0 (4)	15.0 (4)	0.965	61.9	17	Excellent
2011		61.3 (3)	56.7 (4)	40.0 (4)	10.7 (4)			≥ 16	G - E
2010			21.3 (2)	44.0 (4)	17.3 (4)			≥ 11	F - G
2009*									
2008	12.2 (4)	99.0 (4)	21.0 (2)	83.0 (4)	7.0 (4)	0.466	37.3	18	Excellent
2007	12.2 (4)	21.0 (2)	40.0 (3)	64.0 (4)	0.0 (1)	0.374	31.2	14	Good
2006	10.3 (2)	24.0 (2)	24.0 (2)	60.0 (4)	0.0 (1)	0.755	53.0	11	Fair
2005	10.3 (2)	34.0 (2)	147.0 (4)	21.0 (3)	4.0 (4)			15	Good
2004	10.3 (2)	2.7 (1)	5.3 (1)	6.7 (2)	0.0 (1)	0.884	58.7	7	Poor
2003*	10.3 (2)	86.8 (4)	73.6 (4)	20.8 (3)	2.8 (3)			16	Good

^a Only one age-3 fish

^b Used psd file and modified fall age file

* Lake renovated in 2003, drawn down for repairs in 2009

Table 48. Length frequency and CPUE (fish/nn) for Channel Catfish collected in tandem hoop net sets in Mauzy Lake during October 2023. Nets were fished for three nights using cheese logs for bait.

Species	Inch class																Total	CPUE
	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
Channel Catfish	2	4	17	15	11	5	8	5	5	1	5	1	3	3	2	2	89	29.7

nwd4hn.d23

Table 49. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 1.0 hour of 15-minute diurnal electrofishing runs at Carpenter Lake in April 2023.

Species	Inch class																	Total	CPUE	SE	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Largemouth Bass	3	12	14	3	2	5	11	5	3	6	7	8	4	8	5	4	9	1	110	110.0	31.9

nwd5psd.d23

Table 50. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Carpenter Lake from 2003-2023.

Year	Length group										Total	
	< 8.0 in		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in		≥ 20.0 in		CPUE	SE
2023	32.0	12.1	23.0	5.3	16.0	1.6	39.0	15.6	10.0	7.4	110.0	31.9
2022	30.0	7.0	31.0	6.6	39.0	7.9	47.0	2.5	6.0	2.0	147.0	20.1
2021	26.0	13.1	50.0	10.5	15.0	1.0	38.0	7.6	7.0	3.0	129.0	16.6
2020	26.0	6.2	50.0	13.1	24.0	6.7	51.0	9.6	2.0	2.0	151.0	32.2
2019	37.0	10.4	29.0	12.3	21.0	9.3	65.0	3.4	6.0	1.2	152.0	30.1
2018	40.0	9.2	17.3	7.4	108.0	12.0	49.3	13.1	1.3	1.3	214.7	10.4
2017	32.0	2.3	44.0	12.9	100.0	20.8	24.0	4.6	5.3	2.7	200.0	38.6
2016	97.3	31.5	57.3	5.8	65.3	11.4	33.3	5.3	12.0	6.1	254.3	41.9
2015	21.3	5.8	86.7	3.5	12.0	2.3	17.3	2.7	0.0		137.3	4.8
2014	16.0	6.7	131.2	17.6	48.0	13.2	30.4	5.9	12.8	5.4	225.6	37.0
2013	80.0	26.2	138.7	9.6	20.0	4.0	22.7	1.3	5.3	1.3	261.3	38.5
2012	40.0	16.7	74.7	15.0	46.7	7.4	22.7	12.7	1.3	1.3	184.0	46.7
2011	182.7	15.4	166.7	9.6	73.3	13.1	9.3	3.5	4.0	4.0	432.0	30.2
2010	73.3	19.4	198.7	39.6	10.7	5.8	12.0	4.6	2.7		294.7	34.7
2009	102.7	18.7	166.7	26.3	18.7	4.8	8.0	2.3	0.0		296.0	27.2
2008	136.0	17.7	229.0	28.8	9.0	2.5	11.0	4.1	1.0	1.0	385.0	50.3
2007	45.3	7.4	128.0	24.3	12.0	2.3	10.7	3.5	1.3		196.0	31.8
2006	97.3	12.0	134.7	8.7	24.0	1.3	9.3	2.3	0.0		265.3	55.4
2005	157.3	3.5	165.3	48.6	30.7	3.5	2.7	1.3	0.0		356.0	54.6
2004	80.0	16.7	128.0	28.0	22.7	3.5	21.3	8.7	2.7		252.0	47.7
2003	181.3	49.3	97.3	11.4	18.7	4.8	36.0	12.2	1.3		333.3	63.4

nwd5psd.d23

Table 51. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected at Carpenter Lake in April 2023.

Year class	No.	Age											
		1	2	3	4	5	6	7	8	9	10	11	
2022	21	6.0											
2021	5	5.6	9.6										
2020	17	6.1	8.7	10.5									
2019	8	6.6	10.0	12.2	13.6								
2018	11	6.6	9.8	11.9	13.7	14.7							
2017	5	6.3	10.9	13.3	15.2	16.4	17.1						
2016	3	6.0	10.4	13.0	14.5	15.7	16.7	17.3					
2015	3	7.6	11.7	13.8	15.3	16.4	17.3	18.0	18.8				
2012	2	5.4	8.0	10.2	11.6	12.7	13.8	15.1	16.1	17.4	18.5	19.8	
Mean		6.2	9.6	11.7	14	15.2	16.6	17	17.7	17.4	18.5	19.8	
No.	75												
Smallest		4.4	6.8	8.8	11.1	11.8	13.3	15.0	16.0	17.1	17.7	18.3	
Largest		8.8	13.3	16.6	18.0	18.7	19.5	20.0	20.7	17.6	19.2	21.2	
SE		0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	0.3	0.7	1.4	
95% CI (±)		0.2	0.4	0.5	0.5	0.7	1	1.3	1.8	0.6	1.5	2.9	

nwd5lmba.d23

Table 52. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 1.0 hour of 15-minute diurnal electrofishing runs at Carpenter Lake in October 2023.

Species	Inch class																	Total	CPUE	SE	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Largemouth Bass	6	24	17	2	7	25	15	8	18	13	9	2	6	3	1	4	4	1	165	165.0	36.8

nwd5lmb.d23

Table 53. Population assessment for Largemouth Bass based on spring electrofishing at Carpenter Lake from 2001-2023 (scoring based on statewide assessment).

Year	Mean length				Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating	
	age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥ 15.0 in					CPUE ≥ 20.0 in
2023	10.7 (2)*	32.0 (3)	16.0 (2)	39.0 (4)	10.0 (4)	0.227	20.3	15	Good
2022		12.0 (2)	39.0 (3)	47.0 (4)	6.0 (4)			≥ 14	Good
2021		26.0 (3)	15.0 (2)	38.0 (4)	7.0 (4)			≥ 14	Good
2020		12.0 (2)	24.0 (2)	51.0 (4)	2.0 (3)			≥ 12	F - G
2019		37.0 (3)	21.0 (2)	65.0 (4)	6.0 (4)			≥ 14	Good
2018	11.3 (3)	40.0 (3)	108.0 (4)	49.3 (4)	1.3 (2)			16	Good
2017		34.7 (3)	100.0 (4)	24.0 (3)	5.3 (4)			≥ 15	G - E
2016		97.3 (4)	65.3 (4)	33.3 (4)	12.0 (4)			≥ 17	Excellent
2015	10.6 (2)		12.0 (1)	17.3 (3)	0.0 (1)			≥ 8	P - F
2014		16.0 (2)	48.0 (4)	30.4 (4)	12.8 (4)			≥ 15	G - E
2013		69.3 (4)	20.0 (2)	22.7 (3)	5.3 (4)			≥ 14	Good
2012		12.0 (2)	46.7 (4)	22.7 (3)	1.3 (2)			≥ 12	F - G
2011		182.7 (4)	73.3 (4)	9.3 (2)	4.0 (4)			≥ 15	G - E
2010	10.1 (1)	72.0 (4)	10.7 (1)	12.0 (2)	2.7 (3)	0.438	35.5	11	Fair
2009	10.3 (2)	97.9 (4)	18.7 (2)	8.0 (2)	0.0 (1)			11	Fair
2008	10.3 (2)	120.3 (4)	9.0 (1)	11.0 (2)	1.0 (2)	0.561	42.9	11	Fair
2007	10.3 (2)	39.9 (3)	12.0 (1)	10.7 (2)	1.3 (2)	0.560	42.9	10	Fair
2006	11.6 (4)	78.7 (4)	24.0 (2)	9.3 (2)	0.0 (1)	1.160	68.7	13	Good
2005	11.6 (4)	132.0 (4)	30.7 (3)	2.7 (1)	0.0 (1)			13	Good
2004	11.6 (4)	56.0 (4)	22.7 (2)	21.3 (3)	2.7 (3)	1.155	68.5	16	Good
2003	11.6 (4)	162.7 (4)	54.7 (4)	36.0 (4)	1.3 (2)	0.943	61.1	18	Excellent
2002	11.6 (4)	12.0 (2)	12.0 (1)	21.3 (3)	0.0 (1)			11	Fair
2001	11.6 (4)	8.0 (2)	90.7 (4)	66.7 (4)	1.3 (2)			16	Good

* Used mean length at age Excel tool

Table 54. Length frequency and CPUE (fish/hr) of Bluegill and Redear Sunfish collected during 0.75 hours of electrofishing at Carpenter Lake in May 2023.

Species	Inch class								Total	CPUE	SE
	2	3	4	5	6	7	8	9			
Bluegill	19	20	43	56	99	4			241	321.3	28.1
Redear Sunfish			4		11	29	19	9	72	96.0	16.1

nwd5bg.d23

Table 55. PSD and RSD values obtained for Bluegill and Redear Sunfish collected in spring electrofishing samples at NWFD state-owned lakes during 2023; 95% confidence intervals are in parentheses.

Lake	Species	≥ Stock size	PSD	RSD ^a
Carpenter	Bluegill	222	46 (± 6)	-
	Redear Sunfish	72	79 (± 10)	13 (± 8)
New Kingfisher	Bluegill	128	20 (± 6)	-
	Redear Sunfish	-	-	-
Old Kingfisher	Bluegill	106	28 (± 8)	-
	Redear Sunfish	6	-	-
Washburn	Bluegill	287	46 (± 6)	8 (± 3)
	Redear Sunfish	74	86 (± 8)	30 (± 11)

^a Bluegill = RSD₈, Redear Sunfish = RSD₉

nwd5bg.d23

nwd6bg.d23

nwd7bg.d23

nwd8bg.d23

Table 56. Spring electrofishing CPUE (fish/hr) for each length group of Bluegill collected at Carpenter Lake from 2001-2023.

Year	Length group										Total	
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 8.0 in		≥ 10.0 in		CPUE	SE
2023	25.3	11.6	158.7	16.5	137.3	23.4	0.0		0.0		321.3	28.1
2022	12.0	4.5	462.7	58.1	268.0	50.0	0.0		0.0		742.7	104.7
2021	98.7	15.7	190.7	30.3	69.3	23.7	0.0		0.0		358.7	43.3
2020	50.7	16.2	536.0	112.3	144.0	53.2	1.3	1.3	0.0		732.0	156.0
2019	5.3	4.0	249.3	51.8	104.0	34.8	0.0		0.0		358.7	81.9
2018	17.3	6.0	528.0	85.3	49.3	8.1	0.0		0.0		594.7	93.9
2017	89.3	27.9	348.0	38.8	170.7	22.0	0.0		0.0		608.0	84.3
2016	8.0	3.6	133.3	30.5	156.0	25.0	0.0		0.0		297.3	52.5
2015	2.7	1.7	125.3	17.9	220.0	52.9	0.0		0.0		348.0	65.5
2014	5.3	4.0	352.0	34.6	332.0	34.1	1.3	1.3	0.0		690.7	49.7
2013	20.0	9.2	138.7	27.1	312.0	42.5	0.0		0.0		470.7	70.8
2012	1.6	1.6	144.0	31.9	147.2	22.3	0.0		0.0		292.8	49.7
2011	16.0	10.4	400.0	157.5	180.8	50.5	0.0		0.0		596.8	214.4
2010	10.7	6.4	100.0	18.6	101.3	19.0	0.0		0.0		212.0	30.8
2009	17.3	9.6	124.0	24.4	140.0	17.9	0.0		0.0		281.3	42.9
2008	0.0		88.0	18.8	150.0	50.7	0.0		0.0		238.0	68.5
2007	2.7	2.7	61.3	17.7	168.0	38.5	1.3	1.3	0.0		233.3	9.1
2006	1.3	1.3	57.3	10.0	102.7	12.1	0.0		0.0		161.3	21.3
2005	12.1	9.8	190.1	17.1	98.9	6.8	18.7	9.0	0.0		319.8	23.1
2004	12.3	4.6	26.2	7.1	46.2	11.4	1.5	1.5	0.0		86.2	20.4
2003	7.7	2.8	102.6	23.0	47.4	13.2	3.9	1.7	0.0		161.5	34.1
2002	2.3		8.1		17.2		1.2		0.0		28.7	
2001			198.7	74.7	152.0	22.7	41.3	12.7	0.0		392.0	108.9

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Table 57. Spring electrofishing CPUE (fish/hr) for each length group of Redear Sunfish collected at Carpenter Lake from 2010-2023.

Year	Length group										Total	
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 8.0 in		≥ 10.0 in		CPUE	SE
2023	0.0		5.3	5.3	53.3	9.4	37.3	9.8	0.0		96.0	16.1
2022	0.0		60.0	30.2	50.7	16.4	66.7	14.1	0.0		177.3	48.3
2021	1.3	1.3	0.0		25.3	12.3	38.7	15.1	0.0		65.3	21.8
2020	0.0		14.5	6.7	34.7	11.4	49.3	17.0	0.0		98.7	29.1
2019	0.0		10.7	4.9	73.3	22.7	18.7	3.4	0.0		102.7	27.3
2018	0.0		21.3	3.4	16.0	4.1	16.0	2.9	1.3	1.3	53.3	6.4
2017	0.0		29.3	19.0	17.3	5.2	22.7	10.0	1.3	1.3	69.3	19.8
2016	0.0		1.3	1.3	8.0	2.9	12.0	6.4	2.7	1.7	21.3	7.9
2015	0.0		2.7	2.7	10.7	3.4	40.0	9.9	1.3	1.3	53.3	11.4
2014	0.0		0.0		10.7	4.0	72.0	11.7	0.0		82.7	11.4
2013	0.0		1.3	1.3	9.3	2.5	12.0	2.7	0.0		22.7	2.5
2012	0.0		8.0	3.6	41.6	20.3	6.4	3.0	0.0		56.0	25.2
2011	0.0		32.0	24.4	28.8	17.6	16.0	5.7	0.0		76.8	43.1
2010	0.0		2.7	2.7	16.0	4.6	9.3	2.5	0.0		28.0	6.5

nwd5bg.d23

Table 58. Population assessment for Bluegill based on spring electrofishing at Carpenter Lake from 2001-2023 (scoring based on statewide assessment).

Year	Mean length age 2 at capture	Years to 6.0 in	CPUE ≥ 6.0 in	CPUE ≥ 8.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
2023			137.3 (4)	0.0 (1)			≥ 7	F - G
2022			268.0 (4)	0.0 (1)			≥ 7	F - G
2021			69.3 (3)	0.0 (1)			≥ 6	F - G
2020			145.3 (4)	1.3 (2)			≥ 8	F - G
2019			104.0 (4)	0.0 (1)			≥ 7	F - G
2018	4.8 (4)*	3-3+ (3)	49.3 (2)	0.0 (1)			10	Good
2017			170.7 (4)	0.0 (1)			≥ 7	F - G
2016			156.0 (4)	0.0 (1)			≥ 7	F - G
2015	4.9 (4)	4-4+ (2)	220.0 (4)	0.0 (1)			11	Good
2014			333.3 (4)	1.3 (2)			≥ 8	F - E
2013			312.0 (4)	0.0 (1)			≥ 7	F - G
2012			147.2 (4)	0.0 (1)			≥ 7	F - G
2011			180.8 (4)	0.0 (1)			≥ 7	F - G
2010	4.9 (4)	3-3+ (3)	101.3 (4)	0.0 (1)	0.615	45.9	12	Good
2009	4.6 (3)	3-3+ (3)	140.0 (4)	0.0 (1)			11	Good
2008	4.6 (3)	3-3+ (3)	150.0 (4)	0.0 (1)	0.571	43.9	11	Good
2007	4.6 (3)	3-3+ (3)	169.3 (4)	1.3 (2)	0.386	32.0	12	Good
2006	5.6 (4)	2-2+ (4)	84.6 (3)	0.0 (1)	1.657	80.9	12	Good
2005	5.6 (4)	2-2+ (4)	117.6 (4)	18.7 (4)			16	Excellent
2004	5.6 (4)	2-2+ (4)	47.7 (2)	1.5 (2)			12	Good
2003	5.6 (4)	2-2+ (4)	53.3 (2)	4.0 (3)	1.427	76.0	13	Good
2002	5.6 (4)	2-2+ (4)	18.4 (1)	1.2 (2)			11	Good
2001			145.7 (4)	41.3 (4)			≥ 10	G - E

* Back calculated from age table

Table 59. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 0.5 hours of 7.5-minute diurnal electrofishing runs at New Kingfisher Lake in April 2023.

Species	Inch class																Total	CPUE	SE		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20	21
Largemouth Bass	5	12	2		2	4	6	4	9	3		5	1	4	7	1	1	1	67	134.0	22.0

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Table 60. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at New Kingfisher Lake from 2003-2023.

Year	Length group										Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023	38.0	13.6	32.0	4.6	24.0	8.6	40.0	14.2	4.0	4.0	134.0	22.0
2022	64.0	14.6	82.0	22.0	38.0	13.2	50.0	8.9	2.0	2.0	234.0	53.6
2021	72.0	28.1	74.7	19.2	10.7	7.1	48.0	25.7	8.0	8.0	205.3	25.4
2020	168.0	62.1	45.3	14.1	50.7	7.1	58.7	22.8	8.0	4.6	322.7	41.9
2019	48.0	24.4	21.3	9.6	5.3	2.7	61.3	2.7	10.7	7.1	136.0	12.2
2018	10.7	5.3	32.0	4.6	10.7	10.7	104.0	12.2	5.3	2.7	157.3	29.7
2017 ^b	56.0	21.2	2.7	2.7	26.7	2.7	61.3	30.1			146.7	43.7
2012-2016	No sampling - Renovation											
2011	213.3	75.9	128.0	28.1	24.0	4.6	16.0	8.0			381.3	99.6
2010	178.7	48.5	112.0	25.5	34.7	9.6	16.0	8.0			341.3	84.2
2009	109.3	37.3	24.7	2.7	21.3	2.7	0.0				165.3	37.3
2008 ^a	282.7	37.3	240.0	33.3	56.0	9.2	0.0				578.7	71.8
2007	98.7	27.8	392.0	92.7	21.3	2.7	2.7	2.7			514.7	112.8
2006	189.3	14.1	333.3	46.3	10.7	2.7	0.0				533.3	62.9
2005	287.2	97.4	428.2	53.5	41.0	6.8	12.8	5.1			769.2	141.2
2004	161.5	45.1	243.6	45.6	12.8	6.8	2.6	2.6			420.5	92.5
2003	105.6	28.2	425.0	55.5	8.3	4.8	0.0				538.9	59.8

^a Major fish kill 9/5/08

^b First standardized sample since renovation

nwd6psd.d23

Table 61. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 0.375 hours of 7.5-minute diurnal electrofishing runs at New Kingfisher Lake in October 2023.

Species	Inch class																			Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
Largemouth Bass	1	19	15	4	3	14	13	2	4	7	8	8	1	1	1	1		1	103	274.7	46.7	

nwd6lmb.d23

Table 62. Population assessment for Largemouth Bass based on spring electrofishing at New Kingfisher Lake from 2003-2023 (scoring based on statewide assessment).

Year	Mean length				Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating	
	age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥ 15.0 in					CPUE ≥ 20.0 in
2023		38.0 (3)	21.0 (2)	40.0 (4)	4.0 (4)		≥ 14	Good	
2022		36.0 (3)	38.0 (3)	50.0 (4)	2.0 (3)		≥ 14	Good	
2021			10.7 (1)	48.0 (4)	8.0 (4)		≥ 11	Good	
2020		154.7 (4)	50.7 (4)	58.7 (4)	8.0 (4)		≥ 17	Excellent	
2019			5.3 (1)	61.3 (4)	10.7 (4)		≥ 11	F - G	
2018		10.7 (2)	10.7 (1)	104.0 (4)	5.3 (4)		≥ 12	F - G	
2017 ^b			26.7 (3)	61.3 (4)	0.0 (1)		≥ 10	F - G	
2012-2016			No sampling - Renovation						
2011		192.0 (4)	24.0 (2)	16.0 (2)	0.0 (1)		≥ 10	F - G	
2010			34.7 (2)	16.0 (2)	0.0 (1)		≥ 7	P - G	
2009	10.5 (2)	77.3 (4)	21.3 (2)	0.0 (1)	0.0 (1)		10	Fair	
2008 ^a	10.5 (2)	250.7 (4)	56.0 (4)	0.0 (1)	0.0 (1)	0.562	43.0	12	Fair
2007	10.5 (2)	96.0 (4)	21.3 (2)	2.7 (1)	0.0 (1)	0.608	39.2	10	Fair
2006	11.0 (3)	149.3 (4)	10.7 (1)	0.0 (1)	0.0 (1)	1.335	73.7	10	Fair
2005	11.0 (3)	248.7 (4)	41.0 (3)	12.8 (2)	0.0 (1)			13	Good
2004	11.0 (3)	94.9 (4)	12.8 (1)	2.6 (1)	0.0 (1)	1.230	70.8	10	Fair
2003	11.0 (3)	100.0 (4)	8.3 (1)	0.0 (1)	0.0 (1)	1.330	73.6	10	Fair

^a Major fish kill 9/5/08

^b First standardized sample since renovation

Table 63. Length frequency and CPUE (fish/hr) of Bluegill and Redear Sunfish collected in 0.5 hours of 7.5-minute diurnal electrofishing runs at New Kingfisher Lake in May 2023.

Species	Inch class									Total	CPUE	SE
	1	2	3	4	5	6	7	8	9			
Bluegill	1	39	64	28	11	12	13			168	336.0	92.7
Redear Sunfish									1	1	2.0	2.0

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Table 64. Spring electrofishing CPUE (fish/hr) for each length group of Bluegill collected at New Kingfisher Lake from 2003-2023.

Year	Length group										Total	
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 8.0 in		≥ 10.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	80.0	33.5	206.0	62.2	50.0	20.2	0.0			0.0	336.0	92.7
2022	229.3	119.6	394.7	40.4	189.3	83.3	0.0			0.0	813.3	85.2
2021	10.0	10.0	52.0	25.6	40.0	13.5	0.0			0.0	112.0	31.0
2020	24.0	16.7	426.7	72.2	208.0	90.9	0.0			0.0	658.7	166.7
2019	42.7	13.3	448.0	48.0	138.7	34.7	2.7	2.7		0.0	632.0	72.2
2018	21.3	17.5	885.3	314.5	72.0	12.2	2.7	2.7		0.0	981.3	335.4
2017 ^b	18.7	5.3	853.3	203.7	85.3	28.2	0.0			0.0	957.3	222.3
2012-2016	No sampling											
2011	8.0	4.6	338.7	37.3	413.3	97.6	0.0			0.0	760.0	92.3
2010	130.7	27.1	274.7	30.8	80.0	21.2	0.0			0.0	485.3	47.2
2009	194.7	21.3	338.7	35.3	74.7	30.1	0.0			0.0	608.0	53.3
2008 ^a	42.7	5.3	242.7	65.5	37.3	14.9	0.0			0.0	322.7	85.2
2007	5.3	2.7	69.3	26.3	45.3	5.3	0.0			0.0	120.0	33.3
2006	16.0	13.5	104.0	33.8	14.0	2.0	0.0			0.0	134.0	44.0
2005	0.0		53.9	7.7	12.8	6.8	10.3	6.8		0.0	76.9	8.9
2004	0.0		15.4	8.9	23.1	11.8	0.0			0.0	38.5	4.4
2003	12.8	6.8	56.4	2.6	15.4	7.7	5.1	2.6		0.0	89.7	5.1

^a Major fish kill 9/5/08

^b First standardized sample since renovation

nwd6bg.d23

Table 65. Population assessment for Bluegill based on spring electrofishing at New Kingfisher Lake from 2003-2023 (scoring based on statewide assessment).

Year	Mean length		CPUE ≥ 6.0 in	CPUE ≥ 8.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
	age 2 at capture	Years to 6.0 in						
2023			50.0 (2)	0.0 (1)			≥ 5	P - F
2022			189.3 (4)	0.0 (1)			≥ 7	F - G
2021			40.0 (2)	0.0 (1)			≥ 5	P - F
2020			208.0 (4)	0.0 (1)			≥ 7	F - G
2019			141.3 (4)	2.7 (3)			≥ 9	F - E
2018			74.7 (3)	2.7 (3)			≥ 8	F - G
2017 ^b			85.3 (3)	0.0 (1)			≥ 6	P - G
2012-2016				No sampling				
2011			413.3 (4)	0.0 (1)			≥ 7	F - G
2010			80.0 (4)	0.0 (1)			≥ 7	F - G
2009	4.3 (2)	3-3+ (3)	74.7 (3)	0.0 (1)			9	Fair
2008 ^a	4.3 (2)	3-3+ (3)	37.3 (2)	0.0 (1)	2.140	88.2	8	Fair
2007	4.3 (2)	3-3+ (3)	45.3 (2)	0.0 (1)	0.574	42.6	8	Fair
2006	5.7 (4)	2-2+ (4)	14.0 (1)	0.0 (1)	1.587	79.5	10	Good
2005	5.7 (4)	2-2+ (4)	23.1 (1)	10.3 (3)			12	Good
2004	5.7 (4)	2-2+ (4)	23.1 (1)	0.0 (1)			10	Good
2003	5.7 (4)	2-2+ (4)	21.6 (1)	5.4 (2)	0.865	57.9	11	Good

^a Major fish kill 9/5/08

^b First standardized sample since renovation

Table 66. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 0.379 hours of diurnal electrofishing at Old Kingfisher Lake in April 2023.

Species	Inch class																Total	CPUE	SE
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth Bass	6	19	3	1	7	3	1	6	3	4			2			2	57	150.4	0.0

nwd7psd.d23

Table 67. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Old Kingfisher Lake during 2017-2023.

Year	Length group										Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in		CPUE	SE
2023	73.9	0.0	31.7	0.0	34.3	0.0	10.6	0.0	5.3	0.0	150.4	0.0
2022	60.1	0.0	39.0	0.0	12.0	0.0	24.0	0.0	0.0	0.0	135.1	0.0
2021	48.1	0.0	63.1	0.0	12.0	0.0	12.0	0.0	0.0	0.0	135.1	0.0
2020	93.8	0.0	26.4	0.0	14.7	0.0	14.7	0.0	0.0	0.0	149.6	0.0
2019	8.0	0.0	34.9	0.0	2.7	0.0	32.2	0.0	2.7	0.0	77.8	0.0
2018	58.1	0.0	9.7	0.0	9.7	0.0	35.5	0.0	3.2	0.0	112.9	0.0
*2017	148.3	0.0	3.2	0.0	28.4	0.0	47.3	0.0	3.2	0.0	227.1	0.0

*First standardized sample since renovation

nwd7psd.d23

Table 68. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 0.314 hours of diurnal electrofishing runs at Old Kingfisher Lake in October 2023.

Species	Inch class												Total	CPUE	SE	
	4	5	6	7	8	9	10	11	12	13	14	15				16
Largemouth Bass	4	17	2	1	13	14	5	5	9	3		1	1	75	238.9	0.0

nwd7lmb.d23

Table 69. Population assessment for Largemouth Bass based on spring electrofishing at Old Kingfisher Lake from 2017-2023 (scoring based on statewide assessment).

Year	Mean length age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
2023			34.3 (3)	10.6 (2)	5.3 (4)			≥ 11	F - G
2022		36.0 (3)	12.0 (1)	24.0 (3)	0.0 (1)			≥ 9	Fair
2021			12.0 (1)	12.0 (2)	0.0 (1)			≥ 6	P - F
2020		67.1 (4)	14.7 (2)	14.7 (3)	0.0 (1)			≥ 11	F - G
2019			2.7 (1)	32.2 (4)	2.7 (3)			≥ 10	F - G
2018			9.7 (1)	35.5 (4)	3.2 (3)			≥ 10	F - G
2017*			28.4 (3)	47.3 (4)	3.2 (3)			≥ 12	F - E

*First standardized sample since renovation

Table 70. Length frequency and CPUE (fish/hr) of Bluegill and Redear Sunfish collected in 0.331 hours of diurnal electrofishing at Old Kingfisher Lake in May 2023.

Species	Inch class									Total	CPUE	SE
	1	2	3	4	5	6	7	8	9			
Bluegill	10	15	34	25	17	20	10			131	395.8	0.0
Redear Sunfish							1	4	1	6	18.1	0.0

nwd7bg.d23

Table 71. Spring electrofishing CPUE (fish/hr) for each length group of Bluegill collected at Old Kingfisher Lake from 2017-2023.

Year	Length group										Total	
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 8.0 in		≥ 10.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	75.5	0.0	229.6	0.0	90.6	0.0	0.0	0.0	0.0	0.0	395.8	0.0
2022	158.8	0.0	605.9	0.0	364.7	0.0	0.0	0.0	0.0	0.0	1129.4	0.0
2021	304.0	122.2	226.7	46.3	216.0	134.4	0.0	0.0	0.0	0.0	746.7	99.7
2020	16.0	9.2	533.3	59.6	325.3	159.5	0.0	0.0	0.0	0.0	874.7	204.5
2019	10.7	5.3	466.7	44.4	149.3	50.9	0.0	0.0	0.0	0.0	626.7	82.7
2018	6.8	0.0	952.4	0.0	190.5	0.0	0.0	0.0	0.0	0.0	1149.7	0.0
2017*	58.7	14.1	965.3	100.6	309.3	72.2	0.0	0.0	0.0	0.0	1333.3	178.0

*First standardized sample since renovation
nwd7bg.d23

Table 72. Population assessment for Bluegill based on spring electrofishing at Old Kingfisher Lake from 2017-2023 (scoring based on statewide assessment).

Year	Mean length		CPUE ≥ 6.0 in	CPUE ≥ 8.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
	age 2+ at capture	Years to 6.0 in						
2023			90.6 (3)	0.0 (1)			≥ 6	F - G
2022			364.7 (4)	0.0 (1)			≥ 7	F - G
2021			216.0 (4)	0.0 (1)			≥ 7	F - G
2020			325.3 (4)	0.0 (1)			≥ 7	F - G
2019			149.3 (4)	0.0 (1)			≥ 7	F - G
2018			190.5 (4)	0.0 (1)			≥ 7	P - G
2017			309.3 (4)	0.0 (1)			≥ 7	F - G

*First standardized sample since renovation
nwd7bg.d23

Table 73. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 0.5 hours of diurnal electrofishing at Washburn Lake in April 2023.

Species	Inch class																	Total	CPUE	SE
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth Bass	3	6	36	46	27	11	26	14	5	3	1	1					1	180	360.0	45.4

nwd8psd.d23

Table 74. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Washburn Lake from 2001-2023.

Year	Length group										Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	182.0	13.6	156.0	35.9	18.0	3.8	4.0	2.3	2.0	2.0	360.0	45.4
2022	184.0	29.6	106.0	12.4	20.0	7.7	0.0		0.0		310.0	38.1
2021	168.0	17.0	190.0	22.5	4.0	2.3	10.0	7.6	4.0	4.0	372.0	32.3
2020	186.7	48.5	58.7	21.8	10.7	7.1	10.7	10.7	2.7	2.7	266.7	58.7
2018	69.3	14.1	269.3	48.5	77.3	14.9	18.7	7.1	0.0		434.7	44.4
2017	258.7	31.4	306.7	9.6	42.7	7.1	5.3	2.7	5.3	2.7	613.3	46.3
2015	66.7	22.8	253.3	61.5	8.0	4.6	10.7	2.7	8.0	4.6	338.7	44.9
2014	90.7	7.1	333.3	30.8	8.0	4.6	10.7	2.7	5.3	2.7	442.7	23.3
2012	213.3	39.8	218.7	46.3	16.0	0.0	8.0	0.0	5.3	2.7	456.0	77.7
2011	205.3	44.9	133.3	35.3	2.7	2.7	5.3	2.7	0.0		346.7	78.6
2010	96.0	28.1	80.0	16.7	5.3	5.3	2.7	2.7	2.7	2.7	184.0	45.5
2009	104.0	60.0	82.7	39.8	0.0		10.7	5.3	0.0		197.3	104.3
2008	170.7	42.9	61.3	21.8	16.0	0.0	13.3	9.6	0.0		261.3	59.6
2007	133.3	35.3	80.0	4.6	16.0	4.6	21.3	9.6	0.0		250.7	30.8
2006	96.0	9.2	98.7	39.3	64.0	0.0	18.7	5.3	2.7	2.7	277.3	25.4
2005	43.6	11.2	146.2	16.0	28.2	5.1	2.6	2.6	2.6	2.6	220.5	25.3
2004	46.2	4.4	353.9	49.5	0.0		0.0		0.0		400.0	51.2
2003	123.1	33.5	438.5	49.5	0.0		0.0		0.0		561.5	52.4
2002	50.0		321.4		0.0		0.0		0.0		371.4	0.0
2001	260.0		8.0		0.0		0.0		0.0		268.0	0.0

* Washburn Lake renovated summer 1999 and restocked spring 2000

nwd8psd.d23

Table 75. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 0.375 hours of 7.5-minute diurnal electrofishing runs at Washburn Lake in October 2023.

Species	Inch class													Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15			
Largemouth Bass	4	29	22	37	5	15	22	8	1	2	1	4	1	151	402.7	86.0

nwd8lmb.d23

Table 76. Population assessment for Largemouth Bass based on spring electrofishing at Washburn Lake from 2003-2023 (scoring based on statewide assessment).

Year	Mean length	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
	age 3 at capture								
2023		202.0 (4)	18.0 (2)	4.0 (1)	2.0 (3)			≥ 11	F - G
2022		110.0 (4)	20.0 (2)	0.0 (1)	0.0 (1)			≥ 9	F - G
2021		166.0 (4)	4.0 (1)	10.0 (2)	4.0 (4)			≥ 11	F - G
2020		165.3 (4)	10.7 (1)	10.7 (2)	2.7 (3)			≥ 11	F - G
2018			77.3 (4)	18.7 (3)	0.0 (1)			≥ 10	F - G
2017	10.4 (2)	258.7 (4)	42.7 (3)	5.3 (1)	5.3 (4)	0.939	60.9	14	Good
2015			8.0 (1)	10.7 (2)	8.0 (4)			≥ 9	F - G
2014		90.7 (4)	8.0 (1)	10.7 (2)	5.3 (4)			≥ 12	F - G
2012			16.0 (1)	8.0 (2)	5.3 (4)			≥ 9	F - G
2011			2.7 (1)	5.3 (2)	0.0 (1)			≥ 6	P - F
2010	10.7 (2)	96.0 (4)	5.3 (1)	0.0 (1)	0.0 (1)	0.819	55.9	9	Fair
2009	13.1 (4)	99.7 (4)	0.0 (1)	10.7 (2)	0.0 (1)			12	Fair
2008	13.1 (4)	165.9 (4)	16.0 (1)	13.3 (2)	0.0 (1)	1.117	67.3	12	Fair
2007	13.1 (4)	131.2 (4)	16.0 (1)	21.3 (3)	0.0 (1)	0.944	61.1	13	Good
2006	11.2 (3)	94.7 (4)	64.0 (4)	18.7 (3)	2.7 (3)	0.669	48.8	17	Excellent
2005	11.2 (3)	41.0 (3)	28.2 (2)	2.6 (1)	2.6 (3)			12	Good
2004	11.2 (3)	48.3 (3)	0.0 (1)	0.0 (1)	0.0 (1)			9	Fair
2003	11.2 (3)	131.6 (4)	0.0 (1)	0.0 (1)	0.0 (1)			10	Fair

Table 77. Length frequency and CPUE (fish/hr) of Bluegill and Redear Sunfish collected in 0.5 hours of 7.5-minute diurnal electrofishing runs at Washburn Lake in May 2023.

Species	Inch class										Total	CPUE	SE
	1	2	3	4	5	6	7	8	9	10			
Bluegill	8	169	109	20	25	49	60	24			464	928.0	36.8
Redear Sunfish		8	21	6	4		10	32	21	1	103	206.0	35.7

nwd8bg.d23

Table 78. Spring electrofishing CPUE (fish/hr) for each length group of Bluegill collected at Washburn Lake during spring samples from 2001-2023.

Year	Length group										Total	
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 8.0 in		≥ 10.0 in		CPUE	SE
2023	354.0	81.8	308.0	41.9	218.0	53.1	48.0	25.1	0.0		928.0	36.8
2022	130.0	24.5	238.0	62.3	46.0	22.5	10.0	6.0	0.0		424.0	70.1
2021	10.0	5.0	84.0	35.0	38.0	8.3	12.0	4.0	0.0		144.0	38.2
2020	10.0	6.0	134.0	38.8	58.0	12.8	4.0	2.3	0.0		206.0	49.5
2018	24.0	12.2	258.7	27.8	101.3	33.4	29.3	16.2	0.0		413.3	55.7
2017	72.0	25.7	144.0	25.7	42.7	19.2	37.3	20.8	0.0		296.0	8.0
2015	26.0	13.6	152.0	18.2	122.0	17.4	8.0	4.6	0.0		308.0	20.8
2014	0.0		181.3	64.1	133.3	9.6	8.0	4.6	0.0		322.7	55.9
2013	10.7	7.1	101.3	16.2	109.3	58.5	2.7	2.7	0.0		224.0	46.2
2012	30.0	11.9	158.0	27.6	64.0	23.3	22.0	6.8	0.0		274.0	49.1
2011	24.0	10.7	93.3	16.5	33.3	10.4	5.3	2.7	0.0		156.0	19.6
2010	53.3	16.2	152.0	57.9	32.0	0.0	0.0		0.0		237.3	41.7
2009	60.0	15.1	80.0	19.0	138.0	10.0	0.0		0.0		278.0	20.8
2008	2.7	2.7	152.0	37.8	168.0	48.7	0.0		0.0		322.7	69.5
2007	58.7	14.1	245.3	37.1	40.0	12.2	0.0		0.0		344.0	54.5
2006	58.7	50.7	138.7	39.3	32.0	16.0	0.0		0.0		229.3	81.6
2005	161.5	31.9	155.8	18.9	9.6	3.7	0.0		0.0		326.9	39.3
2004	80.8	7.4	48.1	3.7	11.5	5.0	21.2	10.6	0.0		161.5	13.0
2003	7.7	3.1	71.2	12.7	113.5	39.9	0.0		0.0		192.3	39.9
2002			46.5		102.3		0.0		0.0		148.8	0.0
2001			28.0		64.0		4.0		0.0		96.0	0.0

* Washburn Lake renovated summer 1999 and restocked spring 2000

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Table 79. Spring electrofishing CPUE (fish/hr) for each length group of Redear Sunfish collected at Washburn Lake during spring samples from 2012-2023.

Year	Length group											
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 8.0 in		≥ 10.0 in		Total	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	16.0	10.8	62.0	6.0	20.0	8.3	108.0	34.0	2.0	2.0	206.0	35.7
2022	0.0		16.0	5.7	42.0	11.5	44.0	17.7	0.0		120.0	31.2
2021	2.0	2.0	4.0	2.3	94.0	20.5	168.0	24.7	0.0		268.0	39.9
2020	0.0		40.0	13.9	108.0	9.5	62.0	8.9	0.0		210.0	25.6
2018	0.0		133.3	18.7	154.7	63.7	144.0	50.8	0.0		432.0	127.6
2017	0.0		178.7	57.8	45.3	9.6	53.3	29.3	0.0		227.3	29.7
2015	0.0		44.0	12.4	74.0	23.0	94.0	29.5	0.0		212.0	55.1
2014	0.0		5.3	2.7	85.3	14.9	98.7	30.8	0.0		189.3	39.8
2013	0.0		96.0	20.1	85.3	2.7	0.0		0.0		181.3	22.8
2012	0.0		28.0	12.4	2.0	2.0	0.0		0.0		30.0	11.0

nwd8bg.d23

Table 80. Population assessment for Bluegill based on spring electrofishing at Washburn Lake from 2003-2023 (scoring based on statewide assessment).

Year	Mean length age 2 at capture	Years to 6.0 in	CPUE ≥ 6.0 in	CPUE ≥ 8.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
2023			266.0 (4)	48.0 (4)			≥ 10	F - G
2022			56.0 (3)	10.0 (4)			≥ 9	F - G
2021			50.0 (2)	12.0 (4)			≥ 8	F - G
2020			62.0 (3)	4.0 (3)			≥ 8	F - G
2018	3.5 (1)	4-4+ (2)	130.7 (4)	29.3 (4)			11	Good
2017			80.0 (3)	37.3 (4)			≥ 9	F - G
2015			130.0 (4)	8.0 (4)			≥ 10	F - G
2014			141.3 (4)	8.0 (4)			≥ 10	F - G
2013			112.0 (4)	2.7 (3)			≥ 9	F - G
2012			86.0 (3)	22.0 (4)			≥ 9	F - G
2011			38.7 (2)	5.3 (4)			≥ 8	P - G
2010			32.0 (2)	0.0 (1)			≥ 5	P - F
2009	4.7 (3)	3-3+ (3)	138.0 (4)	0.0 (1)	0.599	45.1	11	Good
2008	5.3 (4)	2-2+ (4)	168.0 (4)	0.0 (1)	2.046	87.1	13	Good
2007	5.3 (4)	2-2+ (4)	40.0 (2)	0.0 (1)	1.050	65.0	11	Good
2006	5.3 (4)	2-2+ (4)	32.0 (2)	0.0 (1)			11	Good
2005	5.4 (4)	2-2+ (4)	9.6 (1)	0.0 (1)			10	Good
2004	5.4 (4)	2-2+ (4)	32.7 (2)	22.0 (4)			14	Excellent
2003	5.4 (4)	2-2+ (4)	118.0 (4)	0.0 (1)			13	Good

Table 81. Population assessment for Redear Sunfish based on spring electrofishing at Washburn Lake from 2012-2023 (scoring based on statewide assessment).

Year	Mean length age 3 at capture	Years to 8.0 in	CPUE ≥ 8.0 in	CPUE ≥ 10.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
2023			108.0 (4)	2.0 (4)			≥ 10	G - E
2022			44.0 (4)	0.0 (1)			≥ 7	F - G
2021			168.0 (4)	0.0 (1)			≥ 7	F - G
2020			62.0 (4)	0.0 (1)			≥ 7	F - G
2018	8.4 (4)	3-3+ (4)	144.0 (4)	0.0 (1)			13	Good
2017			53.3 (4)	0.0 (1)			≥ 7	F - G
2015			94.0 (4)	0.0 (1)			≥ 7	F - G
2014			98.7 (4)	0.0 (1)			≥ 7	F - G
2013			0.0 (1)	0.0 (1)			≥ 4	P - F
2012			0.0 (1)	0.0 (1)			≥ 4	P - F

Table 82. Length frequency and CPUE (fish/nn) for catfish collected in tandem hoop net sets in Washburn Lake during October 2023. Nets were fished on two separate occasions for three nights each time using cheese logs for bait.

Species	Date	Inch class									Total	CPUE	
		21	22	23	24	25	26	27	28	29			
Channel Catfish	10/16 - 10/19			1	1						1	3	1.0
	10/27 - 10/30	1		1				1			1	4	1.3

nwd8hn.d23

SOUTHWESTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Lake sampling conditions are summarized in Table 1.

Barren River Lake (10,000 acres)

Black Bass

Black bass were collected with diurnal electrofishing from late April to early May from both lake arms (Tables 2-5) and again in early October (Tables 6 and 7). A total of 519 black bass were collected in the spring at a rate of 86.5 fish/hr (Table 2). Largemouth Bass made up 87% of the total catch while Spotted Bass made up 13% (Table 2) and their distribution remains tied to the lower 1/3 of the reservoir. The overall catch rate for Largemouth Bass (74.8 fish/hr) was significantly lower than the previous 6 years sampled (2013, 2018-2020 were not sampled due to high water; Table 3). Only the Peninsula (lower lake) area catch rates were similar to previous years; all others were well below (Table 2). Catch rates were lower across all length groups, but Beaver Creek and Peter Creek areas were notably lacking the larger size groups (15.0-in plus); reflective of average spawns since 2019 (Table 7). The low catch rate for the 12.0- to 14.9-in length group suggests that the promising 2021 year class may not have fully recruited to this size group or experienced poorer survival to age 2. In addition, the overwinter survival of the 2022 year class was low (13.1 fish/hr) even though there were good numbers of age-0 fish over 5.0 in (38.2 fish/hr). The results of these catch rates are shown by the drop from “Excellent” to “Good” in the Largemouth Bass population assessment.

Largemouth Bass size structure indices remain on the high end of the range (PSD = 71 and RSD₁₅ = 44; Table 5) and were like previous years. Spotted Bass size structure has shifted slightly to smaller fish but remains high quality as well (PSD = 78 and RSD₁₄ = 39), even with the low number of fish sampled. The Smallmouth Bass population remains poorly represented in samples (Tables 2 and 6), but larger fish are reported by anglers.

Fall young of year sampling suggests a potentially good 2023 year class. Age-0 CPUE (457.2 fish/hr; Table 7) was the highest recorded over the last 10 years. Age-0 CPUE ≥ 5.0 in (31.2 fish/hr) was just below average for the past 10 years and age-0 Largemouth Bass mean length (3.6 in) was the lowest when compared to the past 10 years. Since the young of year are smaller than normal, this may result in poor overwinter survival. Age-0 Largemouth Bass production was highest in the Barren River arm of the lake (Walnut Creek and Peter Creek sites), followed closely by the lower end of the lake (the Peninsula sites). Surprisingly, the upper end of the other arm (Beaver Creek sites) yielded half as many young of year fish and fish overall (Table 6). Largemouth Bass made up most of the fall sample (84%), while Spotted Bass made up the other 15% (Table 6). Smallmouth Bass were nearly nonexistent in these samples.

Crappie

Trap netting for crappie yielded 2,147 total crappie (925 Black Crappie and 1,222 White Crappie) in 75 net-nights (nn; Table 8). The crappie population appears to remain an even mix of both species (57% White and 43% Black). Age-0 catch rates of both species represented 10% of total crappie catch (6% of White Crappie and 14% of Black Crappie catch rates; Tables 9-12). The 2019 year class remains strong for both Black and White crappie, while the 2020 year class was very poor. The 2022 year class for White Crappie had very good overwinter survival that resulted in the highest catch rate for age-1 fish within the last 14 years (8.7 fish/nn; Table 13). The 2022 Black Crappie year class did not have as good of an overwinter survival, but its catch rate for age-1 fish was within the top four for the past 14 years (2.0 fish/nn; Table 14). The assessment rating remained “Good” for Black Crappie due to the high catch rate of age-1 fish and fish ≥ 8.0 in, and the rating for White Crappie increased to “Excellent” due to the catch rate of age-1 fish and the overall catch rate (Tables 13 and 14). The overall crappie assessment rating remained “Good” due to the highest catch rate for age-1 (10.7 fish/net-night) crappie within the past 14 years (Table 15). White Crappie reached harvestable size (10.0 in) in 2.5 years (calculated from Von Bertalanffy equation; FAST 3.0 software). White

Crappie size structure indices fell back to more normal ranges (PSD = 65 and RSD = 27; Table 16) as the exceptional 2019 year class aged out of the fishery. Black Crappie size structure indices both increased from 2021 (PSD = 46 and RSD = 2) due to the exceptional 2019 year class recruiting to larger sizes. The length-weight equations for Black Crappie (n=609) and White Crappie (n=985) were similar to prior years:

$$\text{Black Crappie } \text{Log}_{10}(\text{weight}) = -5.7515 + 3.383 * \text{Log}_{10}(\text{Length})$$

$$\text{White Crappie } \text{Log}_{10}(\text{weight}) = -6.0863 + 3.5089 * \text{Log}_{10}(\text{Length})$$

Blue Catfish

Blue Catfish were collected with diurnal low-pulse electrofishing in early August from both lake arms (Tables 17 and 18). A total of 41 Blue Catfish were collected at a rate of 17.6 fish/hr (Table 17). Few fish <20.0 inches in length were noted suggesting that natural reproduction has not been substantial enough to support the population expectations. No Blue Catfish were stocked from 2020 to 2023 to evaluate reproduction. Stocking of Blue Catfish will resume in the fall of 2024 at the same rate (8.0 fish/acre) as previously stocked. The relative weights of the Blue Catfish sampled were very good for all sizes ($W_r = 94$), and for fish ≥ 30.0 in, it was exceptional ($W_r = 103$; Table 18).

Briggs Lake (18 acres)

Sunfish

The sunfish population was sampled by diurnal electrofishing on May 23 (Tables 19-24). Overall CPUE of Bluegill (453.3 fish/hr; Table 19) was similar to prior sampling years (2021 and 2019) and was the third highest over the past thirteen years (Table 20). The catch rates of Bluegill in the 3.0- to 5.9-in length group (281.3 fish/hr) and 6.0- to 7.9-in length group (141.3 fish/hr) were well above the average of the past 13 years. The ≥ 8.0 -in length group CPUE (4.0 fish/hr; Table 20) was among the lowest of last 13 years and is possibly explained by a later sampling date (May 23). Similarly, Redear Sunfish CPUE (245.3 fish/hr) was the highest within the past 13 years (Table 21). The sample was dominated by the 6.0- to 7.9-in length group (121.3 fish/hr), which was the highest catch rate within the past 13 years. Size structure indices for Bluegill (PSD = 34; Table 22) remained unchanged from 2021 (PSD = 35) while indices for Redear Sunfish (PSD = 38) dropped greatly (2021 PSD = 70) due to an increase in intermediate sizes (3.0-5.9 in; Table 22), not lack of larger fish. The population assessment for Bluegill increased to “Excellent” due to the slight increase in the catch rate of ≥ 8.0 -in fish, while the Redear Sunfish rating dipped to “Good” due to lack of larger fish (≥ 10.0 in) sampled (Tables 23 and 24).

Marion County Lake (25 acres)

Sunfish

The sunfish population was sampled by diurnal electrofishing on May 18 (Tables 25-34). The overall catch rate for Bluegill (1,093.3 fish/hr) was significantly higher than all samples taken within the past 15 years (Table 26). The Redear Sunfish catch rate (54.7 fish/hr) was the lowest over the past 15 years (Tables 25 and 27). Even though the Bluegill sample was dominated by fish in the small (<3.0-in (296.0 fish/hr)) and intermediate (3.0- to 5.9-in (630.7 fish/hr)) length groups, the larger size groups (6.0- to 7.9-in and ≥ 8.0 -in) were well represented and either eclipsed or were similar to prior years (Table 26). Though the Redear Sunfish sample was dominated by the larger size groups, all of the length groups were either well below average or right around average of previous years (Table 27). The size structure indices for Bluegill (PSD = 21) decreased significantly from the last sample in 2021 (PSD = 62) due to the exceptional catch rates of intermediate-size fish (Table 28). Redear Sunfish size structure (PSD = 80) increased slightly from the last sample in 2021 (PSD = 70) due to lower presence of intermediate-size fish. The population assessment for Bluegill remained “Good” while the Redear Sunfish population assessment decreased to “Good” solely due to a low catch rate of ≥ 10.0 -in fish (Tables 29 and 30). Bluegill and Redear Sunfish were aged during sampling (Tables 31-34). Bluegill reached 6.0 inches in 3.0 years via growth curve analysis (calculated from Von Bertalanffy equation; FAST 3.0 software); mean back calculated length to age-3 was 6.3 in. Conversely, Redear Sunfish reached 8.0 inches in 3.5 years using growth curve analysis (calculated from Von Bertalanffy

equation; FAST 3.0 software) and similarly, mean back calculated lengths had Redear reaching 8.0 in at ages 3 to 4. The oldest fish aged within either the Bluegill or the Redear Sunfish populations fell within the 5- to 6-year-old age range.

West Fork Drakes (88 acres)

Black Bass

Largemouth Bass were sampled by diurnal electrofishing on October 26 for condition analysis. A total of 88 bass were collected throughout most size ranges (Table 35). Overall, the relative weights of all largemouth bass ($W_r = 84$) in the sample were fair (Table 36) with larger fish being the best conditioned (≥ 15.0 -in length group ($W_r = 94$)). West Fork Drakes is a river-run system with a broad forage base (sunfish, shiners, suckers and Gizzard Shad) with a substantial stand of aquatic vegetation at times.

Green River Lake

Muskellunge

Muskellunge were collected by diurnal electrofishing during late winter and early spring. Due to low sample sizes and sampling opportunities, data from 2023 and 2024 were combined to bolster sample sizes and only condition analysis is presented (Table 37). Muskellunge size group condition indices were similar to previous years, except for the middle size range (30.0- to 38.0-in; $W_r = 77$), which was lower.

Black Bass

Nocturnal bass electrofishing was conducted on the upper and lower ends of each lake arm (Green River and Robinson Creek) during early May (Table 38). The overall Largemouth Bass CPUE of 101.8 fish/hr was well below prior years (Table 39). The quality-size Largemouth Bass catch rate (≥ 15.0 in; 43.8 fish/hr) dipped significantly, returning to the recent average for the lake. Largemouth Bass size structure indices (PSD = 76 and RSD = 51; Table 40) remained similar to previous years. The population assessment for Largemouth Bass remained “Excellent”; similar to the last 14 years (Table 41). Largemouth Bass aged from spring sampling had good representation ($n \geq 5$) through age-7 (Table 42). Largemouth Bass reached 15.0 inches in 3.7 years; similar to previous spring age samples (Table 43).

The Spotted Bass catch rate (36.5 fish/hr; Table 38) continued to slide but remained in the normal range. The population continues to produce notable numbers of fish ≥ 12.0 inches in length (PSD = 33; Table 40), which was rare prior to 2004 when few Spotted Bass achieved such lengths. Spotted Bass were well represented ($n \geq 5$) through age-5 and needed 4.4 years to achieve 12.0 in (Tables 44 and 45).

Fall sampling suggests an average 2022 Largemouth Bass year class as age-1 CPUE was 12.5 fish/hr (Tables 46 and 47). Catch rates of age-0 Largemouth bass (30.0 fish/hr) and age-0 >5.0 in Largemouth Bass (2.7 fish/hr) were both significantly below average suggesting a very weak 2023 year class. Lower lake sites (Ramp 1 and Lone Valley) continue to show lower numbers of age-0 fish, likely reflecting a more nutrient poor area of the lake. CPUE of age-0 Largemouth Bass from the upper lake sites bolstered the overall age-0 CPUE once again.

Walleye/White bass

Experimental gill net sampling for White Bass and Walleye was conducted during mid-November and early-December (Table 1). White Bass presence (1.8 fish/nn; Table 48) continues to slide with the strong year classes of 2014 and 2015 faded out of the fishery (Table 49). The moderate 2021 year class currently props up this fishery (49% of catch; Table 49). Growth rate (mean length age 2+ = 14.4 in; Table 51) and condition indices for all length groups ($W_r = 95$; Table 53) of White Bass remain good to excellent. The White Bass population assessment, however, only rated “Fair” due to poor catch rates (Table 51). The length-weight equation for White Bass ($n=36$) was similar to previous years:

$$\text{Log}_{10}(\text{weight}) = -3.42911 + 3.09391 * \text{Log}_{10}(\text{Length})$$

Walleye CPUE (1.8 fish/nn; Table 48) was up slightly from the prior sample in 2020 with age-0 fish providing the extra pulse of fish. Only fish through age 3+ were well represented and overall numbers were low ($n \geq 8$; Table 50). Growth rate (19.7 in by age 2+; Table 52) and condition indices for all length groups ($Wr = 97-102$; Table 54) remain excellent. The Walleye population assessment rose to “Fair” due to an increase in CPUE of larger fish (≥ 20.0 in; Table 52). High water years of 2018, 2019, and 2020 afforded greater opportunities for Walleye emigration via lake discharges and this was also coupled with reduced stocking rates. This could explain some of the continued decrease in Walleye numbers. The length-weight equation for Walleye ($n=23$) was similar to previous years:

$$\text{Log}_{10}(\text{weight}) = -3.65988 + 3.18484 * \text{Log}_{10}(\text{Length})$$

Metcalfe County Lake (22 acres)

Black Bass

Largemouth Bass were sampled by diurnal electrofishing on April 18 (Table 1), returning to the normal sampling window. Largemouth Bass CPUE (196.0 fish/hr; Table 55) was similar to the most recent years (Table 56). The size structure remains diverse ($PSD = 43$ and $RSD = 27$; Table 57) and similar to previous years. CPUE of 20.0-in plus fish returned to the exceptional norm (16.0 fish/hr), likely due to the return to an earlier sampling time frame. The lake consistently averages 6.0-8.0 fish/hr for this length group, which is well above any waterbody in the Southwestern Fisheries District.

Mill Creek Lake (109 acres)

Black Bass

Largemouth Bass were sampled by nocturnal electrofishing on April 18 (Tables 1 and 58). Catch rates of Largemouth Bass in the larger length groups were above average, especially fish ≥ 15.0 in (98.0 fish/hr; Table 59). The increase in larger fish numbers could be due to active management conducted in 2020. Size structure indices ($PSD = 79$ and $RSD = 48$; Table 60) remain excellent and nearly unchanged even with extra pressure on the food base. Age data has not been collected from this population, so no assessment parameters are reported. However, even if growth was mediocre, the fishery would rate excellent.

Shanty Hollow Lake (136 acres)

Black Bass

Largemouth Bass were sampled by diurnal electrofishing on October 24 for condition analysis. A total of 249 bass were collected throughout most size ranges (Table 61) except larger fish (≥ 15.0 in), which is consistent with spring samples. Overall, the relative weights of all Largemouth Bass are chronically in the “Fair” range, unchanged by multiple bass removal efforts.

Sunfish

Sunfish (Bluegill and Redear Sunfish) were sampled by nocturnal electrofishing on May 25 after a substandard diurnal attempt in late April (Tables 1 and 62). Catch rates of intermediate-size Bluegill remain depressed and substantially off historic ranges (Table 63). Catch rates of the larger length groups of Bluegill both increased significantly. Bluegill size structure ($PSD = 59$; Table 65) increased from the last sample in 2021, perhaps reflecting a sustained increase of larger sizes. The Bluegill population assessment remains “Good” but is held back by average to low growth, similar to the last 10 years (Table 66). Bluegill were aged during the spring with fish needing just shy of 3.5 years to reach 6.0 in (Tables 68 and 69).

The Redear Sunfish population remains at a low density (CPUE = 29.0 fish/hr; Tables 62 and 64) with good size structure (PSD = 33, Table 65), except for a consistent absence of large fish (10.0-in plus). The Redear Sunfish population assessment dipped to “Fair”, handicapped by slower growth (Table 67). Redear Sunfish needed just over 4 years to achieve 8.0 in (Tables 70 and 71).

Channel Catfish

Tandem hoop nets were deployed from late-September to early-October with limited results (Table 72). Nets were fished in suitable dissolved oxygen levels (5-9 ppm) and captured miscellaneous other fish species, but only 19 Channel Catfish (age 1+ and 3+; Table 73), reflecting stocked years. Channel Catfish condition indices ($W_r = 88 - 99$; Table 74) were good.

Spurlington Lake (25 acres)

Black Bass

Largemouth Bass were sampled by diurnal electrofishing on October 25 for condition analysis. A total of 70 bass were collected throughout most size ranges (Table 75). Overall, the condition of Largemouth Bass across size groups remained good ($W_r = 88-93$) with larger sizes showing better condition.

Sunfish

The sunfish population was sampled by diurnal electrofishing on May 20 (Tables 1 and 76). The overall catch rate of Bluegill (1,422.0 fish/hr) was similar to most recent years (Table 77). A downturn in larger fish sizes may be a result of increasing crappie presence. Bluegill size structure reflects intermediate-size fish prevalence (PSD = 14; Table 79). Age data was collected during the spring sample with Bluegill needing 3.4 years to reach 6.0 in (Tables 80, 81, and 84). The Bluegill population assessment slid to “Good” (Table 84) due to slower growth and a size structure shift to intermediate sizes.

The Redear Sunfish population maintained a higher density (144.0 fish/hr; Table 76), similar to the previous sample (Table 78), but was driven solely by the 6.0- to 7.0-in size group (2021 year class; Table 82). The Redear Sunfish population growth parameters were very good (reaching 9.0 in by age 4; Table 83) and contributed heavily to the “Good” population assessment (Table 85).

Table 1. Lake sampling conditions in the Southwestern Fisheries District in 2023.

Lake	Date	Species	Water temp. surface (F)	Conductivity (umhos)	Secchi (in)	Comments
Barren River	4/24	Bass		170	42	2.5 ft below summer pool; 89 cfs outflow
	4/25	Bass	64	170	54	2.5 ft below summer pool; 89 cfs outflow
	5/9	Bass	67	210	34	8 inches below summer pool; 55 CFS outflow
	5/10	Bass	69		72	1/2 ft below summer pool; 55 CFS outflow
	10/9	YOY bass	71	210	20	1/2 ft below summer pool & steady; 500 cfs outflow
	10/10	YOY bass	71	210	39	1/2 ft below summer pool & steady; 500 cfs outflow
	10/11	YOY bass	73	210	30	1/2 ft below summer pool & steady; 500 cfs outflow
	10/12	YOY bass	71	210	24	1/2 ft below summer pool & steady; 500 cfs outflow
	10/31 - 11/3	Crappie	58-60			8 -9 ft below summer pool & falling; 1750 cfs outflow
Briggs	5/23	Bluegill & Redear	72-81	185	40	Normal
	10/26	Bass	66	200	30	Normal
Green River	2/23	Muskie	51-58		11	3.5 ft above summer pool & steady; 4877 cfs outflow
	2/24	Muskie	50-56		12	3.5ft above summer pool & steady; 4889 cfs outflow
	3/15	Muskie				5.5 ft below summer pool & falling; 4029 cfs outflow
	5/1	Bass	62	100		1 ft below summer pool & steady; 243 cfs outflow
	5/1	Bass	60			1 ft below summer pool & steady; 243 cfs outflow
	5/2	Bass	62	100		1 ft below summer pool & steady; 243 cfs outflow
	5/4	Bass	64	100		1 ft below summer pool & steady; 243 cfs outflow
	10/17 - 10/19	YOY bass	64	140	24-60	2 ft below summer pool & steady; 454 cfs outflow
11/13 - 11/17	White Bass/Walleye	56-57		49	2 ft below summer pool & falling; 1500 -2500 cfs outflow	
11/29 - 12/1	White Bass/Walleye	52-53			4.5 ft below summer pool & falling; 600 -2300 cfs outflow	
Marion County	5/18	Bluegill & Redear	76	140	14	Normal
Metcalfe County	4/18	Bass	67-69	220	24	Normal
Mill Creek	4/18	Bass	67	225		Normal
Shanty Hollow	4/20	Bluegill & Redear	68			Dinghy
	5/25	Bluegill & Redear	78	110	60	Normal
	9/30 -10/5	Channel Catfish	79			8 ft low
	10/24	Bass	61	140	31	11 ft low
Spurlington	4/21	Bluegill & Redear	68	140	38	Normal
	5/31	Bluegill & Redear	78-73	160		Normal
	10/25	Bass	60	200	94	Normal
West Fork Drakes	10/26	Bass	64	360	27	Normal

Table 2. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours (12- 0.50-hour runs) of diurnal electrofishing at Barren River Lake in late April and early May 2023.

Area	Species	Inch class																	Total	CPUE	SE		
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20	
Peninsula	Smallmouth Bass																			0			
	Spotted Bass				1		2	6	5	4	7	13	12	7	1	1				59	39.3	14.9	
	Largemouth Bass				1	4	13	13	16	9	20	9	11	16	27	14	5	3		161	107.3	11.6	
Beaver Creek	Smallmouth Bass																			0			
	Spotted Bass																			0			
	Largemouth Bass		4	5		3	2	1		13	23	13	8	17	6	9	4	3		111	74.0	21.2	
Peter Creek	Smallmouth Bass																			0			
	Spotted Bass						1	1		1	2	1	4							10	6.7	3.3	
	Largemouth Bass	3	3	10	4	3	3	3	5	15	4	2	3	9	8	6	3	2	1	87	58.0	19.1	
Walnut Creek	Smallmouth Bass																			0			
	Spotted Bass													1							1	0.7	0.7
	Largemouth Bass	1	4	1	1	4		4	11	7	3	4	9	11	14	5	9	2		90	60.0	11.0	
TOTAL	Smallmouth Bass																			0			
	Spotted Bass				1		3	7	5	4	8	15	13	12	1	1				70	11.7	5.9	
	Largemouth Bass	4	11	16	6	14	18	21	32	44	50	28	31	53	55	34	21	10	1	449	74.8	9.2	

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Table 3. Spring diurnal electrofishing CPUE (fish/hr) of each length group of Largemouth Bass collected at Barren River Lake 2013-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	8.5	1.7	19.2	4.2	18.2	3.6	29.0	4.3	0.2	0.2	74.8	9.2
2022	25.0	3.4	14.5	2.2	28.0	2.9	48.0	3.2	0.7	0.3	115.5	4.9
2021	3.2	1.1	20.0	1.9	35.7	4.5	31.2	3.2	0.7	0.4	90.0	6.6
2020	no data due to flooding											
2019	no data due to flooding											
2018	no data due to flooding											
2017	31.7	9.5	27.8	5.5	30.0	3.3	35.2	5.5	0.5	0.3	124.7	12.9
2016	7.5	1.6	16.5	2.8	48.0	4.9	23.5	3.9	0.5	0.3	95.5	7.4
2015	10.5	3.1	44.3	6.7	40.2	5.8	24.7	4.3	1.2	0.4	119.7	12.2
2014	26.9	10.0	45.8	6.1	48.7	5.5	44.0	7.2	2.0	0.8	165.3	18.5
2013	no data due to flooding											

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Table 4. Population assessment of Largemouth Bass based on spring sampling at Barren River Lake 2014-2023 (scoring based on statewide assessment).

Parameter	Year													
	<u>2023</u>		<u>2022</u>		<u>2021*</u>		<u>2017</u>		<u>2016</u>		<u>2015</u>		<u>2014*</u>	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Growth														
Mean length age 3 at capture	15.8	4	15.8	4	15.8	4	14.6	4	14.6	4	14.6	4	14.6	4
Size structure														
Spring CPUE 12.0-14.9 in	18.2	2	28.0	3	35.7	4	30.0	3	48.0	4	40.2	4	48.7	4
Size structure														
Spring CPUE \geq 15.0 in	29.0	4	48.0	4	31.2	4	35.2	4	23.5	4	24.7	4	44.0	4
Size structure														
Spring CPUE \geq 20.0 in	0.2	2	0.7	3	0.7	3	0.5	3	0.5	3	1.2	3	2.0	4
Recruitment														
Spring CPUE age 1	13.1	2	29.4	3	3.5	1	46.8	4	8.0	1	19.2	2	44.5	4
Instantaneous mortality (z)					-0.619								-0.558	
Annual mortality (A)%					46.1								44.2	
Total score	14		17		16		18		16		17		20	
Assessment rating	Good		Excellent		Good		Excellent		Good		Excellent		Excellent	

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* - age data collected in fall

Table 5. PSD and RSD values obtained for each black bass species collected during 6.0 hours (12-0.50-hour runs) of spring diurnal electrofishing at each area of Barren River Lake in late April and early May 2023. 95% confidence intervals are in parentheses.

Area	Species	\geq Stock size	PSD	RSD ^A
Peninsula	Largemouth Bass	156	67 (± 8)	42 (± 8)
	Spotted Bass	58	78 (± 11)	36 (± 13)
Beaver Creek	Largemouth Bass	99	84 (± 7)	39 (± 10)
	Spotted Bass	0	*	*
Peter Creek	Largemouth Bass	64	59 (± 13)	45 (± 13)
	Spotted Bass	10	80 (± 26)	50 (± 33)
Walnut Creek	Largemouth Bass	79	72 (± 10)	52 (± 11)
	Spotted Bass	1	100 (± 0)	100 (± 0)
Total	Largemouth Bass	398	71 (± 5)	44 (± 5)
	Spotted Bass	69	78 (± 10)	39 (± 12)

^A Largemouth Bass = RSD₁₅, Spotted Bass = RSD₁₄.

* No fish of sufficient size were collected during sampling.

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Table 6. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours (12- 0.50-hour runs) of diurnal electrofishing at Barren River Lake in early October 2023.

Area	Species	Inch class																	Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				19
Peninsula	Smallmouth Bass																			0		
	Spotted Bass	167	235	25	5	9	6	3		2	1	3	1		1					458	305.3	79.3
	Largemouth Bass	426	297	15	5	5	8	3	5	4	1	2	4	4	5		1			785	523.3	162.7
Beaver Creek	Smallmouth Bass																			0		
	Spotted Bass									1										1	0.7	0.7
	Largemouth Bass	26	262	30	10	23	19	7	3	10	12	12	9	7	6	3				439	292.7	29.8
Peter Creek	Smallmouth Bass								1											1	0.7	0.7
	Spotted Bass		12	10	1		1			1									25	16.7	8.7	
	Largemouth Bass	40	585	99	5	17	9	5	10	17	15	3	11	5	6	7	1	2	2	839	559.3	58.4
Walnut Creek	Smallmouth Bass																			0		
	Spotted Bass	1	22	26	2	2		1	1										55	36.7	22.0	
	Largemouth Bass	35	578	163	15	30	20	3	1	13	11	4	1	2	1	1	1			879	586.0	99.1
TOTAL	Smallmouth Bass								1										1	0.2	0.2	
	Spotted Bass	168	269	61	8	11	7	4	1	3	2	3	1		1				539	89.8	41.6	
	Largemouth Bass	527	1722	307	35	75	56	18	19	44	39	21	25	18	18	11	3	2	2	2942	490.3	55.5

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Table 7. Indices of year class strength at age 0 and age 1 and mean length (in) of Largemouth Bass collected during diurnal fall electrofishing at Barren River Lake 2013-2023.

Year class	Age 0 ^A		Age 0 ^A		Age 0 \geq 5.0 in ^A		Age 1 ^B	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	3.6	<0.1	457.2	56.8	31.2	4.6		
2022	4.0	<0.1	242.6	57.9	38.2	7.1	13.1	2.2
2021	4.4	<0.1	301.7	59.0	69.7	19.6	29.4	3.5
2020	3.9	<0.1	241.0	67.2	29.7	8.1	3.5	1.2
2019	4.3	0.1	116.1	20.5	27.1	5.7	ND	
2018	3.9	0.1	210.1	23.7	43.8	11.2	ND	
2017	4.1	<0.1	148.7	36.3	22.0	3.7	ND	
2016	4.3	<0.1	179.5	38.2	34.2	9.9	46.8	13.4
2015	4.0	<0.1	154.8	25.0	18.6	3.2	8.0	1.7
2014	4.0	<0.1	156.2	25.0	36.3	6.6	19.2	
2013	3.9	<0.1	365.3	91.4	57.4	8.3	44.5	13.1

^A Data collected by fall (September-November) diurnal electrofishing. Mean lengths were determined by analysis of otoliths removed from a subsample of LMB <10.0 in, and extrapolated to the entire catch of the fall sample.

^B Data collected during the following spring (April/May) diurnal electrofishing sample.

ND = no data available

swdbrlbb.d13 - d23
 swdbrlag.d14,16-19
 brlyyag.d13,15,20-23
 swdbrlyy.d13 - d23
 brlbbag.d21-23

Table 8. Length frequency and CPUE (fish/nn) of each inch class of White and Black crappie collected by trap net (75 net-nights) at Barren River Lake in late October and early November 2023.

Location	Species	Inch class										Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11				12
Beaver Creek	White Crappie		33	33	32	268	63	133	101	174	51	6	894	29.8	6.3
	Black Crappie	3	92	17	93	22	90	89	54	5			465	15.5	3.7
Walnut Creek	White Crappie		6	1		8	33	114	82	66	15	3	328	7.3	1.5
	Black Crappie	1	20	1	23	32	167	158	50	8			460	10.2	2.4
TOTAL	White Crappie		39	34	32	276	96	247	183	240	66	9	1222	16.3	3.0
	Black Crappie	4	112	18	116	54	257	247	104	13			925	12.3	2.0

swdbrltn.d23

Table 9. Age frequency and CPUE (fish/nn) of Black Crappie collected during 75 net-nights of trap netting at Barren River Lake in late October and early November 2023.

Age	Inch class									Total	Percent	CPUE	SE
	2	3	4	5	6	7	8	9	10				
0+	4	112	18							134	14	1.8	0.5
1+				116	23	12				151	16	2.0	0.5
2+					28	70	40			138	15	1.8	0.3
3+						12	10	13		35	4	0.5	0.1
4+					3	129	119	65	7	323	35	4.3	0.7
5+						35	79	26	7	147	16	2.0	0.3
Total	4	112	18	116	54	258	248	104	14	928	100		
%	0	12	2	13	6	28	27	11	2	100			

swdbrltn.d23; brlyyag.d23

Table 10. Age frequency and CPUE (fish/nn) of White Crappie collected during 75 net-nights of trap netting at Barren River Lake in late October and early November 2023.

Age	Inch class										Total	Percent	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12					
0+	39	34										73	6	1.0	0.3
1+			32	261	96	203	61					653	53	8.7	1.6
2+				15		9	69	106	7			206	17	2.7	0.5
3+							23	29	11			63	5	0.8	0.2
4+						35	31	106	37	6		215	18	2.9	0.5
5+									11	3		14	1	0.2	<0.1
Total	39	34	32	276	96	247	184	241	66	9	1224	100			
%	3	3	3	23	8	20	15	20	5	1	100				

swdbrltn.d23; brlyyag.d23

Table 11. Mean back calculated length (in) at each annulus for Black Crappie collected from Barren River Lake in late October and early November 2023, including the range of Black Crappie at each age and the 95% confidence interval for each age.

Year class	No.	Age				
		1	2	3	4	5
2022	15	4.3				
2021	21	4.2	6.2			
2020	5	4.6	6.7	7.9		
2019	44	4.2	6.2	7.3	8.1	
2018	22	3.5	5.8	7.0	7.8	8.5
Mean		4.1	6.1	7.2	8.0	8.5
No.		107	92	71	66	22
Smallest		1.9	4.2	5.8	6.5	7.1
Largest		7.7	8.1	9.5	10.3	9.8
SE		0.1	0.1	0.1	0.1	0.2
95% CI (+)		0.2	0.2	0.2	0.2	0.4

Otoliths were used for age-growth determinations; intercept = 0

swdbrlag.d23

Table 12. Mean back calculated length (in) at each annulus for White Crappie collected from Barren River Lake in late October and early November 2023, including the range of White Crappie at each age and the 95% confidence interval for each age.

Year class	No.	Age				
		1	2	3	4	5
2022	85	4.9				
2021	24	5.4	8.4			
2020	9	5.0	7.5	9.2		
2019	35	5.0	7.2	8.8	9.9	
2018	6	5.2	7.7	9.2	10.2	11.1
Mean		5.0	7.7	8.9	10.0	11.1
No.		159	74	50	41	6
Smallest		3.8	5.8	6.5	7.5	10.5
Largest		6.8	9.6	10.8	12.0	11.7
SE		<0.1	0.1	0.1	0.2	0.2
95% CI (+)		0.1	0.2	0.3	0.3	0.3

Otoliths were used for age-growth determinations; intercept = 0
swdbrlag.d23

Table 13. White Crappie population assessment from trap netting at Barren River Lake 2009-2023 (scoring based on statewide assessment).

Year	CPUE excluding age 0		CPUE age 1		CPUE age 0		CPUE ≥8.0 in		Mean length age 2+ at capture		Total score	Rating
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score		
2023	15.3	4	8.7	4	1.0	2	9.9	4	9.8	3	17	E
2021	11.8	3	1.3	2	0.8	2	10.3	4	9.0	2	13	G
2019	4.9	2	4.4	3	3.5	3	1.5	2	11.5 [^]	4	14	G
2017	4.2	2	0.4	1	0.2	1	4.0	3	9.7	3	10	F
2015	7.0	3	3.7	3	4.8	4	3.6	3	10.2	3	16	G
2013	5.6	2	0.2	1	11.9	4	5.6	3	10.1	3	13	G
2012	7.5	3	2.5	2	0.1	1	6.5	4	9.9	3	13	G
2011	4.7	2	4.5	3	0.2	1	2.8	2	10.9	4	12	F
2010	0.7	1	0.3	1	0.6	2	0.7	1	10.9	4	9	F
2009*	4.4	2	4.0	3	<0.1	1	4.0	3	10.2	3	12	F

* Age assessment data extrapolated from previous age data

[^]number based on only one age-2+ fish

swdbrtn.D09- D23

swdbrlag.D09- D23

Table 14. Black Crappie assessment from trap netting at Barren River Lake 2009-2023 (scoring based on statewide assessment).

Year	CPUE excluding age 0		CPUE age 1		CPUE age 0		CPUE ≥ 8.0 in		Mean length age 2+ at capture		Total score	Rating
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score		
2023	10.6	4	2.0	3	1.8	3	4.9	4	7.6	1	15	G
2021	10.7	4	1.4	2	1.2	3	1.6	3	7.0	1	13	G
2019	4.2	3	3.4	3	1.8	3	0.6	1	8.5	2	12	F
2017	3.7	3	1.4	2	2.4	4	1.3	2	8.0	1	12	F
2015	3.1	2	1.4	2	7.0	4	0.4	1	7.8	1	10	F
2013	9.7	4	0.7	2	12.3	4	8.5	4	8.7	2	16	G
2012	5.2	3	1.0	2	0.1	1	3.3	3	8.3	1	10	F
2011	5.3	3	2.3	3	0.2	1	3.1	3	9.0	2	12	F
2010	5.7	3	1.4	2	0.8	2	3.6	4	8.7	2	13	G
2009*	5.9	3	4.3	4	0.4	2	0.6	1	8.0	1	11	F

* Age assessment data extrapolated from previous age data

swdbrltn.D09 - D23

swdbrlag.D09 - D23

Table 15. Population assessment for all crappie from Barren River Lake based on trap net data collected from 2010 to 2023 (scoring based on statewide assessment).

Parameter	Year																	
	2023		2021		2019		2017		2015		2013		2012		2011		2010	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Population density (CPUE age 1 and older)	25.9	4	22.5	4	9.1	3	8.0	3	10.1	3	15.4	4	12.7	3	10.0	3	6.4	2
Recruitment (CPUE age 1)	10.7	4	2.7	2	7.8	3	1.8	2	5.0	3	0.9	1	3.5	2	6.8	3	1.7	2
Recruitment (CPUE age 0)	2.8	3	2.0	2	5.3	4	2.7	3	11.7	4	24.2	4	0.2	1	0.5	1	1.4	2
Size structure (CPUE \geq 8.0 in)	14.8	4	11.9	4	2.1	1	5.3	3	4.0	2	14.1	4	9.8	4	5.8	3	4.3	3
Growth (Mean length age 2 at capture)	8.9	1	8.2	1	8.5*	1	9.0	1	9.1	1	9.5	2	9.3	2	9.0	1	8.9	1
Instantaneous mortality (Z)	-0.286		-0.758		-0.853		-0.859		-1.1		-0.688		NA		NA		-1.08	
Annual mortality (A)%	24.9		53.1		57.4		57.6		66.7		49.7						66.1	
Total score:	16		13		12		12		13		15		12		11		10	
Assessment rating:	Good		Good		Fair		Fair		Good		Good		Fair		Fair		Fair	

*number weighted by Black Crappie because only one White Crappie was aged 2+

NA - data not amenable to mortality estimates

ND - no age data taken

sw dbrltn.D09 - D23

Table 16. PSD and RSD₁₀ values obtained for White and Black crappie collected by trap nets (75 net-nights) at Barren River Lake in late October and early November 2023. Numbers in parentheses represent 95% confidence intervals.

Species	≥ Stock size	PSD	RSD ₁₀
White Crappie	1149	65 (±3)	27 (±3)
Black Crappie	791	46 (±3)	2 (±1)

swdbrltn.D23

Table 17. Length frequency and CPUE (fish/hr) for Blue Catfish collected during 2.32 hours (28 - 0.083 hour runs) of low-pulse (15pps) electrofishing in early August 2023 at Barren River Lake.

Species	Inch class																																														Total	CPUE	SE		
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46														
Blue Catfish	1							1	1	3	4	2	2	3	4	3	4	4		3	1	1	1																									1	41	17.6	2.9

sw dbrlbc.d23

Table 18. Number of fish and mean relative weight (Wr) for each length group of Blue Catfish collected during 2.32 hours (28 - 0.083 hour runs) of low-pulse (15pps) electrofishing in early August 2023 at Barren River Lake. Standard errors are in parentheses.

	Length group			Total
	12.0-19.9 in	20.0-29.9 in	≥30.0 in	
Wr	88 (1)	93 (1)	103 (4)	94 (1)
N	5	29	6	40

swdbrlbc.d23

Table 19. Length frequency and CPUE (fish/hr) of Bluegill, Redear Sunfish, Warmouth, and Black Crappie collected in 0.75 hours (6 - 450-sec runs) of diurnal electrofishing at Briggs Lake on 23 May 2023.

Species	Inch class										Total	CPUE	SE
	1	2	3	4	5	6	7	8	9	10			
Bluegill	2	18	54	106	51	36	70	3			340	453.3	29.6
Redear Sunfish			2	2	42	68	23	28	19		184	245.3	42.2
Warmouth			2	1	1	2	1				7	9.3	2.5
Black Crappie	1			2	4	4		1	1	2	15	20.0	9.2

swdbrgbg.d23

Table 20. Spring electrofishing CPUE (fish/hr) for each length group of Bluegill collected at Briggs Lake from mid-April to mid-May 2010-2023. Standard errors are in parentheses.

Year	Length group				Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	
2023	26.7 (7.4)	281.3 (19.9)	141.3 (14.4)	4.0 (2.7)	453.3 (29.6)
2021	26.7 (9.2)	325.3 (94.7)	176.0 (32.1)	1.3 (1.3)	529.3 (116.2)
2019	14.0 (6.0)	182.0 (69.7)	102.0 (47.5)	14.0 (8.3)	312.0 (126.7)
2017	16.0 (8.6)	114.0 (38.1)	70.0 (15.8)	18.0 (8.3)	218.0 (63.5)
2015*	174.0 (59.5)	112.0 (23.8)	170.0 (26.6)	108.0 (25.4)	564.0 (104.4)
2014	3.2 (2.0)	27.2 (10.3)	128.0 (25.7)	9.6 (4.7)	168.0 (32.4)
2013	4.8 (2.0)	40.0 (13.6)	81.6 (26.5)	19.2 (4.1)	145.6 (43.1)
2012	56.0 (32.2)	158.0 (32.7)	62.0 (21.3)	16.0 (7.3)	292.0 (53.7)
2011	66.0 (15.1)	94.0 (39.2)	60.0 (19.7)	24.0 (3.3)	244.0 (60.7)
2010	20.8 (14.2)	94.4 (38.0)	153.6 (81.0)	52.8 (41.9)	321.6 (159.3)

swdbrgbg.D10 - D23

* nocturnal electrofishing used due to high water clarity

Table 21. Spring electrofishing CPUE (fish/hr) for each length group of Redear Sunfish collected at Briggs Lake during mid-April to mid-May 2010-2023. Standard errors are in parentheses.

Year	Length group					Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	≥10.0 in	
2023	na	61.3 (23.9)	121.3 (14.2)	62.7 (18.3)	na	245.3 (42.2)
2021	na	14.7 (3.8)	105.3 (15.1)	42.7 (15.7)	2.7 (1.7)	162.7 (28.3)
2019	na	4.0 (2.3)	42.0 (9.5)	58.0 (11.5)	12.0 (5.2)	104.0 (19.0)
2017	na	20.0 (8.3)	56.0 (7.3)	126.0 (38.8)	2.0 (2.0)	202.0 (50.5)
2015*	na	34.0 (15.5)	72.0 (5.7)	108.0 (21.0)	12.0 (5.2)	214.0 (20.8)
2014	1.6 (1.6)	8.0 (3.6)	96.0 (12.9)	67.2 (13.1)	8.0 (4.4)	178.2 (24.0)
2013	1.6 (1.6)	41.6 (16.7)	48.0 (18.8)	56.0 (11.9)	6.4 (3.9)	147.2 (37.6)
2012	4.0 (2.3)	58.0 (19.2)	94.0 (33.1)	6.0 (3.8)	2.0 (2.0)	162.0 (49.9)
2011	na	4.0 (4.0)	14.0 (2.0)	28.0 (10.6)	12.0 (4.0)	46.0 (14.4)
2010	na	9.6 (3.9)	16.0 (7.2)	17.6 (9.6)	1.6 (1.6)	43.2 (19.9)

swdbrgbg.D10 - D23

* nocturnal electrofishing used due to high water clarity

Table 22. PSD and RSD values obtained for Bluegill and Redear Sunfish collected by diurnal electrofishing at Briggs Lake on 23 May 2023. Numbers in parentheses represent 95% confidence intervals.

Species	N	PSD	RSD ^a
Bluegill	320	34 (±5)	1 (±1)
Redear Sunfish	182	38 (±8)	10 (±5)

^a Bluegill=RSD₈; Redear Sunfish=RSD₉

swdbrgbg.d23

Table 23. Bluegill population assessment for Briggs Lake 2011-2023 (scoring based on statewide assessment).

Parameter	Year																	
	2023		2021		2019		2017		2015		2014		2013		2012		2011	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Growth																		
Mean length age 2 at capture	4.6*	3	4.6*	3	4.6	3	4.7*	3	4.7*	3	4.7*	3	4.7*	3	4.7	3	4.9*	4
Growth																		
Years to 6.0 in	2.9*	4	2.9*	4	2.9	4	2.6*	4	2.6*	4	2.6*	4	2.6*	4	2.6	4	2.7*	4
Size structure																		
CPUE ≥6.0 in	145.3	4	177.3	4	116.0	4	88.0	3	278.0	4	137.6	4	100.8	4	78.0	3	84.0	3
Size structure																		
CPUE ≥8.0 in	4.0	3	1.3	2	14.0	4	18.0	4	108.0	4	9.6	4	19.2	4	16.0	4	24.0	4
Instantaneous mortality (z)					-0.38952													
Annual mortality (A)%					32.3													
Total score:	14		13		15		14		15		15		15		14		15	
Assessment rating:	Excellent		Good		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent	

*No age data collected; values carried over from 2007, 2012 (spring collected), and 2019 fall collection

sw dbrgbg.D10 - D23

Table 24. Redear Sunfish population assessment for Briggs Lake 2011-2023 (scoring based on statewide assessment).

Parameter	Year																	
	2023		2021		2019		2017		2015		2014		2013		2012		2011	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Grow th																		
Mean length age 3 at capture	8.2*	4	8.2*	4	8.2	4	8.6*	4	8.6*	4	8.6*	4	8.6*	4	8.6*	4	8.6*	4
Grow th																		
Years to 8.0 in	2.6*	4	2.6*	4	2.6	4	2.7*	4	2.7*	4	2.7*	4	2.7*	4	2.7*	4	2.7*	4
Size structure																		
CPUE ≥8.0 in	62.7	4	42.7	4	58.0	4	126.0	4	108.0	4	67.2	4	62.4	4	6.0	2	28.0	4
Size structure																		
CPUE ≥10.0 in	0.0	1	2.7	4	12.0	4	2.0	4	12.0	4	8.0	4	6.4	4	2.0	4	12.0	4
Instantaneous mortality (z)					-0.53													
Annual mortality (A)%					41.3													
Total score:	13		16		16		16		16		16		16		14		16	
Assessment rating:	Good		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent	

*No age data collected; values carried over from 2007 and 2019 fall collection

sw dbrgbg.D10 - D23

Table 25. Length frequency and CPUE (fish/hr) of each inch class of Bluegill and Redear Sunfish collected during 0.75 hours of diurnal electrofishing (6 - 0.125-hour runs) at Marion County Lake on 18 May 2023.

Species	Inch class										Total	CPUE	SE
	1	2	3	4	5	6	7	8	9	10			
Bluegill	11	211	244	179	50	54	64	7			820	1093.3	134.4
Redear Sunfish				2	1	5	8	11	13	1	41	54.7	9.1

swdmclbg.d23

Table 26. Spring electrofishing CPUE (fish/hr) for each length group of Bluegill collected at Marion County Lake 2008-2023. Standard errors are in parentheses.

Year	Length group				Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	
2023	296.0 (47.9)	630.7 (72.6)	157.3 (20.3)	9.3 (5.2)	1093.3 (134.4)
2021	25.0 (10.7)	154.0 (19.1)	238.0 (34.7)	10.0 (5.6)	427.0 (53.8)
2018	18.3 (9.5)	46.9 (11.9)	29.7 (9.0)	6.9 (3.7)	101.7 (20.0)
2016	52.0 (18.0)	138.0 (24.5)	141.0 (39.6)	9.0 (4.1)	340.0 (65.4)
2014	49.0 (19.0)	267.0 (72.6)	112.0 (28.9)	1.0 (1.0)	429.0 (101.8)
2012	270.0 (86.0)	213.0 (45.5)	32.0 (4.3)	7.0 (3.8)	522.0 (95.5)
2011	499.4 (112.4)	107.4 (16.3)	73.1 (10.7)	14.9 (2.7)	694.9 (126.5)
2010	55.0 (27.7)	72.0 (10.5)	25.0 (9.1)	5.0 (2.1)	157.0 (25.8)
2009	48.0 (22.2)	109.7 (20.9)	58.3 (10.6)	1.1 (1.1)	217.1 (35.4)
2008	60.0 (31.6)	73.0 (13.6)	130.0 (14.6)	11.0 (4.0)	274.0 (45.1)

swdmclbg.d08 - d23

Table 27. Spring electrofishing CPUE (fish/hr) for each length group of Redear Sunfish collected at Marion County Lake 2008-2023. Standard errors are in parentheses.

Year	Length group					Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	≥10.0 in	
2023	na	4.0 (2.7)	17.3 (3.8)	33.3 (8.1)	1.3 (1.3)	54.7 (9.1)
2021	2.0 (1.3)	11.0 (4.8)	53.0 (15.3)	59.0 (14.5)	4.0 (1.5)	125.0 (26.4)
2018	na	8.0 (2.5)	21.7 (3.8)	26.3 (9.8)	10.3 (5.4)	56.0 (11.7)
2016	3.0 (2.1)	19.0 (6.4)	8.0 (3.0)	52.0 (8.9)	2.0 (1.3)	82.0 (8.7)
2014	1.0 (1.0)	38.0 (12.4)	20.0 (6.6)	25.0 (5.9)	5.0 (2.1)	84.0 (21.7)
2012	1.0 (1.0)	3.0 (2.1)	5.0 (2.1)	48.0 (18.1)	na	57.0 (18.0)
2011	1.1 (1.1)	14.9 (5.9)	45.7 (10.7)	74.3 (23.4)	4.6 (4.6)	136.0 (39.5)
2010	7.0 (7.0)	20.0 (6.1)	20.0 (6.9)	15.0 (2.8)	na	62.0 (12.5)
2009	na	52.6 (10.2)	34.3 (6.9)	17.1 (5.4)	2.3 (2.3)	104.0 (14.8)
2008	1.0 (1.0)	37.0 (15.6)	9.0 (3.2)	28.0 (9.1)	6.0 (3.3)	75.0 (16.1)

swdmclbg.d08 - d23

Table 28. PSD and RSD values obtained for Bluegill and Redear Sunfish collected by diurnal electrofishing at Marion County Lake on 18 May 2023. Numbers in parentheses represent 95% confidence intervals

Species	≥ Stock size	PSD	RSD ^A
Bluegill	598	21 (±3)	1 (±1)
Redear Sunfish	33	80 (±13)	34 (±15)

^A Bluegill=RSD₈; Redear Sunfish=RSD₉

swdmclbg.d23

Table 29. Bluegill population assessments from 2009-2023 at Marion County Lake (scoring based on statewide assessment).

Parameter	Year																	
	2023		2021		2018		2016		2014		2012		2011		2010		2009	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age 2 at capture	4.0	2	4.0*	2	4.0*	2	4.0*	2	4.0*	2	4.0	2	3.9*	2	3.9*	2	3.9*	2
Years to 6.0 in	3.0	3	3.2*	3	3.2*	3	3.2*	3	3.2*	3	3.2	3	4.1*	2	4.1*	2	4.1*	2
CPUE \geq 6.0 in	166.7	4	248.0	4	36.6	2	150.0	4	113.0	4	39.0	2	88.0	3	30.0	2	59.4	3
CPUE \geq 8.0 in	9.3	4	10.0	4	6.9	4	9.0	4	1.0	2	7.0	4	14.9	4	5.0	4	1.1	2
Instantaneous mortality (z)	-0.444										-0.813							
Annual mortality (A)	35.8										55.6							
Total score:	13		13		11		13		11		11		11		10		9	
Assessment rating	Good		Good		Good		Good		Good		Good		Good		Good		Fair	

*No age data, values carried over from 2007 and 2012

sw dmclag.d07, mclbgag.d12, sw dmclag.d23

sw dmclbg.d08 - d23

Table 30. Redear Sunfish population assessments from 2009-2023 at Marion County Lake (scoring based on statewide assessment).

Parameter	Year																	
	2023		2021		2018		2016		2014		2012		2011		2010		2009	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age 3 at capture	7.4	2	8.3*	4	8.3*	4	8.3*	4	8.3*	4	8.3	4	8.3*	4	8.3*	4	8.3*	4
Years to 8.0 in	3.5	4	3.6*	4	3.6*	4	3.6*	4	3.6*	4	3.6	4	3.9*	4	3.9*	4	3.9*	4
CPUE \geq 8.0 in	33.3	4	59.0	4	26.3	4	52.0	4	25.0	4	48.0	4	74.3	4	15.0	3	17.1	3
CPUE \geq 10.0 in	1.3	3	4.0	4	10.3	4	2.0	4	5.0	4	0.0	0	4.6	4	0.0	0	2.3	4
Instantaneous mortality (z)	NA										NA							
Annual mortality (A)	NA										NA							
Total score:	13		16		16		16		16		12		16		11		15	
Assessment rating	Good		Excellent		Excellent		Excellent		Excellent		Good		Excellent		Good		Excellent	

*No age data, values carried over from 2007 and 2012

NA (data not amenable to calculations)

sw dmclag.d07, mclbgag.d12

sw dmclbg.d08 - d23

Table 31. Age frequency and CPUE (fish/hr) of Bluegill collected during 0.75 hours of diurnal electrofishing (6 - 0.125-hour runs) at Marion County Lake on 18 May 2023.

Age	Inch class								Total	Percent	CPUE	SE
	1	2	3	4	5	6	7	8				
1	11	211	27						249	30	332.0	6.5
2			217	179	20				416	51	554.7	68.7
3					30	54	6		90	11	120.0	12.8
4							51	5	56	7	74.7	18.1
5							6	2	8	1	10.7	3.5
Total	11	211	244	179	50	54	63	7	819	100	1093.3	134.4
%	1	26	30	22	6	7	8	1	100			

swdmclbg.d23; swdmclag.d23

Table 32. Age frequency and CPUE (fish/hr) of Redear Sunfish collected during 0.75 hours of diurnal electrofishing (6 - 0.125-hour runs) at Marion County Lake on 18 May 2023.

Age	Inch class								Total	Percent	CPUE	SE
	4	5	6	7	8	9	10					
1	2	1							3	7	4.0	2.7
2									0	--	--	--
3			4	7	3				14	34	18.7	3.2
4			1	1	5				7	17	9.3	2.1
5					3	12	1		16	39	21.3	5.2
6						1			1	2	1.3	0.6
Total	2	1	5	8	11	13	1		41	100	54.9	9.1
%	5	2	12	20	27	32	2		100			

swdmclbg.d23; swdmclag.d23

Table 33. Mean back calculated length (in) at each annulus for Bluegill collected from Marion County Lake on 18 May 2023, including the range of Bluegill at each age and the 95% confidence interval for each age.

Year class	No.	Age				
		1	2	3	4	5
2022	1	3.1				
2021	22	2.2	4.3			
2020	15	1.9	3.8	6.2		
2019	10	2.6	4.8	6.5	7.7	
2018	2	1.9	3.8	5.8	7.0	7.7
Mean		2.2	4.2	6.3	7.6	7.7
No.		50	49	27	12	2
Smallest		1.2	2.9	4.8	6.4	7.1
Largest		3.9	6.5	8.0	8.5	8.3
SE		0.1	0.1	0.1	0.2	0.6
95% CI (+/-)		0.2	0.3	0.3	0.3	1.2

Otoliths were used for age-growth determinations; intercept = 0
swdmclag.d23

Table 34. Mean back calculated length (in) at each annulus for Redear Sunfish collected from Marion County Lake on 18 May 2023, including the range of Redear at each age and the 95% confidence interval for each age.

Year class	No.	Age					
		1	2	3	4	5	6
2022	2	5.1					
2020	11	3.0	5.2	7.3			
2019	5	2.0	3.9	6.2	8.0		
2018	11	3.1	6.4	8.0	8.8	9.4	
2017	1	1.6	3.8	6.7	8.1	8.9	9.7
Mean		2.9	5.4	7.4	8.5	9.3	9.7
No.		30	28	28	17	12	1
Smallest		1.0	2.3	4.0	6.8	8.7	9.7
Largest		5.3	7.2	9.1	9.6	10.0	9.7
SE		0.2	0.3	0.2	0.2	0.1	
95% CI (+/-)		0.4	0.5	0.4	0.3	0.3	

Otoliths were used for age-growth determinations; intercept = 0
swdmclag.d23

Table 35. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 1.0 hour (2- 0.5 hour runs) of diurnal electrofishing at West Fork Drakes Creek on 26 October 2023.

Species	Inch class																							Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Largemouth Bass	1	1	1		3	4	2	14	14	9	11	10	9	4	3	1						1	88	88.0	14.0	

swdwfdwr.d23

Table 36. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected during 1 hour (2 - 0.5 hour runs) of diurnal fall electrofishing on October 26 2023 at West Fork Drakes Creek. Standard errors are in parentheses.

	Length group			Total
	8.0-11.9 in	12.0-14.9 in	≥15.0 in	
Wr	82 (1)	85 (2)	94 (3)	84 (1)
N	39	30	9	78

swdwfdwr.d23

Table 37. Number of fish and mean relative weight (Wr) for each length group of Muskellunge collected by diurnal electrofishing at Green River Lake during winter months (February through mid-March) of 2023 and 2024. Standard errors are in parentheses.

	Length group		
	20.0-29.9 in	30.0-37.9 in	≥38.0 in
Wr	98 (3)	77 (5)	91 (3)
N	6	5	11

grlmywr.D234

Table 38. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours (12- 0.50-hour runs) of nocturnal electrofishing at Green River Lake on May 1, 2, and 4 2023.

Area	Species	Inch class																			Total	CPUE	SE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Green River Arm																							
Holmes Bend	Smallmouth Bass		1									1									2	1.3	0.7
	Spotted Bass	3	7	1		3	5	7	7	5	2	4				1					45	30.0	3.1
	Largemouth Bass	2	3	7	3	11	12	4	10	12	4	3	4	5	12	9	3	3				107	71.3
Ramp 1	Smallmouth Bass					1	5	1						1							8	5.3	3.3
	Spotted Bass	4	2		3	1	11	11	11	4	7	2	5	1							62	41.3	4.7
	Largemouth Bass	3		3	2	2	5	8	5	10	12	11	21	11	21	17	19	9	2		161	107.3	15.8
Robinson Creek Arm																							
Smith Ridge	Smallmouth Bass									1											1	0.7	0.7
	Spotted Bass		2			4	5	5	9	5	1		2	1							34	22.7	9.3
	Largemouth Bass	1	2	5	5	7	14	14	10	11	12	12	12	20	14	9	6	1	1		156	104.0	12.2
Lone Valley	Smallmouth Bass			1	2	2					1					1					7	4.7	1.3
	Spotted Bass	11	5	6	6	6	11	10	8	6	3	2	4								78	52.0	11.0
	Largemouth Bass	1	2	1	3	6	10	6	13	17	18	16	17	17	17	21	10	9	1	1	187	124.7	1.3
TOTAL	Smallmouth Bass		1	1	2	3	5	1		1	1	1		1		1					18	3.0	1.0
	Spotted Bass	18	16	7	9	14	32	33	35	20	13	8	11	2		1					219	36.5	4.8
	Largemouth Bass	7	7	16	13	26	41	32	38	50	46	42	54	53	64	56	38	22	4	1	611	101.8	7.3

sw dgrlbb.d23

Table 39. Spring diurnal electrofishing CPUE (fish/hr) of Largemouth Bass by length group collected at Green River Lake during late April to early to mid-May since 1997.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	9.5	1.7	25.3	1.6	23.2	3.2	43.8	5.2	2.0	0.7	101.8	7.3
2022	23.7	3.5	31.7	4.6	32.2	3.3	65.7	9.4	2.2	0.6	153.2	12.3
2021	16.5	3.0	35.5	6.3	35.0	4.2	38.8	2.5	1.5	0.5	125.8	11.6
2020	no data due to flooding											
2019	26.7	4.8	35.7	3.8	40.7	3.9	37.5	4.6	2.8	0.5	140.5	5.6
2018	13.3	3.8	37.8	6.4	40.2	4.2	45.8	4.4	2.7	0.7	137.2	16.1
2017	21.8	5.9	41.5	6.3	40.8	6.4	59.8	4.7	4.0	0.9	164.0	11.7
2016	15.0	3.7	13.0	2.7	25.0	4.7	40.0	5.8	2.5	0.7	93.5	9.1
2015	9.2	1.8	23.3	6.0	23.7	3.7	51.7	5.9	2.7	0.7	107.8	15.0
2014	no data due to flooding											
2013	4.2	0.7	23.7	3.7	44.0	4.8	52.8	5.3	3.3	0.7	124.7	11.7
2012	16.5	4.3	54.8	6.3	35.3	6.4	38.0	5.4	1.3	0.5	144.7	16.3
2011	no data due to flooding											
2010	no data due to flooding											
2009	7.2	1.8	11.3	3.4	13.0	2.7	42.8	7.9	1.7	0.8	74.3	12.3
2008	22.8	9.5	25.8	4.7	27.8	4.0	30.2	2.7	0.8	0.4	106.7	17.0
2007	3.8	1.0	20.5	2.5	33.7	5.8	22.2	3.6	0.5	0.3	80.2	10.3
2006	15.1	2.0	44.4	3.6	23.1	2.8	18.9	2.1	0.3	0.2	96.2	5.3
2005	67.8	8.0	30.7	2.8	11.7	1.9	16.8	2.5	1.5	0.7	127.0	12.5
2004	17.3	2.7	22.8	2.1	11.6	1.8	15.6	2.6	0.9	0.3	67.3	6.4
2003	5.8	1.4	12.3	2.1	5.8	1.8	18.2	3.0	1.8	0.7	42.2	4.1
2002	5.0	1.1	9.5	1.5	20.5	2.5	13.0	2.5	1.2	0.4	48.0	4.2
2001	10.2	2.5	26.7	3.0	32.2	6.5	12.5	1.5	1.7	0.4	81.5	7.8
2000	2.5	0.9	41.0	4.4	24.2	3.4	14.7	3.4	3.2	1.0	82.3	8.6
1999	21.4	3.8	53.5	7.2	19.4	4.0	14.3	1.7	2.8	0.8	108.6	12.5
1998	33.5	7.7	9.0	1.8	8.8	2.0	17.5	1.8	2.0	0.7	68.8	8.6
1997	3.7	1.0	22.3	2.5	23.3	2.8	23.2	2.1	1.2	0.5	72.5	5.2

sw dgrlbb.D97-D22

Table 40. PSD and RSD values for each black bass species collected during 6.0 hours (12- 0.50-hour runs) of nocturnal electrofishing by area at Green River Lake on May 1, 2, and 4 2023. 95% confidence intervals are in parentheses.

Area	Species	≥ Stock size	PSD	RSD ^A
Green River Arm				
Holmes Bend	Largemouth Bass	81	53 (±11)	47 (±7)
	Spotted Bass	34	35 (±16)	*
	Smallmouth Bass	0	*	*
Ramp 1	Largemouth Bass	151	81 (±6)	52 (±8)
	Spotted Bass	53	36 (±13)	*
	Smallmouth Bass	8	*	*
Robinson Creek Arm				
Smith Ridge	Largemouth Bass	148	73 ±(7)	51 (±8)
	Spotted Bass	32	28 (±16)	*
	Smallmouth Bass	1	*	*
Lone Valley	Largemouth Bass	174	74 (±8)	44 (±7)
	Spotted Bass	50	30 (±13)	*
	Smallmouth Bass	4	*	*
Total	Largemouth Bass	554	73 (±4)	47 (±4)
	Spotted Bass	169	33 (±7)	8 (±4)
	Smallmouth Bass	14	36 (±27)	*

^A Largemouth Bass = RSD₁₅, Spotted Bass and Smallmouth Bass = RSD₁₄.

sw dgrlbb.d23

Table 41. Population assessment of Largemouth Bass based on nocturnal spring sampling at Green River Lake 2003-2022 (scoring based on statewide assessment). Age data collected in bolded font (year).

Parameter	<u>2023</u>		<u>2022</u>		<u>2021</u>		<u>2019</u>		<u>2018</u>		<u>2017</u>		<u>2016</u>		<u>2015</u>		<u>2013</u>		
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	
Mean length age 3 at capture	13.8	4	13.1	4	13.1	4	13.1	4	13.1	4	13.1	4	13.1	4	13.1	4	14.6	4	
Spring CPUE age 1	12.5	2	25.5	3	34.3	3	34.3	3	17.7	2	34.5	3	17.3	2	16.0	2	3.8	1	
Spring CPUE 12.0-14.9 in	23.2	3	32.2	4	35.0	4	40.7	4	40.2	4	40.8	4	25.0	3	23.7	3	44.0	4	
Spring CPUE \geq 15.0 in	43.8	4	65.7	4	38.8	4	37.5	4	45.8	4	59.8	4	40.0	4	51.7	4	52.8	4	
Spring CPUE \geq 20.0 in	2.0	4	2.2	4	1.5	4	2.8	4	2.7	4	4.0	4	2.5	4	2.7	4	3.3	4	
Instantaneous mortality (z)																-0.473			
Annual mortality (A)%																37.71			
Total score	17		19		19		19		18		19		17		17		17		
Assessment rating	Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		
sw dgrlag.D03, D09, 15, 23																			
sw dgrlbb.D02-D23																			

Table 42. Age frequency and CPUE (fish/hr) of Largemouth Bass collected during spring nocturnal electrofishing at Green River Lake during early May 2023.

Age	Inch class																			Total	Percent	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
1	6	5	12	10	19	16	7													75	12.0	12.5	1.7	
2					5	16	16	42	49	24	4	5									160	26.0	26.7	1.7
3							2		4	12	30	34	12								95	16.0	15.8	2.1
4										8	7	10	20	25	5						76	12.0	12.6	1.4
5											5	12	32	24	9	3					85	14.0	14.2	1.5
6															19	18	7				44	7.0	7.4	1.1
7														6	19	5	17	5			51	8.0	8.5	1.2
8																9		2			11	2.0	1.9	0.4
9																	3				3	1.0	0.6	0.1
10																5					5	1.0	0.8	0.2
14																			2		2	0.0	0.4	0.1
Total	6	5	12	10	24	32	25	42	53	44	41	54	44	63	67	46	30	9			607	100	99.0	25.9
%	1	1	2	2	4	5	4	7	9	7	7	9	7	10	11	8	5	1						

swdgrlbb.d23; swdgrlag.d23

Table 43. Mean back calculated length (in) at each annulus for Largemouth Bass collected from Green River Lake in early May 2023, including the range of Largemouth Bass at each age and the 95% confidence interval for each age.

Year class	No.	Age													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2022	56	6.4													
2021	46	6.7	10.4												
2020	23	6.5	11.1	13.6											
2019	16	6.5	11.0	13.5	15.2										
2018	17	6.8	11.9	14.3	16.0	16.9									
2017	10	8.2	12.8	15.2	16.6	17.6	18.2								
2016	13	7.9	12.3	14.3	15.8	17.0	17.9	18.7							
2015	3	7.2	10.3	12.4	14.2	15.8	17.0	18.2	19.2						
2014	1	7.2	11.7	14.1	15.8	17.2	17.9	18.6	19.3	19.6					
2013	1	9.1	12.1	14.1	15.1	16.1	16.8	17.5	18.1	18.5	18.8				
2009	1	4.6	7.9	10.2	12.0	13.0	14.1	15.3	16.1	16.9	17.9	18.4	18.9	19.7	20.2
Mean		6.7	11.2	14.0	15.7	16.9	17.8	18.4	18.5	18.3	18.3	18.4	18.9	19.7	20.2
No.		187	131	85	62	46	29	19	6	3	2	1	1	1	1
Smallest		2.4	6.8	8.2	10.5	11.8	12.8	13.9	14.9	15.9	16.9	17.9	18.9	19.7	20.2
Largest		11.0	14.6	17.0	18.3	19.3	19.8	20.7	20.6	19.6	18.8	18.4	18.9	19.7	20.2
SE		0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.6	0.8	0.5				
95% CI (+/-)		0.2	0.3	0.3	0.4	0.4	0.5	0.7	1.2	1.3	0.9				

Otoliths were used for age-growth determinations; intercept = 0

swdgrlag.d23

Table 44. Age frequency and CPUE (fish/hr) of Spotted Bass collected during spring nocturnal electrofishing at Green River Lake during early May 2023.

Age	Inch class															Total	Percent	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17				
1	18	16	6	5												45	20.0	7.4	2.1
2			1	2	9	5	12	3								32	15.0	5.3	0.9
3				2	5	12	7	8	5	2						41	19.0	6.9	1.0
4						12	9	25	4	6	5	4				65	30.0	10.8	1.4
5							5		5	6	3	2				21	9.0	3.4	0.5
6						2			2			4				8	4.0	1.3	0.2
7									2			2			1	5	2.0	0.8	0.2
8									2							2	1.0	0.3	0.1
9													2			2	1.0	0.3	0.2
Total	18	16	7	9	14	31	33	36	20	14	8	12	2	0	1	221			
%	8	7	3	4	6	14	15	16	9	6	4	5	1		1	100			

swdgrlyy.d23; swdgrlag.d23

Table 45. Mean back calculated length (in) at each annulus for Spotted Bass collected from Green River Lake in early May 2023, including the range of Spotted Bass at each age and the 95% confidence interval for each age.

Year class	No.	Age								
		1	2	3	4	5	6	7	8	9
2022	42	4.2								
2021	13	5.6	8.7							
2020	18	4.5	7.5	9.5						
2019	30	4.7	7.3	9.5	10.9					
2018	11	4.7	7.2	9.2	10.7	11.9				
2017	4	4.7	7.8	9.5	10.6	11.6	12.2			
2016	3	4.8	7.5	9.8	11.6	12.8	14.1	14.5		
2015	1	2.3	3.8	5.7	7.6	9.1	10.3	11.0	11.4	
2014	1	4.2	8.1	10.0	11.4	12.8	13.6	14.5	15.0	15.3
Mean		4.6	7.6	9.4	10.8	11.8	12.8	13.8	13.2	15.3
No.		123	81	68	50	20	9	5	2	1
Smallest		2.3	3.8	5.7	7.6	8.3	8.8	11.0	11.4	15.3
Largest		6.8	12.1	13.6	14.7	15.6	17.2	17.7	15	15.3
SE		0.1	0.2	0.2	0.3	0.4	0.8	1.2	1.8	
95% CI (+/-)		0.2	0.3	0.4	0.5	0.8	1.6	2.3	3.6	

Otoliths were used for age-growth determinations; intercept = 0
swdgrlag.d23

Table 46. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours (12- 0.50-hour runs) of diurnal electrofishing at Green River Lake from 17-19 October 2023.

Area	Species	Inch class																		Total	CPUE	SE
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Green River Arm																						
Holmes Bend	Smallmouth Bass			1																1	0.7	0.7
	Spotted Bass		14	11	2	1	3	4	1			1								37	24.7	5.9
	Largemouth Bass	3	32	5	2		3	2	2	1	2		3	1	1	1	2		1	61	40.7	4.8
Ramp 1																						
Ramp 1	Smallmouth Bass	1	4	1	1	1														8	5.3	4.4
	Spotted Bass	9	9	2	2	2	1	1				1								27	18.0	10.0
	Largemouth Bass		1		1		1					1	1	1						6	4.0	3.1
Robinson Creek Arm																						
Smith Ridge																						
Smith Ridge	Smallmouth Bass								1											1		
	Spotted Bass	4	34	17	1	1	4	3	1	2										67	44.7	9.3
	Largemouth Bass	4	98	18	2	4	1	2	1			1	2	1	1	3	2			140	93.3	30.1
Lone Valley																						
Lone Valley	Smallmouth Bass	1	6	5	2	4	4													22	15.3	2.4
	Spotted Bass	5	12	22	9	7	3		1	1										60	40.0	6.0
	Largemouth Bass		1	2	2	1						1								7	4.7	4.7
TOTAL																						
TOTAL	Smallmouth Bass	2	10	7	3	5	4		1											32	5.3	2.1
	Spotted Bass	18	69	52	14	11	11	8	3	1	1		2							191	31.8	4.7
	Largemouth Bass	7	132	25	7	5	5	4	3	1	2	3	6	3	2	4	4	1	1	214	35.7	12.8

sw dgrlly.d23

Table 47. Largemouth Bass mean length (in) at age 0 and catch rates at age 0 and age 1 at Green River Lake 2010-2023..

Year class	Age 0 ^A		Age 0 ^A		Age 0 \geq 5.0 in ^A		Age 1 ^B	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	3.8	0.1	30.0	11.6	2.7	0.8		
2022	4.3	0.1	68.5	15.7	16.2	3.8	12.5	1.7
2021	4.6	0.1	69.3	16.4	24.5	7.3	25.5	3.7
2020	4.3	<0.1	79.5	15.3	19.7	4.9	ND	
2019	3.5	<0.1	108.0	20.3	9.8	3.4	ND	
2018	5.2	0.1	72.2	9.4	36.8	6.9	34.3	5.6
2017	4.8	0.1	19.0	6.6	7.0	2.5	17.7	4.5
2016	5.1	0.1	55.3	8.7	30.3	7.9	34.7	8.8
2015	5.7	0.1	65.0	22.6	44.7	15.8	17.5	4.2
2014	data collected too late for comparison to other years							
2013	5.9	0.1	26.0	15.4	19.3	12.9	ND	
2012	4.2	0.1	16.5	4.2	5.0	2.0	3.8	0.8
2011	3.9	0.1	28.8	7.5	5.8	1.5	15.5	4.0
2010	4.8	0.1	45.0	8.1	18.3	4.9	ND	

^A Data collected by fall (late-Sept through early November) diurnal electrofishing. Mean lengths were determined by otoliths taken from a subsample of LMB <9.0 in and extrapolated to the entire catch of the fall sample.

^B Data collected during the following spring (May) nocturnal electrofishing.
 swdgrlbb.D10 - D23
 swdgrlag. D10 -
 swdgrlyy. D10 -

ND = no data due to spring flooding

Table 48. Length frequency and CPUE (fish/nn) for White Bass and Walleye collected by experimental gillnets (24 net-nights) on 13-17 November and 29 November-01 December 2023 at Green River Lake.

Species	Inch class													Total	CPUE	SE		
	9	10	11	12	13	14	15	16	17	18	19	20	21				22	23
White Bass				4	10	11	10	8								43	1.8	0.3
Walleye	1	6	3			1			5	5	7	5	4	4	1	42	1.8	0.4

swdgrlgn.d23, swdgrlag.d23

Table 49. Age frequency and CPUE (fish/nn) of White Bass collected from experimental gillnets (24 net-nights) on 13-17 November and 29 November-01 December 2023 at Green River Lake.

Age	Inch class					Total	Percent	CPUE	SE
	12	13	14	15	16				
0						0	--	--	--
1	4	3				7	16	0.3	0.1
2		7	8	6		21	49	0.9	0.2
3			3	1	2	6	12	0.2	0.2
4				1	3	4	11	0.2	0.1
5				1	3	4	9	0.2	<0.1
6				1		1	3	0.1	<0.1
Total	4	10	11	10	8	43		1.8	0.3
%	6	20	21	21	10	100			

swdgrlgn.D23, swdgrlag.D23

Table 50. Age frequency and CPUE (fish/nn) of Walleye collected from experimental gillnets (24 net-nights) on 13-17 November and 29 November-01 December 2023 at Green River Lake.

Age	Inch class													Total	Percent	CPUE	SE		
	9	10	11	12	13	14	15	16	17	18	19	20	21					22	23
0	1	6	3													10	24	0.4	0.1
1						1			4	4	1					10	24	0.4	0.1
2										1	6	3	1			11	26	0.5	0.2
3									1			3	2	2		8	17	0.3	0.1
4													1		1	2	5	0.1	0.1
5																			
6																			
7														2		2	5	0.1	0.0
Total	1	6	3			1			5	5	7	6	4	4	1	43	100.0	1.8	0.4
%	2	14	7			2			12	12	16	14	10	10	2	100			

swdgrlgn.D23, swdgrlag.D23

Table 51. White Bass population assessment from late-fall experimental gillnetting at Green River Lake from 2002-2023. Data was not collected in years that are not listed.

Year	CPUE age 1 and older		Mean length age 2+ at capture		CPUE ≥ 12.0 in		CPUE age 1		Instantaneous mortality (z)	Annual mortality (A)	Assessment	Rating
	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment				
2023	1.8	1	14.4	4	1.8	2	0.0	1	NA		8	F
2020	4.9	2	14.2	4	4.6	3	1.3	1	NA		9	F
2018	8.0	3	13.9	4	7.7	3	2.9	2	NA		11	G
2017	9.4	3	14.3	4	9.4	4	0.7	1	NA		9	F
2015	24.8	4	NA	4	23.8	4	24.0	4	NA		16	E
2007	3.2	1	14.0	4	2.6	2	1.1	1	0.575	43.7	8	F
2006	5.8	2	13.8	4	4.1	3	2.1	2	0.341	28.9	11	G
2005	7.4	3	12.4	1	3.5	2	5.8	3	NA		9	F
2004	5.8	2	12.8	2	0.5	1	3.5	3	1.320	73.3	8	F
2003	18.9	4	12.5	2	1.3	2	2.3	2	0.660	48.3	10	G
2002	10.2	3	13.8	4	4.4	3	5.4	3	0.735	52	13	G

NA - data not available or not amenable for mortality estimates

sw dgrlgn. d02-d07, 15, 17-18, 20, 23

sw dgrlag.d02-07, 15, 17-18, 20, 23

Table 52. Walleye population assessment from late-fall experimental gillnetting at Green River Lake from 2009-2023 (scoring based on statewide assessment).

Year	CPUE excluding age-0		Mean length age 2+ at capture		CPUE ≥ 20.0 in		CPUE age 1		Mortality		Assessment	Rating
	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Instantaneous mortality (z)	Annual mortality (A)		
2023	1.4	1	20.2	4	0.6	3	0.4	1	NA		9	F
2020	0.9	1	20.2	4	0.1	1	0.8	1	NA		7	P
2018	1.9	1	19.5	4	0.4	2	1.0	2	NA		9	F
2017	2.1	1	19.5	4	0.8	3	1.1	2	NA		9	F
2015	2.1	1	19.5	4	1.1	4	0.8	1	NA		10	G
2014	1.0	1	20.1	4	0.7	3	0.1	1	NA		9	F
2013	2.8	2	19.2	4	0.9	3	1.1	2	NA		11	G
2012	3.1	2	19.2	4	0.9	3	1.3	2	-0.479	38.1	11	G
2011	1.8	1	19.3	4	0.8	3	0.4	1	-0.409	33.5	9	F
2010	3.6	2	18.8	3	1.0	3	1.7	3	-0.566	43.2	11	G
2009	4.1	3	19.6	4	1.1	4	2.3	3	-0.657	48.2	14	E

NA - catch data not amenable to mortality estimates

sw dgrlgn.d09-15, 17-18, 20, 23

sw dgrlag.d09-15, 17-18, 20,23

Table 53. Number of fish and mean relative weight (Wr) for each length group of White Bass collected by gill nets (24 net-nights) at Green River Lake on 13-17 November and 29 November-01 December 2023. Standard errors are in parentheses.

	Length group		
	6.0-8.9 in	9.0-11.9 in	≥ 12.0 in
Wr	n/a	n/a	95 (1)
N	0	0	36

swdgrlgn.D23

Table 54. Number of fish and mean relative weight (Wr) for each length group of Walleye collected by gill nets (24 net-nights) at Green River Lake on 13-17 November and 29 November-01 December 2023. Standard errors are in parentheses.

	Length group		
	10.0-14.9 in	15.0-19.9 in	≥20.0 in
Wr	97 (3)	99 (1)	102 (2)
N	9	16	13

swdgrlgn.D23

Table 55. Length frequency and CPUE (fish/hr) of Largemouth Bass collected during 0.50 hours (4- 0.125-hour runs) of diurnal electrofishing at Metcalfe County Lake on 18 April 2023.

Species	Inch class																Total	CPUE	SE		
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21	22
Largemouth Bass	4	2	3	20	13	7	11	9	4	1	3	3	2	3	5	3	2	3	98	196.0	24.1

swdmetbb.d23

Table 56. Spring nocturnal electrofishing CPUE (fish/hr) of each length group of Largemouth Bass collected at Metcalfe County Lake during late April or early May since 2001.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	18.0	2.0	102.0	3.8	28.0	4.0	48.0	19.9	16.0	9.0	196.0	24.1
2020	38.0	5.0	118.0	13.2	26.0	3.8	38.0	10.5	2.0	2.0	220.0	17.7
2016	26.0	8.9	74.0	6.0	18.0	3.8	30.0	3.8	10.0	3.8	148.0	44.7
2014	20.0	9.5	110.0	30.5	18.0	8.9	50.0	11.9	26.0	13.2	198.0	44.7
2013	24.0	16.3	142.0	28.4	12.0	5.2	56.0	10.3	14.0	6.8	234.0	29.5
2010	32.0	3.3	100.0	9.5	18.0	8.3	36.0	5.2	6.0	3.8	186.0	13.6
2006	10.0	2.0	76.0	12.0	26.0	5.0	30.0	6.0	6.0	3.8	142.0	12.4
2004	24.0	NA	64.0	NA	24.0	NA	32.0	NA	8.0	NA	144.0	NA
2002	80.5	NA	84.5	NA	6.0	NA	54.6	NA	6.0	NA	144.0	NA
2001	50.0	NA	98.0	NA	28.0	NA	28.0	NA	6.0	NA	204.0	NA

swdmetbb.D01 - D23

NA - SE not applicable as run times were not same as 2006 - 2020.

Table 57. PSD and RSD₁₅ values obtained for Largemouth Bass collected during 0.5 hours (4 - 0.125-hour runs) of spring diurnal electrofishing at Metcalfe County Lake on 18 April 2023. 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Largemouth Bass	89	43 (±10)	27 (±9)

swdmetbb.D23

Table 58. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 1.5 hours (6- 0.25-hour runs) of nocturnal electrofishing at Mill Creek Lake on 18 April 2023.

Species	Inch class																Total	CPUE	SE			
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				19	20	
Spotted Bass	1	3	3	9	11	13	13	8	8	6	4	1							80	53.3	3.3	
Largemouth Bass				4	7	5	9	24	16	16	27	41	26	44	40	24	17	14	8	322	214.7	16.5

swdmillbb.D23

Table 59. Spring nocturnal electrofishing CPUE (fish/hr) of each length group of Largemouth Bass collected at Mill Creek Lake during mid- to late April to mid-May 2006-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	10.7	1.7	43.3	5.7	62.7	8.4	98.0	15.4	5.3	2.5	214.7	16.5
2020	6.7	3.5	27.3	6.2	43.3	6.0	60.7	5.3	6.7	2.0	138.0	9.6
2017	12.7	4.2	41.3	5.1	24.7	5.7	50.7	9.8	8.7	3.5	129.3	14.8
2014	2.0	1.4	36.7	6.7	56.7	5.4	46.0	6.1	6.0	2.7	141.3	11.5
2011	42.0	9.3	49.3	4.3	32.7	3.8	64.0	9.6	4.7	1.2	188.0	9.6
2006	42.7	6.8	124.0	6.8	36.7	3.8	29.3	8.4	6.0	2.7	232.7	16.5

swdmillbb.D06 - D23

Table 60. PSD and RSD₁₅ values from spring nocturnal electrofishing (1.5 hours; 6- 0.25-hour runs) for Largemouth Bass at Mill Creek Lake on 18 April 2023. 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Spotted Bass	64	30 (±11)	8 (±7)
Largemouth Bass	306	79 (±5)	48 (±6)

swdmillbb.D23

Table 61. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected by diurnal electrofishing at Shanty Hollow Lake during fall/early winter. Standard errors are in parentheses.

Year		Length group		
		8.0-11.9 in	12.0-14.9 in	≥15.0 in
2023	Wr	83 (1)	83 (1)	82 (3)
	N	190	51	8
2015	Wr	86 (1)	85 (1)	87 (2)
	N	99	42	3
2012	Wr	82 (1)	82 (1)	86 (2)
	N	112	33	7
2009	Wr	87 (1)	86 (1)	86 (3)
	N	113	43	5
2008	Wr	85 (1)	88 (1)	92 (3)
	N	130	64	12
2004	Wr	89 (1)	86 (2)	90 (5)
	N	94	34	6
2002	Wr	86 (1)	85 (1)	81 (4)
	N	168	41	8

swdshlwr.D23

Table 62. Length frequency and CPUE (fish/hr) of Bluegill collected by nocturnal electrofishing (6 - 0.125-hour runs) at Shanty Hollow Lake on 25 May 2023 and Redear Sunfish collected by diurnal electrofishing (4- 0.125 runs) on 20 April 2023.

Species	Inch class								Total	CPUE	SE
	1	2	3	4	5	6	7	8			
Bluegill	5	22	21	21	21	32	78	9	209	278.7	32.6
Redear Sunfish			2	1	4	13	6	3	29	29.0	8.4
Bluegill/Redear hybrids						1	1	3	5	6.9	2.7

swdshlbg.d23

Table 63. Spring electrofishing CPUE (fish/hr) for each length group of Bluegill collected at Shanty Hollow Lake 2001-2023. Standard errors are in parentheses.

Year	Length group								Total	
	<3.0 in		3.0-5.9 in		6.0-7.9 in		≥8.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	36.0	7.9	84.0	15.0	146.7	15.6	12.0	5.4	278.7	32.6
2021	241.3	55.7	112.7	16.5	100.0	24.8	2.0	1.0	456.0	90.4
2019	99.3	16.5	253.3	26.0	74.7	21.0	5.3	1.8	432.7	53.7
2017	23.2	8.0	97.6	9.8	41.6	5.8	3.2	2.4	165.6	26.7
2015	38.7	14.6	51.3	9.6	67.3	10.5	3.3	1.2	160.7	26.7
2012	192.8	25.9	452.0	70.1	59.2	11.5	0.8	0.8	704.8	82.6
2010	66.0	11.2	181.3	24.6	29.3	5.8	0.7	0.7	277.3	27.5
2009	16.0	8.1	184.0	41.7	28.7	8.0	*		228.7	51.2
2008	115.1	23.9	142.8	11.5	108.9	18.4	*		366.8	31.5
2007	197.1	33.0	321.5	38.2	94.6	18.2	0.7	0.7	613.8	64.2
2006	134.0	45.3	78.7	8.9	98.7	13.9	12.7	4.7	324.0	50.2
2005	76.3	16.5	194.5	23.2	124.3	15.3	1.2	0.8	396.3	43.3
2004	85.7	26.7	285.2	53.0	157.1	27.6	*		590.8	100.1
2003	43.3	10.4	346.7	34.6	106.0	17.0	5.3	2.8	501.3	47.6
2002	78.0	15.2	391.3	55.2	121.3	15.0	10.7	2.8	601.3	67.1
2001	99.9	28.2	224.7	57.5	239.4	67.8	4.4	3.5	573.3	153.3

swdshlbg.D01 - D23

Table 64. Spring electrofishing CPUE (fish/hr) for each length group of Redear Sunfish collected at Shanty Hollow Lake 2001-2023.

Year	Length group										Total	
	<3.0 in		3.0-5.9 in		6.0-7.9 in		≥8.0 in		≥10.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	*		14.0	2.0	24.0	8.6	6.0	3.8	*		29.0	8.4
2021	1.3	0.9	10.7	2.5	10.7	3.7	6.0	4.0	*		28.7	7.3
2019	2.0	1.4	0.8	0.8	5.3	1.8	5.3	2.7	*		16.0	4.3
2017	*		9.6	2.0	3.2	1.8	6.4	1.1	*		19.2	3.6
2015	*		3.3	1.5	6.0	2.2	16.0	3.6	0.7	0.7	25.3	4.2
2012	4.0	2.2	20.8	5.6	5.6	2.4	9.6	3.1	*		40.0	8.2
2010	*		12.7	3.4	8.7	2.3	2.0	1.4	*		23.3	4.1
2009	3.3	2.1	16.0	3.6	6.0	4.0	6.0	3.7	*		31.3	9.2
2008	1.2	0.8	3.1	1.9	9.2	3.0	11.7	6.2	*		25.2	9.2
2007	1.5	1.0	9.5	2.8	34.2	6.4	2.9	1.2	*		48.0	7.3
2006	*		8.0	3.3	6.0	2.2	8.7	2.9	*		22.7	5.6
2005	1.2	1.2	3.7	1.5	9.2	2.7	3.7	1.5	*		17.9	3.8
2004	1.2	0.8	8.0	2.6	8.0	2.2	9.9	3.2	*		27.1	4.8
2003	*		2.7	1.1	1.3	0.9	10.7	6.0	*		14.7	5.9
2002	*		3.3	1.2	6.7	2.2	6.7	3.1	*		16.9	5.1
2001	*		0.8	0.8	13.8	5.3	42.1	8.7	*		60.0	8.3

swdshlbg.D01 - D23

Table 65. PSD and RSD values obtained for Bluegill and Redear Sunfish collected by diurnal electrofishing on 20 April 2023 and by nocturnal electrofishing on 25 May 2023 at Shanty Hollow Lake. Numbers in parentheses represent 95% confidence intervals.

Species	N	PSD	RSD ^a
Bluegill	270	59 (±6)	N/A
Redear Sunfish	27	33 (±18)	N/A

^a Bluegill=RSD₈; Redear Sunfish=RSD₉

swdshlbg.D23

Table 66. Bluegill population assessments from 2009 to 2023 at Shanty Hollow Lake (scoring based on statewide assessment).

Parameter	Year															
	<u>2023</u>		<u>2021</u>		<u>2019</u>		<u>2017</u>		<u>2015</u>		<u>2012</u>		<u>2010</u>		<u>2009</u>	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age 2 at capture	3.3	1	3.4*	1	3.4*	1	3.4*	2	3.4	2	3.7*	2	3.7*	2	3.7*	2
Years to 6.0 in	3.5	3	3.0*	3	3.0*	3	3.0*	3	3.0	3	2.7*	4	2.7*	4	2.7*	4
CPUE \geq 6.0 in	156.7	4	102.0	4	74.7	3	44.8	2	70.7	3	60.0	3	30.0	2	28.7	2
CPUE \geq 8.0 in	12.0	4	2.0	3	5.3	4	3.2	3	3.3	3	0.8	1	0.7	1	0.0	1
Instantaneous mortality (z)	NA															
Annual mortality (A)	NA															
Total score:	12		11		11		10		11		10		9		9	
Assessment rating:	Good		Good		Good		Good		Good		Good		Fair		Fair	

*No age data collected, value carried over from years with age data

NA - data collected, but no amenable for use

sw dshlag.d02, 08, 15, 23

sw dshlbg.D02 - D23

Table 67. Redear Sunfish population assessments from 2009 to 2023 at Shanty Hollow Lake (scoring based on statewide assessment).

Parameter	Year															
	<u>2023</u>		<u>2021</u>		<u>2019</u>		<u>2017</u>		<u>2015</u>		<u>2012</u>		<u>2010</u>		<u>2009</u>	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age 3 at capture	6.3	3	7.2	4	8.8	4	7.5	4	7.5	4	7.8	4	7.8	4	7.8	4
Years to 8.0 in	4.1	3	3.9	4	3.9	4	3.7	4	3.7	4	3.7	4	3.7	4	3.7	4
CPUE _{≥8.0} in	6.0	2	6.0	2	5.3	2	6.4	2	16.0	3	9.6	2	2.0	2	6.0	2
CPUE _{≥10.0} in	0.0	1	0.0	1	0.7	2	0.0	1	0.7	2	0.0	1	0.0	1	0.0	1
Instantaneous mortality (z)																
Annual mortality (A)																
Total score:	9		11		12		11		13		11		11		11	
Assessment rating:	Fair		Good		Good		Good		Good		Good		Good		Good	

ND - data collected

sw dshlag.d02, 08, 15, 18, 23

sw dshlbg.D02 - D23

Table 68. Age frequency and CPUE (fish/hr) of Bluegill collected from nocturnal electrofishing at Shanty Hollow Lake on 25 May 2023.

Age	Inch class								Total	Percent	CPUE	SE
	1	2	3	4	5	6	7	8				
1	5	22							27	13	36.0	7.9
2			21	4					25	12	32.7	6.9
3				18	19	13			50	24	66.1	10.4
4					2	10	6		17	8	23.1	2.4
5						6	42	2	50	24	66.9	9.9
6						3	30	5	39	17	51.5	9.2
7								2	2	1	2.4	1.1
Total	5	22	21	22	21	32	78	9	210	100.0		
%	2	11	10	11	10	15	37	4	100			

swdshlbg.D23, swdshlag.D23

Table 69. Mean back-calculated length (in) at each otolith annulus for Bluegill collected from Shanty Hollow Lake on 20 April and 25 May 2023, including the range of Bluegill lengths at each age and the 95% confidence interval for each age group.

Year class	No.	Age						
		1	2	3	4	5	6	7
2021	16	2.4	3.6					
2020	25	2.4	3.7	5.2				
2019	5	2.5	4.1	5.5	6.6			
2018	10	2.8	4.5	5.9	6.9	7.5		
2017	9	2.5	4.5	5.9	6.6	7.1	7.5	
2016	1	2.7	3.9	6.1	7.0	7.4	7.8	8.2
Mean		2.5	3.9	5.5	6.7	7.3	7.5	8.2
No.		66	66	50	25	20	10	1
Smallest		1.6	2.4	3.3	4.0	6.3	8.4	8.2
Largest		3.5	5.4	7.1	6.9	7.5	8.4	8.2
SE		0.1	0.1	0.1	0.1	0.1	0.2	
95% CI (±)		0.1	0.2	0.2	0.2	0.2	0.3	

swdshlabg.d23

Table 70. Age frequency and CPUE (fish/hr) of Redear Sunfish collected from diurnal electrofishing at Shanty Hollow Lake on 20 April 2023.

Age	Inch class						Total	Percent	CPUE	SE
	3	4	5	6	7	8				
1							0			
2	2	1	1	1			5	11	10.5	4.0
3			3	9	1		13	60	26.3	5.5
4					1	1	2	8	3.6	2.2
5					1	1	2	8	3.6	2.2
Total	2	1	4	10	3	2	22	100.0	44.0	12.4
%	9	5	18	45	14	9	100			

swdshlbg.D23, swdshlag.D23

Table 71. Mean back-calculated length (in) at each otolith annulus for Redear Sunfish collected from Shanty Hollow Lake on 20 April and 25 May 2023, including the range of Redear lengths at each age and the 95% confidence interval for each age group.

Year class	No.	Age				
		1	2	3	4	5
2021	4	2.8	4.8			
2020	15	3.1	4.8	6.4		
2019	5	3.6	5.3	6.7	7.8	
2018	5	3.2	5.0	6.3	7.3	7.8
Mean		3.2	4.9	6.5	7.5	7.8
No.		29	29	25	10	5
Smallest		0.5	2.4	3.3	4.0	7.3
Largest		4.1	5.4	7.1	6.9	8.7
SE		0.1	0.2	0.3	0.5	0.2
95% CI (+)		0.1	0.2	0.2	0.4	0.5

swdshlabg.d23

Table 72. Length frequency and CPUE (fish/set-night) of Channel Catfish collected from 8 sets of tandem hoop nets (3 nets per set each with 72 hour soak time) at Shanty Hollow Lake in early October 2023.

Species	Inch class											Total	CPUE	SE					
	5	6	7	8	9	10	11	12	13	14	15				16	17	18	19	20
Channel Catfish							1	2	1		1	4	4	2	3	1	19	2.4	0.7
Redear Sunfish	2	9	29	31													71	8.9	1.6

swdshlcc.d23

Table 73. Age frequency and CPUE (fish/set-night) of Channel Catfish collected from tandem hoopnetting at Shanty Hollow in early October 2023.

Age	Inch class											Total	Percent	CPUE	SE				
	11	12	13	14	15	16	17	18	19	20	21								
0														0					
1	1	2	1											4	21	0.5	0.2		
2														0					
3						1	4	4	2	3	1			15	79	1.9	0.7		
4																			
Total	1	2	1	0	0	1	4	4	2	3	1			19	100.0	2.4	0.7		
%	5	11	5	0	0	5	21	21	11	16	5			100					

swdshlcc.D23, swdshlag.D23

Table 74. Number of fish and mean relative weight (Wr) for each length group of Channel Catfish collected by tandem set hoopnets (4 sets with 3 nets each with 72 hour soak time) at Shanty Hollow Lake in early October 2023. Standard errors are in parentheses.

	Length group		
	11.0-15.9 in	16.0-23.9 in	≥24.0 in
Wr	88 (4)	99 (3)	
N	4	17	0

swdshlcc.D23

Table 75. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected by diurnal electrofishing at Spurlington Lake on 25 October 2023. Standard errors are in parentheses.

	Length group		
	8.0-11.9 in	12.0-14.9 in	≥15.0 in
Wr	88 (2)	91 (2)	93 (1)
N	26	16	28

swdsplwr.D23

Table 76. Length frequency and CPUE (fish/hr) of Bluegill collected by diurnal electrofishing (4- 0.125-hour runs) at Spurlington Lake on 31 May 2023.

Species	Inch class												Total	CPUE	SE	
	1	2	3	4	5	6	7	8	9	10	11	12				
Bluegill	10	155	196	195	81	37	29	9						712	1422.0	236.4
Redear				2	15	38	13	3						72	144.0	28.5
White Crappie				5	31	21							3	60	120.0	48.1

swdsplbg.d23

Table 77. Diurnal spring electrofishing CPUE (fish/hr) for each length group of Bluegill collected at Spurlington Lake 2005-2023. Standard errors are in parentheses.

Year	Length group				Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	
2023	532.0 (187.9)	638.0 (186.5)	42.0 (15.5)	12.0 (5.2)	1422.0 (236.4)
2021	244.0 (93.6)	734.0 (102.1)	186.0 (35.2)	26.0 (15.8)	1190.0 (168.9)
2018	222.0 (116.8)	604.0 (90.4)	52.0 (7.7)	26.0 (6.0)	904.0 (201.0)
2016	92.0 (28.8)	276.0 (99.2)	92.0 (20.0)	10.0 (3.8)	470.0 (145.5)
2014	104.0 (37.4)	465.0 (76.5)	204.8 (40.5)	22.4 (6.9)	796.8 (131.8)
2012	150.0 (42.4)	788.0 (178.0)	60.0 (7.7)	14.0 (5.0)	1012.0 (227.6)
2011	713.6 (111.1)	1057.6 (187.3)	156.8 (54.4)	8.0 (3.6)	1936.0 (256.1)
2010	310.0 (134.0)	468.0 (75.7)	100.0 (42.1)	2.0 (2.0)	880.0 (195.7)
2009	246.4 (37.6)	571.2 (82.8)	156.8 (30.2)	14.4 (7.8)	988.8 (119.6)
2008	198.0 (38.4)	550.0 (145.6)	120.0 (43.2)	14.0 (14.0)	882.0 (236.3)
2007	496.0 (85.2)	606.0 (73.5)	50.0 (18.3)	4.0 (4.0)	1156.0 (137.4)
2006	138.0 (47.7)	302.0 (54.7)	46.0 (8.9)	14.0 (2.0)	482.0 (100.2)
2005	66.0 (14.4)	216.0 (45.7)	50.0 (15.8)	16.0 (8.6)	348.0 (68.9)

swdsplbg.D05 - D23

Table 78. Spring electrofishing CPUE (fish/hr) for each length group of Redear Sunfish collected at Spurlington Lake during early to mid-May 2009-2023. Standard errors are in parentheses.

Year	Length group					Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	≥10.0 in	
2023	*	34.0 (8.9)	102.0 (23.0)	8.0 (5.9)	*	144.0 (28.5)
2021	28.0 (5.2)	28.0 (5.2)	52.0 (14.8)	56.0 (29.0)	4.0 (2.3)	164.0 (38.3)
2018	*	14.0 (6.8)	20.0 (6.9)	12.0 (6.8)	4.0 (4.0)	50.0 (15.5)
2016	2.0 (2.0)	6.0 (3.8)	10.0 (7.6)	8.0 (8.0)		26.0 (15.5)
2014	*	8.0 (2.6)	30.4 (17.8)	11.2 (6.0)	*	49.6 (22.4)
2012	*	8.0 (5.7)	18.0 (6.8)	8.0 (0.0)	*	34.0 (3.8)
2011	3.2 (3.2)	40.0 (10.1)	59.2 (22.6)	11.2 (9.3)	1.6 (1.6)	113.6 (34.3)
2010	24.0 (12.7)	18.0 (10.5)	10.0 (5.0)	12.0 (5.2)	*	64.0 (27.1)
2009	1.6 (1.6)	6.4 (3.0)	28.8 (12.6)	24.0 (11.0)	*	60.8 (22.4)

swdsp1bg.D09-23

Table 79. PSD and RSD values obtained for Bluegill and Redear Sunfish collected by diurnal electrofishing at Spurlington Lake on 31 May 2023. Numbers in parentheses represent 95% confidence intervals.

Species	N	PSD	RSD ^A
Bluegill	546	14 (±3)	NA
Redear Sunfish	72	24 (±10)	NA

^A Bluegill=RSD₈; Redear Sunfish=RSD₉

swdsp1bg.d23

Table 80. Age frequency and CPUE (fish/hr) of Bluegill collected from diurnal electrofishing at Spurlington Lake on 21 April and 31 May 2023.

Age	Inch class								Total	Percent	CPUE	SE
	1	2	3	4	5	6	7	8				
1	10	155	90						255	36	510.0	74.0
2			106	179	12				297	42	592.0	95.7
3				16	69	24	3		112	16	226.0	62.8
4						8	14	2	24	3	48.0	17.4
5						5	12	6	23	3	46.0	17.0
6								1	1	0	2.0	0.7
Total	10	155	196	195	81	37	29	9	712	100.0	1422.0	236.4
%	1	22	28	27	11	5	4	1	100			

swdsplbg.D23, swdsplag.D23

Table 81. Mean back-calculated length (in) at each otolith annulus for Bluegill collected from Spurlington Lake on 21 April and 31 May 2023, including the range of Bluegill lengths at each age and the 95% confidence interval for each age group.

Year class	No.	Age					
		1	2	3	4	5	6
2022	6	3.4					
2021	20	2.8	4.2				
2020	23	2.6	4.5	5.9			
2019	11	2.8	4.7	6.2	7.4		
2018	14	2.6	4.4	6	7.1	7.9	
2017	1	2.5	4.7	6.3	7.6	8	8.4
Mean		2.7	4.4	6.0	7.3	7.9	8.4
No.		75	69	49	26	15	1
Smallest		1.2	2.4	3.3	4	6.3	8.4
Largest		4.1	5.4	7.1	6.9	7.5	8.4
SE		0.1	0.1	0.1	0.1	0.2	
95% CI (±)		0.1	0.2	0.4	0.5	0.5	

swdsplabg.d23

Table 82. Age frequency and CPUE (fish/hr) of Redear Sunfish collected from diurnal electrofishing at Spurlington Lake on 21 April and 31 May 2023.

Age	Inch class					Total	Percent	CPUE	SE
	4	5	6	7	8				
1	1					1	1	2.0	1.4
2	2	14	34	8		58	81	116.0	26.3
3			4	5	3	12	17	24.0	4.6
4					1	1	1	2.0	1.4
Total	3	14	38	13	4	72	100.0	144.0	28.5
%	4	19	53	18	6	100			

swdsplbg.D23, swdsplag.D23

Table 83. Mean back-calculated length (in) at each otolith annulus for Redear Sunfish collected from Spurlington Lake on 21 April and 31 May 2023, including the range of Redear lengths at each age and the 95% confidence interval for each age group.

Year class	No.	Age			
		1	2	3	4
2022	3	4.0			
2021	33	3.7	5.9		
2020	9	3.5	5.9	7.9	
2019	2	2.7	4.6	7	9.1
Mean		3.6	5.8	7.7	9.1
No.		47	44	11	2
Smallest		0.5	2.4	3.3	4
Largest		4.1	5.4	7.1	6.9
SE		0.1	0.2	0.3	0.5
95% CI (+)		0.3	0.3	0.5	0.7

swdsplabg.d23

Table 84. Bluegill population assessments from 2008 to 2023 at Spurlington Lake (scoring based on statewide assessment).

Parameter	Year																				
	2023		2021		2018		2016		2014		2012		2011		2010		2009		2008		
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	
Mean length age 2 at capture	4.4	2	5.1	4	5.1	4	5.1	4	5.6	4	5.6	4	5.6	4	5.6	4	5.6	4	5.6	4	
Years to 6.0 in	3.4	3	3.9	3	3.9*	3	3.9	3	3.2	3	3.2	3	3.2	3	3.2	3	3.2	3	3.2	3	
CPUE \geq 6.0 in	54.0	3	212.0	4	78.0	3	102.0	4	227.2	4	74.0	3	164.8	4	102.0	4	171.2	4	134.0	4	
CPUE \geq 8.0 in	12.0	3	26.0	4	26.0	4	10.0	4	22.4	4	14.0	4	8.0	4	2.0	3	14.4	3	14.0	3	
Instantaneous mortality (z)	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Annual mortality (A)																				-1.091	
																					66.4
Total score:	11		15		14		15		15		14		15		14		14		14		
Assessment rating	Good		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		Excellent		

ND - no age data collected

*Age data collected in fall, unmarked years age collected in the spring

sw dsplag.d08 & d18

sw dsplbg.D03 - D23

Table 85. Redear Sunfish population assessments from 2018 to 2023 at Spurlington Lake (scoring based on statewide assessment).

Parameter	Year					
	2023		2021		2018	
	Value	Score	Value	Score	Value	Score
Mean length age 3 at capture	7.4	4	7.4	4	7.4	4
Years to 8.0 in	3.3	4	3.3	3	3.3	3
CPUE \geq 8.0 in	8.0	2	60.0	4	16.0	4
CPUE \geq 10.0 in	0.0	0	4.0	3	0.0	0
Instantaneous mortality (z)	ND		ND		ND	
Annual mortality (A)	ND		ND		ND	
Total score:	10		14		11	
Assessment rating	Fair		Excellent		Good	

swdsplag.d23
swdsplbg.D18 - D23

CENTRAL FISHERIES DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Lake sampling conditions for 2023 are summarized in Table 1.

Taylorsville Lake (3,050 acres)

Spring nocturnal electrofishing was completed in April 2023 to assess the black bass population. Three sections (Big Beech Creek, Ashes/Jacks Creek, and Van Buren area) of Taylorsville Lake were sampled for 7.5 hours (2.5 hours per section; 15-minute runs). Length distribution and CPUE for Largemouth Bass are presented in Tables 2 and 3. The catch rate of bass collected in 2023 (144.1 fish/hr) was higher than the lake's historic average of 120.7 fish/hr. The catch rate for keeper-size bass (≥ 15.0 in) was 29.7 fish/hr; higher than the lake average (19.5 fish/hr). The Ashes/Jack's Creek area recorded the highest catch rate for Largemouth Bass. The PSD for Largemouth Bass was 59, which was slightly higher than the lake's average of 57 (Table 4). Additionally, the RSD₁₅ value was 31, which is higher than the lake's average of 22. Age and growth was assessed by using otoliths collected in April 2023 (Tables 5 and 6). On average, Largemouth Bass reach the 15.0-in minimum size limit between age 4 and age 5. The Largemouth Bass population assessment score, based on spring electrofishing data, was "Excellent", which has been the average rating at Taylorsville Lake since 2014 (Table 7). Length frequency, relative weight, and index for year-class strength at age 0 for Largemouth Bass, based on October 2023 electrofishing data, are presented in Tables 8-10. Average body condition for Largemouth Bass in 2023 ($W_r=94$; Table 9) was acceptable, but less than the lake's historic average ($W_r=96$). The catch rate of age-0 Largemouth Bass in the fall of 2023 (42.0 fish/hr) was higher than the lake's historic average of 37.9 fish/hr (Table 10). The year-class strength model indicated above-average recruitment for young-of-the-year Largemouth Bass in 2023. No Largemouth Bass were stocked into Taylorsville Lake in 2023.

Saugeye were collected during the spring and fall Largemouth Bass samples. During the spring sample, eleven Saugeye were collected from the 12.0- to 23.0-in size classes for a catch rate of 2.9 fish/hr (Table 2). Saugeye were also collected at 0.4 fish/hr during the fall bass sample up to the 17.0-in size class (Table 8). A total of 119 Saugeye were collected during fall gill netting that ranged from the 6.0- to 26.0-in size classes (Table 20). Age and growth studies were completed using otoliths. Calculations indicated, on average, Saugeye reach the 14.0-in size limit between age 1 and age 2, and 20.0 in between age 3 and age 4 (Table 29). All stocked year-classes since 2017 were represented in the age and growth sample (Table 30). The relative weight (W_r) index for Saugeye (89) showed acceptable body condition (Table 31). During November, an electrofishing survey was completed in the upper section of Taylorsville Lake specifically to target Saugeye. A total of 34 Saugeye were collected in 1.5 hours of 15-minute electrofishing runs with fish collected from the 6.0- to 22.0-in size classes (Table 32). Taylorsville Lake was stocked with 71,720 Saugeye (23.5 fish/acre; 1.5 in) in May 2023.

Trap netting for crappie (48 net-nights) resulted in the collection of 690 White Crappie and 53 Black Crappie (Table 11). PSD and RSD₁₀ values are shown in Table 12. Age and growth determinations and age frequency for White and Black crappie were completed using otoliths (Tables 13-16). Age studies indicated White Crappie, on average, reach the 10.0-in size limit between age 3 and age 4. The crappie population assessment scores rated White Crappie as "Fair" and Black Crappie as "Poor" (Tables 17 and 18). Historically, the crappie population at Taylorsville Lake has been very cyclic with peaks occurring every 7 to 9 years. More recently, there have been significant spawns in 2013, 2015, and 2019 based off trap net data. Body condition of White and Black crappie in the fall of 2023 was lower than the historical averages (Table 19).

Fall gill netting for hybrid Striped Bass, White Bass, and Saugeye was conducted in October 2023 (Tables 20-32). Hybrid Striped Bass were captured in 12 net-nights for a CPUE of 7.9 fish/nn. Age and growth studies were completed for hybrid Striped Bass using otoliths (Tables 21 and 22). Hybrid Striped Bass continue to show good growth, reaching 15.0 in between age 1 and age 2. Otoliths collected from the 2018 (age 5+) and 2019 (age 4+) year-classes were checked for OTC marks for determination of original versus reciprocal cross. The four largest (>11.0 lbs) fish collected were all determined to be the reciprocal hybrid Striped Bass cross. The relative weight

(W_r) index for hybrid Striped Bass was 86 in 2023 which is equal to the historic average ($W_r = 86$) at Taylorsville Lake (Table 23). The population assessment for hybrid Striped Bass was rated at “Poor” (Table 24). Taylorsville Lake was stocked with 61,008 (20.0 fish/acre; 1.7 in) reciprocal-cross hybrid Striped Bass in June 2023. No original-cross hybrid Striped Bass were stocked in 2023. Data for White Bass collected during fall 2023 gill netting studies is presented in Tables 20 and 25-28. Age and growth studies indicate White Bass average over 10.0 in by age 2, with good year classes produced in 2018, 2019, and 2020 (Tables 25 and 26). Relative weight values ($W_r=84$) revealed less than average body conditions for all sizes of White Bass in 2023 (Table 27). The White Bass population assessment was rated “Poor”; a below-average rating for White Bass at Taylorsville Lake (Table 28).

Summer diurnal low-pulse electrofishing was completed in July and August 2023 to assess the Blue Catfish population. Only one site was sampled in July due to recent heavy rains destratifying the water column resulting in poor sampling conditions. In August, once the thermocline was reestablished, two sections (Lower Lake: Big Beech/Ashes/Jacks creeks, and Upper Lake: Chowning Lane area) of Taylorsville Lake were sampled for 4.5 hours (15-minute runs). During August, 150 Blue Catfish were collected in the lower section compared to 320 Blue Catfish collected in the upper section of the lake (Table 33). The total number of Blue Catfish collected in 2023 (112.7 fish/hr) was slightly lower than the lake’s historic average of 129.5 fish/hr (Table 34). Relative weight values revealed good body condition for Blue Catfish <30.0 in and excellent condition for Blue Catfish ≥ 30.0 in (Table 35). Taylorsville Lake was stocked with 30,245 (9.9 fish/acre; 5.5 in) Blue Catfish in October 2023.

Herrington Lake (2,410 acres)

Diurnal electrofishing studies were completed in April 2023 to monitor the crappie population. Upper, middle, and lower lake sections were sampled for a total of 4.5 hours. A total of 56 crappie were collected in 2023 (Table 36). The PSD for White Crappie (100) was higher than the historical average of 93, while Black Crappie PSD (89) was lower than the historical average of 91 (Table 37). The overall catch was dominated by Black Crappie, which made up 80.4% of the crappie sampled at Herrington Lake. Age and growth determinations and age frequency for White and Black crappie were completed using otoliths (Tables 38-39 and 41-42). Age studies indicated both White and Black crappie, on average, reach 10.0 in between age 2 and age 3. Age-2 crappie comprised 73.0% of the Black Crappie sampled, this is encouraging since that was the first year that Black Crappie were stocked as part of a 5-year stocking effort. A population assessment was developed for spring electrofishing for White and Black crappie at Herrington Lake. The population assessment for White Crappie indicated a “Poor” population, which has been the average assessment since 2016 (Table 40). The population assessment for Black Crappie was “Fair”, equal to the lake’s average rating (Table 43). Herrington Lake was stocked with 120,316 blacknose Black Crappie (49.9 fish/acre; 1.6 in) in September 2023.

Spring diurnal electrofishing studies were completed in April 2023 to monitor the black bass population. Upper, middle, and lower sections were sampled for a total of 7.5 hours (2.5 hours per section). Species composition, relative abundance, and CPUE of black bass collected in the spring are presented in Table 44. Largemouth Bass (96.1%) dominate the black bass fishery at Herrington Lake. The catch rate of Largemouth Bass collected in 2023 (71.9 fish/hr) was lower than the lake’s historic average of 114.0 fish/hr (Table 45). Fluctuations in the overall catch rates at Herrington Lake seems to be related to lake levels during sampling. The higher the lake level the lower the catch rate of bass. The catch rate for keeper bass (≥ 12.0 in) was 31.0 fish/hr, lower than the lake’s historic average (47.5 fish/hr). The PSD for Largemouth Bass was 65, higher than the lake’s average of 58 (Table 46). Additionally, the RSD_{15} value was 37, which is higher than the lake average of 25. The Largemouth Bass population assessment score, based on spring electrofishing data, was “Good”, which is an average rating for Herrington Lake (Table 47). Length frequency, relative weight, and index of year-class strength at age 0 of Largemouth Bass based on October 2023 electrofishing data at Herrington Lake are presented in Tables 48-50. Largemouth Bass condition ($W_r = 91$) was slightly less than the lake’s historic average ($W_r = 92$; Table 49). Age-0 CPUE for Largemouth Bass (54.9 fish/hr) was higher than the lake average (34.9 fish/hr; Table 50).

Herrington Lake was stocked with 48,048 (19.9 fish/acre; 1.6 in) reciprocal-cross hybrid Striped Bass in June 2023.

A roving daytime angler creel survey was conducted at Herrington Lake from mid-March through October. The last creel survey conducted at this lake was in 2018. Table 51 provides descriptive statistical parameters of the

lake fishery during the present survey (2023) and the last 3 surveys (2018, 2010, and 2004). The number of fishing trips in 2023 (13,224) was comparable to 2018 (13,438). However, fishing pressure (man-hours), number of fish caught, number of fish harvested, pounds of fish harvested, and catch rates (fish/hr and fish/acre) have decreased since 2018. Other parameters such as gender, residency, method, and mode were similar to surveys completed in past years.

In 2023, Largemouth Bass was the predominant black bass species caught; however, Spotted Bass and Smallmouth Bass were represented in lower numbers (Tables 52 and 53). Mean length of Largemouth Bass harvested increased from 13.9 inches in 2018 to 14.3 inches in 2023. Overall, 26.8% of Largemouth Bass were harvested. This number is probably elevated due to the fact this creel considers a tournament angler's fish in the live well as harvested. In most cases, tournament anglers are required to release their fish after weigh-in. Therefore, if all tournament anglers' harvested bass were changed to released, it would indicate that only 3.1% of Largemouth Bass were harvested. The number of fishing trips for black bass in 2023 was 6,515, a slight decrease from 6,653 in 2018. Black bass continued to be the most sought-after group fished for in Herrington Lake. Catch rates of bass by bass anglers decreased from 0.85 fish/hr (2018) to 0.39 fish/hr in 2023. Bass angler success rate (17.4%) was higher than that reported in 2018 (8.0%). Black bass catch, harvest, and monthly angling success are shown in Tables 54 and 55.

The *Morone* group (hybrid Striped Bass and White Bass) was the second most sought-after group at Herrington Lake in 2023. The number of hybrid Striped Bass (HSB) caught increased from 4,020 fish in 2018 to 6,404 fish in 2023. Additionally, the number of hybrid Striped Bass harvested increased from 592 fish in 2018 to 5,278 fish in 2023. The number of White Bass (WB) caught increased from 106 fish in 2018 (0 harvested) to 279 fish in 2023 (203 harvested). Pounds of HSB harvested in 2023 totaled 11,598 lbs (4.84 lbs/acre), whereas in 2018 it was 1,079 lbs (0.45 lbs/acre). Mean length of HSB harvested in 2023 was 16.3 in while in 2018 it was 15.4 in. The number of trips for *Morones* increased from 1,187 trips in 2018 to 1,433 trips in 2023. Hours spent fishing for these fish decreased from 5,652 hrs (2.40 hrs/acre) in 2018 to 5,453 hrs (2.30 hrs/acre). Harvest rate for *Morone* anglers increased from 0.07 fish/hr in 2018 to 0.79 fish/hr in 2023. Success rate for these anglers increased from 16% in 2018 to 73% in 2023. *Morone* catch, harvest, and monthly angling success are shown in Tables 56 and 57.

Panfish (Bluegill) were the third most sought after fish group at Herrington Lake in 2023. The number of panfish caught in 2023 (21,246 fish) decreased from the 24,794 fish caught in 2018. Pounds harvested in 2023 was less than that seen in 2018, decreasing from 2,662 lbs (1.1 lbs/acre) in 2018 to 1,973 lbs (0.8 lbs/acre) in 2023. The average length of Bluegill harvested was 5.6 in, compared to 6.1 inches in 2018. Trips for panfish increased from 602 trips in 2018 to 1,175 trips in 2023. The harvest rate for panfish was 2.31 fish/hr (2.78 fish/hr in 2018). The percentage of successful panfish anglers was 71% while in 2018 it was 53%. Panfish catch, harvest, and monthly angling success are shown in Tables 58 and 59.

The catfish group was the fourth most sought after at Herrington Lake. In 2023, there were 931 trips by catfish anglers compared to 1,482 trips by catfish anglers in 2018. Channel Catfish represented 62% of the catfish caught, compared to 90% in 2018. Pounds of catfish harvested decreased from 6,796 lbs in 2018 to 5,675 lbs in 2023. Pounds of Flathead Catfish harvested by catfish anglers (2,703 lbs) increased from 1,542 lbs in 2004, 1,941 lbs in 2010, and 1,712 lbs in 2018. Mean length of Channel Catfish harvested by catfish anglers was 16.3 in (15.5 inches in 2018) while mean length of harvested Flathead Catfish was 20.6 in (21.0 inches in 2018). Harvest rate by catfish anglers increased from 0.09 fish/hr (2018) to 0.62 fish/hr (2023). Success rate for catfish anglers in 2023 (69%) was less than that observed in 2018 (75%). Catfish catch, harvest, and monthly angling success are shown in Tables 60 and 61.

Crappie were the least sought-after group fished for in Herrington Lake in 2023. Numbers of crappie caught decreased from 15,773 in 2018 to 5,412 in 2023. Additionally, the number of crappie harvested decreased from 13,755 fish in 2018 to 4,745 fish in 2023. Mean length of crappie harvested was 12.5 in for White Crappie and 11.4 in for Black Crappie. The number of fishing trips for crappie in 2023 (811 trips) was far less than 2018 (6,487). Harvest rate by crappie anglers decreased from 2.01 fish/hr in 2018 to 1.08 fish/hr in 2023. Percent success of crappie anglers decreased from 79.2% in 2018 to 73.7% in 2023. White Crappie represented 82% of the crappie caught and 81% of the crappie harvested. Crappie catch, harvest, and monthly angling success are shown in Tables 62 and 63.

An angler attitude survey was conducted at Herrington Lake during the creel survey. Surveys were completed in the field by the creel clerk. A total of 189 surveys were completed in 2023 compared to 348 in 2018. The attitude survey found that most anglers fish for Largemouth Bass (34.9%) followed by Bluegill (16.9%), Channel Catfish (11.6%), hybrid Striped Bass (11.6%), crappie (7.4%), and other species (17.6%). Most anglers expressed satisfaction for their species of preference in 2023 and are satisfied with the current regulations on Herrington Lake.

Guist Creek Lake (317 acres)

Spring nocturnal electrofishing studies were completed for length frequency, CPUE, and population assessment for Largemouth Bass in May 2023 (Table 64). The total Largemouth Bass catch rate (214.0 fish/hr) was higher than the lake average of 170.1 fish/hr (Table 65). The PSD for Largemouth Bass was 64, compared to the lake average of 66 (Table 66). The RSD₁₅ was 44, compared to the lake average of 40. The Largemouth Bass population assessment score, based on spring electrofishing data, was “Excellent”, which has been the average rating at Guist Creek Lake since 2013 (Table 67). Fall Largemouth Bass sampling was conducted for length frequency, relative weight, and index of year-class strength at age 0 (Tables 68-70). Relative weight values indicated good body condition for bass, especially for bass over 15.0 in (Table 69). The catch rate of age-0 Largemouth Bass (50.7 fish/hr) was higher than the lake average (avg. = 45.4 fish/hr; Table 70).

All Saugeye seen during Largemouth Bass sampling events were collected. During the spring sample, no Saugeye were collected (Table 64). Two Saugeye were collected during the fall sample for a catch rate of 1.3 fish/hr (Table 68). During November, an electrofishing sample targeting Saugeye resulted in a catch rate of 8.7 fish/hr (Table 71). Guist Creek Lake was stocked with 30,803 (97.2 fish/acre; 1.5 in) Saugeye in May 2023.

Guist Creek Lake was stocked with 3,170 (10.0 fish/acre; 8.0 in) Channel Catfish in October 2023.

Guist Creek Lake was stocked with 9,512 (30.0 fish/acre; 1.7 in) reciprocal-cross hybrid Striped Bass in June 2023.

Beaver Lake (158 acres)

A spring diurnal electrofishing sample was completed in May 2023 to assess the black bass population (Table 72). The CPUE for all sizes was 234.0 fish/hr, slightly lower than the lake average of 257.4 fish/hr (Table 73). The PSD and RSD₁₅ for Largemouth Bass was 35 and 8, respectively, compared to the lake average of 28 and 5 (Table 74). The population assessment score indicated a “Good” bass population, which is the average assessment rating for Beaver Lake (Table 75). Largemouth Bass growth rates at Beaver Lake indicated bass are reaching 12.0 in between age 3 and age 4 (Tables 76 and 77). Additionally, Largemouth Bass reach 15.0 in between age 4 and age 5. Fall diurnal electrofishing was conducted for relative weight and to index age-0 year-class strength of Largemouth Bass (Tables 78-80). The overall relative weight indicated acceptable condition ($W_r = 86$); the lake average is 85 (Table 79). Fall sampling indicated near average numbers of age-0 bass, (132.0 fish/hr; average = 138.6 fish/hr) and the average size of Largemouth Bass (4.1 in) was smaller than the lake’s average of 4.3 in (Table 80).

Spring diurnal electrofishing was completed in May 2023 to assess the panfish populations (Tables 81-88). Length frequency results showed a good size distribution of Bluegill up to the 7.0-in size class (Table 81). The PSD for Bluegill was 36, compared to the lake average of 34 (Table 82). The RSD₈ was 0, compared to the lake average of 1. CPUE for all length groups of Bluegill was 322.4 fish/hr, compared to the lake average of 260.5 fish/hr (Table 83). The population assessment for Bluegill indicated a “Good” population rating, which is the average rating since 2011 (Table 84). The Redear Sunfish catch rate was 134.4 fish/hr, which is higher than the lake’s average catch rate (68.4 fish/hr) for all sizes. The catch rate of Redear Sunfish ≥ 8.0 in was 23.2 fish/hr and was higher than the lake average of 19.4 fish/hr (Table 85). Redear Sunfish PSD and RSD₉ were 56 and 7, respectively (Table 82). The population assessment indicated a “Good” Redear Sunfish fishery (Table 86). Age and growth studies indicate that, on average, Bluegill reach 6.0 in between age 3 and age 4 (Table 87). Redear Sunfish, on average, reach 8.0 in

between age 3 and age 4 (Table 88). Overall, relative weight data was acceptable for both Bluegill and Redear Sunfish (Table 89). A total of 31,600 Redear Sunfish (200.0 fish/acre; 1.1 in) were stocked in September 2023.

Channel Catfish were sampled in October 2023 using tandem hoop nets. Length frequency results for Channel Catfish show a size distribution ranging from the 16.0- to 27.0-in size classes (Table 90). PSD and RSD₂₄ were 100 and 6, respectively (Table 91). The overall catch rate in 2023 was 14.9 fish/net-set, which is lower than the lake average (38.5 fish/net-set; Table 92). Relative weight indicated good body condition for Channel Catfish ($W_r = 95$; Table 93). On May 30th, June 9th, and June 16th, 25 wooden catfish spawning boxes were monitored for usage. Overall, Channel Catfish were observed using 18 (72%) of these boxes, Flathead Catfish used 4 (16%) of these boxes and 3 (12%) boxes recorded no activity. During this period, Channel Catfish were observed on 22 separate events guarding eggs. Flathead Catfish were also observed guarding eggs on 2 separate events. Overall, Channel and Flathead catfish usage was observed in 22 of the 25 boxes (88%) during 2023.

In May 2023, 500 lbs of granular 10-52-4 fertilizer was applied in Beaver Lake.

Benjy Kinman Lake (88 acres)

A spring nocturnal electrofishing sample was completed in April 2023 at Benjy Kinman Lake to assess the black bass population (Table 94). The overall CPUE for all sizes of Largemouth Bass was 343.0 fish/hr, compared to the lake average of 188.2 fish/hr (Table 95). The PSD and RSD₁₅ for Largemouth Bass were 7 and 4, respectively, compared to the lake average of 18 and 7, respectively (Table 96). The population assessment score indicated a “Fair” Largemouth Bass population, which is the average assessment rating for Benjy Kinman Lake (Table 97). Age and growth studies on Largemouth Bass show they reach 12.0 in between age 3 and age 4 and 15.0 in between age 5 and age 6 (Tables 98 and 99). Fall Largemouth Bass sampling was conducted for relative weight and index of year-class strength at age 0 in September 2023 (Tables 100-102). Overall, relative weight values indicated fair body condition for bass ($W_r = 88$), with larger fish exhibiting better condition compared to smaller length groups (Table 101). The better condition of larger fish is due to the Gizzard Shad forage base. Fall sampling indicated above-average numbers of age-0 bass, (140.0 fish/hr; average = 91.3 fish/hr) and the average size of Largemouth Bass (4.6 in) was smaller than the lake’s average of 4.7 in (Table 102). During 2023, seven efforts were made to reduce the crowded Largemouth Bass population at Benjy Kinman Lake. A total of 1,961 (22.3 fish/acre) Largemouth Bass were removed from Benjy Kinman Lake in 2023. Fish removed were stocked into Eagle Creek and the Kentucky River. Largemouth Bass removed from the lake ranged in size from 4.0 to 11.0 in (<8.0 in = 1,103 fish (56.2%); 8.0-10.9 in = 855 fish (43.6%); 11.0 in = 3 fish (0.2%)). Since 2021, a total of 3,819 (43.4 fish/acre) Largemouth Bass have been removed from Benjy Kinman Lake.

Relative weights for Bluegill and Redear Sunfish were collected during the fall bass sample at Benjy Kinman Lake (Table 103). Overall, relative weights were “good” for both Bluegill and Redear Sunfish.

Channel Catfish were sampled in November 2023 using tandem hoop nets. Length frequency results for Channel Catfish show a size distribution between the 10.0- and 26.0-in size classes (Table 104). PSD and RSD₂₄ were 100 and 23, respectively (Table 105). Overall, the catch rate (4.6 fish/net-set) in 2023 was lower than the historic average of 7.2 fish/net-set (Table 106). Relative weight values indicated good body condition for Channel Catfish ($W_r = 96$, Table 107). All 15 Channel Catfish spawning boxes installed in 2020 were removed in the fall of 2023 and moved to Beaver Lake.

Only one rough fish removal effort was completed that resulted in a total of 19 rough fish being removed. Additionally, a total of 9 rough fish (common carp and bigmouth buffalo) were removed during routine sampling. Therefore, a total of 28 rough fish were removed at an estimated weight of 280 lbs. Since 2014, a total of 4,497 rough fish (51.1 fish/acre) have been removed at an estimated weight of 35,141 lbs (399.3 lbs/acre).

Three hundred and seventy-five pounds of granular fertilizer (10-52-4) was applied in May 2023 at Benjy Kinman Lake. During June and July, two applications of aquatic herbicides were applied in an effort to reduce the density of filamentous algae and coontail.

Water willow collected from the spillway at Boltz Lake was transplanted into Benjy Kinman Lake to create 7 new water willow beds during the summer of 2023. During the fall, 47 buttonbushes and 34 bald cypress trees were planted.

Boltz Lake (92 acres)

In September 2023, diurnal electrofishing was conducted for relative weight and index of age-0 year-class strength for Largemouth Bass (Tables 108-110). Relative weight values indicated acceptable body condition ($W_r = 94$) which was higher than the lake's average relative weight of 91 (Table 109). Fall sampling indicated above-average numbers of age-0 bass, (192.7 fish/hr; average = 91.8 fish/hr) and the average size (3.9 in) was smaller than the historic lake average of 4.1 in (Table 110). No bass were stocked into Boltz Lake in 2023.

Saugeye were collected during fall Largemouth Bass sampling at a rate of 0.7 fish/hr with the only fish collected in the 22.0-in size class (Table 108). Boltz Lake was stocked with 9,200 (100 fish/acre; 1.5 in) Saugeye in May 2023.

Relative weights for Bluegill and Redear Sunfish were collected during the fall bass sample at Boltz Lake (Table 111). The relative weight index reflected "Good" condition for Bluegill ($W_r = 91$) and "Excellent" condition for Redear Sunfish ($W_r = 101$).

Boltz Lake was stocked with 2,160 (23.5 fish/acre; 6.5 in) Channel Catfish in October 2023.

One application of aquatic herbicides was applied in July 2023 to maintain the dam and spillway areas at Boltz Lake.

Bullock Pen Lake (134 acres)

Spring diurnal electrofishing was completed in April 2023 to assess the black bass population (Table 112). The total catch rate of Largemouth Bass (231.0 fish/hr) was higher than the historic lake average of 158.5 fish/hr (Table 113). The PSD for Largemouth Bass was 69, similar to the lake average of 68 (Table 114). The RSD_{15} for Largemouth Bass was 27, lower than the lake average of 38. The population assessment for Largemouth Bass was rated "Excellent", which has been the average rating since 2018 (Table 115). Fall diurnal electrofishing was conducted in September 2023 to determine length frequency, relative weight, and index of age-0 year-class strength for Largemouth Bass (Tables 116-118). Relative weight values indicated acceptable body condition for bass ($W_r = 93$) and was equal to the lake average ($W_r = 93$; Table 117). Larger fish exhibited better condition compared to smaller length groups, which is a function of the shad forage base. Age-0 CPUE (40.7 fish/hr) was higher than the lake average (23.1 fish/hr; Table 118).

Saugeye were collected during the spring and fall Largemouth Bass samples. Eight Saugeye were collected during the spring sample at 4.0 fish/hr between the 9.0- and 23.0-in size classes (Table 112). Four Saugeye (2.7 fish/hr) were collected in September 2023 between the 11.0- and 20.0-in size classes (Table 116). No Saugeye were stocked at Bullock Pen Lake in 2023.

Bullock Pen Lake was stocked with 2,200 (16.4 fish/acre; 6.5 in) Channel Catfish in October 2023.

Corinth Lake (96 acres)

Spring nocturnal electrofishing was completed in April 2023 to assess the black bass population (Table 119). The total catch rate of Largemouth Bass (262.0 fish/hr) was higher than the lake average of 250.1 fish/hr (Table 120). The PSD for Largemouth Bass was 30, higher than the lake average of 23 (Table 121). The RSD_{15} for Largemouth Bass was 6, similar to the lake average of 7. The population assessment for Largemouth Bass was rated "Good", which has been the average rating since 2005 (Table 122). Fall diurnal electrofishing for Largemouth Bass was conducted to determine length frequency, relative weight, and index of year-class strength at age 0 (Tables 123-

125). The overall relative weight in 2023 ($W_r = 83$) was similar to the historic average relative weight at Corinth Lake ($W_r = 84$; Table 124). Age-0 CPUE (140.0 fish/hr) was higher than the lake average (92.3 fish/hr; Table 125).

Spring diurnal electrofishing for Bluegill and Redear Sunfish was completed in May 2023 to obtain length frequency, CPUE, population assessment data, and age and growth (Table 126-133). Bluegill PSD (38) was higher than the lake average of 34 (Table 127). The Bluegill catch rate (179.2 fish/hr) was lower than the lake average (242.8 fish/hr; Table 128). The population assessment indicated a “Good” population, which has been the average rating since 2011 (Table 129). The Redear Sunfish catch rate (140.8 fish/hr) continues to be higher than the lake’s average (80.8 fish/hr; Table 130). Redear Sunfish PSD was 77, higher than the lake average of 58 (Table 127). Catch rate for Redear Sunfish ≥ 8.0 in was 52.8 fish/hr; remaining higher than the lake average of 31.6 fish/hr (Table 130). The population assessment for Redear Sunfish was rated as “Good” (Table 131). Age and growth studies show that Bluegill reach 6.0 in between age 2 and age 3 and Redear Sunfish reach 8.0 in between age 4 and age 5 (Tables 132-133). Fall diurnal electrofishing for Bluegill and Redear Sunfish was conducted for relative weights. Relative weight values indicated fair condition for Bluegill (86) and good condition for Redear Sunfish (93; Table 134).

Corinth Lake was stocked with 1,945 (20.3 fish/acre; 6.5 in) Channel Catfish in October 2023.

No fertilizer was applied to Corinth Lake in 2023. Two applications of aquatic herbicides were applied in April and July 2023 to maintain bank fishing areas, the boat ramp, fishing pier, and dam control structure at Corinth Lake.

Elmer Davis Lake (149 acres)

Spring diurnal electrofishing studies were conducted in April 2023 for Largemouth Bass length frequency, PSD, and CPUE (Table 135). The total catch rate (448.5 fish/hr) was higher than the historical lake average of 313.7 fish/hr (Table 136). Largemouth Bass PSD and RSD_{15} were 42 (average = 33) and 6 (average = 8), respectively (Table 137). The population assessment indicated a “Good” bass population, which is the historical average rating (Table 138). Fall electrofishing for Largemouth Bass was completed to evaluate relative weight and index of year-class strength at age 0 (Tables 139-141). Largemouth Bass relative weight ($W_r = 89$) was higher than the historical lake average ($W_r = 87$; Table 140). The year-class strength model indicated that 2023 was about average for young-of-year Largemouth Bass. Age-0 CPUE (147.3 fish/hr) was slightly higher than the lake average (142.0 fish/hr; Table 141). No Largemouth Bass were stocked during 2023.

Diurnal spring electrofishing for length frequency, CPUE, and population assessment data was conducted for Bluegill and Redear Sunfish in May 2023 (Tables 142). The total Bluegill catch rate (301.6 fish/hr) remains higher than the lake average of 266.5 fish/hr (Table 143). The PSD value for Bluegill (36) was higher than the lake average of 34 (Table 144). The RSD_8 (8) was higher than the lake average of 3. The population assessment for Bluegill was “Excellent” (Table 145). The total catch rate of Redear Sunfish (175.2 fish/hr) was higher than the lake average of 73.5 fish/hr (Table 146). The PSD for Redear Sunfish was 63 compared to the lake average of 56. The RSD_9 was 17 compared to the lake average of 21 (Table 144). The Redear Sunfish population assessment indicated an “Excellent” population, which has been the rating since 2021 (Table 147). Relative weight index reflected good condition for Bluegill ($W_r = 99$) and excellent condition for Redear Sunfish ($W_r = 110$; Table 148). Elmer Davis Lake was stocked with 30,984 (207.9 fish/acre; 1.2 in) surplus Redear Sunfish in September 2023.

Channel Catfish were sampled during October 2023 using tandem hoop nets. Length frequency results for Channel Catfish showed a size distribution between the 22.0- and 25.0-in size classes (Table 149). Total Channel Catfish catch rates have decreased since stocking ceased to promote natural reproduction with the installation of spawning boxes (Table 150). PSD and RSD_{24} were 100 and 40, respectively (Table 151). Relative weight values indicated good body condition for Channel Catfish ($W_r = 98$; Table 152). In May 2021, 25 wooden catfish spawning boxes were installed to promote spawning. In 2023, 2 boxes were missing, therefore only 23 spawning boxes were evaluated for spawning activities weekly from May 25th through June 22nd. Channel Catfish were observed using 21 (91%) of the 23 spawning boxes. Throughout this period, 21 individual observations were made of adult fish guarding an egg mass, seven boxes were observed with a pair of adult catfish, and multiples spawns were observed in 4 boxes. No Channel Catfish were stocked in 2023.

One application of aquatic herbicides was applied in July 2023 to maintain the dam spillway, park lots and boat ramps at Elmer Davis Lake.

Kincaid Lake (183 acres)

Spring diurnal electrofishing studies were conducted in May 2023 for length frequency, PSD, and CPUE for Largemouth Bass (Table 153). The total catch rate (153.5 fish/hr) was lower than the lake average of 207.8 fish/hr (Table 154). Largemouth Bass PSD and RSD_{15} were 64 (average = 68) and 44 (average = 45), respectively (Table 155). The population assessment indicated an “Excellent” bass population, which is above the average assessment rating of “Good” at Kincaid Lake (Table 156). Diurnal fall electrofishing for Largemouth Bass in October 2023 was completed to collect length frequency, relative weight, and index year-class strength at age 0 (Tables 157-159). Relative weight was acceptable ($W_r = 94$) and higher than the lake average of 92 (Table 158). CPUE for age-0 bass (29.3 fish/hr) was lower than the lake average of 37.7 fish/hr (Table 159). No Largemouth Bass were stocked at Kincaid Lake in 2023.

Kincaid Lake was stocked with 2,430 (13.3 fish/acre; 6.5 in) Channel Catfish in October 2023.

Time-lapse cameras were installed at the boat ramps located at the dam and state park marina access sites at Kincaid Lake from March 2023-February 2024 to estimate total usage (trips) and pressure (hours). This approach differs from previous daytime roving creel surveys in that these counts capture all usage types (boat anglers, bank anglers and recreational boaters). However, the primary usage of these sites was by anglers. The time-lapse camera recorded a picture of the entire fishing area (parking lot and boat ramp) every 10-minutes during daylight hours throughout the study period. Images were analyzed by randomly selecting 16 days (10 week and 6 weekend days) each month. For each randomly selected day, a total daily vehicle count was made based on the images for that day. From these counts, monthly averages were calculated. Average trip length (3.34 hrs) and average party size per vehicle (1.62 individuals) was derived from the averages from prior pressure count surveys conducted at Beaver, Benjy Kinman, Bullock Pen, and Corinth lakes.

Overall, it was estimated that 4,489 trips (24.5 trips/acre) were taken to Kincaid Lake from March 2023-February 2024 (Table 160). Monthly trip totals ranged from 10 trips in January 2024 to 857 trips in May 2023 (Figure 1). May (2,862 hours), June (2,385 hours), and July (2,422 hours) recorded the highest usage rates (Figure 2). It was estimated that Kincaid Lake received 14,993 hours (81.9 hours/acre) of recreational pressure during this 12-month study period (Table 160).

McNeely Lake (51 acres)

Spring diurnal electrofishing studies were conducted in April 2023 for PSD, length frequency, and CPUE for Largemouth Bass (Table 161). The total catch rate in 2023 (325.3 fish/hr) was higher than the lake average of 240.9 fish/hr (Table 162). Largemouth Bass PSD and RSD_{15} were 31 (average = 34) and 14 (average = 11), respectively (Table 163). The population assessment indicated an “Excellent” bass population, which has been the lake average since 2018 (Table 164). Diurnal fall electrofishing for Largemouth Bass was completed in September 2023 to collect length frequency, relative weight values, and index the year-class strength at age 0 (Tables 165-167). The relative weight value was equal to the historical lake average ($W_r = 88$; Table 166). CPUE for age-0 bass (91.8 fish/hr) was lower than the lake average of 120.6 fish/hr (Table 167); however, no Largemouth Bass were stocked in 2023.

Relative weight for Bluegill and Redear Sunfish was calculated from the fall diurnal electrofishing sample data. Overall condition was good for Bluegill (91) and excellent for Redear Sunfish (100; Table 168).

McNeely Lake was stocked with 1,275 (25.0 fish/acre; 6.5 in) Channel Catfish in November 2023.

Two applications of aquatic herbicides were applied in June and August 2023 to maintain the dam spillway, boat ramp, fishing pier, and bank fishing access sites at McNeely Lake.

A.J. Jolly Lake (175 acres)

Relative weight data for Largemouth Bass was collected at A.J. Jolly Lake in November 2023 (Table 169). Overall, Largemouth Bass condition was good, with larger fish being in excellent condition. In September 2023, the Campbell County Fiscal Court stocked 1,750 (10.0 fish/acre; 3.5 in) Largemouth Bass in A.J. Jolly Lake.

In November 2023, an electrofishing survey was completed for Saugeye. Saugeye were collected at 23.3 fish/hr from the 8.0- to 24.0-in size classes (Table 170). A total of 17,805 (101.7 fish/acre; 1.5 in) Saugeye were stocked in May 2023.

A.J. Jolly Lake was stocked with 1,750 (10.0 fish/acre; 6.5 in) Channel Catfish in October 2023.

Lincoln Homestead Lake (9 acres)

Length frequency, relative abundance, and CPUE of fish collected by electrofishing at Lincoln Homestead Lake (Washington Co.) in April 2023 are shown in Table 171. Largemouth Bass were collected from the 3.0- to 21.0-in size classes and Bluegill up to the 9.0-in size class. Trophy size (≥ 10.0 in) Redear Sunfish were sampled. Channel Catfish, Black Crappie and White Crappie were represented in the sample.

Reformatory Lake (54 acres)

Length frequency, relative abundance, and CPUE of fish collected by electrofishing at Reformatory Lake (Oldham Co.) in May 2023 are shown in Table 172. Largemouth bass were collected from the 3.0- to 20.0-in size classes, Bluegill from the 2.0- to 7.0-in size classes, and Redear Sunfish from the 2.0- to 8.0-in size classes. Other species observed included White Crappie, Black Crappie, Yellow Bass, Channel Catfish, and Flathead Catfish.

Reformatory Lake was stocked with 120 (2.2 fish/acre; 12.9 in) triploid Grass Carp in June 2023 and 1,090 (20.2 fish/acre; 6.5 in) Channel Catfish in November 2023.

Table 1. Yearly summary of sampling conditions by waterbody, species sampled and date.

Water body	Species	Date	Time (24hr)	Gear	Weather	Water temp. F	Water level	Secchi (in)	Conditions	Pertinent sampling comments
Herrington Lake	Crappie	4/4	1000	Shock	Overcast	59	733.8	34	Good	Cane Run (lower)
		4/5	1100	Shock	Overcast, windy	60	733.4	15		Kings Mill (upper)
		4/6	1000	Shock	Overcast, rainy	60	733.4	-		Gwinn Island (middle)
Lincoln Homestead	LMB/BG/RES	4/11	1030	Shock	Clear, sunny	59	Full	34	Good	Good sample
McNeely Lake	LMB	4/14	1000	Shock	Clear, sunny	67	Full	64	Good	Good sample
Herrington Lake	LMB	4/17	1100	Shock	Post frontal - cool	62	735.1	60	Good	Cane Run (lower)
		4/18	1100	Shock	-	60	735.2	-		Gwinn Island (middle)
		4/20	1030	Shock	Clear, sunny, windy	65	735.1	33		Kings Mill (upper)
Taylorsville Lake	LMB	4/17	1900	Shock	Clear, cool	61	547.3	36	Good	Ashes/Jacks creeks
		4/17	1900	Shock	Clear, cool	61	547.2	-		Big Beech Creek (Habitat crew completed sample)
		4/18	1900	Shock	Mostly cloudy, calm	65	547.2	31		Chowning Lane area
Guist Creek Lake	LMB	4/19	1100	Shock	-	63	Full	-	Good	Good sample
Elmer Davis Lake	LMB	4/25	1300	Shock	Clear, cool Post front conditions	62	Full	43	Good	Good sample
Benjy Kinman Lake	LMB	4/25	1900	Shock	Clear, cool	65	Full	47	Good	Good sample
Guist Creek Lake	LMB	4/26	1100	Shock	Clear, cool	63	Full	29	Good	Good sample
Corinth Lake	LMB	4/26	2030	Shock	Mostly clear, cool	-	Full	37	Good	Good sample
Bullock Pen Lake	LMB	4/27	1030	Shock	Clear, cool	-	761.2	34	Good	Good sample
Beaver Lake	LMB	5/1	1000	Shock	Overcast, cool Post frontal	60	Full	84	Good	Good sample
Kincaid Lake	LMB	5/2	1100	Shock	Mostly sunny	-	Full	33	Good	Good sample
Reformatory	LMB/BG/RES	5/3	1030	Shock	Sunny, major cold front	58	Full	36	Good	Good sample
Beaver Lake	BG/RES	5/17	1000	Shock	Mostly sunny, east wind	71	Full	78	Good	Good sample
Corinth Lake	BG/RES	5/18	1000	Shock	Sunny	69	Full	48	Good	Good sample
Elmer Davis Lake	BG/RES	5/22	1000	Shock	Mostly sunny	72	Full	19	Good	Good sample
Taylorsville Lake (Upper Lake)	Blue Catfish	7/5	0830	Shock	Sunny, hot	79	549.5	-	Poor	No thermocline due to recent heavy rains
Taylorsville Lake (Upper Lake)	Blue Catfish	8/21	0800	Shock	Hot, Sunny, Heat Advisory	81	546.4	32	Good	Good sample
Taylorsville Lake (Lower Lake)	Blue Catfish	8/22	0800	Shock	Hot, Sunny, Heat Advisory	83	546.4	39	Good	Good sample
Elmer Davis Lake	LMB/BLG/RES	9/18	1100	Shock	Clear, sunny	72	Down ~15"	-	Good	Good sample
Boltz Lake	LMB/BLG/RES	9/19	1000	Shock	Clear, sunny High pressure	62	Full	43	Good	Good sample
Bullock Pen Lake	LMB	9/21	1100	Shock	Clear, sunny High pressure	62	Full	43	Good	Good sample
Boltz Lake	LMB/BLG/RES	9/22	1030	Shock	Cloudy, light wind	72	Full	-	Good	Wr's only
Corinth Lake	LMB/BLG/RES	9/25	1030	Shock	-	70	-	43	Good	Good sample
Benjy Kinman Lake	LMB/BLG/RES	9/26	1030	Shock	Mostly sunny	72	Full	39	Good	Good sample
Guist Creek Lake	LMB	9/27	0930	Shock	Mostly cloudy	72	-	-	Good	Good sample
Beaver Lake	LMB/BLG/RES	9/28	1030	Shock	Cloudy, windy	72	Down ~12	22	Good	Good sample

Table 1 (cont.).

Water body	Species	Date	Time (24hr)	Gear	Weather	Water temp. F	Water level	Secchi (in)	Conditions	Pertinent sampling comments
McNeely Lake	LMB/BG/RES	9/29	1000	Shock	Sunny, light wind	74	Down ~3"	29	Good	Good sample
Benjy Kinman Lake	LMB/BG/RES	10/2	1000	Shock	-	73	-	-	Good	Wr's only, Big River Research crew
Taylorsville Lake	LMB	10/2	1030	Shock	Clear, high pressure	74	545.5	45	Good	Big Beech Creek Ashes/Jacks creeks Chowning Lane
		10/2	1030	Shock	Clear, high pressure	73	545.5	-		
		10/3	1030	Shock	Clear, high pressure	74	545.4	28		
Herrington Lake	LMB	10/3	1000	Shock	Sunny	74	733.9	34	Good	Kings Mill (upper) Gwinn Island (middle) Cane Run (lower)
		10/3	1000	Shock	Sunny	73	733.9	91		
		10/4	1100	Shock	Sunny	74	733.7	84		
Kincaid Lake	LMB	10/5	1100	Shock	Cloudy, prefrontal	72	Full	-	Good	Good sample
Taylorsville Lake	LMB	10/9	1000	Shock	-	70	545.7	-	Good	Wr's only
Guist Creek Lake	LMB	10/10	1000	Shock	Cool, breezy	66	Down ~36"	-	Good	Wr's only
Beaver Lake	LMB/BG/RES	10/12	1000	Shock	Sunny	66	Down ~15"	-	Good	Wr's only
Herrington Lake	Black Bass	10/16	1030	Shock	Cloudy, rain	67	733.2	-	Good	Wr's only
Benjy Kinman Lake	LMB	10/18	1000	Shock	Sunny	62	Down ~12"	-	Good	Wr's only
Elmer Davis Lake	Channel Catfish	10/20	1000	Hoop net	Cloudy, cool	59	Down ~15"	-	Good	Good sample
Benjy Kinman Lake	LMB	10/23	1000	Shock	-	62	Down ~12"	-	Good	Wr's only
Elmer Davis Lake	Crappie	10/25	1030	Shock	Cloudy, light breeze	60	Down ~18"	-	Good	Good sample
Beaver Lake	Channel Catfish	10/27	1030	Hoop net	Overcast	63	Down ~12"	-	Good	Good sample
Taylorsville Lake	Crappie/Morones	10/31	1000	Trapnet/	Sunny, cool	61	545.2	-	Good	FINs crew assisted with sample FINs sampled upper portion of lake CFD sampled lower portion of lake
		11/01	1000	Gillnet	Mostly cloudy	60	545.2	-		
		11/02	1000		Sunny, cool	60	545.2	-		
		11/03	1000		Sunny	59	545.2	-		
Benjy Kinman Lake	Channel Catfish	11/09	1000	Hoop net	-	-	-	-	Good	Good sample
AJ Jolly Lake	Saugeye	11/14	1100	Shock	-	53	Down ~12"	-	Good	Good sample
Guist Creek Lake	Saugeye	11/15	1100	Shock	-	54	Down ~48"	-	Good	Good sample
Taylorsville Lake	Saugeye	11/16	1030	Shock	Mostly cloudy	55	545.0	-	Good	Sampled in Van Buren area
Taylorsville Lake	Crappie/Morones	10/31	1000	Trapnet/	Sunny, cool	61	545.2	-	Good	FINs crew assisted with sample FINs sampled upper portion of lake CFD sampled lower portion of lake
		11/01	1000	Gillnet	Mostly cloudy	60	545.2	-		
		11/02	1000		Sunny, cool	60	545.2	-		
		11/03	1000		Sunny	59	545.2	-		
Benjy Kinman Lake	Channel Catfish	11/09	1000	Hoop net	-	-	-	-	Good	Good sample
AJ Jolly Lake	Saugeye	11/14	1100	Shock	-	53	Down ~12"	-	Good	Good sample
Guist Creek Lake	Saugeye	11/15	1100	Shock	-	54	Down ~48"	-	Good	Good sample
Taylorsville Lake	Saugeye	11/16	1030	Shock	Mostly cloudy	55	545.0	-	Good	Sampled in Van Buren area

Table 2. Length distribution and CPUE (fish/hr) of black bass and Saugeye collected in 7.5 hours of 15-minute electrofishing runs in Taylorsville Lake in April 2023.

Area	Species	Inch class																					Total	CPUE	SE
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
Van Buren	Largemouth Bass			11	49	40	16	10	7	33	57	26	23	30	20	27	20	6	2	1	1	1	380	152.0	13.4
	Saugeye																	1				2	3	1.2	0.9
Ashes Creek	Largemouth Bass	1	9	27	48	42	19	14	41	47	26	28	27	27	39	22	13	2	3	4	1		440	176.0	11.6
	Saugeye										1								1			1	1	4	1.6
Big Beech Creek	Largemouth Bass			16	23	30	21	6	7	25	28	18	15	11	16	18	15	8	3	1			261	104.4	10.1
	Saugeye																				1	1	2	4	1.2
Total	Largemouth Bass	1	9	54	120	112	56	30	55	105	111	72	65	68	75	67	48	16	8	6	2	1	1081	144.1	8.6
	Saugeye										1							1	1		1	2	5	11	1.5

Dataset = cfdpstvl.d23

Table 3. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Taylorsville Lake from 2014-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	46.9	4.1	40.1	3.4	27.3	2.7	29.7	2.8	1.2	0.4	144.1	8.6
2022	18.7	1.9	22.9	2.4	38.9	2.6	27.2	2.2	1.1	0.5	107.7	5.1
2021	13.5	2.9	37.7	3.1	77.2	5.6	20.9	3.7	0.9	0.3	149.3	11.4
2020	*No sample due to Covid-19 restrictions*											
2019	20.7	2.6	77.5	5.4	46.8	3.6	19.6	2.0	0.3	0.2	164.5	9.3
2018	24.7	3.6	83.5	7.6	41.3	4.1	35.3	3.6	0.4	0.2	184.4	14.5
2017	22.5	2.7	27.2	2.5	74.4	4.7	46.9	3.6	0.5	0.3	171.1	7.5
2016	15.9	2.5	59.2	4.8	98.8	6.6	44.8	3.4	0.9	0.4	218.7	13.2
2015	18.5	3.9	39.3	5.3	32.7	3.2	19.3	2.7	0.3	0.2	109.9	11.7
2014	17.1	2.8	40.5	7.6	35.1	4.1	21.3	2.3	0.5	0.3	114.0	13.4

Dataset = cfdpstvl.d14 - .d23

Table 4. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples in each area of Taylorsville Lake in 2023; 95% confidence intervals are in parentheses.

Area	Species	≥ Stock size	PSD	RSD ₁₅
Big Beech	Largemouth Bass	171	61 (± 7)	36 (± 7)
Ashes Creek	Largemouth Bass	294	56 (± 6)	29 (± 5)
Van Buren	Largemouth Bass	264	59 (± 6)	30 (± 6)
Total	Largemouth Bass	729	59 (± 4)	31 (± 3)

Dataset = cfdpstvl.d23

Table 5. Mean back calculated lengths (in) at each annulus for otoliths from Largemouth Bass collected from Taylorsville Lake in 2023.

Year	No.	Age									
		1	2	3	4	5	6	7	8	9	10
2022	55	6.0									
2021	33	6.4	10.2								
2020	14	7.0	11.0	12.8							
2019	12	7.2	11.2	13.2	14.8						
2018	10	6.8	10.9	12.6	13.7	14.6					
2017	13	6.3	11.4	13.7	14.9	15.9	17.0				
2016	6	6.3	10.4	12.5	13.9	15.1	16.2	17.0			
2015	2	7.0	11.2	14.1	15.8	17.1	17.9	18.7	19.3		
2014	2	5.7	10.6	12.9	15.3	17.4	18.3	19.2	19.8	20.6	
2013	2	5.3	9.7	12.0	13.6	15.1	16.0	16.9	17.9	18.7	19.2
Mean	149	6.4	10.7	13.0	14.5	15.5	16.9	17.6	19.0	19.7	19.2
Smallest		2.9	7.2	10.4	11.6	12.8	13.3	13.9	17.3	18.0	18.4
Largest		9.6	13.0	15.7	17.6	18.7	19.5	19.7	20.3	21.0	20.0
SE		0.1	0.1	0.2	0.2	0.3	0.3	0.5	0.4	0.6	0.8
95% ConLo		6.2	10.5	12.7	14.1	15.0	16.3	16.6	18.2	18.4	17.6
95% ConHi		6.6	11.0	13.3	14.9	16.0	17.5	18.7	19.9	20.9	20.8

Intercept value = 0.00

Dataset = cfdagtv1.d23

Table 6. Age frequency and CPUE (fish/hr) per inch class of Largemouth Bass collected during 7.5 hours of electrofishing at Taylorsville Lake during April 2023. Fish were collected in 15-minute runs.

Age	Inch class																				Total	%	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21					
1	1	9	54	120	112	50	16	6													369	34	49.2	4.2	
2						6	14	49	105	65	27										265	25	35.3	3.0	
3										28	45	30	9								111	10	14.8	1.4	
4									19			12	17	19	34						100	9	13.3	1.1	
5												18	26	38							81	7	10.8	1.3	
6													9	19	34	32	4	4			101	9	13.4	1.1	
7												6	9			16	8	1			40	4	5.3	0.5	
8																			3		3	0	0.4	0.1	
9																				3	2	5	0	0.7	0.3
10																	4			3		7	1	0.9	0.2
Total	1	9	54	120	112	56	30	55	105	111	72	65	68	75	67	48	16	8	6	2	1080	100	144.1	8.6	
%	0	1	5	11	10	5	3	5	10	10	7	6	6	7	6	4	1	1	1	0	100				

Dataset = cfdagstvl.d23 and cfdpstvl.d23

Table 7. Population assessment for Largemouth Bass collected during spring electrofishing at Taylorsville Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	12.7	49.2	27.3	29.7	1.2	-0.509	40%	17	Excellent
	Score	3	4	3	4	3				
2022	Value	13.4*	23.1	38.9	27.2	1.1	-0.446	36%	18	Excellent
	Score	4	3	4	4	3				
2021	Value	13.4*	15.1	77.2	20.9	0.9	-0.535	41%	17	Excellent
	Score	4	2	4	4	3				
2020	Value									
	Score				No Sample					
2019	Value	13.4*	42.8	46.8	19.6	0.3	-0.616	46%	17	Excellent
	Score	4	4	4	3	2				
2018	Value	13.4	26.3	41.3	35.3	0.4	-0.539	42%	17	Excellent
	Score	4	3	4	4	2				
2017	Value	12.9*	21.2	74.4	46.9	0.5	-0.552	42%	16	Good
	Score	3	2	4	4	3				
2016	Value	12.9*	24.6	98.8	44.8	0.9	-0.511	40%	17	Excellent
	Score	3	3	4	4	3				
2015	Value	12.9*	16.8	32.7	19.3	0.3	-0.616	46%	14	Good
	Score	3	2	4	3	2				
2014	Value	12.9	23.6	35.1	21.3	0.5	-0.590	45%	17	Excellent
	Score	3	3	4	4	3				

* Age data not collected

^Calculations based on age data gathered in previous years

Table 8. Length distribution and CPUE (fish/hr) of Largemouth Bass and Saugeye collected in 4.5 hours of 15-minute electrofishing runs for black bass at Taylorsville Lake in October 2023.

Area	Species	Inch class																		Total	CPUE	SE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Van Buren	Largemouth Bass	21	24	10	6	19	22	6	7	7	9	11	4	2		3			151	100.7	10.7	
	Saugeye															1			1	0.7	0.7	
Ashes Creek	Largemouth Bass	13	31	22	11		13	13	15	8	7	11	4	5		1			154	102.7	9.9	
	Saugeye																		0	0.0	-	
Big Beech Creek	Largemouth Bass	5	18	18	11	7	7	23	9	13	8	7	6	4	7	4	1		149	99.3	6.3	
	Saugeye												1					1	1	0.7	0.7	
Total	Largemouth Bass	18	70	64	32	13	39	58	30	28	22	27	21	13	9	5	4		454	100.9	5.0	
	Saugeye												1				1		2	0.4	0.3	

Dataset = cfdwrtvl.d23

Table 9. Number of fish and mean relative weight (W_r) for each length group of Largemouth Bass collected at Taylorsville Lake in October 2023; standard errors are in parentheses.

Area	Species	Length group						Total	
		8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
		No.	Wr	No.	Wr	No.	Wr		
Van Buren	Largemouth Bass	5	96 (3)	15	101 (2)	10	102 (2)	30	101 (1)
Briar Ridge Area	Largemouth Bass	28	88 (1)	34	91 (2)	32	99 (1)	94	93 (1)
Ashes Creek	Largemouth Bass	49	90 (1)	22	88 (1)	6	90 (3)	77	89 (1)
Big Beech Creek	Largemouth Bass	55	94 (1)	30	102 (6)	21	96 (2)	106	97 (2)
Total	Largemouth Bass	137	92 (1)	101	95 (2)	69	98 (1)	307	94 (1)

Dataset = cfdwrtvl.d23

Table 10. Indices of year-class strength at age 0 and age 1 and mean length (in) of Largemouth Bass collected in the fall in electrofishing samples at Taylorsville Lake. Age-1 CPUE and standard error could not be calculated for 2019 year-class due to COVID-19 work restrictions.

Year class	Area	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1 (natural)	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	5.1	0.1	42.0	4.1	22.5	2.0		
2022	Total	5.1	0.1	44.2	5.8	22.7	2.5	49.2	4.2
2021	Total	5.6	0.1	18.9	3.6	12.7	2.4	23.1	2.1
2020	Total	5.9	0.1	9.8	2.6	8.0	2.2	15.1	3.0
2019	Total	6.1	0.1	18.0	2.5	15.1	2.5	-	-
2018*	Total	6.3	0.1	23.7	3.2	22.0	2.9	42.8	6.0
2017	Total	5.2	0.1	46.2	3.9	26.2	3.7	27.7	3.7
2016	Total	5.0	0.1	49.3	7.1	21.3	2.7	25.1	2.6
2015	Total	6.0	0.1	14.4	2.1	12.7	2.1	24.6	3.0
2014	Total	5.5	0.1	21.1	4.3	15.4	3.0	16.8	3.7

Dataset = cfdwrtvl.d23

*Data only collected at Van Buren and Ashes Creek due to YOY stocking

Table 11. Length distribution and CPUE (fish/nn) of each species of crappie collected at Taylorsville Lake in 48 net-nights in October 2023.

Species	Inch class											Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13			
White Crappie	7	12	1	26	144	216	150	84	39	9	2	690	14.4	2.6
Black Crappie	1	1		1	4	21	23	1	1			53	1.1	0.4

Dataset = cfdtntvl.d23

Table 12. PSD and RSD₁₀ values calculated for crappie collected at Taylorsville Lake in 48 net-nights during October 2023. 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₀
White Crappie	671	75 (± 3)	20 (± 3)
Black Crappie	51	90 (± 8)	4 (± 5)

Dataset = cfdntvl.d23

Table 13. Mean back calculated lengths (in) at each annulus for otoliths from White Crappie trap netted at Taylorsville Lake in 2023.

Year class	No.	Age							
		1	2	3	4	5	6	7	8
2022	28	4.8							
2021	17	4.7	7.2						
2020	43	4.9	7.6	8.9					
2019	55	5.3	8.5	9.5	10.2				
2015	5	5.2	7.4	8.4	9.6	10.5	11.2	11.6	11.9
Mean	148	5.0	7.9	9.2	10.1	10.5	11.2	11.6	11.9
Smallest		3.7	5.4	6.1	6.6	9.7	10.4	10.8	11.0
Largest		7.3	10.4	11.4	12.5	11.1	12.0	12.4	12.7
SE		0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3
95% ConLo		4.9	7.8	9.0	9.8	9.9	10.6	11.0	11.3
95% ConHi		5.1	8.1	9.4	10.4	11.1	11.7	12.1	12.5

Intercept value = 0.00

Dataset = cfdagtl.d23

Table 14. Age frequency and CPUE (fish/nn) per inch class of White Crappie trap netted for 48 net-nights at Taylorsville Lake in 2023.

Age	Inch class											Total	%	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12	13					
0+	7	12											19	3	0.4	0.1
1+			1	25	63								88	13	1.8	0.4
2+					56	49	21						127	18	2.6	0.5
3+				1	19	108	75	42	5	1			251	36	5.2	0.9
4+					6	59	54	42	31	6	1		199	29	4.1	0.8
5+													0			
6+													0			
7+													0			
8+									3	2	1		6	1	0.1	0.1
Total	7	12	1	26	144	216	150	84	39	9	2		690	100	14.4	2.6
(%)	1	2	0	4	21	31	22	12	6	1	0		100			

Dataset = cfdntnl.d23 and cfdagtl.d23

CPUE of ≥ 8.0 -in White Crappie = 10.4 ± 1.9 fish/nn; ≥ 10.0 in = 2.8 ± 0.8 fish/nn

Table 15. Mean back calculated lengths (in) at each annulus for otoliths from Black Crappie trap netted at Taylorsville Lake in 2023

Year	class	No.	Age							
			1	2	3	4	5	6	7	8
2022		4	4.4							
2021		15	4.5	7.5						
2020		32	4.5	7.5	8.5					
2019		6	4.4	7.2	8.7	9.2				
2015		1	4.6	6.9	8.3	9.2	9.9	10.6	10.9	11.1
Mean		58	4.5	7.5	8.5	9.2	9.9	10.6	10.9	11.1
Smallest			3.1	5.2	6.8	8.5	9.9	10.6	10.9	11.1
Largest			5.5	8.7	9.9	10.5	9.9	10.6	10.9	11.1
SE			0.1	0.1	0.1	0.3				
95% ConLo			4.4	7.3	8.3	8.7				
95% ConHi			4.6	7.6	8.7	9.7				

Intercept value = 0.00

Dataset = cfdagtl.d23

Table 16. Age frequency and CPUE (fish/nn) per inch class of Black Crappie trap netted for 48 net-nights at Taylorsville Lake in 2023.

Age	Inch class									Total	%	CPUE	SE
	3	4	5	6	7	8	9	10	11				
0+	1	1								2	4	<0.1	<0.1
1+				1	2					3	6	0.1	<0.1
2+						10	4			14	26	0.3	0.1
3+					2	10	15	1		28	52	0.6	0.2
4+						1	4			5	9	0.1	<0.1
5+										0			
6+										0			
7+										0			
8+									1	1	2	<0.1	<0.1
Total	1	1		1	4	21	23	1	1	53	100	1.1	0.4
(%)	2	2		2	8	40	43	2	2	100			

Dataset = cfdntnvl.d23 and cfdagtl.d23

CPUE of ≥ 8.0 -in Black Crappie = 1.0 ± 0.4 fish/nn; ≥ 10.0 in = 0.04 ± 0.03 fish/nn

Table 17. Population assessment for White Crappie collected during fall trap netting at Taylorsville Lake from 2014-2023 (scoring based on statewide assessment).

Year		CPUE age 1 and older	Mean length age 2+ at capture	CPUE ≥ 8.0 in	CPUE age 1+	CPUE age 0+	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	14.0	8.2	10.4	1.8	0.4	-0.7613	53%	12	Fair
	Score	3	2	4	2	1				
2022	Value	15.4	8.7	10.5	4.4	0.9	-0.7424	52%	15	Good
	Score	4	2	4	3	2				
2021	Value	14.3	9.4	8.3	6.8	0.7	-0.7882	55%	14	Good
	Score	3	2	4	3	2				
2020	Value	10.8	11.0	8.3	10.2	1.1	-1.1281	68%	17	Excellent
	Score	3	4	4	4	2				
2019*	Value	7.5	9.7*	7.3	0.9*	8.8	ND		15	Good
	Score	3	3	4	1	4				
2018	Value	11.0	9.7	11.0	0.9	0.6	-0.5899	45%	13	Good
	Score	3	3	4	1	2				
2017	Value	12.5	9.3	10.8	2.2	0.3	-1.6256	80%	12	Fair
	Score	3	2	4	2	1				
2016	Value	16.8	11.3	7.9	16.4	0.4	-1.8811	85%	17	Excellent
	Score	4	4	4	4	1				
2015	Value	5.6	10.5	3.5	4.4	16.9	-1.5272	78%	16	Good
	Score	2	4	3	3	4				
2014	Value	2.9	10.9	2.2	2.5	0.4	-1.9429	86%	11	Fair
	Score	2	4	2	2	1				

* Age data not collected

ND = not determined

Table 18. Population assessment for Black Crappie collected during fall trap netting at Taylorsville Lake from 2014-2023 (scoring based on statewide assessment).

Year		CPUE	Mean	CPUE	CPUE	CPUE	Instantaneous	Annual	Total	Assessment
		age 1 and older	length age 2+ at capture							
2023	Value	1.1	8.8	1.0	0.1	<0.1	-0.3605	30%	7	Poor
	Score	1	2	2	1	1				
2022	Value	1.1	8.8	0.9	0.2	0.0	-0.1783	16%	7	Poor
	Score	1	2	2	1	1				
2021	Value	2.1	9.4	1.1	1.0	0.0	-0.6960	50%	10	Fair
	Score	2	3	2	2	1				
2020	Value	0.7	9.2	0.4	0.6	0.0	-0.6272	47%	7	Poor
	Score	1	3	1	1	1				
2019*	Value	1.2	9.8*	0.9	0.8*	0.1	ND		10	Fair
	Score	1	4	2	2	1				
2018	Value	2.3	9.8	2.4	0.8	0.1	ND		12	Fair
	Score	2	4	3	2	1				
2017	Value	3.8	9.4	3.4	0.7	0	-0.7052	51%	12	Fair
	Score	3	3	3	2	1				
2016	Value	4.8	9.0	3.0	2.1	0.1	-1.1342	68%	12	Fair
	Score	3	2	3	3	1				
2015	Value	8.6	9.2	2.0	6.0	1.2	-1.6083	80%	16	Good
	Score	3	3	3	4	3				
2014	Value	6.3	9.3	2.4	5.2	0.9	-1.2768	72%	15	Good
	Score	3	3	3	4	2				

* Age data not collected
 ND = not determined

Table 19. Number of fish and the mean relative weight (Wr) for each length group of crappie at Taylorsville Lake in October 2023.

Species	Length group						Total	
	5.0–7.9 in		8.0–9.9 in		≥ 10.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr		
White Crappie	94	89 (1)	189	88 (1)	98	87 (1)	381	88 (1)
Black Crappie	5	82 (4)	42	88 (1)	2	83 (8)	49	87 (1)

Dataset = cfdntvl.d23

Table 20. Length distribution and CPUE (fish/nn) of White Bass, hybrid Striped Bass, and Saugeye collected during 12 net-nights of gill netting in Taylorsville Lake in October 2023: numbers in parentheses are standard errors.

Species	Inch class																			Total	CPUE					
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			25	26	27	28	29
White Bass		3	1	1	6	18	12	3	1	1															46	3.8 (1.6)
Hybrid Striped Bass		7	44	20			5	3	1			3	1	2		2			2		1		1	3	95	7.9 (2.6)
Saugeye	1			9	6		4	7	27	18	5		4	3	1	2	2	9	12	6	3				119	9.9 (3.6)

Dataset = cfdgntvl.d23

Table 21. Mean back calculated lengths (in) at each annulus for otoliths from hybrid Striped Bass gill netted at Taylorsville Lake in 2023.

Year class	No.	Age																									
		1	2	3	4	5	6	7	8	9	10																
2022	9	7.2																									
2021	6	8.6	15.4																								
2019	4	11.3	17.1	19.6	22.0																						
2014	1	8.8	17.5	21.2	23.3	25.5	26.3	27.0	27.7	28.2																	
2013	3	11.3	16.6	20.1	22.6	24.4	26.0	26.7	27.3	28.1	28.6																
Mean	23	8.9	16.3	20.0	22.4	24.7	26.1	26.8	27.4	28.1	28.6																
Smallest		6.2	14.1	17.6	20.4	23.7	25.5	26.4	27.0	28.1	28.6																
Largest		13.3	18.1	21.4	23.5	25.5	26.5	27.2	27.8	28.2	28.7																
SE		0.5	0.3	0.5	0.5	0.4	0.2	0.2	0.2	<0.1	<0.1																
95% ConLo		8.0	15.6	19.0	21.5	23.9	25.6	26.4	27.1	28.1	28.6																
95% ConHi		9.8	17.0	20.9	23.3	25.4	26.5	27.2	27.8	28.2	28.7																

Intercept Value = 0.00

Dataset = cfdagntvl.d23

Table 22. Age frequency and CPUE (fish/nn) per inch class of hybrid Striped Bass gill netted for 12 net-nights at Taylorsville Lake in 2023.

Age	Inch class																			Total	%	CPUE	SE				
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25					26	27	28	29
0+	7	44	20																					71	75	5.9	2.5
1+						5	3	1																9	9	0.8	0.3
2+											3	1	2											6	6	0.5	0.2
3+																								0	0	0.0	
4+														2			2							4	4	0.3	0.2
5+																				1				1	1	0.1	0.1
6+																								0	0	0.0	
7+																								0	0	0.0	
8+																								0	0	0.0	
9+																						1		1	1	0.1	0.1
10+																							3	3	3	0.3	0.2
Total	7	44	20			5	3	1			3	1	2	2			2			1		1	3	95	100	7.9	2.6
%	7	46	21	0	0	5	3	1	0	0	3	1	2	0	2	0	2	0	1	0	1	3		100			

Dataset = cfdagtv1.d23 and cfdgntvl.d23

Table 23. Number of fish and mean relative weight (Wr) for each length group of hybrid Striped Bass collected at Taylorsville Lake in October 2023.

Species	Area	Length group						Total	
		8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
Hybrid Striped Bass	Total	No.	Wr	No.	Wr	No.	Wr	88	86 (1)
		64	87 (1)	9	82 (2)	15	87 (2)		

Dataset = cfdgntvl.d23

Table 24. Population assessment for hybrid Striped Bass collected during fall gill netting at Taylorsville Lake from 2014-2023 (scoring based on statewide assessment).

Year		CPUE (excluding age 0)	Mean length age 2+ at capture	CPUE ≥15.0 in	CPUE age 1+	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	2.0	18.2	1.3	0.8	-	-	6	Poor
	Score	1	3	1	1				
2022	Value	No Sample							
	Score								
2021	Value	4.6	18.4	2.4	2.3	-	-	9	Fair
	Score	2	3	2	2				
2020	Value	7.9	19.5	4.0	5.9	-	-	11	Good
	Score	2	4	2	3				
2019	Value	4.9	18.4	3.6	1.8	-	-	9	Fair
	Score	2	3	2	2				
2018	Value	6.7	17.9	2.9	5.1	-	-	10	Good
	Score	2	3	2	3				
2017	Value	10.0	18.0	7.8	2.8	-	-	11	Good
	Score	3	3	3	2				
2016	Value	12.2	16.8	9.5	3.2	-	-	10	Good
	Score	3	2	3	2				
2015	Value	5.1	18.0	3.4	1.8	-	-	9	Fair
	Score	2	3	2	2				
2014	Value	10.9	17.5	3.0	8.4	-	-	12	Good
	Score	3	3	2	4				

Table 25. Mean back calculated lengths (in) at each annulus for otoliths from White Bass gill netted at Taylorsville Lake in 2023.

Year class	No.	Age			
		1	2	3	4
2022	21	7.9			
2021	4	7.4	10.2		
2020	24	8.0	10.7	11.9	
2019	1	8.8	12.1	13.2	13.6
Mean	50	7.9	10.7	11.9	13.6
Smallest		5.3	8.8	10.7	13.6
Largest		9.4	12.1	14.1	13.6
SE		0.2	0.1	0.2	
95% ConLo		7.6	10.4	11.6	
95% ConHi		8.2	11.0	12.2	

Intercept Value = 0.00

Dataset = cfdagtlv.d23

Table 26. Age frequency and CPUE (fish/nn) per inch class of White Bass gill netted for 12 net-nights at Taylorsville Lake in 2023.

Age	Inch class									Total	%	CPUE	SE
	7	8	9	10	11	12	13	14	15				
0+	3	1								4	9	0.3	0.2
1+			1	6	9	1				17	37	1.4	0.7
2+					3	1				4	8	0.3	0.2
3+					7	10	2	1		20	44	1.7	0.6
7+									1	1	2	0.1	0.1
Total	3	1	1	6	18	12	3	1	1	46	100	3.8	1.6
%	3	8	3	15	33	30			10	100			

Dataset = cfdagntvl.d23 and cfdgntvl.d23

Table 27. Number of fish and mean relative weight (W_r) for each length group of White Bass collected at Taylorsville Lake in October 2023.

Species	Area	Length group						Total	
		6.0–8.9 in		9.0–11.9 in		≥12.0 in		No.	W_r
		No.	W_r	No.	W_r	No.	W_r		
White bass	Total	4	91 (4)	25	84 (1)	17	83 (2)	46	84 (1)

Dataset = cfdgntvl.d23

Table 28. Population assessment for White Bass collected during fall gill netting at Taylorsville Lake from 2014-2023 (scoring based on statewide assessment).

Year		CPUE (excluding age 0)	Mean length age 2+ at capture	CPUE ≥12.0 in	CPUE age 1+	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	3.5	11.6	1.4	1.4			6	Poor
	Score	2	1	2	1				
2022	Value					No Sample			
	Score								
2021	Value	4.5	12.5	2.0	2.3			8	Fair
	Score	2	2	2	2				
2020	Value	11.5	12.7	5.5	6.7			11	Good
	Score	3	2	3	3				
2019	Value	5.7	12.7	0.6	5.2			8	Fair
	Score	2	2	1	3				
2018	Value	2.4	13.0	0.8	1.8			6	Poor
	Score	1	2	1	2				
2017	Value	1.4	10.5	0.3	1.1			4	Poor
	Score	1	1	1	1				
2016	Value	3.4	12.0	1.5	1.0			6	Poor
	Score	2	1	2	1				
2015	Value	3.2	12.5	0.8	1.3			5	Poor
	Score	1	2	1	1				
2014	Value	4.5	11.3*	0.5	4.5			7	Fair
	Score	2	1	1	3				

* Age data not collected because no fish were captured at this age

Table 29. Mean back calculated lengths (in) at each annulus for otoliths from Saugeye gill netted at Taylorsville Lake in 2023.

Year class	No.	Age					
		1	2	3	4	5	6
2022	42	11.4					
2021	9	10.7	15.2				
2020	2	13.4	17.2	19.2			
2019	7	13.7	18.1	21.1	22.7		
2018	8	11.4	16.7	19.5	21.1	22.2	
2017	13	11.3	16.3	19.8	21.6	23.1	24.2
Mean	81	11.6	16.5	19.9	21.7	22.8	24.2
Smallest		6.0	9.9	15.4	16.7	17.6	21.7
Largest		15.4	19.2	23.2	23.8	24.1	26.0
SE		0.2	0.3	0.3	0.3	0.4	0.3
95% ConLo		11.2	15.9	19.4	21.1	22.0	23.5
95% ConHi		11.9	17.1	20.5	22.4	23.5	24.8

Intercept Value = 0.00

Dataset = cfdagtv1.d23

Table 30. Age frequency and CPUE (fish/nn) per inch class of Saugeye gill netted for 12 net-nights at Taylorsville Lake in 2023.

Age	Inch class																Total	%	CPUE	SE		
	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					25	26
0+	9	5																	14	12	1.2	0.5
1+		1		4	6	26	17	3											57	48	4.7	1.9
2+					1	1	1	2	6	3	1	1	1						17	10	0.9	0.4
3+											1		1	1					3	3	0.3	0.1
4+															5	3	2		10	9	0.9	0.4
5+										1	1				1	5		1	9	8	0.8	0.3
6+														1	3	3	4	2	13	11	1.1	0.5
Total	9	6	4	7	27	18	5	6	4	3	1	2	2	9	11	6	3	118	100	9.9	3.6	
%	8	5	3	6	23	15	4		3	3	1	2	2	8	10	5	3	100				

Dataset = cfdagtv1.d23 and cfdgntv1.d23

Table 31. Number of fish and mean relative weight (W_r) for each length group of Saugeye collected at Taylorsville Lake in October 2023.

Species	Area	Length group						Total	
		10.0–14.9 in		15.0–19.9 in		≥20.0 in		No.	W_r
		No.	W_r	No.	W_r	No.	W_r		
Saugeye	Total	44	88 (1)	30	86 (1)	35	92 (1)	118	89 (1)

Dataset = cfdgntv1.d23

Table 32. Length distribution and CPUE (fish/hr) of Saugeye collected in 1.5 hours of 15-minute electrofishing runs in Taylorsville Lake in November 2023; numbers in parentheses are standard errors.

Species	Inch class																	Total	CPUE	SE
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
Saugeye	2	3	10	7	2			4	3	1			1				1	34	22.7	5.5

Dataset = cfdwrgcl.d23

Table 33. Length distribution and CPUE (fish/hr) of Blue Catfish collected in 4.5 hours of 15-minute electrofishing runs for Blue Catfish in Taylorsville Lake in July and August 2023.

Month	Area	Species	Inch class																												Total	CPUE	SE			
			8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	...	29	30	31	32	...	35	36	37						
July	Upper	Blue Catfish				2	14	12	1	1	1	1	3	2																				37	24.7	6.6
Aug	Upper	Blue Catfish				2	22	111	118	9	4	10	12	16	7	4	2			1	2													320	213.3	54.7
Aug	Lower	Blue Catfish	1		1		15	39	21	17	4	2	10	6	4	8	8	2	2	2	1		2	1		1	1	1	1	1	1	1	150	100.0	23.7	
	Total	Blue Catfish	1		1	4	51	162	140	27	9	13	25	24	11	12	10	2	2	3	3		2	1		1	1	1	1	1	1	507	112.7	26.6		

Dataset = cfdpstvl.d23

Table 34. Electrofishing CPUE (fish/hr) for each length group of Blue Catfish collected from Taylorsville Lake from 2014-2023.

Year	Length group									
	<12.0 in		12.0-19.9 in		20.0-29.9 in		≥30.0 in		Total	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	1.3	0.5	100.2	25.7	10.0	2.4	1.1	0.7	112.7	26.6
2022	91.7	27.8	60.7	12.6	15.3	4.7	1.3	0.8	169.0	28.1
2021	34.7	17.7	104.0	32.5	11.0	3.8	0.7	0.5	150.3	39.6
2020	0.7	0.5	108.7	16.8	13.0	1.4	2.3	1.2	124.7	17.0
2019	7.0	3.5	92.3	17.5	12.0	3.3	0.7	0.5	112.0	21.7
2018	45.7	8.5	111.7	16.1	15.7	3.4	2.3	0.9	175.3	21.8
2017	87.3	23.7	118.0	21.2	9.0	5.5	2.3	1.3	216.7	30.8
2016	35.3	15.4	53.0	21.5	6.7	2.7	1.7	1.2	96.7	31.5
2015	31.4	16.0	47.1	16.6	4.6	2.1	1.9	1.0	84.9	24.6
2014	31.1	11.3	119.4	21.1	11.4	2.5	5.2	1.7	167.1	27.5

Dataset = cfdpstvl.d14-.d23

Table 35. Number of fish and mean relative weight (W_r) for each length group of Blue Catfish collected at Taylorsville Lake on 5 July 2023 and 21 and 22 August 2023; standard errors are in parentheses.

Area	Species	Length group						Total	
		12.0-19.9 in		20.0-29.9 in		≥30.0 in		No.	Wr
		No.	Wr	No.	Wr	No.	Wr		
Upper (Jul)	Blue Catfish	35	94 (1)	0		0		35	94 (1)
Upper (Aug)	Blue Catfish	302	92 (1)	16	94 (2)	0		318	92 (1)
Lower (Aug)	Blue Catfish	114	92 (1)	29	94 (2)	5	110 (3)	148	93 (1)
Total	Blue Catfish	451	93 (<1)	45	94 (1)	5	110 (3)	501	93 (<1)

Dataset = cfdpstvl.d23

Table 36. Species composition, relative abundance, and CPUE (fish/hr) of crappie collected in 4.5 hours of 15-minute electrofishing runs in Herrington Lake, April 2023.

Area	Species	Inch class										Total	CPUE	SE	
		6	7	8	9	10	11	12	13	14	15				
Upper	White Crappie												0	0.0	
	Black Crappie	1	4	10	6	3			1			1	26	20.8	3.4
Middle	White Crappie			1	2	1	5	1	1				11	7.3	1.9
	Black Crappie			5	5		1		1	1			13	8.7	3.2
Lower	White Crappie												0	0.0	
	Black Crappie							2	4				6	4.0	2.7
Total	White Crappie			1	2	1	5	1	1				11	2.6	1.1
	Black Crappie	1	4	15	11	3	1	2	6	1	1		45	10.6	2.4

Dataset = cfdpsher.d23

Table 37. PSD and RSD_{10} values calculated for crappie electrofished from Herrington Lake during April 2023. 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD_{10}
White Crappie	11	100 (± 0)	72 (± 28)
Black Crappie	45	89 (± 9)	31 (± 14)

Dataset = cfdpsher.d23

Table 38. Mean back calculated lengths (in) at each annulus for otoliths from White Crappie collected by electrofishing at Herrington Lake in 2023.

Year class	No.	Age						
		1	2	3	4	5	6	7
2021	2	4.8	9.2					
2020	6	4.0	8.4	10.8				
2016	2	3.8	6.9	9.2	10.7	11.7	12.5	13.2
Mean	10	4.1	8.2	10.4	10.7	11.7	12.5	13.2
Smallest		3.3	5.6	7.7	9.8	11.0	11.9	12.5
Largest		5.1	9.9	11.9	11.6	12.4	13.2	13.8
SE		0.2	0.5	0.5	0.9	0.7	0.6	0.7
95% ConLo		3.8	7.3	9.4	8.9	10.3	11.3	11.9
95% ConHi		4.4	9.2	11.4	12.4	13.0	13.8	14.4

Intercept value = 0.00

Dataset = cfdagher.d23

Table 39. Age frequency and CPUE (fish/hr) per inch class of White Crappie collected during 4.5 hours of electrofishing at Herrington Lake in 2023.

Age	Inch class						Total	%	CPUE	SE
	8	9	10	11	12	13				
1							0	0	0.0	
2	1	1					2	15	0.4	0.3
3		1	1	5			7	67	1.7	0.7
4							0	0	0.0	
5							0	0	0.0	
6							0	0	0.0	
7					1	1	2	18	0.5	0.3
Total	1	2	1	5	1	1	11	100	2.6	1.1
(%)	9	18	9	45	9	9	100			

Dataset = cfdpsher.d23 and cfdagher.d23

CPUE of ≥ 8.0 -in White Crappie = 2.6 ± 1.1 fish/hr; ≥ 10.0 in = 1.9 ± 1.0 fish/hr

Table 40. Population assessment for White Crappie collected during spring electrofishing at Herrington Lake from 2014-2023 (scoring based on lake-specific assessment).

Year		Total CPUE	Mean length age 2 at capture	Spring CPUE ≥ 8.0 in	Spring CPUE ≥ 10.0 in	CPUE age 2	Total score	Assessment rating
2023	Value	2.6	9.0	2.6	1.9	0.4		
	Score	1	3	1	1	1	7	Poor
2022	Value	1.3	8.8*	1.1	0.7	0.4 [^]		
	Score	1	3	1	1	1	7	Poor
2021	Value	1.6	8.8*	1.6	0.9	0.3 [^]		
	Score	1	3	1	1	1	7	Poor
2020	Value					No sample		
	Score							
2019	Value					No sample		
	Score							
2018	Value					No sample		
	Score							
2017	Value					No sample		
	Score							
2016	Value	10.9	8.8*	10.9	9.1	1.8 [^]		
	Score	1	3	1	2	1	8	Fair
2015	Value					No sample		
	Score							
2014	Value	16.7	8.8	16.2	15.1	0.9		
	Score	2	3	2	2	1	10	Fair

* Age data not collected

[^]Calculations based on age data gathered in previous years

Table 41. Mean back calculated lengths (in.) at each annulus for otoliths from Black Crappie collected by electrofishing at Herrington Lake in 2023.

Year class	No.	Age								
		1	2	3	4	5	6	7	8	
2021	27	4.4	8.9							
2020	3	4.4	8.6	11.0						
2019	8	4.7	8.9	11.5	13.0					
2016	1	4.9	7.7	11.8	13.3	14.0	14.6	15.1		
2015	1	4.9	9.6	11.5	12.7	13.1	13.8	14.3	14.6	
Mean	40	4.5	8.8	11.4	13.0	13.5	14.2	14.7	14.6	
Smallest		3.7	6.6	9.6	12.0	13.1	13.8	14.3	14.6	
Largest		5.5	10.4	12.1	13.7	14.0	14.6	15.1	14.6	
SE		0.1	0.2	0.2	0.1	0.4	0.4	0.4		
95% ConLo		4.3	8.5	11.0	12.7	12.8	13.4	13.9		
95% ConHi		4.6	9.1	11.8	13.3	14.3	15.0	15.5		

Intercept value = 0.00

Dataset = cfdagher.d23

Table 42. Age frequency and CPUE (fish/hr) per inch class of Black Crappie collected during 4.5 hours of electrofishing at Herrington Lake in 2023.

Age	Inch class										Total	%	CPUE	SE
	6	7	8	9	10	11	12	13	14	15				
1											0		0.0	
2	1	4	15	10	3						33	73	7.7	2.3
3				1		1					2	5	0.5	0.3
4							2	6			8	18	1.9	1.0
5											0		0.0	
6											0		0.0	
7										1	1	2	0.2	0.2
8									1		1	2	0.2	0.2
Total	1	4	15	11	3	1	2	6	1	1	45	100	10.6	2.4
%	2	9	33	24	7	2	4	13	2	2	100			

Dataset = cfdpsher.d23 and cfdagher.d23

CPUE of ≥ 8.0 -in Black Crappie = 9.4 ± 2.1 fish/hr; ≥ 10.0 in = 3.3 ± 1.1 fish/hr

Table 43. Population assessment for Black Crappie collected during spring electrofishing at Herrington Lake from 2014-2023 (scoring based on lake-specific assessment).

Year		Total CPUE	Mean length age 2 at capture	Spring CPUE ≥ 8.0 in	Spring CPUE ≥ 10.0 in	CPUE age 2	Total score	Assessment rating
2023	Value	10.6	8.8	9.4	3.3	7.7	9	Fair
	Score	2	3	2	1	1		
2022	Value	6.4	9.3*	6.4	4.9	1.6^	8	Fair
	Score	1	4	1	1	1		
2021	Value	8.2	9.3	7.8	3.3	5.6^	8	Fair
	Score	1	4	1	1	1		
2020	Value				No Sample			
	Score							
2019	Value				No Sample			
	Score							
2018	Value				No Sample			
	Score							
2017	Value				No Sample			
	Score							
2016	Value	34.4	8.9*	34.2	22.4	11.8^	16	Good
	Score	3	3	4	4	2		
2015	Value				No Sample			
	Score							
2014	Value	4.6	8.9	4.6	3.6	2.8	7	Poor
	Score	1	3	1	1	1		

* Age data not collected

^Calculations based on age data gathered in previous years

Table 44. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 7.5 hours of 15-minute electrofishing runs in Herrington Lake, April 2023.

Area	Species	Inch class																		Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20
Upper	Largemouth Bass			28	24	13	14	4	8	7	13	8	12	9	10	5	6	5	4	3	173	69.2	8.3
	Spotted Bass																				0	0.0	
Middle	Largemouth Bass			19	14	18	12	11	11	15	10	6	9	13	9	16	10	4	3	2	182	72.8	7.1
	Spotted Bass		4		1	1															6	2.4	1.1
Lower	Largemouth Bass		3	7	5	12	10	11	12	14	11	17	11	15	14	15	17	7	3		184	73.6	9.9
	Spotted Bass	1		2	1	2	1					4	3	2							16	6.4	2.1
Total	Largemouth Bass		3	54	43	43	36	26	31	36	34	31	32	37	33	36	33	16	10	5	539	71.9	3.9
	Spotted Bass	1	4	2	2	3	1					4	3	2							22	2.9	0.9

Dataset = cfdpsher.d23

Table 45. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from Herrington Lake from 2014-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	23.9	3.2	16.9	1.9	13.3	1.5	17.7	2.0	0.7	0.3	71.9	3.9
2022	35.6	5.9	25.7	3.7	21.6	2.7	21.1	2.9	0.9	0.4	104.0	9.6
2021	16.4	2.7	16.0	2.5	16.9	1.9	27.5	3.9	0.3	0.2	76.8	6.0
2020	*No sample due to Covid-19 restrictions*											
2019	32.7	4.8	27.6	2.6	40.0	3.7	37.5	3.1	0.5	0.3	137.7	9.7
2018	45.3	7.9	50.8	5.9	58.5	5.1	29.9	3.1	1.5	0.5	184.5	13.8
2017	26.4	3.0	40.5	4.4	30.8	3.6	16.3	1.6	1.2	0.4	114.0	6.5
2016	32.8	4.7	43.1	5.5	16.4	1.9	17.7	2.1	1.1	0.4	110.0	9.0
2015	32.9	3.4	16.8	2.2	20.9	1.9	17.6	2.5	0.8	0.3	88.3	6.1
2014	30.1	4.1	20.5	2.0	28.5	2.7	18.0	2.4	1.3	0.4	97.2	6.4

Dataset = cfdpsher.d14- .d23

Table 46. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples in each area of Herrington Lake in 2023; 95% confidence intervals are in parentheses.

Area	Species	≥ Stock size	PSD	RSD ₁₅
Lower	Largemouth Bass	147	67 (± 8)	38 (± 8)
Middle	Largemouth Bass	119	61 (± 9)	37 (± 9)
Upper	Largemouth Bass	94	66 (± 10)	35 (± 10)
Total	Largemouth Bass	360	65 (± 5)	37 (± 5)

Dataset = cfdpsher.d23

Table 47. Population assessment for Largemouth Bass collected during spring electrofishing at Herrington Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	13.6*	20.0	13.3	17.7	0.7				
	Score	4	2	1	3	3			13	Good
2022	Value	13.6*	38.5	21.6	21.1	0.9				
	Score	4	3	2	4	3			16	Good
2021	Value	13.6	16.4	16.9	27.5	0.3				
	Score	4	2	2	4	2			14	Good
2020	Value						No Sample			
	Score									
2019	Value	13.4*	20.5	40.0	37.5	0.5				
	Score	4	2	4	4	3			17	Excellent
2018	Value	13.4*	39.6	58.5	29.9	1.5				
	Score	4	3	4	4	4			19	Excellent
2017	Value	13.4*	31.1	30.8	16.3	1.2				
	Score	4	3	3	3	3			16	Good
2016	Value	13.4*	59.2	16.4	17.7	1.1				
	Score	4	4	2	3	3			16	Good
2015	Value	13.4	36.8	20.9	17.6	0.8				
	Score	4	3	2	3	3			15	Good
2014	Value	13.8*	33.9	28.5	18.0	1.3				
	Score	4	3	3	3	4			17	Excellent

* Age data not collected; ^ calculations based on age data gathered in previous years

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

Table 48. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 4.5 hours of 15-minute electrofishing runs in Herrington Lake in October 2023.

Area	Species	Inch class																			Total	CPUE	SE
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Lower	Largemouth Bass	2	13	8	6	6	2	6	5	5	3	3	3	4	6	5	1		1		79	52.7	17.0
	Spotted Bass		5		3	5	2	4	1	1		2										23	15.3
Middle	Largemouth Bass	35	61	12	8	4		3	3		2	1	3	4				4			140	93.3	30.5
	Spotted Bass	9	18	3	3	4	5	1	1		2	3										49	32.7
Upper	Largemouth Bass	12	62	8	3	5	1	1			1				2	1	1	2	1	1	101	67.3	27.1
	Spotted Bass		1					1					1									3	2.0
Total	Largemouth Bass	49	136	28	17	15	3	10	8	5	5	6	8	8	6	2	6	2	1		320	71.1	14.4
	Spotted Bass	9	24	3	6	9	7	6	2	1	2	5	1									75	16.7

Dataset = cfdwrher.d23

Table 49. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at Herrington Lake in October 2023. Standard errors are in parentheses.

Area	Species	Length group						Total	
		8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
		No.	Wr	No.	Wr	No.	Wr		
Lower	Largemouth Bass	19	93 (2)	10	93 (3)	13	95 (3)	42	94 (1)
Middle	Largemouth Bass	9	87 (4)	9	84 (2)	10	88 (2)	28	86 (2)
Upper	Largemouth Bass	1	86 (-)	1	91 (-)	8	95 (3)	10	94 (3)
Total	Largemouth Bass	29	91 (2)	20	89 (2)	31	93 (2)	80	91 (1)

Dataset = cfdwrher.d23

Table 50. Indices of year-class strength at age 0 and age 1 and mean length (in) of Largemouth Bass collected in the fall in electrofishing samples at Herrington Lake. Age-1 CPUE and standard error could not be calculated for 2019 year-class due to COVID-19 work restrictions

Year class	Area	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1 (natural)	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	3.7	0.1	54.9	13.2	7.6	1.6		
2022	Total	4.3	0.1	29.6	4.0	7.9	1.5	20.0	3.0
2021	Total	3.7	0.1	48.7	6.7	11.8	2.2	38.5	6.1
2020	Total	5.0	0.1	16.4	2.8	8.4	1.5	21.1	3.1
2019	Total	4.9	0.1	23.6	4.3	11.8	2.0	-	-
2018	Total	5.8	0.1	11.6	1.6	9.3	1.5	20.5	3.8
2017	Total	5.0	0.1	26.0	4.2	13.3	3.5	42.5	7.7
2016	Total	5.4	0.1	24.9	3.6	16.7	2.8	39.1	4.2
2015	Total	5.2	0.1	67.8	10.3	44.8	7.9	59.7	7.8
2014	Total	4.7	0.1	36.9	6.0	20.0	3.5	38.4	3.9

Dataset = cfdwrher.d23

Table 51. Fishery statistics derived from a daytime creel survey at Herrington Lake (2,410 acres) during 16 March through 31 October 2023.

	<u>2023</u>		<u>2018</u>		<u>2010</u>		<u>2004</u>	
	(3/16 to 10/31)		(3/16 to 10/31)		(3/16 to 10/31)		(3/7 to 10/31)	
Fishing Trips								
No. of fishing trips (per acre)	13,224	(5.5)	13,438	(5.6)	11,692	(4.9)	12,878	(5.3)
Fishing Pressure								
Total man-hours (S.E.) ^a	50,315	(2,018)	63,989	(4,447)	57,680	(1,455)	72,958	(1,861)
Man-hours/acre	20.9		26.6		23.9		30.3	
Catch / Harvest								
No. of fish caught (S.E.)	48,470	(6,191)	77,427	(11,510)	57,910	(5,352)	79,836	(8,260)
No. of fish harvested (S.E.)	35,453	(5,319)	40,563	(7,304)	33,396	(3,445)	27,343	(3,532)
Lb of fish harvested	27,172		28,114		18,903		13,606	
Harvest Rates								
Fish/hour	0.71		0.58		0.58		0.37	
Lb/hour	0.75		0.86		0.53		0.45	
Fish/acre	14.71		16.83		13.86		11.35	
Lb/acre	11.27		11.67		7.84		5.65	
Catch Rates								
Fish/hour	0.96		1.24		0.99		1.10	
Fish/acre	20.10		32.13		24.03		33.13	
Miscellaneous Characteristics								
Male	82.54		90.21		89.66		88.23	
Female	17.46		9.79		10.34		11.77	
Resident	99.77		98.02		98.37		98.06	
Non-resident	0.23		1.98		1.63		1.94	
Method (%)								
Still fishing	36.96		36.01		58.07		41.40	
Casting	54.88		54.08		33.45		50.81	
Fly	0.00		0.23		0.35		0.16	
Trolling	0.00		9.44		8.01		7.63	
Jugging	0.45		0.23		0.12			
Spider rigging	7.71							
Mode (%)								
Boat	80.50		79.25		77.00		90.16	
Bank	5.67		9.44		15.21		5.48	
Dock	13.83		8.97		7.78		4.35	
Other			2.33					

^a S.E. = Standard Error

Table 52. Fish harvest derived from a creel survey on Herrington Lake (2,410 acres) from 16 March to 31 October 2023.

	Black bass group	Largemouth Bass	Spotted Bass	Smallmouth Bass	Crappie group	White Crappie	Black Crappie	Blacknose Crappie	Catfish group	Channel Catfish	Flathead Catfish	Bullhead
No. caught (per acre)	10,807 (4.5)	6,705 (2.8)	4,022 (1.7)	80 (t)	5,412 (2.2)	4,442 (1.8)	880 (0.4)	91 (t)	3,643 (1.5)	2,256 (0.9)	689 (0.3)	698 (0.3)
No. harvested (per acre)	3,035 (1.3)	1,798 (0.7)	1,237 (0.5)		4,745 (2.0)	3,820 (1.6)	835 (0.3)	91 (t)	3,156 (1.3)	1,940 (0.8)	689 (0.3)	527 (0.2)
% of total no. harvested	8.6	5.1	3.5		13.4	10.8	2.4	0.3	8.9	5.5	1.9	1.5
Lb harvested (per acre)	3,718 (1.5)	2,641 (1.1)	1,077 (0.4)		3,967 (1.6)	3,199 (1.3)	723 (0.3)	45 (t)	5,675 (2.4)	2,762 (1.1)	2,703 (1.1)	210 (0.1)
% of total lb harvested	13.7	9.7	4.0		14.6	11.8	2.7	0.2	20.9	10.2	9.9	0.8
Mean length (in)		14.3	13.0			12.5	11.4			16.3	20.6	9.6
Mean weight (lb)		1.51	0.94			1.04	0.81			1.42	3.75	0.41
No. of fishing trips for that species	6,515				811				931			
% of all trips	49.2				6.1				8.9			
Hours fished for that species (per acre)	24,789 (10.3)				3,084 (1.3)				3,541 (1.5)			
No. harvested fishing for that species	2,963				4,617				2,729			
Lb harvested fishing for that species	3,625				3,849				5,204			
No./hour harvested fishing for that species	0.122				1.077				0.624			
% success fishing for that species	17.4				73.7				69.0			

t = <0.05

Table 52 (cont).

	Morone group	Hybrid Striped Bass	White Bass	Panfish group	Bluegill	Green Sunfish	Longear Sunfish	Warmouth Perch	Redear Sunfish	Drum	Gar	Carp	Buffalo	Anything
No. caught (per acre)	6,683 (2.8)	6,404 (2.7)	279 (0.1)	21,246 (8.8)	18,753 (7.8)	224 (0.1)	933 (0.4)	414 (0.2)	22 (t)	224 (0.1)	377 (0.2)	33 (t)	45 (t)	
No. harvested (per acre)	5,481 (2.3)	5,278 (2.2)	203 (0.1)	18,908 (7.8)	16,812 (7.0)	957 (0.4)	743 (0.3)	373 (0.2)	22 (t)		128 (0.1)			
% of total no. harvested	15.5	14.9	0.6	53.3	47.4	2.7	2.1	1.1	0.1		0.4			
Lb harvested (per acre)	11,736 (4.9)	11,598 (4.8)	139 (0.1)	1,973 (0.8)	1,783 (0.7)	75 (t)	55 (t)	52 (t)	8 (t)		104 (t)			
% of total lb harvested	43.2	42.7	0.5	7.3	6.6	0.3	0.2	0.2	t		0.4			
Mean length (in)		16.3			5.6	4.6	5.1	5.6	8.0		20.7			
Mean weight (lb)		2.21			0.11	0.07	0.08	0.13	0.35		0.79			
No. of fishing trips for that species	1,433			1,175										2,359
% of all trips	10.8			8.9										17.8
Hours fished for that species (per acre)	5,453 (2.3)			4,470 (1.9)										8,977
No. harvested fishing for that species	4,984			10,750										
Lb harvested fishing for that species	10,697			1,243										
No./hour harvested fishing for that species	0.785			2.309										
% success fishing for that species	72.7			71.3										33.7

Table 53. Length distribution (length of released fish are estimated) for each species of fish harvested at Herrington Lake from 16 March – 31 October 2023.

	Inch class																													
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	32	33
Largemouth Bass																														
Harvested											533	266	333	222	178	67	178	21												
Released							145	73	967	604	1499	314	508	242	266	48	218	24												
Spotted Bass																														
Harvested											747	320	85	21	43	21														
Released							25	50	727	1129	577	201	50				25													
Smallmouth Bass																														
Released											27	53																		
White Crappie																														
Harvested									549	1048	974	749	399	50	50															
Released						50	323	249																						
Black Crappie																														
Harvested									203	226	226	23	135	22																
Released							45																							
Blacknose Crappie																														
Harvested								23	68																					
Bluegill																														
Harvested	43		1968	7999	3764	1690	920	235	128	65																				
Released		68	835	361	497	113	68																							
Redear Sunfish																														
Harvested							22																							
Green Sunfish																														
Harvested			134	823																										
Released			42	125																										
Longear Sunfish																														
Harvested			270	293	180																									
Released				151	38																									
Warmouth Perch																														
Harvested				140	210				23																					
Released			20		20																									
Hybrid Striped Bass																														
Harvested											335		391	2485	279	168	726	56	447	140	28	112	111							
Released									188		344	313	156	31			31		31										32	
White Bass																														
Harvested					25				51	25	51		25		26															
Released									57		19																			
Channel Catfish																														
Harvested										52	131	262	52	551	184		367	52	79	52			26		52	26	26		28	
Released								57	57	57	115				30															

Table 53 (con't).

	Inch class																													
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	32	33	36	40
Flathead Catfish																														
Harvested											132		53		132		26	26	26	26	79	26			53		53	26	23	
Bullhead Catfish																														
Harvested			75	50				301		101																				
Released					171																									
Drum																														
Released												45	45	22	22		45										22	23		
Buffalo																														
Released														22	23															
Carp																														
Released												33																		
Gar																														
Harvested															26	26		51			25									
Released															50	25		50			50				50					24

Table 54. Black bass catch and harvest statistics derived from a creel survey at Herrington Lake (2,410 acres) for black bass caught and released by all anglers from 16 March to 31 October 2023.

	Largemouth Bass Catch and Release				Spotted Bass Catch and Release				Smallmouth Bass Catch and Release			
	Harvest	12.0 – 14.9 in	≥15.0 in	Total	Harvest	12.0 – 14.9 in	≥15.0 in	Total	Harvest	12.0 – 14.9 in	≥15.0 in	Total
Total no of bass	1,798	2,321	798	6,705	1,237	828	25	4,022		80		80
% of black bass harvested by no.	59.2				40.8							
Total weight of fish (lbs)	2,641	2,181	752	7,255	1,077	514	15	2,806		78		78
% of black bass harvest by weight	71.0				29.0							
Mean length	14.3				13.0							
Mean weight	1.51				0.94							
Rate (fish/hr)	0.037				0.027							

Table 55. Monthly black bass angling success at Herrington Lake during the 2023 creel survey.

Month	Total no. of black bass caught by all anglers	Total no. of black bass harvested by anglers	No. of fishing trips for black bass	Hours fished by black bass anglers	Black bass caught by black bass anglers	Black bass caught/hr by black bass anglers	Black bass harvested by black bass anglers	Black bass harvested/hr by black bass anglers
March	35	-	81	310	35	0.30	-	-
April	1,866	989	1,993	7,582	1,866	0.22	989	0.12
May	1,002	179	675	2,569	859	0.35	161	0.07
June	1,427	70	721	2,745	1,323	0.49	70	0.03
July	1,010	67	457	1,738	852	0.56	45	0.03
August	814	33	347	13212	652	0.74	-	-
September	3,412	942	1,448	5,510	3,360	0.57	942	0.16
October	1,241	755	792	3,013	1,242	0.36	756	0.22
Total	10,807	3,035	6,515	24,789	10,189		2,963	
Mean						0.39		0.08

t = < 0.01

Table 56. Temperate bass (*Morones*) catch and harvest statistics derived from a creel survey at Herrington Lake (2,410 acres) from 16 March to 31 October 2023.

	Harvest	Hybrid Striped Bass Catch and Release			Total	Harvest	White Bass Catch and Release		Total
		12.0 – 14.9 in	≥15.0 in	12.0 – 14.9 in			≥15.0 in		
Total no of <i>Morones</i>	5,278	813	125	6,404	203	19	-	279	
% of <i>Morones</i> harvested by no.	96.3%				3.7%				
Total weight of fish (lbs)	11,598	981	151	12,956	139	10	-	178	
% of <i>Morones</i> harvest by weight	98.8%				1.2%				
Mean length	16.3				11.6				
Mean weight	2.21				0.68				
Rate (fish/hr)	0.087				0.004				

Table 57. Monthly *Morone* angling success at Herrington Lake during the 2023 creel survey.

Month	Total no. of <i>Morones</i> caught by all anglers	Total no. of <i>Morones</i> harvested by all anglers	No. of fishing trips for <i>Morones</i>	Hours fished by <i>Morones</i> anglers	<i>Morones</i> caught by <i>Morone</i> anglers	<i>Morones</i> caught/hr by <i>Morone</i> anglers	<i>Morones</i> harvested by <i>Morone</i> anglers	<i>Morones</i> harvested/hr by <i>Morone</i> anglers
March	-	-	-	-	-	-	-	-
April	45	-	-	-	-	-	-	-
May	698	644	158	599	662	1.23	626	1.17
June	2,298	1,915	245	933	1,915	1.20	1,532	0.96
July	1,122	987	352	1,340	1,076	0.81	942	0.71
August	2,215	1,629	471	1,792	2,215	0.93	1,629	0.68
September	306	306	207	787	255	0.44	255	0.44
October	-	-	-	-	-	-	-	-
Total	6,683	5,481	1,433	5,453	6,123		4,984	
Mean						0.95		0.79

Table 58. Panfish catch and harvest statistics derived from a creel survey at Herrington Lake (2,410 acres) for panfish caught and released by all anglers from 16 March to 31 October 2023.

	Bluegill				Redear Sunfish				Other Panfish			
	Harvest	Catch and Release		Total	Harvest	Catch and Release		Total	Harvest	Catch and Release		Total
		6.0-7.9 in	≥8.0 in			6.0-7.9 in	≥8.0 in			6.0-7.9 in	≥8.0 in	
Total no of panfish	16,812	610	68	18,753	22	-	-	22	2,074	59	0	2,470
% of panfish harvested by no.	88.9				0.1				10.0			
Total weight of fish (lbs)	1,783	47	5	1,932	8	-	-	8	182	6	0	215
% of panfish harvest by weight	90.4				0.4				8.2			
Mean length	5.6				8.0				5.1			
Mean weight	0.11				0.35				0.09			
Rate (fish/hr)	0.36				0.0005				0.04			

Table 59. Monthly panfish angling success at Herrington Lake during the 2023 creel survey.

Month	Total no. of panfish caught by all anglers	Total no. of panfish harvested by all anglers	No. of fishing trips for panfish	Hours fished by panfish anglers	Panfish caught by panfish anglers	Panfish caught/hr by panfish anglers	Panfish harvested by panfish anglers	Panfish harvested/hr by panfish anglers
March	1,917	1,893	163	620	1,916	2.260	1,893	2.233
April	1,552	1,282	337	1,282	1,101	1.111	832	0.839
May	4,653	3,651	225	856	2,506	3.018	1,862	2.237
June	3,795	3,447	245	933	2,056	2.810	1,777	2.429
July	5,588	5,251	117	447	2,895	4.230	2,895	4.230
August	1,629	1,270	50	189	944	2.900	651	2.000
September	2,113	2,113	38	143	840	4.400	840	4.400
October	0	0	0	0	0	0	0	0
Total	21,246	18,908	1,175	4,470	12,258		10,750	
Mean						2.597		2.309

Table 60. Catfish catch and harvest statistics derived from a creel survey at Herrington Lake (2,410 acres) for catfish caught and released by all anglers from 16 March to 31 October 2023.

	Harvest	Channel Catfish Catch and Release			Total	Harvest	Flathead Catfish Catch and Release			Total	Harvest	Bullhead Catfish Catch and Release			Total
		12.0 – 14.9 in	≥15.0 in				12.0 – 14.9 in	≥15.0 in				12.0 – 14.9 in	≥15.0 in		
Total no of catfish	1,940	115	30	2,256	689	-	-	689	527	-	-	698			
% of catfish harvested by no.	61.5				21.8				16.7						
Total weight of fish (lbs)	2,762	51	14	2,902	2,703	-	-	2,703	210	-	-	257			
% of catfish harvest by weight	48.7				47.6				3.7						
Mean length	16.2				20.6				9.6						
Mean weight	1.42				3.75				0.41						
Rate (fish/hr)	0.034				0.012				0.010						

Table 61. Monthly catfish angling success at Herrington Lake during the 2023 creel survey.

Month	Total no. of catfish caught by all anglers	Total no. of catfish harvested by all anglers	No. of fishing trips for catfish	Hours fished by catfish anglers	Catfish caught by catfish anglers	Catfish caught/hr by catfish anglers	Catfish harvested by catfish anglers	Catfish harvested/hr by catfish anglers
March	46	35	31	116	47	0.57	35	0.43
April	45	45	103	390	45	0.17	45	0.17
May	555	501	113	428	430	0.57	394	0.52
June	1,219	1,149	144	549	1,079	1.17	1,009	1.09
July	651	651	117	447	471	0.84	471	0.84
August	847	521	273	1,038	847	0.83	521	0.51
September	280	255	132	501	279	0.55	254	0.50
October	0	0	0	0	0	0	0	0
Total	3,643	3,156	931	3,541	3,198		2,729	
Mean						0.72		0.62

Table 62. Crappie catch and harvest statistics derived from a creel survey at Herrington Lake (2,410 acres) for crappie caught and released by all anglers from 16 March to 31 October 2023.

	Harvest	White Crappie Catch and Release			Harvest	Black Crappie Catch and Release			Harvest	Blacknose Crappie Catch and Release		
		<10.0 in	≥10.0 in	Total		<10.0 in	≥10.0 in	Total		<10.0 in	≥10.0 in	Total
Total no of crappie	3,820	622	-	4,442	835	45		880	91			91
% of crappie harvested by no.	80.5				17.6				1.9			
Total weight of fish (lbs)	3,199	152	-	3,351	723	11		735	45			45
% of crappie harvest by weight	80.6				18.2				1.1			
Mean length	12.5				11.4				9.8			
Mean weight	1.04				0.81				0.50			
Rate (fish/hr)	0.071				0.017				0.002			

Table 63. Monthly crappie angling success at Herrington Lake during the 2023 creel survey.

Month	Total no. of crappie caught by all anglers	Total no. of crappie harvested by all anglers	No. of fishing trips for crappie	Hours fished by crappie anglers	Crappie caught by crappie anglers	Crappie caught/hr by crappie anglers	Crappie harvested by crappie anglers	Crappie harvested/hr by crappie anglers
March	-	-	-	-	-	-	-	-
April	1,709	1,439	337	1,282	1,709	1.32	1,439	1.11
May	1,181	1,127	180	685	1,110	0.93	1,074	0.90
June	1,950	1,741	216	823	1,915	1.55	1,706	1.38
July	359	224	52	199	337	1.42	202	0.85
August	195	195	25	94	196	1.50	196	1.50
September	-	-	-	-	-	-	-	-
October	18	18	-	-	-	-	-	-
Total	5,412	4,745	811	3,084	5,267		4,617	
Mean						1.23		1.08

HERRINGTON LAKE ANGLER ATTITUDE SURVEY 2023

1. Have you been surveyed this year? Yes - stop survey No – continue
2. Name _____ and Zip Code _____
3. On average how many times do you fish Herrington Lake in a year? (n=169)
First time: **3.6%** 1 to 4: **4.7%** 5 to 10: **26.6%** More than 10: **65.1%**
4. Which species of fish do you fish for at Herrington Lake (**check all that apply**)? (n=189)
Bass: **35.4%** Crappie: **9.5%** Hybrid striped bass: **12.2%** White Bass: **1.6%** Channel Catfish: **13.2%**
Flathead Catfish: **12.7%** Bluegill: **16.9%** Anything: **16.9%**
5. Which one species do you fish for most at Herrington Lake (**check only one**)? (n=189)
Bass: **34.9%** Crappie: **7.4%** Hybrid striped bass: **11.6%** White Bass: **1.1%** Channel Catfish: **11.6%**
Flathead Catfish: **0.5%** Bluegill: **16.9%** Anything: **16.0%**

-Answer the following questions for each species you fish for – (see question 4)

Bass Anglers

6. In general, what level of satisfaction or dissatisfaction do you have with bass fishing at Herrington Lake? (n=66)
Very satisfied: **90.9%** Somewhat satisfied: **4.6%** Neutral: **4.5%** Somewhat dissatisfied: **0%** Very dissatisfied: **0%**
- 6a. If you responded with very or somewhat satisfied in question (6) - What is the single most important reason for your Satisfaction? (n=62)
Number of fish: **83.9%** Size of fish: **16.1**
- 6b. If you responded with somewhat or very dissatisfied in question (6) - What is the single most important reason for your Dissatisfaction? (n=0)
7. Do you fish in any bass tournaments on Herrington Lake? (n=66) Yes: **51.5%** No: **48.5%**

Crappie Anglers

8. In general, what level of satisfaction or dissatisfaction do you have with crappie fishing at Herrington Lake? (n=18)
Very satisfied: **77.8%** Somewhat satisfied: **22.2%** Neutral: **0%** Somewhat dissatisfied: **0%** Very dissatisfied: **0%**
- 8a. If you responded with very or somewhat satisfied in question (8) - What is the single most important reason for your Satisfaction? (n=18)
Number of fish: **22.2%** Size of fish: **72.2%** Other: **5.6%**
- 8b. If you responded with somewhat or very dissatisfied in question (8) - What is the single most important reason for your Dissatisfaction? (n=0)

White Bass Anglers

9. In general, what level of satisfaction or dissatisfaction do you have with white bass fishing at Herrington Lake? (n=3)
Very satisfied: **33.3%** Somewhat satisfied: **33.3%** Neutral: **33.3%** Somewhat dissatisfied: **0%** Very dissatisfied: **0%**
- 9a. If you responded with very or somewhat satisfied in question (9) - What is the single most important reason for your Satisfaction? (n=2)
Number of fish: 100.0%
- 9b. If you responded with somewhat or very dissatisfied in question (9) - What is the single most important reason for your Dissatisfaction? (n=0)

Hybrid Striped Bass Anglers

10. In general, what level of satisfaction or dissatisfaction do you have with hybrid striped bass fishing at Herrington Lake? (n=21)
Very satisfied: **81.0%** Somewhat satisfied: **19.0%** Neutral: **0%** Somewhat dissatisfied: **0%** Very dissatisfied: **0%**
- 10a. If you responded with very or somewhat satisfied in question (10) - What is the single most important reason for your Satisfaction? (n=21)
Number of fish: **42.9%** Size of fish: **57.1%**
- 10b. If you responded with somewhat or very dissatisfied in question (10) - What is the single most important reason for your Dissatisfaction? (n=0)

Channel Catfish Anglers

11. In general, what level of satisfaction or dissatisfaction do you have with channel catfish fishing at Herrington Lake? (n=22)
Very satisfied: 86.4% Somewhat satisfied: 0% Neutral: 13.6% Somewhat dissatisfied: 0% Very dissatisfied: 0%
- 11a. If you responded with very or somewhat satisfied in question (11) - What is the single most important reason for your Satisfaction? (n=18)
Number of fish: **55.6%** Size of fish: **44.4%**
- 11b. If you responded with somewhat or very dissatisfied in question (11) - What is the single most important reason for your Dissatisfaction? (n=0)

Flathead Catfish Anglers

12. In general, what level of satisfaction or dissatisfaction do you have with flathead catfish fishing at Herrington Lake? (n=18)
Very satisfied: **88.9%** Somewhat satisfied: **0%** Neutral: **11.1%** Somewhat dissatisfied: **0%** Very dissatisfied: **0%**
- 12a. If you responded with very or somewhat satisfied in question (12) - What is the single most important reason for your Satisfaction? (n=16)
Number of fish: **25.0%** Size of fish: **75.0%**
- 12b. If you responded with somewhat or very dissatisfied in question (12) - What is the single most important reason for your Dissatisfaction? (n=0)

All Anglers

13. Are you satisfied with the current size and creel limits on all sport fish at Herrington Lake? (n=173) Yes: **99.4%** No: 0.6%

If NO:

- 13a. If not, which species are you dissatisfied with and what size and creel limits would you prefer? (n=0)

Table 64. Species composition, relative abundance, and CPUE (fish/hr) of black bass and Saugeye collected in 3.0 hours of 15-minute diurnal electrofishing runs in Guist Creek Lake, May 2023.

Species	Inch class																		Total	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Largemouth Bass	5	45	43	21	44	68	41	30	36	33	33	30	56	50	42	35	19	8	3	642	214.0	15.4
Saugeye																				0	0.0	0.0

Dataset = cfdpsgcl.d23

Table 65. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from Guist Creek Lake from 2014-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		>20.0 in		CPUE	SE
2023	52.7	8.2	58.3	3.0	32.0	3.4	67.3	8.8	3.7	1.0	214.0	15.4
2022	31.3	4.9	48.3	5.1	46.0	3.0	67.3	8.3	4.7	1.2	193.0	15.9
2021	9.0	1.8	56.3	6.6	35.7	3.6	53.3	7.8	5.3	1.6	154.3	12.2
2020	No sample due to Covid-19 restrictions											
2019	22.7	5.1	42.3	5.7	57.0	6.7	67.7	5.1	6.3	1.2	189.7	13.9
2018	11.0	1.9	111.7	10.3	64.7	5.6	64.3	8.1	5.3	1.4	251.7	18.3
2017	13.0	3.3	57.3	7.3	36.0	5.0	70.0	11.2	5.7	1.7	176.3	21.2
2016	No sample											
2015	28.7	8.4	86.0	6.5	47.0	4.9	63.7	10.2	3.3	1.2	225.3	22.2
2014	13.3	2.4	43.3	5.4	32.7	4.6	49.3	6.8	4.3	1.3	138.7	15.8

Dataset = cfdpsgcl.d14- d23

Table 66. PSD and RSD₁₅ values obtained for Largemouth Bass from spring nocturnal electrofishing samples in Guist Creek Lake in 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Largemouth Bass	484	64 (± 4)	44 (± 4)

Dataset = cfdpsgcl.d23

Table 67. Population assessment for Largemouth Bass collected during spring electrofishing at Guist Creek Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	12.5*	36.8	32.0	67.3	3.7			19	Excellent
	Score	4	3	4	4	4				
2022	Value	12.5*	21.7	46.0	67.3	4.7			19	Excellent
	Score	4	3	4	4	4				
2021	Value	12.5*	8.3	35.7	53.3	5.3			17	Excellent
	Score	4	2	3	4	4				
2020	Value						No Sample			
	Score									
2019	Value	12.5*	16.0	57.0	67.7	6.3			18	Excellent
	Score	4	2	4	4	4				
2018	Value	12.5*	7.0	64.7	64.3	5.3			17	Excellent
	Score	4	1	4	4	4				
2017	Value	12.5	12.7	36.0	70.0	5.7			17	Excellent
	Score	4	2	3	4	4				
2016	Value						No Sample			
	Score									
2015	Value	12.2*	13.0	47.0	63.7	3.3			17	Excellent
	Score	4	2	4	4	3				
2014	Value	12.2*	3.7	32.7	49.3	4.3			16	Good
	Score	4	1	3	4	4				

* Age data not collected

^Calculations based on age data gathered in previous years

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

Table 68. Length frequency and CPUE (fish/hr) of Largemouth Bass and Saugeye collected in 1.5 hours of 15-minute electrofishing runs for black bass in Guist Creek Lake in September 2023.

Species	Inch class																				Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Largemouth Bass	2	32	26	12	4	10	31	16	18	23	27	17	19	11	23	19	15	11	2	1	319	212.7	7.2
Saugeye							1												1		2	1.3	0.8

Dataset = cfdwrgcl.d23

Table 69. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at Guist Creek Lake in September and October 2023. Standard errors are in parentheses.

Species	Length group						Total	
	8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr		
Largemouth Bass	111	89 (1)	79	96 (1)	170	100 (1)	360	96 (1)

Dataset = cfdwrgcl.d23

Table 70. Indices of year-class strength at age 0 and age 1 and mean lengths (in) of Largemouth Bass collected in the fall in electrofishing samples at Guist Creek Lake.

Year class	Area	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.3	0.1	50.7	4.7	10.7	2.8		
2022	Total	4.3	0.1	57.3	8.9	7.3	1.6	36.8	7.0
2021	Total	4.1	0.1	23.7	3.2	4.7	1.2	21.7	3.4
2020	Total	4.4	0.1	32.0	5.8	9.3	3.2	8.3	1.9
2019	Total					No Sample			
2018	Total	4.8	0.1	29.3	6.6	10.7	3.4	15.3	4.5
2017	Total	4.1	0.1	75.3	20.3	18.7	4.3	7.0	1.8
2016	Total	5.0	0.1	56.0	8.6	29.3	7.4	11.0	3.0
2015	Total	5.0	0.1	49.3	5.1	28.0	2.3	---	
2014	Total	4.0	0.1	27.3	5.2	3.3	0.7	13.0	6.4

Table 71. Length frequency and CPUE (fish/hr) of Saugeye collected in 1.5 hours of 15-minute electrofishing runs in Guist Creek Lake in November 2023.

Species	Inch class										Total	CPUE	SE
	11	12	13	14	15	16	17	18	19	20			
Saugeye	1				2	1	1		5	3	13	8.7	1.2

Dataset = cfdwrgcl.d23

Table 72. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 2.0 hours of 15-minute electrofishing runs in Beaver Lake, May 2023.

Species	Inch class																		Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth Bass	31	71	25	15	17	38	49	73	40	48	25	12	7	9	3	3	1	1	468	234.0	11.3

Dataset = cfdpsbvr.d23

Table 73. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from Beaver Lake from 2014-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		>20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	79.5	8.7	100.0	8.8	42.5	7.6	12.0	1.1	0.5	0.5	234.0	11.3
2022	89.0	18.5	78.0	9.5	43.0	7.5	12.5	2.1	1.0	0.7	222.5	31.5
2021	108.0	9.9	116.0	8.8	38.0	4.1	16.0	3.3	4.0	1.5	278.0	16.4
2020	136.0	13.2	182.0	14.6	27.0	6.5	9.5	1.3	2.0	1.1	354.5	24.3
2019	117.5	16.8	118.0	11.8	20.0	4.9	9.5	2.1	1.5	0.7	265.0	22.5
2018	130.0	12.1	223.0	18.4	30.0	5.4	3.5	1.6	0.0	0.0	386.5	23.7
2017	279.0	37.2	160.5	16.5	35.5	5.1	5.0	1.8	0.5	0.5	480.0	45.1
2016	106.5	21.4	104.0	13.2	38.0	2.4	15.0	2.9	4.5	1.8	263.5	31.0
2015	64.8	9.5	126.5	19.9	22.8	4.1	12.5	1.8	2.8	0.8	226.5	31.3
2014	73.5	10.7	116.0	12.5	21.0	3.3	14.5	2.7	2.0	1.1	225.0	21.2

Dataset = cfdpsbvr.d14 - .d23

Table 74. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples in Beaver Lake in 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Largemouth Bass	309	35 (± 6)	8 (± 3)

Dataset = cfdpsbvr.d23

Table 75. Population assessment for Largemouth Bass collected during spring electrofishing at Beaver Lake from 2014-2023 (scoring based on statewide assessment).

Year	Mean length age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value Score	10.9 3	71.3 4	42.5 3	12.0 2	0.5 2	-0.5931	45%	14 Good
2022	Value Score	11.3* 3	57.5 4	43.0 3	12.5 2	1.0 2			14 Good
2021	Value Score	11.3* 3	107.5 4	38.0 3	16.0 3	4.0 4			17 Excellent
2020	Value Score	11.3* 3	131.5 4	27.0 3	9.5 2	2.0 3			15 Good
2019	Value Score	11.3* 3	117.5 4	20.0 2	9.5 2	1.5 2			13 Good
2018	Value Score	11.3 3	126.5 4	30.0 3	3.5 1	0.0 1			12 Fair
2017	Value Score	10.8* 3	279.0 4	35.5 3	5.0 1	0.5 2			13 Good
2016	Value Score	10.8* 3	103.0 4	38.0 3	15.0 3	4.5 4			17 Excellent
2015	Value Score	10.8* 3	46.3 3	22.8 2	12.5 2	2.8 3			13 Good
2014	Value Score	10.8 3	47.3 3	21.0 2	14.5 3	2.0 3			14 Good

* Age data not collected

^Calculations based on age data gathered in previous years

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

Table 76. Mean back calculated lengths (in) at each annulus for otoliths from Largemouth Bass collected in the spring from Beaver Lake in 2023.

Year class	No.	Age									
		1	2	3	4	5	6	7	8	9	10
2022	34	5.3									
2021	25	5.4	8.4								
2020	29	5.1	8.6	10.9							
2019	23	6.3	9.8	12.0	13.7						
2018	12	6.3	9.9	12.4	14.1	15.6					
2017	2	6.2	9.8	11.5	13.2	14.6	16.4				
2016	5	6.2	9.5	11.7	13.1	14.3	15.4	16.4			
2015	1	4.9	9.2	12.7	14.0	16.0	17.4	18.5	19.5		
2013	1	6.5	11.0	12.8	13.9	15.2	16.5	17.8	18.8	19.6	20.4
Mean	132	5.6	9.1	11.6	13.7	15.2	16.0	16.9	19.2	19.6	20.4
Smallest		3.3	6.8	9.1	11.8	12.7	13.2	13.7	18.8	19.6	20.4
Largest		8.0	11.7	14.3	16.4	17.9	17.4	18.5	19.5	19.6	20.4
SE		0.1	0.1	0.1	0.2	0.3	0.5	0.7	0.3		
95% ConLo		5.4	8.9	11.3	13.4	14.6	15.0	15.5	18.5		
95% ConHi		5.8	9.3	11.8	14.0	15.8	17.0	18.3	19.8		

Intercept value = 0.00
 Dataset = cfdagbvr.d23

Table 77. Age frequency and CPUE (fish/hr) per inch class of Largemouth Bass collected during 2.0 hours of electrofishing at Beaver Lake during April 2023. Fish were collected in 15-minute runs.

Age	Inch class																		Total	%	CPUE	SE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
1	31	71	25	14	2															143	30	71.3	8.4	
2				1	15	38	22	8												84	18	42.4	2.5	
3							27	65	36	22										150	32	74.9	6.8	
4									4	26	19	7	2	5						63	13	31.5	5.2	
5											3	5	3		2					13	3	6.5	0.8	
6													1		1					2	0	0.8	0.1	
7											3		1	5		3				12	2	5.6	0.7	
8																			1	1	0	0.5	0.5	
9																				0	0	0.0		
10																				1	1	0	0.5	0.5
Total	31	71	25	15	17	38	49	73	40	48	25	12	7	10	3	3	1	1		469	100	234.0	11.3	
%	7	15	5	3	4	8	10	16	9	10	5	3	1	2	1	1	0	0		100				

Dataset = cfdgsvr.d23 and cfdpsvvr.d23

Table 78. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 1.5 hours of 15-minute electrofishing runs for black bass in Beaver Lake in September 2023.

Species	Inch class																				Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Largemouth Bass	10	88	72	24	4	20	42	29	29	52	41	15	10	6	1	3	4	1	1	1	452	301.3	36.5

Dataset = cfdwrbvr.d23

Table 79. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at Beaver Lake in fall 2023; standard errors are in parentheses.

Species	Length group							
	8.0–11.9 in		12.0–14.9 in		≥15.0 in		Total	
	No.	Wr	No.	Wr	No.	Wr	No.	Wr
Largemouth Bass	100	86 (2)	81	85 (1)	38	89 (1)	219	86 (1)

Dataset = cfdwrbvr.d23

Table 80. Indices of year-class strength at age 0 and age 1 and mean length (in) of Largemouth Bass collected in the fall in electrofishing samples at Beaver Lake.

Year class	Area	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.1	0.1	132.0	19.7	18.7	8.0		
2022	Total	4.4	0.1	135.3	16.3	30.0	6.2	71.3	8.4
2021	Total	4.1	0.1	69.3	12.4	9.3	3.4	57.5	15.9
2020	Total	3.7	0.1	232.0	26.1	17.3	2.2	107.5	9.8
2019	Total	5.1	0.1	209.3	29.7	119.3	20.3	131.5	13.5
2018	Total	5.2	0.1	196.0	31.6	118.7	26.8	117.5	16.8
2017	Total	4.8	0.1	227.3	23.1	84.0	13.0	126.5	11.8
2016	Total	5.6	0.1	370.0	34.9	320.0	25.8	279.0	37.2
2015	Total	4.2	0.1	184.5	23.6	28.5	4.4	103.0	20.9
2014	Total	4.1	0.1	94.7	15.0	14.0	3.5	46.3	7.6

Table 81. Species composition, relative abundance, and CPUE (fish/hr) of Bluegill and Redear Sunfish collected in 1.25 hours of 7.5-minute electrofishing runs in Beaver Lake, May 2023.

Species	Inch class									Total	CPUE	SE
	2	3	4	5	6	7	8	9	10			
Bluegill	20	87	102	55	73	66				403	322.4	24.8
Redear Sunfish	2	1	20	22	31	63	17	10	2	168	134.4	24.1

Dataset = cfdpsbvr.d23

Table 82. PSD and RSD values calculated for sunfish collected during 1.25 hours of electrofishing at Beaver Lake during May 2023. Fish were collected in 7.5-minute runs. 95% confidence intervals are in parentheses.

Species	\geq Stock size	PSD	RSD ^a
Bluegill	383	36 (\pm 5)	0 (\pm 0)
Redear Sunfish	165	56 (\pm 8)	7 (\pm 4)

^aBluegill = RSD₈; Redear Sunfish = RSD₉

Dataset = cfdpsbvr.d23

Table 83. Electrofishing CPUE (fish/hr) for each length group of Bluegill collected from Beaver Lake from 2014-2023.

Year	Length group								Total	
	<3.0 in		3.0–5.9 in		6.0-7.9 in		>8.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	16.0	4.6	195.2	21.5	111.2	22.4	0.0	0.0	322.4	24.8
2022	9.6	2.3	262.4	33.3	172.0	31.3	0.8	0.8	444.8	58.1
2021	No Sample									
2020	No Sample									
2019	1.6	1.1	94.4	10.6	117.6	16.0	8.8	2.5	222.4	16.0
2018	0.8	0.8	150.4	18.5	150.4	28.9	12.8	3.0	314.4	43.0
2017	4.0	1.8	136.8	23.5	247.2	66.1	14.4	3.5	402.4	87.8
2016	33.6	12.0	213.6	30.6	201.6	45.1	1.6	1.1	450.4	81.4
2015	0.0	0.0	160.8	16.6	212.0	37.0	0.0	0.0	372.8	44.9
2014	1.6	1.6	252.8	33.4	252.8	56.6	0.0	0.0	507.2	37.4

Dataset = cfdpsbvr.d14 - .d23

Table 84. Population assessment for Bluegill collected during spring electrofishing at Beaver Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 2 at capture	Years to 6.0 in	CPUE ≥6.0 in	CPUE ≥8.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	4.4	3-3+	111.2	0.0	-	-	11	Good
	Score	3	3	4	1				
2022	Value	4.1	3-3+	172.8	0.8	-	-	11	Good
	Score	2	3	4	2				
2021	Value	No Sample							
	Score	No Sample							
2020	Value	No Sample							
	Score	No Sample							
2019	Value	4.6	2-2+*	126.4	8.8	-	-	15	Excellent
	Score	3	4	4	4				
2018	Value	4.4*	2-2+*	163.2	12.8	-	-	15	Excellent
	Score	3	4	4	4				
2017	Value	4.4	2-2+	261.6	14.4	-	-	15	Excellent
	Score	3	4	4	4				
2016	Value	4.7*	3-3+*	203.2	1.6	-	-	13	Good
	Score	3	3	4	3				
2015	Value	4.7	3-3+	212.0	0.0	-	-	11	Good
	Score	3	3	4	1				
2014	Value	4.7*	2-2+	252.8	0.0	-	-	12	Good
	Score	3	4	4	1				

* Age data not collected

Table 85. Electrofishing CPUE (fish/hr) for each length group of Redear Sunfish collected from Beaver Lake from 2014-2023.

Year	Length group										Total	
	<3.0 in		3.0-5.9 in		6.0-7.9 in		>8.0 in		>10.0 in		CPUE	SE
2023	1.6	1.1	34.4	9.6	75.2	17.3	23.2	8.1	1.6	1.1	134.4	24.1
2022	0.8	0.8	38.4	4.4	28.8	6.1	28.8	7.4	0.8	0.8	96.8	10.0
2021	No Sample											
2020	No Sample											
2019	0.0	0.0	11.2	3.2	2.4	1.2	10.4	4.5	0.0	0.0	24.0	4.6
2018	0.0	0.0	7.2	3.3	5.6	1.7	4.0	2.2	0.0	0.0	16.8	4.5
2017	0.0	0.0	4.0	2.2	4.8	2.1	7.2	2.8	4.0	2.2	16.0	2.9
2016	0.8	0.8	4.8	1.8	3.2	1.8	2.4	1.7	0.0	0.0	11.2	2.1
2015	0.0	0.0	1.6	1.1	3.2	1.3	1.6	1.1	0.0	0.0	6.4	1.6
2014	0.0	0.0	3.2	2.0	6.4	1.6	12.8	5.4	4.8	3.2	22.4	3.0

Dataset = cfdpsbvr.d14 – .d23

Table 86. Population assessment for Redear Sunfish collected during spring electrofishing at Beaver Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	Years to 8.0 in	CPUE ≥8.0 in	CPUE ≥10.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	7.2	3-3+	23.2	1.6	-	-	12	Good
	Score	2	3	4	3				
2022	Value	8.1	2-2+*	28.8	0.8	-	-	14	Excellent
	Score	4	4	4	2				
2021	Value	No Sample							
	Score	No Sample							
2020	Value	No Sample							
	Score	No Sample							
2019	Value	8.6	2-2+	10.4	0.0	-	-	12	Good
	Score	4	4	3	1				
2018	Value	10.1*	2-2+*	4.0	0.0	-	-	11	Good
	Score	4	4	2	1				
2017	Value	10.1	2-2+	7.2	4.0	-	-	14	Excellent
	Score	4	4	2	4				
2016	Value	7.0*	3-3+*	2.4	0.0	-	-	8	Fair
	Score	2	4	1	1				
2015	Value	7.0	3-3+	1.6	0.0	-	-	8	Fair
	Score	2	4	1	1				
2014	Value	8.8*	2-2+	12.8	4.8	-	-	15	Excellent
	Score	4	4	3	4				

* Age data not collected

Table 87. Mean back calculated lengths (in) at each annulus for otoliths from Bluegill collected from Beaver Lake in 2023.

Year class	No.	Age			
		1	2	3	4
2022	28	2.9			
2021	7	2.2	4.4		
2020	10	2.4	4.3	5.9	
2019	3	2.1	4.5	5.8	6.8
Mean	55	2.4	4.4	5.9	6.8
Smallest		1.5	3.3	4.8	5.8
Largest		3.9	5.7	7.2	7.4
SE		0.1	0.1	0.1	0.1
95% ConLo		2.2	4.3	5.6	6.5
95% ConHi		2.5	4.6	6.1	7.0

Intercept value = 0.00
Dataset = cfdagbvr.d23

Table 88. Mean back calculated lengths (in) at each annulus for otoliths from Redear Sunfish collected from Beaver Lake in 2023.

Year class	No.	Age				
		1	2	3	4	5
2022	2	2.8				
2021	21	2.5	4.9			
2020	23	3.2	5.4	7.2		
2019	15	2.9	6.3	8.0	9.1	
2018	3	3.0	5.9	8.1	9.1	9.7
Mean	64	2.9	5.5	7.5	9.1	9.7
Smallest		1.8	4.3	6.0	8.1	9.0
Largest		4.1	6.9	8.7	10.1	10.4
SE		0.1	0.1	0.1	0.1	0.4
95% ConLo		2.8	5.3	7.3	8.8	8.9
95% ConHi		3.0	5.6	7.7	9.3	10.5

Intercept value = 0.00
Dataset = cfdagbvr.d23

Table 89. Number of fish and mean relative weight (Wr) for each length group of Bluegill and Redear Sunfish collected at Beaver Lake during September 2023; standard errors are in parentheses.

Species	Length group							
	No.	Wr	No.	Wr	No.	Wr	No.	Wr
Bluegill	3.0–5.9 in		6.0–7.9 in		≥8.0 in		Total	
	76	94 (2)	38	75 (2)	0		114	88 (2)
Redear Sunfish	1.0–3.9 in		4.0–6.9 in		7.0–9.0 in		≥9.0 in	
	25	93 (3)	53	92 (2)	51	94 (1)	18	96 (1)
	Total		Total		Total		Total	
	147	93 (1)						

Dataset = cfdwrivr.d23

Table 90. Length composition, relative abundance, and CPUE (fish/set-night) of Channel Catfish at Beaver Lake sampled on 27 October 2023. Channel Catfish were collected using 10 set-nights of baited, tandem hoop nets (72 hours soak time).

Species	Inch class												Total	Average per set	SE
	16	17	18	19	20	21	22	23	24	25	26	27			
Channel Catfish	2	20	33	32	30	13	5	5	2	1	2	4	149	14.9	3.5

Dataset = cfdhnbvr.d23

Table 91. PSD and RSD₂₄ values obtained for Channel Catfish from tandem hoop net samples in Beaver Lake in 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₂₄
Channel Catfish	149	100 (± 0)	6 (± 4)

Dataset = cfdhnbvr.d23

Table 92. CPUE (fish/set-night) for each length group of Channel Catfish collected by hoop net from 2008-2023 at Beaver Lake.

Year	Length group							
	>12.0 in		>15.0 in		>20.0 in		Total	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	14.9	3.5	14.9	3.5	6.2	1.6	14.9	3.5
2022	31.8	8.4	31.4	8.2	9.8	3.6	31.8	8.4
2021	34.6	7.2	14.4	4.5	3.2	1.5	35.4	7.7
2019	28.3	2.7	27.7	2.4	7.3	2.6	28.3	2.7
2017	22.7	12.2	21.3	11.0	5.7	3.2	22.7	12.2
2015	16.0	3.5	14.3	3.3	1.7	0.3	16.0	3.5
2011	44.8	14.0	28.0	8.7	1.0	0.6	72.8	24.5
2010	40.0	8.2	25.6	5.4	0.6	0.2	41.8	8.8
2009	71.4	17.2	21.6	5.1	1.6	0.9	94.8	29.1
2008	14.0	4.1	5.4	2.0	0.8	0.6	28.2	8.8

Dataset = cfdhnbvr.d08 - .d23

Table 93. Number of fish and mean relative weight (Wr) for each length group of Channel Catfish collected at Beaver Lake in October 2023; standard errors are in parentheses.

Species	Length group						Total	
	11.0–15.9 in		16.0–23.9 in		≥24.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr		
Channel Catfish	0		140	93 (1)	9	117 (4)	149	95 (1)

Dataset = cfdhnbvr.d23

Table 94. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 2.0 hours of 15-minute electrofishing runs for black bass at Benjy Kinman Lake during April 2023.

Species	Inch class																			Total	CPUE	SE
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				
Largemouth Bass	39	128	94	22	149	168	47	12	5	4			2	3	3	4	3	3	686	343.0	20.0	

Dataset = cfdpsbkl.d23

Table 95. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from Benjy Kinman Lake from 2015-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		≥20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023	141.5	19.1	188.0	11.8	4.5	1.4	9.0	2.4	3.0	1.3	343.0	20.0
2022	51.8	8.9	151.0	8.2	5.3	1.1	7.0	1.2	1.0	0.5	215.0	14.5
2021	53.0	9.3	188.0	12.4	8.5	2.4	14.0	3.2	1.5	1.1	263.5	19.1
2020	52.0	13.9	78.0	12.6	10.0	2.1	11.0	2.0	2.0	0.8	151.0	23.0
2019	74.0	13.2	130.0	15.5	9.5	3.4	6.0	1.5	0.5	0.5	219.5	25.2
2018	31.5	6.3	73.5	11.0	13.5	1.1	9.5	2.7	1.0	0.7	128.0	14.1
2017	27.0	7.0	66.0	10.7	22.5	3.5	4.5	1.8	1.0	0.7	120.0	18.6
2016	23.0	7.0	82.0	11.5	15.0	2.9	7.0	2.4	1.0	0.7	127.0	18.6
2015	12.0	2.4	84.2	5.1	17.4	1.7	12.9	1.8	4.7	1.0	126.6	7.8

Dataset = cfdpsbkl.d15-.d23

Table 96. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples in Benjy Kinman Lake in 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Largemouth Bass	403	7 (± 3)	4 (± 2)

Dataset = cfdpsbkl.d23

Table 97. Population assessment for Largemouth Bass collected during spring electrofishing at Benjy Kinman Lake from 2015-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	10.2	125.3	4.5	9.0	3.0	-0.437	35%	12	Fair
	Score	2	4	1	2	3				
2022	Value	10.2*	46.5	5.3	7.0	1.0			10	Fair
	Score	2	3	1	2	2				
2021	Value	10.2	48.5	8.5	14.0	1.5			11	Fair
	Score	2	3	1	3	2				
2020	Value	10.7*	50.0	10.0	11.0	2.0			11	Fair
	Score	2	3	1	2	3				
2019	Value	10.7*	70.5	9.5	6.0	0.5			11	Fair
	Score	2	4	1	2	2				
2018	Value	10.7*	29.5	13.5	9.5	1.0			11	Fair
	Score	2	3	2	2	2				
2017	Value	10.7	24.0	22.5	4.5	1.0			10	Fair
	Score	2	3	2	1	2				
2016	Value	10.1*	51.1	15.0	7.0	1.0			10	Fair
	Score	1	3	2	2	2				
2015	Value	10.1*	11.1	17.4	12.9	4.7			11	Fair
	Score	1	2	2	2	4				

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

* Age data not collected (data collected in 2014)

Table 98. Mean back calculated lengths (in) at each annulus for otoliths from Largemouth Bass collected in the spring from Benjy Kinman Lake in 2023.

Year class	No.	Age													
		1	2	3	4	5	6	7	8	9	10	11	12	13	
2022	31	5.4													
2021	30	5.6	8.6												
2020	15	5.8	8.8	10.7											
2019	10	6.0	9.1	10.9	12.3										
2018	4	5.8	9.3	11.1	12.6	13.9									
2017	4	6.0	10.0	12.2	13.6	15.1	16.5								
2016	1	5.7	8.6	11.5	13.4	15.3	17.4	19.1							
2015	2	5.4	9.7	11.9	14.2	16.0	17.5	18.5	19.4						
2012	1	6.7	8.8	11.1	13.4	14.5	15.7	17.0	17.6	18.3	18.7	19.1			
2010	1	5.2	8.2	9.8	13.0	14.8	16.3	17.8	18.7	19.5	20.2	20.6	21.3	21.7	
Mean	99	5.6	8.9	11.0	12.9	14.8	16.7	18.2	18.8	18.9	19.4	19.9	21.3	21.7	
Smallest		4.2	6.8	8.6	9.2	9.8	12.2	17.0	17.6	18.3	18.7	19.1	21.3	21.7	
Largest		7.2	10.9	13.5	15.2	16.8	18.5	19.2	20.0	19.5	20.2	20.6	21.3	21.7	
SE		0.1	0.1	0.2	0.3	0.6	0.6	0.4	0.5	0.6	0.7	0.8			
95% ConLo		5.5	8.6	10.6	12.3	13.7	15.5	17.4	17.8	17.8	18.0	18.4			
95% ConHi		5.8	9.1	11.4	13.5	16.0	18.0	19.0	19.7	20.1	20.9	21.3			

Intercept value = 0.00

Dataset = cfdagbkl.d23

Table 99. Age frequency and CPUE (fish/hr) per inch class of Largemouth Bass collected during 2.0 hours of electrofishing at Benjy Kinman Lake during April 2023. Fish were collected in 15-minute runs.

Age	Inch class																	Total	%	CPUE	SE		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					21	
1	39	128	84																	251	37	125.3	19.5
2			10	22	149	126	12													319	47	159.6	11.4
3						28	35	7	1											71	10	35.4	1.6
4								5	3	3										11	1	5.0	1.3
5						14				1			2							17	3	8.7	0.6
6									1					3	2					6	1	2.8	0.8
7															2					2	0	1.0	0.8
8															2		3			5	1	2.3	1.0
9																				0		0.0	
10																				0		0.0	
11																2				2	0	1.0	0.8
12																				0		0.0	
13																				3	0	1.5	0.7
Total	39	128	94	22	149	168	47	12	5	4	0	0	2	3	4	4	3	3		687	100	343.0	20.0
%	6	19	14	3	22	24	7	2	1	1	0	0	0	0	0	1	0	0		100			

Dataset = cfdagtlv.d23 and cfdpstvl.d23

Table 100. Length distribution and CPUE (fish/hr) of Largemouth Bass collected in 1.5 hours of 15-minute electrofishing runs for black bass in Benjy Kinman Lake in September 2023.

Species	Inch class																	Total	CPUE	SE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20	
Largemouth Bass	30	118	58	4	10	47	35	22	5	5	3			2	1	1	2	1		344	229.3	23.3

Dataset = cfdwrbl.d23

Table 101. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at Benjy Kinman Lake during September and October 2023. Standard errors are in parentheses.

Species	Length group						Total	
	8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr		
Largemouth Bass	105	83 (1)	44	89 (1)	30	102 (2)	179	88 (1)

Dataset = cfdwrbkl.d23

Table 102. Indices of year-class strength at age 0 and age 1 and mean lengths (in) of Largemouth Bass collected in the fall in electrofishing samples at Benjy Kinman Lake.

Year class	Area	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.6	0.1	140.0	17.2	41.3	13.4		
2022	Total	5.1	0.1	140.0	29.4	72.7	20.6	125.3	19.5
2021	Total	4.6	0.1	100.7	17.7	30.0	7.8	46.5	8.1
2020	Total	4.8	0.1	104.0	20.2	46.0	7.7	48.5	7.8
2019	Total	5.1	0.1	124.7	37.5	75.3	30.7	50.0	12.9
2018	Total	4.9	0.1	73.3	3.8	39.3	4.7	70.5	13.7
2017	Total	4.7	0.1	92.7	13.8	38.7	7.4	29.5	6.4
2016	Total	4.7	0.1	43.3	6.0	15.3	3.2	24.0	5.9
2015	Total	4.0	0.1	78.0	16.2	8.7	2.4	51.1	9.1
2014	Total	4.2	0.1	16.0	5.4	2.5	1.3	11.1	2.2

Table 103. Number of fish and mean relative weight (Wr) for each length group of Bluegill and Redear Sunfish collected at Benjy Kinman Lake during September and October 2023; standard errors are in parentheses.

Species	Length group						Total			
	3.0–5.9 in		6.0–7.9 in		≥8.0 in		No.	Wr		
	No.	Wr	No.	Wr	No.	Wr				
Bluegill	75	95 (2)	33	85 (2)	0		108	92 (2)		
Redear Sunfish	1.0–3.9 in		4.0–6.9 in		7.0–9.0 in		≥9.0 in		Total	
	0		71	97 (1)	33	90 (2)	1	86 (-)	105	95 (1)

Dataset = cfdwrbkl.d23

Table 104. Length frequency and CPUE (fish/set-night) of Channel Catfish at Benjy Kinman Lake. Channel Catfish were collected using five (5) baited, tandem hoop nets (72 hours soak time) that were set on 6 November 2023.

Species	Inch class																Total	Average per set	SE	
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25				26
Channel Catfish	1						1	2	4	3	1	3	2	1	1	1	3	23	4.6	3.2

Dataset = cfdhnbkl.d23

Table 105. PSD and RSD₂₄ values obtained for Channel Catfish from tandem hoop net samples in Benjy Kinman Lake in 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₂₄
Channel Catfish	22	100 (± 0)	23 (± 18)

Dataset = cfdhnbkl.d23

Table 106. CPUE (fish/net-set) for each length group of Channel Catfish collected by hoop net at Benjy Kinman Lake from 2015-2023.

Year	Length group							
	≥12.0 in		≥15.0 in		≥20.0 in		Total	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.4	3.2	4.4	3.2	2.4	1.6	4.6	3.2
2022	6.0	3.1	5.6	2.8	3.0	1.7	6.0	3.1
2021	1.2	0.6	1.2	0.6	0.4	0.2	1.4	0.7
2020	9.1	2.4	2.6	1.2	2.0	1.0	10.1	2.8
2019	6.7	3.7	6.7	3.7	4.0	2.5	6.7	3.7
2018	14.3	8.4	13.0	7.0	3.7	2.3	14.3	8.4
2015	3.3	2.0	0.0	0.0	0.0	0.0	7.3	3.7

Dataset = cfdhnbkl.d15-.d23

Table 107. Number of fish and mean relative weight (Wr) for each length group of Channel Catfish collected at Benjy Kinman Lake in November 2023; standard errors are in parentheses.

Species	Length group						Total	
	11.0–15.9 in		16.0–23.9 in		≥24.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr	No.	Wr
Channel Catfish	0	-	17	92 (3)	5	112 (5)	22	96 (3)

Dataset = cfdhnbkl.d23

Table 108. Length frequency and CPUE (fish/hr) of Largemouth Bass and Saugeye collected in 1.5 hours of 15-minute electrofishing runs for black bass in Boltz Lake in September 2023.

Species	Inch class																						Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
Largemouth Bass	14	168	84	20	5	25	22	17	11	10	17	15	16	11	0	5	1						441	294.0	16.4
Saugeye																						1	1	0.7	0.7

Dataset = cfdwrbol.d23

Table 109. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at Boltz Lake in September 2023. Standard errors are in parentheses.

Species	Length group						Total	
	8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr		
Largemouth Bass	86	91 (1)	85	94 (1)	46	100 (3)	217	94 (1)

Dataset = cfdwrbol.d23

Table 110. Indices of year-class strength at age 0 and age 1 and mean lengths (in) of Largemouth Bass collected in the fall in electrofishing samples at Boltz Lake.

Year class	No. fish	Age 0		Age 0		Age 0 ≥5.0 in		Age 1		
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE	
2023	289	3.9	0.1	192.7	16.9	15.3	3.2			
2022	438	3.9	<0.1	292.3	34.4	19.6	4.5	---		
2021	375	3.9	0.1	250.0	27.2	30.7	6.0	19.0	6.4	
2020	359	3.6	<0.1	239.3	41.4	20.0	6.0	15.0	4.6	
2019				No Sample						
2018	287	4.3	0.1	191.3	24.7	37.3	4.5	10.0	1.9	
2017	246	4.3	0.1	164.0	18.9	40.7	8.9	14.0	3.2	
2016	104	4.1	0.1	69.3	7.8	15.3	2.8	20.5	5.3	
2015	71	4.1	0.1	47.3	3.6	6.0	1.4	---		
2014	58	4.0	0.1	38.7	10.9	4.0	3.3	29.5	5.2	

Table 111. Number of fish and mean relative weight (Wr) for each length group of Bluegill and Redear Sunfish collected at Boltz Lake during September 2023. Standard errors are in parentheses.

Species	Length group									
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
Bluegill	3.0–5.9 in		6.0–7.9 in		≥8.0 in				Total	
	82	93 (2)	46	87 (1)	0				128	91 (1)
Redear Sunfish	1.0–3.9 in		4.0–6.9 in		7.0–9.0 in		≥9.0 in		Total	
	1	93 (-)	15	101 (4)	8	103 (2)	3	102 (2)	27	101 (2)

Dataset = cfdwrbol.d23

Table 112. Length frequency, relative abundance, and CPUE (fish/hr) of Largemouth Bass and Saugeye collected in 2.0 hours of 15-minute diurnal electrofishing runs in Bullock Pen Lake, April 2023.

Species	Inch class																							Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Largemouth Bass	3	13	24	20	4	23	45	21	16	36	46	51	57	30	22	16	7	14	7	6	1		462	231.0	14.1	
Saugeye							3						1		1						2	1	8	4.0	2.5	

Dataset = cfdpsbpl.d23

Table 113. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from Bullock Pen Lake from 2014-2023.

Year	Length group												Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		Total			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023	43.5	8.1	59.0	6.0	77.0	8.0	44.5	5.5	7.0	1.7	231.0	14.1		
2022	25.5	4.5	82.0	6.3	60.5	7.1	34.5	3.4	3.5	1.2	202.5	13.6		
2021	44.5	4.6	116.0	8.1	51.5	5.4	53.0	5.8	11.0	2.6	265.0	15.4		
2020	No Sample													
2019	24.0	2.6	63.0	6.2	47.5	7.3	61.5	8.3	6.5	1.7	196.0	14.3		
2018	20.0	3.9	59.5	7.6	67.5	4.4	78.0	10.3	11.0	3.0	225.0	11.7		
2017	23.0	4.7	40.0	4.9	66.0	5.9	75.5	7.7	12.5	3.9	204.5	13.9		
2016	No Sample													
2015	No Sample													
2014	13.0	2.7	61.5	8.5	57.0	6.9	58.0	3.2	4.5	1.4	189.5	14.0		

Dataset = cfdpsbpl.d14 - .d23

Table 114. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples in Bullock Pen Lake in 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Largemouth Bass	375	69 (± 5)	27 (± 5)

Dataset = cfdpsbpl.d23

Table 115. Population assessment for Largemouth Bass collected during spring electrofishing at Bullock Pen Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	Spring CPUE age 1	Spring CPUE 12.0-14.9 in	Spring CPUE ≥15.0 in	Spring CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	11.5*	32.0	77.0	44.5	7.0			17	Excellent
	Score	3	3	4	4	3				
2022	Value	11.5*	17.5	60.5	34.5	3.5			16	Good
	Score	3	2	4	4	3				
2021	Value	11.5*	14.5	51.5	53.0	11.0			17	Excellent
	Score	3	2	4	4	4				
2020	Value Score						No Sample			
2019	Value	11.5*	17.2	47.5	61.5	6.5			17	Excellent
	Score	3	2	4	4	4				
2018	Value	11.5	15.5	67.5	78.0	11.0			17	Excellent
	Score	3	2	4	4	4				
2017	Value	10.5*	21.0	66.0	75.5	12.5			16	Good
	Score	2	2	4	4	4				
2016	Value Score						No Sample			
2015	Value Score						No Sample			
2014	Value	10.5*	2.5	57.0	58.0	4.5			15	Good
	Score	2	1	4	4	4				

* Age data not collected

^Calculations based on age data gathered in previous years

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

Table 116. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 1.5 hours of 15-minute electrofishing runs for black bass in Bullock Pen Lake in September 2023.

Species	Inch class																			Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth Bass	7	34	17	3	8	23	20	22	14	13	15	18	13	15	11	8	4	2	2	249	166.0	16.0
Saugeye										2					1					4	2.7	0.8

Dataset = cfdwrblp.d23

Table 117. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at Bullock Pen Lake in September 2023; standard errors are in parentheses.

Species	Area	Length group						Total	
		8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
Largemouth Bass	Total	No.	Wr	No.	Wr	No.	Wr	No.	Wr
		69	89 (1)	45	93 (1)	42	100 (1)	156	93 (1)

Dataset = cfdwrblp.d23

Table 118. Indices of year-class strength at age 0 and age 1 and mean length (in) of Largemouth Bass collected in the fall in electrofishing samples at Bullock Pen Lake. Age-1 CPUE and standard error could not be calculated for 2019 year-class due to COVID-19 work restrictions.

Year class	Area	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	3.6	0.1	40.7	7.0	2.0	1.4		
2022	Total	3.9	0.3	10.0	3.4	2.0	0.9	32.0	7.0
2021	Total	3.7	0.2	16.0	3.7	2.0	1.4	17.5	3.7
2020	Total	3.9	0.1	30.0	5.9	3.3	1.2	12.5	2.8
2019	Total	4.3	0.1	46.7	0.7	7.3	3.2	---	
2018	Total	4.2	0.1	34.0	6.0	2.0	1.4	17.2	2.9
2017	Total	4.0	0.1	32.7	6.4	6.0	2.5	15.5	3.9
2016				No Sample					
2015				No Sample					
2014	Total	4.0	0.2	16.0	3.1	4.0	1.5	---	

Table 119. Length frequency, relative abundance, and CPUE (fish/hr) of Largemouth Bass collected in 2.0 hours of 15-minute nocturnal electrofishing runs in Corinth Lake, April 2023.

Species	Inch class																	Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Largemouth Bass	4	10	19	12	21	35	78	109	97	62	28	20	14	4	3	2	6	524	262.0	18.7

Dataset = cfdpscor.d23

Table 120. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from Corinth Lake from 2014-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		≥20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023	33.0	3.8	159.5	15.1	55.0	7.9	14.5	2.8	0.0		262.0	18.7
2022	30.5	4.7	168.0	12.6	53.0	6.5	18.0	3.4	0.5	0.5	269.5	16.3
2021	30.5	3.4	174.0	8.8	77.5	9.0	20.0	2.1	2.5	1.3	302.0	9.6
2020	No Sample											
2019	24.0	4.2	194.5	16.6	75.5	9.2	26.0	6.0	2.5	1.0	320.0	25.9
2018	45.0	6.1	145.0	8.5	66.5	7.8	20.0	3.7	3.0	1.3	276.5	15.6
2017	107.0	11.9	226.5	24.0	26.0	4.4	21.0	4.6	5.0	2.0	380.5	39.7
2016	No Sample											
2015	93.0	4.5	141.0	3.8	38.0	4.1	16.0	3.1	3.5	1.2	288.0	9.0
2014	33.0	5.5	152.5	9.7	17.0	3.8	15.0	2.6	3.0	1.5	189.5	14.0

Dataset = cfdpscor.d14 - .d23

Table 121. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples in Corinth Lake in 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Largemouth Bass	458	30 (± 4)	6 (± 2)

Dataset = cfdpscor.d23

Table 122. Population assessment for Largemouth Bass collected during spring electrofishing at Corinth Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	10.3*	22.5	55.0	14.5	0.0			13	Good
	Score	2	3	4	3	1				
2022	Value	10.3*	8.0	53.0	18.0	0.5			13	Good
	Score	2	2	4	3	2				
2021	Value	10.3*	23.0	77.5	20.0	2.5			15	Good
	Score	2	3	4	3	3				
2020	Value						No Sample			
	Score									
2019	Value	10.3	11.0	75.5	26.0	2.5			14	Good
	Score	2	2	4	3	3				
2018	Value	10.8*	4.5	66.5	20.0	3.0			14	Good
	Score	3	1	4	3	3				
2017	Value	10.8*	19.5	26.0	21.0	5.0			15	Good
	Score	3	2	3	3	4				
2015	Value	10.8	29.9	38.0	16.0	3.5			14	Good
	Score	3	3	3	2	3				
2014	Value	11.1*	29.0	17.0	15.0	3.0			12	Fair
	Score	3	3	1	2	3				

* Age data not collected

^Calculations based on age data gathered in previous years

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

Table 123. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 1.5 hours of 15-minute electrofishing runs for black bass in Corinth Lake on 25 September 2023.

Species	Inch class																		Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Largemouth Bass	4	89	93	22	5	19	73	39	48	49	34	13	10	2	3	1	1	2	507	338.0	22.8

Dataset = cfdwrcor.d23

Table 124. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at Corinth Lake in September 2023; standard errors are in parentheses.

Species	Area	Length group						Total	
		8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
		No.	Wr	No.	Wr	No.	Wr	No.	Wr
Largemouth Bass	Total	104	82 (1)	47	83 (1)	9	91 (2)	160	83 (1)

Dataset = cfdwrcor.d23

Table 125. Indices of year-class strength at age 0 and age 1 and mean length (in) of Largemouth Bass collected in the fall in electrofishing samples at Corinth Lake.

Year class	Area	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.1	0.1	140.0	22.8	16.0	4.6		
2022	Total	4.6	0.1	157.2	18.6	41.9	9.9	22.5	3.2
2021	Total	4.3	0.1	85.3	15.3	16.7	2.4	8.0	1.5
2020	Total	4.0	0.1	82.7	9.5	6.7	1.3	23.0	3.5
2019	Total	4.9	0.1	107.3	20.0	50.7	9.9	-	
2018	Total	4.1	0.1	62.7	8.1	4.7	1.9	11.0	2.6
2017	Total	4.1	0.1	35.3	3.9	1.3	0.8	4.0	0.8
2016	Total	4.1	0.1	30.0	3.5	1.3	0.8	19.5	4.0
2015	Total	4.4	0.1	35.3	5.7	2.0	1.4	NS	
2014	Total	3.4	0.04	56.7	8.9	0.0		29.9	2.5

Dataset = cfdwrcor.d14-.d23

Table 126. Species composition, relative abundance, and CPUE (fish/hr) of Bluegill and Redear Sunfish collected in 1.25 hours of 7.5-minute electrofishing runs in Corinth Lake, May 2023.

Species	Inch class								Total	CPUE	SE
	2	3	4	5	6	7	8	9			
Bluegill	10	53	39	40	33	49			224	179.2	18.7
Redear Sunfish	4	5	3	10	26	62	50	16	176	140.8	15.5

Dataset = cfdpscor.d23

Table 127. PSD and RSD values calculated for sunfish collected during 1.25 hours of electrofishing at Corinth Lake during May 2023. Fish were collected in 7.5-minute runs. 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ^a
Bluegill	214	38 (± 7)	0 (± 0)
Redear Sunfish	167	77 (± 7)	10 (± 4)

^aBluegill = RSD₈; Redear Sunfish = RSD₉

Dataset = cfdpscor.d23

Table 128. Electrofishing CPUE (fish/hr) for each length group of Bluegill collected from Corinth Lake from 2014-2023.

Year	Length group								Total	
	<3.0 in		3.0-5.9 in		6.0-7.9 in		>8.0 in		CPUE	SE
2023	8.0	3.2	105.6	14.4	65.6	11.4	0.0	0.0	179.2	18.7
2022	No Sample									
2021	No Sample									
2020	32.8	8.5	164.0	22.0	103.2	12.4	0.8	0.8	300.8	25.3
2019	No Sample									
2018	5.6	2.1	161.1	11.5	148.8	21.3	4.8	2.1	320.8	22.9
2017	29.6	14.9	82.4	17.3	142.4	22.8	9.6	2.9	264.0	32.6
2016	5.6	1.7	60.0	9.2	135.2	13.4	4.0	2.2	204.8	11.2
2015	4.0	1.3	106.4	16.4	115.2	24.1	4.8	3.2	230.4	16.5
2014	4.8	2.1	89.6	14.4	64.8	10.4	4.0	1.3	163.2	23.1

Dataset = cfdpscor.d14 - .d23

Table 129. Population assessment for Bluegill collected during spring electrofishing at Corinth Lake from 2014-2023 (scoring based on statewide assessment).

Year	Value Score	Mean length		CPUE ≥6.0 in	CPUE ≥8.0 in	Total score	Assessment rating
		age 2 in spring	Years to 6.0 in				
2023		4.7	2-2+	65.6	0.0	11	Good
	3	4	3	1			
2022		No Sample					
2021		No Sample					
2020		4.5	3-3+*	104.0	0.8	12	Good
	3	3	4	2			
2019		No Sample					
2018		3.6	2-2+*	153.6	4.8	13	Good
	1	4	4	4			
2017		3.8*	2-2+*	152.0	9.6	13	Good
	1	4	4	4			
2016		3.8	2-2+	139.2	4.0	12	Good
	1	4	4	3			
2015		5.5*	3-3+*	120.0	4.8	15	Excellent
	4	3	4	4			
2014		5.5	3-3+	68.8	4.0	13	Good
	4	3	3	3			

* Age data not collected

^Calculations based on age data gathered in previous years

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

Table 130. Electrofishing CPUE (fish/hr) for each length group of Redear Sunfish collected from Corinth Lake from 2014-2023.

Year	Length group										Total	
	<3.0 in		3.0-5.9 in		6.0-7.9 in		>8.0 in		>10.0 in		CPUE	SE
2023	3.2	2.4	14.4	4.1	70.4	9.8	52.8	6.4	0.0	0.0	140.8	15.5
2022	No Sample											
2021	No Sample											
2020	0.8	0.8	16.0	4.5	96.8	8.8	43.2	11.3	0.0	0.0	156.8	14.9
2019	No Sample											
2018	0.0	0.0	56.8	7.5	157.6	20.2	36.8	8.9	0.0	0.0	251.2	26.4
2017	0.0	0.0	44.8	12.7	115.2	16.3	43.2	5.7	0.0	0.0	203.2	26.9
2016	0.0	0.0	16.8	4.7	84.8	15.5	33.6	7.1	0.0	0.0	135.2	21.4
2015	0.0	0.0	22.4	3.5	53.6	14.6	42.4	7.4	1.6	1.1	118.4	20.0
2014	0.0	0.0	0.8	0.8	10.4	3.8	33.6	15.2	0.8	0.8	44.8	16.0

Dataset = cfdpscor.d14 – .d23

Table 131. Population assessment for Redear Sunfish collected during spring electrofishing at Corinth Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age-3 at capture	Years to 8.0 in	CPUE ≥8.0 in	CPUE ≥10.0 in	Total score	Assessment rating	
2023	Value Score	7.4 2	4-4+ 3	52.8 4	0.0 1	10	Good	
2022	Value Score	No Sample						
2021	Value Score	No Sample						
2020	Value Score	7.2 2	5-5+ 2	43.2 4	0.0 1	9	Fair	
2019	Value Score	No Sample						
2018	Value Score	6.1 1	5-5+ 2	36.8 4	0.0 1	8	Fair	
2017	Value Score	7.2* 2	4-4+* 3	43.2 4	0.0 1	10	Good	
2016	Value Score	7.2 2	4-4+ 3	33.6 4	0.0 1	10	Good	
2015	Value Score	8.1* 4	3-3+* 4	42.4 4	1.6 3	15	Excellent	
2014	Value Score	8.1 4	3-3+ 4	33.6 4	0.8 2	14	Excellent	

* Age data not collected

Table 132. Mean back calculated lengths (in) at each annulus for otoliths from Bluegill collected from Corinth Lake in 2023.

Year class	No.	Age				
		1	2	3	4	5
2022	11	3.4				
2021	22	2.5	4.7			
2020	9	2.4	4.7	6.4		
2019	9	2.2	4.3	6.0	7.0	
2018	3	2.4	5.0	6.2	7.0	7.5
Mean	54	2.6	4.6	6.2	7.0	7.5
Smallest		1.5	3.5	5.0	6.2	7.2
Largest		4.2	6.2	7.5	7.8	7.8
SE		0.1	0.1	0.1	0.2	0.2
95% ConLo		2.4	4.4	5.9	6.7	7.1
95% ConHi		2.8	4.8	6.5	7.3	7.8

Intercept value = 0.00
Dataset = cfdagcor.d23

Table 133. Mean back calculated lengths (in) at each annulus for otoliths from Redear Sunfish collected from Corinth Lake in 2023.

Year class	No.	Age								
		1	2	3	4	5	6	7	8	9
2022	10	3.5								
2021	15	3.2	6.0							
2020	13	3.0	5.5	7.4						
2019	5	2.9	5.7	7.5	8.3					
2018	4	3.9	6.4	7.5	8.2	8.6				
2017	4	2.4	4.8	6.8	7.9	8.6	9.3			
2016	1	2.3	4.4	6.5	7.6	8.4	8.8	9.0		
2015	3	3.0	5.0	6.5	7.4	8.0	8.6	9.0	9.5	
2014	3	3.3	5.3	6.6	7.3	7.8	8.2	8.5	8.8	9.1
Mean	58	3.1	5.6	7.2	7.9	8.3	8.8	8.8	9.1	9.1
Smallest		1.9	3.9	5.5	6.8	7.7	8.1	8.3	8.6	8.8
Largest		5.8	7.5	8.1	8.9	8.9	9.5	9.5	9.8	9.3
SE		0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1
95% ConLo		3.0	5.4	6.9	7.6	8.1	8.5	8.5	8.8	8.8
95% ConHi		3.3	5.9	7.4	8.1	8.5	9.1	9.1	9.5	9.4

Intercept value = 0.00
Dataset = cfdagcor.d23

Table 134. Number of fish and mean relative weight (Wr) for each length group of Bluegill and Redear Sunfish collected at Corinth Lake in September 2023; standard errors are in parentheses.

Species	Length group								Total	Wr
	No.	Wr	No.	Wr	No.	Wr	No.	Wr		
Bluegill	3.0–5.9 in		6.0–7.9 in		≥8.0 in				114	86 (1)
	81	90 (2)	33	78 (1)	0					
	1.0–3.9 in		4.0–6.9 in		7.0–9.0 in		≥9.0 in			
Redear Sunfish	6	98 (9)	54	93 (1)	11	90 (1)	1	83 (-)	72	93 (1)

Dataset = cfdwrcor.d23

Table 135. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 2.0 hours of 15-minute electrofishing runs in Elmer Davis Lake, April 2023.

Species	Inch class																		Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth Bass	12	87	149	101	18	74	60	76	100	94	61	31	15	7	6	3	2	1	897	448.5	18.6

Dataset = cfdpselm.d23

Table 136. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from Elmer Davis Lake from 2014-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		≥20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023	183.5	17.1	155.0	15.4	93.0	8.7	17.0	2.5	0.5	0.5	448.5	18.6
2022	78.5	10.0	172.0	10.1	104.5	7.6	25.0	5.1	4.0	1.5	380.0	16.8
2021	44.5	7.3	158.5	11.1	54.0	9.8	13.5	2.9	1.0	0.7	270.5	20.8
2020	No Sample											
2019	80.0	10.5	86.5	8.9	91.5	7.9	32.0	4.3	6.5	2.1	290.0	15.5
2018	91.0	10.4	87.0	12.6	125.0	8.8	28.5	3.3	3.5	1.9	331.5	23.6
2017	65.5	10.6	87.5	5.5	95.5	5.9	31.0	2.8	8.0	1.9	279.5	14.4
2016	57.5	6.3	113.0	10.6	126.0	7.9	44.5	2.8	8.0	1.3	341.0	18.1
2015	34.5	5.5	119.0	7.0	78.5	8.9	19.5	4.9	4.0	1.7	251.5	18.3
2014	27.5	4.1	113.5	13.8	75.0	14.2	23.5	4.0	4.5	1.4	239.5	31.7

Dataset = cfdpselm.d14 – .d23

Table 137. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples in Elmer Davis Lake in 2023; confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Largemouth Bass	530	42 (± 4)	6 (± 2)

Dataset = cfdpselm.d23

Table 138. Population assessment for Largemouth Bass collected during spring electrofishing at Elmer Davis Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	Spring CPUE age 1	Spring CPUE 12.0-14.9 in	Spring CPUE ≥15.0 in	Spring CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	11.0*	180.5	93.0	17.0	0.5			16	Good
	Score	3	4	4	3	2				
2022	Value	11.0*	72.0	104.5	25.0	4.0			18	Excellent
	Score	3	4	4	3	4				
2021	Value	11.0	41.0	54.0	13.5	1.0			15	Good
	Score	3	3	4	3	2				
2019	Value	10.7*	60.0	91.5	32.0	6.5			18	Excellent
	Score	2	4	4	4	4				
2018	Value	10.7*	91.0	125.0	28.5	3.5			17	Excellent
	Score	2	4	4	4	3				
2017	Value	10.7*	60.5	95.5	31.0	8.0			18	Excellent
	Score	2	4	4	4	4				
2016	Value	10.7	46.5	126.0	44.5	8.0			17	Excellent
	Score	2	3	4	4	4				
2015	Value	10.5*	28.0	78.5	19.5	4.0			16	Good
	Score	2	3	4	3	4				
2014	Value	10.5*	8.0	75.0	23.5	4.5			15	Good
	Score	2	2	4	3	4				

* Age data not collected

^Calculations based on age data gathered in previous years

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

Table 139. Length distribution and CPUE (fish/hr) of Largemouth Bass collected in 1.50 hours of 15-minute electrofishing runs for black bass in Elmer Davis Lake in September 2023.

Species	Inch class																				Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Largemouth Bass	8	110	76	27	1	30	66	33	40	37	29	25	15	7	4	1	1	1	1	1	513	342.7	35.9

Dataset = cfdwreim.d23

Table 140. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at Elmer Davis Lake on 18 September and 25 October 2023; standard errors are in parentheses.

Species	Length group							
	8.0–11.9 in		12.0–14.9 in		≥15.0 in		Total	
	No.	Wr	No.	Wr	No.	Wr	No.	Wr
Largemouth Bass	102	89 (1)	76	87 (1)	52	93 (1)	230	89 (1)

Dataset = cfdwreln.d23

Table 141. Indices of year-class strength at age 0 and age 1 and mean length (in) of Largemouth Bass collected in the fall in electrofishing samples at Elmer Davis Lake.

Year class	Area	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.0	0.1	147.3	19.7	18.0	4.2		
2022	Total	4.7	0.1	225.3	32.4	80.0	9.1	180.5	16.4
2021	Total	4.2	0.1	91.3	11.4	14.0	2.8	72.0	9.3
2020	Total	3.8	0.1	176.0	35.6	14.0	1.7	41.0	6.8
2019	Total	4.6	0.1	151.3	16.6	50.0	8.1	-	-
2018	Total	3.9	0.1	100.7	23.3	8.7	1.9	60.0	8.6
2017	Total	3.9	0.1	366.4	74.7	71.2	15.9	91.0	10.4
2016	Total	4.4	0.1	80.0	7.6	24.7	4.9	60.5	10.8
2015	Total	4.0	0.1	77.3	9.1	11.3	3.5	46.5	6.2
2014	Total	-	-	-	-	-	-	28.0	5.3

Dataset= cfdwreln.d14- .d23

Table 142. Species composition, relative abundance, and CPUE (fish/hr) of Bluegill and Redear Sunfish collected in 1.25 hours of 7.5-minute electrofishing runs in Elmer Davis Lake, May 2023.

Species	Inch class										Total	CPUE	SE
	1	2	3	4	5	6	7	8	9	10			
Bluegill	1	37	104	77	36	53	43	25	1		377	301.6	21.3
Redear Sunfish		4	3	1	37	40	27	71	31	5	219	175.2	22.8

Dataset = cfdpselm.d23

Table 143. Electrofishing CPUE (fish/hr) for each length group of Bluegill collected from Elmer Davis Lake from 2014-2023.

Year	Length group								Total	
	<3.0 in		3.0–5.9 in		6.0-7.9 in		>8.0 in		CPUE	SE
2023	30.4	8.0	173.6	16.7	76.8	9.5	20.8	5.7	301.6	21.3
2022	No Sample									
2021	11.2	3.8	162.4	26.9	101.6	30.4	18.4	4.8	293.8	58.9
2020	No Sample									
2019	5.6	2.1	356.8	52.2	74.4	12.1	13.6	2.4	450.4	56.5
2018	24.8	6.4	156.0	15.5	56.0	5.3	5.6	2.4	242.4	18.2
2017	12.0	3.4	84.8	11.4	96.0	19.6	1.6	1.6	194.4	26.5
2016	No Sample									
2015	0.8	0.8	27.2	5.0	18.4	7.4	0.0	0.0	46.4	9.6
2014	17.6	7.4	117.6	25.5	33.6	10.2	0.0	0.0	168.8	26.5

Dataset = cfdpselm.d14 - .d23

Table 144. PSD and RSD values calculated for sunfish collected during 1.25 hours of electrofishing at Elmer Davis Lake during May 2023. Fish were collected in 7.5-minute runs. 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ^a
Bluegill	339	36 (± 6)	8 (± 3)
Redear Sunfish	212	63 (± 7)	17 (± 5)

^aBluegill = RSD₈; Redear Sunfish= RSD₉

Dataset = cfdpselm.d23

Table 145. Population assessment for Bluegill collected during spring electrofishing at Elmer Davis Lake from 2014-2023 (scoring based on statewide assessments).

Year		Mean length age 2 at capture	Years to 6.0 in	CPUE ≥6.0 in	CPUE ≥8.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	4.6*	2-2+*	97.6	20.8	-	-	14	Excellent
	Score	3	4	3	4				
2022	Value	No Sample							
	Score								
2021	Value	4.6	2-2+	120.0	18.4	-	-	15	Excellent
	Score	3	4	4	4				
2020	Value	No Sample							
	Score								
2019	Value	4.5	4-4+	88.0	13.6	-	-	12	Good
	Score	3	2	3	4				
2018	Value	3.8*	4-4+*	61.6	5.6	-	-	10	Good
	Score	1	2	3	4				
2017	Value	3.8*	4-4+*	97.6	1.6	-	-	9	Fair
	Score	1	2	3	3				
2016	Value	No Sample							
	Score								
2015	Value	3.8	4-4+	18.4	0.0	-	-	5	Poor
	Score	1	2	1	1				
2014	Value	4.1*	3-3+*	33.6	0.0	-	-	8	Fair
	Score	2	3	2	1				

* Age data not collected

Table 146. Electrofishing CPUE (fish/hr) for each length group of Redear Sunfish collected from Elmer Davis Lake from 2014-2023.

Year	Length group										Total	
	<3.0 in		3.0-5.9 in		6.0-7.9 in		>8.0 in		>10.0 in		CPUE	SE
2023	3.2	1.3	32.8	4.7	53.6	8.2	85.6	18.6	4.0	2.2	175.2	22.8
2022	No Sample											
2021	0.8	0.8	4.8	1.8	28.0	7.0	23.2	4.8	3.2	1.3	56.8	7.6
2020	No Sample											
2019	0.0	0.0	14.4	4.1	20.0	6.9	42.4	10.1	12.8	4.7	76.8	18.9
2018	0.0	0.0	10.4	2.7	0.8	0.8	20.0	5.0	10.4	2.9	31.2	5.4
2017	0.0	0.0	0.8	0.8	4.0	1.8	43.2	13.0	0.8	0.8	48.0	13.2
2016	No Sample											
2015	0.0	0.0	11.2	3.0	61.6	8.9	13.6	4.0	0.0	0.0	86.4	13.1
2014	0.8	0.8	146.4	37.0	56.8	19.7	27.2	7.8	0.8	0.8	231.2	53.2

Dataset = cfdpselm.d14 – .d23

Table 147. Population assessment for Redear Sunfish collected during spring electrofishing at Elmer Davis Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	Years to 8.0 in	CPUE ≥8.0 in	CPUE ≥10.0 in	Total score	Assessment rating	
2023	Value	8.8*	2-2+*	85.6	4.0	16	Excellent	
	Score	4	4	4	4			
2022	Value	No Sample						
	Score							
2021	Value	8.8	2-2+	23.2	3.2	16	Excellent	
	Score	4	4	4	4			
2020	Value	No Sample						
	Score							
2019	Value	6.9	4-4+	42.4	12.8	13	Good	
	Score	2	3	4	4			
2018	Value	6.7*	4-4+*	20.0	10.4	12	Good	
	Score	2	3	3	4			
2017	Value	6.7*	4-4+*	43.2	0.8	11	Good	
	Score	2	3	4	2			
2016	Value	No Sample						
	Score							
2015	Value	6.7	4-4+	13.6	0.0	9	Fair	
	Score	2	3	3	1			
2014	Value	7.7*	3-3+*	27.2	0.8	13	Good	
	Score	3	4	4	2			

* Age data not collected

Table 148. Number of fish and mean relative weight (Wr) for each length group of Bluegill and Redear Sunfish collected at Elmer Davis Lake on 18 September, 20 October, and 25 October 2023; standard errors are in parentheses.

Species	Length group								
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	
Bluegill	3.0–5.9 in		6.0–7.9 in		≥8.0 in		Total		
	80	105 (2)	67	96 (1)	18	85 (2)	165	99 (1)	
Redear Sunfish	1.0–3.9 in		4.0–6.9 in		7.0–9.0 in		≥9.0 in		Total
	0		68	109 (1)	87	111 (1)	70	111 (2)	225 110 (1)

Dataset = cfdwreilm.d23

Table 149. Length frequency and CPUE (fish/set-night) of Channel Catfish at Elmer Davis Lake sampled on 20 October 2023. Channel Catfish were collected using 10 set-nights of baited, tandem hoop nets (72 hours soak time).

Species	Inch class				Total	Average per set	SE
	22	23	24	25			
Channel Catfish	1	2		2	5	0.5	0.4

Dataset = cfdhnelm.d23

Table 150. CPUE (fish/set-night) for each length group of Channel Catfish collected by hoop net from 2007-2023 at Elmer Davis Lake.

Year	Length group							
	≥12.0 in		≥15.0 in		≥20.0 in		Total	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	0.5	0.4	0.5	0.4	0.5	0.4	0.5	0.4
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	3.4	1.7	3.4	1.7	2.4	1.2	3.4	1.7
2018	16.3	7.0	16.0	7.1	4.3	1.9	16.3	7.0
2015	54.0	5.7	23.7	3.7	6.0	2.0	66.7	10.9
2011	39.8	14.3	20.0	6.6	2.6	1.0	75.0	25.4
2010	28.0	10.8	17.0	7.3	2.0	1.1	32.4	11.8
2009	103.4	38.6	21.4	7.2	0.4	0.2	106.4	39.7
2008	111.8	14.6	23.4	4.7	0.4	0.4	134.0	17.9
2007	71.2	26.0	14.0	4.2	0.2	0.2	118.4	45.2

Dataset = cfdhnelm.d07 - .d23

Table 151. PSD and RSD₂₄ values obtained for Channel Catfish from tandem hoop net samples in Elmer Davis Lake in 2023; 95% confidence intervals are in parentheses.

Species	> Stock size	PSD	RSD ₂₄
Channel Catfish	5	100 (± 0)	40 (± 40)

Dataset = cfdhnelm.d23

Table 152. Number of fish and mean relative weight (Wr) for each length group of Channel Catfish collected at Elmer Davis Lake in October 2023; standard errors are in parentheses.

Species	Length group						Total	
	11.0–15.9 in		16.0–23.9 in		≥24.0 in			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr
Channel Catfish	0		3	101 (3)	2	94 (5)	5	98 (3)

Dataset = cfdhnelm.d23

Table 153. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 2.0 hours of 15-minute electrofishing runs in Kincaid Lake, May 2023.

Species	Inch class																		Total	CPUE	SE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21	22
Largemouth Bass	7	12	9	5	18	16	21	21	34	18	18	16	10	24	20	21	12	14	6	5	307	153.5	10.9

Dataset = cfdpskin.d23

Table 154. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from Kincaid Lake from 2014-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	25.5	2.5	46.0	7.5	26.0	3.1	43.5	7.8	12.5	3.0	153.5	10.9
2022	8.0	2.1	32.0	3.6	30.5	3.3	51.0	6.4	7.5	1.8	121.5	6.9
2021	24.0	4.3	76.0	9.0	41.0	4.3	88.0	9.1	19.5	3.3	229.0	14.3
2020	No Sample											
2019	16.5	3.2	53.5	7.4	31.5	4.4	86.0	6.5	15.0	2.6	187.5	15.2
2018	No Sample											
2017	20.0	2.8	41.5	3.1	53.0	5.6	106.5	4.1	14.0	1.5	221.0	10.4
2016	No Sample											
2015	16.0	5.8	52.0	5.9	47.5	7.4	79.5	6.3	8.5	11.9	195.0	22.3
2014	No Sample											

Dataset = cfdpskin.d14- .d23

Table 155. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples in Kincaid Lake in 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Largemouth Bass	256	64 (± 6)	44 (± 6)

Dataset = cfdpskin.d23

Table 156. Population assessment for Largemouth Bass collected during spring electrofishing at Kincaid Lake from 2014-2023 (scoring based on statewide assessment).

Year	Mean length age 3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value Score	11.6* 4	14.5 2	25.5 3	46.0 4	12.5 4		17	Excellent
2022	Value Score	11.6* 4	1.0 1	30.5 3	51.0 4	7.5 4		16	Good
2021	Value Score	11.6 4	10.0 2	41.0 3	88.0 4	19.5 4		17	Excellent
2020	Value Score				No Sample				
2019	Value Score	11.6* 4	4.5 1	31.5 3	86.0 4	15.0 4		16	Good
2018	Value Score				No Sample				
2017	Value Score	11.6 4	2.0 1	53.0 4	106.5 4	14.0 4		17	Excellent
2016	Value Score				No Sample				
2015	Value Score	11.7* 4	0.5 1	47.5 3	79.5 4	8.5 4		16	Good
2014	Value Score				No Sample				

* Age data not collected

^Calculations based on age data gathered in previous years

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

Table 157. Length distribution and CPUE (fish/hr) of Largemouth Bass collected in 1.5 hours of 15-minute electrofishing runs in Kincaid Lake in October 2023.

Species	Inch class																				Total	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				22
Largemouth Bass	3	18	18	4	4	21	24	7	13	16	9	4	8	4	5	12	11	9	7	1	1	199	132.7	12.5

Dataset = cfdwrkin.d23

Table 158. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at Kincaid Lake during October 2023; standard errors are in parentheses.

Species	Length group						Total	
	8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr		
Largemouth Bass	69	86 (1)	28	91 (1)	66	103 (1)	163	94 (1)

Dataset = cfdwrkin.d23

Table 159. Indices of year-class strength at age 0 and age 1 and mean length (in) of Largemouth Bass collected in the fall in electrofishing samples at Kincaid Lake.

Year class	No. fish	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	44	4.0	0.1	29.3	4.7	3.3	1.2		
2022	61	3.7	0.1	40.7	9.7	3.3	1.9	14.5	1.5
2021	30	3.6	0.1	20.0	2.9	0.7	0.7	1.0	0.7
2020	85	3.2	0.1	56.7	7.5	2.7	1.3	10.0	2.9
2019				No Sample					
2018	72	3.5	0.1	48.0	8.1	4.0	2.1	8.0	2.3
2017	44	3.5	0.1	29.3	8.2	0.0	0.0	-	-
2016	51	3.8	0.1	34.0	6.4	3.3	1.9	2.0	1.3
2015				No Sample					
2014	37	2.6	0.1	24.7	7.4	0.0	0.0	1.3	(0.5)

Dataset = cfdwrkin.d23

Table 160. Trail camera counts used to derive usage statistics from March 2023- February 2024 at Kincaid Lake (183 acres).

Total Trips*	2023-2024
No. of trips	4,489
Trips/acre	24.5
Pressure*	
Total man-hours	14,993
Man-hours/acre	81.9

*Usage hours (angler and non-angler usage combined)

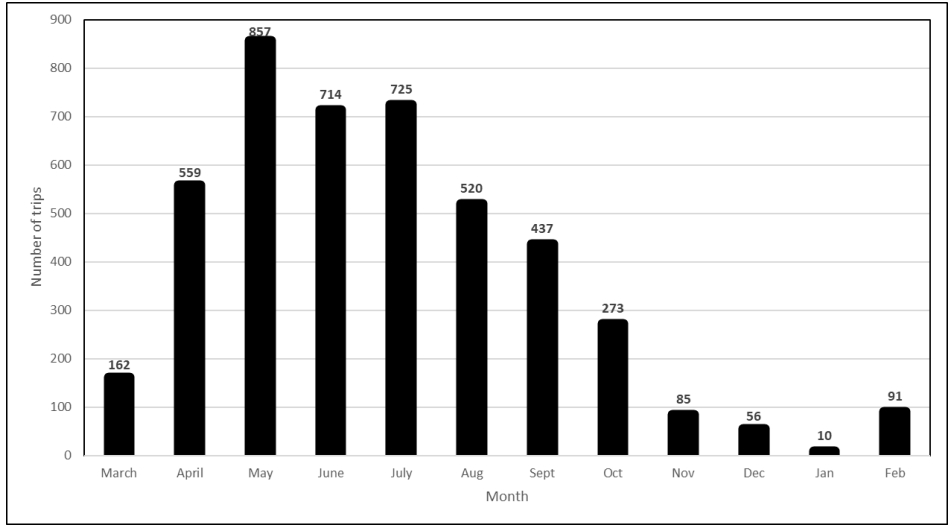


Figure 1. Number of trips per month at Kincaid Lake from March 2023 through February 2024.

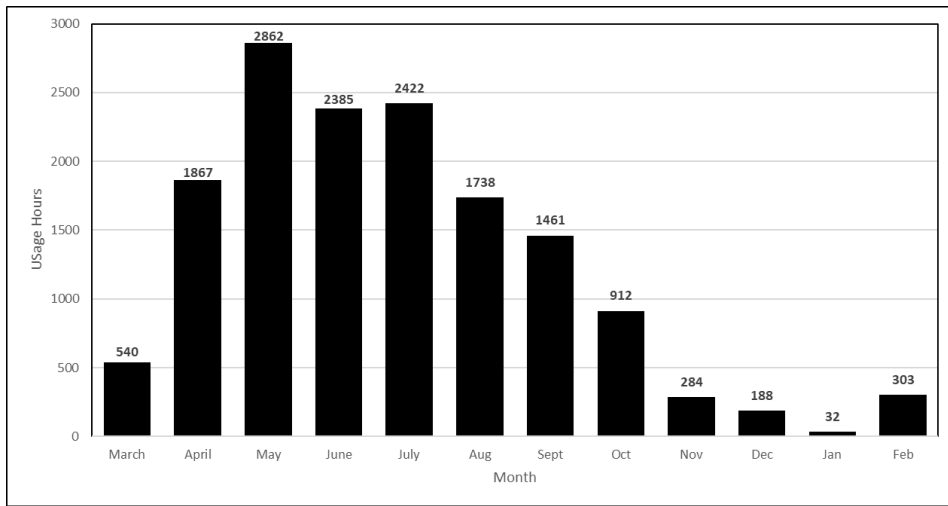


Figure 2. Number of usage hours by month at Kincaid Lake from March 2023 through February 2024.

Table 161. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 0.75 hours of 7.5-minute electrofishing runs for black bass at McNeely Lake in April 2023.

Species	Inch class																		Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth Bass	1	12	8	5	14	38	30	40	32	22	6	8	8	5	1	7	2	5	244	325.3	16.6

Dataset = cfdpsmcl.d23

Table 162. Electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from McNeely Lake from 2014-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		>20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023	53.3	12.2	186.7	11.3	48.0	5.5	37.3	7.6	6.7	3.2	325.3	16.6
2022	54.0	8.5	123.0	11.2	49.0	5.7	33.0	6.1	2.0	1.3	259.0	21.1
2021	No Sample											
2020	No Sample											
2019	97.0	30.9	205.0	19.3	43.0	5.7	27.0	3.4	3.0	1.0	372.0	46.1
2018	73.3	25.5	173.3	16.6	72.0	7.9	25.3	2.5	2.7	1.3	344.0	41.4
2017	No Sample											
2016	46.0	12.9	130.0	10.4	44.0	4.3	9.0	3.0	0.0	0.0	229.0	15.8
2015	110.0	27.8	198.0	18.5	33.0	7.6	13.0	5.3	2.0	1.2	354.0	43.1
2014	26.0	6.2	167.0	11.8	18.0	2.6	21.0	3.0	3.0	1.0	232.0	16.3

Dataset = cfdpsmcl.d14 - .d23

Table 163. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples at McNeely Lake in April 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₅
Largemouth Bass	204	31 (± 6)	14 (± 5)

Dataset = cfdpsmcl.d23

Table 164. Population assessment for Largemouth Bass collected during spring electrofishing at McNeely Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	Spring CPUE age 1	Spring CPUE 12.0-14.9 in	Spring CPUE ≥15.0 in	Spring CPUE ≥20.0 in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2023	Value	10.9*	33.3	48.0	37.3	6.7			18	Excellent
	Score	3	3	4	4	4				
2022	Value	10.9*	42.0	49.0	33.0	2.0			17	Excellent
	Score	3	3	4	4	3				
2021							No Sample			
2020							No Sample			
2019	Value	10.9*	94.0	43.0	27.0	3.0			17	Excellent
	Score	3	4	3	4	3				
2018	Value	10.9*	70.0	72.0	25.3	2.7			17	Excellent
	Score	3	4	4	3	3				
2017							No Sample			
2016	Value	10.9	38.0	44.0	9.0	0.0			12	Fair
	Score	3	3	3	2	1				
2015	Value	10.5*	109.0	33.0	13.0	2.0			14	Good
	Score	2	4	3	2	3				
2014	Value	10.5*	18.0	18.0	21.0	3.0			12	Fair
	Score	2	2	2	3	3				

* Age data not collected

^Calculations based on age data gathered in previous years

-Instantaneous and annual mortality not calculated in years where age and growth data are not collected

Table 165. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 1.0 hour of 10.0-minute electrofishing runs in McNeely Lake in September 2023.

Species	Inch class																Total	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				19
Largemouth Bass	32	40	18	5	17	25	30	16	15	19	6	5	4	3	2	2	2	241	241.0	42.5

Dataset = cfdwrml.d23

Table 166. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected at McNeely Lake on 29 September 2023; standard errors are in parentheses.

Species	Length group						Total	
	8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr		
Largemouth Bass	83	85 (1)	30	90 (1)	13	98 (3)	126	88 (1)

Dataset = cfdwrml.d23

Table 167. Indices of year-class strength at age 0 and age 1 and mean length (in) of Largemouth Bass collected in the fall in electrofishing samples at McNeely Lake.

Year class	Area	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.3	0.1	91.8	22.7	20.0	5.5		
2022	Total	4.9	0.1	89.0	9.7	48.0	4.9	33.3	11.2
2021	Total	4.5	0.1	132.0	36.3	37.3	14.3	42.0	7.1
2020	Total	4.2	0.1	73.0	10.4	4.0	0.0	-	-
2019	Total	5.0	0.0	171.3	16.0	88.0	17.3	-	-
2018	Total	-	-	-	-	-	-	94.0	30.4
2017	Total	4.4	0.1	177.6	11.6	32.8	4.1	70.0	26.1
2016	Total	5.0	0.1	96.0	21.1	56.8	14.3	-	-
2015	Total	4.2	0.0	126.4	14.9	12.0	4.2	38.0	13.1
2014	Total	-	-	-	-	-	-	109.0	27.8

Dataset = cfdwrml.d14-.d23

Table 168. Number of fish and the mean relative weight (Wr) for each length group of Bluegill and Redear Sunfish collected at McNeely during September 2023; standard errors are in parentheses.

Species	Length group								No.	Wr
	3.0–5.9 in		6.0–7.9 in		≥8.0 in		Total			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr		
Bluegill	75	97 (3)	49	84 (1)	1	78 (-)			125	91 (2)
Redear Sunfish	1.0–3.9 in		4.0–6.9 in		7.0–9.0 in		≥9.0 in		Total	
	2	88 (59)	30	107 (3)	23	97 (1)	9	90 (2)	64	100 (2)

Dataset = cfdwrml.d23

Table 169. Number of fish and the mean relative weight (Wr) for each length group of Largemouth Bass collected at A.J. Jolly Lake on 14 November 2023; standard errors are in parentheses.

Species	Length group						Total	
	8.0–11.9 in		12.0–14.9 in		≥15.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr		
Largemouth Bass	27	92 (1)	16	98 (4)	7	107 (1)	50	96 (2)

Dataset = cfdwrajj.d23

Table 170. Length frequency and CPUE (fish/hr) of Saugeye collected in 1.5 hours of 15- minute electrofishing runs in A.J. Jolly Lake, November 2023.

Species	Inch class													Total	CPUE	SE			
	8	9	10	11	12	13	14	15	16	17	18	19	20				21	22	23
Saugeye	2	2		4	5	1	1	1	2	2	3	5	1		1	4	35	23.3	4.8

Dataset = cfdwrajj.d23

Table 171. Species composition, relative abundance, and CPUE (fish/hr) of fish collected in 0.75 hours of 7.5- minute electrofishing runs in Lincoln Homestead Lake, April 2023.

Species	Inch class																			Total	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Largemouth Bass		2	7	17	8	13	8	6	13	24	19	26	10	5	4				2	1	165	220.0	18.8
Bluegill	7	31	86	44	27	32	14	1													242	322.7	59.9
Redear Sunfish		1	1		1	4	10	17	1	2											37	49.3	15.1
Black Crappie			1	1						1											3	4.0	2.7
White Crappie								1													1	1.3	1.3
Channel Catfish																		1			1	1.3	1.3

Dataset = cfdpslhl.d23

Table 172. Species composition, relative abundance, and CPUE (fish/hr) of Largemouth Bass collected 1.0 hour of 15-minute electrofishing runs and Bluegill and Redear Sunfish collected in 0.5 hours of 7.5-minute electrofishing runs in Reformatory Lake, May 2023.

Species	Inch class																			Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth Bass		4	12	7	5	3	4	8	3	8	8	13	10	6	6	4	2		1	104	104.0	12.4
Bluegill	16	66	37	19	21	6														165	330.0	61.5
Redear Sunfish	5	5	11	19	19	7	4													70	140.0	18.0

Dataset = cfdpsref.d23

NORTHEASTERN FISHERY DISTRICT

Project 1: Lake and Tailwaters Fishery Surveys

FINDINGS

All sampling conditions can be found in Table 1 and model parameters collected are presented in Table 2.

Cave Run Lake (8,720a)

Muskellunge sampling

On 23 and 27-28 of March, the upper, middle, and lower sections of Cave Run Lake were diurnally electrofished to assess the Muskellunge population. In total, 85 fish were captured ranging in size from 11.0 to 47.0 in (Table 3). Weights of all fish collected showed a similar, if not slightly higher relative weight (W_r) than previous years on Cave Run Lake (Table 4). All Muskellunge stocked into Cave Run Lake are marked with a unique fin clip or wire tag implant to indicate year class. Fish collected in 2022 ranged in age from 1 to 12 years old, and their size was on average for their given age (Table 5). While sampling, sex is determined for individuals collected. From this it was determined that overall catch rates of both sexes were down from historical averages (Females: Table 6 and Males: Table 7) and in 2023 more males were collected than females. Relative weight values, by sex, showed that both sexes were generally on target with historical averages (Females: Table 8 and Males: Table 9). Finally, using capture rate data, an overall assessment of the Muskellunge population was determined to be “Poor” (Table 10). A reduction in the stocking efforts due to production issues for the previous years is likely hampering this assessment.

Black bass sampling (Spring)

On 17-19 April, the upper, middle, and lower sections of Cave Run Lake were nocturnally electrofished for assessment of the black bass population. In total, 1,396 fish were captured. Most of these fish were Largemouth Bass (71%), followed by Spotted Bass (28%), and Smallmouth Bass (1%; Table 11). As is normally the case, the percentage of the population represented by Spotted and Smallmouth bass increases as you head from the upper lake to the lower lake. Overall catch rates were higher than the 1990-2022 average, largely driven by smaller fish (<8.0-in and 8.0- to 11.9-in length groups; Table 12). Catch rates of the larger fish continue to be better now than the pre-slot limit time periods (12.8 versus 4.5 fish per hour (fish/hr) of electrofishing for Largemouth Bass over 15.0 in and 0.6 versus 0.2 fish/hr for Largemouth Bass over 20.0 in). PSD and RSD₁₅ values for Largemouth Bass demonstrate that most of the fish in the lake are below 12.0 in (Table 13).

In the spring of 2023, a subsample of Largemouth Bass and Spotted Bass were collected to look at age and growth characteristics of the population. From the Largemouth Bass we learned that fish are reaching the upper end of the slot limit in their 4th or 5th year (Table 14), that growth rates are fairly similar across the units of the lake (Table 15), and that females grow slightly faster than males in the population (Table 16). Across all sections of the lake and both sexes, 91% of the population is less than 3 years old and range in size from 4.0 to 14.0 in (Table 17). From the Spotted Bass, we learned that growth tapers off at age 3 (Table 18), and like Largemouth Bass, most fish are young and small (Table 19).

Overall, the Largemouth Bass population was rated as “Fair” (Table 20) and the Spotted Bass population was rated as “Poor” (Table 21). It should be noted, however, that the parameter “Spring CPUE age 1” (for both Spotted Bass and Largemouth Bass) continues to be debilitatingly high.

On 25-26 September, the black bass population was once again sampled for determination of relative weight (W_r) values. In this sample, 932 fish were collected ranging in size from 2.0 to 21.0 in (Table 22). Relative weight values ranged from the upper 70's to middle 80's across all species and sections of the lake (Table 23). For the 8.0- to 11.0-in class and the 12.0- to 14.9-in class, W_r 's were lower than the historical average, but for fish over 15.0 in they were on target with the historical average (Table 24). Values for assessment of the age-0 year-class and the Bass Stocking Initiative show that survival of spawned Largemouth Bass continues to be high on Cave Run Lake (Table 25).

White Bass sampling (Fall)

From October 24 through 26, assessment of the White Bass population in Cave Run Lake was conducted using gill nets. In total, 274 White Bass were captured (Table 26). Of those, 42% were captured in the upper reaches of the lake and 58% were from the lower two-thirds of the lake. Across all sections, the catch rate for each size class were significantly higher than historical averages and were the highest obtained on record for the lake (Table 27). Relative weight values were lower than the historic average (Table 28). A subsample of individuals was collected for determination of age and growth characteristics which showed fish reaching 15.0 in by their fourth year (Table 29). Most of the fish collected were 3 to 5 years old and ranged in size from 12.0 to 16.0 in (Table 30). The overall assessment of the population was “Good” (Table 31).

Grayson Lake (1,512a)

Black bass sampling (Spring/Fall)

The black bass population at Grayson Lake was nocturnally electrofished on 24-26 April. In total, 1,200 fish were collected ranging in size from 3.0 to 20.0 in (Table 32). Most of these fish were Largemouth Bass (77%) and the remainder were Spotted Bass (23%). Overall, catch rates by length group were similar to the 1999 to 2021 average with the exception of fish in the less than 8.0-in range which were slightly lower and fish in the 8.0- to 11.9-in range which were higher (Table 33). Of those Largemouth Bass over 8.0 in, the majority were under 12.0 in as demonstrated by PSD values. In addition, the ratio of bigger fish to smaller fish remained constant across all sections of the lake (although the upper section also produced the lowest catch rates of fish overall; Table 34). Overall, the Largemouth Bass population was rated as “Fair” (Table 35).

The black bass population at Grayson Lake was also sampled in late September for determination of W_r values and spawning strength of Largemouth Bass. From 18-20 September, 1,072 fish were collected using nocturnal electrofishing (Table 36). Overall, relative weights ranged in the low- to upper-80’s, but some of the bigger fish were in the mid-90 range (Table 37). Larger fish seemed to exhibit better growth but were caught in far lower numbers. When compared to previous years’ W_r values, weights in 2023 were very similar to historical averages (Table 38). Indices of year-class strength for Largemouth Bass rebounded slightly in 2023, which wasn’t welcome news given the excessive recruitment and numbers of smaller-size fish already in this population (Table 39).

Clear Creek Lake (40a)

Black bass sampling (Spring/Fall)

On 27 April, Clear Creek Lake was diurnally electrofished to assess the Largemouth Bass population. A total of 120 fish were collected ranging from 3.0 to 19.0 in (Table 40). The total catch rate improved compared to the last few sampling events. Most of the fish collected were in the less than 8.0-in and 8.0- to 11.9-in groups (Table 41). PSD values continue to increase over the last few samples but RSD_{15} is at the average for the last 15 years (Table 42). A subsample of Largemouth Bass was collected for age and growth assessment of the fishery. Clear Creek Lake has slow Largemouth Bass growth rates, with an average length at age 3 at capture of 9.9 in (Table 43). CPUE in the spring was highest for the age-1 Largemouth Bass, which ranged in size from 4.0 to 6.0 in (Table 44). Lower catch rates of larger fish and a mean length of 9.9 in at age 3 at capture resulted in a “Fair” overall assessment of the Largemouth Bass population (Table 45).

Clear Creek Lake was sampled again in the fall to collect indices related to W_r values of Largemouth Bass. A total of 44 fish were collected (Table 46), resulting in a total W_r of 82 (Table 47).

Greenbo Lake (181a)

Black bass sampling (Spring/Fall)

On 20 April, Greenbo Lake was nocturnally electrofished for an assessment of the Largemouth Bass population. In total, 315 fish were captured ranging in size from 2.0 to 23.0 in (Table 48). Except for the 12.0- to 14.9-in size class, all size classes had similar or higher catch rates when compared to previous years (Table 49). PSD values were similar to previous years, but RSD_{15} values were significantly higher, indicating a better population of fish

over 15.0 in when compared to past years (Table 50). The overall assessment rating was “Good” for the Largemouth Bass population at Greenbo Lake when compared to other lakes of similar size (Table 51).

On 21 September, the lake was sampled to look at W_r values and determine the strength of the spawning class. Relative weight values were similar to previous years (Table 53). Assessment of the spawning class showed slightly higher than historical catch rates of age-0 fish (Table 54).

Creel Survey

From April through October, a roving creel survey was conducted on Greenbo Lake. Overall, 7,682 trips were made to Greenbo Lake which is similar to the number of trips made in 2010, but far fewer than the suspect 27,344 trips made in 1990 to the lake (Table 55). Panfish (dominated by Bluegill) were caught in the highest numbers in the 2023 creel, followed by trout, black bass, crappie, and catfish (Table 56). Roughly 7% of the Largemouth Bass caught were harvested (roughly only 10% of the legal-size fish caught were harvested; Table 57). Far and away the most successful month for Largemouth Bass anglers was April, followed by June and July (Table 58). Most of the trout catch and harvest happened in March (and likely January and February; Table 59). Crappie anglers had their most successful months in May and March (Table 60). Panfish anglers had the most success in June and October, catching over 2.0 fish per angler hour (Table 61). Finally, catfish anglers’ best month was July (Table 62).

Angler Attitude Survey

In conjunction with the creel survey, anglers were asked a series of questions pertaining to their attitudes towards fishing at Greenbo Lake (Table 63). According to anglers surveyed, the most fished for species of fish was bass, followed by sunfish, “other”, trout, catfish, and crappie. More bass, sunfish, catfish, and trout anglers were satisfied with their fishing than were dissatisfied. Furthermore, most of the anglers on the lake were satisfied with the current size and creel limits.

Mill Creek Lake (41a)

Black bass sampling (Spring/Fall)

On 01 May, Mill Creek Lake was diurnally electrofished to assess the Largemouth Bass population. A total of 173 fish were collected ranging from 3.0 to 21.0 in (Table 64). Most of the fish collected were in the 8.0- to 11.9-in length group (Table 65). PSD and RSD_{15} values continue to be lower than the ten-year average (Table 66). Mill Creek Lake has slow growth with a mean length of 9.3 in at age 3 at capture (Table 67). Only three percent of fish captured during electrofishing were of harvestable size based on the 15.0-in minimum length limit (Table 68). Slow growth rates and low catch rates of larger fish contributed to the assessment rating of “Fair” for Mill Creek Lake (Table 69).

On 05 October, Largemouth Bass were collected to assess fish condition. A total of 70 fish were collected (Table 70). The overall W_r was consistent with the last 7 samples (Table 71).

Sunfish Sampling (Summer)

On 23 May, Mill Creek Lake was diurnally electrofished for an assessment of the sunfish population. A total of 225 Bluegill were collected ranging from 1.0 to 8.0 in (Table 72). The most abundant length group in our sample was the 3.0- to 5.0-in group with a CPUE of 148.0 fish/hr (Table 73). PSD and RSD_8 values were both above the 15-year average (Table 74). The growth rate of Bluegill is very slow in Mill Creek, with a mean length at age 2 of 3.6 in (Table 75). Age-2 fish were the highest represented group for catch rates and ranged from 2.0-5.0 in (Table 76). The overall rating for the Bluegill population in Mill Creek Lake was “Good” (Table 77).

Lake Reba (76a)

Black bass sampling (Spring/Fall)

On 17 April, Lake Reba was diurnally electrofished for assessment of the Largemouth Bass fishery. In total, 214 fish were collected ranging in size from 2.0 to 21.0 in (Table 78). Catch rates by inch class were all lower compared to previous years (Table 79) but PSD and RSD_{15} values were slightly higher than the average (Table 80). The overall assessment of the Largemouth Bass population was “Excellent” for 2023 (Table 81).

The Largemouth Bass population of Lake Reba was also sampled in October for determination of relative weights and spawning strength. On 03 October, 327 fish were collected (Table 82). Overall, relative weights ranged from the mid-80's to upper 90's and were very comparable to previous years (Table 83). Indices of year-class strength for Largemouth Bass were slightly lower than average (Table 84).

Smokey Valley (36a)

Largemouth Bass sampling (Spring/Fall)

On 24 April, Smoky Valley was diurnally electrofished to assess the Largemouth Bass population. In total, 197 fish were captured ranging in size from 3.0-23.0 in (Table 85). Catch rates for all length groups were above the 10-year average (Table 86). PSD and RSD₁₅ were also above the 10-year average showing a slight increase in the size proportion of the lake (Table 87). Good catch rates of 12.0- to 14.9-in fish and recruitment helped give this lake a "Good" assessment rating (Table 88).

Sunfish sampling (Summer)

On 24 May, Smoky Valley was diurnally electrofished to assess the sunfish population. In total, 187 sunfish were collected. Of those fish, 170 were Bluegill and 17 were Redear Sunfish (Table 89). No fish greater than 8.0 in were captured during electrofishing (Table 90). PSD values for Bluegill have increased in the last few samples and RSD₈ has been consistently low in all historic samples (Table 91). Catch rates of fish over 6.0 in is considered good (Table 92). Total CPUE was very low for Redear Sunfish and not enough fish were collected to determine an RSD₈ value (Tables 93 and 94). Currently there is no overall assessment of the Redear Sunfish population (Table 95). Redear Sunfish were stocked into Smoky Valley in 2018 and 2019.

Table 1: Yearly summary of sampling conditions by waterbody, species sampled, and date.

Water body	Species	Date (2022)	Time 24hr	Gear	Weather	Water Temp (°F)	Water level	Secchi (in)	Conditions	Pertinent sampling comments
Cave Run Lake	Muskie	3/23	800	electro	cloudy	49	726.42	30	good	upper section
Cave Run Lake	Muskie	3/27	800	electro	clear	54	727.44	12-36	good	Beaver Creek
Cave Run Lake	Muskie	3/28	800	electro	cloudy/w ind	55	727.01	30	good	low er section
Cave Run Lake	LMB	4/17	2000	electro	nocturnal	61	728.26	72	good	upper section
Cave Run Lake	LMB	4/18	2000	electro	nocturnal	62	728.36	60	good	middle section
Cave Run Lake	LMB	4/19	2000	electro	nocturnal	63	728.43	96	good	low er section
Cave Run Lake	LMB	9/25	800	electro	sunny	73	729.88	42	good	upper section
Cave Run Lake	LMB	9/25	2000	electro	nocturnal	75	729.88	-	good	middle section
Cave Run Lake	LMB	9/26	2000	electro	nocturnal	77	729.85	78	good	low er section
Cave Run Lake	WB	10/24	800	gill net	sunny/w arm	58 / 64	728.49	36 / 48	good	upper and middle section
Cave Run Lake	WB	10/25	800	gill net	sunny	64 / -	728.39	48 / -	good	upper and middle section
Cave Run Lake	WB	10/26	800	gill net	beautiful	61 / 64	728.30	48 / 52	good	upper and middle section
Grayson Lake	LMB	4/24	2000	electro	nocturnal	63	645.58	48	good	upper section (Caney)
Grayson Lake	LMB	4/25	2000	electro	nocturnal	63	645.60	96	fair	middle section (Bruin)
Grayson Lake	LMB	4/26	2030	electro	nocturnal	61	645.61	48	good	low er section (Dam/Deer Creek)
Grayson Lake	LMB	9/18	1900	electro	nocturnal	76	643.20	72	good	low er section (Dam/Deer Creek)
Grayson Lake	LMB	9/19	1900	electro	nocturnal	77	643.12	-	good	middle section (Bruin)
Grayson Lake	LMB	9/20	1900	electro	nocturnal	76	643.07	24	good	upper section (Caney)
Clear Creek	LMB	4/27	900	electro	clear	71	normal	-	good	
Clear Creek	LMB	9/29	815	electro	clear/cool	61	normal	48	good	
Greenbo Lake	LMB	4/20	2030	electro	cool, clear	63	normal	180	good	
Greenbo Lake	LMB	9/21	2030	electro	cool, clear	77	normal	78	good	
Mill Creek	LMB	5/1	900	electro	-	60	normal	96	good	
Mill Creek	Sunfish	5/23	830	electro	sunny/clear	70	normal	144	good	
Mill Creek	LMB	10/5	900	electro	sunny/cool	72	normal	168	good	
Lake Reba	LMB	4/17	930	electro	sunny	61	normal	40	good	
Lake Reba	LMB	10/4	930	electro	clear, cool	73	normal	24	good	
Smoky Valley	LMB	4/24	1000	electro	sunny/cool	60	normal	48	good	
Smoky Valley	Sunfish	5/24	800	electro	sunny	67	normal	-	good	
Stoner Creek	"Game"	5/10	900	electro	sunny	65	normal	30	good	Fryman's Ramp site
Stoner Creek	"Game"	5/10	1200	electro	sunny	67	normal	30	good	Tuttle's Ramp site
South Fork Licking River	"Game"	5/11	900	electro	sunny		normal		good	Lair Ramp (NEFD Sample)
South Fork Licking River	"Game"	5/11	1100	electro	sunny	68	normal	29	good	Airport Ramp (NEFD Sample)
South Fork Licking River	"Game"	5/11	1300	electro	sunny	70	normal	36	good	Cynthania Ramp (NEFD Sample)
South Fork Licking River	"Game"	5/10	1030	electro	clear, sunny	67	normal		good	Falmouth Ramp (CFD Sample)
South Fork Licking River	"Game"	5/10		electro	clear, sunny		normal		good	Robinson Dam Ramp (CFD Sample)

Table 2. Model parameters (Length:Weight Regressions and Von Bertalanffy Values) collected in 2023, sorted by lake and species type.

Lake	Species	L:W Values		Von Bertalanffy Values		
		a (intercept)	b (slope)	L _{INF} (mm)	K	t ₀
Cave Run Lake	Muskie	-6.674	3.517			
Cave Run Lake	Largemouth Bass	-5.413	3.195	446.308	0.376	-0.112
Cave Run Lake	Spotted Bass	-4.755	2.926	293.853	0.667	0.121
Cave Run Lake	White Bass	-4.990	3.025	417.805	0.461	-0.458
Grayson Lake	Largemouth Bass	-4.747	2.923			
Grayson Lake	Spotted Bass	-5.698	3.333			
Greenbo Lake	Largemouth Bass	-5.228	3.132			
Lake Reba	Largemouth Bass	-5.842	3.382			
Clear Creek	Largemouth Bass	-4.791	2.935	356.286	0.411	-0.224
Mill Creek	Largemouth Bass	-5.856	3.382	395.453	0.295	-0.186
Mill Creek	Bluegill			295.250	0.223	0.020

Table 3. Length frequency and CPUE (fish/hr) of Muskellunge collected in the upper, middle, and lower sections during 18 hours of 30-minute runs spread across each area of Cave Run Lake (6 hours in each section; 23, 27-28 March).

Species	Area	Inch class																		Total	CPUE	SE			
		11	12	13	14	15	16	--	25	--	27	--	33	34	35	36	37	38	39				40	41	--
Muskellunge	Upper		3	6	2	1	1		1					1	1	2		1				1	20	3.3	1.0
	Middle	2	7	11	5	3			1		1			1	1	2	1						35	5.8	1.4
	Lower		1	3	7	1							1		6	2		5			2	2	30	5.0	0.9
	Total	2	11	20	14	5	1		2		1		1	1	8	5	3	5	1	2	2	1	85	4.7	0.6

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Table 4. Number of fish and mean relative weight (W_r) values for length groups of Muskellunge collected across all lake units in Cave Run Lake from 2003-2023. Standard errors are in parentheses.

Year	Length group								Total	
	≤ 20.0 in		20.1 - 30.0 in		30.1 - 38.0 in		≥ 38.1 in			
	N	W_r	N	W_r	N	W_r	N	W_r	N	W_r
2023	6	72 (3)	3	101 (3)	18	93 (3)	11	92 (3)	38	90 (2)
2022	8	77 (3)	5	93 (3)	39	87 (3)	24	86 (2)	76	86 (2)
2021*										
2020	15	80(4)	6	90 (5)	25	89 (2)	8	82 (4)	54	86 (2)
2019										
2018	8	80 (1)	21	88 (2)	20	92 (2)	10	87 (3)	59	88 (1)
2017	4	88 (3)	31	92 (1)	54	88 (1)	18	87 (3)	107	89 (1)
2016	5	81 (1)	25	89 (2)	31	89 (1)	9	100 (4)	70	90 (1)
2015*										
2014	30	80 (1)	24	89 (1)	57	90 (1)	29	91 (2)	140	88 (1)
2013	11	79 (2)	4	95 (2)	41	94 (1)	17	92 (3)	73	91 (1)
2012	14	75 (1)	28	87 (2)	58	102 (12)	20	86 (1)	120	93 (6)
2011	23	83 (2)	29	93 (1)	40	91 (1)	27	88 (2)	119	89 (1)
2010	19	79 (1)	64	92 (1)	52	94 (2)	18	90 (1)	153	91 (1)
2009	12	88 (4)	11	97 (1)	36	93 (1)	23	93 (1)	82	93 (1)
2008	27	76 (1)	40	114 (17)	48	94 (1)	11	89 (1)	126	96 (6)
2007	35	84 (1)	9	102 (4)	18	95 (3)	14	92 (2)	76	90 (1)
2006	17	75 (1)	13	88(2)	26	89 (1)	13	87 (1)	69	85 (1)
2005	26	81 (4)	23	91 (1)	38	89 (1)	22	85 (2)	109	87 (1)
2004	10	79 (2)	10	90 (3)	32	87 (1)	15	80 (1)	67	85 (1)
2003	22	82 (3)	16	96 (3)	33	92 (2)	9	87 (2)	80	90 (1)

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* =Sample was not collected

Table 5. Average length and weight of known-age Muskellunge. Standard errors are in parentheses.

		Age class												
		Age 1	Age 2	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8	Age 9	Age 10	Age 11	Age 12	Age 13
2011	N= 33 L= 14.9 (0.2) W= 0.6 (0.0)													
2012	N= 61 L= 14.4 (0.1) W= 0.5 (0.0)	15 23.4 (0.5) 2.7 (0.2)												
2013	N= 74 L= 13.9 (0.1) W= 0.5 (0.0)	1 25.1 19.5	7 31.0 (0.4) 7.5 (0.5)											
2014	N= 73 L= 14.8 (0.1) W= 0.6 (0.0)	23 23.4 (0.4) 2.9 (0.2)	9 31.7 (0.4) 8.1 (0.4)	15 34.0 (0.8) 10.2 (0.9)										
2015*														
2016	N= 40 L= 14.0 (0.1) W= 0.5 (0.0)	18 23.2 (0.2) 2.8 (0.1)	15 31.0 (0.4) 7.3 (0.3)	13 34.2 (0.5) 10.2 (0.6)	1 39.1 16.0	5 38.5 (1.0) 15.0 (2.2)								
2017	N= 59 L= 13.5 (0.1) W= 0.4 (0.0)	17 24.1 (0.7) 2.9 (0.2)	22 29.8 (0.5) 6.3 (0.3)	17 34.3 (0.4) 10.2 (0.4)	9 37.3 (0.5) 13.5 (0.9)	5 37.5 (0.5) 12.8 (0.7)	4 37.6 (0.4) 13.2 (0.8)							
2018	N= 45 L= 14.0 (0.1) W= 0.5 (0.0)	23 21.9 (0.4) 2.3 (0.2)	3 32.0 (1.2) 8.4 (1.0)	2 32.1 (0.7) 9.9 (0.7)	7 35.1 (0.7) 11.0 (0.7)	2 36.2 (2.2) 11.8 (1.8)	4 38.3 (2.4) 15.2 (3.1)	0						
2019*														
2020	N= 34 L= 14.7 (0.2) W= 0.6 (0.0)	2 18.5 (1.6) 1.0 (0.0)	3 28.5 (1.4) 6.3 (0.9)	12 33.4 (0.5) 9.4 (0.4)	2 38.0 (2.4) 12.3 (1.7)	4 36.9 (0.8) 12.1 (0.6)	1 38.2 8.8	4 38.3 (1.1) 14.5 (1.9)	1 39.2 12.4	0				
2021*	N= L= W=													
2022	N= 18 L= 14.8 (0.2) W= 0.5 (0.0)	0	12 30.6 (0.4) 7.3 (0.4)	2 32.5 (1.0) 8.8 (1.1)	3 36.7 (0.8) 12.7 (1.0)	7 38.0 (0.9) 13.8 (1.0)	11 36.8 (0.4) 12.0 (0.5)	2 38.2 (0.4) 14.1 (0.2)	2 39.1 (0.5) 14.7 (0.7)	1 38.3 15.1	1 37.2 11.6	0		
2023	N= 53 L= 13.5 (0.2) W= 0.4 (0.0)	2 30.7 (5.4) 8.0 (4.1)	0	1 35.1 10.3	3 34.9 (1.1) 12.6 (0.9)	0	2 39.2 (2.8) 17.5 (5.0)	0	0	0	0	1 47.2 31.3	0	
Mean	N= 490 L= 14.3 (0.2) W= 0.5 (0.0)	101 23.8 (1.2) 5.3 (2.2)	71 30.6 (0.4) 7.1 (0.3)	62 33.6 (0.4) 9.9 (0.2)	25 36.8 (0.7) 13.0 (0.7)	23 37.7 (0.4) 13.4 (0.6)	22 38.0 (0.4) 13.3 (1.5)	6 38.3 (0.0) 14.3 (0.2)	3 39.1 (0.1) 13.9 (1.1)	1 38.3 15.1	1 37.2 11.6	1 47.2 31.3	0	

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* =Sample w as not collected

Table 6. Electrofishing CPUE (fish/hr) for each length group of known female Muskellunge collected at Cave Run Lake from 2006-2023.

Year	Length group								Total	
	< 20.0 in		≥ 30.0 in		≥ 36.0 in		≥ 40.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	2.2	0.2	2.0	0.3	1.3	0.3	0.3	0.2	2.2	0.2
2022	1.4	0.3	1.3	0.3	0.9	0.3	0.5	0.2	2.8	0.3
2021*										
2020	0.6	0.3	0.6	0.3	0.3	0.1	0.2	0.1	3.3	0.8
2019*										
2018	0.6	0.2	0.6	0.2	0.5	0.2	0.3	0.1	2.2	0.2
2017	2.1	0.3	1.9	0.3	1.1	0.2	0.6	0.2	3.2	0.3
2016	1.0	0.3	0.8	0.3	0.4	0.2	0.2	0.1	3.3	0.6
2015*										
2014	1.9	0.3	1.8	0.3	1.5	0.3	1.0	0.3	3.2	0.3
2013	1.5	0.3	1.5	0.3	0.9	0.3	0.5	0.2	2.8	0.3
2012	2.1	0.4	1.9	0.4	1.3	0.3	0.6	0.2	3.5	0.4
2011	2.9	0.6	2.3	0.5	1.4	0.4	0.8	0.3	4.7	0.7
2010	2.1	0.4	1.9	0.4	0.9	0.3	0.4	0.2	4.2	0.5
2009	1.5	0.3	1.1	0.3	0.8	0.2	0.7	0.2	3.2	0.4
2008	1.3	0.3	1.0	0.3	0.7	0.2	0.2	0.1	1.8	0.3
2007	0.8	0.2	0.8	0.2	0.6	0.2	0.3	0.1	2.5	0.4
2006	0.8	0.2	0.7	0.2	0.6	0.2	0.3	0.1	2.6	2.8

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* =Sample was not collected

Table 7. Electrofishing CPUE (fish/hr) for each length group of known male Muskellunge collected at Cave Run Lake from 2006-2023.

Year	Length group								Total	
	< 20.0 in		≥ 30.0 in		≥ 36.0 in		≥ 40.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	2.8	0.4	2.7	0.5	1.7	0.5	0.3	0.3	2.8	0.4
2022	2.3	0.5	2.2	0.5	1.2	0.3	0.0	0.0	2.3	0.5
2021*										
2020	1.4	0.4	1.2	0.4	0.5	0.2	0.1	0.1	1.4	0.4
2019*										
2018	1.1	0.3	1.1	0.3	0.3	0.1	0.1	0.1	6.5	0.7
2017	2.6	0.5	2.0	0.4	1.1	0.3	0.1	0.1	3.8	0.5
2016	1.6	0.3	1.3	0.3	0.4	0.1	0.0	0.0	3.1	0.4
2015*										
2014	3.0	0.5	2.9	0.5	1.3	0.4	0.1	0.1	4.0	0.6
2013	1.9	0.3	1.3	0.3	0.8	0.2	0.1	0.1	3.3	0.3
2012	2.8	0.6	2.4	0.6	0.6	0.2	0.0	0.0	4.3	0.7
2011	2.9	0.6	2.3	0.5	1.4	0.4	0.8	0.3	4.7	0.7
2010	2.2	0.4	1.9	0.4	1.0	0.3	0.2	0.1	3.1	0.4
2009	2.3	0.6	2.2	0.6	0.9	0.3	0.0	0.0	4.2	0.9
2008	2.6	0.5	1.9	0.4	0.6	0.2	0.1	0.1	4.1	0.5
2007	1.1	0.3	0.9	0.3	0.6	0.2	0.1	0.1	2.9	0.4
2006	1.6	0.4	1.5	0.4	0.7	0.2	0.1	0.1	1.6	0.4

nedmumcr.d23-d06

* =Sample was not collected

Table 8. Number of fish and mean relative weight (W_r) values for length groups of female Muskellunge collected across all lake units in Cave Run Lake from 2006-2023. Standard errors are in parentheses.

Year	Length group						Total	
	20.1 - 30.0 in		30.1 - 38.0 in		≥ 38.1 in		N	W_r
2023	1	106 (-)	8	94 (2)	4	95 (4)	13	95 (2)
2022	2	92 (2)	7	93 (4)	16	86 (2)	25	89 (2)
2021*								
2020	0		6	93 (5)	4	91 (2)	10	92 (3)
2019								
2018	0		3	91 (5)	7	91 (4)	10	91 (3)
2017	4	94 (3)	20	88 (2)	14	89 (3)	38	89 (17)
2016	3	100 (5)	10	90 (3)	5	99 (2)	18	94 (2)
2015*								
2014	1	94 (-)	9	95 (2)	24	92 (2)	34	93 (1)
2013	0		13	98 (2)	12	97 (3)	25	97 (2)
2012	3	79 (11)	19	90 (1)	15	89 (1)	37	89 (1)
2011	11	95 (3)	20	93 (2)	22	89 (2)	54	92 (1)
2010	4	98 (2)	25	97 (3)	9	92 (2)	38	96 (2)
2009	7	97 (2)	7	97 (2)	13	95 (1)	27	96 (1)
2008	5	96 (6)	11	93 (3)	7	88 (2)	23	92 (2)
2007	1	104 (-)	5	99 (8)	10	93 (2)	16	95 (3)
2006	2	94 (7)	6	92 (2)	6	88 (2)	14	91 (2)

nedmufcr.d23-d06

* =Sample was not collected

Table 9. Number of fish and mean relative weight (W_r) values for length groups of male Muskellunge collected across all lake units in Cave Run Lake from 2023-2006. Standard errors are in parentheses.

Year	Length group						Total	
	20.1 - 30.0 in		30.1 - 38.0 in		≥ 38.1 in		N	W_r
	N	W_r	N	W_r	N	W_r		
2023	1	100 (-)	10	91 (5)	6	88 (4)	17	91 (3)
2022	3	93 (5)	32	85 (3)	7	86 (2)	42	86 (2)
2021*								
2020	3	94 (2)	18	87 (1)	4	74 (2)	25	86 (2)
2019								
2018	4	80 (8)	17	93 (2)	3	80 (3)	20	90 (2)
2017	11	93 (1)	32	88 (1)	4	80 (8)	47	88 (1)
2016	4	85 (5)	20	88 (1)	4	101 (10)	28	89 (2)
2015*								
2014	1	91 (-)	48	90 (1)	5	87 (1)	54	90 (1)
2013	3	93 (1)	27	92 (2)	5	80 (4)	36	90 (2)
2012	7	93 (2)	39	90 (1)	5	80 (1)	51	89 (1)
2011	11	95 (3)	20	93 (21)	22	89 (2)	54	92 (1)
2010	5	98 (2)	26	92 (2)	9	87 (2)	40	92 (1)
2009	3	98 (2)	29	92 (1)	10	91 (2)	42	92 (1)
2008	13	95 (3)	31	95 (1)	3	84 (3)	47	95 (1)
2007	2	112 (1)	13	93 (2)	4	90 (3)	19	94 (2)
2006	1	95 (-)	20	88 (2)	7	86 (2)	28	88 (1)

nedmumcr.d23-d06

* =Sample was not collected

Table 10. Population assessment of Muskellunge based on spring electrofishing at Cave Run Lake from 1995-2023.

Year		CPUE age 1	CPUE ≥ 20.0 in	CPUE ≥ 30.0 in	CPUE ≥ 36.0 in	CPUE ≥ 40.0 in	Total score	Assessment rating
2023	Value	2.9	1.8	1.6	1.4	0.3	8	Poor
	Score	2	1	1	2	2		
2022	Value	1.0	3.8	3.5	2.2	0.5	13	Good
	Score	1	2	3	4	3		
2021*								
2020	Value	2.1	2.2	1.8	0.8	0.2	6	Poor
	Score	1	1	1	1	2		
2019*								
2018	Value	3.3	3.4	2.0	0.9	0.5	9	Fair
	Score	2	1	1	2	3		
2017	Value	3.8	5.9	4.1	2.2	0.7	17	Excellent
	Score	3	3	3	4	4		
2016	Value	2.4	3.8	2.4	0.9	0.2	9	Fair
	Score	1	2	2	2	2		
2015*								
2014	Value	4.1	6.1	4.8	2.8	1.1	18	Excellent
	Score	3	3	4	4	4		
2013	Value	4.2	3.4	3.2	1.6	0.6	13	Good
	Score	3	1	3	3	3		
2012	Value	3.5	5.9	4.3	1.9	0.6	16	Good
	Score	2	3	4	4	3		
2011	Value	1.9	5.3	3.7	2.2	0.9	14	Good
	Score	1	2	3	4	4		
2010	Value	6.8	7.4	3.9	1.9	0.6	18	Excellent
	Score	4	4	3	4	3		
2009	Value	2.6	3.9	3.3	1.7	0.7	14	Good
	Score	2	2	3	3	4		
2008	Value	2.7	5.5	3.3	1.3	0.3	13	Good
	Score	2	3	3	3	2		
2007	Value	3.6	2.5	1.8	1.2	0.4	9	Fair
	Score	2	1	1	2	3		
2006	Value	2.4	2.9	2.2	1.2	0.4	9	Fair
	Score	1	1	2	2	3		
2005	Value	2.9	5.5	4.0	2.0	0.8	16	Good
	Score	2	3	3	4	4		
2004	Value	1.3	3.2	2.6	1.3	0.4	10	Fair
	Score	1	1	2	3	3		
2003	Value	1.9	3.2	2.3	1.0	0.3	8	Poor
	Score	1	1	2	2	2		
2002*								
2001	Value	2.3	4.4	3.1	1.5	0.6	11	Fair
	Score	1	2	2	3	3		
2000	Value	1.7	2.8	1.8	0.9	0.3	7	Poor
	Score	1	1	1	2	2		
1999	Value	1.6	3.2	2.3	0.7	0.2	7	Poor
	Score	1	1	2	1	2		
1998	Value	3.8	2.8	2.8	1.0	0.3	10	Fair
	Score	3	1	2	2	2		
1997	Value	2.3	1.7	0.8	0.2	0.5	8	Poor
	Score	1	1	1	2	3		
1996	Value	5.2	4.2	2.4	0.8	0.4	11	Fair
	Score	3	2	2	1	3		
1995	Value	2.9	4.5	2.8	1.6	0.6	12	Fair
	Score	2	2	2	3	3		

nedmuscr.d23-d22, d20, d18-d16 d14 -09; nedMS2cr.d08; nedMK1cr.d07; nedmuscr.d06-95

* =Sample was not collected

Table 11. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 1.5 hours (4.5 hours total) of 30-minute nocturnal electrofishing runs in each area of Cave Run Lake from 17-19 April 2023.

Area	Species	Inch class																			Total	CPUE	SE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Upper	Largemouth Bass	1	17	20	6	9	6	5	8	11	6	6	2	5	1	2		1			106	70.7	6.7
	Spotted Bass			2	2			1	2	1											8	5.3	2.4
	Smallmouth Bass																				0		
Middle	Largemouth Bass	2	35	97	77	16	22	57	23	20	16	7	7	5	6	1	1	1			393	262.0	68.4
	Spotted Bass	2	44	31	8	17	22	17	21	3	1			2							168	112.0	19.7
	Smallmouth Bass					1			1				1			1					4	2.7	1.8
Lower	Largemouth Bass	1	29	96	57	19	99	77	31	20	17	7	9	10	3	2	3	3	1	1	485	323.3	707.0
	Spotted Bass	20	48	15	27	43	22	23	13	6	1	2									220	146.7	49.4
	Smallmouth Bass		1	1		2	3		1	1		1									10	6.7	2.7
Total	Largemouth Bass	4	81	213	140	44	127	139	62	51	39	20	18	20	10	5	4	5	1	1	984	219.1	43.1
	Spotted Bass	22	92	48	37	60	44	41	36	10	2	2		2							396	88.0	26.2
	Smallmouth Bass		1	1		3	3		2	1		1	1				1				14	3.1	1.3

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Table 12. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Cave Run Lake from 1990-2023.

Year	Length group										Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	107.6	26.8	84.2	20.1	17.1	3.2	10.2	2.0	0.4	0.3	219.1	43.1
2022	88.7	23.5	43.6	10.0	14.2	2.6	6.9	2.1	0.7	0.3	153.3	32.3
2021	107.1	25.3	81.6	17.7	20.2	4.9	15.3	2.8	0.7	0.3	224.2	35.5
2020*												
2019	185.6	45.1	89.1	13.6	38.4	3.5	21.3	2.2	0.7	0.3	334.4	57.9
2018	34.3	4.9	85.0	13.9	28.0	3.5	16.0	2.5	0.3	0.2	163.3	18.5
2017	73.5	8.0	55.3	7.4	32.3	3.0	21.5	2.8	0.5	0.3	182.7	15.4
2016	83.8	12.7	99.7	9.2	64.3	8.4	25.5	2.9	1.3	0.6	273.3	22.8
2015*												
2014	59.0	7.5	69.3	10.6	23.8	3.4	20.0	3.1	2.0	0.7	172.0	12.9
2013	93.0	6.1	56.7	5.0	20.7	2.3	17.7	2.3	1.5	0.4	188.0	10.1
2012	46.0	6.7	88.0	4.9	25.5	3.6	18.3	2.4	1.3	0.4	177.8	10.7
2011*												
2010*												
2009*												
2008	25.8	6.2	23.3	2.6	8.3	1.8	3.5	1.0	0.5	0.5	61.0	8.5
2007	67.5	7.2	43.3	3.5	19.9	2.8	7.9	1.3	0.3	0.2	138.7	10.7
2006	50.7	10.1	48.5	7.7	14.7	2.0	10.2	1.4	0.2	0.2	124.0	19.1
2005	75.0	13.1	41.7	6.4	14.7	2.7	7.2	1.6	0.7	0.4	138.5	22.2
2004	29.0	3.0	60.7	5.9	26.0	3.0	14.1	13.5	0.3	0.2	129.8	10.1
2003	41.0	6.0	64.6	5.2	24.8	2.3	20.3	2.9	0.8	0.3	150.6	13.0
2002*												
2001	22.8	3.7	54.7	5.4	27.6	2.3	12.6	1.6	0.3	0.2	117.7	8.6
2000	45.1	4.9	78.3	6.5	26.8	2.9	9.0	1.5	0.4	0.3	159.3	10.7
1999	67.6	7.2	51.3	3.5	21.6	1.8	8.6	1.5	0.0		149.0	8.7
1998	18.7	3.5	17.9	2.9	20.6	2.1	6.9	1.5	0.0		64.0	7.6
1997	37.1	3.6	50.4	5.2	24.6	2.6	4.4	0.8	0.1	0.1	116.5	10.4
1996	58.9	6.5	42.4	4.0	15.3	1.5	4.0	0.7	0.0		116.1	9.5
1995	27.8	5.3	80.5	11.5	36.6	3.9	6.4	0.7	0.1	0.1	151.3	17.9
1994	62.5	7.0	54.7	7.9	38.8	3.1	3.7	0.6	0.3	0.2	159.6	15.5
1993	47.1	5.4	110.7	10.3	36.2	4.8	4.9	0.8	0.3	0.1	198.8	15.3
1992	52.0	4.3	77.9	5.1	21.9	1.8	2.8	0.6	0.2	0.1	152.8	6.8
1991	32.5	4.7	64.5	4.9	31.0	2.1	6.3	1.0	0.4	0.2	134.3	7.2
1990	23.3	2.7	43.0	2.7	18.5	2.2	3.4	0.9	0.2	0.1	88.2	5.8

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* =Sample was not collected

Table 13. PSD and RSD values obtained for Largemouth and Spotted bass taken in spring electrofishing samples in each area of Cave Run Lake; 95% confidence intervals are in parentheses.

Area	Species	≥ Stock size	PSD	RSD _a
Upper	Largemouth Bass	53	43 (± 13)	17 (± 10)
	Spotted Bass	4	25 (± 49)	-
Middle	Largemouth Bass	166	27 (± 7)	8 (± 4)
	Spotted Bass	83	7 (± 6)	2 (± 3)
Lower	Largemouth Bass	283	20 (± 5)	8 (± 3)
	Spotted Bass	110	8 (± 5)	-
Total	Largemouth Bass	502	25 (± 4)	8 (± 4)
	Spotted Bass	197	8 (± 4)	1 (± 1)

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^a Largemouth bass = RSD₁₅, spotted bass = RSD₁₄

Table 14. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected from Cave Run Lake in April 2023, includes 95% confidence interval (CI) for mean length for each age class.

Year class	No.	Age							
		1	2	3	4	5	6	7	8
2022	25	5.8							
2021	34	5.8	8.8						
2020	27	6.0	9.6	11.8					
2019	15	6.7	10.2	12.4	14.3				
2018	14	6.7	9.8	11.8	13.2	14.6			
2017	0								
2016	4	7.2	10.3	12.8	14.4	15.7	16.4	16.8	
2015	2	6.9	10.4	12.8	14.5	15.2	15.9	16.3	16.6
Mean		6.1	9.5	12.0	13.9	14.9	16.2	16.6	16.3
Number		121	96	62	35	20	6	6	2
Smallest		4.3	7.2	9.8	11.2	12.2	15.1	15.5	15.9
Largest		8.2	11.8	14.9	17.1	18.1	17.2	17.7	17.3
SE		0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.7
95% CI (±)		0.3	0.4	0.5	1.0	1.1	1.2	1.3	2.7

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Table 15. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected from Cave Run Lake in April 2023 by section of the lake; includes 95% confidence interval (CI) for mean length for each age class.

Section	Year	Age							
		1	2	3	4	5	6	7	8
Upper	Mean	6.1	9.3	12.2	14.4	15.0	16.8	17.1	
	Number	41	31	21	9	4	1	1	
	Smallest	4.7	7.2	10.5	11.9	13.6			
	Largest	8.2	11.8	14.9	17.1	16.3			
	SE	0.1	0.2	0.3	0.6	0.5			
	95% CI (±)	0.5	0.8	1.2	2.3	2.2			
Middle	Mean	6.2	9.6	12.0	13.9	15.0	16.0	16.4	15.9
	Number	53	42	27	16	10	4	4	1
	Smallest	4.3	7.7	10.2	12.2	13.3	15.1	15.5	
	Largest	7.7	11.1	13.9	16.4	18.1	17.2	17.7	
	SE	0.1	0.1	0.2	0.3	0.4	0.4	0.5	
	95% CI (±)	0.4	0.6	0.6	1.2	1.7	1.7	1.8	
Lower	Mean	6.1	9.5	11.9	13.5	14.6	16.6	17.0	17.3
	Number	27	23	14	10	6	1	1	1
	Smallest	4.5	7.7	9.8	11.2	12.2			
	Largest	7.5	11.5	13.7	15.1	16.5			
	SE	0.2	0.2	0.3	0.4	0.7			
	95% CI (±)	0.7	0.8	1.1	1.6	2.6			
Total	Mean	6.1	9.5	12.0	13.9	14.9	16.2	16.6	16.3
	Number	121	96	62	35	20	6	6	2
	Smallest	4.3	7.2	9.8	11.2	12.2	15.1	15.5	15.9
	Largest	8.2	11.8	14.9	17.1	18.1	17.2	17.7	17.3
	SE	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.7
	95% CI (±)	0.3	0.4	0.5	1.0	1.1	1.2	1.3	2.7

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Table 16. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected from Cave Run Lake in April 2023 by sex; includes 95% confidence interval (CI) for mean length for each age class.

Section	Year	Age							
		1	2	3	4	5	6	7	8
Female	Mean	6.3	9.5	12.2	14.1	14.7	15.8	16.2	
	Number	48	47	24	16	10	1	1	
	Smallest	4.3	7.2	10.5	11.8	13.3			
	Largest	8.2	11.2	14.9	17.1	18.1			
	SE	0.1	0.1	0.2	0.4	0.4			
	95% CI (±)	0.5	0.5	0.9	1.7	1.8			
Male	Mean	6.3	9.6	11.9	13.7	15.0	16.3	16.7	16.6
	Number	45	38	19	10	5	5	2	2
	Smallest	4.8	7.9	9.8	11.2	12.2	15.1	15.5	15.9
	Largest	7.9	11.8	14.4	15.1	16.5	17.2	17.7	17.3
	SE	0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.7
	95% CI (±)	0.5	0.5	0.7	1.0	1.6	1.4	1.5	2.7
Total	Mean	6.1	9.5	12.0	13.9	14.9	16.2	16.6	16.3
	Number	121	96	62	35	20	6	6	2
	Smallest	4.3	7.2	9.8	11.2	12.2	15.1	15.5	15.9
	Largest	8.2	11.8	14.9	17.1	18.1	17.2	17.7	17.3
	SE	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.7
	95% CI (±)	0.3	0.4	0.5	1.0	1.1	1.2	1.3	2.7

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Table 17. Age frequency and CPUE (fish/hr) of Largemouth Bass sampled at Cave Run Lake in April 2023.

Age	Inch class															Total	%	CPUE	SE
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				
1	81	213	142	5												441	45	98.0	25.1
2				39	127	139	25	4								334	34	74.3	18.8
3							37	43	31	2	4					117	12	25.9	4.7
4								4	4	8	9	8	2	1		36	4	8.1	1.4
5									4	10	5	12	2		4	37	4	8.3	1.6
6																0			
7													4	3		7	1	1.4	0.5
8													2	1		3	0	0.7	0.2
Total	81	213	142	44	127	139	62	51	39	20	18	20	10	5	4	975	100		
%	8	22	15	5	13	14	6	5	4	2	2	2	1	1	0	100			

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Table 18. Mean back calculated lengths (in) at each annulus for Spotted Bass collected from Cave Run Lake in April 2023; includes 95% confidence interval (CI) for mean length for each age class.

Year class	No.	Age				
		1	2	3	4	5
2022	22	5.1				
2021	28	5.0	7.6			
2020	16	5.7	8.7	10.3		
2019	12	5.4	8.2	10.0	11.0	
2018	2	4.9	7.8	9.4	10.2	10.9
Mean		5.2	8.0	10.1	10.9	10.9
Number		80	58	30	14	2
Smallest		3.7	5.9	8.4	9.5	10.6
Largest		8.0	11.0	13.2	13.4	11.2
SE		0.1	0.1	0.2	0.3	0.3
95% CI (±)		0.4	0.5	0.8	1.3	1.2

nedaagcr.d23

Table 19. Age frequency and CPUE (fish/hr) of Spotted Bass sampled at Cave Run Lake in April 2023.

Age	Inch class										Total	%	CPUE	SE
	4	5	6	7	8	9	10	11	12	13				
1	92	43	12								147	40	32.8	9.8
2		5	25	60	40	8					138	37	30.5	9.2
3					4	16	23	5		1	49	13	11.1	3.1
4						16	10	3	2	1	32	9	7.2	2.1
5								3	2		5	1	1.1	0.4
Total	92	48	37	60	44	40	36	10	2	2	371	100		
%	25	13	10	16	12	11	10	3	1	1	100			

nedaagcr.d23, nedpsdcr.d23

Table 20. Population assessment of Largemouth Bass based on samples collected at Cave Run Lake from 2008-2023 (scoring based on statewide assessment).

Year		Mean length age 3	CPUE 12.0-15.0 in	CPUE ≥ 15.0 in	CPUE ≥ 20 in	CPUE age 1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2023	Value	11.8	17.1	10.2	0.4	98.0	12	Fair	-0.833	56.5%
	Score	2	2	2	2	4				
2022	Value		14.2	6.9	0.7	85.1	12	Fair		
	Score	2	1	2	3	4				
2021	Value		20.2	15.3	0.7	102.4	14	Good		
	Score	2	2	3	3	4				
2020	Value									
	Score									
2019	Value		38.4	21.3	0.7	170.2	17	Excellent		
	Score	2	4	4	3	4				
2018	Value	11.9	28.0	16.0	0.3	35.8	13	Good	-0.612	45.8%
	Score	2	3	3	3	2				
2017	Value		32.3	21.5	0.5	72.0	17	Excellent		
	Score	2	4	4	3	4				
2016	Value	11.2	64.3	25.5	1.3	81.3	18	Excellent	-0.743	52.4%
	Score	2	4	4	4	4				
2015*	Value									
	Score									
2014	Value		23.8	20.0	2.0	59.0	17	Excellent		
	Score	2	3	4	4	4				
2013	Value		20.7	17.7	1.5	91.3	15	Good		
	Score	2	2	3	4	4				
2012	Value	11.8	25.5	18.3	1.3	45.3	16	Good	-0.852	57.3%
	Score	2	3	3	4	4				
2011*	Value									
	Score									
2010*	Value									
	Score									
2009*	Value									
	Score									
2008	Value		8.3	3.5	0.5	24.9	10	Fair	-0.786	54.4%
	Score	2	1	1	3	3				

nedpsdcr.d23-d00

* =Sample was not collected

Table 21. Population assessment of Spotted Bass based on samples collected at Cave Run Lake from 2000-2023 (scoring based on statewide assessment).

Year		Mean length age 3	CPUE 11.0-14.0 in	CPUE ≥ 14.0 in	CPUE age 1	Total score	Assessment rating
2023	Value	10.3	3.1	0.4	34.0	9	Fair
	Score	2	1	2	4		
2022	Value		0.9	0.0	20.2	7	Fair
	Score	1	1	1	4		
2021	Value		2.7	0.0	22.9	7	Fair
	Score	1	1	1	4		
2020	Value						
	Score						
2019	Value		4.0	0.2	16.0	7	Fair
	Score	1	1	1	4		
2018	Value		4.2	0.3	39.5	7	Fair
	Score	1	1	1	4		
2017	Value	8.7	5.0	0.5	27.2	8	Fair
	Score	1	1	2	4		
2016	Value		5.3	0.8	24.8	8	Fair
	Score	(1)	1	2	4		
2015*	Value						
	Score						
2014	Value		1.8	0.3	10.8	7	Fair
	Score	(1)	1	1	4		
2013	Value		4.2	0.3	11.8	7	Fair
	Score	(1)	1	1	4		
2012	Value		7.0	0.2	20.0	8	Fair
	Score	(1)	2	1	4		
2011*	Value						
	Score						
2010*	Value						
	Score						
2009*	Value						
	Score						
2008	Value		0.7	0.0	7.8	7	Fair
	Score	(1)	1	1	4		
2007	Value		2.3	0.2	13.6	7	Fair
	Score	(1)	1	1	4		
2006	Value		2.8	0.3	15.3	7	Fair
	Score	(1)	1	1	4		
2005	Value		1.7	0.3	9.2	7	Fair
	Score	(1)	1	1	4		
2004	Value		2.9	0.4	5.9	8	Fair
	Score	(1)	1	2	4		
2003	Value		3.0	0.4	13.3	8	Fair
	Score	(1)	1	2	4		
2002*	Value						
	Score						
2001	Value		2.5	0.3	9.0	7	Fair
	Score	(1)	1	1	4		
2000	Value		2.7	0.0	13.6	7	Fair
	Score	(1)	1	1	4		

nedpsdcr.d23-d00

* =Sample was not collected

Table 22. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 1.5 hours (4.5 hours total) of 30-minute electrofishing runs in each area of Cave Run Lake from 25 to 26 September 2023 (upper run was diurnal; middle and lower runs were nocturnal).

Area	Species	Inch class																			Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Upper	Largemouth Bass	16	23	9	3	5	1	7	10	7	6	6			1					1	95	63.3	9.0	
	Spotted Bass	8	28	9	2	3	4			1	3										58	38.7	12.2	
	Smallmouth Bass																				0			
Middle	Largemouth Bass		8	30	13		4	17	11	9	8	7	2	2	3	2	1				117	78.0	26.2	
	Spotted Bass	1	94	52	3	36	48	14	9	7	4	2									270	180.0	31.1	
	Smallmouth Bass		5	2				1		1											9	6.0	2.0	
Lower	Largemouth Bass		7	15	3	10	29	25	32	24	12	4	5	2	2	2	1		1	1	175	116.7	5.9	
	Spotted Bass	7	46	10	26	38	21	19	6	8	4	1		1							187	124.7	38.9	
	Smallmouth Bass	1	4	4		2	5	1	2										1	1	21	14.0	5.3	
Total	Largemouth Bass	16	38	54	19	15	34	49	53	40	26	17	7	4	6	4	2		1	1	1	387	86.0	11.4
	Spotted Bass	16	168	71	31	77	73	33	15	16	11	3		1							515	114.4	25.3	
	Smallmouth Bass	1	9	6		2	5	2	2	1									1	1	30	6.7	2.6	

nedwrsr.d23

Table 23. Number of fish and mean relative weight (W_r) values for length groups of black bass collected in Cave Run Lake from 25 to 26 September 2023. Standard errors are in parentheses.

Species	Area	Length group							
		8.0-11.9 in		12.0-14.9 in		≥15.0 in		Overall	
		No.	W_r	No.	W_r	No.	W_r	No.	W_r
Largemouth Bass	Upper	30	86 (1)	6	87 (3)	2	87 (3)	38	86 (1)
	Middle	45	81 (1)	11	77 (2)	6	87 (2)	62	81 (1)
	Lower	92	80 (1)	11	81 (2)	7	91 (3)	110	81 (1)
	Total	167	81 (1)	28	81 (1)	15	89 (2)	210	82 (1)
Spotted Bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in		Overall	
		No.	W_r	No.	W_r	No.	W_r	No.	W_r
	Upper	5	101 (3)	3	95 (4)	0		8	99 (2)
	Middle	78	94 (1)	6	82 (6)	0		84	93 (1)
	Lower	51	92 (1)	5	84 (6)	1	96 (-)	57	91 (2)
Total	134	94 (1)	14	86 (3)	1	96 (-)	149	93 (1)	
Smallmouth Bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in		Overall	
		No.	W_r	No.	W_r	No.	W_r	No.	W_r
	Upper	0		0		0		0	
	Middle	2	76 (2)	0		0		2	76 (2)
	Lower	8	86 (4)	0		2	90 (5)	10	87 (3)
Total	10	84 (4)	0		2	90 (5)	12	85 (3)	

nedwrscr.d23

Table 24. Number of fish and mean relative weights (W_r) for each length group of Largemouth Bass captured at Cave Run Lake from 1990-2023. Standard errors are in parentheses.

Year	Length group						Overall	
	8.0-11.9 in		12.0-14.9 in		≥ 15.0 in			
	No.	W_r	No.	W_r	No.	W_r	No.	W_r
2023	167	81 (1)	28	81 (1)	15	89 (2)	210	82 (1)
2022								
2021								
2020								
2019								
2018	102	85 (1)	34	86 (1)	25	91 (1)	161	86 (1)
2017								
2016	129	84 (2)	32	81 (2)	12	86 (3)	173	84 (2)
2015	219	84 (2)	99	82 (1)	32	83 (2)	350	83 (1)
2014								
2013								
2012								
2011	392	86 (1)	130	85 (1)	28	95 (1)	550	87 (1)
2010	228	84 (1)	54	83 (1)	17	90 (3)	299	84 (<1)
2009	216	85 (<1)	57	84 (1)	20	92 (2)	293	85 (<1)
2008	122	86 (2)	29	88 (2)	9	90 (2)	160	87 (2)
2007	163	90 (1)	34	89 (1)	4	89 (4)	201	90 (1)
2006	172	91 (1)	53	94 (1)	10	92 (2)	235	92 (1)
2005	136	85 (1)	26	81 (2)	8	85 (3)	170	84 (1)
2004	150	87 (1)	55	86 (1)	19	90 (1)	224	87 (<1)
2003	219	86 (1)	45	84 (1)	17	90 (2)	281	86 (1)
2002	119	86 (1)	40	93 (1)	24	94 (2)	183	89 (1)
2001	122	87 (1)	28	87 (1)	16	93 (3)	166	88 (1)
2000								
1999	209	89 (1)	53	93 (1)	14	88 (2)	276	90 (1)
1998	274	95 (1)	28	90 (2)	14	91 (3)	316	95 (1)
1997	190	93 (1)	63	89 (1)	21	89 (2)	274	91 (<1)
1996	243	87 (1)	54	86 (1)	8	89 (3)	305	87 (<1)
1995	224	93 (1)	90	88 (1)	15	91 (1)	329	92 (<1)
1994	374	93 (1)	71	91 (1)	5	87 (3)	450	93 (<1)
1993	232	93 (1)	61	88 (1)	5	89 (4)	298	92 (1)
1992	165	84 (1)	20	85 (1)	8	93 (4)	193	84 (1)
1991	232	89 (1)	38	84 (1)	10	89 (5)	280	89 (1)
1990	125	87 (1)	20	83 (1)	10	89 (2)	155	87 (1)

nedwrs.cr.d23,d18,d16-d15,d11-d01,d99-d90

Table 25. Indices of year class strength of age-0 Largemouth Bass collected in the fall and age-1 Largemouth Bass collected the following spring while nocturnal electrofishing at Cave Run Lake.

Year class	Area	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.0	0.1	84.7	5.9	12.7	1.7		
2022		*						98.0	25.1
2021		*						85.1	22.6
2020		*						102.4	24.6
2019		*						*	*
2018		*						170.2	43.9
2017		*						35.8	5.3
2016	Total	4.8	0.1	62.4	19.7	29.8	8.0	72.0	-
2015	Total	5.0	<0.1	100.7	46.4	50.9	12.4	81.3	12.5
2014		*						*	*
2013		*						59.0	7.5
2012	Total	4.4	<0.1	100.7	35.6	31.0	9.2	91.3	6.0
2011	Total	4.0	<0.1	85.0	20.6	15.3	2.4	45.3	6.7
2010	Total	4.5	<0.1	91.7	27.7	24.7	4.2	*	*
2009	Total	4.6	<0.1	70.2	12.2	26.3	4.1	*	*
2008	Total	4.6	<0.1	76.5	28.2	26.3	8.1	*	*
2007	Total	4.7	0.1	50.5	19.0	20.3	7.7	24.9	5.9
2006	Total	4.8	0.1	68.5	26.2	31.5	13.1	66.5	7.1
2005	Total	4.1	0.1	51.5	19.4	10.8	3.5	49.2	9.9
2004	Total	5.3	0.1	86.0	26.3	53.5	14.0	63.4	9.9
2003	Total	4.7	<0.1	70.7	19.0	23.5	6.4	28.1	3.0

* No data collected

nedwrsr.d23,d16 - d15, d09 - 03; nedpsdcr.d23-d21, d19-d16, d14 - d12, d08-d02

Table 26. Length frequency and CPUE (fish/nn) for White Bass collected in 12 net-nights of sampling at Cave Run Lake (6 net-nights each in the upper and middle sections) from 24-26 October 2023.

Species	Inch class										Total	CPUE	SE	
	7	8	9	10	11	12	13	14	15	16				17
Upper	1			4	5	11	36	37	21	1		116	19.3	5.1
Middle	1			4	7	15	42	39	39	10	1	158	26.3	7.5
Total	2			8	12	26	78	76	60	11	1	274	22.8	4.5

nedwtbcr.d23

Table 27. Fall gill net CPUE (fish/nn) for different length groups of White Bass collected at Cave Run Lake from 1993-2023.

Year	Length group						Total	
	≥ 8.0 in		≥ 12.0 in		≥ 15.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE		
2023	22.7	4.4	21.0	4.4	6.0	1.8	22.8	4.5
2017	17.1	3.0	15.2	2.8	0.3	0.2	19.2	3.5
2014	2.1	0.6	1.6	0.5	0.0		2.5	0.6
2011	21.8	4.6	17.3	3.8	1.1	0.5	23.2	4.4
2008	9.9	1.7	7.8	1.5	1.6	0.5	11.3	1.7
2007	8.1	1.8	6.1	1.4	0.6	0.3	8.6	1.8
2005	12.3	3.8	7.5	2.9	0.7	0.3	12.3	3.8
2003	18.0	6.0	4.9	2.3	0.5	0.3	19.4	5.8
1998	14.1	3.0	9.3	2.1	0.9	0.5	16.9	3.8
1993	4.1	0.8	3.4	0.7	0.4	0.1	6.2	1.0

nedwtbcr.d23, d17, d14, d11, d08, d07, d05, d03, nedwbgr.d98, d93

Table 28. Number of fish and mean relative weight (W_r) values for length groups of White Bass collected in Cave Run Lake by gill netting. Standard errors are in parentheses.

Year	Length group							
	6.0 - 8.9 in		9.0 - 11.9 in		≥ 12.0 in		Total	
	No.	W_r	No.	W_r	No.	W_r	No.	W_r
2023	2	83 (6)	20	84 (1)	252	86 (<1)	274	86 (<1)
2017	35	89 (1)	25	86 (1)	228	91 (<1)	228	90 (<1)
2014	2	96 (24)	7	82 (2)	25	85 (1)	25	85 (1)
2011	19	88 (2)	40	89 (1)	173	96 (1)	173	94 (1)
2008	22	93 (2)	19	90 (2)	94	92 (1)	94	92 (1)
2007	4	95 (3)	32	88 (1)	49	93 (1)	49	92 (1)

nedctncr.d23, d17, d14, d11, d08, d07

Table 29. Mean back calculated lengths (in) at each annulus for White Bass collected from Cave Run Lake in October 2023, includes 95% confidence interval (CI) for mean length for each age class.

Year class	No.	Age							
		1	2	3	4	5	6	7	8
2022	19	8.0							
2021	29	7.6	10.9						
2020	30	7.7	11.3	12.7					
2019	54	7.9	11.5	12.9	13.8				
2018	16	8.2	12.0	13.6	14.4	14.9			
2017	13	7.9	12.0	13.5	14.4	15.0	15.4		
2016	4	8.8	12.3	13.9	14.8	15.5	15.9	16.2	
2015	1	8.8	12.6	13.9	14.6	15.2	15.6	16.0	16.2
Mean		7.9	11.5	13.1	14.1	15.0	15.5	16.1	16.2
Number		166	147	118	88	34	18	5	1
Smallest		6.0	8.8	11.3	12.1	13.3	14.5	15.7	
Largest		9.7	1.5	14.8	15.4	16.0	16.5	16.5	
SE		0.1	0.1	0.1	0.1	0.1	0.1	0.1	
95% CI (±)		0.2	0.3	0.2	0.3	0.4	0.5	0.5	

nedaagcr.d17

Table 30. Age frequency and CPUE (fish/nn) of White Bass sampled using gill nets for 12 net-nights at Cave Run Lake in October 2023.

Age	Inch class							Total	%	CPUE	SE
	10	11	12	13	14	15	16				
1	8	8						16	6	1.4	0.2
2		4	22	9				35	13	2.8	0.2
3			3	38	15	4		60	22	5.0	1.1
4			1	27	56	20		104	38	8.6	1.7
5				4	4	18	2	28	11	2.4	0.6
6					2	16	4	22	8	1.8	0.5
7						2	4	6	2	0.5	0.2
8							1	1	0	0.1	0.1
Total	8	12	26	78	77	60	11	272	100		
%	3	4	10	29	28	22	4	100			

nedwtbcr.d23; nedaagcr.d23

Table 31. Population assessment of White Bass based on samples collected at Cave Run Lake from 1993-2023 (scoring based on statewide assessment).

Year		CPUE	Mean length	CPUE ≥ 12.0 in	CPUE age 1	Total score	Assessment rating
		age 1 and older	age 2 at capture				
2023	Value	22.7	12.2	21.0	1.4	10	Good
	Score	4	1	4	1		
2017	Value	16.8	13.6	15.2	2.1	12	Good
	Score	3	3	4	2		
2014	Value	2.1		1.6	2.1	5	Poor
	Score	1	2	1	1		
2011	Value	21.4	11.6	17.3	3.4	12	Good
	Score	4	2	4	2		
2008	Value	9.0	12.9	7.8	2.3	9	Fair
	Score	2	3	3	1		
2007	Value	4.3	12.9	3.1	1.1	7	Fair
	Score	1	3	2	1		
2005	Value	13.3	12.9	7.5	5.1	12	Good
	Score	3	3	3	3		
2003	Value	17.9	13.6	4.9	15.1	13	Good
	Score	3	4	2	4		
1998	Value	13.6	13.4	9.3	4.4	12	Good
	Score	3	4	3	2		
1993	Value	10.0	13.0	6.8	3.1	12	Good
	Score	3	4	3	2		

nedwtbcr.d23,d17,d14,d11,d07,d05,d03,d98,d93

Table 32. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 1.5 hours (4.5 hours total) of 30-minute nocturnal electrofishing runs in each area of Grayson Lake from 24-26 April 2023.

Area	Species	Inch class																		Total	CPUE	SE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Upper	Largemouth Bass	1	6	9	8	4	12	51	30	17	3	2	5	1	2	2				153	102.0	11.1
	Spotted Bass						1		1	1			1							4	2.7	1.3
Middle	Largemouth Bass	7	84	131	35	21	79	49	41	12	12	2		3	3	1	3		3	486	324.0	52.9
	Spotted Bass	8	22	3	5	11	5	3	1		1									59	39.3	9.8
Lower	Largemouth Bass	2	25	43	17	11	37	59	51	20	11	2	1	4	2	1	1	2	1	290	193.3	14.3
	Spotted Bass	27	61	23	30	25	22	11	7	2										208	138.7	0.7
Total	Largemouth Bass	10	115	183	60	36	128	159	122	49	26	6	6	8	7	4	4	2	4	929	206.4	36.0
	Spotted Bass	35	83	26	35	36	28	14	9	3	1		1							271	60.2	20.5

nedpsdgl.d23

Table 33. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Grayson Lake from 1999-2023.

Year	Length group										Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	89.8	27.4	101.8	9.4	8.4	1.4	6.4	1.1	0.9	0.4	206.4	36.0
2022	68.8	20.7	82.3	10.9	13.8	2.4	6.3	1.5	0.5	0.5	171.0	30.0
2021	105.8	36.0	94.7	15.1	10.4	1.6	10.2	2.5	1.1	0.5	221.1	47.9
2020*												
2019	145.5	47.4	86.0	17.1	15.0	2.2	9.5	3.0	1.8	1.0	256.0	59.4
2018	130.4	26.9	117.6	22.1	16.7	3.9	8.4	1.7	1.1	0.5	273.1	51.4
2017	90.9	13.7	107.1	17.9	19.8	2.3	8.9	1.3	0.9	0.5	226.7	25.5
2016	178.3	15.4	93.7	7.4	15.7	2.4	11.0	1.5	1.7	1.0	298.7	16.1
2015	55.1	14.2	90.9	12.5	18.9	4.0	14.9	2.6	3.3	0.9	179.8	27.8
2014	53.5	10.7	97.3	11.3	12.7	1.6	13.5	2.0	2.2	0.7	176.9	18.3
2013	75.2	11.3	78.2	5.7	13.2	1.5	16.3	2.1	1.5	0.4	182.8	14.4
2012	67.0	11.4	91.0	6.5	16.8	2.2	13.3	2.8	0.3	0.3	188.0	16.1
2011*												
2010*												
2009	22.8	4.0	41.0	4.2	17.0	2.7	12.7	2.0	0.8	0.3	93.5	10.3
2008	25.7	7.2	22.5	4.4	11.5	2.5	3.7	0.9	0.3	0.2	63.3	11.5
2007	48.0	8.0	46.8	3.8	16.0	2.1	5.0	0.8	0.2	0.2	115.8	11.6
2006	18.8	2.9	55.5	7.4	23.7	3.9	5.3	1.1	0.3	0.2	103.3	10.1
2005	50.1	8.0	70.2	7.9	25.1	3.7	2.9	0.5	0.2	0.2	148.3	15.9
2004	162.3	22.0	77.8	10.1	12.9	1.4	2.9	0.6	0.3	0.2	255.9	31.9
2003	128.3	10.7	79.5	6.5	6.3	0.8	2.2	0.6	0.7	0.4	216.3	15.1
2002	132.5	17.9	54.5	5.5	4.8	1.4	3.0	0.8	0.8	0.4	194.8	22.7
2001	220.8	30.6	54.2	3.2	6.7	0.9	2.2	0.5	0.2	0.2	283.9	30.2
2000	143.3	20.6	65.7	5.9	13.4	1.5	6.7	1.0	0.3	0.2	229.1	25.9
1999	172.7	21.6	102.4	10.1	24.1	2.1	4.6	0.7	0.2	0.2	303.8	31.3

nedpsdgl.d23-d21; d19-d12; d09 - d99

* =Sample was not collected

Table 34. PSD and RSD values obtained for Largemouth and Spotted bass taken in spring electrofishing samples in each area of Grayson Lake; 95% confidence intervals are in parentheses.

Area	Species	≥ Stock size	PSD	RSD _a
Upper	Largemouth Bass	125	12 (± 6)	4 (± 3)
	Spotted Bass	4	50 (± 57)	25 (±49)
Middle	Largemouth Bass	208	13 (± 5)	6 (± 3)
	Spotted Bass	21	5 (± 9)	-
Lower	Largemouth Bass	192	13 (± 5)	6 (± 3)
	Spotted Bass	67	3 (± 4)	-
Total	Largemouth Bass	525	13 (± 3)	6 (± 2)
	Spotted Bass	92	5 (± 5)	1 (± 2)

nedpsdgl.d23

_a Largemouth Bass = RSD₁₅, Spotted Bass = RSD₁₄

Table 35. Population assessment of Largemouth Bass based on samples collected at Grayson Lake from 2008-2023 (scoring based on statewide assessment).

Year	Mean length age 3	CPUE 12.0-15.0 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	CPUE age 1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2023	Value 8.4	6.4	0.9	82.2					
	Score 2	1	2	3	4	12	Fair		
2022	Value 13.8	6.3	0.5	54.3					
	Score 2	1	2	3	4	12	Fair		
2021	Value 11.7	10.4	10.2	1.1	97.1				
	Score 2	1	2	3	4	12	Fair	-0.547	42.10%
2020*	Value								
	Score								
2019	Value 15.0	9.5	1.8	142.8					
	Score 2	1	2	4	4	13	Good		
2018	Value 16.7	8.4	1.1	126.9					
	Score 2	2	2	3	4	13	Good		
2017	Value 12.2	19.8	8.9	0.9	85.1				
	Score 2	2	2	3	4	13	Good	-0.634	46.90%
2016	Value 15.7	11.0	1.7	169.3					
	Score 2	1	2	3	4	12	Fair		
2015	Value 18.9	14.9	3.3	53.8					
	Score 2	2	3	4	4	15	Good		
2014	Value 12.7	13.5	2.2	46.9					
	Score 2	1	3	4	4	14	Good		
2013	Value 13.2	16.3	1.5	73.2					
	Score 2	1	3	4	4	14	Good		
2012	Value 16.8	13.3	0.3	48.5					
	Score 2	2	3	2	4	13	Good		
2011*	Value								
	Score								
2010*	Value								
	Score								
2009	Value 17.0	12.7	0.8	19.9					
	Score 2	2	2	3	2	11	Fair		
2008	Value 11.6	11.5	3.7	0.3	21.3				
	Score 2	1	1	2	2	8	Poor	-0.445	35.90%

nedpsdgl.d23-d02; nedaaggl.d21, d17, d08

* =Sample was not collected

Table 36. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 1.5 hours (4.5 hours total) of 30-minute nocturnal electrofishing runs in each area of Grayson Lake from 18-20 September 2023.

Area	Species	Inch class																			Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Upper	Largemouth Bass	2	33	56	25	14	9	29	39	38	16	6	2	2	1	3		1	4	1	281	187.3	47.4	
	Spotted Bass		2	3							1										6	4.0	2.3	
Middle	Largemouth Bass		11	59	41	5	45	54	57	42	15	8	2	1		2			1	3	1	347	231.3	6.6
	Spotted Bass		9	15	16	16	11	9	6	3												85	56.7	9.4
Lower	Largemouth Bass		8	20	2	5	12	33	47	25	8	9	2	2			1					174	116.0	19.1
	Spotted Bass	1	30	10	31	43	23	16	15	7	2	1										179	119.3	1.8
Total	Largemouth Bass	2	52	135	68	24	66	116	143	105	39	23	6	5	1	5	1	1	5	4	1	802	178.2	22.4
	Spotted Bass	1	41	28	47	59	34	25	21	10	3	1										270	60.0	16.9

nedwrsjl.d23

Table 37. Number of fish and mean relative weight (W_r) values for each length group of black bass collected in Grayson Lake by section. Standard errors are in parentheses.

Species	Area	Length group						Overall	
		8.0-11.9 in		12.0-14.9 in		≥15.0 in		No.	W_r
		No.	W_r	No.	W_r	No.	W_r		
Largemouth Bass	Upper	122	85 (1)	10	87 (2)	10	96 (2)	142	86 (1)
	Middle	166	82 (1)	11	85 (2)	7	93 (2)	184	83 (1)
	Lower	113	81 (1)	13	79 (5)	1	96 (-)	127	81 (1)
	Total	401	83 (1)	34	83 (2)	18	95 (2)	453	83 (1)
Spotted Bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in		Overall	
		No.	W_r	No.	W_r	No.	W_r	No.	W_r
	Upper	0		1	83 (-)	0		1	83 (-)
	Middle	28	95 (2)	0		0		28	95 (2)
	Lower	56	91 (1)	3	84 (9)	0		59	90 (1)
Total	84	92 (1)	4	83 (6)	0		88	92 (1)	

nedwrsjl.d23

Table 38. Number of fish and mean relative weight (W_r) values for each length group of Largemouth Bass captured at Grayson Lake from 1990-2023. Standard errors are in parentheses.

Year	Length group						Overall	
	8.0-11.9 in		12.0-14.9 in		≥15.0 in		No.	W_r
2023	401	83 (1)	34	83 (2)	18	95 (2)	453	83 (1)
2022	435	79 (<1)	32	81 (2)	19	89 (2)	486	80 (<1)
2021	463	80 (<1)	42	79 (2)	13	90 (2)	518	80 (<1)
2020								
2019								
2018								
2017	464	84 (2)	57	84 (1)	20	90 (2)	541	84 (1)
2016								
2015								
2014								
2013								
2012	300	83 (<1)	37	86 (2)	10	100 (3)	347	84 (<1)
2011	235	85 (1)	34	86 (2)	19	92 (2)	288	85 (1)
2010	174	81 (1)	31	77 (1)	3	90 (3)	208	81 (1)
2009	115	80 (1)	25	82 (2)	14	95 (3)	154	72 (1)
2008	124	80 (1)	16	86 (2)	12	96 (1)	152	82 (1)
2007	120	83 (1)	20	84 (2)	6	95 (3)	146	84 (1)
2006	130	84 (1)	33	85 (2)	12	95 (3)	175	85 (1)
2005	234	81 (<1)	61	81 (1)	10	89 (4)	305	81 (<1)
2004	313	87 (<1)	64	84 (1)	8	86 (2)	385	86 (<1)
2003	642	82 (<1)	72	81 (1)	10	90 (3)	724	82 (<1)
2002	350	84 (1)	40	83 (1)	15	90 (3)	405	84 (1)
2001	89	81 (1)	42	82 (1)	14	93 (2)	145	83 (1)
2000								
1999	179	77 (1)	35	78 (2)	7	88 (3)	221	77 (1)
1998	556	90 (<1)	89	84 (1)	16	94 (3)	661	89 (<1)
1997	392	85 (<1)	89	81 (1)	9	92 (3)	490	84 (<1)
1996	433	82 (<1)	95	81 (1)	7	90 (2)	535	82 (<1)
1995	437	87 (<1)	57	83 (1)	20	95 (2)	514	86 (<1)
1994	493	84 (<1)	86	81 (1)	13	93 (2)	592	84 (<1)
1993	704	87 (<1)	93	81 (1)	22	96 (3)	819	86 (<1)
1992	317	85 (<1)	45	82 (1)	5	90 (4)	367	84 (<1)
1991	18	84 (2)	1	83 (-)	0		19	84 (2)
1990	79	84 (1)	13	85 (3)	1	105 (-)	93	84 (1)

nedwrsjl.d23-d21,d17,d12-d01, d99-d90

Table 39. Indices of year class strength of age-0 Largemouth Bass collected in the fall and age-1 Largemouth Bass collected the following spring while nocturnal electrofishing at Grayson Lake.

Year class	Area	Age 0		Age 0		Age 0 ≥ 5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.6	0.1	61.8	15.3	19.8	6.0		
2022	Total	5.0	<0.1	44.7	12.7	24.2	8.4	82.2	27.4
2021	Total	4.7	<0.1	67.6	18.9	23.6	10.2	54.3	18.9
2020		*		*		*		97.1	36.5
2019	Total	4.8	<0.1	167.7	36.5	67.7	14.3	*	
2018	Total	4.9	<0.1	164.2	39.3	74.2	19.8	142.8	47.3
2017	Total	5.2	<0.1	91.1	20.1	63.1	15.3	126.9	28.0
2016	Total	4.7	<0.1	116.4	24.1	38.9	9.7	85.1	12.7
2015	Total	4.8	<0.1	126.0	16.7	48.7	8.6	169.3	15.1
2014	Total	4.6	<0.1	101.8	15.7	31.8	8.3	53.8	14.3
2013	Total	4.3	<0.1	81.3	11.2	15.3	3.3	46.9	9.5
2012	Total	4.5	<0.1	139.1	23.0	41.8	6.1	65.7	9.1
2011	Total	4.0	<0.1	83.6	15.0	11.1	2.6	48.5	12.0
2010	Total	4.8	<0.1	98.2	17.3	42.0	6.9	*	
2009	Total	4.1	0.1	33.1	5.7	4.2	1.4	*	
2008	Total	4.1	<0.1	66.0	16.4	8.7	2.8	19.9	3.8
2007	Total	4.3	0.1	44.9	9.2	12.9	2.8	29.8	10.0
2006	Total	4.1	<0.1	87.1	17.9	12.0	2.6	45.9	8.0
2005	Total	4.0	<0.1	72.3	17.0	11.7	2.2	17.3	2.8
2004	Total	4.3	0.1	40.4	5.7	11.3	2.1	46.8	7.8
2003	Total	4.3	<0.1	59.1	6.8	10.4	1.7	158.9	21.7

nedwrsigl.d23-d21,d17,d12 - d03; nedbsigl.d19-d18, d16-d13; nedpsdgl.d22-d21,d19-d12, d09 - d04
nedaaggl.d03, d08, d17, d21

* =Sample was not collected

Table 40. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 0.39 hours (3- 7.5-minute runs) of diurnal electrofishing in Clear Creek Lake on 27 April 2023.

Species	Inch class																	Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Largemouth Bass	3	23	22	8	3	7	16	13	6	7	6	1	3			1	1	120	307.7	23.1

nedpsdcc.d23

Table 41. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Clear Creek Lake from 2008-2023.

Year	Length group										Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	151.3	16.8	107.7	16.0	35.9	2.6	12.8	2.6	0.0	0.0	307.7	23.1
2022 _a												
2021	54.7	4.8	96.0	16.0	18.7	1.3	1.3	1.3	1.3	1.3	170.7	21.8
2020 _a												
2019 _a												
2018	88.9	15.5	130.6	26.5	5.6	5.6	11.1	2.8	5.6	2.8	236.1	40.4
2017 _a												
2016 _a												
2015 _a												
2014	205.1	21.9	118.0	33.9	7.7	0.0	18.0	2.6	10.3	5.1	348.7	57.3
2013 _a												
2012	80.0	20.1	234.7	41.4	10.7	2.7	16.0	8.0	8.0	0.0	341.3	49.4
2011 _a												
2010 _a												
2009	82.7	10.7	36.0	9.2	16.0	4.6	8.0	4.6	5.3	2.7	261.3	31.4
2008	378.0	66.4	162.0	13.2	12.0	5.2	10.0	3.8	4.0	2.3	562.0	55.1

nedpsdcc.d23, d21, d18,d14,d12,d09,d08

_a = Lake not sampled

Table 42. Largemouth Bass PSD and RSD₁₅ values from spring electrofishing at Clear Creek Lake from 2008-2023; 95% confidence intervals are in parentheses.

Year	≥ Stock size	PSD	RSD ₁₅
2023	61	31 (± 12)	8 (± 7)
2022 _a			
2021	87	17 (± 8)	1 (± 2)
2020 _a			
2019 _a			
2018	53	11 (± 9)	8 (± 7)
2017 _a			
2016 _a			
2013			
2014	56	18 (± 10)	13 (± 9)
2013 _a			
2012	98	10 (± 6)	6 (± 5)
2011 _a			
2010 _a			
2009	36	25 (± 14)	8 (± 9)
2008	92	12 (± 7)	5 (± 5)

nedpsdcc.d23, d21, d18,d14,d12,d09,d08

_a = Lake not sampled

Table 43. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected from Clear Creek Lake in April 2023, includes 95% confidence interval (CI) for mean length for each age class.

Year class	No.	Age							
		1	2	3	4	5	6	7	8
2022	14	5.7							
2021	11	5.4	8.8						
2020	11	4.9	7.9	9.7					
2019	7	5.4	8.6	10.0	11.2				
2018	6	6.4	9.5	10.9	11.9	12.8			
2017	3	5.2	8.0	9.7	10.9	11.8	12.6		
2016	2	6.5	9.3	11.5	12.5	13.2	13.6	14.0	
2015	2	5.9	8.4	9.9	11.2	11.9	12.6	13.0	13.4
Mean		5.5	8.6	10.1	11.5	12.5	12.9	13.5	13.4
Number		56	42	31	20	13	7	4	2
Smallest		3.8	6.1	8.3	10.3	11.4	12.0	12.4	13.2
Largest		7.8	10.8	13.0	14.4	15.7	15.2	15.5	13.5
SE		0.1	0.1	0.2	0.3	0.4	0.4	0.7	0.2
95% CI (±)		0.5	0.6	0.7	1.0	1.6	1.6	2.7	0.5

nedaagcr.d23

Table 44. Age frequency and CPUE (fish/hr) of Largemouth Bass sampled at Clear Creek Lake in April 2023.

Age	Inch class											Total	%	CPUE	SE		
	4	5	6	7	8	9	10	11	12	13	14					15	
1	23	22	8											53	46	135.9	18.0
2				3	6	8								17	15	42.6	4.0
3					1	8	7	1						17	16	43.4	9.7
4							6	3		1				10	8	23.9	9.8
5								3	2	1		2		8	6	18.0	0.6
6									4	1				5	4	12.1	1.3
7									2			2		4	3	8.3	0.6
8										2				2	2	6.2	0.0
Total	23	22	8	3	7	16	13	7	8	5		4		116	100		
%	20	19	7	3	6	14	11	5	6	5		3		100			

nedpsdcc.d23, nedaagcc.d23

Table 45. Population assessment of Largemouth Bass based on samples collected at Clear Creek Lake from 2012-2023 (scoring based on statewide assessment).

Year		Mean length age 3	CPUE 12.0-15.0 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	CPUE age 1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2023	Value	9.9	143.6	35.9	12.8	0.0	11	Fair	-0.425	34.60%
	Score	1	4	3	2	1				
2022 _a	Value									
	Score									
2021	Value		48.0	18.7	1.3	1.3	9	Fair		
	Score	1	3	2	1	2				
2020 _a	Value									
	Score									
2019 _a	Value									
	Score									
2018	Value	9.8	83.3	5.6	11.1	5.6	12	Good	-0.877	58.4%
	Score	1	4	1	2	4				
2017 _a	Value									
	Score									
2016 _a	Value									
	Score									
2015 _a	Value									
	Score									
2014	Value	9.1	61.5	7.7	18.0	10.3	12	Good		
	Score	1	3	1	3	4				
2013 _a	Value									
	Score									
2012	Value		65.6	10.7	16.0	8.0	12	Good		
	Score	2	3	1	2	4				

nedpsdcc.d23

_a = Lake was not sampled

Table 46. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 0.39 hours (3 - 7.5-minute runs) of diurnal electrofishing in Clear Creek Lake on 29 September 2023.

Species	Inch class											Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12			
Largemouth Bass	1	7	4	5		1	7	7	6	4	2	44	112.8	11.2

nedWRScc.d18

Table 47. Number of fish and mean relative weight (W_r) values for each length group of Largemouth Bass collected at Clear Creek Lake 2003-2023. Standard errors are in parentheses.

Year	Length group							
	8.0-11.9 in		12.0-14.9 in		≥15.0 in		Overall	
	No.	W_r	No.	W_r	No.	W_r	No.	W_r
2023	24	81 (1)	2	83 (2)	0		26	82 (1)
2014	34	83 (1)	1	82 (-)	2	89 (5)	37	83 (1)
2009	29	76 (1)	1	82 (-)	1	86 (-)	31	76 (1)
2006	43	81 (1)	5	79 (4)	4	100 (4)	52	82 (1)
2005	26	86 (2)	6	83 (2)	0		32	85 (1)
2003	9	88 (2)	9	81 (2)	0		18	85 (1)

nedwrsr.d23,d14,d09,d06,d05,d03

Table 48. Length frequency and CPUE (fish/hr) of Largemouth Bass bass collected in 1.5 hours of nocturnal electrofishing (6- 15-minute runs) at Greenbo Lake (Greenup Co.) on 20 April 2023.

Species	Inch class																							Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Largemouth Bass	14	12	39	6	10	13	12	19	31	45	44	25	8	4	5	7	8		4	5	1	3	315	210.0	15.9	

nedpsdgb.d23

Table 49. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Greenbo Lake from 2009-2023.

Year	Length group											
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in		Total	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	62.7	12.1	71.3	6.8	51.3	2.2	24.7	8	8.7	2.8	210.0	15.9
2022	48.7	7.8	58.0	5.1	34.0	3.2	16.0	4.6	2.7	1.3	156.7	5.4
2021	60.0	12.8	75.3	19.5	38.7	4.7	35.3	12.3	4.7	3.0	209.3	26.8
2020*												
2019	31.7	3.9	35.3	6.1	47.7	4.1	9.0	2.2	3.3	1.6	176.0	15.2
2018	63.3	7.8	72.7	10.8	95.3	7.62	20.0	5.0	7.3	3.3	251.3	22.8
2017	24.0	5.6	78.0	13.1	82.7	10.7	16.0	2.3	4.0	1.5	200.7	17.2
2016	40.7	7.8	103.3	5.5	76.7	7.6	18.0	5.5	6.0	2.9	238.7	15.0
2015	38.7	4.8	68.0	7.7	58.0	8.1	12.7	3.0	2.0	1.4	177.3	16.8
2014	28.0	7.2	52.7	3.0	116.0	16.1	7.3	1.6	3.3	1.2	204.0	16.0
2013	14.0	1.7	78.7	7.4	75.3	17.3	8.7	2.2	1.3	0.8	176.7	22.4
2012	25.3	4.8	111.3	11.8	64.7	8.0	8.7	2.8	2.0	0.9	210.0	21.1
2011	46.0	13.1	91.3	9.3	58.0	8.9	6.7	3.2	1.3	0.8	202.0	14.8
2010	78.0	12.9	87.3	3.5	45.3	9.3	13.3	5.8	2.0	1.4	224.0	11.3
2009	44.7	9.4	60.0	8.7	50.0	8.0	18.0	3.4	2.7	1.3	172.7	16.7

nedpsdgb.d23-d21, d19-d09

* =Sample was not collected

Table 50. PSD and RSD₁₅ values obtained for Largemouth Bass taken in spring electrofishing samples at Greenbo Lake from 2009-2023; 95% confidence intervals are in parentheses.

Year	≥ Stock size	PSD	RSD ₁₅
2023	221	52 (± 7)	17 (± 5)
2022	162	46 (± 8)	15 (± 5)
2021	224	50 (± 7)	24 (± 6)
2020*			
2019	214	60 (± 6)	11 (± 4)
2018	282	61 (± 6)	11 (± 4)
2017	265	56 (± 6)	9 (± 3)
2016	297	48 (± 6)	8 (± 3)
2015	208	51 (± 7)	9 (± 4)
2014	264	70 (± 6)	4 (± 2)
2013	244	52 (± 6)	5 (± 3)
2012	277	40 (± 6)	5 (± 3)
2011	234	51 (± 6)	4 (± 3)
2010	219	40 (± 7)	9 (± 4)
2009	192	53 (± 7)	14 (± 5)

nedpsdgb.d23-d21, d19-d09

* =Sample was not collected

Table 51. Population assessment of Largemouth Bass based on samples collected at Greenbo Lake from 2010-2023 (scoring based on statewide assessment).

Year		Mean length age 3	CPUE 12.0-15.0 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	CPUE age 1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2023	Value		51.3	24.7	8.7	50.0	16	Good		
	Score	2	4	3	4	3				
2022	Value		32.7	34.0	16.0	2.7	14	Good		
	Score	2	3	3	3	3				
2021	Value	10.5	44.0	38.7	35.3	4.7	16	Good	-0.311	26.70%
	Score	2	3	3	4	4				
2020*	Value									
	Score									
2019	Value		25.3	47.7	9.0	3.3	14	Good	-	-
	Score	3	2	4	2	3				
2018	Value		22.7	95.3	20.0	7.3	16	Good	-	-
	Score	3	2	4	3	4				
2017	Value		6.0	82.7	16.0	4.0	14	Good	-	-
	Score	3	1	4	2	4				
2016	Value		14.7	76.7	18.0	6.0	16	Good	-1.17	68.80%
	Score	3	2	4	3	4				
2015	Value	11.2	38.7	58.0	12.6	2.0	15	Good	-	-
	Score	3	3	4	2	3				
2014	Value	11.2	21.3	116.0	7.3	3.3	14	Good	-	-
	Score	3	2	4	2	3				
2013	Value	11.2	3.8	75.3	8.7	1.3	12	Good	-	-
	Score	3	1	4	2	2				
2012	Value	11.2	2.0	64.7	8.7	2.0	13	Good	-0.812	56.60%
	Score	3	1	4	2	3				
2011	Value	10.7	9.5	58.0	6.7	1.3	12	Good	-	-
	Score	2	2	4	2	2				
2010	Value	10.7	5.3	45.3	13.3	2.0	13	Good	-0.597	45.00%
	Score	2	1	4	3	3				

nedpsdgb.d23-d21, d19-d09

* =Sample was not collected

Table 52. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 1.5 hours of nocturnal electrofishing (6-15-minute runs) at Greenbo Lake (Greenup Co.) on 21 September 2023.

Species	Inch class															Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
Largemouth Bass	14	88	19	14	44	40	35	13	11	18	15	21	10	2	3	347	231.3	34.5

nedwrs.gb.d23

Table 53. Number of fish and mean relative weight (W_r) values for each length group of Largemouth Bass captured at Greenbo Lake from 2007-2023. Standard errors are in parentheses.

Year	Length group						Overall	
	8.0-11.9 in		12.0-14.9 in		≥15.0 in			
	No.	W_r	No.	W_r	No.	W_r	No.	W_r
2023	76	87 (1)	45	87 (1)	5	89 (3)	126	88 (1)
2021	49	87 (1)	23	83 (1)	12	89 (3)	84	86 (1)
2016	47	85 (1)	35	83 (1)	7	83 (3)	89	84 (1)
2010	83	87 (2)	36	85 (1)	7	93 (5)	126	87 (1)
2009	52	82 (1)	23	85 (1)	10	88 (1)	85	84 (1)
2008	34	85 (1)	23	84 (2)	8	86 (2)	65	85 (1)
2007	30	88 (2)	29	88 (1)	5	97 (5)	64	89 (1)

nedwrs.gb.d23, d21, d16, d10 - d07

Table 54. Indices of year class strength of age-0 Largemouth Bass collected in the fall and age-1 Largemouth Bass collected the following spring while nocturnal electrofishing at Greenbo Lake.

Year class	Area	Age 0		Age 0		Age 0 ≥ 5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	3.6	0.4	82.0	20.8	1.3	0.8		
2022	Total	3.2	0.1	61.3	8.5	2.0	1.4	50.0	13.3
2021	Total	4.0	0.1	88.0	29.3	24.0	9.5	32.7	5.0
2020	Total	3.5	0.1	40.0	15.4	1.3	0.8	44.0	11.5
2019		*						*	
2018		*						25.3	4.1
2017		*						26.7	5.0
2016		*						6.0	2.9
2015	Total	3.4	0.2	63.3	6.7	9.3	2.5	4.0	2.7
2014	Total	4.2	0.2	51.3	10.8	15.3	4.1	38.7	4.8
2013	Total	3.3	0.1	99.3	9.8	3.3	1.6	21.3	6.3
2012	Total	3.5	<0.1	219.3	35.0	13.3	5.9	3.8	1.4
2011	Total	3.5	0.2	44.0	11.9	6.0	1.7	2.0	0.9
2010	Total	3.9	0.1	40.7	9.2	8.7	2.6	9.5	2.8
2009	Total	5.1	0.2	48.0	6.0	26.0	4.8	5.3	0.4
2008	Total	3.5	0.1	82.0	7.6	2.0	1.4	3.2	1.3
2007	Total	3.9	0.1	44.7	11.3	3.3	1.2	1.0	0.9
2006	Total	3.6	0.1	45.3	9.2	2.7	1.7	2.1	1.0
2005	Total	3.8	0.1	32.0	7.0	4.0	1.0	35.6	5.5

nedbsigb.d22, d20 d15-d13, nedwrsigb.d23, d21, d16, d12-05; nedpsdgb.d23-d21, d19-d05
nedaaggl.d21, d16, d12, d11-d05

* =Sample was not collected

Table 55. Fishery statistics derived from a daytime creel survey at Greenbo Lake from March through October 2023 as compared to findings from 2018, 1990, and 2010.

	2023	2018	2010	1990
Fishing trips				
No. of fishing trips (per acre)	7,682 (44)	5,814 (33)	7,575 (43)	27,344 (151)
Fishing pressure				
Total man-hours (SE)	28,197 (1,023.8)	23,189 (632.3)	25,532 (1,044.1)	123,491 (20,165)
Man hours/acre	(160)	(132)	(145)	(682)
Catch/harvest				
No. of fish caught (SE)	19,175 (2,537.6)	13,103 (1,504.0)	16,373 (2,678.9)	49,758 (8,797)
No. of fish harvested (SE)	8,223 (1,348.2)	6,530 (1,023.3)	11,302 (2,392.7)	21,829 (5,330)
Lbs. of fish harvested	3,724	2,381	3,998	11,886
Harvest rate				
Fish/hour	0.3	0.3	0.3	0.2
Fish/acre	46.7	37.1	64.2	120.6
Lbs/acre	21.2	13.5	22.7	65.7
Catch rates				
Fish/hour	0.7	0.6	0.6	0.4
Fish/acre	109.0	74.5	93.0	247.9
Misc. characteristics (%)				
Male	81.5	81.4	85.1	85.0
Female	18.6	18.7	14.9	15.0
Resident	83.6	85.1	88.7	81.0
Non-resident	16.4	14.9	11.3	19.0
Method (%)				
Still fishing	60.6	59.8	75.7	no data
Casting	34.8	36.2	20.5	no data
Trolling	3.9	1.2	3.2	no data
Fly Fishing	0.6	0.0	0.0	no data
Trotline/jugging	0.1	1.2	0.6	no data
Mode (%)				
Boat	60.5	68.1	41.0	91.0
Bank	23.0	8.2	44.6	9.0
Dock	16.4	23.7	14.4	0.0

(SE) = Standard error

t < 0.5%

Table 56. Fish harvest statistics derived from the 2023 creel survey at Greenbo Lake.

	Largemouth Bass	Black bass group	Bluegill	Redear Sunfish	Warmouth	Panfish group	Rainbow Trout	Brown Trout	Trout Group	Black Crappie	Crappie group	Channel Catfish	Catfish group	Anything
Number caught (per acre)	1843 10.4	1843 10.5	9646 54.8	4049 23.0	102 0.6	13798 78.4	2659 15.1	83 0.5	2742 15.6	571 3.2	571 3.2	221 1.3	221 1.3	
Number harvested (per acre)	125 0.7	125 0.7	3340 19.0	2275 12.9	17 0.1	5632 32.0	1961 11.1		1961 11.1	330 19	330 19	175 10	175 10	
% of total number harvested	15	15	40.6	27.7	0.2	68.5	23.8		23.8	4.0	4.0	2.1	2.1	
Pounds harvested (per acre)	147.6 0.8	147.6 0.8	1014.2 5.8	1013.3 5.8	15 0.0	2029.0 11.5	1009.9 5.7		1009.9 5.7	219.7 12	219.7 12	317.5 18	317.5 18	
% of total pounds harvested	4.0	3.9	27.2	27.2	0.4	54.5	27.1		27.1	5.9	5.9	8.5	8.5	
Mean length (in)	11.70		7.20	8.40	5.00		11.30			10.70		18.50		
Mean weight (lb)	0.94		0.29	0.42	0.09		0.54			0.79		2.19		
Number fishing trips for that species		1612.7				1562.6			830.1		340.5		137.6	3198.4
% of all trips		21.0				20.3			10.8		4.4		1.8	41.6
Hours fished for that species (per acre)		5919.7 (33.6)				5735.6 (32.6)			3046.9 (17.3)		1249.8 (7.1)		504.9 (2.9)	11740.1 (66.7)
Number harvested fishing for that species		98				5,230			1,908		225		62	
Pounds harvested fishing for that species		129.1				1,906.1			979.9		142.1		110.0	
Number harvested per hour fishing for that species		0.01				0.76			0.61		0.17		0.10	
% success fishing for that species		1.9				33.6			29.8		14.8		14.8	2.5

Table 57. Length distribution (length of released fish are estimates) for each species of fish harvested (H) or released (R) at Greenbo Lake from March through October 2023.

Species		Inch class																						Total	Overall Total	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			23
Bluegill	H		26	62	53	35	334	835	861	633	422	78													3,339	9,611
	R	34	152	1,566	1,802	1,238	867	253	227	135	8	24													6,272	
Redear Sunfish	H			8		74	124	371	495	486	503	206	8												2,275	4,048
	R		146	508	439	207	103	155	121	86	8														1,773	
Rainbow Trout	H								20	297	485	337	466	158	129	69									1,961	2,658
	R					20	20	110	179	189	70	60	40			9									697	
Largemouth Bass	H								7			7	51	22	22	7							8	124	1,839	
	R			44	22	50	36	58	65	255	160	400	160	175	80	44	22	22	7	7	29	79		1,715		
Black Crappie	H					9		9	18	27	101	92	37	27		9								329	570	
	R			28	46	28	65		9	46	9	10												241		
Channel Catfish	H													9	61	17	9	35	9	9		0	7	156	201	
	R									8		23				8		6						45		
Warmouth	H					17																		17	101	
	R		9		47	28																		84		
Brown Trout	H																							0	83	
	R								21	42	20													83		

Table 58. Monthly black bass angling success at Greenbo Lake during the 2023 creel survey period.

Month	Total no. caught	Total no. harvested	Total no. of trips for	Hours fished for	Catch fishing for	Catch per hour fishing for	No. harvested fishing for	No. harvested per hour fishing for
Mar	156	52	187.1	686.9	94	0.10	52	0.06
Apr	764	63	354.5	1301.3	678	0.35	46	0.02
May	254	0	165.1	606.2	93	0.13	0	0.00
Jun	260	10	274.4	1007.1	144	0.15	0	0.00
Jul	253	0	349.9	1284.4	218	0.15	0	0.00
Aug	23	0	41.3	151.4	17	0.08	0	0.00
Sep	92	0	108.6	398.5	50	0.08	0	0.00
Oct	41	0	131.8	483.9	41	0.07	0	0.00
Total	1,843	125	1612.7	5919.7	1,335		98	
Mean						0.20		0.01

Table 59. Monthly trout angling success at Greenbo Lake during the 2023 creel survey period.

Month	Total no. caught	Total no. harvested	Total no. of trips for	Hours fished for	Catch fishing for	Catch per hour fishing for	No. harvested fishing for	No. harvested per hour fishing for
Mar	1,446	812	464.6	1705.5	1,395	0.87	791	0.50
Apr	52	23	76.9	282.2	34	0.15	17	0.07
May	85	68	5.5	20.2	85	2.50	68	2.00
Jun	202	192	28.0	102.8	202	1.56	192	1.48
Jul	157	157	9.5	34.7	131	1.36	131	1.36
Aug	0	0	11.3	41.3	0	0.00	0	0.00
Sep	0	0	0.0	0.0	0	0.00	0	0.00
Oct	800	709	234.3	860.2	800	1.04	709	0.92
Total	2,742	1,961	830.1	3046.9	2,647		1,908	
Mean						0.84		0.61

Table 60. Monthly crappie angling success at Greenbo Lake during the 2023 creel survey period.

Month	Total no. caught	Total no. harvested	Total no. of trips for	Hours fished for	Catch fishing for	Catch per hour fishing for	No. harvested fishing for	No. harvested per hour fishing for
Mar	364	229	148.4	544.8	228	0.44	166	0.32
Apr	52	40	81.2	297.9	40	0.14	34	0.12
May	127	42	27.5	101.0	84	0.83	25	0.25
Jun	19	10	0.0	0.0	0	0.00	0	0.00
Jul	9	9	0.0	0.0	0	0.00	0	0.00
Aug	0	0	0.0	0.0	0	0.00	0	0.00
Sep	0	0	0.0	0.0	0	0.00	0	0.00
Oct	0	0	0.0	0.0	0	0.00	0	0.00
Total	571	330	340.5	11249.8	352		225	
Mean						0.27		0.17

Table 61. Monthly panfish angling success at Greenbo Lake during the 2023 creel survey period.

Month	Total no. caught	Total no. harvested	Total no. of trips for	Hours fished for	Catch fishing for	Catch per hour fishing for	No. harvested fishing for	No. harvested per hour fishing for
Mar	73	52	19.4	71.1	10	0.13	10	0.13
Apr	592	362	230.7	846.6	516	0.79	327	0.50
May	5,385	2,468	693.6	2545.9	5,004	1.62	2,400	0.78
Jun	4,499	1,644	341.6	1253.7	3,874	2.18	1,577	0.89
Jul	1,223	472	123.0	451.3	681	1.42	367	0.76
Aug	759	154	56.3	206.5	445	1.97	85	0.38
Sep	579	25	54.3	199.3	176	1.24	8	0.06
Oct	689	456	43.9	161.3	649	2.84	456	2.00
Total	13,798	5,632	1562.6	5735.6	11,355		5,230	
Mean						1.65		0.76

Table 62. Monthly catfish angling success at Greenbo Lake during the 2023 creel survey period.

Month	Total no. caught	Total no. harvested	Total no. of trips for	Hours fished for	Catch fishing for	Catch per hour fishing for	No. harvested fishing for	No. harvested per hour fishing for
Mar	10	10	0.0	0.0	0	0.00	0	0.00
Apr	0	0	29.9	109.8	0	0.00	0	0.00
May	85	68	27.5	101.0	17	0.16	0	0.00
Jun	10	10	0.0	0.0	0	0.00	0	0.00
Jul	79	61	18.9	69.4	61	0.70	52	0.60
Aug	17	6	18.8	68.8	11	0.14	0	0.00
Sep	0	0	5.4	19.9	0	0.00	0	0.00
Oct	20	20	14.6	53.8	10	0.08	10	0.08
Total	221	175	137.6	504.9	99		62	
Mean						0.18		0.10

Table 63: Angler attitude survey carried out with 2023 creel survey on the Greenbo Lake.

2. Which species do you fish for at Greenbo Lake (check all that apply)? (N=397)
Bass= 42.3%; **Sunfish**= 27.5%; **"other"**= 27.2; **Trout**= 19.4%; **Catfish**= 9.6%; **Crappie**= 6.0%

3. Which species do you fish for most at Greenbo Lake (check only one)? (N=397)
Bass= 34.7%; **"other"**= 25.9; **Sunfish**= 16.5% **Trout**= 14.6%; **Crappie**= 4.5%; **Catfish**= 3.8%

4. On average, how many times do you fish Greenbo Lake in a year? (N=382)

1st Time =	10.4%	1 - 4 =	29.4%
5 - 10 =	28.3%	≥ 10 =	31.9%

Bass Anglers

5. What level of satisfaction do you have with bass fishing at Greenbo Lake? (N=159)

Very Satisfied	14.4%	Somewhat Satisfied	42.2%	Total	56.6%
Very Dissatisfied	11.9%	Somewhat Dissatisfied	10.7%	Total	22.6%
Neutral	20.8%				

5a. If angler responds with somewhat or very dissatisfied in question 5: what is the single most important reason for your dissatisfaction?
**Note: These numbers are percentages ONLY of those who were dissatisfied (22.6%; N=36)*

Number of Fish	69.4%	Size of Fish	5.6%
Too Many Anglers	5.6%	"Other"	19.4%

"Other" includes 3 anglers who "can't find the fish", 2 that thought "the lake was too clear" and 2 that thought "there wasn't enough habitat".

Sunfish Anglers

6. What level of satisfaction do you have with sunfish fishing at Greenbo Lake? (N=106)

Very Satisfied	65.1%	Somewhat Satisfied	18.9%	Total	84.0%
Very Dissatisfied	1.9%	Somewhat Dissatisfied	6.6%	Total	8.5%
Neutral	7.5%				

6a. If angler responds with somewhat or very dissatisfied in question 6: what is the single most important reason for your dissatisfaction?
**Note: These numbers are percentages ONLY of those who were dissatisfied (8.5%; N=9)*

Number of Fish	77.8%	Size of Fish	22.2%
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Catfish Anglers

7. What level of satisfaction do you have with catfish fishing at Greenbo Lake? (N=36)

Very Satisfied	27.8%	Somewhat Satisfied	50.0%	Total	77.8%
Very Dissatisfied	5.6%	Somewhat Dissatisfied	8.3%	Total	13.9%
Neutral	8.3%				

7a. If angler responds with somewhat or very dissatisfied in question 7: what is the single most important reason for your dissatisfaction?
**Note: These numbers are percentages ONLY of those who were dissatisfied (8.3%; N=5)*

Number of Fish	100.0%		
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8. What level of satisfaction do you have with trout fishing at Greenbo Lake? (N=74)

Very Satisfied	82.4%	Somewhat Satisfied	13.5%	Total	95.9%
Very Dissatisfied	0.0%	Somewhat Dissatisfied	1.4%	Total	1.4%
Neutral	2.7%				

8a. If angler responds with somewhat or very dissatisfied in question 8: what is the single most important reason for your dissatisfaction?
**Note: These numbers are percentages ONLY of those who were dissatisfied (1.4%; N=1)*

Number of Fish	100.0%		
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9. Have you caught any Brown Trout while trout fishing at Greenbo Lake? N=73

Yes =	39.7%	No =	60.3%
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10. Have you specifically targeted Brown Trout while fishing at Greenbo Lake? N=73

Yes =	5.5%	No =	94.5%
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All Anglers

11. Are you satisfied with the current size and creel limits on fish at Greenbo Lake? (N=394)

Yes =	98.7%	No =	1.3%
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11a. If you responded as not satisfied with the size or creel limits at Greenbo Lake what size and creel limits do you prefer?

C&R for Largemouth Bass	40% (2 anglers)
15" length limit for Largemouth	20% (1 angler)
9" length limit for Sunfish	20% (1 angler)
20 fish creel on Sunfish	20% (1 angler)

Table 64. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 0.75 hours (3- 15-minute runs) of diurnal electrofishing in Mill Creek Lake on 01 May 2023.

Species	Inch class																Total	CPUE	SE			
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				19	20	21
Largemouth Bass	8	6	2	3	6	14	29	24	39	23	9	2	1	2	2	2			1	173	230.7	22.2

nedpsdmc.d23

Table 65. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Mill Creek Lake from 1991-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		>20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	33.3	7.1	141.3	9.6	45.3	5.8	10.7	1.3	1.3	1.3	230.7	22.2
2022 ^a												
2021	51.0	12.4	128.0	18.8	46.0	6.6	13.0	4.4	5.0	3.0	238.0	25.4
2020 ^a												
2019 ^a												
2018 ^a												
2017	46.8	10.3	118.9	13.4	85.2	11.1	6.9	4.0	2.9	1.9	257.6	13.9
2016 ^a												
2015 ^a												
2014	27.0	3.8	155.0	14.3	32.0	7.8	18.0	2.6	5.0	1.9	232.0	11.9
2013 ^a												
2012	27.0	11.5	97.0	12.4	20.0	5.4	14.0	2.6	7.0	3.0	158.0	27.8
2011 ^a												
2010	43.0	8.1	65.0	6.6	41.0	10.3	12.0	3.7	1.0	1.0	161.0	10.0
2009	9.0	3.8	52.0	5.4	44.0	3.3	12.0	4.6	4.0	1.6	117.0	3.4
2008	10.0	3.5	89.0	10.8	38.0	3.5	12.0	3.7	3.0	1.9	149.0	11.0
2007	31.0	5.3	84.0	15.9	31.0	9.0	7.0	2.5			153.0	22.3
2006	45.0	18.5	108.0	11.0	22.0	2.0	7.0	4.4			182.0	28.7
2005 ^a												
2004	50.4	16.1	68.0	4.6	17.6	2.0	5.6	1.6	1.6	1.6	283.0	35.9
2003 ^a												
2002 ^a												
2001	36.0	8.5	59.0	10.6	13.0	3.0	7.0	2.5	1.0	1.0	115.0	17.5
2000	39.0	11.4	70.0	11.5	12.0	3.3	4.0	0.0			125.0	21.6
1999	29.0	6.8	4.0	11.4	70.0	3.4	2.0	1.2			78.0	20.9
1998 ^a												
1997	27.0	6.6	44.0	6.7	22.0	3.5	6.0	2.6	3.0	1.9	99.0	13.9
1996 ^a												
1995 ^a												
1994	91.0	21.0	178.0	4.0	8.0	4.0	5.0	1.0	2.0	0.0	282.0	12.0
1993 ^a												
1992	90.0	0.0	44.0	6.0	12.0	2.0	4.0	0.0			150.0	4.0
1991	86.1	6.1	31.5	2.5	19.2	0.8	2.3	0.3			176.0	40.0

nedpsdmc.d23,d21,d17,d14.d12.d10-d06, d04; nedlmbmc.d01-d99,d97,d94,d92-d91

^a = Lake not sampled

Table 66. Largemouth Bass PSD and RSD₁₅ values for spring electrofishing at Mill Creek Lake from 1991-2023; 95% confidence intervals are in parentheses.

Year	≥ Stock size	PSD	RSD ₁₅
2023	148	28 (±7)	5 (±4)
2022 ^a			
2021	187	32 (±7)	7 (±4)
2020 ^a			
2019 ^a			
2018 ^a			
2017	185	43 (±7)	3 (±2)
2016 ^a			
2015 ^a			
2014	205	24 (±6)	9 (±4)
2013 ^a			
2012	131	26 (±8)	11 (±5)
2011 ^a			
2010	118	45 (±9)	10 (±5)
2009	108	52 (±9)	11 (±6)
2008	139	36 (±8)	9 (±5)
2007	122	31 (±8)	6 (±4)
2006	137	21 (±7)	5 (±4)
2005 ^a			
2004	114	25 (±8)	6 (±4)
2003 ^a			
2002 ^a			
2001	79	25 (±10)	9 (±6)
2000	86	19 (±8)	5 (±4)
1999	49	18 (±11)	4 (±6)
1998 ^a			
1997	72	39 (±11)	8 (±6)
1996 ^a			
1995 ^a			
1994	191	7 (±4)	3 (±2)
1993 ^a			
1992	60	27 (±11)	7 (±6)
1991	47	40 (±14)	4 (±6)

nedpsdmc.d23,d21,d17,d14.d12.d10-d06, d04; nedlmbmc.d01-d99,d97,d94,d92-d91

^a = Lake not sampled

Table 67. Mean back-calculated lengths (in) at each annulus for Largemouth Bass collected from Mill Creek Lake in October 2023, includes 95% confidence interval (CI) for mean length for each age class.

Year class	No.	Age							
		1	2	3	4	5	6	7	8
2022	4	5.8							
2021	6	4.4	7.5						
2020	20	4.2	7.2	9.3					
2019	8	5.0	7.9	9.7	11.0				
2018	2	5.3	8.5	10.0	11.3	12.1			
2017	6	4.5	7.9	10.2	11.4	12.1	12.6		
2016	5	4.4	8.1	10.4	11.7	12.5	13.1	13.6	
2015	2	4.9	9.3	11.3	12.3	13.1	13.9	14.4	14.8
Mean		4.6	7.6	9.8	11.4	12.3	13.0	13.8	14.8
Number		53	49	43	23	15	13	7	2
Smallest		3.5	5.9	8.1	10.4	11.2	11.7	12.2	13.5
Largest		6.6	10.0	12.0	12.9	13.9	14.9	15.6	16.0
SE		0.1	0.1	0.1	0.1	0.2	0.2	0.4	1.3
95% CI (±)		0.4	0.5	0.5	0.5	0.7	1.0	1.6	4.9

nedaagmc.d23

Table 68. Age frequency and CPUE of Largemouth Bass <16.0 in sampled at Mill Creek Lake in May 2023.

Age	Inch class											Total	%	CPUE	SE		
	4	5	6	7	8	9	10	11	12	13	14					15	
1	6	2	3											11	7	14.7	1.3
2				6	2									8	5	10.1	4.3
3					12	29	17							58	37	78.1	0.6
4							7	29						36	23	48.1	6.7
5								5	5					10	6	12.6	1.5
6									5	14	4			23	14	29.7	4.2
7										5	4	2		11	6	13.6	2.9
8											2		2	4	2	5.1	1.6
Total	6	2	3	6	14	29	24	39	24	10	2	2		161	100		
%	4	1	2	4	9	18	15	25	14	6	1	1					

nedpsdcr.d23, nedaagcr.d23

Table 69. Population assessment of Largemouth Bass based on samples collected at Mill Creek Lake from 2010-2023 (scoring based on statewide assessment).

Year		Mean length age 3	CPUE age 1	CPUE 12.0-15.0 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2023	Value Score	9.3 1	21.3 2	45.3 4	10.7 2	1.3 2	11	Fair	-0.469	37.40%
2022 _a	Value Score									
2021	Value Score	1	34.0 3	46.0 4	13.0 3	5.0 4	14	Good		
2020 _a	Value Score									
2019 _a	Value Score									
2018 _a	Value Score									
2017	Value Score	10.7 1	31.9 3	85.2 3	6.9 2	2.9 3	13	Good		
2016 _a	Value Score									
2015 _a	Value Score									
2014	Value Score	2	22.0 2	32.0 2	18.0 3	5.0 4	13	Good		
2013 _a	Value Score									
2012	Value Score	2	25.0 2	20.0 2	14.0 2	7.0 4	12	Good		
2011 _a	Value Score									
2010	Value Score	2	1.0 1	41.0 3	12.0 2	1.0 2	10	Fair	--0.302	26.00%

nedpsdmc.d23,d12 - d04; nedlmbmc.d03 - d00

Table 70. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 0.75 hours (3- 15-minute runs) of diurnal electrofishing in Mill Creek Lake on 05 October 2023

Species	Inch class																			Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth Bass	1	5	3		1	11	3	6	12	13	9	2	1	2					1	70	93.3	7.4

nedpsdmc.d23

Table 71. Number of fish and mean relative weight (W_r) values for each length group of Largemouth Bass captured at Mill Creek Lake from 2007-2023. Standard errors are in parentheses.

Year	Length group						Overall	
	8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		No.	W_r
	No.	W_r	No.	W_r	No.	W_r		
2023	34	85 (1)	12	83 (1)	2	92 (3)	48	85 (1)
2017	33	90 (1)	20	90 (1)	2	90 (2)	55	90 (1)
2010	60	85 (1)	16	84 (1)	3	93 (4)	79	85 (1)
2009	36	84 (1)	18	86 (2)	6	96 (3)	60	86 (1)
2008	34	84 (1)	18	88 (1)	2	98 (12)	54	86 (1)
2007	58	87 (1)	12	85 (2)	3	90 (1)	73	87 (1)

nedwrsmc.d23,d17; d10 - d07

Table 72. Length frequency and CPUE (fish/hr) of Bluegill collected in 0.75 hours (3- 0.25-hour runs) of diurnal electrofishing in Mill Creek Lake on 23 May 2023.

Species	Inch class								Total	CPUE	SE
	1	2	3	4	5	6	7	8			
Bluegill	3	29	43	43	25	24	36	22	225	300.0	20.1

nedsunmc.d23

Table 73. Spring electrofishing CPUE (fish/hr) for various length groups of Bluegill collected at Mill Creek Lake from 2005-2023.

Year	Length group										Total		CPUE (excluding <3.0 in)
	<3.0 in		3.0-5.9 in		6.0-7.9 in		≥6.0 in		≥8.0 in		CPUE	SE	
2023	42.7	17.6	148.0	28.0	80.0	31.2	109.3	38.1	29.3	7.1	300.0	20.1	257.3
2022a													
2021a													
2020a													
2019a													
2018a													
2017			173.3	15.5	50.7	6.7	78.7	13.1	28.0	6.9	252.0	18.0	252.0
2016 ^a													
2015			54.0	4.8	39.0	17.1	55.0	23.3	16.0	10.7	109.0	22.1	109.0
2014 ^a													
2013 ^a													
2012			161.0	37.4	74.0	8.7	98.0	12.4	24.0	7.1	259.0	42.4	259.0
2011 ^a													
2010	254.0	11.9	153.0	23.2	35.0	8.7	46.0	6.2	11.0	3.0	453.0	37.3	199.0
2009	519.0	219.0	193.0	15.3	19.0	7.0	23.0	6.0	4.0	1.6	735.0	234.1	216.0
2008			164.0	49.9	20.0	10.1	28.0	13.7	8.0	4.6	192.0	55.6	192.0
2007			76.0	14.7	18.0	6.2	25.0	7.9	7.0	3.2	101.0	14.0	101.0
2006	124.6	48.9	74.3	16.2	33.1	8.1	42.3	13.0	9.1	7.9	241.1	73.9	116.6
2005	42.3	8.1	98.3	16.2	77.2	12.3	100.6	16.6	22.9	7.5	241.1	17.6	198.9

nedsunmc.d23,d17, d15, d12 - d05

^a = Lake not sampled

Table 74. Bluegill PSD and RSD₈ values from spring electrofishing at Mill Creek Lake from 2005-2023; 95% confidence intervals are in parentheses.

Year	≥ Stock size	PSD	RSD ₈
2023a	193	43 (±7)	11 (±5)
2022a			
2021a			
2020a			
2019a			
2018a			
2017a			
2016a			
2015	189	31 (±7)	11 (±4)
2014 ^a			
2015	109	50 (±9)	15 (±7)
2014 ^a			
2013 ^a			
2012	259	38 (±6)	9 (±4)
2011 ^a			
2010	199	23 (±6)	6 (±3)
2009	216	11 (±4)	2 (±2)
2008	96	15 (±7)	4 (±4)
2007	101	25 (±8)	7 (±5)
2006	102	36 (±9)	8 (±5)
2005	174	51 (±7)	11 (±5)

nedsunmc.d17, d15, d12 - d05

^a = Lake not sampled

Table 75. Mean back calculated lengths (in) at each annulus for Bluegill collected from Mill Creek Lake in May 2023; includes 95% confidence interval (CI) for mean length for each age class.

Year class	No.	Age					
		1	2	3	4	5	6
2022	8	2.2					
2021	19	2.3	3.4				
2020	22	2.5	4.2	5.6			
2019	9	2.2	4.1	5.5	6.6		
2018	1	2.5	4.2	6.6	8.0	8.5	
2017	1	2.6	4.5	6.3	7.3	7.9	8.4
Mean		2.4	3.9	5.7	6.9	8.0	8.4
Number		63	55	36	14	5	4
Smallest		0.2	2.3	2.5	4.7	7.5	8.0
Largest		5.0	5.9	7.5	8.0	8.5	8.7
SE		0.1	0.1	0.2	0.3	0.2	0.1
95% CI (±)		0.3	0.4	0.6	1.0	0.7	0.6

nedaagcr.d23

Table 76. Age frequency and CPUE (fish/hr) of Bluegill sampled at Mill Creek Lake in May 2023.

Age	Inch class							Total	%	CPUE	SE
	2	3	4	5	6	7	8				
1	20	4						24	11	32.3	13.2
2	9	39	24	2				74	33	98.6	20.9
3			14	20	17	18		69	31	92.8	16.7
4			5	2	7	18	4	36	16	47.9	11.2
5							4	4	2	4.9	1.2
6							15	15	7	19.6	4.7
Total	29	43	43	24	24	36	23	222			
%	13	19	19	11	11	16	10	100			

nedpsdcr.d23, nedaagcr.d23

Table 77. Population assessment of Bluegill based on samples collected at Mill Creek Lake from 2008-2023 (scoring based on statewide assessment).

Year		Mean length age 2 at capture	Years to 6.0 in 3-3+	Spring CPUE ≥ 6.0 in	Spring CPUE ≥ 8.0 in	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2023	Value	3.6	3-3+	109.3	29.3	12	Good	-0.942	61.00%
	Score	1	3	4	4				
2022a	Value								
	Score								
2021a	Value								
	Score								
2020a	Value								
	Score								
2019a	Value								
	Score								
2018a	Value								
	Score								
2017	Value			78.7	28.0				
	Score			3	4				
2016 ^a	Value								
	Score								
2015	Value	4.7	3	55.0	16.0	13	Good	-0.458	36.80%
	Score	3	3	3	4				
2014 ^a	Value								
	Score								
2013 ^a	Value								
	Score								
2012	Value			98.0	24.0				
	Score			4	4				
2011 ^a	Value								
	Score								
2010	Value	3.9	3-3+	46.0	11.0	10	Fair	-1.503	77.80%
	Score	2	3	2	3				
2009	Value			23.0	4.0				
	Score			1	1				
2008	Value			28.0	8.0				
	Score			2	2				

nedsunmc.d23,d17,d15,d12 - d05

^a = Lake not sampled

Table 78. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 1.0 hour (4- 15-minute runs) of diurnal electrofishing in Lake Reba on 17 April 2023

Species	Inch class																			Total	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Largemouth Bass	4	18	21	17	3	10	25	19	10	14	28	20	11	5	3	2	2		1	1	214	214.0	53.8

nedpsdlr.d23

Table 79. Spring electrofishing CPUE (fish/hr) for various length groups of Largemouth Bass collected at Lake Reba from 1995-2023.

Year	Length group										Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	73.0	22.0	68.0	24.4	9.0	19.1	14.0	6.0	2.0	1.2	214.0	53.8
2022	188.8	32.0	176.8	22.4	71.2	10.3	23.2	6.6	1.6	1.0	460.0	40.3
2021	94.0	18.9	154.0	19.5	49.0	10.8	12.0	1.6	2.0	1.2	309.0	37.3
2020	251.0	34.1	191.0	24.9	54.0	4.2	4.0	1.6	1.0	1.0	500.0	37.0
2019	187.0	55.2	223.0	34.7	34.0	9.3	5.0	3.0	0.0	0.0	449.0	30.6
2018	193.0	45.5	56.0	8.2	29.0	6.8	8.0	8.0	0.0	0.0	286.0	28.3
2017	373.6	51.5	175.2	19.9	94.4	21.2	21.6	2.4	4.8	0.8	664.8	53.0
2016	108.0	15.8	102.0	23.7	41.0	10.0	13.0	1.9	2.0	1.2	264.0	19.5
2015	103.2	26.5	84.0	9.2	96.8	12.9	33.6	5.7	4.0	1.8	317.6	23.0
2014	56.0	11.0	144.0	12.4	95.0	10.8	75.0	18.1	7.0	5.7	370.0	22.7
2013	60.1	7.8	102.4	7.7	63.3	11.0	27.1	8.7	0.0		252.9	26.9
2012	103.3	16.5	90.7	9.0	68.0	8.2	16.7	4.2	1.3	0.8	278.7	13.5
2011	66.0	11.4	108.7	16.8	106.0	18.6	25.3	6.1	2.0	1.4	306.0	35.8
2010	67.7	8.1	118.3	19.4	57.7	8.0	6.8	1.7	0.7	0.7	246.0	26.8
2009	47.3	7.6	238.7	12.9	92.7	7.3	26.0	3.2	0.7	0.7	404.7	23.4
2008	77.3	18.4	208.0	28.4	34.0	6.3	12.7	2.6	0.0		332.0	47.1
2007	134.7	20.9	216.7	45.9	60.7	5.2	18.7	4.1	0.7	0.7	430.7	52.2
2006	189.3	18.9	70.7	13.5	26.0	4.9	6.0	2.3	0.0		292.0	27.1
2005	53.3	9.3	57.3	8.1	45.3	4.3	13.3	2.2	0.7	0.7	169.3	16.4
2004	30.0	8.9	125.3	21.5	51.3	9.2	6.7	2.2	0.0		213.3	26.0
2003	110.0	17.9	126.0	10.9	52.0	6.1	8.0	2.5	0.7	0.7	296.0	27.3
2002	138.0	33.6	140.0	31.3	31.0	6.6	5.0	1.0	0.0		314.0	67.0
2001	196.0	25.0	32.0	15.1	9.3	5.3	4.0	2.3	0.0		241.3	32.4
2000	104.1	17.3	35.1	6.6	4.6	0.6	8.0	3.3	0.0		151.7	11.3
1999	122.7	29.4	10.0	3.5	8.0	2.1	18.0	4.7	0.7	0.7	158.7	27.3
1998	76.0	23.7	10.0	2.6	23.0	5.5	21.0	3.4	2.0	1.2	130.0	28.5
1997												
1996	104.0	32.2	7.0	3.4	15.0	5.7	14.0	2.6	0.0		140.0	28.8
1995	160.0	52.9	21.0	7.7	74.0	7.4	3.0	1.9	0.0		258.0	61.5

nedpsdlr.d23-d95

Table 80. Largemouth Bass PSD and RSD₁₅ values from spring electrofishing at Lake Reba from 1995-2023; 95% confidence intervals are in parentheses.

Year	≥ Stock size	PSD	RSD ₁₅
2023	141	52 (± 8)	10 (± 5)
2022	339	35 (± 5)	9 (± 3)
2021	215	28 (± 1)	6 (± 3)
2020	249	23 (± 5)	2 (± 2)
2019	262	15 (± 4)	2 (± 2)
2018	93	40 (± 10)	9 (± 6)
2017	364	40 (± 5)	7 (± 3)
2016	156	35 (± 7)	8 (± 4)
2015	268	61 (± 6)	16 (± 4)
2014	314	54 (± 6)	24 (± 5)
2013	243	47 (± 6)	14 (± 4)
2012	263	48 (± 6)	10 (± 4)
2011	360	55 (± 5)	11 (± 3)
2010	270	35 (± 6)	4 (± 2)
2009	536	33 (± 4)	7 (± 2)
2008	382	18 (± 4)	5 (± 2)
2007	444	27 (± 4)	6 (± 2)
2006	154	31 (± 7)	6 (± 4)
2005	174	51 (± 7)	11 (± 5)
2004	275	32 (± 6)	4 (± 2)
2003	279	32 (± 5)	4 (± 2)
2002	176	20 (± 6)	3 (± 2)
2001	33	30 (± 16)	9 (± 10)
2000	43	28 (± 14)	19 (± 12)
1999	98	72 (± 12)	50 (± 13)
1998	26	81 (± 10)	39 (± 13)
1997*			
1996	54	96 (± 8)	62 (± 19)
1995	54	79 (± 8)	3 (± 3)

nedpsdlr.d23 - d98, d96 - d95

* =Sample was not collected

Table 81. Population assessment of Largemouth Bass based on samples collected at Lake Reba from 2007-2023 (scoring based on statewide assessment).

Year	Mean length age 3	CPUE 12.0-15.0 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	CPUE age 1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%	
2023	Value Score	59.0 4	14.0 3	2.0 3	63.0 3	17	Excellent			
2022	Value Score	71.2 4	23.2 3	1.6 3	189.6 4	18	Excellent			
2021	Value Score	49.0 4	12.0 2	2.0 3	83.0 4	16	Good			
2020	Value Score	11.6 4	54.0 4	4.0 1	1.0 2	234.0 4	15	Good	-1.037	64.60%
2019	Value Score	34.0 3	5.0 1	0.0 1	162.0 4	12	Fair			
2018	Value Score	29.0 3	8.0 2	0.0 1	184.0 4	13	Good			
2017	Value Score	94.4 3	21.6 3	4.8 4	321.6 4	18	Excellent			
2016	Value Score	41.0 3	13.0 2	2.0 3	101.0 4	15	Good			
2015	Value Score	11.0 3	96.8 4	33.6 4	4.0 4	72.8 4	19	Excellent	-0.464	37.10%
2014	Value Score	95.0 3	75.0 4	7.0 4	50.0 3	18	Excellent			
2013	Value Score	63.3 3	27.1 4	0.0 1	28.4 3	15	Good			
2012	Value Score	68.0 3	16.7 3	1.3 2	76.0 4	16	Good			
2011	Value Score	106.0 3	25.3 3	2.0 3	52.7 3	16	Good			
2010	Value Score	11.4 3	57.7 4	6.8 2	0.7 2	47.1 3	14	Good	-1.019	63.90%
2009	Value Score	92.7 3	26.0 3	0.7 2	65.3 4	16	Good	-0.162	15.00%	
2008	Value Score	34.0 3	12.7 2	0.0 1	113.0 4	13	Good	-1.030	64.30%	
2007	Value Score	60.7 3	18.7 3	0.7 2	183.7 4	16	Good	-1.040	65.00%	

nedpsdlr.d23

Table 82. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in 1.0 hour (4- 15-minute runs) of diurnal electrofishing in Lake Reba on 03 October 2023.

Species	Inch class																				Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Largemouth Bass	8	62	74	26	8	27	37	16	15	14	15	7	7	4	2	1	1	1		2	327	327.0	50.1

nedwrslr.d23

Table 83. Number of fish and mean relative weight (W_r) values for each length group of Largemouth Bass captured at Lake Reba from 1994-2023. Standard errors are in parentheses.

Year	Length group						Overall	
	8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		No.	W_r
	No.	W_r	No.	W_r	No.	W_r	No.	W_r
2023	82	85 (1)	29	90 (2)	11	98 (2)	122	88 (1)
2022	121	92 (7)	28	91 (2)	8	94 (2)	157	92 (5)
2021*								
2020	220	89 (1)	57	88 (1)	5	99 (2)	282	89 (1)
2016*								
2018*								
2017*								
2016*								
2015	216	91 (1)	62	89 (1)	7	91 (4)	285	91 (1)
2014*								
2013*								
2012*								
2011	114	93 (1)	80	89 (1)	16	94 (2)	210	92 (1)
2010	191	90 (3)	116	86 (1)	12	86 (7)	319	89 (2)
2009	91	86 (1)	31	84 (1)	2	88 (11)	124	85 (1)
2008	219	84 (1)	32	86 (1)	1	81 (-)	252	84 (1)
2007	142	91 (5)	17	83 (2)	8	93 (3)	167	90 (5)
2006	243	91 (1)	75	93 (1)	18	101 (2)	336	92 (0)
2005	134	90 (1)	27	90 (3)	9	92 (3)	170	90 (1)
2004	186	87 (1)	73	90 (1)	10	95 (2)	269	88 (0)
2003	65	85 (1)	28	87 (2)	2	83 (3)	95	86 (1)
2002	67	92 (2)	12	87 (3)	1	93 (-)	80	91 (1)
2001	92	94 (1)	53	92 (1)	12	99 (2)	157	93 (1)
2000	60	97 (1)	13	95 (3)	9	98 (3)	82	97 (1)
1999	56	90 (1)	6	92 (3)	3	96 (4)	65	91 (1)
1998	9	93 (3)	3	94 (5)	3	103 (5)	15	95 (2)
1997	25	94 (2)	6	98 (1)	9	101 (2)	40	96 (1)
1996*								
1995	12	99 (3)	27	99 (3)	10	107 (3)	49	101 (2)
1994	37	92 (2)	56	95 (1)	3	104 (6)	96	95 (1)

nedwrslr.d22, d20, d15, d11-d97, d95-d94

* =Sample was not collected

Table 84. Indices of year class strength of age-0 Largemouth Bass collected in the fall and age-1 Largemouth Bass collected the following spring while diurnal electrofishing at Lake Reba.

Year class	Area	Age 0		Age 0		Age 0 ≥ 5.0 in		Age 1	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	4.2	0.1	173.0	40.6	29.0	9.6		
2022	Total	3.9	0.1	120.0	28.8	15.0	5.3	63.0	17.0
2021	Total	4.3	<0.1	371.0	54.2	70.0	19.2	189.6	31.9
2020	Total	4.6	0.1	122.0	24.5	34.0	11.1	83.0	15.6
2019	Total	4.8	0.1	373.0	28.7	153.0	22.0	234.0	41.3
2018	Total	4.8	<0.1	318.0	43.0	126.0	27.4	162.0	46.7
2017	Total	4.8	0.1	501.3	123.3	196.0	34.2	184.0	42.33
2016	Total	5.1	0.1	490.0	43.9	279.0	8.1	321.6	48.5
2015	Total	4.5	0.6	116.0	34.5	35.2	10.2	101.0	15.2
2014	Total	4.1	0.1	375.0	29.6	74.0	16.5	100.0	27.3
2013	Total	3.9	0.1	80.0	16.4	12.0	4.4	50.0	8.9
2012	Total	4.5	0.1	129.1	16.8	37.2	6.0	54.6	9.4
2011	Total	4.4	<0.1	334.9	44.8	84.4	19.5	76.0	14.9
2010	Total	3.9	0.1	58.7	18.9	10.7	4.8	57.3	10.5
2009	Total	4.0	0.1	58.7	15.6	11.3	8.1	47.1	7.0
2008	Total	4.2	0.1	58.7	15.6	11.3	8.1	65.3	7.1
2007	Total	4.3	0.1	44.0	11.2	5.3	2.2	113.0	27.2
2006	Total	4.3	<0.1	175.3	35.9	30.0	8.7	183.7	22.1
2005	Total	5.2	0.1	225.0	48.6	133.0	30.2	192.0	19.5
2004	Total	4.2	0.1	76.7	9.6	15.3	1.9	61.0	10.4
2003	Total	3.7	0.2	23.3	4.8	0.7	0.7	47.3	14.0

nedwrs1r.d23, nedpsdlr.d23

Table 85. Length frequency and CPUE (fish/hr) for Largemouth Bass collected in 0.75 hours of diurnal electrofishing (3- 15-minute runs) at Smoky Valley Lake (Carter Co.) on 24 April 2023.

Species	Inch class																	Total	CPUE	SE					
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20	21	22	23	
Largemouth Bass	6	35	18		4	30	25	21	21	21	10	1	2	1	1							1	197	262.7	89.5

nedpsdsv.d23

Table 86. Spring electrofishing CPUE (fish/hr) for various length groups of Largemouth Bass collected at Smoky Valley Lake from 1990-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	84.0	24.4	129.3	46.3	42.7	17.9	6.7	3.5	1.3	1.3	262.7	89.5
2022 ^a												
2021	70.7	31.4	97.3	15.0	33.3	16.4	1.3	1.3	1.3	1.3	202.7	62.2
2020	73.3	9.3	98.7	24.9	29.3	2.7	1.3	1.3			202.7	21.5
2019	134.7	43.7	106.7	32.7	37.3	16.2	5.3	5.3	1.3	1.3	284.0	66.1
2018	127.7	30.1	178.7	28.2	36.0	9.2	4.0	2.3			341.3	59.3
2017 ^a												
2016	110.6	29.5	125.2	21.1	18.1	4.9	2.0	1.2			256.0	52.8
2015	46.1	14.3	86.4	13.2	13.4	2.2	2.0	1.2			147.9	26.5
2014	71.1	16.6	177.4	28.8	24.4	5.5	1.0	1.0			273.9	42.6
2013	100.9	8.5	109.8	11.5	8.9	1.9	2.0	1.2			221.6	6.5
2012	112.1	21.8	98.9	22.3	12.8	2.0	1.0	1.0			224.7	41.4
2011	150.0	34.0	69.0	8.7	10.0	6.2					229.5	31.8
2010	47.7	9.3	65.9	7.8	3.3	1.1	1.0	1.0			117.9	15.3
2009	97.0	6.6	145.0	23.7	14.0	2.6	1.0	1.0			383.0	153.4
2008	155.0	23.3	199.0	34.4	46.0	7.8					607.0	260.2
2007	119.0	21.8	229.0	32.5	37.0	6.4	2.0	1.2			573.0	223.4
2006	112.0	12.8	256.0	33.8	62.0	8.7	4.0	1.6			633.5	234.4
2005	54.4	10.2	190.4	22.7	63.2	9.1	0.8	0.8			397.6	90.9
2004 ^a												
2003 ^a												
2002 ^a												
2001	117.3	11.6	180.0	14.1	46.7	12.7	2.7	2.7			346.7	11.6
2000	68.0	13.0	218.0	22.1	69.0	13.7	1.0	1.0			356.0	46.8
1999 ^a												
1998	135.0	32.2	132.0	25.5	75.0	15.1	3.0	1.0			546.0	264.9
1997	46.0	8.9	63.0	6.0	39.0	4.1	3.0	1.9			151.0	3.8
1996	30.0	5.8	77.0	11.5	50.0	7.8	3.0	1.9			160.0	14.3
1995	41.0	14.4	104.0	21.9	84.0	17.7	2.0	2.0			231.0	43.7
1994	72.0	5.9	104.0	14.5	94.0	10.5	7.0	1.9	1.0	1.0	277.0	13.2
1993	34.7	18.3	58.7	28.6	24.7	13.9	4.0	4.0			122.0	63.1
1992	43.4	8.9	96.1	10.9	94.0	6.8	7.3	3.5	1.8	1.0	261.0	36.8
1991	18.0	2.6	129.0	17.1	18.0	2.0	6.0	1.2	1.0	1.0	171.0	16.9
1990	58.7	9.7	109.2	21.8	34.1	1.2	18.6	5.8	2.4	1.2	352.0	158.0

nedpsdsv.d23

^a = Sample not collected

Table 87. Largemouth Bass PSD and RSD₁₅ values from spring electrofishing at Smoky Valley Lake from 1990-2023; 95% confidence intervals are in parentheses.

Year	≥ Stock size	PSD	RSD ₁₅
2023	134	28 (± 8)	4 (± 3)
2022 ^a			
2021	99	26 (± 9)	1 (± 2)
2020	97	24 (± 9)	1 (± 2)
2019	112	29 (± 8)	4 (± 3)
2018	164	18 (± 6)	2 (± 2)
2017 ^a			
2016	137	14 (± 6)	1 (± 2)
2015	91	15 (± 7)	2 (± 3)
2014	156	12 (± 5)	1 (± 1)
2013	105	10 (± 6)	2 (± 3)
2012	101	13 (± 7)	1 (± 2)
2011	70	14 (± 8)	
2010	67	6 (± 6)	1 (± 3)
2009	160	9 (± 5)	1 (± 1)
2008	245	19 (± 5)	(± 0)
2007	268	15 (± 4)	1 (± 1)
2006	322	20 (± 4)	1 (± 1)
2005	318	25 (± 5)	0 (± 1)
2004 ^a			
2003 ^a			
2002 ^a			
2001	172	22 (± 6)	1 (± 2)
2000	288	24 (± 5)	0 (± 1)
1999 ^a			
1998	210	37 (± 7)	1 (± 2)
1997	105	40 (± 9)	3 (± 3)
1996	130	41 (± 8)	2 (± 3)
1995	190	45 (± 7)	1 (± 1)
1994	205	49 (± 7)	3 (± 2)
1993	131	33 (± 8)	5 (± 4)
1992	213	51 (± 7)	4 (± 3)
1991	153	16 (± 6)	4 (± 3)
1990	194	30 (± 6)	11 (± 4)

nedpsdsv.d23

^a = Sample not collected

Table 88. Population assessment of Largemouth Bass based on samples collected at Smoky Valley lake from 2010-2023 (scoring based on statewide assessment).

Year		Mean length age 3	CPUE 12.0-15.0 in	CPUE ≥ 15.0 in	CPUE ≥ 20.0 in	CPUE age 1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2023	Value		42.7	6.7	1.3	78.7	14	Good		
	Score	3	3	2	2	4				
2022a	Value									
	Score									
2021	Value		69.3	33.3	1.3	1.3	13	Good		
	Score	3	4	3	1	2				
2020	Value	11.2	29.3	1.3	0.0	60.4	11	Fair	-1.099	66.70%
	Score	3	3	1	0	4				
2019	Value		37.3	5.3	1.3	129.3	14	Good		
	Score	4	3	1	2	4				
2018	Value	11.9	36.0	4.0	0.0	61.3	12	Fair	-0.780	53.70%
	Score	4	3	1	0	4				
2017 ^a	Value									
	Score									
2016	Value	11.0	18.1	2.0	0.0	47.3	10	Fair	-0.273	23.90%
	Score	3	2	1	1	3				
2015	Value		13.4	2.0	0.0	36.7	10	Fair		
	Score	3	2	1	1	3				
2014	Value		24.4	1.0	0.0	70.1	11	Fair		
	Score	3	2	1	1	4				
2013	Value		8.9	2.0	0.0	80.0	10	Fair		
	Score	3	1	1	1	4				
2012	Value	11.5	12.8	1.0	0.0	68.0	10	Fair	-0.936	60.80%
	Score	3	1	1	1	4				
2011	Value		10.0	0.0	0.0	150.5	7	Poor		
	Score	1	1	0	1	4				
2010	Value	9.6	3.3	1.0	0.0	34.9	7	Poor	-0.787	54.50%
	Score	1	1	1	1	3				

nedpsdsv.d23

^a = Sample not collected

Table 89. Length frequency and CPUE (fish/hr) for sunfish collected in 0.75 hours of diurnal electrofishing (3- 15-minute runs) at Smoky Valley Lake on 24 May 2023.

Species	Inch class						Total	CPUE	SE
	3	4	5	6	7	8			
Bluegill	41	50	15	32	32		170	226.7	65.0
Redear Sunfish		5	2	4	5	1	17	22.7	5.8

nedsunsv.d23

Table 90. Spring electrofishing CPUE (fish/hr) for various length groups of Bluegill collected at Smoky Valley Lake from 2009-2023.

Year	Length group										Total		Total CPUE (excluding <3.0 in)
	< 3.0 in		3.0-5.9 in		6.0-7.9 in		≥ 6.0 in		≥ 8.0 in		CPUE	SE	
2023			141.3	31.0	85.3	42.4	85.3	42.2	0.0		226.7	65.0	226.7
2022 _a													
2021 _a													
2020 _a													
2019	24.0	20.1	150.7	71.6	30.7	10.9	36.0	10.6	5.3	1.3	210.7	101.2	186.7
2018 _a													
2017 _a													
2016	29.3	11.4	93.3	36.3	33.3	21.5	33.3	21.5	0.0		156.0	40.1	126.7
2015 _a													
2014			164.0	41.6	40.0	18.0	40.0	18.0	0.0		204.0	44.2	204.0
2013 _a													
2012			210.6	53.0	25.6	5.4	26.6	5.8	1.0	1.0	237.1	47.4	237.1
2011	742.0	78.1	105.0	23.7	12.0	5.9	13.0	6.6	1.0	1.0	860.0	60.0	118.0
2010	216.9	69.4	167.0	36.8	28.6	6.0	29.6	5.6	1.0	1.0	384.0	97.4	167.1
2009	203.0	34.5	214.0	44.3	24.0	10.7	25.0	11.7	1.0	1.0	442.0	64.4	239.0

nedsunsv.d23,d19, d16, d14; nedsunsv.d12-d09;

_a = Lake was not sampled

Table 91. Bluegill PSD and RSD₈ values from spring electrofishing at Smoky Valley Lake from 2009-2023; 95% confidence intervals are in parentheses.

Year	≥ Stock size	PSD	RSD ₈
2023	170	38 (± 7)	- -
2022 _a			
2021 _a			
2020 _a			
2019	140	19 (± 7)	3 (± 3)
2018 _a			
2017 _a			
2016	95	26 (± 9)	- -
2015 _a			
2014	153	20 (± 6)	- -
2013 _a			
2012	231	11 (± 4)	0 (± 1)
2011	118	11 (± 6)	1 (± 2)
2010	185	15 (± 5)	1 (± 1)
2009	239	10 (± 4)	0 (± 1)

nedsunsv.d23,d19, d16, d14; nedsunsv.d12-d09

_a = Lake was not sampled

- = No fish over 8.0 in captured to determine RSD₈

Table 92. Population assessment of Bluegill based on samples collected at Smoky Valley lake from 2009-2023 (scoring based on statewide assessment).

Year		Mean length age 2	Years to 6.0 in	Spring CPUE ≥ 6.0 in	Spring CPUE ≥ 8.0 in	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2023	Value			85.3	0				
	Score			3	0				
2022 _a	Value								
	Score								
2021 _a	Value								
	Score								
2020 _a	Value								
	Score								
2019	Value	4.2	3-3+	36.0	5.3	11	Good	-0.739	52.20%
	Score	2	3	2	4				
2018 _a	Value								
	Score								
2017 _a	Value								
	Score								
2016	Value	3.6	3-3+	33.3	0.0	7	Fair	-0.528	41.00%
	Score	1	3	2	1				
2015 _a	Value								
	Score								
2014	Value			4.0	0.0				
	Score			1	1				
2013 _a	Value								
	Score								
2012	Value	4.1	3-3+	26.6	1.0	8	Fair	-1.277	72.10%
	Score	2	3	1	2				
2011	Value			13.0	1.0				
	Score			1	2				
2010	Value			29.6	1.0				
	Score			2	2				
2009	Value			25.0	1.0				
	Score			1	2				

nedsunsv.d23,d19, d16, d14, d12-d09

_a = Lake was not sampled

Table 93. Spring electrofishing CPUE (fish/hr) for various length groups of Redear Sunfish collected at Smoky Valley Lake in 2023.

Year	Length group										Total		Total CPUE (excluding <3.0 in)
	3.0-5.9 in		6.0-7.9 in		≥6.0 in		≥8.0 in		≥10.0 in		CPUE	SE	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE			
2023	9.3	3.5	12.0	2.3	13.3	2.7	1.3	1.3	0.0		22.7	5.8	22.7

Table 94. Redear Sunfish PSD and RSD₈ values from spring electrofishing at Smoky Valley Lake in 2023; 95% confidence intervals are in parentheses.

Year	≥ Stock size	PSD	RSD ₈
2023	17	35 (±23)	- -

Table 95. Population assessment of Redear Sunfish based on samples collected at Smoky Valley lake in 2023 (scoring based on statewide assessment).

Year	Mean length age 3	Years to 8.0 in	Spring CPUE ≥ 8.0 in	Spring CPUE ≥ 10.0 in	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2023	Value		1.3	0				
	Score		1	0				

nedsuns.v.d23

SOUTHEASTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Conditions encountered during sampling in 2023 at southeastern district lakes are listed in Table 1.

Lake Cumberland (50,250 acres)

Black Bass Sampling (Spring)

Diurnal electrofishing studies were conducted at Wolf Creek dam, Faubush Creek, Fishing Creek, and Lily Creek embayments of Lake Cumberland during April 2023 to assess the black bass populations. The length-frequency and catch-per-unit-effort (CPUE) of the black bass species collected in each area is shown in Table 2, and the catch-per-hour (by area and length group) of the three black bass species are shown in Tables 3-6. Largemouth Bass (58%) comprised most of the black bass population in Lake Cumberland and Spotted Bass made up an additional 35%. Catch rates of Largemouth Bass in 2023 were higher than rates observed in 2022 and good numbers of fish in the smaller size classes should bolster the population going forward. Catch rates for Spotted Bass were lower in 2023 than in 2022; however, the catch rate of fish over 14.0 in remains stable. Overall catch rates of Smallmouth Bass were higher in 2023 than in 2022. Table 7 compares the catch-per-hour by length group of black bass in Lake Cumberland to other SEFD lakes sampled in 2023.

Largemouth Bass catch rates greatly exceeded three of the four CPUE management objectives, with only the catch rate of fish ≥ 20.0 in failing to meet the objective (Assessment rating=Good; Table 8). Spotted Bass exceeded all three of the catch rate management objectives (Assessment rating=Excellent; Table 9). The Smallmouth Bass population met two of the three CPUE management objectives (Assessment rating=Good; Table 10).

Largemouth Bass exhibited excellent size structure, with a PSD value of 74 (RSD_{15-49} ; Table 11). Spotted bass had a good size distribution with a PSD of 59 (RSD_{14-19} ; Table 11). The Smallmouth Bass population was skewed towards large fish ($PSD=80$, RSD_{14-45} ; Table 11), but this was based off a limited number of fish sampled. Table 12 compares the size structure of the black bass populations in Lake Cumberland to other SEFD lakes sampled in 2023.

Black Bass Sampling (Fall)

Diurnal electrofishing was conducted in the Fishing Creek embayment on 28 September 2023 to index Largemouth Bass year-class strength (Tables 13 and 14). Catch rates for age-0 Largemouth Bass in 2023 were lower than rates observed in 2022 but remained above the 10-year average (Table 14). Table 15 compares the CPUE of age-0 Largemouth Bass in Lake Cumberland to other SEFD lakes sampled in fall 2023. Relative weight (Wr) values for Largemouth Bass and Spotted Bass collected during September sampling are shown in Table 16. Table 17 compares Wr values for black bass in Lake Cumberland to other SEFD lakes sampled in fall 2023.

Crappie Sampling

Fall trap netting was conducted in the Fishing Creek and Wolf Creek embayments of Lake Cumberland during late October and early November 2023 to assess the crappie population. Length frequency and CPUE for each species of crappie from each area are shown in Table 18. While crappie catch rates in Fishing Creek were consistent between 2021 and 2023, Black Crappie catch rates in Wolf Creek were lower in 2023 than in previous years. The PSD and RSD_{10} values for crappie are shown in Table 19. Age-growth data from White Crappie and Black Crappie collected in 2023 are shown in Tables 20 and 21, respectively. Six year classes were observed in the White Crappie population, and the 2019 year class (age 4) continues to remain strong and comprised 44% of the White Crappie population (Table 22). The 2022 (age 1) and 2021 (age 2) year classes made up 58% of the Black Crappie catch (Table 23). The crappie population assessments (White and Black) are shown in Table 24, with both species rating "Fair". The crappie population met two of the five management objectives (Table 25). Relative weight (Wr) values for crappie are shown in Table 26.

Striped Bass Sampling

Gill nets were used in late November 2023 to evaluate the Striped Bass population in Lake Cumberland. Twenty-eight net-nights (nn) captured 58 Striped Bass for a catch rate of 2.1 fish/nn. Length-frequency and CPUE of Striped Bass are shown in Table 27. Striped Bass ranged from 9.0 to 36.0 in with the mode being the 18.0-in class (13 fish). One of the four management objectives was met for the Striped Bass population (Table 28). The age-growth data for Striped Bass collected during 2023 is shown in Table 29. Eight year classes were represented in the catch, and the 2022 year class (age 1) was the most abundant year class collected (57%; Table 30). The mean length of age-2+ fish at capture (2021 year class) was 22.3 in, which exceeded the growth objective (21.0 in) for the Striped Bass fishery (Table 31). The Striped Bass assessment score was 7 (rating=Fair; Table 31). Striped Bass Wt values are shown in Table 32. Catch rates of Striped Bass collected during sampling were the lowest observed in the history of routine standardized sampling for Striped Bass at the lake. Even so, angler reports during 2023 indicated that Striped Bass numbers were abundant and indicate that the Striped Bass population is still strong.

Cumberland Tailwater

Trout Sampling (Fall)

Nocturnal electrofishing was conducted in seven different areas of the tailwater on November 5 and 6 2023 to assess the trout population. Table 33 shows the length-frequency and CPUE for the two trout species that were collected in each area. Cutthroat Trout and Brook Trout were not observed during sampling. Catch rates of Rainbow Trout decreased across all size classes during 2023, with the middle reach of the tailwater showing a large decline in numbers (Table 34). Brown Trout catch rates for fish 15.0-17.9 in improved in 2023 and numbers of fish <15.0 in remain good; however, population numbers remain well below the historic average of 67.7 fish/hr (Table 35). Relative weight values for each trout species are shown in Table 36. Relative weights for Rainbow Trout were consistent with 2022 sampling, and Brown Trout relative weights showed a slight improvement during 2023 sampling.

Laurel River Lake (6,060 acres)

Black Bass Sampling (Spring)

Nocturnal electrofishing sampling was conducted during April and May 2023 to assess the black bass population in Laurel River Lake. Electrofishing was conducted in four areas of the lake including the dam, Spruce Creek, the upper Laurel River arm, and upper Craigs Creek. Length-frequency and CPUE of the three black bass species collected in each area is shown in Table 37. The catch-per-hour (by area and length group) of the three black bass species are shown in Tables 38-41. Largemouth Bass (62%) comprised most of the black bass population in Laurel River Lake. Spring catch rates for all three species of black bass in Laurel River Lake were higher in 2023 compared to 2022. Largemouth Bass catch rates for fish less than 8.0 in had a large increase in spring 2023, which is likely due to age-0 bass stockings in fall 2022. Catch rates for Largemouth Bass ≥ 15.0 in continue to increase. Spotted Bass catch rates improved in 2023 due to a large increase in fish under 8.0 in and the catch rate of Spotted Bass over 14.0 in continues to expand. Overall catch rates for Smallmouth Bass were consistent with catch rates observed in 2022 and catch rates for fish less than 8.0 in continue to improve, which should help the population going forward. Table 7 compares the catch-per-hour by length group of black bass in Laurel River Lake to other SEFD lakes sampled in spring 2023.

The Largemouth Bass population met two of the four catch rate objectives, with the CPUE of Largemouth Bass 12.0-14.9 in (15.3 fish/hr) and fish ≥ 20.0 in (0.2 fish/hr) failing to meet the objectives (Assessment rating=Fair; Table 42). Spotted Bass met two of the three catch rate management objectives, with the catch rate of age-1 fish failing to meet the objective (Assessment rating=Good; Table 43). The Smallmouth Bass population met one of the three catch rate management objectives, with the catch rate of fish ≥ 14.0 in meeting the objective (Assessment rating=Good; Table 44).

Size structure values were good for Largemouth Bass (PSD=68, RSD₁₅ = 38) and Smallmouth Bass PSD=64, RSD₁₄ = 40; Table 45). Spotted Bass exhibited fair size structure with a PSD of 50 and an RSD₁₄ of 14 (Table 45). Table

12 compares the size structure values of black bass populations in Laurel River Lake to other SEFD lakes sampled in 2023.

The age-growth data for Largemouth Bass collected during 2023 is shown in Table 46. Eight year-classes were present in the Largemouth Bass sample with the 2022 year-class (age 1) comprising 33% of the population, and the 2018 year-class (age 5) making up an additional 24% of the population (Table 47). Growth rates of Largemouth Bass declined slightly since 2018, with bass reaching 12.5 in by age 3 in 2023, which failed to meet the growth rate objective of 13.0 in (Table 42). The Largemouth Bass population assessment score was 12 (rating=Fair) and is shown in Table 48.

Black Bass Sampling (Fall)

Nocturnal electrofishing was conducted in the Laurel River arm on 11 October 2023 to index Largemouth Bass year-class strength (Tables 49 and 50). Age-0 catch rates for Largemouth Bass in 2023 were higher than rates observed in 2022 (Table 50). Table 15 compares the CPUE of age-0 Largemouth Bass in Laurel River Lake to other SEFD lakes sampled in fall 2023. Relative weight (Wr) values for black bass collected during October sampling are shown in Table 51. Relative weight values for Largemouth Bass ranged from 96-100 across the length groups, and Spotted Bass relative weights were 97-102. Table 17 compares Wr values for black bass in Laurel River Lake to other SEFD lakes sampled in fall 2023.

Walleye Sampling

Gill nets were used in November 2023 to evaluate the Walleye population in Laurel River Lake. A total of 131 Walleye were captured in 8 net-nights for a catch rate of 16.4 fish/nn. Length frequency and CPUE of Walleye is shown in Table 52. Walleye ranged from 11.0 to 24.0 in with the mode being the 19.0-in class (39 fish). The Walleye population met two of the three catch rate management objectives, with the catch rate of age-1+ fish failing to meet the objective (Assessment rating=Excellent; Table 53). Age-growth data for male and female Walleye are shown in Tables 54 and 55, respectively. The age-growth for both sexes combined is shown in Table 56. Eight year-classes were represented in the catch, with age-3 (2020 year-class) Walleye comprising 29% of the catch and the 2022 year-class accounting for an additional 21% of the catch (Table 57). The Walleye assessment score was 16 (rating=Excellent; Table 58). Mean length of age-2+ Walleye at capture (19.4 in) surpassed the growth objective of 18.0 in (Table 53). Relative weight (Wr) values for Walleye are shown in Table 59.

Cedar Creek Lake (784 acres)

Black Bass Sampling (Spring)

Diurnal electrofishing was conducted on 8 May 2023 to assess the Largemouth Bass population in Cedar Creek Lake. The length-frequency and CPUE of Largemouth Bass is shown in Table 60. Size structure of Largemouth Bass was good (PSD=67, RSD₁₅=48; Table 61). Table 12 compares the size structure values of Largemouth Bass populations in Cedar Creek Lake to other SEFD lakes sampled in 2023. The catch-per-hour (by length group) of Largemouth Bass for 2014-2023 is shown in Table 62. Overall catch rates of Largemouth Bass in Cedar Creek Lake decreased for the fourth consecutive year, but increased amounts of vegetation are making sampling difficult. Table 7 compares the catch-per-hour by length group of Largemouth Bass in Cedar Creek Lake to other SEFD lakes sampled in 2023. Three of the four CPUE management objectives were exceeded for the Largemouth Bass population, with the CPUE of bass ≥ 20.0 in (2.0 fish/hr) failing to meet the objective of 4.0 fish/hr (Assessment rating=Good; Table 63).

Black Bass Sampling (Fall)

Diurnal electrofishing was conducted on 7 November 2023 to index the Largemouth Bass year class strength (Tables 64 and 65). Catch rates of age-0 Largemouth Bass in 2023 were lower than rates in 2022 but still remain high (Table 65). Table 15 compares the CPUE of age-0 Largemouth Bass in Cedar Creek Lake to other SEFD lakes sampled in fall 2023. Relative weight (Wr) values for Largemouth Bass are found in Table 66. Table 17 compares Wr values for Largemouth Bass in Cedar Creek Lake to other SEFD lakes sampled in fall 2023.

Bluegill/Redear Sunfish Sampling

Diurnal electrofishing was conducted on 15 May 2023 to assess the Bluegill and Redear Sunfish populations in Cedar Creek Lake. The length-frequency and CPUE of Bluegill and Redear Sunfish is shown in Table 67. The catch-per-hour (by length group) of Bluegill and Redear Sunfish is shown in Table 68. Catch rates for both Bluegill and Redear Sunfish decreased in 2023. PSD and RSD values for Bluegill and Redear Sunfish are shown in Table 69. The Bluegill population exhibited a poor size structure (PSD=7, RSD₈=0; Table 69). The Redear Sunfish population exhibited a good size structure (PSD=43, RSD₉=2; Table 69).

Beulah Lake (71 acres)

Angler Utilization Survey

Two Browning Dark Ops HD Pro X trail cameras were placed at Beulah Lake on 28 February 2023 to assess angler utilization of the reservoir. One camera was placed at the main boat ramp area and another camera was placed at a bank fishing access site. The trail cameras were configured to take motion detected and time-lapse pictures of the boat ramp, courtesy dock, and surrounding bank access areas. Angler utilization data was collected bimonthly from March 2023 to February 2024 and included number of anglers, angling type (boat, bank, or canoe/kayak), and estimated length of each angling trip (hours). Angler utilization data was analyzed by randomly selecting 16 days each month.

Angler count data for Beulah Lake are shown in Table 70. Between March 2023 and February 2024, an estimated 2,372 angling trips were taken to Beulah Lake with an annual average of 12.3 trips per day and 33.3 trips per acre. Total monthly angling trips ranged from 484 trips in May 2023 to 32 trips in January 2024. Most angling trips (75%; 1,773 trips) were taken between April 2023 and August 2023. Overall, bank angling trips accounted for 58% (1,382 trips) of total trips taken to Beulah Lake. Boat angling trips accounted for 35% (833 trips) and canoe/kayak angling trips accounted for 7% (157 trips) of total angling trips.

Additionally, between March 2023 and February 2024, it was estimated that Beulah Lake received 5,656 hours of angling pressure with May (1,244 hours) and July (1,056 hours) having the highest angling pressure rates (Table 71). The average angling trip length during this period was 2.4 hours. Monthly average trip lengths ranged from 1.1 hours in January 2024 to 2.7 hours in July 2023. Boat angling trips accounted for 54% of total angling pressure (3,041 hours) with an overall average trip length of 3.7 hours. Bank angling trips accounted for 38% (2,165 hours) and canoe/kayak angling trips accounted for 8% (450 hours) of total angling pressure. The overall average trip length for bank and canoe/kayak angling was 1.6 hours and 2.9 hours, respectively.

A comparison of cumulative angler counts and angling pressure for smaller reservoirs (less than 500 acres in size) in the Southeastern Fisheries District is shown in Table 72.

Angler Attitude Survey

In addition to the angler utilization survey, angler attitude surveys were conducted at Beulah Lake from March 2023 to February 2024. Surveys were conducted in the field by district personnel and a total of 24 surveys were completed and results are shown in Figure 1. The angler attitude surveys reflected that 62% of interviewed anglers fished mostly for Bluegill/Redear Sunfish and 25% of interviewed anglers fished mostly for Largemouth Bass. All interviewed anglers were satisfied with the current size and creel limits on all sportfish at Beulah Lake. Overall, 96% of all interviewed anglers were satisfied with the current Beulah Lake facilities (parking lot, boat ramp, courtesy dock). Seventy-nine percent of interviewed anglers stated that they owned smartphones, 50% of those anglers use their smartphone regularly as a tool to get angling information.

Laurel Creek Reservoir (43 acres)

Largemouth Bass Sampling (Spring)

Electrofishing was conducted on 18 April 2023 at Laurel Creek Reservoir to assess the Largemouth Bass population. Length frequency and CPUE for Largemouth Bass is shown in Table 73. Catch-per-hour (by length group) for Largemouth Bass is shown in Table 74. Catch rates for each length group and overall catch rates for Largemouth

Bass were lower in 2023 than observed in previous sampling years. Table 7 compares the catch-per-hour by length group of Largemouth Bass in Laurel Creek Reservoir to other SEFD lakes sampled in 2023. Size structure values were marginal for Largemouth Bass (PSD=58, RSD₁₅=1; Table 75). Table 12 compares the size structure values of Largemouth Bass populations in Laurel Creek Reservoir to other SEFD lakes sampled in 2023. Age-growth and age-frequency data from Largemouth Bass collected in 2023 is shown in Tables 76 and 77, respectively. The Largemouth Bass population was rated “Fair” (Assessment score: 11; Table 78).

Liberty Lake (79 acres)

Black Bass Sampling (Spring)

Electrofishing was conducted on 19 April 2023 at Liberty Lake to assess the black bass population. Length frequency and CPUE for black bass is shown in Table 79. Catch-per-hour (by length group) for Largemouth and Spotted bass is shown in Table 80. Overall catch rates of Largemouth Bass, as well as catch rates of Largemouth Bass less than 8.0 in and between 12.0 and 14.9 in have increased since 2019. Catch rates of Largemouth Bass greater than 15.0 in were lower than observed in 2019. Table 7 compares the catch-per-hour by length group of Largemouth Bass in Beulah Lake to other SEFD lakes sampled in 2023. Largemouth and Spotted bass both exhibited poor size structure, with Largemouth Bass having a PSD value of 35 (RSD₁₅=4) and Spotted Bass having a PSD value of 17 (RSD₁₄=0; Table 81). Table 12 compares the size structure values of the black bass populations in Liberty Lake to other SEFD lakes sampled in 2023. Age-growth and age-frequency data from Largemouth Bass collected in 2023 is shown in Tables 82 and 83. The Largemouth Bass population was rated "Good" (Assessment score: 14; Table 84).

Lake Linville (361 acres)

Crappie Sampling

Fall trap netting was conducted in Lake Linville during October 2023 to assess the crappie population. The crappie data should be interpreted with caution because of the low sample size and may not be representative of the crappie population. Length frequency and CPUE for crappie from the lake are shown in Table 85. In previous crappie sampling on Lake Linville, the population was comprised primarily of White Crappie, but now Black and Blacknose Crappie make up the majority of the crappie population. White Crappie exhibited a good size structure as shown by the PSD and RSD₁₀ values in Table 86, but it is based on a low number of fish. The Black and Blacknose crappie population has a poor size structure (Table 86). Age-growth data from crappie collected in 2023 are shown in Table 87. Three year-classes were represented in the White Crappie catch, with age-1 fish accounting for 67% of the catch (Table 88). Two year-classes were observed in the Black Crappie population, with the 2022 year-class (age 1+) making up 77% of the population (Table 89). Age-1+ Blacknose Crappie were the only Blacknose Crappie collected (Table 90). The crappie population assessments were not completed due to lack of age-2 crappie collected. Relative weight (Wr) values for crappie are shown in Table 91.

Wood Creek Lake (625 acres)

Black Bass Sampling (Spring)

Diurnal electrofishing was conducted on 17 April 2023 in the Pump Station and Dock areas of Wood Creek Lake to assess the black bass population. Length frequency and CPUE for black bass are shown in Table 92. The size structure for Largemouth Bass and Spotted Bass was poor, with Largemouth Bass having a PSD value of 38 (RSD₁₅=13) and Spotted Bass having a PSD of 0 (RSD₁₄=0; Table 93). Table 12 compares the size structure values of black bass populations in Wood Creek Lake to other SEFD lakes sampled in 2023. Catch-per-hour (by length group) for Largemouth Bass and Spotted Bass are shown in Tables 94 and 95, respectively. The Largemouth Bass population continues to be comprised primarily of fish <12.0 in, but overall catch rates have declined over the last 5 years. Catch rates of Spotted Bass remain low, and no fish over 11.0 in were observed during sampling. Table 7 compares the catch-per-hour by length group of black bass in Wood Creek Lake to other SEFD lakes sampled in 2023. The Largemouth Bass population assessment is shown in Table 96, and two of the four catch rate management objectives were met (Assessment rating=Fair).

Black Bass Sampling (Fall)

Diurnal electrofishing was conducted on 26 September 2023 in the Pump Station and Dock areas of Wood Creek Lake to index Largemouth Bass year-class strength (Tables 97 and 98). Catch rates of age-0 Largemouth Bass in 2023 were lower than catch rates observed over the last five years (Table 98). Table 15 compares the CPUE of age-0 Largemouth Bass in Wood Creek Lake to other SEFD lakes sampled in fall 2023. Relative weight values for Largemouth Bass and Spotted Bass in Wood Creek are shown in Table 99. Table 17 compares Wr values for black bass in Wood Creek Lake to other SEFD lakes sampled in fall 2023.

Table 1. Summary of sampling conditions by waterbody, species sampled, and date for the Southeastern Fisheries District in 2023.

Water body	Area	Species	Date	Time (24hr)	Gear	Weather	Water temp. F	Water level	Secchi (in)	Conditions	Pertinent sampling comments
Lake Cumberland											
	Dam	black bass	4/24/2023	945	shock	Sunny & clear, mid 40s, WNW w inds 7-12 mph	54-56	715.7	78	good	
	Faubush Creek	black bass	4/25/2023	1615	shock	Clear, mid 60s, no w ind	63-64	715.6	48	good	
	Fishing Creek	black bass	4/26/2023	935	shock	Clear, upper 50s, low 60s, ENE w inds 5-7 mph	60	715.5	36	good	
	Lily Creek	black bass	4/24/2023	1240	shock	Clear, low 50s, WNW w inds 9-12, gusts 22 mph	63-64	715.7	36	good	water murkier than usual
	Fishing Creek	black bass	9/28/2023	1015	shock	Cloudy, 60s, S w inds 6-8 mph	73	699	20	fair	water was murky, some bass had sores on them
	Fishing Creek	crappie	10/30-11/2		trap net	Sunny/Cloudy, 30s rising into 50, w indy	54-65	692	72	good	cold overnight lows, temps varied by time and location
	Wolf Creek	crappie	10/23-10/26		trap net	Mostly sunny, 60s, increasing w inds during week	65	694		good	
	Beaver Creek	Striped Bass	11/27-11/30		gill net	Sun and clouds, 30s-40s, w indy	50-56	688.7		good	water temps varied by day
	Wolf/Lily creeks	Striped Bass	11/27-11/30		gill net	Sun and clouds, 30s-40s, w indy	56	687.7		good	
Cumberland Tailwater											
	Above Helms	trout	11/5/2023	1800	shock		58.5	3570 cfs		good	
	Below Helms	trout	11/5/2023	1745	shock	Clear, air temps in mid 60s and falling in the 40s	58	3570 cfs		good	
	Rainbow Run	trout	11/5/2023	1800	shock	Clear, warm	60	3570 cfs		good	
	Big Willis	trout	11/5/2023	1800	shock	Clear, cool	58	3570 cfs		good	
	Crocus Creek	trout	11/5/2023	1800	shock		58	3570 cfs		good	
	Hwy 61 Traces	trout	11/6/2023	1740	shock	78 at start, clear, SW w inds 8 mph	58	3750 cfs		good	
	Cloyds	trout	11/6/2023	1800	shock		58	3750 cfs		good	
Laurel River Lake											
	Dam	black bass	4/25/2023	2025	shock	Clear, 50s	61	1015	156	good	bass were deep
	Spruce Creek	black bass	5/2/2023	2010	shock	Cloudy, mid 50s, W w inds 8-15 gusts to 23 mph	61	1013	48	good	water had brown color
	Craig's Creek	black bass	5/1/2023	2020	shock	Clouds and sprinkles early, clearing, 50s, w indy	61	1013	156	good	
	312 Bridge	black bass	5/4/2023	2010	shock	Mostly clear, mid 60s	63-65	1012	48	good	
	312 Bridge	black bass	10/11/2023	1900	shock	50s, light breeze	68-69	1006	38	good	
	Entire lake	Walleye	11/13-11/14		gill net	Clear/clouds late, 50s, E/NE w inds 3-10 mph	58	1005		good	
Cedar Creek Lake											
	LMB		5/8/2023	1030	shock	Cloudy, 70s, S w inds 8-10 mph, rain later in day	62-63	full	60	fair	milfoil and filamentous algae thick
	LMB		11/7/2023	950	shock	Clouds but clearing, 70s, W w ind 8 & diminishing	56-60	low	60	fair	vegetation not as bad but still present
	BLG/RESF		5/15/2023	940	shock	Cloudy, 60s, N/NE w inds 10-13 mph	71-75	normal	72	fair	milfoil and filamentous algae thick
Laurel Creek Reservoir											
	LMB		4/18/2023	1000	shock	Sunny, low -mid 60's	60.6	normal	132	good	Water was clear, good tree habitat for fish
Liberty Lake											
	black bass		4/19/2023	955	shock	Sunny, Mid-60's to upper 70's, calm w inds	61.4	normal	36	good	Water murky, overhanging trees kept boat off bank
Lake Linville											
	crappie		10/16-10/19		trap net	Cloudy/sunny, 40s & 50s, light w inds	62-63	low		fair	low lake levels kept nets off banks
Wood Creek Lake											
	black bass		4/17/2023	1015	shock	Partly sunny, low 50s, WSW w ind 15-30/gusts 40	60-61	1020	60	good	no vegetation in the upper part of the lake
	black bass		9/26/2023	1015	shock	Sunny, clear, nice, 70s	73	1019	72/42	good	Elodea not present, some water willow around banks

Table 2. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours of 15-minute diurnal electrofishing runs in Lake Cumberland during April 2023.

Area	Species	Inch class																		Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20
Dam	Largemouth Bass	1	3	4	2	5	5	5	2	2	1	2	2		16	16	16	13	1	1	97	64.7	11.5
	Spotted Bass	2	2	1	3	5	2	1			1	11	9	5	1						43	28.7	7.9
	Smallmouth Bass	2	3	1	1	3	1	1		1				1						1	15	10.0	4.2
Faubush Creek	Largemouth Bass		6	6	6	11	15	5	4	2	13	9	8	18	15	16	9	6	1		150	100.0	11.9
	Spotted Bass	1	4	4	5	9	12	11	10	3	14	12	7	2	3	2	1				100	66.7	13.0
	Smallmouth Bass		4									1		2							7	4.7	1.9
Fishing Creek	Largemouth Bass	1	13	9	5	15	18	11	6	9	16	8	9	20	21	15	3	4			183	122.0	15.3
	Spotted Bass		1	2	2		1	1	1	3		1									12	8.0	2.3
	Smallmouth Bass																	1			1	0.7	0.7
Lily Creek	Largemouth Bass		1	2	1	9	6	7	6	2	5	8	6	5	3	10	12	7			90	60.0	8.7
	Spotted Bass	1	5	1	5	7	10	27	9	12	14	16	19	19	13	1					159	106.0	4.7
	Smallmouth Bass		3	3	1	1	1	2	1	1	1	7	5	4	2	3	2	2			39	26.0	9.6
Total	Largemouth Bass	2	23	21	14	40	44	28	18	15	35	27	25	43	55	57	40	30	2	1	520	86.7	7.8
	Spotted Bass	4	12	8	15	21	25	40	20	18	29	40	35	26	17	3	1				314	52.3	8.7
	Smallmouth Bass	2	10	4	2	4	2	3	1	2	1	8	5	7	2	3	2	3	1		62	10.3	3.2

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Table 3. Comparison of catch-per-hour of black bass (by area) captured during spring electrofishing on Lake Cumberland from 2018-2023.

Species/Area	Stock					Quality					Preferred				
	2018	2019	2021	2022	2023	2018	2019	2021	2022	2023	2018	2019	2021	2022	2023
Largemouth Bass															
Dam	34.7	61.3	84.0	74.7	51.3	28.7	48.7	82.0	61.3	44.7	26.0	42.0	70.0	48.7	42.0
Faubush Creek	48.0	46.0	57.3	51.3	70.7	41.3	39.3	50.0	41.3	54.7	25.3	31.3	26.7	22.0	31.3
Fishing Creek	38.0	123.3	84.0	56.7	81.3	31.3	94.0	70.0	38.0	53.3	12.7	54.0	28.0	21.3	28.7
Lily Creek	20.0	36.0	36.0	37.3	47.3	18.0	26.7	26.7	31.3	34.0	12.7	20.0	13.3	14.7	21.3
Mean	35.2	66.7	63.6	55.0	62.7	29.8	52.2	54.9	43.0	46.7	19.2	36.8	31.3	26.7	30.8
Spotted Bass															
Dam	101.3	75.3	96.0	98.7	20.0	78.0	50.0	87.0	83.3	18.0	27.3	12.7	19.0	12.0	4.0
Faubush Creek	15.3	55.3	34.0	67.3	51.3	6.0	30.7	22.7	14.7	27.3	3.3	8.0	6.0	4.7	5.3
Fishing Creek	11.3	11.3	4.0	17.3	4.7	3.3	7.3	2.0	6.0	0.7	1.3	0.7	0.0	0.7	0.0
Lily Creek	96.0	98.0	71.3	90.7	93.3	50.0	62.0	34.0	49.3	54.7	19.3	18.0	9.3	12.7	22.0
Mean	56.0	60.0	47.3	68.5	42.3	34.3	37.5	31.8	38.3	25.2	12.8	9.8	7.6	7.5	7.8
Smallmouth Bass															
Dam	3.3	20.0	17.0	2.7	3.3	2.0	14.0	17.0	2.0	1.3	2.0	11.3	16.0	0.7	1.3
Faubush Creek	4.0	1.3	0.7	4.0	2.0	1.3	0.7	0.7	2.0	2.0	1.3	0.7	0.7	1.3	1.3
Fishing Creek	0.7	0.0	0.7	0.7	0.7	0.7	0.0	0.7	0.7	0.7	0.7	0.0	0.7	0.7	0.7
Lily Creek	21.3	24.7	18.0	18.7	20.7	14.0	19.3	14.0	4.7	17.3	8.0	12.7	10.7	4.0	8.7
Mean	7.3	11.5	8.4	6.5	6.7	4.5	8.5	7.3	2.3	5.3	3.0	6.2	6.2	1.7	3.0

Largemouth Bass - ≥ 8.0 in = stock, ≥ 12.0 in = quality, ≥ 15.0 in = preferred.

Smallmouth Bass and Spotted Bass - ≥ 7.0 in = stock, ≥ 11.0 in = quality, ≥ 14.0 in = preferred.

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Table 4. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Lake Cumberland during April 2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	24.0	3.5	16.0	3.1	15.8	2.5	30.8	2.6	0.2	0.2	86.7	7.8
2022	10.8	2.5	12.0	2.2	16.3	2.2	26.7	3.9	0.0	0.0	65.8	6.3
2021	5.8	1.6	8.7	1.5	23.6	3.4	31.3	5.2	0.2	0.2	69.5	6.7
2019	18.7	3.4	14.5	2.9	15.3	3.7	36.8	5.2	0.2	0.2	85.3	12.8
2018	4.3	0.8	5.3	1.0	10.7	1.6	19.2	2.8	0.3	0.2	39.5	3.9
2017	2.8	0.7	4.5	1.4	14.3	2.4	25.3	3.5	0.2	0.2	47.0	5.6
2016	5.0	1.8	9.3	3.3	9.8	1.5	12.8	2.4	0.5	0.4	37.0	6.4
2015	6.3	2.3	9.3	2.6	14.2	3.4	8.0	1.7	0.0	0.0	37.8	7.8
2014	9.5	3.7	12.8	4.4	9.7	2.4	8.2	2.0	0.3	0.2	40.2	8.5
2013	1.8	1.1	8.2	2.6	8.2	1.8	4.7	1.1	0.2	0.2	22.8	5.0

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Table 5. Spring electrofishing CPUE (fish/hr) for each length group of Spotted Bass collected at Lake Cumberland during April 2023.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	14.2	2.4	13.0	3.1	17.3	3.3	7.8	2.3	0.2	0.2	52.3	8.7
2022	12.5	1.9	24.8	5.1	30.8	6.4	7.5	1.6	0.0	0.0	75.7	9.2
2021	8.9	2.7	13.3	3.5	24.2	5.4	7.6	1.9	0.2	0.2	54.0	9.2
2019	16.2	3.0	17.8	2.7	27.7	4.3	9.8	2.1	0.0	0.0	71.5	9.9
2018	12.8	2.4	15.5	3.2	21.5	5.3	12.8	3.3	0.3	0.3	62.7	11.7
2017	6.5	1.3	6.7	1.4	14.0	2.4	5.5	2.2	0.0	0.0	32.7	5.2
2016	4.8	1.9	7.2	1.2	9.7	2.4	3.5	1.2	0.0	0.0	25.2	4.5
2015	4.2	1.2	6.0	1.2	10.3	2.5	3.5	1.0	0.0	0.0	24.0	4.2
2014	7.2	1.9	11.2	2.5	7.7	2.4	2.3	1.2	0.0	0.0	28.3	6.0
2013	1.8	0.6	7.7	1.6	9.8	2.4	1.5	0.7	0.0	0.0	20.8	3.8

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Table 6. Spring electrofishing CPUE (fish/hr) for each length group of Smallmouth Bass collected at Lake Cumberland during April 2023.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.0	1.4	1.0	0.4	2.3	1.0	3.0	1.2	1.0	0.5	10.3	3.2
2022	3.0	1.2	2.5	1.1	0.7	0.3	1.7	0.5	1.2	0.5	7.8	2.3
2021	1.5	0.6	0.9	0.6	1.1	0.5	6.2	2.0	2.9	1.0	9.6	2.8
2019	2.3	1.4	1.8	0.5	2.3	0.9	6.2	2.3	3.5	1.4	12.7	3.5
2018	2.8	0.8	1.8	0.8	1.5	0.7	3.0	1.0	1.7	0.6	9.2	2.4
2017	0.5	0.3	0.7	0.3	0.7	0.4	1.7	0.9	1.2	0.7	3.5	1.4
2016	4.2	2.2	1.2	0.6	1.0	0.4	2.5	0.8	1.0	0.4	8.8	2.6
2015	1.2	0.7	1.0	0.4	1.7	0.6	5.2	1.8	2.0	0.8	9.0	2.4
2014	1.2	0.6	3.2	1.5	1.7	0.7	2.0	1.1	0.8	0.4	8.0	2.8
2013	1.0	0.6	2.3	0.6	0.3	0.2	1.7	0.5	0.3	0.2	5.3	1.3

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Table 7. Catch-per-hour of black bass captured during spring electrofishing on lakes in the Southeastern Fishery District during 2023.

Species/Lake	Stock*	Quality*	Preferred*
Largemouth Bass			
Lake Cumberland	62.7	46.7	30.8
Laurel River Lake	51.2	35.0	19.7
Cedar Creek Lake	100.0	68.7	48.0
Laurel Creek Reservoir	109.6	63.2	1.6
Liberty Lake	96.0	33.7	3.4
Wood Creek Lake	75.3	28.7	10.0
Spotted Bass			
Lake Cumberland	42.3	25.2	7.8
Laurel River Lake	28.8	14.5	4.2
Liberty Lake	36.6	6.3	0.0
Wood Creek Lake	4.7	0.0	0.0
Smallmouth Bass			
Lake Cumberland	6.7	5.3	3.0
Laurel River Lake	4.2	2.7	1.7

*Largemouth Bass - ≥ 8.0 in = stock, ≥ 12.0 in = quality, ≥ 15.0 in = preferred

*Smallmouth Bass and Spotted Bass - ≥ 7.0 in = stock, ≥ 11.0 in = quality, ≥ 14.0 in = preferred

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Table 8. Population assessment for Largemouth Bass based on spring electrofishing at Lake Cumberland from 2013-2023 (scoring based on statewide assessment).

Year		Mean length	CPUE	CPUE	CPUE	CPUE	Total score	Assessment rating
		age 3 at capture	age 1	12.0-14.9 in	≥15.0 in	≥20.0 in		
Management objective		≥13.0 in	≥5.0 fish/hr	≥10.0 fish/hr	≥8.0 fish/hr	≥0.5 fish/hr		
2023	Value		20.4	15.8	30.8	0.2		
	Score	4	2	1	4	2	13	G
2022	Value		15.3	16.3	26.7	0.0		
	Score	4	2	2	4	1	13	G
2021	Value	14.1	8.7	23.6	31.3	0.2		
	Score	4	1	3	4	2	14	G
2019	Value		29.0	15.3	36.8	0.2		
	Score	4	3	1	4	2	14	G
2018	Value		6.3	10.7	19.2	0.3		
	Score	4	1	1	3	2	11	F
2017	Value		3.8	14.3	25.3	0.2		
	Score	4	1	1	4	2	12	F
2016	Value	13.7	9.2	9.8	12.8	0.5		
	Score	4	1	1	2	3	11	F
2015	Value		8.3	14.2	8.0	0.0		
	Score	4	1	1	2	1	9	F
2014	Value		12.8	9.7	8.2	0.3		
	Score	4	2	1	2	2	11	F
2013	Value		6.6	8.2	4.7	0.2		
	Score	4	1	1	1	2	9	F

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Table 9. Population assessment for Spotted Bass based on spring electrofishing at Lake Cumberland from 2013-2023 (scoring based on statewide assessment).

Year		Mean length	CPUE	CPUE	CPUE	Total score	Assessment rating
		age 3 at capture	age 1	11.0-13.9 in	≥ 14.0 in		
Management objective		≥ 9.6 in	≥ 4.0 fish/hr	≥ 7.0 fish/hr	≥ 2.0 fish/hr		
2023	Value		4.6	17.3	7.8		
	Score	3	4	4	4	15	E
2022	Value		2.1	30.8	7.5		
	Score	3	3	4	4	14	E
2021	Value		5.8	24.2	7.6		
	Score	3	4	4	4	15	E
2019	Value		7.5	27.7	9.8		
	Score	3	4	4	4	15	E
2018	Value		2.5	21.5	12.8		
	Score	3	3	4	4	14	E
2017	Value		0.6	14.0	5.5		
	Score	3	1	4	4	12	G
2016	Value		1.2	9.7	3.5		
	Score	3	2	3	4	12	G
2015	Value		1.7	10.3	3.5		
	Score	3	2	4	4	13	G
2014	Value		1.2	7.7	2.3		
	Score	3	2	2	3	10	G
2013	Value	11.1	0.0	9.8	1.5		
	Score	3	1	3	3	10	G

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Table 10. Population assessment for Smallmouth Bass based on spring electrofishing at Lake Cumberland from 2013-2023 (scoring based on statewide assessment).

Year		Mean length age 3 at capture	CPUE age 1	CPUE 11.0-13.9 in	CPUE ≥14.0 in	Total score	Assessment rating
Management objective		≥11.0 in	≥2.0 fish/hr	≥3.0 fish/hr	≥2.0 fish/hr		
2023	Value Score	1	2.7 3	2.3 4	3.0 4	12	G
2022	Value Score	1	0.2 1	0.7 2	1.7 3	7	F
2021	Value Score	1	1.1 2	1.1 3	6.2 4	10	G
2019	Value Score	1	0.5 2	2.3 4	6.2 4	11	G
2018	Value Score	1	1.0 2	1.5 3	3.0 4	10	G
2017	Value Score	1	0.0 1	0.7 2	1.7 3	7	F
2016	Value Score	1	2.8 3	1.0 3	2.5 4	11	G
2015	Value Score	1	0.3 1	1.7 3	5.2 4	9	F
2014	Value Score	1	0.2 1	1.7 3	2.0 4	9	F
2013	Value Score	1	0.3 1	0.3 2	1.7 3	7	F

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Table 11. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples at Lake Cumberland during April 2023; 95% confidence limits are in parentheses.

Year	Area	Largemouth Bass			Spotted Bass			Smallmouth Bass		
		≥ Stock size*	PSD	RSD ₁₅	≥ Stock size*	PSD	RSD ₁₄	≥ Stock size*	PSD	RSD ₁₄
2023	Dam	77	87 (± 8)	82 (± 9)	30	90 (± 11)	20 (± 15)	5	40 (± 48)	40 (± 48)
	Faubush Creek	106	77 (± 8)	44 (± 10)	77	53 (± 11)	10 (± 7)	3	100 (± 0)	67 (± 65)
	Fishing Creek	122	66 (± 9)	35 (± 9)	7	14 (± 28)	0 (± 0)	1	100 (± 0)	100 (± 0)
	Lily Creek	71	72 (± 11)	45 (± 12)	140	59 (± 8)	24 (± 7)	31	84 (± 13)	42 (± 18)
	Total	376	74 (± 4)	49 (± 5)	254	59 (± 6)	19 (± 5)	40	80 (± 13)	45 (± 16)
2022	Total	330	78 (± 5)	48 (± 5)	411	56 (± 5)	11 (± 3)	39	36 (± 15)	26 (± 14)
2021	Total	350	86 (± 4)	49 (± 5)	260	67 (± 6)	16 (± 5)	46	87 (± 10)	74 (± 13)
2019	Total	400	78 (± 4)	55 (± 5)	360	63 (± 5)	16 (± 4)	69	74 (± 10)	54 (± 12)
2018	Total	211	85 (± 5)	55 (± 7)	336	61 (± 5)	23 (± 5)	44	61 (± 15)	41 (± 15)
2017	Total	265	90 (± 4)	57 (± 6)	168	70 (± 7)	20 (± 6)	19	74 (± 20)	53 (± 23)
2016	Total	192	71 (± 6)	40 (± 7)	136	58 (± 8)	15 (± 6)	32	66 (± 17)	47 (± 18)
2015	Total	189	70 (± 7)	25 (± 6)	132	63 (± 8)	16 (± 6)	47	87 (± 10)	66 (± 14)
2014	Total	184	58 (± 7)	27 (± 6)	150	40 (± 8)	9 (± 5)	45	49 (± 15)	27 (± 13)
2013	Total	126	61 (± 9)	22 (± 7)	121	56 (± 9)	7 (± 5)	27	44 (± 19)	37 (± 19)

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*Largemouth Bass = ≥8.0 in, Smallmouth Bass and Spotted Bass = ≥7.0 in

Table 12. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples at Lake Cumberland, Laurel River Lake, Cedar Creek Lake, Laurel Creek Reservoir, Liberty Lake, and Wood Creek Lake during 2023; 95% confidence limits are in parentheses.

Lake	Largemouth Bass		Smallmouth Bass		Spotted Bass	
	PSD	RSD ₁₅	PSD	RSD ₁₄	PSD	RSD ₁₄
Lake Cumberland	74 (± 4)	49 (± 5)	80 (± 13)	45 (± 16)	59 (± 6)	19 (± 5)
Laurel River Lake	68 (± 5)	38 (± 6)	64 (± 19)	40 (± 20)	50 (± 8)	14 (± 5)
Cedar Creek Lake	69 (± 7)	48 (± 8)				
Laurel Creek Reservoir	58 (± 8)	1 (± 2)				
Liberty Lake	35 (± 7)	4 (± 3)			17 (± 9)	0 (± 0)
Wood Creek Lake	38 (± 9)	13 (± 6)			0 (± 0)	0 (± 0)

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Table 13. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 1.5 hours of 15-minute diurnal electrofishing runs in Fishing Creek of Lake Cumberland on 28 September 2023.

Species	Inch class																Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18			
Largemouth Bass	7	5	4	9	7	2	9	5	5	5	4	3	4	2	1	1	73	48.7	5.9
Spotted Bass	23	14	9	1		3	1	3	6	5	3	2	1	2			73	48.7	10.0

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Table 14. Indices of year class strength at age 0 and age 1 and mean lengths (in) of Largemouth Bass collected in the fall (September and October) in electrofishing samples in the Fishing Creek area of Lake Cumberland.

Year class	Area	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1 ^a	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
Lake Cumberland									
2023	Fishing Creek	4.8	0.3	22.7	6.5	12.0	2.7		
2022	Fishing Creek	5.8	0.2	44.7	13.2	34.7	13.1	31.9	7.3
2021	Fishing Creek	4.5	0.3	20.7	4.3	10.0	4.9	33.3	6.2
2020	Fishing Creek	4.1	0.4	16.0	5.0	4.7	2.4	12.7	4.4
2019	Fishing Creek	5.8	0.4	6.7	4.5	4.7	3.2	NA	NA
2018	Fishing Creek	6.2	0.2	17.3	2.9	15.3	2.2	58.0	11.0
2017	Fishing Creek	4.2	0.5	11.3	4.4	3.3	1.6	6.7	2.0
2016	Fishing Creek	6.8	0.2	20.0	9.2	19.3	8.7	4.0	2.1
2015	Fishing Creek	5.1	0.2	18.7	14.1	8.7	6.4	13.3	4.9
2014	Fishing Creek	6.7	0.2	9.3	2.2	9.3	2.2	26.0	4.9

^a Age-1 Largemouth Bass CPUE based only on Fishing Creek location
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Table 15. Year class strength at age 0 and mean lengths (in) of Largemouth Bass collected in fall 2023 in electrofishing samples at Lake Cumberland, Laurel River Lake, Cedar Creek Lake, and Wood Creek Lake.

Lake	Area	Age 0		Age 0		Age 0 \geq 5.0 in	
		Mean length	SE	CPUE	SE	CPUE	SE
Lake Cumberland	Fishing Creek	4.8	0.3	22.7	6.5	12.0	2.7
Laurel River Lake	Laurel River Arm	4.6	0.2	54.7	9.0	28.0	8.9
Cedar Creek Lake		4.5	0.1	86.0	36.2	30.0	9.3
Wood Creek Lake		4.0	0.1	24.7	6.7	2.7	0.8

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Table 16. Number of fish and mean relative weight (Wr) for each length group of black bass collected in Fishing Creek of Lake Cumberland on 28 September 2023. Standard error is in parentheses.

Species	Length group					
	8.0-11.9 in		12.0-14.9 in		≥15.0 in	
	No.	Wr	No.	Wr	No.	Wr
Largemouth Bass	24	86 (2)	11	86 (1)	4	91 (3)
	7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	No.	Wr	No.	Wr	No.	Wr
Spotted Bass	13	102 (2)	10	94 (1)	3	97 (1)

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Table 17. Number of fish and mean relative weight (Wr) for each length group of black bass collected in Lake Cumberland, Laurel River Lake, Cedar Creek Lake, and Wood Creek Lake during fall 2023. Standard error is in parentheses.

Species	Lake	Length group					
		No.	Wr	No.	Wr	No.	Wr
Largemouth Bass		8.0-11.9 in		12.0-14.9 in		≥15.0 in	
	Lake Cumberland (Fishing Creek)	24	86 (2)	11	86 (1)	4	91 (3)
	Laurel River Lake (Laurel River Arm)	29	99 (2)	14	96 (3)	20	100 (2)
	Cedar Creek Lake	51	87 (1)	12	89 (2)	14	98 (2)
	Wood Creek Lake	54	87 (3)	8	88 (2)	2	103 (6)
Spotted Bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	Lake Cumberland (Fishing Creek)	13	102 (2)	10	94 (1)	3	97 (1)
	Laurel River Lake (Laurel River Arm)	10	97 (4)	7	100 (5)	3	102 (0)
	Wood Creek Lake	8	97 (3)	2	90 (5)	0	-
Smallmouth Bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	Laurel River Lake (Laurel River Arm)	11	92 (3)	2	84 (11)	0	0 (0)

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Table 18. Length frequency and CPUE (fish/nn) for each species of crappie collected in the Fishing Creek (27 net-nights) and Wolf Creek (27 net-nights) embayments of Lake Cumberland in 54 net-nights from 23-26 October and 30 October-2 November 2023.

Area	Species	Inch class											Total	CPUE	SE	
		2	3	4	5	6	7	8	9	10	11	12				13
Fishing Creek																
	White Crappie		27	12	2	13	31	31	21	56	27	5	1	226	8.4	0.9
	Black Crappie	1	13	1	8	9	14	15	11	12	2			86	3.2	0.5
Wolf Creek																
	White Crappie					1								1	<0.1	<0.1
	Black Crappie		2		6	9	8	6		24	9	1	1	66	2.4	0.8
Total																
	White Crappie		27	12	2	14	31	31	21	56	27	5	1	227	4.2	0.7
	Black Crappie	1	15	1	14	18	22	21	11	36	11	1	1	152	2.8	0.5

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Table 19. PSD and RSD₁₀ values calculated for crappie collected in trapnets at Lake Cumberland in October and November 2023; 95% confidence limits are in parentheses.

Species	Area	≥ Stock size*	PSD	RSD ₁₀
White Crappie				
	Fishing Creek	187	75 (± 6)	48 (± 7)
	Wolf Creek	1	- (-)	- (-)
	Total	188	75 (± 6)	47 (± 7)
Black Crappie				
	Fishing Creek	71	56 (± 12)	20 (± 9)
	Wolf Creek	64	64 (± 12)	55 (± 12)
	Total	135	60 (± 8)	36 (± 8)

* ≥5.0 in

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Table 20. Mean back calculated lengths (in) at each annulus for White Crappie collected from Lake Cumberland during 2023, including the 95% confidence interval (CI) for each mean length per age group.

Year class	No.	Age				
		1	2	3	4	5
2022	31	4.2				
2021	3	4.4	8.1			
2020	1	4.2	7.3	9.3		
2019	32	4.2	6.6	8.8	10.0	
2018	1	4.0	8.5	10.8	12.0	12.8
Mean		4.2	6.8	8.9	10.1	12.8
Number		68	37	34	33	1
Smallest		3.4	5.5	7.5	8.2	12.8
Largest		5.6	9.1	10.8	12.0	12.8
SE		0.1	0.2	0.2	0.2	
95% CI \pm		0.1	0.4	0.3	0.3	

Otoliths were used for age-growth determinations; Intercept = 0
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Table 21. Mean back calculated lengths (in) at each annulus for Black Crappie collected from Lake Cumberland during 2023, including the 95% confidence interval (CI) for each mean length per age group.

Year class	No.	Age				
		1	2	3	4	5
2022	25	4.0				
2021	20	4.2	7.1			
2020	9	3.9	6.5	8.3		
2019	9	3.8	6.0	8.1	9.4	
2018	5	4.0	6.9	8.6	9.8	10.5
Mean		4.0	6.7	8.3	9.5	10.5
Number		68	43	23	14	5
Smallest		2.6	5.0	6.9	8.3	9.0
Largest		5.6	9.2	10.7	11.7	13.0
SE		0.1	0.2	0.2	0.3	0.9
95% CI \pm		0.2	0.4	0.4	0.6	1.7

Otoliths were used for age-growth determinations; Intercept = 0
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Table 22. Age-frequency and CPUE (fish/nn) of White Crappie trap-netted at Lake Cumberland in 54 net-nights in October and November 2023.

Age	Inch class											Total	%	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12	13					
0+	27	12											39	17.2	0.7	0.2
1+			2	14	31	28							75	33.0	1.4	0.3
2+							4		3				7	3.1	0.1	<0.1
3+								6					6	2.6	0.1	<0.1
4+						3	17	50	24	5			99	43.6	1.8	0.3
5+											1		1	0.4	<0.1	<0.1
Total	27	12	2	14	31	31	21	56	27	5	1		227	100.0	4.2	
%	11.9	5.3	0.9	6.2	13.7	13.7	9.3	24.7	11.9	2.2	0.4					

CPUE of ≥ 8.0 -in (quality size) crappie = 2.6 fish/nn

CPUE of ≥ 10.0 -in (preferred size) crappie = 1.7 fish/nn

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Table 23. Age-frequency and CPUE (fish/nn) of Black Crappie trap-netted at Lake Cumberland in 54 net-nights in October and November 2023.

Age	Inch class												Total	%	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	13					
0+	1	15	1											17	11.1	0.3	0.1
1+				14	13	11	6							44	28.8	0.8	0.2
2+					5	9	11		11	8				44	28.8	0.8	0.2
3+						2	4	4	11					21	13.7	0.4	0.1
4+								4	14	3				21	13.7	0.4	0.1
5+								4			1	1		6	3.9	0.1	<0.1
Total	1	15	1	14	18	22	21	12	36	11	1	1		153	100.0	2.8	
%	0.7	9.8	0.7	9.2	11.8	14.4	13.7	7.8	23.5	7.2	0.7	0.7					

CPUE of ≥ 8.0 -in (quality size) crappie = 1.5 fish/nn

CPUE of ≥ 10.0 -in (preferred size) crappie = 0.9 fish/nn

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Table 24. Population assessment for White and Black crappie from Lake Cumberland trap net data collected in October and November 2023 (scoring based on statewide assessment).

Parameter	Species			
	White Crappie		Black Crappie	
	Assessment value	Assessment score	Assessment value	Assessment score
CPUE age 1 and older	3.5	2	2.5	2
CPUE age 1	1.4	2	0.8	2
CPUE age 0	0.7	2	0.3	2
CPUE \geq 8.0 in	2.6	2	1.5	2
Mean length age 2 at capture	10.4	4	9.1	3
Instantaneous mortality (Z)	0.571		0.450	
Annual mortality (A)	43.5		36.2	
Total score:		12		11
Assessment rating:		F		F

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sedagcbc.d23

Table 25. Population assessment for crappie based on fall trap netting at Lake Cumberland from 2005-2023 (scoring based on statewide assessment).

Year		CPUE ≥ age 1			CPUE age 1			CPUE age 0			CPUE ≥ 8.0 in			Mean length age 2 at capture			Total score	Assesment rating
		WC	BC	ALL	WC	BC	ALL	WC	BC	ALL	WC	BC	ALL	WC	BC	ALL		
Management objective		≥ 5.0 fish/nn			≥ 3.0 fish/nn			≥ 3.0 fish/nn			≥ 2.0 fish/nn			≥ 9.6 in				
2023	Value	3.5	2.5	6.0	1.6	0.8	2.4	0.7	0.3	1.0	2.6	1.5	4.1	10.4	9.1	9.3		
	Score			2			2			2			3			2	11	F
2021	Value	4.2	3.4	7.6	0.6	1.4	2.0	0.5	1.0	1.5	2.6	1.3	4.0	8.6	8.3	8.5		
	Score			3			2			2			2			1	10	F
2019	Value	0.4	10.7	11.1	0.1	8.9	9.0	6.1	7.3	13.4	0.4	2.4	2.8	10.5	10.2	10.2		
	Score			3			4			4			2			4	17	E
2017	Value	1.5	3.2	4.6	0.3	0.4	0.8	0.0	0.2	0.2	1.1	1.4	2.6	9.4	7.7	8.5		
	Score			2			1			1			2			1	7	P
2015	Value	0.2	3.7	3.9	0.1	1.4	1.5	0.4	0.3	0.7	0.1	1.6	1.7	11.9*	8.4	8.5		
	Score			1			1			1			1			1	5	P
2013	Value	0.2	0.9	1.1	0.0	0.1	0.1	0.0	34.2	34.2	0.2	0.8	1.0	11.9	9.7	9.9		
	Score			1			1			4			1			3	10	F
2011	Value	2.8	2.7	5.5	2.3	2.2	4.5	0.2	23.3	23.5	1.4	0.7	2.0	10.7	9.8	10.2		
	Score			2			3			4			1			4	14	G
2009	Value	0.8	0.7	1.5	0.8	0.6	1.4	0.6	7.3	7.9	0.6	0.3	0.9	-	-	-		
	Score			1			1			4			1			0	7	P
2007	Value	0.3	7.0	7.3	0.2	6.7	6.9	0.0	0.2	0.3	0.3	0.5	0.8	11.2	9.4	9.9		
	Score			3			3			1			1			3	11	F
2005	Value	0.5	5.2	5.7	0.1	2.8	3.0	0.2	1.2	1.4	0.5	1.4	1.9	10.6	8.1	8.8		
	Score			2			2			2			1			1	8	P

* No age-2 fish collected. Data is from age-2 White Crappie collected in 2013.

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Table 26. Number of fish and mean relative weight (Wr) for each length group of crappie collected in Lake Cumberland in October and November 2023. Standard error is in parentheses.

Species	Area	Length group					
		5.0-7.9 in		8.0-9.9 in		≥10.0 in	
		No.	Wr	No.	Wr	No.	Wr
White Crappie							
	Fishing Creek	46	94 (1)	52	90 (1)	88	87 (1)
	Wolf Creek	1	86 (-)	0	- (-)	0	- (-)
	Lake Cumberland	47	94 (1)	52	90 (1)	88	87 (1)
Black Crappie							
	Fishing Creek	31	91 (2)	26	88 (1)	14	89 (2)
	Wolf Creek	23	93 (2)	6	104 (2)	35	92 (1)
	Lake Cumberland	54	92 (1)	32	91 (2)	49	91 (1)

sedtncb.d23

Table 27. Length frequency and CPUE (fish/nn) of Striped Bass collected at Lake Cumberland in 28 net-nights on 27-30 November 2023.

Species	Inch class																	Total	CPUE	SE		
	9	13	14	15	16	17	18	21	22	23	25	26	27	28	29	30	31				32	36
Striped Bass	2	2	1	2	5	10	13	2	1	1	1	3	4	3	1	1	3	2	1	58	2.1	0.5

sedgncbs.d23

Table 28. Population assessment for Striped Bass based on fall gill netting at Lake Cumberland from 2011-2023.

Year		CPUE ≥age 1	Mean length age 2 at capture	CPUE ≥24.0 in	CPUE age 1	Total score	Assesment rating
Management objective		≥4.0 fish/nn	≥21.0 in	≥1.0 fish/nn	≥2.0 fish/nn		
2023	Value	2.0	22.3	0.7	1.2		
	Score	1	3	1	2	7	F
2021	Value	5.0	24.0	3.7	1.1		
	Score	3	4	4	1	12	G
2019	Value	6.9	22.0	2.4	0.7		
	Score	4	2	4	1	11	G
2017	Value	4.0	24.3	1.7	2.2		
	Score	2	4	4	3	13	G
2016	Value	5.0	22.8	2.7	0.9		
	Score	3	4	4	1	12	G
2015	Value	4.6	22.3	1.5	0.9		
	Score	3	3	4	1	11	G
2014	Value	6.1	21.9	0.6	5.2		
	Score	4	2	1	4	11	G
2013	Value	7.2	22.1	2.8	2.6		
	Score	4	3	4	3	14	E
2012	Value	7.3	20.6	1.9	0.8		
	Score	4	1	4	1	10	G
2011	Value	5.9	20.5	1.2	0.6		
	Score	4	1	3	1	9	F

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Table 29. Mean back calculated lengths (in) at each annulus for Striped Bass collected from Lake Cumberland during 2023, including the 95% confidence interval (CI) for each mean length per age group.

Year class	No.	Age						
		1	2	3	4	5	6	7
2022	22	10.0						
2021	4	11.0	18.8					
2020	9	13.1	20.4	24.9				
2019	4	13.2	20.5	25.4	28.9			
2018	2	11.8	19.7	23.7	26.4	28.8		
2017	2	12.5	18.9	22.4	24.2	26.8	28.5	
2016	2	12.3	19.3	23.5	25.5	28.1	31.1	31.9
Mean		11.2	19.9	24.5	26.8	27.9	29.8	31.9
Number		45	23	19	10	6	4	2
Smallest		5.1	17.3	21.9	23.6	25.2	26.6	28.8
Largest		15.1	22.1	26.6	29.8	30.7	34.0	35.0
SE		0.4	0.3	0.3	0.7	0.9	1.6	3.1
95% CI \pm		0.8	0.5	0.6	1.4	1.8	3.2	6.1

Otoliths were used for age-growth determinations; Intercept = 0
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Table 30. Age-frequency and CPUE (fish/nn) of Striped Bass gill netted for 28 net-nights at Lake Cumberland in November 2023.

Age	Inch class																			Total	%	CPUE	SE	
	9	13	14	15	16	17	18	21	22	23	25	26	27	28	29	30	31	32	36					
0	2																				2	3.4	0.1	0.1
1+		2	1	2	5	10	13														33	56.9	1.2	0.4
2+								2	1	1											4	6.9	0.1	0.1
3+											1	3	2	3							9	15.5	0.3	0.1
4+																1	2	1			4	6.9	0.1	0.1
5+													1					1			2	3.4	0.1	<0.1
6+													1				1				2	3.4	0.1	<0.1
7+															1					1	2	3.4	0.1	0.1
Total	2	2	1	2	5	10	13	2	1	1	1	3	4	3	1	1	3	2	1		58	100.0	2.1	
%	3.4	3.4	1.7	3.4	8.6	17.2	22.4	3.4	1.7	1.7	1.7	5.2	6.9	5.2	1.7	1.7	5.2	3.4	1.7					

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Table 31. Population assessment for Striped Bass gill netted at Lake Cumberland in November 2023.

Parameter	Actual value	Assessment score
Population density (CPUE age 1 and older)	2.0	1
Growth rate (Mean length age 2+ at capture)	22.3	3
Size structure (CPUE ≥ 24.0 in)	0.7	1
Recruitment (CPUE age 1)	1.2	2
Instantaneous mortality (Z)	0.447	
Annual mortality (A)	36.0	
Total score		7
Assessment rating		F

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Table 32. Number of fish and mean relative weight (Wr) for each length group of Striped Bass collected in Lake Cumberland in November 2023. Standard error is in parentheses.

Length group					
12.0-19.9 in		20.0-29.9 in		≥ 30.0 in	
No.	Wr	No.	Wr	No.	Wr
33	90 (1)	16	83 (1)	7	81 (2)

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Table 33. Species composition, relative abundance, and CPUE (fish/hr) of trout collected during 8.75 hours of 15-minute nocturnal electrofishing runs in Cumberland tailwater during November 2023.

Area	Species	Inch class																Total	CPUE	SE	
		5	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				22
Above Helms	Rainbow Trout		2	8	57	112	74	23	10	2	8	11	2	1	2		1		313	250.4	26.0
	Brown Trout			2	3	12	11	15	12	2	2		1						60	48.0	10.4
Below Helms	Rainbow Trout			2	16	50	33	16	5	3	3	2	1	1					132	105.6	8.7
	Brown Trout				1	17	12	4	6	4	1								45	36.0	8.9
Rainbow Run	Rainbow Trout				4	16	9	6	1	3	4	2	2						47	37.6	5.9
	Brown Trout				5	10	26	13	11	4	3			1				1	74	59.2	23.7
Big Willis	Rainbow Trout	1	2	4	6	10	13	10	6	3	1	3	5		1				65	52.0	11.9
	Brown Trout				1	13	20	13	8	3	2								60	48.0	11.1
Crocus Creek	Rainbow Trout			9	9	18	7	7	6	6	5	11	3	1					82	65.6	11.1
	Brown Trout			3	17	18	7	2	1										48	38.4	9.0
Hwy 61 Bridge	Rainbow Trout		1	2	11	8	10	5	4	7	5	3	2						58	46.4	2.4
	Brown Trout				4	6	4	2	2	1									19	15.2	7.4
Cloyd's Landing	Rainbow Trout				2	7	10	4	8	2	3	2	1			2			41	32.8	3.9
	Brown Trout				1	2	1	2											6	4.8	1.5
Total	Rainbow Trout	1	5	25	105	221	156	71	40	26	29	34	16	3	3	2	1		738	84.3	13.0
	Brown Trout			5	31	77	82	50	42	14	8		1	1			1		312	35.7	5.1

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Table 34. Fall electrofishing mean CPUE (fish/hr) of <15.0-in, 15.0- to 17.9-in, 18.0- to 19.9-in, and ≥20.0-in Rainbow Trout in the Lake Cumberland tailwater from 2000 to 2023. Data collected from sample sites 1-5 each year, except 2007 and 2020 which was based on sites 1-4.

Year	Length group							
	<15.0 in		15.0-17.9 in		18.0-19.9 in		≥20.0 in	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	91.0	16.0	10.1	1.8	1.0	0.4	0.2	0.2
2022	112.8	19.9	12.6	1.4	3.2	0.7	0.3	0.2
2021	96.5	9.5	15.8	1.5	2.2	0.7	0.8	0.3
2020	80.2	14.9	10.4	1.5	4.0	0.7	0.6	0.3
2019	79.4	15.5	6.7	1.4	1.8	0.6	0.5	0.3
2018	75.5	20.7	13.1	2.2	1.9	0.6	0.2	0.2
2017	44.5	7.1	21.8	2.4	1.4	0.5	0.0	
2016	196.5	38.2	6.2	1.3	1.0	0.4	0.5	0.3
2015	60.6	8.7	9.0	1.9	1.3	0.6	0.2	0.2
2014	127.7	15.7	8.6	1.1	3.0	0.7	0.2	0.2
2013	118.9	15.3	23.2	3.6	0.5	0.3	0.0	
2012	127.5	18.0	0.5	0.3	0.2	0.2	0.0	
2011*	55.2	7.7	1.1	0.6	0.0		0.2	0.2
2010	129.0	18.7	1.3	0.5	0.3	0.2	0.0	
2009	78.4	14.7	5.4	1.6	0.5	0.3	0.0	
2008	166.1	32.3	18.1	4.3	1.4	0.5	0.0	
2007	175.0	40.5	25.0	3.5	6.4	1.3	0.6	0.3
2006	185.8	33.4	29.3	3.0	4.3	1.2	0.3	0.2
2005	166.2	28.9	9.3	2.4	2.1	0.8	0.0	
2004	66.1	10.7	2.2	0.8	0.6	0.4	0.0	
2003	55.0	11.4	2.1	0.7	1.0	0.4	0.2	0.2
2002	121.0	18.6	10.7	2.4	1.4	0.7	1.0	0.6
2001	109.7	17.2	21.0	3.7	5.5	1.3	0.7	0.4
2000	65.8	12.4	9.4	1.3	1.4	0.7	0.5	0.4

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*2011 sampling was conducted in February.

Table 35. Fall electrofishing mean CPUE (fish/hr) of <15.0-in, 15.0- to 17.9-in, 18.0- to 19.9-in, and ≥20.0-in Brown Trout in the Lake Cumberland tailwater from 2000 to 2023. Data collected from sample sites 1-5 each year, except 2007 and 2020 which was based on sites 1-4.

Year	Length group							
	<15.0 in		15.0-17.9 in		18.0-19.9 in		≥20.0 in	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	44.2	5.6	1.4	0.6	0.2	0.2	0.2	0.2
2022	45.1	10.9	0.3	0.2	0.2	0.2	0.6	0.3
2021	13.1	1.7	1.1	0.4	0.3	0.2	0.0	0.0
2020	7.4	1.3	0.8	0.4	0.0	0.0	0.6	0.4
2019	16.8	2.4	1.0	0.4	0.3	0.2	0.5	0.4
2018	29.3	6.8	1.0	0.5	0.5	0.3	2.2	0.6
2017	31.4	6.4	1.4	0.5	1.4	0.5	2.6	0.7
2016	27.5	5.1	4.5	1.1	3.0	0.8	2.2	0.8
2015	41.0	6.0	5.6	1.8	1.9	0.7	1.9	0.7
2014	86.4	13.6	7.2	2.1	1.4	0.6	1.6	0.8
2013	70.2	12.0	2.4	0.8	1.1	0.6	4.6	1.5
2012	32.0	8.5	2.6	0.8	3.2	1.2	2.7	0.9
2011*	26.6	4.4	6.6	1.2	3.4	0.9	4.0	1.2
2010	14.4	2.3	3.7	0.9	1.3	0.5	0.6	0.4
2009	55.8	9.9	9.1	2.0	5.3	1.7	2.7	1.1
2008	108.6	15.6	14.1	2.9	6.4	1.0	2.6	0.7
2007	112.2	25.1	29.0	6.2	5.8	1.3	3.4	0.7
2006	56.6	11.7	30.2	10.1	5.6	1.5	5.0	1.5
2005	84.5	10.2	14.9	3.1	7.0	1.7	9.3	2.4
2004	42.7	4.1	11.8	3.3	7.7	2.0	3.2	0.9
2003	52.0	7.0	20.2	5.0	3.8	1.4	1.9	0.7
2002	97.9	13.2	31.2	6.6	5.6	1.1	2.9	0.9
2001	71.2	9.0	30.2	8.7	5.8	1.5	5.2	1.3
2000	71.5	13.1	18.9	4.7	6.6	1.6	9.0	2.5

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*2011 sampling was conducted in February.

Table 36. Number of fish and mean relative weight (Wr) for each species of trout collected in the Cumberland tailwater during November 2023. Standard error is in parentheses.

Area	Species			
	Rainbow Trout		Brown Trout	
	No.	Wr	No.	Wr
Above Helms	311	81 (1)	60	87 (1)
Below Helms	131	76 (1)	45	83 (1)
Rainbow Run	47	79 (1)	74	86 (1)
Big Willis	62	82 (1)	60	89 (1)
Crocus Creek	79	88 (1)	48	89 (1)
Hwy 61	56	92 (2)	19	87 (2)
Cloyds	40	98 (2)	6	95 (5)
Total	726	83 (0)	312	87 (1)

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Table 37. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours of 15-minute nocturnal electrofishing runs in Laurel River Lake during April and May 2023.

Area	Species	Inch class																		Total	CPUE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			20
Dam	Largemouth Bass			4	3	3	8	5	7	6	8	9	3	20	28	4	1				109	72.7
	Spotted Bass						1	2			2	4	3	4							16	10.7
	Smallmouth Bass					1	2	1		1		1		2	1	1					10	6.7
Spruce Creek	Largemouth Bass			1	1	1	3	6	5	2	1	2	10	7	19	9	4	1	1		73	48.7
	Spotted Bass			1	2	1	2	3	2	3	3	4	4	8							33	22.0
	Smallmouth Bass				1	1		1		1	1	1	2	1	2	1					12	8.0
Laurel River Arm	Largemouth Bass	1	3	23	89	12	6	12	14	12	9	5	11	8	20	12	2	1	2	1	243	162.0
	Spotted Bass			8	21	10	9	12	4		4		4	4							76	50.7
	Smallmouth Bass		7	5		5	1	2			1										21	14.0
Upper Craigs Creek	Largemouth Bass						1	1	3	1	5	4	5	8	9	3	1				41	27.3
	Spotted Bass	1			4	13	12	15	11	10	13	11	10	9							109	72.7
	Smallmouth Bass		1			1										1	1				4	2.7
Total	Largemouth Bass	1	3	28	93	16	18	24	29	21	23	20	29	43	76	28	8	2	3	1	466	77.7
	Spotted Bass	1		9	27	24	24	32	17	13	22	19	21	25							234	39.0
	Smallmouth Bass		8	5	1	8	3	4		2	2	2	2	3	3	3	1				47	7.8

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Table 38. Comparison of catch-per-hour of black bass (by area) captured during spring electrofishing on Laurel River Lake during the period of 2019-2023.

Species/Area	Stock					Quality					Preferred				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Largemouth Bass															
Dam	30.7	40.0	58.0	60.0	60.7	24.7	11.3	43.3	52.7	43.3	8.7	5.3	9.3	14.7	22.0
Spruce Creek	50.7	24.0	46.7	71.3	44.7	42.7	14.0	36.0	59.3	35.3	25.3	10.7	11.3	25.3	22.7
Laurel River Arm	74.0	97.3	88.0	54.7	72.7	46.7	46.7	68.0	45.3	41.3	27.3	19.3	22.7	24.7	25.3
Craigs Cr. headwaters	68.0	36.0	60.7	36.0	26.7	36.7	14.0	45.3	25.3	20.0	13.3	4.0	9.3	4.0	8.7
Mean	55.8	49.3	63.3	55.5	51.2	37.7	21.5	48.2	45.7	35.0	18.7	9.8	13.2	17.2	19.7
Spotted Bass															
Dam	3.3	2.7	8.7	8.7	10.7	1.3	0.0	4.0	4.0	8.7	0.0	0.0	0.0	1.3	2.7
Spruce Creek	17.3	14.7	30.0	42.7	19.3	13.3	6.7	18.0	26.0	12.7	1.3	1.3	4.0	5.3	5.3
Laurel River Arm	22.7	33.3	37.3	14.7	24.7	10.0	8.0	24.0	8.7	8.0	1.3	3.3	0.7	0.7	2.7
Craigs Cr. headwaters	18.7	26.0	48.0	51.3	60.7	6.7	11.3	24.7	20.0	28.7	2.0	2.0	2.0	2.0	6.0
Mean	15.5	19.2	31.0	29.3	28.9	7.8	6.5	17.7	14.7	14.5	1.2	1.7	1.7	2.3	4.2
Smallmouth Bass															
Dam	4.0	0.0	6.7	2.0	6.0	2.0	0.0	5.3	1.3	3.3	2.0	0.0	4.0	0.0	2.7
Spruce Creek	2.0	2.0	8.0	16.0	6.7	2.0	0.0	5.3	10.0	5.3	1.3	0.0	4.0	4.7	2.7
Laurel River Arm	2.0	3.3	4.7	2.0	2.7	2.0	0.0	4.0	2.0	0.7	2.0	0.0	2.7	0.0	0.0
Craigs Cr. headwaters	1.3	4.0	6.0	1.7	1.3	1.3	4.0	4.0	0.7	1.3	1.3	4.0	3.3	0.7	1.3
Mean	2.3	2.3	6.3	5.3	4.2	1.8	1.0	4.7	3.5	2.7	1.7	1.0	3.5	1.3	1.7

Largemouth Bass - >8.0 in = stock, >12.0 in = quality, >15.0 in = preferred.

Smallmouth Bass and Spotted Bass - >7.0 in = stock, >11.0 in = quality, >14.0 in = preferred.

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Table 39. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Laurel River Lake during April and May 2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	26.5	8.6	16.2	3.0	15.3	2.1	19.7	2.6	0.2	0.2	77.7	11.6
2022	6.3	1.3	9.8	1.6	28.5	3.7	17.2	2.8	0.2	0.2	61.8	6.2
2021	14.0	4.8	15.2	2.2	35.0	3.6	13.2	2.1	0.0	0.0	77.3	7.4
2020	16.8	2.7	27.8	3.7	11.7	2.5	9.8	1.7	0.0	0.0	66.2	8.0
2019	9.0	1.9	18.2	3.4	19.0	1.8	18.7	2.4	0.8	0.3	64.8	6.3
2018	3.2	0.8	15.3	2.2	21.0	2.2	19.8	2.2	0.5	0.3	59.3	4.9
2017	8.7	1.3	24.5	3.0	22.0	2.6	24.0	2.2	0.2	0.2	79.2	5.2
2016	6.5	1.5	18.2	3.3	25.2	2.9	20.7	3.0	0.8	0.3	70.5	7.9
2015	11.5	2.6	16.5	2.5	23.0	3.2	21.7	2.2	1.2	0.5	72.7	7.1
2014	5.8	1.2	20.0	4.9	16.8	2.5	21.5	2.6	0.8	0.3	64.2	7.9

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Table 40. Spring electrofishing CPUE (fish/hr) for each length group of Spotted Bass collected at Laurel River Lake during April and May 2023.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023	14.2	3.6	10.3	2.5	10.3	2.4	4.2	1.0	0.0	0.0	39.0	6.1
2022	5.5	1.6	10.8	2.2	12.3	3.3	2.3	0.8	0.2	0.2	31.0	6.5
2021	8.5	1.6	9.8	2.0	16.0	4.2	1.7	0.8	0.0	0.0	36.0	6.7
2020	6.0	1.6	10.0	3.7	4.8	1.2	1.7	0.9	0.0	0.0	22.5	5.5
2019	3.5	0.8	6.2	1.4	6.7	1.6	1.2	0.4	0.0	0.0	17.5	2.6
2018	4.2	0.9	8.5	1.4	5.2	1.2	3.0	1.0	0.0	0.0	20.8	3.2
2017	4.8	1.1	5.3	0.9	6.3	1.5	3.0	0.8	0.0	0.0	19.5	3.2
2016	4.0	0.9	6.3	1.4	4.5	1.1	2.3	0.7	0.0	0.0	17.2	2.4
2015	2.0	0.7	2.8	0.7	4.8	1.0	3.3	0.9	0.0	0.0	13.0	1.9
2014	3.0	0.7	8.2	1.7	6.3	1.5	3.8	1.2	0.0	0.0	21.3	3.6

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Table 41. Spring electrofishing CPUE (fish/hr) for each length group of Smallmouth Bass collected at Laurel River Lake during April and May 2023.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.2	1.7	1.0	0.4	1.0	0.4	1.7	0.6	0.2	0.2	7.8	2.0
2022	3.0	1.0	1.2	0.6	2.2	0.8	1.3	0.8	0.5	0.3	7.7	2.3
2021	2.7	0.9	0.8	0.3	1.2	0.5	3.5	1.2	1.5	0.7	8.2	1.5
2020	2.7	1.0	0.5	0.3	0.0	0.0	1.0	0.7	0.0	0.0	4.2	1.1
2019	0.5	0.3	0.2	0.2	0.2	0.2	1.7	0.6	1.0	0.4	2.5	0.6
2018	2.0	0.8	0.2	0.2	0.2	0.2	0.8	0.3	0.2	0.2	3.2	0.9
2017	0.7	0.4	0.2	0.2	0.7	0.4	0.8	0.4	0.2	0.2	2.3	0.7
2016	0.5	0.3	1.0	0.5	0.5	0.4	2.0	0.6	1.2	0.5	4.0	1.1
2015	0.3	0.3	0.3	0.3	0.2	0.2	1.3	0.5	0.5	0.3	2.2	0.9
2014	0.7	0.3	0.5	0.3	0.5	0.4	2.3	0.6	1.0	0.4	4.0	0.9

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Table 42. Population assessment for Largemouth Bass based on spring electrofishing at Laurel River Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length	CPUE	CPUE	CPUE	CPUE	Total score	Assessment rating
		age 3 at capture	age 1	12.0-14.9 in	≥15.0 in	≥20.0 in		
Management objective		≥13.0 in	≥10.0 fish/hr	≥20.0 fish/hr	≥10.0 fish/hr	≥0.5 fish/hr		
2023	Value	12.5	25.1	15.3	19.7	0.2		
	Score	3	3	1	3	2	12	F
2022	Value		4.0	28.5	17.2	0.2		
	Score	4	1	3	3	2	13	G
2021	Value		12.2	35.0	13.2	0.0		
	Score	4	2	4	3	1	14	G
2020	Value		22.7	11.7	9.8	0.0		
	Score	4	3	1	2	1	11	F
2019	Value		15.5	19.0	18.7	0.8		
	Score	4	2	2	3	3	14	G
2018	Value	13.4	1.5	21.0	19.8	0.5		
	Score	4	1	2	3	3	13	G
2017	Value		4.3	22.0	24.0	0.2		
	Score	3	1	2	4	2	12	F
2016	Value		3.3	25.2	20.7	0.8		
	Score	3	1	3	4	3	14	G
2015	Value		1.3	23.0	21.7	1.2		
	Score	3	1	3	4	3	14	G
2014	Value		1.6	16.8	21.5	0.8		
	Score	3	1	2	4	3	13	G

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Table 43. Population assessment for Spotted Bass based on spring electrofishing at Laurel River Lake from 2014-2023 (scoring based on statewide assessment).

Year	Management objective	Mean length	CPUE	CPUE	CPUE	Total score	Assessment rating
		age 3 at capture	age 1	11.0-13.9 in	≥ 14.0 in		
		≥ 11.0 in	≥ 3.0 fish/hr	≥ 7.0 fish/hr	≥ 1.0 fish/hr		
2023	Value Score	1	1.7 2	10.3 4	4.2 4	11	G
2022	Value Score	1	0.3 1	12.3 4	2.3 3	9	F
2021	Value Score	1	1.7 2	16.0 4	1.7 3	10	G
2020	Value Score	1	0.8 1	4.8 1	1.7 3	6	P
2019	Value Score	1	0.8 1	6.7 2	1.2 2	6	P
2018	Value Score	1	0.7 1	5.2 1	3.0 4	7	F
2017	Value Score	1	1.3 2	6.3 2	3.0 4	9	F
2016	Value Score	1	1.0 2	4.5 1	2.3 3	7	F
2015	Value Score	1	0.3 1	4.8 1	3.3 4	7	F
2014	Value Score	1	0.5 1	6.3 2	3.8 4	8	F

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Table 44. Population assessment for Smallmouth Bass based on spring electrofishing at Laurel River Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length	CPUE	CPUE	CPUE	Total score	Assessment rating
		age 3 at capture	age 1	11.0-13.9 in	≥14.0 in		
Management objective		≥13.0 in	≥3.0 fish/hr	≥1.5 fish/hr	≥1.0 fish/hr		
2023	Value		1.7	1.0	1.7		
	Score	3	3	3	3	12	G
2022	Value		1.2	2.2	1.3		
	Score	3	2	4	3	12	G
2021	Value		1.1	1.2	3.5		
	Score	3	2	3	4	12	G
2020	Value		1.5	0.0	1.0		
	Score	3	2	1	3	9	F
2019	Value		0.2	0.2	1.7		
	Score	3	1	1	3	8	F
2018	Value		1.3	0.2	0.8		
	Score	3	2	1	2	8	F
2017	Value		0.3	0.7	0.8		
	Score	3	1	2	2	8	F
2016	Value		0.2	0.5	2.0		
	Score	3	1	2	4	10	G
2015	Value		0.0	0.2	1.3		
	Score	3	1	1	3	8	F
2014	Value		0.0	0.5	2.3		
	Score	3	1	2	4	10	G

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Table 45. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples at Laurel River Lake during April and May 2023; 95% confidence limits are in parentheses.

Year	Area	Largemouth Bass			Spotted Bass			Smallmouth Bass		
		≥ stock size*	PSD	RSD ₁₅	≥ stock size*	PSD	RSD ₁₄	≥ stock size*	PSD	RSD ₁₄
2023	Dam	91	71 (± 7)	36 (± 9)	16	81 (± 28)	25 (± 20)	9	56 (± 65)	44 (± 0)
	Spruce Creek	67	79 (± 7)	51 (± 9)	29	66 (± 12)	28 (± 8)	10	80 (± 20)	40 (± 19)
	Laurel River Arm	109	57 (± 8)	35 (± 11)	37	32 (± 21)	11 (± 9)	4	25 (± 49)	0 (± 0)
	Upper Craigs Creek	40	75 (± 12)	33 (± 9)	91	47 (± 11)	10 (± 4)	2	100 (± 0)	100 (± 0)
	Total	307	68 (± 4)	38 (± 5)	173	50 (± 7)	14 (± 4)	25	64 (± 17)	40 (± 15)
2022	Total	333	82 (± 4)	31 (± 5)	176	50 (± 7)	8 (± 4)	32	66 (± 17)	25 (± 15)
2021	Total	380	76 (± 4)	21 (± 4)	186	57 (± 7)	5 (± 3)	38	74 (± 14)	55 (± 16)
2020	Total	296	44 (± 6)	20 (± 5)	115	34 (± 9)	9 (± 5)	14	43 (± 27)	43 (± 27)
2019	Total	335	67 (± 5)	33 (± 5)	93	51 (± 10)	8 (± 5)	14	79 (± 22)	71 (± 25)
2018	Total	337	73 (± 5)	35 (± 5)	117	42 (± 9)	15 (± 7)	10	60 (± 32)	50 (± 33)
2017	Total	423	65 (± 5)	34 (± 5)	99	57 (± 10)	18 (± 8)	10	90 (± 20)	50 (± 33)
2016	Total	384	72 (± 5)	32 (± 5)	89	46 (± 10)	16 (± 8)	22	68 (± 20)	55 (± 21)
2015	Total	367	73 (± 5)	35 (± 5)	70	70 (± 11)	29 (± 11)	13	69 (± 26)	62 (± 28)
2014	Total	350	66 (± 5)	37 (± 5)	120	51 (± 9)	19 (± 7)	22	77 (± 18)	64 (± 21)

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*Largemouth Bass = ≥8.0 in, Smallmouth Bass and Spotted Bass = >7.0 in

Table 46. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected from Laurel River Lake during 2023, including the 95% confidence interval (CI) for each mean length per age group.

Year class	No.	Age								
		1	2	3	4	5	6	7	8	
2022	40	5.4								
2021	34	4.7	9.3							
2020	36	5.0	9.5	12.2						
2019	9	5.3	9.7	12.4	13.9					
2018	27	4.3	9.8	12.6	14.4	15.2				
2017	5	6.6	12.2	14.8	16.0	16.9	17.4			
2016	5	6.9	12.0	14.6	16.1	16.8	17.5	18.0		
2015	2	5.1	10.9	14.6	16.3	17.1	17.6	18.2	18.6	
Mean		5.0	9.8	12.7	14.7	15.7	17.5	18.1	18.6	
Number		158	118	84	48	39	12	7	2	
Smallest		2.7	6.2	8.9	11.6	12.7	15.4	16.2	17.5	
Largest		11.0	14.3	16.5	17.6	19.0	19.9	19.4	19.6	
SE		0.1	0.2	0.2	0.2	0.2	0.4	0.5	1.1	
95% CI \pm		0.3	0.4	0.4	0.4	0.5	0.9	1.1	2.1	

Otoliths were used for age-growth determinations; Intercept = 0
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Table 47. Age-frequency and CPUE (fish/hr) of Largemouth Bass collected during 6.0 hours of nocturnal electrofishing at Laurel River Lake in April and May 2023.

Age	Inch class																		Total	%	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				
1+	1	3	28	93	16	10													151	32.3	25.2	8.5
2+						8	24	26	10	6	2								76	16.2	12.7	2.3
3+								3	11	17	12	17	16						76	16.2	12.7	1.7
4+											5	4	8	6	3				26	5.6	4.3	0.5
5+											2	8	20	57	19	4			110	23.5	18.3	2.2
6+														13		2	1	1	17	3.6	2.8	0.4
7+															6		1	2	9	1.9	1.5	0.3
8+																2		1	3	0.6	0.5	0.1
Total	1	3	28	93	16	18	24	29	21	23	21	29	44	76	28	8	2	4	468	100.0	78.0	
%	0.2	0.6	6.0	19.9	3.4	3.8	5.1	6.2	4.5	4.9	4.5	6.2	9.4	16.2	6.0	1.7	0.4	0.9				

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Table 48. Population assessment for Largemouth Bass collected from Laurel River Lake in April and May 2023 (scoring based on statewide assessment).

Parameter	Actual value	Assessment score
Mean length age 3 at capture	12.5	3
CPUE age 1	25.1	3
CPUE 12.0-14.9 in	15.3	1
CPUE \geq 15.0 in	19.7	3
CPUE \geq 20.0 in	0.2	2
Instantaneous mortality (Z)	0.459	
Annual mortality (A)	0.368	
Total score		12
Assessment rating		F

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Table 49. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 1.5 hours of 15-minute nocturnal electrofishing runs for black bass in Laurel River Lake on 11 October 2023.

Area	Species	Inch class																Total	CPUE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			18
Laurel River Arm	Largemouth Bass	12	19	9	28	17	5	10	9	8	2	6	3	5	6	7	5	2	153	102.0
	Spotted Bass		4	2	1	10	3	1	4	3	5		2	2	1				38	25.3
	Smallmouth Bass		35	1		7	9	1		1	2								56	37.3

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Table 50. Indices of year class strength at age 0 and age 1 and mean lengths (in) of Largemouth Bass collected in the fall (September and October) in electrofishing samples at Laurel River Lake.

Year class	Area	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1 ^a	
		Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Laurel River Arm	4.6	0.2	54.7	9.0	28.0	8.9		
2022 ^b	Laurel River Arm	4.7	0.2	15.9	3.1	5.2	1.3	87.5	16.0
2021	Laurel River Arm	3.1	0.0	98.7	18.3	2.0	2.0	10.0	2.3
2020	Laurel River Arm	5.0	0.2	12.0	6.0	7.3	4.2	10.7	2.5
2019	Laurel River Arm	4.2	0.4	12.7	4.1	5.3	2.7	26.7	4.6
2018	Laurel River Arm	4.2	0.3	21.3	7.6	6.7	3.7	17.3	5.5
2017	Laurel River Arm	3.6	0.3	7.3	2.4	1.3	1.3	2.0	1.4
2016	Laurel River Arm	3.4	0.1	24.0	4.8	2.7	1.3	4.7	1.9
2015	Laurel River Arm	3.5	0.1	5.3	2.0	0.0	0.0	6.7	2.5
2014	Laurel River Arm	4.4	0.1	19.3	4.3	4.0	1.0	4.0	1.5

^a Age-1 Largemouth Bass CPUE based only on Laurel River Arm location

^b Age-0 Largemouth Bass stocked in the fall

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Table 51. Number of fish and mean relative weight (Wr) for each length group of black bass collected at 312 Bridge in Laurel River Lake on 11 October 2023. Standard error is in parentheses.

Species	Length group					
	8.0-11.9 in		12.0-14.9 in		≥15.0 in	
	No.	Wr	No.	Wr	No.	Wr
Largemouth Bass	29	99 (2)	14	96 (3)	20	100 (2)
Spotted Bass	7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	No.	Wr	No.	Wr	No.	Wr
	10	97 (4)	7	100 (5)	3	102 (0)
Smallmouth Bass	7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	No.	Wr	No.	Wr	No.	Wr
	11	92 (3)	2	84 (11)	0	- (-)

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Table 52. Length frequency and CPUE (fish/nn) of Walleye collected from Laurel River Lake in 8 net-nights in November 2023.

Species	Inch class											Total	CPUE	SE
	11	12	15	16	17	18	19	20	21	22	24			
Walleye	6	2	3	4	15	11	39	25	20	5	1	131	16.4	3.0

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Table 53. Population assessment for Walleye based on fall gill netting at Laurel River Lake from 2005-2023 (scoring based on statewide assessment).

Year		Parameters				Total score	Assessment rating
		CPUE ≥ age 1+	Mean length age 2+ at capture	CPUE ≥ 20.0 in	CPUE age 1+		
Management objective		≥10.0 fish/nn	≥18.0 in	≥2.5 fish/nn	≥4.0 fish/nn		
2023	Value	15.3	19.4	6.4	3.4		
	Score	4	4	4	4	16	E
2021	Value	12.1	19.5	3.9	4.8		
	Score	4	4	4	4	16	E
2019	Value	13.3	18.9	4.1	0.5		
	Score	4	3	4	1	12	G
2017	Value	11.4	19.2	5.3	1.3		
	Score	4	4	4	2	14	E
2015	Value	16.5	19.5	8.5	4.9		
	Score	4	4	4	4	16	E
2013	Value	18.5	19.4	7.9	4.6		
	Score	4	4	4	4	16	E
2011	Value	15.1	19.1	4.3	1.2		
	Score	4	4	4	2	14	E
2009	Value	15.3	19.0	7.2	5.1		
	Score	4	4	4	4	16	E
2007	Value	21.6	19.1	6.5	8.3		
	Score	4	4	4	4	16	E
2005	Value	25.1	19.5	9.3	8.0		
	Score	4	4	4	4	16	E

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Table 54. Mean back calculated lengths (in) at each annulus for male Walleye collected from Laurel River Lake during 2023, including the 95% confidence interval (CI) for each mean length per age group.

Year class	No.	Age						
		1	2	3	4	5	6	7
2022	16	11.4						
2021	4	12.2	17.0					
2020	10	11.9	16.9	18.9				
2019	7	10.7	15.2	17.4	18.8			
2018	2	11.9	16.8	18.3	19.3	19.9		
2017	6	11.0	15.7	17.7	18.9	19.7	20.4	
2016	3	12.3	16.9	18.4	19.5	20.4	21.1	21.5
Mean		11.5	16.3	18.2	19.0	19.9	20.6	21.5
Number		48	32	28	18	11	9	3
Smallest		6.1	11.4	14.4	16.8	18.9	19.3	20.7
Largest		13.4	18.3	20.6	20.5	21.4	22.2	22.0
SE		0.2	0.3	0.2	0.2	0.3	0.3	0.4
95% CI ±		0.4	0.5	0.5	0.5	0.5	0.7	0.8

Otoliths were used for age-growth determinations; Intercept = 0
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Table 55. Mean back calculated lengths (in) at each annulus for female Walleye collected from Laurel River Lake during 2023, including the 95% confidence interval (CI) for each mean length per age group.

Year class	No.	Age			
		1	2	3	4
2022	3	13.6			
2021	1	12.2	17.1		
2020	5	11.9	17.4	19.8	
2019	1	13.2	18.0	19.6	20.8
Mean		12.6	17.5	19.8	20.8
Number		10	7	6	1
Smallest		10.0	15.8	18.5	20.8
Largest		13.9	18.0	20.5	20.8
SE		0.3	0.3	0.3	
95% CI ±		0.7	0.6	0.6	

Otoliths were used for age-growth determinations;
Intercept = 0
sedaglw.f.d23

Table 56. Mean back calculated lengths (in) at each annulus for Walleye (both sexes) collected from Laurel River Lake during 2023, including the 95% confidence interval (CI) for each mean length per age group.

Year class	No.	Age						
		1	2	3	4	5	6	7
2022	21	11.6						
2021	5	12.2	17.0					
2020	15	11.9	17.1	19.2				
2019	8	11.1	15.6	17.7	19.1			
2018	2	11.9	16.8	18.3	19.3	19.9		
2017	6	11.0	15.7	17.7	18.9	19.7	20.4	
2016	3	12.3	16.9	18.4	19.5	20.4	21.1	21.5
Mean		11.6	16.5	18.5	19.1	19.9	20.6	21.5
Number		60	39	34	19	11	9	3
Smallest		6.1	11.4	14.4	16.8	18.9	19.3	20.7
Largest		13.9	18.3	20.6	20.8	21.4	22.2	22.0
SE		0.2	0.2	0.2	0.2	0.3	0.3	0.4
95% CI \pm		0.4	0.5	0.5	0.5	0.5	0.7	0.8

Otoliths were used for age-growth determinations; Intercept = 0
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Table 57. Age-frequency and CPUE (fish/nn) of Walleye gill netted for 8 net-nights at Laurel River Lake during November 2023.

Age	Inch class										Total	%	CPUE	SE	
	11	12	15	16	17	18	19	20	21	22					
0+	6	2										8	6.2	1.0	0.6
1+			3	4	15	5						27	20.8	3.4	0.5
2+						2	12					14	10.8	1.8	0.3
3+						1	16	8	11	2		38	29.2	4.8	1.6
4+						2	4	10	2			18	13.8	2.3	0.7
5+							4		2			6	4.6	0.8	0.3
6+							4	8	2	1		15	11.5	1.9	0.6
7+									2	2		4	3.1	0.5	0.2
Total	6	2	3	4	15	10	40	26	19	5		130	100.0	16.3	
%	4.6	1.5	2.3	3.1	11.5	7.7	30.8	20.0	14.6	3.8					

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Table 58. Population assessment for Walleye gill netted at Laurel River Lake in November 2023 (scoring based on statewide assessment).

Parameter	Actual value	Assessment score
Population density (CPUE age 1 and older)	15.3	4
Growth rate (Mean length age 2+ at capture)	19.4	4
Size structure (CPUE ≥ 20.0 in)	6.4	4
Recruitment (CPUE age 1)	3.4	4
Total score		16
Assessment rating		E
Instantaneous mortality (Z)	0.252	
Annual mortality (A)	22.3	

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Table 59. Number of fish and mean relative weight (Wr) for each length group of Walleye collected in Laurel River Lake during November 2023. Standard error is in parentheses.

Species	Length group					
	10.0-14.9 in		15.0-19.9 in		≥ 20.0 in	
	No.	Wr	No.	Wr	No.	Wr
Walleye	8	91 (1)	72	91 (1)	51	91 (1)

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Table 60 Length frequency and CPUE (fish/hr) of Largemouth Bass collected at Cedar Creek Lake in 1.5 hours (0.75 hours in lower end; 0.75 hours upper end; 15-min runs) of diurnal electrofishing on 8 May 2023.

Area	Species	Inch class																			Total	CPUE	SE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Lower	Largemouth Bass	12	15	8	5	2	8	10	5	4	3	6	10	10	14	8	6	3		2	131	174.7	40.7
Upper	Largemouth Bass	3	2	4	4	3	7	7	2	4	5	6	1	9	9	4	4	2	1		77	102.7	29.2
Total	Largemouth Bass	15	17	12	9	5	15	17	7	8	8	12	11	19	23	12	10	5	1	2	208	138.7	27.6

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Table 61. PSD and RSD₁₅ values obtained for Largemouth Bass taken in spring electrofishing samples in each area of Cedar Creek Lake on 8 May 2023; 95% confidence levels are in parentheses.

Year	Lower Lake			Upper Lake			Total		
	≥ Stock size	PSD	RSD ₁₅	≥ Stock size	PSD	RSD ₁₅	≥ Stock size	PSD	RSD ₁₅
2023	89	70 (± 10)	48 (± 10)	61	67 (± 12)	48 (± 13)	150	67 (± 7)	48 (± 8)
2022	92	75 (± 9)	62 (± 10)	91	79 (± 8)	65 (± 10)	183	77 (± 6)	63 (± 7)
2021	91	69 (± 10)	48 (± 10)	133	85 (± 6)	59 (± 8)	224	79 (± 5)	55 (± 7)
2020	118	61 (± 9)	31 (± 8)	120	85 (± 6)	52 (± 9)	238	73 (± 6)	41 (± 6)
2019	101	69 (± 9)	59 (± 10)	103	73 (± 9)	53 (± 10)	204	71 (± 6)	56 (± 7)
2018	45	49 (± 15)	36 (± 14)	53	74 (± 12)	62 (± 13)	98	62 (± 10)	50 (± 10)
2017	37	54 (± 16)	30 (± 15)	81	72 (± 10)	52 (± 11)	118	66 (± 9)	45 (± 9)
2016 ^a	73	67 (± 11)	47 (± 12)	104	75 (± 8)	52 (± 10)	177	72 (± 7)	50 (± 7)
2015 ^b	95	79 (± 8)	52 (± 10)	107	81 (± 7)	53 (± 9)	202	80 (± 6)	52 (± 7)
2014	237	82 (± 5)	48 (± 6)	345	81 (± 4)	47 (± 5)	582	82 (± 3)	47 (± 4)

^a diurnal sampling beginning in 2016

^b sampling effort was reduced to 1.5 hours beginning in 2015
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Table 62. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected from Cedar Creek Lake from 2014-2023.

Year	Area	Length group										Total	
		<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
		CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	Total	38.7	14.1	31.3	5.1	20.7	4.1	48.0	8.1	2.0	0.9	138.7	27.6
2022	Total	28.0	6.2	28.0	6.7	16.7	3.9	77.3	6.3	6.0	0.9	150.0	8.5
2021	Total	26.7	7.1	32.0	5.7	35.3	5.3	82.0	13.5	4.7	1.9	176.0	11.3
2020	Total	24.7	12.1	42.7	8.8	50.7	8.0	65.3	10.5	3.3	1.2	183.3	15.9
2019	Total	58.7	20.7	39.3	6.1	20.0	5.1	76.7	8.7	5.3	0.8	194.7	25.4
2018	Total	48.7	21.7	24.7	6.8	8.0	1.5	32.7	7.1	1.3	0.8	114.0	23.4
2017	Total	44.7	8.9	26.7	6.5	16.7	2.6	35.3	9.3	2.0	0.9	123.3	9.3
2016	Total	19.3	5.0	33.3	3.2	26.0	5.7	58.7	8.2	5.3	1.7	137.3	7.5
2015	Total	14.0	4.8	26.7	4.2	37.3	5.7	70.7	6.1	5.3	1.3	148.7	8.7
2014	Total	6.3	1.7	30.3	6.0	57.7	8.8	78.3	12.0	5.7	1.1	172.6	25.7

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Table 63. Population assessment for Largemouth Bass based on spring electrofishing at Cedar Creek Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length	CPUE	CPUE	CPUE	CPUE	Total score	Assesment rating
		age 3 at capture	age 1	12.0-14.9 in	≥15.0 in	≥20.0 in		
Management objective		≥11.5 in	≥16.0 fish/hr	≥20.0 fish/hr	≥30.0 fish/hr	≥4.0 fish/hr		
2023	Value Score	4	34.0 3	20.7 2	48.0 4	2.0 3	16	G
2022	Value Score	4	22.0 3	16.7 2	77.3 4	6.0 4	17	E
2021	Value Score	4	21.3 2	35.3 3	82.0 4	4.7 4	17	E
2020	Value Score	12.4 4	22.7 3	50.7 4	65.3 4	3.3 3	18	E
2019	Value Score	4	47.3 3	20.0 2	76.7 4	5.3 4	17	E
2018	Value Score	4	51.3 3	8.0 1	32.7 4	1.3 2	14	G
2017	Value Score	4	44.7 3	16.7 2	35.3 4	2.0 3	16	G
2016	Value Score	4	16.0 2	26.0 3	58.7 4	5.3 4	17	E
2015	Value Score	12.0 4	8.0 2	37.3 3	70.7 4	5.3 4	17	E
2014	Value Score	4	3.7 1	57.7 4	78.3 4	5.7 4	17	E

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Table 64. Length-frequency and CPUE (fish/hr) of Largemouth Bass collected during 1.5 hours of diurnal electrofishing (0.75 hours in lower end; 0.75 hours in upper end; 15-minute runs) at Cedar Creek Lake on 7 November 2023.

Area	Species	Inch class																			Total	CPUE		
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			21	
Lower	Largemouth Bass	2	30	31	21	4	6	12	8	2	2	4	1	1		2		1	1	1		129	172.0	
Upper	Largemouth Bass		10	11	16	4	9	8	10	8	1	3	1	2	1	2	2	2		1	1		92	122.7
Total	Largemouth Bass	2	40	42	37	8	15	20	18	10	3	7	2	3	1	4	2	3	1	2	1		221	147.3

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Table 65. Indices of year class strength at age 0 and age 1 and mean lengths (in) of Largemouth Bass collected in the fall (September - November) in electrofishing samples at Cedar Creek Lake.

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.5	0.1	86.0	36.2	30.0	9.3		
2022	4.0	0.1	158.0	55.3	19.3	6.1	34.0	13.5
2021	3.6	0.1	103.3	26.6	6.7	2.5	22.0	5.0
2020	3.4	0.1	69.3	16.7	5.3	2.5	21.3	5.6
2019	3.3	0.1	113.3	14.9	2.0	0.9	22.7	12.2
2018	4.2	0.1	52.7	10.6	9.3	2.0	47.3	17.4
2017	4.0	0.1	68.7	15.8	10.7	3.8	51.3	21.9
2016	4.0	0.1	131.3	45.2	36.7	10.1	44.7	8.9
2015	3.4	0.1	50.0	18.6	4.0	1.5	16.0	4.5
2014	3.8	0.2	19.3	7.6	3.3	1.2	8.0	4.0

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Table 66. Number of fish and mean relative weight (Wr) for each length group of Largemouth Bass collected in Cedar Creek Lake on 7 November 2023. Standard error is in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		≥15.0 in	
		No.	Wr	No.	Wr	No.	Wr
Largemouth Bass	Lower	24	87 (1)	6	86 (3)	5	95 (2)
	Upper	27	88 (1)	6	92 (2)	9	99 (3)
	Total	51	87 (1)	12	89 (2)	14	98 (2)

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Table 67. Length frequency and CPUE (fish/hr) of Bluegill and Redear Sunfish collected at Cedar Creek Lake in 1.25 hours (7.5-min runs) of diurnal electrofishing on 15 May 2023.

Species	Inch class										Total	CPUE	SE
	1	2	3	4	5	6	7	8	9	10			
Bluegill	34	156	68	67	39	12	7				383	306.4	59.1
Redear Sunfish		9	2	28	48	81	79	34	5	1	287	229.6	34.7

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Table 68. Spring electrofishing CPUE (fish/hr) for each length group of Bluegill and Redear Sunfish collected at Cedar Creek Lake from 2012-2023.

Species	Year	Length group										Total	
		<3.0 in		3.0-5.9 in		6.0-7.9 in		≥8.0 in		≥10.0 in		CPUE	SE
		CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
Bluegill	2023	152.0	33.5	139.2	29.0	15.2	4.0	0.0	0.0			306.4	59.1
	2022	315.2	42.7	420.0	61.9	28.0	4.5	0.8	0.8			764.0	84.8
	2021	136.0	42.6	238.4	28.5	14.4	3.1	0.0	0.0			388.8	63.9
	2019	257.6	47.6	204.0	30.3	18.4	4.3	1.6	1.1			481.6	48.7
	2018	492.0	137.7	268.0	31.4	8.8	5.5	0.8	0.8			769.6	150.6
	2016	599.2	108.4	464.0	90.4	8.0	2.7	0.0	0.0			1071.2	164.8
	2015	372.0	51.8	510.4	66.9	12.8	4.8	0.0	0.0			895.2	110.5
	2014	396.5	60.6	367.5	98.4	27.5	5.9	1.0	0.7			792.5	116.2
	2013	410.0	102.7	318.5	48.2	21.5	4.6	0.0	0.0			750.0	126.4
	2012	65.1	14.0	206.9	40.8	16.5	5.3	0.0	0.0			288.5	52.7
Redear Sunfish	2023	7.2	4.7	62.4	14.6	128.0	26.8	32.0	9.2	0.8	0.8	229.6	34.7
	2022	23.2	6.8	108.8	26.2	104.0	24.0	25.6	13.8	0.8	0.8	261.6	46.4
	2021	5.6	3.2	81.6	24.0	116.8	32.6	58.4	29.6	4.0	3.2	262.4	53.3
	2019	10.4	4.0	54.4	14.7	37.6	11.3	15.2	5.9	0.8	0.8	117.6	25.1
	2018	14.4	4.9	52.0	7.1	26.4	7.5	1.6	1.1	0.0	0.0	94.4	12.8
	2016	5.6	2.1	63.2	16.3	24.0	6.5	2.4	1.2	0.0	0.0	95.2	20.7
	2015	1.6	1.1	45.6	9.2	42.4	8.5	8.8	2.8	1.6	1.1	98.4	14.9
	2014	5.0	1.6	45.0	10.8	27.0	7.6	8.5	3.3	0.0	0.0	85.5	16.1
	2013	4.0	2.2	33.0	7.2	163.5	75.4	31.0	10.9	0.5	0.5	231.5	84.4
	2012	2.1	1.2	22.4	5.3	43.7	10.5	3.2	1.3	0.0	0.0	71.5	14.7

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Table 69. PSD and RSD values obtained for Bluegill and Redear Sunfish taken in spring electrofishing samples in Cedar Creek Lake on 15 May 2023; 95% confidence levels are in parentheses.

Species	Year	\geq Stock size	PSD	RSD ^a
Bluegill				
	2023	193	10 (\pm 4)	0 (\pm 0)
	2022	561	6 (\pm 2)	0 (\pm 0)
	2021	316	6 (\pm 3)	0 (\pm 0)
	2019	280	9 (\pm 3)	1 (\pm 1)
	2018	347	3 (\pm 2)	0 (\pm 1)
	2016	590	2 (\pm 1)	0 (\pm 0)
	2015	654	2 (\pm 1)	0 (\pm 0)
	2014	792	7 (\pm 2)	0 (\pm 0)
	2013	680	6 (\pm 2)	0 (\pm 0)
	2012	419	7 (\pm 3)	0 (\pm 0)
Redear Sunfish				
	2023	276	43 (\pm 6)	2 (\pm 2)
	2022	275	40 (\pm 6)	3 (\pm 2)
	2021	307	52 (\pm 6)	9 (\pm 3)
	2019	121	31 (\pm 8)	2 (\pm 2)
	2018	82	20 (\pm 9)	0 (\pm 0)
	2016	73	19 (\pm 9)	0 (\pm 0)
	2015	115	29 (\pm 8)	4 (\pm 4)
	2014	144	34 (\pm 8)	1 (\pm 2)
	2013	434	65 (\pm 4)	1 (\pm 1)
	2012	124	35 (\pm 8)	1 (\pm 2)

^a Bluegill = RSD₈, Redear Sunfish = RSD₉

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Table 70. Cumulative angler counts based on trail camera data for Beulah Lake (Jackson County; 71.3 acres), Kentucky, from March 2023 to February 2024.

	Angling Trips			Angling Trips by Type					
	Trips	Trips/Day	Trips/Acre	Boat	%	Bank	%	Canoe/Kayak	%
March	117	7.3	1.6	41	35	72	62	4	3
April	350	21.9	4.9	151	43	189	54	10	3
May	484	30.3	6.8	180	37	264	55	40	8
June	303	18.9	4.2	73	24	206	68	24	8
July	392	24.5	5.5	151	39	196	50	45	11
August	244	15.3	3.4	77	32	150	62	17	6
September	197	12.3	2.8	70	36	115	58	12	6
October	76	4.8	1.1	26	34	46	61	4	5
November	51	3.2	0.7	19	37	32	63	0	0
December	41	2.6	0.6	8	20	32	78	1	2
January	32	2.0	0.4	4	13	28	87	0	0
February	85	5.3	1.2	33	39	52	61	0	0
Total	2,372	12.3	33.3	833	35	1,382	58	157	7

Table 71. Cumulative angling pressure based on trail camera data for Beulah Lake (71.3 acres) from March 2023 to February 2024.

	Angling Trip Length			Angling Trip Length by Type										
	Trips	Total	Hours/	Boat			Bank			Canoe/Kayak				
		Hours	Trip	Trips	Total	Hours/	Trips	Total	Hours/	Trips	Total	Hours/		
				Hours	Trip	Trips	Hours	Trip	Trips	Hours	Trip	Trips	Hours	Trip
March	117	187	1.6	41	103	2.5	72	76	1.1	4	8	2.0		
April	350	889	2.5	151	565	3.7	189	308	1.6	10	16	1.6		
May	484	1,244	2.6	180	680	3.8	264	461	1.7	40	103	2.6		
June	303	726	2.4	73	362	5.0	206	297	1.4	24	67	2.8		
July	392	1,056	2.7	151	572	3.8	196	333	1.7	45	151	3.4		
August	244	591	2.4	77	251	3.3	150	300	2.0	17	40	2.4		
September	197	453	2.3	70	249	3.6	115	158	1.4	12	46	3.8		
October	76	139	1.8	26	65	2.5	46	58	1.3	4	16	4.0		
November	51	86	1.7	19	48	2.5	32	38	1.2	0	0	0.0		
December	41	72	1.8	8	26	3.3	32	43	1.3	1	3	3.0		
January	32	34	1.1	4	9	2.3	28	25	0.9	0	0	0.0		
February	85	179	2.1	33	111	3.4	52	68	1.3	0	0	0.0		
Total	2,372	5,656	2.4	833	3,041	3.7	1,382	2,165	1.6	157	450	2.9		

Table 72. Total cumulative angler counts and angling pressure based on trail camera data for reservoirs (<500 acres) in the Southeastern Fisheries District.

Reservoir	Year	Angling Trips			Angling Trips by Type			Angling Trip Length		Angling Trip Length by Type					
		Trips	Trips/	Trips/	Boat	Bank	Canoe/	Total	Hours/	Boat		Bank		Canoe/Kayak	
										Hours	Trip	Total	Hours/	Total	Hours/
		Day	Day	Day	Hours	Hours	Hours	Trip	Hours	Trip	Hours	Trip	Hours	Trip	
Beulah Lake	2023	2,372	12.3	33.3	833	1,382	157	5,656	2.4	3,041	3.7	2,165	1.6	450	2.9
Liberty Lake	2022	1,275	6.9	16.0	396	635	244	1,926	1.5	880	2.2	635	1.0	411	1.7

Table 73. Length frequency and CPUE (fish/hr) of Largemouth Bass collected at Laurel Creek Reservoir in 1.25 hours (7.5-min runs) of diurnal electrofishing on 18 April 2023.

Species	Inch class														Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
Largemouth Bass	1	2	7	6	4	1	15	19	12	12	39	32	6	2	158	126.4	11.5

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Table 74. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Laurel Creek Reservoir on 18 April 2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023	16.8	5.1	46.4	5.2	61.6	5.9	1.6	1.1	0.0	0.0	126.4	11.5
2019	25.0	1.8	97.0	9.7	99.0	13.1	2.0	1.3	0.0	0.0	223.0	15.8
2016	33.6	6.3	40.8	6.0	56.8	8.6	4.8	1.8	0.8	0.8	136.0	10.2
2013	24.8	5.7	108.8	10.2	54.4	6.3	4.0	2.2	0.8	0.8	192.0	12.9
2010	24.0	4.9	146.4	8.1	21.6	3.2	4.8	1.3	1.6	1.1	196.8	10.2
2007	4.0	1.1	105.0	9.6	24.0	3.2	1.0	1.0	1.0	1.0	134.0	11.5

sedpsdlc.d23

Table 75. PSD and RSD₁₅ values obtained for Largemouth Bass taken in spring electrofishing samples in Laurel Creek Reservoir on 18 April 2023; 95% confidence levels are in parentheses.

Year	≥ Stock size	PSD	RSD ₁₅
2023	137	58 (± 8)	1 (± 2)
2019	198	51 (± 7)	1 (± 1)
2016	128	60 (± 9)	5 (± 4)
2013	209	35 (± 6)	2 (± 2)
2010	216	15 (± 5)	3 (± 2)
2007	260	19 (± 5)	1 (± 1)

sedpsdlc.d23

Table 76. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected from Laurel Creek Reservoir during spring 2023, including the 95% confidence interval (CI) for each mean length per age group.

Year class	No.	Age								
		1	2	3	4	5	6	7	8	9
2022	18	5.0								
2021	30	5.5	9.2							
2020	8	5.7	9.8	11.5						
2019	21	6.0	9.2	11.5	12.6					
2018	7	5.6	9.8	11.7	12.9	13.7				
2017	1	3.8	8.0	10.3	12.0	13.3	14.5			
2016	2	4.0	8.6	11.0	12.0	12.9	13.5	13.9		
2014	1	5.6	10.1	12.6	13.2	14.0	14.6	15.2	15.7	16.0
Mean		5.5	9.3	11.5	12.7	13.6	14.0	14.3	15.7	16.0
Number		88	70	40	32	11	4	3	1	1
Smallest		2.8	7.2	10.0	11.8	12.6	13.3	13.6	15.7	16.0
Largest		9.3	10.9	12.6	14.5	15.9	14.6	15.2	15.7	16.0
SE		0.1	0.1	0.1	0.1	0.3	0.3	0.5		
95% CI ±		0.2	0.2	0.2	0.3	0.6	0.6	0.9		

Otoliths were used for age-growth determinations; Intercept = 0
sedaglcr.d23

Table 77. Age-frequency and CPUE (fish/hr) of Largemouth Bass collected during 1.25 hours of diurnal electrofishing at Laurel Creek Reservoir on 18 April 2023.

Age	Inch class														Total	%	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
1	1	2	7	6	4											20	13.0	16.0	4.9
2						1	15	19	11							46	29.0	36.6	5.6
3									1	8	3					12	8.0	9.8	2.0
4										4	33	19				56	35.0	44.5	4.5
5											3	11	2	2	18	11.0	14.1	2.1	
6													2		2	1.0	1.6	0.9	
7													3	2	5	3.0	3.7	1.0	
Total	1	2	7	6	4	1	15	19	12	12	39	33	6	2	159	100.00	126.3		
%	1.0	1.0	4.0	4.0	3.0	1.0	9.0	12.0	8.0	8.0	25.0	20.0	4.0	1.0					

sedpsdlc.d23

sedaglcr.d23

Table 78. Population assessment for Largemouth Bass collected from Laurel Creek Reservoir in April 2023.

Parameter	Actual value	Assessment score
Mean length age 3 at capture	11.5	3
Spring CPUE age 1	16.0	2
Spring CPUE 12.0-14.9 in	61.6	4
Spring CPUE \geq 15.0 in	1.6	1
Spring CPUE \geq 20.0 in	0.0	1
Instantaneous mortality (Z)	0.358	
Annual mortality (A)	30.1	
Total score		11
Assessment rating		F

sedpsdlc.d23
sedaglcr.d23

Table 79. Length frequency and CPUE (fish/hr) of black bass collected at Liberty Lake in 1.75 hours (15.0-min runs) of diurnal electrofishing on 19 April 2023.

Species	Inch class															Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	17	20			
Largemouth Bass	7	84	69	19	4	5	42	36	26	25	18	10	4	1	1	351	200.6	10.4
Spotted Bass	11	31	4	8	13	15	12	13	8	2	1					118	67.4	12.0

sedpsdlb.d23

Table 80. Spring electrofishing CPUE (fish/hr) for each length group of black bass collected at Liberty Lake on 19 April 2023.

Species	Year	Length group										Total	
		<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
		CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
Largemouth Bass													
	2023	104.6	6.0	62.3	4.9	30.3	3.7	3.4	1.0	0.6	0.6	200.6	10.4
	2019	20.6	4.2	83.4	9.3	17.1	2.9	8.0	2.1	1.7	1.2	129.1	14.8
	2016	82.9	12.0	44.6	9.7	16.0	2.3	0.6	0.6	0.0	0.0	144.0	21.7
	2013	49.7	5.7	66.3	10.2	4.6	2.5	1.1	0.7	0.6	0.6	121.7	12.7
	2010	32.0	8.9	121.7	10.2	25.1	1.4	5.7	1.9	1.1	0.7	184.6	12.5
	2007	176.6	30.1	75.4	11.4	46.9	6.2	4.6	1.4	1.1	0.7	303.4	31.4
Species	Year	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in		Total	
		CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
		Spotted Bass											
	2023	38.3	8.7	22.9	3.4	6.29	2.5	0.0	0.0	0.0	0.0	67.4	12.0
	2019	35.4	11.4	13.7	3.6	5.7	1.7	0.0	0.0	0.0	0.0	54.9	15.7
	2016	48.0	8.7	49.1	9.1	8.6	3.6	1.1	0.7	0.0	0.0	106.9	16.1
	2013	32.6	9.9	24.6	4.6	1.7	1.2	0.0	0.0	0.0	0.0	58.9	12.1
	2010	2.9	1.1	10.9	2.6	0.0	0.0	0.0	0.0	0.0	0.0	13.7	2.9
	2007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

sedpsdlb.d23

Table 81. PSD and RSD values obtained for black bass taken in spring electrofishing samples in Liberty Lake on 16 April 2023; 95% confidence levels are in parentheses.

Year	Largemouth Bass			Spotted Bass		
	\geq Stock size*	PSD	RSD ₁₅	\geq Stock size*	PSD	RSD ₁₄
2023	168	35 (± 7)	4 (± 3)	64	17 (± 9)	0 (± 0)
2019	190	23 (± 6)	7 (± 4)	42	24 (± 13)	0 (± 0)
2016	107	27 (± 9)	1 (± 2)	130	13 (± 6)	2 (± 2)
2013	126	8 (± 5)	2 (± 2)	57	5 (± 6)	0 (± 0)
2010	267	20 (± 5)	4 (± 2)	23	0 (± 0)	0 (± 0)
2007	222	41 (± 6)	4 (± 2)	0	0 (± 0)	0 (± 0)

*Largemouth Bass = \geq 8.0 in and Spotted Bass = \geq 7.0 in
sedpsdlb.d23

Table 82. Mean back calculated lengths (in) at each annulus for Largemouth Bass collected from Liberty Lake during spring 2023, including the 95% confidence interval (CI) for each mean length per age group.

Year class	No.	Age							
		1	2	3	4	5	6	7	8
2022	44	5.2							
2021	27	6.0	9.9						
2020	15	5.8	9.9	11.9					
2019	4	5.9	10.1	12.1	13.4				
2018	9	6.1	10.0	11.9	13.3	14.2			
2017	11	5.5	9.8	11.2	12.3	13.5	14.2		
2016	1	5.6	10.0	11.4	12.3	12.6	12.9	13.5	
2015	1	5.9	9.7	12.6	14.4	15.5	16.4	16.7	17.3
Mean		5.6	9.9	11.8	12.9	13.8	14.3	15.1	17.3
Number		112	68	41	26	22	13	2	1
Smallest		3.3	8.3	10.1	11.6	12.4	12.9	13.5	17.3
Largest		7.9	11.4	13.1	14.4	15.6	16.4	16.7	17.3
SE		0.1	0.1	0.1	0.2	0.2	0.3	1.6	
95% CI \pm		0.2	0.2	0.3	0.3	0.4	0.5	3.2	

Otoliths were used for age-growth determinations; Intercept = 0
sedaglbl.d23

Table 83. Age-frequency and CPUE (fish/hr) of Largemouth Bass collected during 1.75 hours of diurnal electrofishing at Liberty Lake on 19 April 2023.

Age	Inch class														Total	%	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	17				
1	7	84	69	19	4										183	52.0	104.6	6.0
2						5	42	33	10						90	26.0	51.4	4.2
3								3	16	18	2				39	11.0	22.4	2.3
4										5		2			6	2.0	3.6	0.5
5										2	6	3	3		14	4.0	7.8	1.6
6											8	5	1		15	4.0	8.5	2.2
7											2				2	1.0	1.1	0.4
8														1	1	0.0	0.6	0.6
Total	7	84	69	19	4	5	42	36	26	25	18	10	4	1	350	100.0	200.0	
%	2.0	24.0	20.0	5.0	1.0	1.0	12.0	10.0	7.0	7.0	5.0	3.0	1.0	0.0				

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sedaglbl.d23

Table 84. Population assessment for Largemouth Bass collected from Liberty Lake in April 2023.

Parameter	Actual value	Assessment score
Mean length age 3 at capture	11.8	4
Spring CPUE age 1	104.6	4
Spring CPUE 12.0-14.9 in	30.3	3
Spring CPUE ≥ 15.0 in	3.4	1
Spring CPUE ≥ 20.0 in	0.6	2
Instantaneous mortality (Z)	0.685	
Annual mortality (A)	49.6	
Total score		14
Assessment rating		G

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sedaglbl.d23

Table 85. Length frequency and CPUE (fish/nn) for each species of crappie collected in Lake Linville (21 net-nights) from 16-19 October 2023.

Species	Inch class							Total	CPUE	SE
	3	4	6	7	8	9	11			
White Crappie	4	2			2		1	9	0.4	0.2
Black Crappie	7	1	3	18	4	1		34	1.6	0.6
Blacknose Crappie				7				7	0.3	0.2

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Table 86. PSD and RSD₁₀ values calculated for crappie collected in trapnets at Lake Linville in October 2023; 95% confidence limits are in parentheses.

Species	≥ Stock size*	PSD	RSD ₁₀
White Crappie	3	100 (± 0)	33 (± 65)
Black Crappie	26	19 (± 15)	- (-)
Blacknose Crappie	7	- (-)	- (-)

* ≥5.0 in
sedtnll.d23

Table 87. Mean back calculated lengths (in) at each annulus for each species of crappie collected from Lake Linville in 2023, including the 95% confidence interval (CI) for each mean length per age group.

White Crappie				Black Crappie			Blacknose Crappie		
Year	No.	Age		Year	No.	Age	Year	No.	Age
		1	2			1			1
2022	2	4.8		2022	15	4.6	2022	3	4.0
2021	1	6.5	10.3						
Mean		5.4	10.3	Mean		4.6	Mean		4.0
Number		3	1	Number		15	Number		3
Smallest		4.6	10.3	Smallest		3.6	Smallest		3.6
Largest		6.5	10.3	Largest		6.4	Largest		4.4
SE		0.6		SE		0.2	SE		0.2
95% CI ±		1.1		95% CI ±		0.5	95% CI ±		0.4

Otoliths were used for age-growth determinations; Intercept = 0
sedagllc.d23

Table 88. Age-frequency and CPUE (fish/nn) of White Crappie trap-netted at Lake Linville in 21 net-nights in October 2023.

Age	Inch class							Total	%	CPUE	SE
	3	4	6	7	8	9	11				
0+	4	2						6	66.7	0.3	0.2
1+					2			2	22.2	0.1	0.1
2+							1	1	11.1	<0.1	0.1
Total	4	2	0	0	2	0	1	9	100.0	0.4	
%	44.4	22.2	0.0	0.0	22.2	0.0	11.1				

CPUE of ≥8.0-in (quality size) crappie = 0.1 fish/nn
 CPUE of ≥10.0-in (preferred size) crappie = 0.1 fish/nn
 sedtnll.d23
 sedagllc.d23

Table 89. Age-frequency and CPUE (fish/nn) of Black Crappie trap-netted at Lake Linville in 21 net-nights in October 2023.

Age	Inch class						Total	%	CPUE	SE
	3	4	6	7	8	9				
0+	7	1					8	23.5	0.4	0.2
1+			3	18	4	1	26	76.5	1.2	0.5
Total	7	1	3	18	4	1	34	100.0	1.6	
%	20.6	2.9	8.8	52.9	11.8	2.9				

CPUE of ≥ 8.0 -in (quality size) crappie = 0.2 fish/nn

CPUE of ≥ 10.0 -in (preferred size) crappie = 0.0 fish/nn

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Table 90. Age-frequency and CPUE (fish/nn) of Blacknose Crappie trap-netted at Lake Linville in 21 net-nights in October 2023.

Age	Inch class							Total	%	CPUE	SE
	3	4	6	7	8	9	11				
1+				7				7	100.0	0.3	0.2
Total	0	0	0	7	0	0	0	7	100.0	0.3	
%	0.0	0.0	0.0	100.0	0.0	0.0	0.0				

CPUE of ≥ 8.0 -in (quality size) crappie = 0.0 fish/nn

CPUE of ≥ 10.0 -in (preferred size) crappie = 0.0 fish/nn

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Table 91. Number of fish and mean relative weight (Wr) for each length group of crappie collected in Lake Linville in October 2023. Standard error is in parentheses.

Species	Length group					
	5.0-7.9 in		8.0-9.9 in		≥ 10.0 in	
	No.	Wr	No.	Wr	No.	Wr
White Crappie	0	- (-)	2	86 (0)	1	96 (-)
Black Crappie	21	94 (1)	5	92 (2)	0	- (-)

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Table 92. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 1.5 hours of 15-minute diurnal electrofishing runs for black bass in Wood Creek Lake on 17 April 2023.

Area	Species	Inch class																	Total	CPUE	SE	
		3	4	5	6	7	8	9	10	11	12	13	14	16	18	19	20	21				22
Pump station	Largemouth Bass	5	7	2	3	3	8	4	14	10	12	2	2	1	4	1	2		1	81	108.0	18.5
	Spotted Bass		1			1		2	3											7	9.3	4.8
Dock	Largemouth Bass	3	13	11	8	1	7	4	11	12	8	3	1	3		1		2		88	117.3	13.1
	Spotted Bass								1											1	1.3	1.3
Total	Largemouth Bass	8	20	13	11	4	15	8	25	22	20	5	3	4	4	2	2	2	1	169	112.7	10.4
	Spotted Bass		1			1		2	4											8	5.3	2.9

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Table 93. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples at Wood Creek Lake on 17 April 2023; 95% confidence limits are in parentheses. 2014 and 2015 included lower lake sampling locations.

Year	Area	Largemouth Bass			Spotted Bass		
		≥ Stock size*	PSD	RSD ₁₅	≥ Stock size*	PSD	RSD ₁₄
2023	Pump Station	61	41 (± 12)	15 (± 9)	6	0 (± 0)	0 (± 0)
	Dock	52	35 (± 13)	12 (± 9)	1	0 (± 0)	0 (± 0)
	Total	113	38 (± 9)	13 (± 6)	7	0 (± 0)	0 (± 0)
2022	Total	200	24 (± 6)	11 (± 4)	4	0 (± 0)	0 (± 0)
2021	Total	176	25 (± 6)	10 (± 4)	22	33 (± 33)	0 (± 0)
2020	Total	248	25 (± 5)	10 (± 4)	22	27 (± 19)	0 (± 0)
2019	Total	320	16 (± 4)	2 (± 2)	12	17 (± 22)	0 (± 0)
2018	Total	223	33 (± 6)	12 (± 4)	17	41 (± 24)	6 (± 12)
2017	Total	181	25 (± 6)	4 (± 3)	32	34 (± 17)	3 (± 6)
2016	Total	110	42 (± 9)	8 (± 5)	23	26 (± 18)	0 (± 0)
2015	Total	259	41 (± 6)	10 (± 4)	37	30 (± 15)	0 (± 0)
2014	Total	334	34 (± 5)	10 (± 3)	61	21 (± 10)	0 (± 0)

* Largemouth Bass = ≥8.0 in and Spotted Bass = >7.0 in

sedpsdwc.d23

Table 94. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Wood Creek Lake during April 2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023*	37.3	9.0	46.7	2.2	18.7	1.7	10.0	1.4	3.3	0.7	112.7	10.4
2022*	47.3	7.1	101.3	11.0	18.0	4.4	14.0	2.3	0.0	0.0	180.7	17.8
2021*	52.0	17.9	88.0	15.5	17.3	3.0	12.0	2.7	2.0	0.9	169.3	29.6
2020*	40.0	17.5	124.7	26.7	24.0	5.2	16.7	2.8	2.7	2.0	205.3	44.7
2019*	55.3	23.0	178.7	39.9	30.0	5.3	4.7	1.2	0.0	0.0	268.7	67.1
2018*	56.7	15.9	99.3	15.9	32.0	5.8	17.3	3.7	1.3	0.8	205.3	36.8
2017*	121.3	48.5	90.0	19.9	25.3	4.3	5.3	1.7	0.7	0.7	242.0	70.8
2016*	40.0	14.5	42.7	9.0	24.7	3.2	6.0	0.9	0.7	0.7	113.3	21.3
2015	11.7	2.4	51.3	10.6	26.3	6.0	8.7	2.0	1.3	0.6	98.0	15.8
2014	19.0	4.2	74.0	13.4	25.7	4.7	11.7	3.1	1.0	0.7	130.3	19.8

* Lower lake area was not sampled
sedpsdwc.d23

Table 95. Spring electrofishing CPUE (fish/hr) for each length group of Spotted Bass collected at Wood Creek Lake during April 2023.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023*	1.3	0.8	4.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	5.3	2.9
2022*	2.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	1.7
2021*	0.7	0.7	4.0	2.1	2.0	0.9	0.0	0.0	0.0	0.0	6.7	3.0
2020*	2.0	1.4	9.3	6.3	4.0	4.0	0.0	0.0	0.0	0.0	15.3	10.9
2019*	2.0	1.4	6.0	3.4	1.3	0.8	0.0	0.0	0.0	0.0	9.3	4.7
2018*	2.0	1.4	6.0	3.2	4.0	2.5	0.7	0.7	0.0	0.0	12.7	5.5
2017*	6.7	4.0	11.3	5.6	6.7	4.0	0.7	0.7	0.0	0.0	25.3	12.5
2016*	5.3	4.6	9.3	5.7	4.0	2.5	0.0	0.0	0.0	0.0	18.7	10.6
2015	4.3	1.7	7.3	2.1	3.7	0.9	0.0	0.0	0.0	0.0	15.3	3.9
2014	6.3	2.5	13.7	2.7	4.3	1.5	0.0	0.0	0.0	0.0	24.3	5.1

* Lower lake area was not sampled
sedpsdwc.d23

Table 96. Population assessment for Largemouth Bass based on spring electrofishing at Wood Creek Lake from 2014-2023 (scoring based on statewide assessment).

Year		Mean length	CPUE	CPUE	CPUE	CPUE	Total score	Assesment rating
		age 3 at capture	age 1	12.0-14.9 in	≥15.0 in	≥20.0 in		
Management objectives		≥11.5 in	≥8.0 fish/hr	≥20.0 fish/hr	≥17.0 fish/hr	≥2.0 fish/hr		
2023	Value		16.7	18.7	10.0	3.3		
	Score	1	2	2	2	3	10	F
2022	Value		34.0	18.0	14.0	0.0		
	Score	1	3	2	3	1	10	F
2021	Value		32.0	17.3	12.0	2.0		
	Score	1	3	2	2	3	11	F
2020	Value		34.0	24.0	16.7	2.7		
	Score	1	3	2	3	3	12	F
2019	Value	10.1	44.7	30.0	4.7	0.0		
	Score	1	3	3	1	1	9	F
2018	Value		40.7	32.0	17.3	1.3		
	Score	3	3	3	3	2	14	G
2017	Value		105.3	25.3	5.3	0.7		
	Score	3	4	2	1	2	12	F
2016	Value		29.3	24.7	6.0	0.7		
	Score	3	3	2	2	2	12	F
2015	Value		5.0	26.3	8.7	1.3		
	Score	3	1	3	2	2	11	F
2014	Value	11.3	6.0	25.7	11.7	1.0		
	Score	3	1	3	2	2	11	F

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Table 97. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 1.5 hours of 15-minute diurnal electrofishing runs for black bass in Wood Creek Lake on 26 September 2023.

Area	Species	Inch class														Total	CPUE	SE
		2	3	4	5	6	7	8	9	10	11	12	13	19	21			
Pump station	Largemouth Bass	1	6	3	2	1	9	6	8	4	3	3	1			47	62.7	13.1
	Spotted Bass					4	5			3	1					13	17.3	4.8
Dock	Largemouth Bass		12	11	2		13	11	5	10	7	5		1	1	78	104.0	36.3
	Spotted Bass											1				1	1.3	1.3
Total	Largemouth Bass	1	18	14	4	1	22	17	13	14	10	8	1	1	1	125	83.3	19.6
	Spotted Bass					4	5			3	1	1				14	9.3	4.2

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Table 98. Indices of year class strength at age 0 and age 1 and mean lengths (in) of Largemouth Bass collected in fall (September and October) electrofishing samples at Wood Creek Lake.

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.0	0.1	24.7	6.7	2.7	0.8		
2022	4.4	0.1	56.7	21.4	14.0	6.4	16.7	5.3
2021	3.9	0.1	43.3	6.7	3.3	1.2	34.0	5.2
2020	4.2	0.1	43.3	15.3	6.0	2.9	32.0	12.0
2019	4.5	0.1	45.3	14.3	9.3	3.8	34.0	15.6
2018	4.3	0.1	37.3	14.9	8.0	3.7	44.7	20.4
2017 ^a	4.1	0.2	16.0	4.4	2.7	1.3	40.7	12.7
2016	4.0	0.1	74.7	22.6	8.7	1.6	105.3	43.5
2015	4.2	0.1	32.7	7.8	8.0	2.2	29.3	12.8
2014 ^a	3.7	0.2	2.7	0.9	0.0	0.0	5.0	1.0

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^a Age-0 Largemouth Bass stocked in the fall

Table 99. Number of fish and mean relative weight (Wr) for each length group of black bass collected at Wood Creek Lake during 26 September 2023. Standard error is in parentheses.

Species	Length group					
	8.0-11.9 in		12.0-14.9 in		\geq 15.0 in	
	No.	Wr	No.	Wr	No.	Wr
Largemouth Bass	54	87 (3)	8	88 (2)	2	103 (6)
	7.0-10.9 in		11.0-13.9 in		\geq 14.0 in	
	No.	Wr	No.	Wr	No.	Wr
Spotted Bass	8	97 (3)	2	90 (5)	0	-

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EASTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Table 1 shows sampling conditions by water body for eastern fishery district lakes in 2023.

Buckhorn Lake

Muskellunge

Diurnal electrofishing for muskellunge was conducted in early February (Tables 2-4). A total of 17 fish were collected which ranged in size from 12.6-40.8 in (Table 2), with the largest fish weighing 21.9 pounds. Relative weight (W_r) values by length group are listed in Table 3 and range from 84 to 126. Relative weight increased with increasing fish size except for the largest fish. The assessment rating improved to “Fair” this year primarily due to increased recruitment of age-1 fish and a slightly increased catch rate of fish ≥ 40.0 in (Table 4). Please note that the 2017-2019 sample events were conducted during poor conditions. There is a narrow window of opportunity to conduct early spring electrofishing at Buckhorn Lake due to dynamic fluctuations in water levels and muddy lake conditions which significantly affect visibility. Sampling conditions in 2023 included stained water with decent visibility (Table 1). With improved hatchery production in 2023, our stocking goal for the lake was met with a total of 400 Muskellunge (13.0 in) stocked in October. Stocking sites included the marina and Trace Branch Confluence boat ramps. These fish did not have any wire tag or fin clip for identification due to an ongoing Muskellunge research project being conducted on the Kentucky River. Future stockings should include an appropriate identification mark.

Black Bass

Spring nocturnal electrofishing was conducted in the upper and lower sections of the lake during May 2023 to assess the black bass populations. Length-frequency and catch-per-unit-effort (CPUE) of Largemouth Bass collected in each area is shown in Table 5, and the CPUE by length group over time is shown in Table 6. The overall Largemouth Bass catch rate (67.6 fish/hr; Table 5) was nearly half that of 2022 (Table 6). Water levels and sampling conditions were both good at the time of spring sampling in 2023. Fish in the <8.0 and 8.0- to 11.9-in length groups showed the largest decreases in catch rates compared to 2022 (from 35.6 to 8.4 and from 61.8 to 28.0 fish/hr, respectively). This data suggests fewer fish recruited to the population in 2023. Catch rates for the three remaining length groups were within the range of observed values through time. Size structure indices were similar to previous years ($PSD=53$, $RSD_{15}=3$; Table 7) and indicative of a population skewed towards smaller individuals. The Largemouth Bass population rated “Poor” based on assessment parameters (Table 8).

Fall nocturnal electrofishing was completed for black bass to determine length frequency and year-class strength. Length-frequency data shows that the highest density of fish in the fall 2023 sample ranged from 9.0 to 14.0 inches in length (Table 9). The 2023 catch rate of age-0 Largemouth Bass (92.8 fish/hr) was similar to 2022 and higher than the results of the fall 2020 and 2021 surveys (Table 10). Mean age-0 length (5.0 in) was slightly above average. Recruitment has been higher in recent years with above-average CPUE observed for age-0 fish from 2016-2019 and 2022. Relative weight (W_r) values for Largemouth Bass collected during the September sample are shown in Table 11.

Species stocked in Buckhorn Lake in 2023 include 24,600 Redear Sunfish (1.1 in) during September and approximately 5,000 Rainbow Trout (8.0-12.0 in) stocked in the tailwater during the months of April-June and October-November.

Crappie

Trap netting was conducted in the fall to sample White Crappie (Tables 12-16). A total of 1,853 fish were collected in 17 net-nights (nn) for a CPUE of 109.0 fish/nn. Age-0 White Crappie were the most numerous age class (59%) with age-1 and age-2 classes also well represented at 13% and 20%, respectively. Catch rates of fish ≥ 8.0 in (quality size) and fish ≥ 10.0 in (preferred size) were 23.5 fish/hr and 5.5 fish/hr, respectively. These parameters were down from the 2021 catch rates of 74.4 fish/hr and 11.0 fish/hr, respectively. The population assessment was “Good” for

White Crappie primarily due to high numbers of fish in each size class. This rating is down from “Excellent” in 2021 with a decrease in age-1 numbers compared to 2021. Growth rates for White Crappie at Buckhorn Lake are consistently low. Mean total length of age-2 fish at capture was 8.1 in and failed to reach the 9.0 or 10.0-in size desired for commonly used minimum size limits in Kentucky.

Creel Survey

A random, stratified, roving, daytime creel survey was conducted at Buckhorn Lake from April 08 to October 30, 2023, to estimate angling pressure and angler catch/harvest statistics (Tables 17-25). Days were divided into two time periods (morning and afternoon) each with equal probability and 6 hours in length. Weekend day probability was 2.5 times weekday probability. The survey was scheduled for 16 days each month. All data collected was from the same geographical section (1 survey area); from the dam to Trace Branch recreation area. Total angler counts were conducted at random times during each creel period. All the creel interviews and angler attitude surveys were collected using an iPad. This device had GPS capabilities that recorded coordinates associated with each interview and survey (Figures 1 and 2). Figure 1 provides a visual representation of the distribution of angler interviews across the lake for the entire creel. The same angler could only be interviewed once per fishing trip for creel data. Figure 2 provides a similar representation of the distribution of angler attitude surveys taken during the survey period. Anglers were only surveyed once for the entire season. Prior to 2023, the last creel survey conducted at Buckhorn Lake was in 2014.

The results of the 2023 creel survey show a slight increase in estimated hours of angling effort since the 2014 survey. There were an estimated 3,059 fishing trips in 2023 (2.49 trips/acre) which accounted for a total of 15,756 angler-hours (12.80 man-hours/acre) of effort (Table 17). For 2014, there was an estimated 4,430 fishing trips (3.60 trips/acre) which accounted for a total of 12,728 angler-hours (10.35 man-hours/acre). Interestingly, 2023 estimates for the total number of fish caught (31,151) were very similar to 2014 estimates (31,728); however, total numbers of fish harvested substantially increased for 2023 (25,223) versus estimates for 2014 (7,954). Anglers in 2023 caught an estimated 21,095 White Crappie (17.15 fish/acre) and harvested 20,503 with White Crappie making up 79.5% of the total fish harvested in the survey. Anglers also caught an estimated 3,238 Largemouth Bass (2.63 fish/acre) and harvested 947 (Table 18). These estimates are an increase above the 2014 survey for White Crappie where only 14,969 were caught (12.17 fish/acre) but a decrease below the 2014 survey for Largemouth Bass where 5,311 were caught (4.32 fish/acre).

In 2023, anglers made an estimated 908 trips (29.7%) targeting black bass species and 1,381 trips (45.2%) for White Crappie (Table 18). During those trips, 4,678 hours were spent targeting black bass species and 7,114 hours were devoted to crappie angling. There were only 0.77 largemouth bass per acre harvested during the survey period and 16.3 White Crappie harvested per acre. A Redear Sunfish stocking program was initiated at Buckhorn Lake in 2019. For the 2023 survey period, an estimated 88 Redear Sunfish were caught (.07 fish/acre) and all of these were harvested. Additionally, an estimated 2,649 Bluegill were caught (2.15 fish/acre) and 2,545 of them harvested. A total of 53 hours (.04 man-hours/acre) were devoted to panfish angling in 2023. The panfish statistics do not include crappie angling hours, catch, or harvest.

An angler attitude survey was conducted during the creel to gather standardized information on angler preferences and satisfaction regarding the fishery at Buckhorn Lake (Appendix A). Anglers were surveyed only one time each during the survey period. A total of 77 anglers were interviewed. Forty-four (57.1%) anglers fished Buckhorn Lake more than 10 times in a year. The primary species/group fished for was crappie at 68.8% (65.6% in 2014). Black bass were targeted by 46.8% of anglers and Bluegill and Redear Sunfish were fished for by 23.4% of all anglers in 2023.

Half (50%) of anglers who fished for bass were “very” or “somewhat satisfied” with the bass fishery at Buckhorn Lake. One third (30.6%) of bass anglers were “Neutral” in terms of their level of satisfaction with the bass fishery. Anglers who were “somewhat satisfied” or “somewhat dissatisfied” were 27.8% and 19.4%, respectively. Reasons for dissatisfaction included “number of fish” (55.6%) and “size of fish” (33.3%). Of all anglers who fished for crappie, most (83%) were either “very satisfied” or “somewhat satisfied”. The single most important reason for their satisfaction was “numbers of fish” (90.9%). Only 2 Muskellunge anglers participated in the survey. The level of satisfaction with Muskellunge fishing at Buckhorn Lake was split (50%) between “very satisfied” and “somewhat dissatisfied”. The overwhelming majority (97.4%) of anglers surveyed were satisfied with the current size and creel limits at Buckhorn Lake.

Carr Creek Lake

Black Bass

Spring nocturnal electrofishing was completed in May to assess the black bass population. The length-frequency and catch-per-unit-effort (CPUE) of Largemouth Bass collected in each area is shown in Table 26. The overall Largemouth Bass CPUE of 254.4 fish/hr remains well above average, similar to 2022. Fish in the 8.0- to 11.9-in length group showed the largest increase in catch rate ever documented for the second year in a row (Table 27). The recruitment of age-1 fish has consistently remained high since 2013 following expansion of hydrilla in the lake. During the summer of 2022, a significant flood event brought Carr Creek Lake to record pool and water levels remained high and muddy for an extended period through late summer. The lack of water clarity significantly suppressed hydrilla growth lake wide. Since then, hydrilla growth has been minimal with vegetation no longer visible from the surface. Though still high, the CPUE of age-1 fish (74.4 fish/hr) dipped slightly in 2023 (Table 29). The catch rate of Largemouth Bass ≥ 15.0 in (15.2 fish/hr) falls right at the average of the last 20 years (Table 27). Largemouth Bass size structure indices were similar to recent years (PSD=26; RSD₁₅=6) and indicative of a population skewed toward smaller individuals (Table 28). The population assessment remained “Good” for Largemouth Bass in 2023 (Table 29). Age and growth data was last taken in 2019. Growth rates over the last 12 years have remained high indicating a stable population. With continued high recruitment and the increase in catch rates of 8.0- to 11.9-in fish, it is likely that growth rates will soon begin to decrease. Age and growth data will be collected again in the spring of 2025.

Nocturnal black bass electrofishing was completed in September to index Largemouth Bass year-class strength (Tables 30 and 31). Catch rates of age-0 Largemouth Bass (18.0 fish/hr) were lower in 2023 but within the range of values over time (Table 31). Mean age-0 Largemouth Bass length (4.8 in) was average. Fall YOY sampling suggests an average Largemouth Bass year-class in 2023 and no additional bass were stocked. Relative weight (W_r) values for Largemouth Bass collected during the September sample are shown in Table 32. Relative weight increased with increasing fish size.

Walleye

Diurnal electrofishing samples were collected in the early spring for Walleye (Tables 33-35). Additionally, during this sampling effort, broodfish were collected for Minor Clark Fish Hatchery. Over multiple days sampling for broodfish, a total of 63 Walleye were sampled for a catch rate of 8.7 fish/hr. Most fish were in the 16.0- to 23.0-in size class (Table 33). Catch rates by age group are shown in Table 34. The majority of Walleye collected are between 2 and 4 years old. The total relative weight value was 103 (Table 35). All length groups showed an increase in W_r value over the 2022 sample. A total of 35,078 (1.4 in) Walleye were stocked in May.

Crappie

Early spring electrofishing was used to collect Black and White crappie (Tables 36-41). The fishery is managed under a 9.0-in minimum size limit. The total CPUE has fluctuated significantly from year to year (Table 37) and was much lower for 2023 than in the previous (2020) survey. The spring sample was conducted later than normal this year (April) due to spring water conditions. The higher levels and warmer water conditions at time of sample likely affected catch rates. Tables 39 and 40 contain age and growth data for Black and White crappie. Age-1 to age-9 individuals for both species were represented in the age and growth data. Tentative scheduling will include early spring electrofishing in 2026.

In previous years, Grass Carp were stocked jointly by KDFWR and the USACE to help control hydrilla. No grass carp were stocked in 2023. A Redear Sunfish stocking program was initiated in October 2018 and stocking continued in 2019 and 2020 with 14,200 (1.2 in) fish stocked in September of each year. Due to a sudden and unexpected loss of fish at the hatchery, Redear Sunfish were not stocked in 2021. Stocking resumed in 2022 with 14,200 (2.25 in) fish stocked in September and continued in 2023 with 14,200 fish (1.1 in) also stocked in September. Due to the recent establishment of zebra mussels, an annual Blue Catfish stocking program was initiated in October 2020. Stocking has continued through September 2023 with 7,100 (5.5 in) fish. In 2021, a Black Crappie stocking program was initiated with 17,790 Black Crappie (2.5 in) stocked in August. Stockings continued in 2022 with 17,780 (2.1 in) blacknose Black Crappie and again in 2023 with 17,785 (1.6 in) and 625 (6.0 in) blacknose Black Crappie. Tailwater stockings included 4,000 (total) Rainbow Trout stocked during the months of April, May, October, and November.

During 2019, Zebra Mussels were documented for the first time in the lake and they became prolific in number by year end. For 2020, the Zebra Mussel population peaked by early summer and numbers looked to have significantly reduced by fall. As of 2021, the Zebra Mussel population appears to have reached carrying capacity and has stabilized. This follows several other recent invasive species introductions to Carr Creek Lake including purple loosestrife (2013), hydrilla (2008), and Alewife (2000).

Cranks Creek Lake

Black Bass

Spring nocturnal electrofishing was completed in May to assess the black bass population. Length distribution and CPUE are presented in Tables 42 and 43. The overall Largemouth Bass CPUE of 184.8 fish/hr was higher than recent years following a return to nocturnal electrofishing at this clear lake. This lake was stocked in the fall of 2022 with fingerling Largemouth Bass at a rate of 15 fish/acre. Catch rates of age-1 fish in the spring of 2023 increased (Table 45). Largemouth Bass size structure indices are displayed in Table 44 and indicate a population skewed towards smaller fish (PSD=12; RSD₁₅=6). The population assessment remained “Fair” for Largemouth Bass in 2023 (Table 45). Cranks Creek Lake receives limited tournament fishing pressure; however, it is considered a location of high angler harvest of all species. Catch rates drop off quickly once largemouth reach the 12.0-in minimum length limit. Age and growth data over time continues to show that Largemouth Bass growth at Cranks Creek Lake is slow with fish only reaching a mean length of 10.7 in by age 3 (Table 45). Largemouth Bass are the dominant black bass species, and this lake continues to produce some trophy-size fish. In the spring 2023 survey, 22.6-in and 24.5-in Largemouth Bass were sampled.

Fall nocturnal electrofishing was completed in October for black bass to determine length-frequency and year-class strength (Tables 46 and 47). Age-0 Largemouth Bass CPUE (34.4 fish/hr) was observed to be much higher than in 2022 but still just below average. Mean age-0 length (4.5 in) was average. Relative weight (W_r) values for Largemouth Bass collected during the October sample are shown in Table 48. This lake’s weighted regression shows that the YOY year class is often density dependent. Stocking advanced fingerlings in the fall does not always benefit the year class. Catch rates for young-of-year Largemouth Bass were low enough that the decision was made to stock fingerlings (4.4-in fish) at a rate of 15 fish/acre in October 2022. This stocking appears to have been beneficial with the increased catch rates of spring age-1 fish previously mentioned. Largemouth Bass stocking was not required for 2023.

Approximately 5,000 Rainbow Trout (total) were stocked in the lake during the months of January, April, May, and October. Channel Catfish (2,640; 8.0 in) were also stocked in October. No vegetation controls were utilized in 2022; however, herbicides have been used when needed in the past, and future work may include a low-rate stocking of Grass Carp.

Dewey Lake

Muskellunge

Dewey Lake was first stocked with Muskellunge in 2014 to establish a fishable population. This population was sampled for the first time in 2023. Diurnal electrofishing was conducted in early January (Tables 49-51). A total of 9 fish were collected ranging in size from 13.0-36.0 in (Table 49), with the largest fish weighing 12.9 pounds. Relative weight (W_r) values by length group are listed in Table 50 and range from 85 to 100. The first assessment rating came in at “Fair” primarily due to low catch rates across all size class parameters (Table 51). Sampling conditions in 2023 included clear water with good visibility (Table 1). A total of 375 Muskellunge (13.0 in) were stocked in October. Stocking sites included the marina and Goble Branch boat ramps. These fish were marked with a left pectoral fin clip for future identification of year class. Future stockings will continue to include an appropriate mark for identification.

Black Bass

Nocturnal electrofishing to assess the black bass population at Dewey Lake was conducted in April (Tables 52-55). Largemouth Bass accounted for 93% of the black bass collected during standardized spring sampling. The length-frequency and catch-per-unit-effort (CPUE) of Largemouth Bass collected in each area is shown in Table 52. The

catch rate for Largemouth Bass decreased slightly to 92.4 fish/hr and remains somewhat below the lake average of 143.6 fish/hr (Table 53). Largemouth Bass size structure indices (PSD = 62; RSD₁₅ = 24; Table 54) were similar to previous years, offering anglers good opportunity for catching quality fish. The spring assessment for Largemouth Bass remained “Good” in 2023 (Table 55). The catch rate of fish ≥ 15.0 in has increased for the last two years in a row. Previous assessments suggest that recruitment of spring age-1 Largemouth Bass had been decreasing. Advanced fingerling Largemouth Bass were overwintered (2021) at Minor Clark fish hatchery for stocking in the spring of 2022. Due to predatory bird loss at the hatchery, a reduced number of advanced fingerlings (3,645 total, 5.7-in fish) survived and were stocked that spring. These fish appear to have had a positive impact on recruitment with the increased catch in 2022. Recruitment of the 2022 year class to age 1 in 2023 was once again lower than average (Table 53). Cycles in recruitment from year to year are normal and will continue to be monitored.

Fall nocturnal electrofishing was completed in September for black bass to determine length-frequency and year-class strength (Tables 56 and 57). Mean age-0 length in the fall (4.8 in) was on average. The total CPUE of age-0 (28.4 fish/hr) and age-0 ≥ 5.0 in (13.6 fish/hr) fish was only slightly below the lake average (42.6 and 18.8 fish/hr, respectively). No supplemental stocking of young-of-year fingerlings was required in the fall of 2023. Relative weight (W_r) values for Largemouth Bass collected during the September sample are shown in Table 58. Average relative weight for Largemouth Bass ≥ 15.0 in was good (96) and considered acceptable for length groups ranging from 8.0-11.9 and 12.0-14.9 in (85 and 90, respectively).

A total of 11,000 Blue Catfish (5.5 in) were stocked in October. An additional 375 Muskellunge (12.9 in) were stocked in October. A total of 4,000 Rainbow Trout (1,000/mo; 9.5 in) were stocked in the Dewey Lake tailwater in April, May, October, and November.

Fishtrap Lake

Black Bass

Spring nocturnal electrofishing was completed in April to assess the black bass population. The length-frequency and catch-per-unit-effort (CPUE) of black bass collected in each area of the lake is shown in Table 59 and the catch-per-hour by length group is shown in Table 60. Overall catch rates for Largemouth Bass increased slightly in 2023 when compared to 2022 for fish in each length range except < 8.0 in (Table 60). PSD data showed a Largemouth Bass population skewed towards larger sizes (PSD=72, RSD₁₅=29; Table 61). The PSD and RSD₁₅ values were similar to those seen in 2022. The spring assessment improved to “Good” for Largemouth Bass (Table 62). Age and growth data from Largemouth Bass collected in 2023 is shown in Table 63. Growth rates of Largemouth Bass are showing improvement with fish reaching a mean length of 13.8 in by three years of age. Previous growth rates for Largemouth Bass were slower with bass only attaining lengths of 11.8 in by age 3. Age-2 Largemouth Bass were the most numerous age class (28%) with age-3 and age-4 classes also well represented at 27% each (Table 64). The most recent assessments suggest that recruitment of spring age-1 Largemouth Bass continues to decline with the age-1 CPUE for 2021-2023 consistently being the lowest recorded levels over the last 12 years (Table 62). Largemouth Bass advanced fingerlings were stocked in the fall of 2021 at a rate of 10 fish/acre. Fingerlings were not available for stocking in 2022 or 2023. The spring sample for 2024 will be closely monitored to see if numbers improve. Largemouth Bass DNA samples for genetic analysis were collected as fin clips in April.

Fall nocturnal electrofishing was completed in October for black bass to determine length frequency and year-class strength (Tables 65 and 66). Mean age-0 Largemouth Bass length (4.5 in) in the fall was below the average of 4.9 in. The total CPUE of age-0 (37.2 fish/hr) and age-0 ≥ 5.0 -in (15.6 fish/hr) fish was well below the average of 95.4 and 45.6 fish/hr, respectively. When fall age-0 catch data suggests the need for stocking, advanced fingerlings for Fishtrap Lake can be held over winter for stocking the following spring if available. Fingerlings were not available for stocking in 2022 or 2023. Relative weight (W_r) values for all black bass collected during the October sample are shown in Table 67.

Crappie

Trap netting was conducted in the fall to assess the White Crappie population (Tables 68-72). A total of 1,253 fish were collected from 2.0-13.0 in for a total CPUE of 41.8 fish/nn. Size structure indices for White Crappie sampled in 2023 (PSD=79, RSD=37) were nearly identical to values sampled in 2021. Age-0 White Crappie was the most numerous age class representing approximately 78% of the total catch, while age-2 crappie were the second most

numerous age group representing only 8% of the total catch. Recruitment of crappie to age-1 and older has been in decline for the last several years; however, catch rates for White Crappie age-1 and older increased in 2023 for the first time since 2015. The population assessment improved to “Good”. Mean total length of age-2 fish at capture was 9.8 in, achieving adequate growth to continue to support the current 9.0-in minimum size limit. White Crappie will next be surveyed in 2025.

Fishtrap Lake is an aging reservoir with limited habitat currently available to fish populations lake wide. Reductions in recruitment as well as overall abundance of both black bass and crappie populations supports the need for fish habitat improvement projects at this lake. EFD staff began implementing improvements during the summer of 2021 with hinged, hardwood trees. These efforts were well received by both anglers and USACE personnel. Habitat improvement work continued through 2023 and will expand to additional habitat structures designed to provide enhanced overwinter survival for young-of-year bass.

Morone

Gill netting for hybrid Striped Bass and White Bass was completed in December of 2023. During the 3 net-night sampling period, 124 hybrid Striped Bass and 15 White Bass were collected (Table 73). A length range of 7.0-22.0 in was observed for hybrid Striped Bass and 10.0-16.0 in for White Bass (Table 73). Otoliths were collected for age and growth determinations. Results of these studies indicated growth rates for both hybrids and White Bass are slowing down (Tables 78 and 79). Hybrid Striped Bass reach 15.0 in between age 2 and age 3 (Table 74). Hybrid Striped Bass ages ranged from 1 to 4 with age-1 fish being most numerous (Table 76). White bass ages ranged from 1 to 5 with age-2 fish being most numerous (Table 77). Population assessments were “Good” for hybrid Striped Bass (Table 78) and “Fair” for White Bass (Table 79). Relative weights of hybrid Striped Bass ($W_t=84$) were lower than expected (Table 80). In the future, stocking rates may have to be reduced until relative weights begin to increase. While sampling crappie earlier in the same week, EFD staff collected many young-of-year hybrid Striped Bass in trap nets further up lake. Even though these fish did not show up in gill nets later in the week, these observations indicate a strong number of stocked fish surviving into early winter for potential recruitment to age 1. This data is not reflected in Tables 73-80.

A total of 11,500 Blue Catfish (5.5 in) were stocked in the lake during October. A total of 23,045 hybrid Striped Bass (2.1 in) were stocked in June. Rainbow Trout (10,000 total) were stocked in the tailwater in April, May, June, and November.

Fishpond Lake

Black bass

Largemouth bass were sampled in April 2023 with nocturnal electrofishing at Fishpond Lake (32 acres). Fish were collected from 3.1-22.4 in (Table 81). Total Largemouth Bass catch rate (265.0 fish/hr) was higher than the lake average of 166.9 fish/hr. The 8.0- to 11.9-in length group showed an increased CPUE with the highest rate seen since 2006 (Table 82). With the increasing number of smaller fish, size structure indices have decreased with the PSD value going from 61 in 2021 to 39 in 2023 and the RSD value changing from 24 in 2021 to 10 in 2023 (Table 83). Both are indicators that the proportion of trophy bass is decreasing in this fishery. The length-frequency values in Table 81 show that this lake still provides good opportunity for angler success with larger fish over 20.0 in.

A total of 4,000 Rainbow Trout (9.0 in) are stocked annually during January, April, May, and October. Channel Catfish (760 fish; 9.0 in) are stocked every other year. Largemouth Bass will be sampled again in 2025.

Martins Fork Lake

Black Bass

Nocturnal electrofishing to sample the black bass population at Martins Fork Lake was conducted in April of 2023. Spotted Bass made up 22% of all black bass collected during spring standardized sampling. A total of 63 Spotted Bass were collected ranging in size from 4.0-11.0 in (Table 84). A total of 218 Largemouth Bass were collected in 1.25 hours of spring sampling for a total CPUE of 174.4 fish/hr (Table 84). This catch rate was consistent with the previous sample (2022). Largemouth Bass in 2021 had a successful spawn which has recruited well to the

population. This year class showed up strong in the 2023 spring survey with an increase in catch rate for fish 8.0-11.9 in (Table 85). Size structure indices for Largemouth Bass continue to decrease over time (PSD=15, RSD₁₅=3), indicating a population that is skewed towards smaller individuals (Table 86). Martins Fork Lake has a 12.0-in minimum size limit and offers anglers limited opportunity to catch trophy bass. Age and growth data was last collected in the fall of 2020 and growth rates of Largemouth Bass have slowly decreased with the mean length of age-3 fish only reaching 10.4 inches in 2021. The spring assessment was once again “Fair” for Largemouth Bass in 2023 (Table 87). The age and growth of the population will next be evaluated in the spring of 2026.

Largemouth Bass length frequency, relative weights, and index of year-class strength at age 0 and age 1 based on October nocturnal electrofishing at Martins Fork Lake are presented in Tables 88-90. The year-class strength model indicated an above-average recruitment year for young-of-year Largemouth Bass based on age-1 CPUE for the second year in a row (Table 89). Age-0 CPUE (80.8 fish/hr) was higher than the lake average (46.7 fish/hr). The number of age-0 fish ≥ 5.0 in (40.8 fish/hr) was also above average (Table 89). No supplemental stocking of young-of-year fingerlings was required in the fall of 2023. The average relative weight (W_r) value for 12.0- to 14.0-in and ≥ 15.0 -in Largemouth Bass was low (74 and 87, respectively) but this is based on a small sample size for those size classes (Table 90). Relative weights will again be monitored in 2024 to see if average body condition improves. Like several other flood control reservoirs in the district, Martins Fork Lake is an aging reservoir that is becoming increasingly void of available fish habitat. EFD staff increased fish habitat improvement efforts here starting in 2022 and will continue these efforts as staff and resources allow.

Walleye

Native-strain Walleye have been stocked annually since 2013. While electrofishing for black bass species in April, no Walleye were observed (Table 84). During the fall survey for black bass species in October, seventeen Walleye were collected ranging in size from 7.0 to 13.0 in, representing the age-0 and age-1 year classes (Table 88). In 2022, native walleye were stocked as advanced fingerlings (5.4 in). This data shows that some of these fish are recruiting to the population and that the stocking of advanced fingerlings may prove to be beneficial at Martins Fork Lake.

A total of 8,552 native-strain Walleye (4.0-4.9 in) were stocked in late June. In addition, 6,700 Redear Sunfish (1.1 in) were stocked in late September. Rainbow Trout (750 fish/month) were stocked in the tailwater in April, May, June, October, and November.

Pikeville City Lake

Black bass

Spring diurnal electrofishing was completed in April to assess the black bass population. Fish were sampled from 4.0-21.0 in (Tables 91 and 92). The overall Largemouth Bass catch rate (75.0 fish/hr) was similar to rates observed since 2015. The majority of the fish sampled were in the 8.0- to 11.9-in and ≥ 15.0 -in length groups (Table 92). The high catch rate of fish ≥ 20.0 in (8.0 fish/hr) is expected with this lake managed as a “catch and release only” fishery for Largemouth Bass. Catch rates for fish < 12.0 in (26.0 fish/hr) is low and annual recruitment of Largemouth Bass at this lake is lower than similar-sized reservoirs managed under statewide regulations. The PSD and RSD₁₅ values (74 and 62, respectively) for Largemouth Bass are high but expected with the current regulation. EFD staff have recommended moving this lake to the trophy bass management regulation (20-in minimum size limit with a one fish daily creel limit). This was discussed at a City Council meeting in the spring of 2021, but angler push-back caused the Board of Directors to table the decision and no further action has been taken.

The primary fisheries at Pikeville City Lake (20 acres) are Largemouth Bass, Rainbow Trout, Bluegill, White Crappie, and Channel Catfish. A total of 2,500 Rainbow Trout are stocked annually during March and November. A total of 600 Channel Catfish are stocked every other year (even years) in November.

Paintsville Lake

Threadfin Shad

Adult Threadfin shad (50,000) were purchased by the Johnson Co. Fiscal Court and stocked in Paintsville Lake on 13 April 2023. This action was at the requests of Largemouth Bass anglers in hopes of establishing a reproducing

Threadfin population to increase available bass forage. Twenty-thousand Threadfin Shad were stocked at the State Park Marina ramp and 30,000 were stocked up lake at the junction of Open Fork and Little Paint Creek arms. Eastern Fishery District staff were tasked with tracking survival and potential reproduction of the Threadfin Shad. Larval Threadfin Shad and larval Gizzard Shad were sampled weekly using a 1000M Neuston net from 10 May – 6 July, then every two weeks through 19 October 2023. The data collected during these sampling events is displayed in Appendix B and Figure 3. Larval samples were fixed in formalin for 24 hours and then transferred to ethanol for storage. All Clupeids were identified to species. A graph representing CPUE of both species over time is displayed in Figure 3. The Gizzard Shad spawn and larval CPUE peaked during the last week of May as expected. Larval Threadfin Shad began to show up during the first week of June in low numbers and remained available through the summer and early fall with no apparent peak in spawn or catch rates. This data suggests that Threadfin Shad stocked in Paintsville Lake in 2023 potentially spawned multiple times throughout the duration of spring and early summer. Larval shad ≥ 28.0 mm are less vulnerable to the neuston net; therefore, the presence of larval fish in September and October samples also suggest Threadfin Shad juveniles remained available at smaller size through early fall (Appendix B). Another Threadfin Shad stocking is planned for spring of 2024.

Black Bass

Spring nocturnal electrofishing studies were conducted in the upper and lower sections of the lake in April to assess the black bass population. Length-frequency and catch-per-unit-effort (CPUE) results from each area are shown in Table 94, and the catch-per-hour (by length group) over time is shown in Table 95. Overall catch rates for Largemouth Bass remained stable for 2023. For the second year in a row, there has been an increase in catch rate of 8.0- to 11.9-in fish with the 2023 catch rate (81.2 fish/hr) being the highest recorded since 2010 (Table 95). The catch rate of 12.0- to 14.9-in fish was lower than the past two years, potentially due to increased angler harvest of this size group. Largemouth Bass at Paintsville Lake continue to exhibit marginal size structure but with a slight improvement over previous years. The population is skewed toward smaller fish while having a few large fish present ($PSD=25$, $RSD_{15}=11$; Table 96). The most recent assessments (Table 97) suggest that recruitment of spring age-1 Largemouth Bass is increasing with a higher catch rate over the past two springs (21.6 fish/hr in 2022; 34.0 fish/hr in 2023). Age and growth data from Largemouth Bass collected in the spring of 2023 is shown in Table 98. All age groups from 1-10 were represented in the age and growth data. These studies show that growth rates of Largemouth Bass are slowing down with fish only reaching a mean length of 11.0 in by three years of age and 15.0 in between ages 5 and 6. The Largemouth Bass population assessment fell to “Fair” for 2023. The slowdown in growth rate as well as reduced catch rates of fish ranging from 12.0-14.9 in and ≥ 20.0 in contributed to the downgrade in the assessment. Largemouth Bass DNA samples for genetic analysis were collected as fin clips in February and March of 2023.

Fall nocturnal electrofishing was completed in October for black bass to determine length frequency and year-class strength of Largemouth Bass (Tables 99 and 100). Mean age-0 Largemouth Bass length (4.4 in) was below average. The year-class strength model indicated that recruitment of young-of-year Largemouth Bass for 2023 (14.0 fish/hr) was well below average (66.6 fish/hr). Numbers of age-0 fish ≥ 5.0 in (3.2 fish/hr) were also well below average (Table 100). At the time of fall data collection, Paintsville Lake water level was 2.1 feet below typical summer pool (Table 1). Due to this, areas of shoreline that usually have more shallow water vegetation were not available and likely affected catch rates of young-of-year black bass which typically seek refuge in bank line vegetation. Average relative weight (W_r) for bass ≥ 15.0 in was good (96), falling only slightly below the 2022 average (98). On the other hand, W_r for 12.0- to 14.9-in fish remains marginal and W_r for 8.0- to 11.9-in fish decreased significantly (77; Table 101). Currently, there is no evidence suggesting that the initial stocking of Threadfin Shad had any benefit to the condition of Largemouth Bass going into the fall. The 12.0- to 15.0-in slot length limit for Largemouth Bass was replaced with a minimum length limit of 12.0 in beginning 1 March 2019. The slot length regulation was in effect for 17 years (2002-2018).

Paintsville Lake is an aging reservoir with limited habitat currently available to fish populations lake wide. Angler requests for lake enhancements support the need for fish habitat improvement projects at this location. EFD staff began implementing improvements during the summer of 2022 in a cooperative effort with a local group of anglers. A total of 59 pallet/tree structures and 10 experimental “Shelbyville Cube” PVC structures were added to the lower, middle, and upper sections of the lake. The cooperative effort of habitat improvement continued in 2023 with the purchase, construction, and deployment of 100 artificial “PVC Trees” in front of the handicap accessible walkway near the marina boat ramp. Materials were purchased with donations from the County and local angler groups.

Walleye

Walleye broodfish collection was conducted in February and March; no females were collected. Gill nets were used in November to evaluate the walleye population in Paintsville Lake. A total of only 3 Walleye were collected in 7 net-nights.

The lake received a stocking of 10,000 Rainbow Trout (9.5 in) during February and 10,000 Brown Trout (8.1 in) in March. Due to production shortages at the hatchery, no Walleye were available for stocking Paintsville Lake in 2023. Surplus blacknose Black Crappie (27,560) were stocked in July (1.6 in).

The tailwater trout fishery received approximately 8,000 Rainbow Trout from April to July. Due to low water conditions at the lake, there were insufficient outflows to the tailwater for the remainder of the year to allow fall stockings. Due to an increase in temperature in the tailwater, the Brown Trout stocking was permanently removed beginning in 2020.

Yatesville Lake

Black Bass

Spring nocturnal electrofishing studies were conducted in the upper and lower sections of the lake during April 2023 to assess the black bass populations at Yatesville Lake. Length distribution and CPUE are presented in Tables 102 and 103. The overall largemouth CPUE of 178.0 fish/hr was consistent with catch rates collected in the spring of 2022 and above the lake's historical average of 139.1 fish/hr for the second year in a row. Bass size structure indices were consistent with previous years and were within acceptable ranges (PSD=37; RSD₁₅=18; Table 104). The population assessment scored a rating of "Good" for Largemouth Bass in 2023 (Table 105). Recruitment of age-1 fish to the population remains high. This lake has been experiencing an expansion of curly leaf pond weed for the last 3 years that is providing additional protection for small, young-of-year bass throughout the fall and early winter. Due to heavy angling pressure via tournaments from spring into fall, the population is monitored closely.

Fall nocturnal electrofishing was completed in October to determine year-class strength of Largemouth Bass and to record length frequency data for all black bass species (Tables 106 and 107). Largemouth Bass made up nearly all the fall sample (97.2%). The total fall catch rate was well below the spring catch rate with significantly fewer fish greater than 15.0 in collected during this survey as compared to the spring survey (Table 106). Age-0 overall CPUE (32.3 fish/hr) and age-0 \geq 5.0 in CPUE (6.0 fish/hr) shows that the 2023 year class was below average (59.2 fish/hr and 30.7 fish/hr, respectively; Table 107). These values indicate the potential for lower overwinter survival of young-of-year fish; however, the upper lake sections had more turbid water conditions at time of sample, limiting visibility. The catch rate of young Largemouth Bass may have been impacted by these conditions. Relative weight (W_r) values for Largemouth Bass collected during the October sample are shown in Table 108. Average relative weight for Largemouth Bass \geq 15.0 in was acceptable (95) but lower than the previous fall sample (99). A small number of additional Largemouth Bass DNA samples for genetic analysis were collected as fin clips in February.

A total of 22,800 (5.5-in) Blue Catfish were stocked in the lake in October. Rainbow Trout were stocked in the tailwater of Yatesville Lake in April-May and October-November (750 fish each month).



Figure 1: Distribution of Creel interviews collected at Buckhorn Lake in 2023 (N=499).

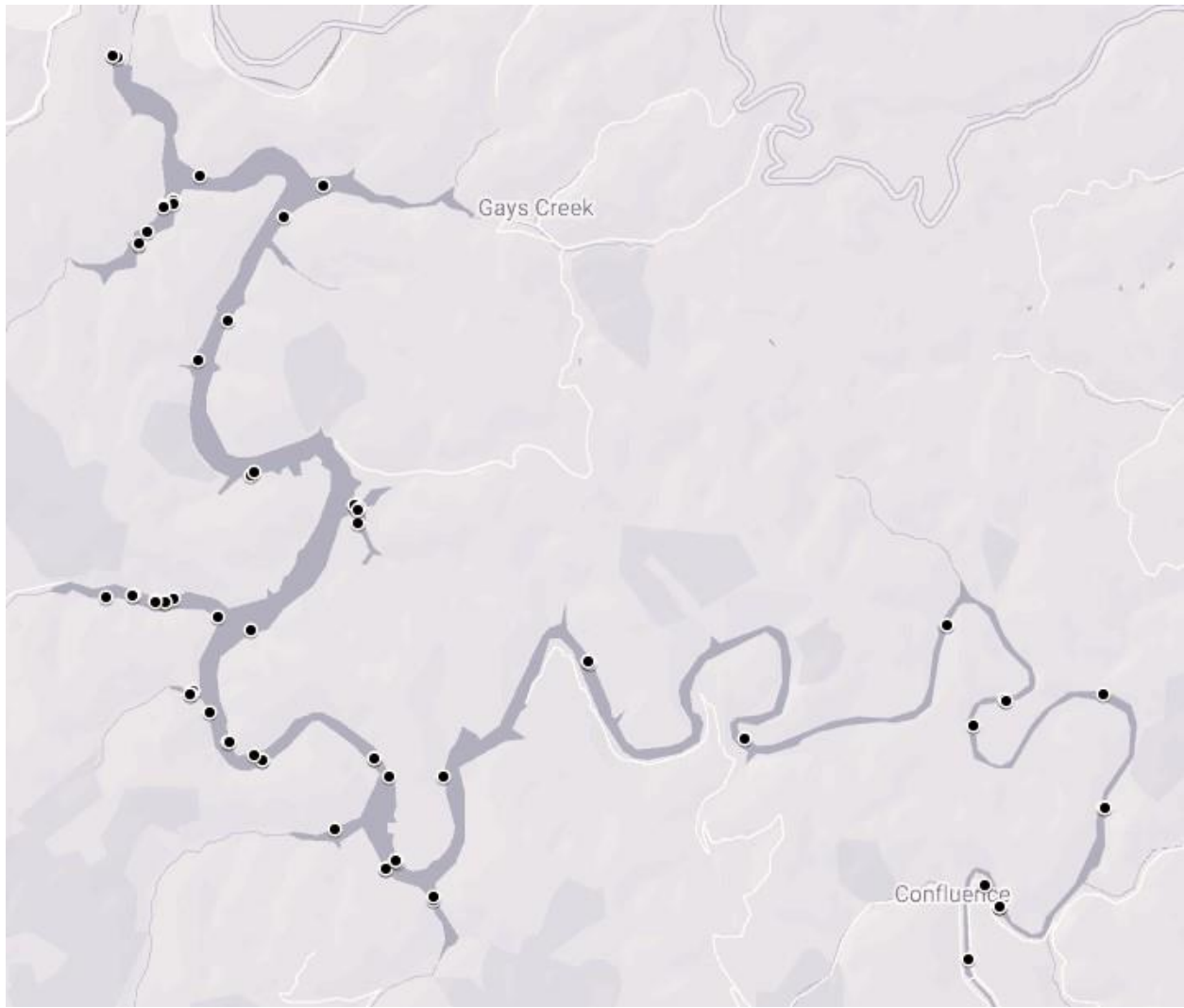


Figure 2. Distribution of Angler Attitude Surveys collected at Buckhorn Lake in 2023 (N=77).

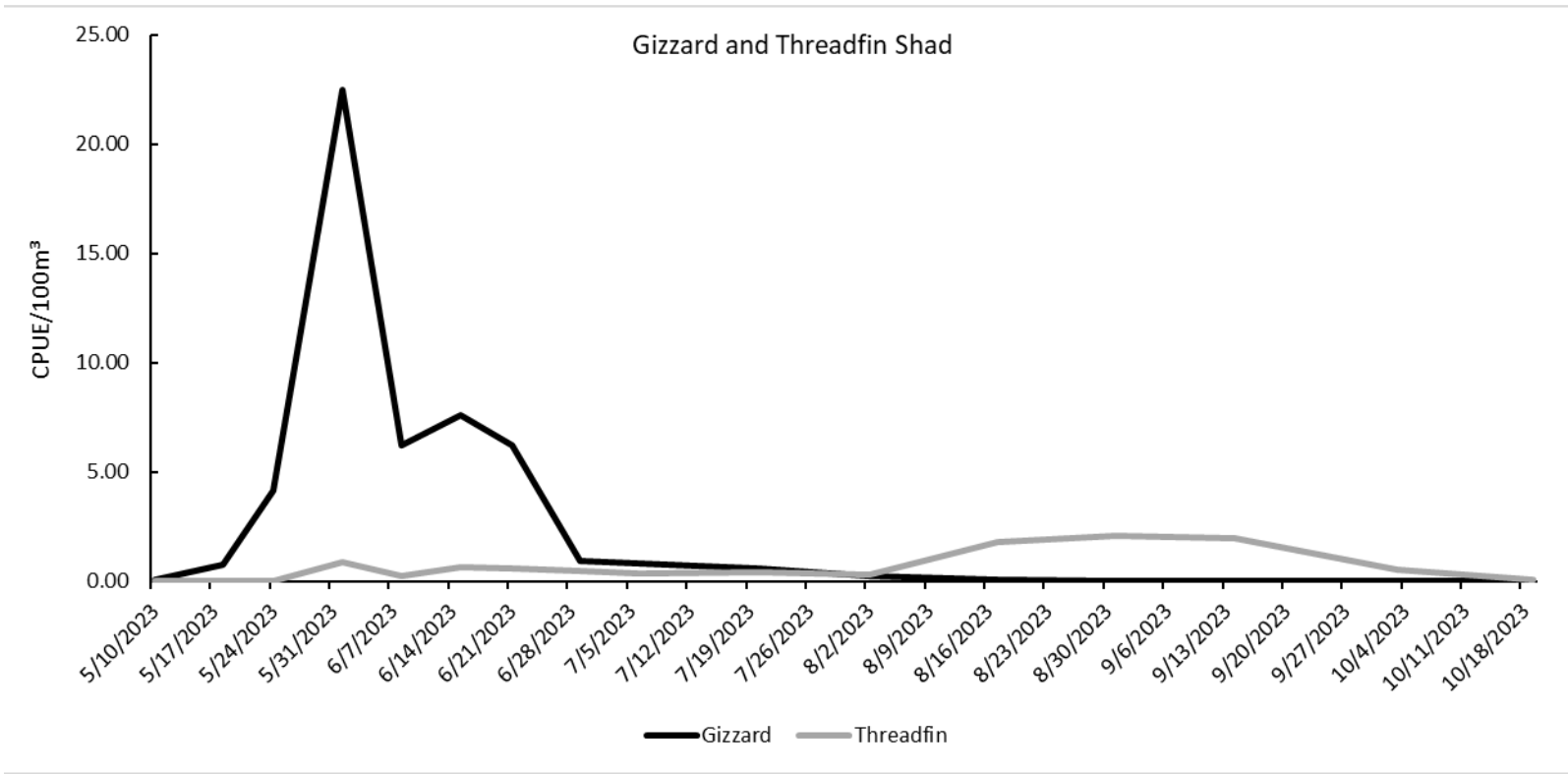


Figure 3. Catch rates (CPUE) of larval Gizzard and Threadfin shad collected by 1000M Neuston net on Paintsville Lake in 2023. Nocturnal samples were collected weekly from May 10 - July 6, then every two weeks through October 19. This data does not necessarily reflect timing of weekly spawns as specific ages are unknown. Catch rates reflect the density of larval shad ≤ 28 mm by species at time of sample. Juvenile shad ≥ 28 mm are far less vulnerable to the gear and are not frequently collected. Threadfin shad were stocked on 13 April 2023. Last prior stocking occurred in 1994.

Table 1. Summary of 2023 sampling conditions by waterbody, species sampled, and date.

Water body	Species	Date	Time (24hr)	Gear	Weather	Water	Water	Secchi (in)	Pertinent sampling comments ^{a,b}
						Temp (°F)	level (elev ft)		
Buckhorn Lake	Muskie	7-Feb	1100	shock	pt. cloudy	40.4	757.7	26	outflow : 493 cfs; bp: 30.24; cond: 254; 1 boat; low er lake; w ater stained
Buckhorn Lake	LMB	11-May	2000	shock	pt. cloudy	75.1	782.0	87	outflow : 279 cfs; bp: 30.04; cond: 363; 2 boats; w ater clear
Buckhorn Lake	LMB	26-Sep	2000	shock	pt. cloudy	78.5	781.8	58	outflow : 40 cfs; bp: 30.07; 2 boats; YOY, Wr; w ater clear
Buckhorn Lake	Crappie	11/20-11/22	1000	trap net	cloudy	53.0	766.3	24	outflow : variable 237-168 cfs; bp: 30.12; 10 nets upper; 7 nets low er; A&G, Wr; w ater muddy
Carr Creek Lake	Walleye	6-Mar	1000	shock	clear/sunny	56.6	1017.5	14	broodfish collection; bp: 30.13; cond: 340; 2 boats; w hole lake; w ater muddy
Carr Creek Lake	Walleye	8-Mar	1000	shock	pt. cloudy	52.5	1017.4	11	broodfish collection; bp: 30.47; cond: 356; 2 boats; w hole lake; w ater muddy
Carr Creek Lake	Crappie	10-Apr	1000	shock	clear	58.6	1022.7	27	outflow : 32 cfs; bp: 30.44; cond: 363; 1 boat; upper lake; w ater turbid; A&G
Carr Creek Lake	Crappie	12-Apr	1000	shock	clear	60.8	1023.0	53	outflow : 12 cfs; bp: 30.22; cond: 408; 1 boat; low er lake; w ater stained; A&G
Carr Creek Lake	LMB	2-May	2000	shock	cloudy/w indy	62.1	1025.7	103	outflow : 8 cfs; bp: 29.65; cond: 517; 2 boats; w ater clear
Carr Creek Lake	LMB	27-Sep	2000	shock	pt. cloudy	75.3	1027.8	108	outflow :5 cfs; bp: 30.1; cond: 690; 2 boats; w ater clear; YOY, Wr
Cranks Creek Lake	LMB	26-Apr	2000	shock	clear	62.7	normal	70	bp: 30.07; cond: 226; 1 boat; w hole lake; w ater clear
Cranks Creek Lake	LMB	12-Oct	2000	shock	clear	65.0	normal	dark	bp: 29.94; cond: 275; 1 boat; w hole lake; w ater clear; YOY, Wr
Dew ey Lake	Muskie	4-Jan	1000	shock	cloudy/lt. rain	44.6	645.9	64	outflow : 217 cfs; bp: 29.76; cond: 460; 1 boat; low er lake; w ater clear
Dew ey Lake	LMB	19-Apr	2000	shock	clear	67.2	650.5	52	outflow : 191 cfs; bp: 30.02; cond: 447; 2 boats; w hole lake; w ater clear
Dew ey Lake	Catfish	23-Aug	1000	shock	sunny	83.6	650.4	106	outflow : 21 cfs; bp: 30.12; cond: 562; 1 boat; upper lake; exploratory low pulse
Dew ey Lake	LMB	25-Sep	2000	shock	cloudy	75.8	650.5	72	outflow : 33 cfs; bp: 30.06; cond: 608; 2 boats; YOY, Wr; w ater clear
Dew ey Lake	LMB	17-Oct	1000	shock	cloudy	64.8	650.5	79	outflow : 14.7 cfs; bp: 30.11; cond: 605; 1 boat; YOY, Wr; w ater clear (2nd visit)
Fish Pond	LMB	17-Apr	2000	shock	w indy	62.4	normal	dark	bp: 29.78; cond: 578; 1 boat; w hole lake; w ater turbid
Fishtrap	LMB	20-Apr	2000	shock	pt.cloudy	70.3	757.5	53	outflow : 319.5 cfs; bp: 30.10; cond: 575; 2 boats; w ater clear; A&G, DNA collection
Fishtrap	LMB	5-Oct	2000	shock	cloudy	76.4	757.0	68	outflow : 85.2 cfs; bp: 29.97; cond: 742; 2 boats; w ater clear; YOY, Wr
Fishtrap	Crappie	11/27-12/6	1000	trap net	cloudy/w indy	48.0	742.3	25	outflow : variable 108 - 936 cfs; bp: 30.08; middle/low er lake; w ater turbid; A&G, Wr
Fishtrap	HSB	12/6-12/7	1000	gill net	coudy/lt. w ind	46.1	735.4	56	outflow : variable 141-104 cfs; low er lake; 3-250ft exp. nets; w ater stained; A&G, Wr
Martins Fk Lake	LMB	26-Apr	2000	shock	clear	64.3	1307.4	58	outflow : minimum; bp: 30.07; cond: 175; 1 boat; w hole lake; w ater clear; Walleye
Martins Fk Lake	LMB	12-Oct	2000	shock	clear	71.1	1308.8	82	outflow : minimum; bp: 29.83; cond: 197; 1 boat; w ater clear; YOY, Wr, Walleye
Paintsville Lake	LMB/WAE	8-Feb	1000	shock	cloudy	44.8	709.5	120	outflow : 223.2 cfs; bp: 30.32; cond: 112; 1 boat; WE broodstock, LMB DNA/A&G, w ater chem
Paintsville Lake	LMB/WAE	7-Mar	1000	shock	pt.cloudy/w indy	52.8	709.5	11	outflow : 28.5 cfs; bp: 30.07; cond: 88; 2 boats; WE broodstock, w ater muddy; LMB DNA/A&G
Paintsville Lake	LMB/WAE	10-Mar	1000	shock	cloudy/lt. rain	48.9	709.3	25	outflow : 331.0 cfs; bp: 29.89; cond: 131; 1 boat; w ater muddy; WE broodstock, LMB DNA/A&G
Paintsville Lake	LMB	24-Apr	2000	shock	clear	61.6	710.0	56	outflow : 181.9 cfs; bp: 30.13; cond: 109; 2 boats; w ater clear
Paintsville Lake	Shad	5/10-10/19	2000	neuston	variable	63-83	variable	var	w eekly nocturnal ichthyoplankton net tow s; 2 runs-each section, U, M, L; 16 total sample nights
Paintsville Lake	LMB	10-Oct	2000	shock	clear	67.8	707.8	58	outflow : 27.0 cfs; bp: 29.81; cond: 139; 2 boats; w ater turning over; YOY, Wr
Paintsville Lake	Walleye	7-Nov	1000	gill net	cloudy	57.1	707.3	166	outflow : 14.9 cfs; bp: 30.01; 7-150ft exp. nets; w ater clear
Pikeville City Lake	LMB	18-Apr	1000	shock	clear	64.1	normal	32	cond: 420; bp: 29.98 ; 1 boat, 7.5min runs; w ater turbid
Yatesville Lake	LMB	10-Feb	1000	shock	cloudy	42.0	624.5	35	outflow : 69.8 cfs; bp: 30.25; 1 boat; w ater turbid; DNA collection
Yatesville Lake	LMB	25-Apr	2000	shock	clear	64.3	630.4	66	outflow : 111.8 cfs; bp: 30.11; cond: 140; 2 boats; w ater clear(L), murky(U)
Yatesville Lake	LMB	4-Oct	2000	shock	cloudy	76.3	629.6	78	outflow : 27.1 cfs; bp: 30.19; cond: 186; 2 boats; w ater clear; YOY, Wr

^a cond = conductivity in µS/cm

^b bp = barometric pressure in inches

L= lower lake

U= upper lake

Table 2. Length frequency and electrofishing CPUE (fish/hr) of Muskellunge collected during spring sampling on Buckhorn Lake from 1998-2023. Results from 2003 are from fall electrofishing.

Year	Inch class																																						Total	CPUE	SE
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47			
2023			2	1	4	3						1		2	1	1											1				1	17	7.6	1.2							
2022				4																								1				1	6	2.7	1.0						
2021																																									
2020			2	7	3	2												1			1				1				2		1	20	11.4	4.6							
2019				1							1	1									1	1				1	2	8	3.6	2.2											
2018	1	1			3				1				1	1							2		1		1	2	14	3.1	0.9												
2017		3	7	1					1				1	1						2	2	1	1						2	22	6.8	1.1									
2016				2	2	4						2	1	2			1						1	1		1	1		1	1	21	7.0	3.3								
2015																																									
2014		1	2	1	6	2						1	2	1	4								1		1					1	1	2	26	7.4	1.9						
2013			3	6	3							1												1	1		1											16	4.3	0.9	
2012		1		1	8	20	2					1	2	1	6	1	1						1		2		1	3	2	2	1		1	57	13.4	1.8					
2011			4	5	17	14	3					2		3	3	1					1		3	1	3		3	2	1	1		1			1	69	12.6	2.7			
2010			1	4	13	18		1	1	1	1		6	6	10	6	1		2	3	2	1	3	2	1	2	1	2	1	4	3	1	1				1	96	12.9	1.6	
2009	1			2	4	11	12	6					1		1	3	2	3	1	1		1	1	4	3	3	3		1	2				1	1	68	17.6	3.4			
2008				2	6	10	6	1						1	1	3				1		1	5	2			1			1			1			1	43	8.3	1.6		
2007					1	1	2	1					2	3	6	2		1			1		2		1	2		1	2		1	1			1	1	32	13.7	4.5		
2006			1	8	10	6								1	2	3					1	1		1	3	2	1	1	1	1	1	1	1	1				45	14.2	2.2	
2005					4	5	2					1		2	2							1		1			2	1	1	3		1				1	27	6.3	1.7		
2004			2	9	23	16	2				1		6	7	19	9					3	5	6	6	6	4	5	7	5	8	3	1	1			1	155	16.7	2.1		
2003	1		5	2	1	1								2	1	1		1	1	2	1	1				1										1	22	7.1	1.9		
2002							1						2	1							3	1		1		2			1	12	6.0	0.8									
2001					4	1	1				1		1										1		1	1		1								1	13	3.2	0.7		
2000		1	3	2	3	1							4					1	2		7	1		1	1		2	1			1	31	8.2	0.5							
1999		1	1	2	3	3	1		1	3	6	6	11	4	4	3				3	2	1		2	1		1										59	10.9	4.4		
1998	1	1	2	7	4	1	1			1	4	3	1	1	1					1		1	1				1	1		1	1	33	6.6	2.9							

EFDBLMSS.D98-D10, D12, D14, D16-D20, D22-D23

LFRBHLSP.D11, D13

Table 3. Number of fish and mean relative weight (W_r) for each length group of Muskellunge collected at Buckhorn Lake (710 acres) by spring electrofishing from 2003-2023. Standard errors are in parentheses.

Year	Length group								Total	
	≤19.9 in		20.0-29.9 in		30.0-37.9 in		≥38.0 in		No.	W_r
2023	10	84 (3)	5	90 (1)	1	126 (<1)	1	109 (<1)	17	90 (3)
2022	4	95 (4)	0	0 (0)	0	0 (0)	1	117 (0)	5	100 (5)
2021	no sample									
2020	14	82 (1)	1	92 (<1)	4	93 (2)	1	102 (<1)	20	86 (2)
2019	1	72 (<1)	2	91 (1)	0		5	92 (3)	8	89 (3)
2018	4	83 (4)	2	91 (4)	6	95 (3)	0		12	90 (3)
2017	0		5	81 (5)	4	84 (1)	2	98 (2)	11	85 (3)
2016	4	78 (5)	6	87 (2)	4	91 (3)	3	96 (2)	17	87 (2)
2014	2	79 (1)	8	95 (2)	2	93 (4)	3	92 (1)	15	92 (2)
2013	0		1	73 (<1)	3	96 (2)	0		4	90 (6)
2012	22	82 (1)	12	91 (3)	8	96 (3)	4	92 (1)	46	88 (1)
2011	11	79 (1)	10	85 (2)	13	92 (2)	3	92 (4)	37	87 (1)
2010	20	79 (1)	33	94 (1)	15	96 (1)	10	97 (4)	78	91 (1)
2009	29	78 (1)	12	96 (4)	15	94 (3)	5	90 (4)	61	86 (2)
2008	16	83 (2)	6	98 (3)	9	96 (2)	3	97 (1)	34	90 (2)
2007	4	87 (2)	14	95 (2)	7	100 (2)	6	91 (5)	31	94 (1)
2006	6	90 (1)	6	106 (2)	9	94 (2)	5	93 (<1)	26	95 (2)
2005	7	75 (5)	5	93 (4)	4	94 (2)	7	93 (2)	23	87 (3)
2004	10	58 (3)	15	69 (5)	19	78 (5)	4	98 (4)	48	73 (3)
2003	1	73 (<1)	6	88 (3)	5	98 (2)	1	73 (<1)	13	89 (3)

EFDBLMSS.D03-D20, D-23

Table 4. Population assessment for Muskellunge from Buckhorn Lake (1,230 acres) captured during spring electrofishing from 2009-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year												
	2009	2010	2011	2012	2013	2014	2016	2017	2018	2019	2020	2022	2023
CPUE age 1	4 (9.3)	3 (5.1)	4 (7.8)	4 (7.5)	2 (3.2)	2 (3.4)	2 (2.7)	2 (3.4)	1 (1.1)	1 (0.5)	4 (8.0)	1 (1.8)	3 (4.5)
CPUE \geq 20.0 in	4 (7.7)	4 (7.8)	2 (4.7)	3 (5.9)	1 (1.1)	2 (4.0)	2 (4.3)	1 (3.4)	1 (1.8)	1 (3.1)	1 (3.4)	1 (0.9)	1 (3.1)
CPUE \geq 30.0 in	4 (4.7)	3 (3.4)	2 (2.9)	2 (3.1)	1 (0.8)	1 (1.7)	2 (2.3)	1 (1.9)	1 (1.3)	2 (2.2)	2 (2.9)	1 (0.9)	1 (0.9)
CPUE \geq 36.0 in	3 (1.8)	3 (1.7)	2 (1.1)	4 (2.1)	1 (0.3)	2 (1.1)	3 (1.3)	1 (0.6)	1 (0.4)	2 (0.9)	3 (1.7)	2 (0.9)	2 (0.9)
CPUE \geq 40.0 in	4 (1.0)	3 (0.4)	3 (0.4)	2 (0.2)	1 (0.0)	4 (0.9)	2 (0.3)	1 (0.0)	1 (0.0)	1 (0.0)	3 (0.6)	1 (0.0)	3 (0.4)
Total score	19	16	13	15	6	11	11	6	5	7	13	6	10
Assessment	Exc	Good	Good	Good	Poor	Fair	Fair	Poor	Poor	Poor	Good	Poor	Fair

EFDBLMSS.D09-D14, D16-D20, D22-D23

LFRBHLSP.D11, D13

Table 5. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in approximately 2.5 hours of 15-minute nocturnal electrofishing runs at Buckhorn Lake (1,230 acres) on 11 May 2023.

Area	Species	Inch class												Total	CPUE	SE	
		4	5	6	7	8	9	10	11	12	13	14	15				16
Lower	Largemouth Bass	3	3	1		1	8	14	8	19	12	8	2	2	81	64.8	4.8
Upper	Largemouth Bass		3	6	5	3	8	16	12	16	11	8			88	70.4	10.9
Total	Largemouth Bass	3	6	7	5	4	16	30	20	35	23	16	2	2	169	67.6	5.7

EFDBLLSS.D23

Table 6. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Buckhorn Lake (1,230 acres) from 2003-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	8.4	0.2	28.0	2.5	29.6	3.4	1.6	0.9	0.0	0.0	67.6	5.7
2022	35.6	7.6	61.8	6.3	28.9	5.2	2.7	0.9	0.4	0.4	128.9	14.7
2021	32.5	12.5	38.0	7.0	22.5	5.1	2.0	1.1	0.0	0.0	95.0	15.2
2020	no sample											
2019	40.0	11.6	56.0	4.3	26.7	3.8	5.3	0.8	2.0	0.9	128.0	16.6
2018	46.4	7.0	59.2	6.4	28.4	4.0	2.8	1.3	0.4	0.4	136.8	11.3
2017	91.3	19.9	40.0	4.3	34.7	7.1	8.7	2.4	0.7	0.7	174.7	19.7
2016	no sample											
2015	56.4	6.0	29.8	5.2	27.1	5.3	3.6	1.2	0.9	0.6	116.9	9.1
2014	9.3	3.4	25.3	6.3	6.0	1.7	2.7	1.3	0.0		43.3	9.9
2013	no sample											
2012	32.5	6.3	26.5	5.3	7.5	0.9	3.5	1.2	0.5	0.5	70.0	8.3
2011	no sample											
2010	21.2	4.5	31.8	6.6	18.3	3.7	10.7	2.6	0.4	0.4	82.0	11.7
2009	41.2	3.5	32.0	7.7	17.2	4.8	14.5	3.0	0.0		104.8	13.2
2008	14.8	5.5	27.0	7.2	21.4	3.3	13.8	1.8	0.0		77.0	12.0
2007	14.5	4.3	26.0	2.7	20.5	3.3	14.0	2.4	0.5	0.5	75.0	6.0
2006	14.2	2.2	35.2	4.6	40.5	5.1	15.2	3.4	0.3	0.3	105.1	11.0
2005	17.0	3.5	45.0	5.1	38.3	5.5	8.3	1.2	0.3	0.3	108.7	7.9
2004	38.0	6.2	51.7	6.5	29.3	4.2	4.3	1.2	0.0		123.3	11.6
2003	22.7	3.5	18.7	2.3	28.3	3.8	6.3	1.2	0.0		76.0	6.9

EFDBLLSS.D03-D23

Table 7. PSD and RSD₁₅ values for Largemouth Bass in each area of Buckhorn Lake (1,230 acres) on 11 May 2023. Numbers in parentheses are 95% confidence intervals.

Area	Species	≥ Stock size	PSD	RSD ₁₅
Lower	Largemouth Bass	74	58 (47-69)	5 (0-11)
Upper	Largemouth Bass	74	47 (47-69)	0
Total	Largemouth Bass	148	53 (45-61)	3 (0-5)

EFDBLLSS.D23

Table 8. Population assessment for Largemouth Bass collected during spring at Buckhorn Lake (1,230 acres) from 2009-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year										
	2009	2010	2012	2014	2015	2017	2018	2019	2021	2022	2023
Mean length age 3 at capture	3 (13.3)	3 (13.3)	3 (13.3)	2 (12.1)	2 (12.1)	2 (12.1)	2 (12.1)	2 (12.1)	2 (11.7)	2 (11.7)	2 (11.7)
Spring CPUE age 1	4 (43.8)	3 (26.1)	3 (36.1)	1 (8.7)	4 (56.0)	4 (90.7)	4 (48.4)	4 (48.7)	3 (37.5)	4 (44.9)	1 (10.8)
Spring CPUE 12.0-14.9 in	2 (17.2)	2 (18.3)	1 (7.5)	1 (6.0)	3 (27.1)	4 (34.7)	3 (28.4)	3 (26.7)	2 (22.5)	3 (28.9)	3 (29.6)
Spring CPUE \geq 15.0 in	3 (14.5)	2 (10.7)	1 (3.5)	1 (2.7)	1 (3.6)	2 (8.7)	1 (2.8)	1 (5.3)	1 (2.0)	1 (2.7)	1 (1.6)
Spring CPUE \geq 20.0 in	1 (0.0)	2 (0.4)	2 (0.5)	1 (0.0)	3 (0.9)	3 (0.7)	2 (0.4)	4 (2.0)	1 (0.0)	2 (0.4)	1 (0.0)
Total score	13	12	10	6	13	15	12	14	9	12	8
Assessment rating	Good	Fair	Fair	Poor	Good	Good	Fair	Good	Fair	Fair	Poor
Instantaneous mortality (z)	0.64	0.73	0.77								
Annual mortality (A)	47.40	51.80	54.90								

EFDBLLSS.D06-D10, D12, D14-D19, D21-D23

EFDBLLAS.D04, D09

EFDBLLAF.D20

Table 9. Length frequency and CPUE (fish/hr) of Largemouth Bass collected in approximately 2.50 hours of 15-minute electrofishing runs at Buckhorn Lake (1,230 acres) on 26 September 2023.

Area	Species	Inch class															Total	CPUE	SE
		3	4	5	6	7	8	9	10	11	12	13	14	15	17	20			
Lower	Largemouth Bass	5	38	23	9	2	1	9	4	6	9	7	6	2		1	122	97.6	14.0
Upper	Largemouth Bass	29	55	34	37	4		2	9	6	10	13	5		1		205	164.0	13.2
Total	Largemouth Bass	34	93	57	46	6	1	11	13	12	19	20	11	2	1	1	327	130.8	14.3

EFDBLLSF.D23

Table 10. Indices of year class strength at age 0 and age 1 and mean length (in) of age-0 Largemouth Bass collected by nocturnal electrofishing during 2002-2023 at Buckhorn Lake (1,230 acres).

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	5.0	0.1	92.8	13.8	42.0	9.1		
2022	5.0	0.1	97.2	24.3	48.0	11.1	10.8	2.5
2021	4.9	0.1	58.8	9.3	26.4	3.6	44.9	7.6
2020	4.8	0.1	50.9	6.2	22.9	2.6	37.5	12.2
2019	4.4	0.1	119.3	14.6	28.7	6.0	no spring sample	
2018	4.7	0.1	114.5	29.8	44.5	9.1	48.7	12.2
2017	4.6	0.1	161.6	20.1	49.6	9.4	48.4	7.9
2016	5.0	<0.1	169.7	44.0	85.7	23.9	90.7	20.0
2015	4.2	0.1	80.0	15.9	17.6	2.0	no spring sample	
2014	4.4	0.1	86.5	24.9	26.5	8.6	56.0	6.0
2013	4.1	0.1	68.8	10.8	16.8	4.3	8.7	3.5
2012	5.0	0.2	39.0	9.6	21.0	7.2	no spring sample	
2011	4.5	0.1	126.7	26.7	42.0	10.0	36.1	6.5
2010	4.3	0.1	67.0	5.0	22.5	5.8	no spring sample	
2009			no fall sample				26.1	5.2
2008	4.9	0.1	21.4	3.7	9.9	2.3	43.8	3.5
2007	4.5	0.2	18.8	6.4	9.6	3.4	11.2	3.8
2006	4.2	0.2	17.6	4.1	5.3	1.9	13.0	3.7
2005	4.0	0.2	44.7	6.6	10.0	3.5	11.2	2.1
2004	3.6	<0.1	176.7	34.0	9.3	4.6	16.3	3.5
2003	4.7	0.5	106.0	13.8	39.7	4.6	35.5	5.4
2002	4.5	0.1	99.3	7.4	38.7	2.6	19.2	3.3

EFDBLLSF.D02-D08, D10-D23

EFDBLLAS.D04, D09

EFDBLLAF.D20

EFDBLLSS.D02-D23

Table 11. Number of fish and mean relative weight (W_r) for length groups of Largemouth and Spotted bass collected at Buckhorn Lake during September 2023. Standard errors are in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		≥15.0 in	
		No.	W_r	No.	W_r	No.	W_r
Largemouth Bass	Lower	20	87 (1)	22	91 (1)	3	83 (8)
	Upper	45	86 (2)	17	88 (2)	28	85 (2)
	Total	37	87 (1)	50	87 (1)	3	83 (8)
Smallmouth Bass	Lower	0	0 (0)	0	0 (0)	0	0 (0)
	Upper	1	98 (0)	0	0 (0)	0	0 (0)
	Total	1	98 (0)	0	0 (0)	0	0 (0)

EFDBLLSF.D23

Table 12. Length frequency and CPUE (fish/nn) for White Crappie collected at Buckhorn Lake (1,230 acres) in 17 net-nights, 21-22 November 2023.

Inch class												Total	CPUE	SE
2	3	4	5	6	7	8	9	10	11	12				
177	856	70	113	90	149	210	94	59	21	14	1853	109.0	23.9	

EFDBLCTF.D23

Table 13. PSD and RSD_{10} values calculated for White Crappie collected in trap nets at Buckhorn Lake (1,230 acres) on 20-22 November 2023; 95% confidence intervals are in parentheses.

≥ Stock size	PSD	RSD_{10}
750	53 (50-57)	13 (10-15)

EFDBLCTF.D23

Table 14. Mean back-calculated length (in) at each annulus for White Crappie collected from Buckhorn Lake (1,230 acres) November 2023, including the length range of crappie at each age and the 95% confidence intervals for each age group.

Year class	No.	Age						
		1	2	3	4	5	6	7
2022	30	4.6						
2021	25	4.4	7.0					
2020	6	4.0	6.6	8.6				
2019	12	4.6	6.6	8.3	9.8			
2018	8	4.6	6.4	7.7	9.1	10.3		
2017	2	3.8	6.0	7.5	8.5	9.7	10.5	
2013	4	4.2	5.7	7.3	8.3	9.4	10.3	11.2
Mean		4.5	6.7	8.0	9.2	9.9	10.4	11.2
Number		87	57	32	26	14	6	4
Smallest		3.3	5.3	6.6	7.4	8.1	8.9	9.6
Largest		5.6	8.2	9.8	11.2	11.2	11.1	12.1
SE		0.1	0.1	0.1	0.2	0.2	0.3	0.6
95% CI LO		4.4	6.5	7.8	8.9	9.5	9.7	10.1
95% CI HI		4.6	6.8	8.3	9.6	10.4	11.0	12.4

Intercept = 0

EFDBLCAF.D23

Table 15. Age frequency and CPUE (fish/nn) of White Crappie collected by trap netting for 17 net-nights at Buckhorn Lake (1,230 acres) 20-22 November 2023.

Age	Inch class											Total	Age%	CPUE	SE	
	2	3	4	5	6	7	8	9	10	11	12					
0	177	856	58	8									1099	59	64.6	15.2
1			12	105	90	25							232	13	13.7	3.1
2						124	191	52					367	20	21.6	5.8
3								21	15	5			41	2	2.4	0.5
4							19	10	22	5	7		63	3	3.7	0.8
5								10	7	9	3		29	2	1.8	0.4
6									7	2			9	1	1.0	0.1
7									7		4		11	1	1.0	0.1
Total	177	856	70	113	90	149	210	93	58	21	14		1851	100		
%	10	46	4	6	5	8	11	5	3	1	1		100			

CPUE of ≥ 8.0 in (quality size) = 23.5 fish/nn

CPUE of ≥ 10.0 in (preferred size) = 5.5 fish/nn

EFDBLCAF.D23

EFDBLCTF.D23

Table 16. Population assessment for White Crappie collected from Buckhorn Lake (1,230 acres) from 2006-2023. Actual values are in parantheses. Scoring based on statewide assessment.

Parameter	Year										
	2006	2007	2008	2010	2011	2013	2015	2017	2019	2021	2023
CPUE age 1 and older	4 (191.4)	4 (32.5)	4 (60.7)	4 (54.0)	4 (299.7)	4 (52.1)	4 (54.6)	4 (42.2)	4 (27.4)	4 (125.9)	4 (102.2)
CPUE age 1	4 (58.6)	2 (3.0)	4 (14.5)	4 (32.9)	4 (155.8)	4 (28.4)	4 (12.3)	4 (8.6)	3 (6.5)	4 (21.9)	3 (6.5)
CPUE age 0	4 (29.8)	2 (0.6)	2 (0.4)	4 (22.3)	4 (51.0)	4 (50.0)	4 (10.0)	4 (20.7)	4 (6.8)	4 (49.6)	4 (6.8)
CPUE \geq 8.0 in	4 (17.8)	3 (5.5)	3 (5.9)	4 (12.6)	4 (54.7)	4 (10.9)	4 (27.3)	4 (15.3)	4 (14.0)	4 (74.4)	4 (23.5)
Mean length age 2 at capture	1 (7.1)	1 (6.3)	1 (6.3)	1 (7.7)	2 (8.2)	1 (6.9)	1 (7.2)	1 (7.5)	1 (7.4)	1 (6.0)	1 (8.1)
Total score	17	12	14	17	18	17	17	17	16	17	16
Assessment rating	Excellent	Fair	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Good	Excellent	Good
Instantaneous mortality (z)	1.52	1.74	1.03	0.87	0.98	0.89	0.61	0.88	0.87	0.89	0.66
Annual mortality (A)	78.00	82.50	64.40	58.20	62.40	59.30	45.90	58.40	58.20	59.1	48.5

EFDBLCTF.D06-D23
EFDBLCAF.D06-D23

Table 17. Fish harvest statistics derived from a daytime creel survey from 8 April - 30 October, 2023 at Buckhorn Lake (1,230 acres).

<u>Fishing trips</u>		
No. of fishing trips	3,059	
(per acre)	2.49	
<u>Fishing pressure</u>		
Total angler-hours (S.E.)	15,756	(363.44)
Angler-hours/acre	12.81	
<u>Catch/harvest</u>		
No. of fish caught (S.E.)	31,151	(2303.96)
No. of fish harvested (S.E.)	25,223	(2154.73)
Lb of fish harvested	13,431	
<u>Harvest rates</u>		
Fish/hour	1.47	
Fish/acre	20.51	
Lb/acre	10.92	
<u>Catch rate</u>		
Fish/hour	1.82	
Fish/acre	25.33	
<u>Miscellaneous characteristics (%)</u>		
Male	96.37	
Female	3.63	
Resident	98.39	
Non-resident	1.61	
<u>Method (%)</u>		
Still fishing	35.28	
Casting	44.56	
Trolling	19.96	
<u>Mode (%)</u>		
Boat	87.9	
Bank	8.47	
Kayak	2.02	

Table 18. Fish harvest statistics derived from a daytime creel survey at Buckhorn Lake (1,230 acres) from 8 April - 30 October 2023.

	Channel	Flathead		Smallmouth		Largemouth	White			
	Catfish	Catfish	Redear	Bluegill	Bass	Spotted Bass	Bass	Crappie	Muskie	White Bass
No. caught	133	139	88	2,649	33	2,753	3,238	21,095	478	500
per acre	0.11	0.11	0.07	2.15	0.03	2.24	2.63	17.15	0.39	0.41
No. harvested	117	123	88	2,545	16	863	947	20,053	37	390
per acre	0.10	0.10	0.07	2.07	0.01	0.70	0.77	16.30	0.03	0.32
% of total no. harvested	0.46	0.49	0.35	10.09	0.07	3.42	3.75	79.50	0.15	1.55
Lb harvested	189.9	285.2	12.1	407.0	31.7	1,318.1	2,011.7	7,937.6	897.0	331.9
per acre	0.15	0.23	0.01	0.33	0.03	1.07	1.64	6.45	0.73	0.27
% of total lb harvested	1.41	2.12	0.09	3.03	0.24	9.81	14.98	59.10	6.68	2.47
Mean length (in)	18.24	17.75	5.13	6.25	16.00	15.40	15.66	9.69	44.75	13.00
Mean weight (lb)	2.04	2.24	0.11	0.16	1.93	1.47	1.99	0.41	24.29	0.91

	Catfish	Panfish	Black bass	Crappie	Muskellunge	Morone	Anything
	group	group	group	group		group	
No. of fishing trips for that species	28	10	908	1381	369	9	353
% of all trips	0.92	0.33	29.69	45.15	12.07	0.31	11.53
Hours fished for that species	144.61	52.65	4,678.44	7,113.79	1,901.60	48.55	1,816.69
(per acre)	0.12	0.04	3.80	5.78	1.55	0.04	1.48
No. harvested fishing for that species	123	164	1,130	19,410	37	88	-
Lb harvested fishing for that species	351.50	27.00	2,134.70	7,688.40	896.40	67.40	-
No./hour harvested fishing for that species	0.51	2.00	0.21	2.76	0.02	1.13	-
% success fishing for that species	80.00	-	25.53	99.08	4.48	-	84.48

Table 19. Species composition and length distribution of each species of fish harvested (H) and released (R) from a daytime creel survey on Buckhorn Lake (1,230 acres) from 8 April - 30 October 2023.

Species		Inch class																																																
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	34	36	37	38	43	45	46												
Channel Catfish	H											23		12	12	35	23				12																													
	R																16																																	
Flathead Catfish	H												31	15	15			15	15	15			16																											
	R										16																																							
Bluegill	H		196	1406	854	89																																												
	R	26	52	25																																														
Redear Sunfish	H	18			53	16																																												
	R																																																	
Smallmouth Bass	H															16																																		
	R													16																																				
Spotted Bass	H											19	19	356	356	112																																		
	R									84	67	284	402	770	234	49																																		
Largemouth Bass	H														309	419	146	36	36																															
	R							34	168	67	101	51	371	421	792	236	17	33																																
White Crappie	H						11650	5698	1792	812	101																																							
	R	19	37	112	353	484			19		17																																							
Muskellunge	H																																															12	12	13
	R																								14	28	14			14	28	28	71	14	28	14	71	28	14	57	18									
White Bass	H									30	120	75	15	90	60																																			
	R									55	18			37																																				

Table 20. Monthly black bass angling success at Buckhorn Lake (1,230 acres) from 8 April - 30 October 2023.

	Total no. caught	Total no. harvested	Hours fished by bass anglers	No. of black bass fishing trips	Bass harvested by bass anglers	Bass harvested/hour by bass anglers	Bass caught by bass anglers	Bass caught/hour by bass anglers
April	1,943	861	1,129	219	596	0.56	1,568	1.46
May	1,713	565	1,692	329	452	0.25	1,599	0.89
June	1,394	148	1,000	194	65	0.06	1,262	1.18
July	513	215	344	67	17	0.05	315	0.86
August	176	16	247	48	0	0.00	112	0.33
September	128	10	121	24	0	0.00	49	0.53
October	157	10	146	28	0	0.00	126	1.09
Total	6,024	1,825	4,679	909	1,130		5,031	
Mean						0.13		0.91

Table 21. Monthly crappie angling success at Buckhorn Lake (1,230 acres) from 8 April - 30 October 2023.

	Total no. caught	Total no. harvested	Hours fished by crappie anglers	No. of crappie fishing trips	Crappie harvested by crappie anglers	Crappie harvested/hour by crappie anglers	Crappie caught by crappie anglers	Crappie caught/hour by crappie anglers
April	6,977	6,425	2022	393	6,293	2.89	6,845	3.15
May	4,734	4,378	1387	269	4,314	3.22	4,669	3.48
June	3,312	3,230	921	179	2,968	3.12	3,050	3.21
July	3,658	3,658	1454	282	3,493	2.57	3,493	2.57
August	818	786	493	96	786	1.58	802	1.61
September	1,050	1,041	486	94	1,021	2.63	1,021	2.63
October	546	535	350	68	535	2.08	535	2.08
Total	21,095	20,053	7,113	1,381	19,410		20,415	
Mean						2.59		2.68

Table 22. Monthly panfish angling success at Buckhorn Lake (1,230 acres) from 8 April - 30 October 2023.

	Total no. caught	Total no. harvested	Hours fished by panfish anglers	No. of panfish fishing trips	Panfish harvested by panfish anglers	Panfish harvested/hour by panfish anglers	Panfish caught by panfish anglers	Panfish caught/hour by panfish anglers
April	949	949	0	0	0	0.00	0	0.00
May	452	452	0	0	0	0.00	0	0.00
June	1,082	1,082	53	10	164	2.00	164	2.00
July	99	99	0	0	0	0.00	0	0.00
August	64	0	0	0	0	0.00	0	0.00
September	79	39	0	0	0	0.00	0	0.00
October	11	11	0	0	0	0.00	0	0.00
Total	2,736	2,632	53	10	164		164	
Mean						0.29		0.29

Table 23. Monthly catfish (Channel) angling success at Buckhorn Lake (1,230 acres) from 8 April - 30 October 2023.

	Total no. caught	Total no. harvested	Hours fished by catfish anglers	No. of catfish fishing trips	Catfish harvested by catfish anglers	Catfish harvested/hour by catfish anglers	Catfish caught by catfish anglers	Catfish caught/hour by catfish anglers
Apr	22	22	0	0	0	0.00	0	0.00
May	48	48	68	13	32	0.57	32	0.57
Jun	66	49	53	10	32	0.50	48	0.75
Jul	0	0	0	0	0	0.00	0	0.00
Aug	48	32	0	0	0	0.00	0	0.00
Sep	88	88	24	5	59	0.50	59	0.50
Oct	0	0	0	0	0	0.00	0	0.00
Total	272	239	145	125	123		139	
Mean						0.22		0.26

Table 24. Monthly Muskellunge (muskie) angling success at Buckhorn Lake (1,230 acres) from 8 April - 30 October 2023.

	Total no. caught	Total no. harvested	Hours fished by muskie anglers	No. of muskie fishing trips	Muskie harvested by muskie anglers	Muskie harvested/ hour by muskie anglers	Muskie caught by muskie anglers	Muskie caught/ hour by muskie anglers
Apr	22	0	47	9	0	0.00	22	0.50
May	97	0	135	26	0	0.00	65	0.42
Jun	98	0	158	31	0	0.00	98	0.43
Jul	33	0	53	10	0	0.00	33	0.29
Aug	96	16	211	41	16	0.07	96	0.40
Sep	69	0	510	99	0	0.00	69	0.12
Oct	63	21	787	153	21	0.02	63	0.07
Total	478	37	1,901	369	37		446	
Mean						0.01		0.32

Table 25. Catch and harvest statistics derived from a creel survey at Buckhorn Lake (1,230 acres) for each species of black bass caught and released by all anglers from 8 April to 30 October 2023.

	Largemouth Bass				Spotted Bass				Smallmouth Bass			
	Harvest	Catch & release		Total	Harvest	Catch & release		Total	Harvest	Catch & release		Total
		<15.0 in	≥15.0 in			<15.0 in	≥15.0 in			<15.0 in	≥15.0 in	
Total number	947	523	1,499	3,238	863	753	1,053	2,753	16	16	0	33
% harvested by number	51.9				47.2				0.9			
Total weight (lb)	2011.7				1318.1				31.7			
% harvested by weight	59.9				39.2				0.9			
Mean length (in)	15.7				15.4				16.0			
Mean weight (lb)	1.99				1.47				1.93			
Rate (fish/hr)	0.052				0.046				0.001			

Table 26. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in approximately 2.5 hours of 15-minute nocturnal electrofishing samples at Carr Creek Lake (710 acres) on 2 May 2023.

Area	Species	Inch class																	Total	CPUE	SE	
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20
Lower	Smallmouth Bass					1		1												2	1.6	1.6
	Spotted Bass	1	2	1	1		3	1	4	2	1	1								17	13.6	1.6
	Largemouth Bass		14	18	14		59	55	57	17	22	22	7	7	4	1	2			299	239.2	12.0
Upper	Smallmouth Bass							1												1	0.8	0.8
	Spotted Bass	3	8	2	5	8	4	3	5											38	30.4	10.9
	Largemouth Bass		13	33	18	18	56	56	52	24	23	8	12	9	3	3	4	3	2	337	269.6	51.3
Total	Smallmouth Bass					1	1	1												3	1.2	0.9
	Spotted Bass	4	10	3	6	8	7	4	9	2	1	1								55	22.0	5.9
	Largemouth Bass		27	51	32	18	115	111	109	41	45	30	19	16	7	4	6	3	2	636	254.4	25.3

EFDCLLSS.D23

Table 27. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Carr Creek Lake (710 acres) from 2002-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	51.2	10.7	150.4	18.2	37.6	4.4	15.2	2.0	0.1	0.5	254.4	25.3
2022	98.0	17.1	102.8	15.0	27.6	5.4	10.4	2.1	0.4	0.4	238.8	32.7
2021	69.5	9.4	28.5	4.7	11.0	3.0	9.0	2.6	0.0	0.0	118.0	118.0
2020	no sample											
2019	59.5	20.6	48.5	9.5	22.5	3.2	16.5	2.9	1.0	0.7	147.0	29.2
2018	107.0	13.8	41.0	10.5	11.0	2.1	19.0	5.3	0.5	0.5	178.0	20.0
2017	28.5	6.6	25.5	7.1	12.5	3.3	17.0	3.1	0.5	0.5	83.5	12.6
2016	30.0	7.6	40.0	11.9	10.7	3.0	15.3	3.6			96.0	16.8
2015	69.5	23.2	18.5	4.1	15.5	3.7	22.0	6.1	1.0	0.7	125.5	28.5
2014	115.0	23.6	48.0	7.8	25.0	4.3	18.5	3.5	1.0	0.7	206.5	18.1
2013	113.3	51.4	20.0	4.5	16.0	3.7	16.7	2.2	2.7	1.3	166.0	53.2
2012	15.0	3.1	21.5	3.5	9.0	1.5	13.5	3.5	1.5	0.7	59.0	8.4
2011	11.0	4.4	10.5	2.6	5.5	1.3	16.0	4.5	1.0	1.0	43.0	9.8
2010	13.8	3.2	10.8	2.6	10.8	2.1	12.6	3.5	0.9	0.6	47.9	4.8
2009	5.1	0.7	10.3	2.6	17.1	3.0	16.0	3.4	0.6	0.6	48.6	6.1
2008	3.0	1.3	16.4	2.6	24.7	5.4	23.7	3.3	0.5	0.5	67.8	8.4
2007	8.0	1.9	20.8	4.7	18.6	3.4	15.7	3.6	0.5	0.5	63.0	5.5
2006	22.3	7.0	30.9	4.8	27.9	3.3	29.9	3.1	0.7	0.5	111.0	10.2
2005	20.0	2.7	19.8	1.6	24.8	2.4	14.0	1.8	0.3	0.3	78.6	4.9
2004	135.0	17.7	24.4	5.3	8.4	1.4	9.0	1.2	0.2	0.2	176.9	18.8
2003	67.6	11.3	15.9	2.2	11.1	1.5	10.7	1.5	0.4	0.3	105.2	14.4
2002	116.3	14.2	16.9	1.7	12.3	1.6	7.1	1.2			152.7	13.3

BBRPSCFL.D02-D05

EFDCLLSS.D02-D23

Table 28. PSD and RSD values for each species of black bass collected in each area of Carr Creek Lake (710 acres) on 2 May 2023. Numbers in parentheses are 95% confidence intervals.

Area	Smallmouth Bass			Spotted Bass			Largemouth Bass		
	≥ Stock size	PSD	RSD ₁₄	≥ Stock size	PSD	RSD ₁₄	≥ Stock size	PSD	RSD ₁₅
Lower	2			12	33 (5-61)		253	26 (20-31)	6 (3-8)
Upper	1			20			255	26 (21-32)	9 (6-13)
Total	3			32	13 (0-25)		508	26 (22-30)	7 (5-10)

EFDCLLSS.D23

Table 29. Population assessment for Largemouth Bass collected from Carr Creek Lake (710 acres) from 2011-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year											
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2021	2022	2023
Mean length age 3 at capture	4 (12.6)	4 (12.6)	4 (13.5)	4 (13.5)	4 (13.5)	4 (13.5)	4 (13.5)	4 (13.5)	4 (13.1)	4 (13.1)	4 (13.1)	4 (13.1)
Spring CPUE age 1	2 (9.0)	2 (13.9)	4 (114.7)	4 (116.0)	4 (71.0)	3 (35.3)	3 (31.0)	4 (111.5)	4 (64.0)	4 (71.0)	4 (106.4)	4 (74.4)
Spring CPUE 12.0-14.9 in	1 (5.5)	1 (9.0)	2 (16.0)	2 (25.0)	2 (15.5)	1 (10.7)	1 (12.5)	1 (11.0)	2 (22.5)	1 (11.0)	3 (27.6)	3 (37.6)
Spring CPUE \geq 15.0 in	3 (16.0)	3 (13.5)	3 (16.7)	3 (18.5)	3 (18.5)	3 (15.3)	3 (17.0)	3 (19.0)	3 (16.5)	2 (9.0)	2 (10.4)	3 (15.2)
Spring CPUE \geq 20.0 in	2 (1.0)	2 (1.5)	3 (2.7)	2 (1.0)	2 (1.0)	1 (0.0)	2 (0.5)	2 (0.5)	2 (1.0)	1 (0.0)	2 (0.4)	1 (0.1)
Total score	12	12	16	15	15	12	13	14	15	12	15	15
Assessment rating	Fair	Fair	Good	Good	Good	Fair	Good	Good	Good	Fair	Good	Good
Instantaneous mortality (z)	0.27	0.44										
Annual mortality (A)	23.80	35.80										

BBRSCFL.D05
 EFDCLLSS.D08-D19, D21-D23
 EFDCLLAF.D13, D19

Table 30. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in approximately 2.5 hours of 15-minute nocturnal electrofishing samples at Carr Creek Lake (710 acres) on 27 September 2023.

Area	Species	Inch class																	Total	CPUE	SE		
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20				21	
Lower	Smallmouth Bass										1									1	0.8	0.8	
	Spotted Bass				3	2	3	2		1											11	8.8	2.9
	Largemouth Bass	1	3	2	3	20	21	23	10	6	1		2	3	1	1					97	77.6	21.3
Upper	Smallmouth Bass																				0	0.0	0.0
	Spotted Bass		5	1	3	2	7		2												20	16.0	4.9
	Largemouth Bass	3	18	15	2	15	32	22	24	10	7	4	6	2	3		1	1	1		166	132.8	26.3
Total	Smallmouth Bass										1										1	0.4	<0.1
	Spotted Bass		5	1	6	4	10	2	2	1											31	12.4	3.0
	Largemouth Bass	4	21	17	5	35	53	45	34	16	8	4	8	5	4	1	1	1	1		263	105.2	18.4

EFDCLLSF.D23

Table 31. Indices of year class strength at age 0 and age 1 and mean length (in) of age-0 Largemouth Bass collected by nocturnal electrofishing from 2003-2023 at Carr Creek Lake (710 acres).

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.8	0.1	18.0	5.4	8.0	3.3		
2022	5.1	0.1	44.5	10.1	26.5	5.8	74.4	9.0
2021	5.5	0.1	19.6	5.4	16.4	4.9	106.4	18.5
2020	4.8	0.1	50.9	6.2	22.9	2.6	71.0	9.8
2019	5.2	0.3	6.7	2.0	4.0	1.6	no sample	
2018	5.4	0.1	18.7	5.4	12.7	4.2	64.0*	21.2
2017	3.9	0.2	19.3	5.8	4.7	1.9	111.5*	13.9
2016	4.6	0.1	32.0	7.9	10.4	3.0	31.0	6.4
2015	4.7	0.2	45.3	9.6	16.0	6.1	35.3	8.0
2014	4.4	0.3	13.3	4.2	5.3	1.7	71.0*	23.2
2013	4.4	0.2	14.0	4.6	4.8	1.8	116.0*	23.8
2012	4.3	0.2	34.5	10.9	11.5	4.0	114.7*	51.8
2011	4.6	0.1	17.6	5.7	7.2	3.0	13.2	2.6
2010	4.6	0.2	13.5	4.4	5.0	1.7	9.0	3.1
2009	3.6	0.3	12.5	2.8	3.5	1.6	10.0	2.5
2008	4.3	0.2	15.2	6.6	3.8	1.7	3.1	0.8
2007	3.7	0.5	5.0	2.2	1.0	0.7	2.4	1.2
2006	4.2	0.2	11.0	4.1	3.0	1.0	7.6	2.0
2005	4.7	0.1	15.8	6.7	5.6	1.7	21.3	6.7
2004	5.2	<0.1	132.0	17.3	88.2	12.7	18.8	2.6
2003	4.4	0.1	14.0	5.4	5.8	2.3	133.8*	17.5

* Includes supplemental spring stocked fish

BBRWRCFL.D03-D05

BBRSCCFL.D03

EFDCLLSF.D03-D23

EFDCLLAS.D08

EFDCLLSS.D03-D19, D21-23

EFDCLLAF.D13, D19

Table 32. Number of fish and mean relative weight (W_r) for length groups of black bass collected at Carr Creek Lake during September 2023. Standard errors are in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		≥15.0 in	
		No.	W_r	No.	W_r	No.	W_r
Largemouth Bass	Lower	60	82 (1)	3	93 (3)	5	95 (2)
	Upper	84	82 (1)	16	83 (4)	8	89 (4)
	Total	144	82 (1)	19	84 (3)	13	91 (3)
Spotted Bass	Lower	7.0-10.9 in		11.0-13.9 in		≥14.0 in	
		No.	W_r	No.	W_r	No.	W_r
		7	89 (5)	1	94 (0)	0	0 (0)
Spotted Bass	Upper	11	90 (2)	0	0 (0)	0	0 (0)
	Total	18	90 (2)	1	94 (0)	0	0 (0)
	Smallmouth Bass	Lower	No.	W_r	No.	W_r	No.
1			98 (0)	1	98 (0)	0	0 (0)
0			0 (0)	0	0 (0)	0	0 (0)
Smallmouth Bass	Upper	0	0 (0)	0	0 (0)	0	0 (0)
	Total	0	0 (0)	1	97 (0)	0	0 (0)

EFDCLLSF.D23

Table 33. Length frequency and CPUE (fish/hr) of Walleye collected at Carr Creek Lake (710 acres) during diurnal spring electrofishing from 2000-2023.

Year	Inch class																		Total	CPUE	SE						
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				25	26	27	28		
2023							1		2	8	6	9	13	14	4	4	2							63	8.7	1.5	
2022								2	4	8	4	7	13	14	5	4		3	1					65	8.4	1.6	
2021			1					1					9	26	43	38	18	4		1				141	13.8	3.4	
2020											1	11	21	17	23	7	4	2	1					87	8.9	1.4	
2019									1	7	9	18	39	58	39	25	9		1	1		1		208	16.6	2.7	
2018								6	3	6	8	5	25	30	12	22	9	1		1				128	14.7	2.0	
2017								1			6	7	18	13	13	9	2		1	1				71	21.9	3.1	
2016									3	3	7	16	21	26	18	13	1	4	1					113	20.6	2.3	
2015								2	3	7	9	13	14	11	12	7	3	1						82	21.6	17.4	
2014									1			2	14	9	12	10	6	1		1				56	11.8	2.9	
2013									3	2	8	11	13	16	21	9	2	2	1					88	10.7	1.4	
2012								1	1	2	1	13	19	22	14	4	4	5	1					87	20.8	2.5	
2011	1	1				1			2	6	8	8	5	15	7	11	5	5	2	3	1			81	15.4	5.2	
2010								6	8	7	7	10	15	16	14	16	13	8	8	9		1		138	12.7	3.3	
2009								1	4	3	9	18	21	17	15	13	10	11	2					124	21.3	1.3	
2008									1	2	5	12	16	19	21	19	15	14	7	3	1	1		136	12.8	1.2	
2007								1		1	2	4	3	11	15	8	4	4	5	2				60	32.9	7.4	
2006											1	4	6	7	9	9	8	3	4	2	2			55	31.3	5.4	
2005									1	1	2	10	2	10	6	5	4	3	1	1				46	28.2	5.0	
2004											1	3	13	10	13	13	4	3	1					61	27.1	7.4	
2003		2	1			1	1	2				3	7		4	2		1	1	1	1	1		28	26.7	8.5	
2002																											
2001								2	4	3	14	8	6	2	2	1				2				44	20.4	4.7	
2000								5	28	10	6	8	2	3	3	1		1	6	4	1			78	20.8	4.6	

EFDCWSS.D00-D23

Table 34. Spring electrofishing catch rate (fish/hr) for each age of Walleye collected from Carr Creek Lake (710 acres) from 2011-2023.

Age	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1													
2	1.3	1.6	1.0	0.9	3.2	1.8	1.5	1.7	0.9	0.4	0.5	1.5	1.1
3	5.0	7.8	4.2	4.5	9.1	8.1	9.0	5.2	6.6	3.5	5.2	3.4	3.9
4	3.6	5.1	2.6	3.6	5.2	5.2	5.7	3.7	4.3	2.4	3.6	1.6	2.0
5	1.6	2.9	1.2	1.3	1.6	2.4	2.4	1.6	2.1	1.1	2.0	1.0	0.8
6	0.4	0.9	0.5	0.4	0.6	0.8	0.8	0.3	0.6	0.5	0.7	0.2	0.1
7	0.4	0.5	0.1	0.1	0.2	0.2	0.2	0.4	0.2	0.2	0.1	0.1	0.1
8	0.7	0.8	0.5	0.5	0.6	0.8	0.9	0.5	0.6	0.4	0.6	0.3	0.1
9	1.0	1.2	0.5	0.5	0.7	1.0	0.9	1.0	0.9	0.4	0.7	0.4	0.3
10	0.3	0.1	0.1	0.2	0.2	0.3	0.4	0.3	0.3	0.1	0.2	0.1	0.1

EFDCLWSS.D09-D23

EFDCLWAS.D09

Table 35. Number of fish and mean relative weight (W_r) for each length group of Walleye collected at Carr Creek Lake (710 acres) during March of 2023. Standard errors are in parentheses.

		Length group									
≤ 9.9 in		10.0-14.9 in		15.0-19.9 in		≥ 20.0 in		Total			
No.	W_r	No.	W_r	No.	W_r	No.	W_r	No.	W_r		
0	0 (0)	1	175 (<1)	30	103 (2)	23	99 (3)	54	103 (2)		

EFDCLWSS.D23

Table 36. Species composition, relative abundance, and CPUE (fish/hr) of crappie collected by electrofishing at Carr Creek Lake (710 acres) on 10 and 12 April 2023.

Species	Inch class								Total	CPUE	SE
	7	8	9	10	11	12	13	14			
White Crappie			6	15	13	10	4	1	49	19.6	5.1
Black Crappie	1	13	29	12	2				57	22.8	5.4

EFDCLCSS.D23

Table 37. Spring electrofishing CPUE (fish/hr) for each length group of Black and White crappie collected at Carr Creek Lake (710 acres) from 2007-2023.

Year	Length group															
	≥8.0 in				≥10.0 in				≥8.0 in		≥10.0 in		Total			
	WC		BC		WC		BC		All crappie		All crappie		WC		BC	
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	19.6	5.1	22.4	5.1	17.2	4.8	5.6	1.5	42.0	6.5	22.8	5.3	19.6	5.1	22.8	5.4
2020	26.5	10.9	29.0	12.9	9.0	3.4	1.5	0.7	55.5	22.1	10.5	3.9	63.0	33.2	150.0	69.8
2017	29.5	9.8	11.0	3.4	20.5	8.3	5.0	2.1	40.5	11.1	25.5	9.1	39.0	12.1	17.5	5.0
2014	41.6	11.4	8.0	3.1	22.4	8.6	1.6	1.6	49.6	11.1	24.0	9.6	280.0	69.5	28.8	5.6
2013	14.0	4.3	10.5	2.9	2.0	1.1	1.0	0.7	24.5	4.9	3.0	1.0	85.0	19.9	41.0	10.8
2012	3.1	1.3	11.3	9.1	1.4	0.8	0.9	0.7	14.4	9.4	2.4	1.2	8.7	3.9	16.7	12.9
2011	2.0	1.3	1.3	0.8	0.7	0.7	0.4	0.3	3.3	1.2	1.1	0.6	21.7	14.1	3.5	0.9
2010	2.5	1.9	2.4	1.0	2.2	1.8	0.8	0.3	4.9	2.3	2.9	2.0	4.9	3.5	6.1	2.3
2009	1.3	0.6	4.6	2.2	0.8	0.4	0.6	0.4	5.9	2.8	1.4	0.6	1.6	0.5	7.5	4.8
2008	1.3	0.8	1.0	0.4	0.8	0.5	0.2	0.1	2.3	1.0	0.9	0.5	1.7	1.0	1.6	0.7
2007	10.1	9.1	3.8	3.0	6.2	5.3	0.7	0.7	13.9	12.1	6.9	5.1	27.8	26.0	6.9	5.3

EFDCLCSS.D07-D23

WC=White Crappie

BC=Black Crappie

Table 38. PSD and RSD₁₀ values for Black and White crappie taken in spring electrofishing samples at Carr Creek Lake (710 acres) on 10 and 12 April 2023; 95% confidence intervals are in parentheses.

Species	≥ Stock size	PSD	RSD ₁₀
White Crappie	49	100 (100-100)	88 (78-97)
Black Crappie	57	98 (95-102)	25 (13-36)

EFDCLCSS.D23

Table 39. Mean back-calculated length (in) at each annulus for White Crappie collected from Carr Creek Lake (710 acres) on 10 and 12 April 2023, including 95% confidence intervals.

Year class	No.	Age								
		1	2	3	4	5	6	7	8	9
2020	1	3.9	6.5	9.3						
2019	7	4.4	6.6	8.5	10.4					
2018	17	4.5	6.6	8.2	9.7	11.2				
2017	11	4.6	6.7	8.1	9.2	10.7	12.1			
2016	3	4.6	6.7	8.4	9.8	10.8	12.1	13.1		
2015	1	4.1	6.1	7.2	7.9	8.5	9.6	10.7	12.0	
2014	1	5.1	6.5	7.6	8.6	9.7	11.6	13.0	14.1	14.8
Mean		4.5	6.6	8.2	9.6	10.9	11.9	12.6	13.1	14.8
Number		41	40	33	16	5	2	1	1	1
Smallest		3.9	5.7	6.8	7.9	8.5	9.6	10.7	12.0	14.8
Largest		5.3	7.7	9.3	11.8	13.0	13.6	13.8	14.1	14.8
SE		0.1	0.1	0.1	0.1	0.2	0.3	0.5	1.1	
95% CI LO		4.4	6.5	8.0	9.3	10.5	11.3	11.6	11.0	
95% CI HI		4.6	6.7	8.4	9.9	11.2	12.4	13.6	15.1	

Intercept = 0

EFDCLCAS.D23

Table 40. Mean back-calculated length (in) at each annulus for Black Crappie collected from Carr Creek Lake (710 acres) on 10 and 12 April 2023, including 95% confidence intervals.

Year class	No.	Age									
		1	2	3	4	5	6	7	8	9	
2021	2	5.5	7.8								
2020	7	4.9	8.0	9.7							
2019	4	4.3	7.3	8.9	10.2						
2018	8	4.0	5.6	7.2	8.4	9.4					
2017	8	3.9	5.6	6.9	8.0	8.8	9.7				
2016	2	4.5	5.7	6.7	7.4	8.3	9.1	10.0			
2015	1	3.6	5.2	5.9	6.5	7.0	7.7	8.3	8.8		
2014	1	3.5	4.6	5.6	6.1	6.5	7.1	7.4	8.0	9.1	
Mean		4.3	6.4	7.8	8.3	8.8	9.2	8.9	8.4	9.1	
Number		33	31	24	20	12	4	2	1	1	
Smallest		3.3	4.6	5.6	6.1	6.5	7.1	7.4	8.0	9.1	
Largest		5.7	9.3	10.8	10.8	11.5	11.1	11.0	8.8	9.1	
SE		0.1	0.2	0.3	0.3	0.2	0.3	0.8	0.4		
95% CI LO		4.0	6.0	7.2	7.8	8.3	8.6	7.4	7.6		
95% CI HI		4.5	6.9	8.3	8.8	9.3	9.9	10.4	9.2		

Intercept = 0

EFDCLCAS.D23

Table 41. Spring electrofishing catch rate (fish/hr) for each age of White and Black crappie collected from Carr Creek Lake (710 acres) from 2010-2023.

Age	Year															
	2010		2011		2012		2013		2014		2017		2020		2023	
	WC	BC	WC	BC	WC	BC	WC	BC	WC	BC	WC	BC	WC	BC	WC	BC
1	0.0	0.0	0.0	0.0	0.0	0.0							3.5	5.9		
2	0.0	0.0	0.9	0.0	0.0	0.0							10.6	36		1.0
3	0.9	0.0	5.1	0.0	1.9	1.3	30.7	10.6	124.9	8.0	3.4	0.6	8.7	32.6	0.5	4.5
4	0.5	0.4	4.1	0.2	1.5	3.2	12.9	10.4	30.4	6.3	12.0	1.4	13.8	24.7	3.5	3.1
5	2.1	1.8	4.2	0.9	1.9	2.5	12.9	2.9	37.4	1.8	9.3	4.3	9.4	13.7	8.6	5.5
6	1.0	1.0	4.6	0.6	1.9	5.7	15.6	10.7	43.2	6.2	9.6	2.8	11.8	12.3	5.1	6.3
7	0.3	0.0	0.2		0.5	2.9	3.7	4.0	12.3	3.7	3.0	3.3	4.4	12.5	1.2	0.8
8	0.1	0.6	0.2		0.6	0.0	4.0		18.0		1.7	3.1	0.9	2.1	0.4	0.6
9					0.4	0.3	0.3	0.9	0.8	0.5			<0.1	8.9	0.4	1.0
10					0.0	0.0				0.8		0.6		<0.1		
11					0.0	0.0										
12					0.0	0.8		1.2								
13					0.1	0.0			1.0							

EFDCLWSS.D07-D17

EFDCLCSS.D13-D23

EFDCLCAS.D07, D12, D17, D20, D23

WC=White Crappie

BC=Black Crappie

Table 42. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 1.25 hours of 15-min electrofishing runs at Cranks Creek Lake (219 acres) on 26 April 2023.

Species	Inch class																		Total	CPUE	SE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				22	24
Spotted Bass		1		1	1	1		1	1	1											7	5.6	4.7
Largemouth Bass	2	22	15	3	34	68	41	21	7	6	3	0	2	1	1	1	1	1	1	1	231	184.8	27.3

EFDCLSS.D23

Table 43. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Cranks Creek Lake (219 acres) from 2000-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	60.8	8.6	109.6	17.0	7.2	3.2	7.2	2.0	2.4	1.6	184.8	27.3
2022	48.8	2.3	59.2	9.8	10.4	2.4	8.0	2.5	3.2	1.5	126.4	9.1
2021	50.4	6.4	79.2	6.6	5.6	2.7	9.6	6.0	4.8	3.9	144.8	7.3
2020	no sample											
2019	118.4	21.9	92.8	6.3	4.0	1.8	6.4	2.0	2.4	1.0	221.6	21.9
2018	60.8	5.3	71.2	3.4	8.0	3.4	11.2	2.3	6.4	2.0	151.2	6.5
2017	76.8	14.3	62.4	13.9	18.4	2.7	15.2	3.9	8.8	3.8	172.8	17.8
2016	no sample											
2015	27.2	6.0	76.0	8.3	15.2	0.8	13.6	2.4	6.4	1.6	132.0	10.8
2014	no sample											
2013	no sample											
2012	34.4	12.0	32.8	4.6	5.6	2.4	8.8	2.3	2.4	1.0	81.6	14.5
2011	57.6	6.0	52.0	10.5	9.6	1.6	11.2	3.9	5.6	3.5	130.4	15.4
2010	80.8	27.6	43.2	10.4	9.6	3.0	14.4	2.0	4.8	2.3	148.0	41.2
2009	no sample											
2008	33.0	7.9	51.0	6.6	27.0	4.4	8.0	3.7	3.0	1.9	119.0	8.2
2007	no sample											
2006	no sample											
2005	59.2	16.6	70.4	10.5	4.0	1.3	6.4	2.0	2.4	1.0	140.0	17.3
2004	40.7	7.6	40.0	5.8	3.3	1.9	4.0	2.1	0.7	0.7	88.0	11.1
2003	no sample											
2002	no sample											
2001	20.0	6.4	22.0	8.3	2.7	1.3	2.0	0.9	0.7	0.7	46.7	13.8
2000	51.3	11.1	24.7	3.8	2.7	1.3	2.0	1.4	2.0	1.4	80.7	12.5

EFDCCLSS.D00-D23

Table 44. PSD and RSD values for each species of black bass collected at Cranks Creek Lake (219 acres) on 26 April 2023. Numbers in parentheses are 95% confidence intervals.

	Largemouth Bass			Spotted Bass		
	≥ Stock size	PSD	RSD ₁₅	≥ Stock size	PSD	RSD ₁₄
Total	155	12 (7-17)	6 (2-10)	5	40 (0-88)	0

EFDCCLSS.D23

Table 45. Population assessment for Largemouth Bass collected from Cranks Creek Lake (219 acres) from 2010-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year									
	2010	2011	2012	2015	2017	2018	2019	2021	2022	2023
Mean length age 3 at capture	3 (11.2)	3 (11.2)	3 (11.2)	1 (10.0)	1 (10.0)	1 (10.0)	2 (10.7)	2 (10.7)	2 (10.7)	2 (10.7)
Spring CPUE age 1	4 (68.8)	3 (45.6)	3 (28.0)	2 (19.2)	4 (72.8)	3 (42.4)	4 (115.2)	4 (60.0)	3 (22.4)	3 (33.6)
Spring CPUE 12.0-14.9 in	1 (9.6)	1 (9.6)	1 (5.6)	2 (15.2)	2 (18.4)	1 (8.0)	1 (4.0)	1 (5.6)	1 (10.4)	1 (7.2)
Spring CPUE ≥15.0 in	3 (14.4)	2 (11.2)	2 (8.8)	3 (13.6)	3 (15.2)	2 (11.2)	2 (6.4)	2 (9.6)	2 (8.0)	2 (7.2)
Spring CPUE ≥20.0 in	4 (4.8)	4 (5.6)	3 (2.4)	4 (6.4)	4 (8.8)	4 (6.4)	4 (2.4)	4 (4.8)	3 (3.2)	3 (2.4)
Total score	15	13	12	12	14	11	13	13	11	11
Assessment rating	Good	Good	Fair	Fair	Good	Fair	Good	Good	Fair	Fair
Instantaneous mortality (z)	0.49	0.56	0.53							
Annual mortality (A)	38.90	43.10	40.90							

EFDCCLAF.D13,D19
EFDCCLSS.D10-D19, D21-D23

Table 46. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 1.25 hours of 15-min nocturnal electrofishing runs at Cranks Creek Lake (219 acres) on 12 October 2023.

Species	Inch class												Total	CPUE	SE		
	3	4	5	6	7	8	9	10	11	12	13	19				22	
Spotted Bass					1	10	2								13	10.4	9.4
Largemouth Bass	10	20	13	2	25	28	20	15	3	5	2	2	1	146	116.8	27.2	

EFDCCLSF.D23

Table 47. Indices of year class strength at age 0 and age 1 and mean length (in) of age-0 Largemouth Bass collected by nocturnal electrofishing from 2001-2023 at Cranks Creek Lake (219 acres).

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.5	0.1	34.4	4.1	10.4	3.0		
2022	4.8	0.2	8.0	1.6	3.2	1.4	33.6	5.7
2021	4.4	0.1	31.2	5.4	5.6	2.0	22.4	2.0
2020	4.3	0.1	43.2	17.6	8.0	4.2	60.0	9.1
2019	3.9	0.1	17.6	9.9			no sample	
2018	4.4	0.1	58.0	6.6	19.0	10.3	115.2	22.1
2017	4.2	0.1	77.3	11.6	13.3	3.5	42.4	6.7
2016	4.1	0.1	70.4	29.7	2.4	1.0	72.8	12.6
2015	4.3	0.2	37.0	14.6	9.0	3.0		
2014	4.0	0.1	104.8	24.5	20.8	5.1	19.2	5.3
2013	3.9	0.2	11.2	5.4	0.8	0.8		
2012	4.1	0.1	66.4	27.4	10.4	5.3		
2011	5.3	0.1	51.2	5.4	34.4	5.3	28.0	10.7
2010	4.3	0.1	93.3	28.5	16.0	6.1	45.6	6.0
2009	3.9	0.1	64.0	29.8	7.2	4.8	68.8	26.1
2008								
2007	4.3	0.1	32.0	8.7	7.2	2.9	23.0	7.3
2006								
2005								
2004							50.4	15.3
2003							15.0	4.3
2002	5.1	0.1	34.4	10.6	20.8	7.7		
2001	5.0	0.1	27.3	5.2	13.3	3.0		
2000							14.3	4.8

EFDCCLSF.D01-D02, D07, D09-D23

EFDCCLAS.D08

EFDCCLSS.D00-D01, D04-D05, D08, D10-D12, D15, D17-D19, D23

EFDCCLAF.D13, D19

Table 48. Number of fish and mean relative weight (W_r) for length groups of Largemouth and Spotted bass collected at Cranks Creek Lake during October 2023. Standard errors are in parentheses.

Species	Length group					
	8.0-11.9 in		12.0-14.9 in		≥15.0 in	
	No.	W_r	No.	W_r	No.	W_r
Largemouth Bass	61	76 (1)	7	72 (4)	3	89 (4)
	7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	No.	W_r	No.	W_r	No.	W_r
Spotted Bass	13	83 (1)	0	0 (0)	0	0 (0)

EFDCCLSF.D23

Table 49. Length frequency and electrofishing CPUE (fish/hr) of Muskellunge collected during spring sampling on Dewey Lake in 2023.

Year	Inch class													Total	CPUE	SE	
	13	14	15	24	28	29	30	31	32	33	34	35	36				
2023	2	1	3	1	1									1	9	4.5	1.2

EFDDLMS.S.D23

Table 50. Number of fish and mean relative weight (W_r) for each length group of Muskellunge collected at Dewey Lake (1,100 acres) during spring electrofishing. Standard errors are in parentheses.

Year	Length group								Total	
	≤19.9 in		20.0-29.9 in		30.0-37.9 in		≥38.0 in		No.	W_r
	No.	W_r	No.	W_r	No.	W_r	No.	W_r		
2023	6	85 (1)	2	100 (5)	1	96 (<1)	0		9	90 (3)

EFDDLMS.S.D23

Table 51. Population assessment for Muskellunge from Dewey Lake (1,100 acres) captured during spring electrofishing in 2023. Scoring based on statewide assessment.

Parameter	Rating (value)
CPUE age 1	2 (3.0)
CPUE ≥ 20.0 in	1 (1.5)
CPUE ≥ 30.0 in	1 (0.5)
CPUE ≥ 36.0 in	1 (0.5)
CPUE ≥ 40.0 in	1 (0.0)
Total score	6
Assessment	Poor

EFDDL MSS.D23

Table 52. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in approximately 2.5 hours of 15-minute nocturnal electrofishing runs by area at Dewey Lake (1,100 acres) on 19 April 2023.

Area	Species	Inch class																Total	CPUE	SE
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Lower	Spotted Bass	1	1		1	1	3	3	7									17	13.6	6.0
	Largemouth Bass	2	7	5		7	21	15	12	26	20	10	10	12	8	2	1	1	159	127.2
Upper	Spotted Bass																	0	0.0	0.0
	Largemouth Bass	1	2	2		5	6	4	10	1	14	10	9	5	3			72	57.6	10.5
Total	Spotted Bass	1	1		1	1	3	3	7									17	6.8	3.6
	Largemouth Bass	3	9	7		12	27	19	22	27	34	20	19	17	11	2	1	1	231	92.4

EFDDLSS.D23

Table 53. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Dewey Lake (1,100 acres) from 1987-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	7.6	2.2	32.0	5.5	32.4	7.0	20.4	2.4	0.4	<0.1	92.4	14.3
2022	30.4	9.8	30.0	3.2	26.4	2.3	18.4	2.9	1.6	0.9	105.2	11.7
2021	11.2	3.0	23.6	4.1	22.0	3.3	11.6	2.1	2.0	0.9	68.4	7.2
2020	no sample											
2019	11.0	1.0	32.0	3.7	34.0	4.8	25.0	3.4	1.0	1.0	102.0	5.0
2018	30.0	9.0	32.0	2.5	28.0	5.7	23.2	4.3	1.6	0.7	113.2	8.6
2017	22.7	5.7	27.3	7.1	20.0	5.4	23.3	4.3	1.3	0.8	93.3	10.3
2016	22.5	3.1	25.5	4.9	47.0	5.4	24.0	3.5	1.0	0.7	119.0	9.9
2015	21.2	3.0	35.2	5.2	43.2	5.4	24.0	4.2	0.8	0.5	123.6	11.2
2014	12.4	2.6	40.4	8.1	31.2	6.6	20.0	2.1	1.2	0.9	104.0	16.2
2013	20.8	3.9	92.8	14.8	54.0	6.5	17.2	1.9	1.2	0.6	184.8	20.8
2012	27.2	4.6	63.2	7.0	34.9	3.9	10.7	2.5	0.4	0.4	136.0	8.6
2011	no sample											
2010	42.6	5.9	98.0	27.6	12.3	2.8	8.3	2.0	0.0	0.0	161.2	33.0
2009	83.7	12.7	62.8	6.3	18.8	1.9	14.4	3.4	0.5	0.5	179.8	16.9
2008	87.4	10.4	86.5	9.5	21.6	3.6	16.3	3.4	0.8	0.5	211.7	12.4
2007	54.9	9.6	80.8	9.8	35.1	5.0	30.2	4.1	1.5	0.7	200.9	19.9
2006	32.3	5.7	66.4	8.6	24.2	3.6	24.9	3.6	0.7		147.8	10.0
2005	39.3	5.0	59.2	6.3	31.0	3.2	24.5	1.9	0.3		153.9	12.8
2004	96.2	11.9	34.7	3.8	20.0	3.2	17.5	2.6	1.0		168.3	13.9
2003	71.1	10.1	55.6	4.4	23.1	1.8	22.0	2.1	0.7		171.8	14.6
2002	no sample											
2001	150.1	17.2	57.8	5.7	26.9	2.7	17.8	1.6	0.6		252.6	22.8
2000	62.2	4.7	44.0	4.4	23.6	3.5	10.3	1.3	0.1		140.1	9.5
1999	78.9		34.6		39.5		12.8		0.5		165.8	12.7
1998	20.1		51.4		43.2		7.2		0.6		122.0	8.5
1997	15.3		53.3		32.3		11.0		1.0		112.0	12.2
1996	no sample											
1995	46.6		59.6		28.5		3.6		0.0		138.3	16.9
1994	no sample											
1993	43.7		71.8		15.6		8.8		0.8		140.0	
1992	57.4		64.1		17.2		7.4		0.2		146.1	
1991	73.8		50.6		18.4		3.5		0.2		146.4	
1990	58.8		68.0		32.0		11.4		0.6		171.4	
1989	75.0		27.5		10.8		7.0		0.0		120.7	
1988	84.0		40.7		26.7		2.0		0.0		154.7	
1987	44.6		38.3		12.0		0.6		0.0		95.4	

EFDDLSS.D87-D23
BBRPSDEW.D03-D05

Table 54. PSD and RSD values for each species of black bass collected in each area of Dewey Lake (1,100 acres) on 19 April 2023 . Numbers in parentheses are 95% confidence intervals.

Area	Largemouth Bass			Spotted Bass		
	≥ Stock size	PSD	RSD ₁₅	≥ Stock size	PSD	RSD ₁₄
Lower	145	62 (54-70)	23 (17-30)	15	47 (21-73)	0
Upper	67	63 (51-74)	25 (15-35)	0		
Total	212	62 (56-69)	24 (18-31)	15	47 (21-73)	0

EFDDLSS.D23

Table 55. Population assessment for Largemouth Bass collected from Dewey Lake (1,100 acres) from 2010-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year											
	2010	2012	2013	2014	2015	2016	2017	2018	2019	2021	2022	2023
Mean length age 3 at capture	2 (11.3)	2 (11.3)	2 (11.3)	2 (11.3)	2 (11.3)	2 (11.3)	2 (11.3)	2 (11.8)	2 (11.8)	2 (11.8)	2 (11.8)	2 (11.8)
Spring CPUE age 1	2 (16.4)	2 (19.5)	2 (20.8)	1 (10.8)	2 (17.2)	2 (20.5)	2 (21.3)	3 (29.2)	1 (11.0)	1 (11.2)	3 (29.6)	1 (7.6)
Spring CPUE 12.0-14.9 in	1 (12.3)	4 (34.9)	4 (54.0)	4 (31.2)	4 (43.2)	4 (47.0)	2 (20.0)	3 (28.0)	4 (34.0)	2 (22.0)	3 (26.4)	4 (32.4)
Spring CPUE \geq 15.0 in	2 (8.3)	2 (10.7)	3 (17.2)	4 (20.0)	4 (24.0)	4 (24.0)	4 (23.3)	4 (23.2)	4 (25.0)	2 (11.6)	3 (18.4)	4 (20.4)
Spring CPUE \geq 20.0 in	1 (0.0)	2 (0.4)	3 (1.2)	3 (1.2)	3 (0.8)	3 (1.0)	4 (1.3)	4 (1.6)	3 (1.0)	4 (2.0)	4 (1.6)	2 (0.4)
Total score	8	12	14	14	15	15	14	16	14	11	15	13
Assessment rating	Poor	Fair	Good	Good	Good	Good	Good	Good	Good	Fair	Good	Good
Instantaneous mortality (z)	0.77	0.64										
Annual mortality (A)	53.90	35.80										

EFDDLSS.D09-D10, D13-D19, D21-D23
 EFDDLAF.D13, D18

Table 56. Species composition, relative abundance, and CPUE (fish/hr) of black bass captured during 2.50 hours of 15-minute nocturnal electrofishing runs at Dewey Lake (1,100 acres) on 25 September 2023.

Area	Species	Inch class																Total	CPUE	SE	
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				19
Lower	Spotted Bass	1	2		2	4	4	2	2	4	1								22	17.6	6.3
	Largemouth Bass		6	4	1	2	4	13	8	12	6	3	3	5		4	1	1	73	58.4	18.4
Upper	Spotted Bass		1							1									2	1.6	1.0
	Largemouth Bass	8	23	24	5	1	10	12	9	14	11	11	5	12	7	4	3		159	127.2	32.8
Total	Spotted Bass	1	3		2	4	4	2	2	5	1								24	9.6	4.0
	Largemouth Bass	8	29	28	6	3	14	25	17	26	17	14	8	17	7	8	4	1	232	92.8	21.1

EFDDLFSF.D23

Table 57. Indices of year class strength at age 0 and age 1 and mean length (in) of age-0 Largemouth Bass collected by nocturnal electrofishing at Dewey Lake (1,100 acres) from 2002-2023 .

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.8	0.1	28.4	11.2	13.6	6.9		
2022	5.2	0.1	39.2	6.9	22.8	5.4	7.6	2.2
2021	4.9	0.1	32.0	8.3	15.6	5.3	29.6	9.9
2020	4.6	0.2	11.6	3.6	2.8	1.34	11.2	3.0
2019	5.0	0.1	41.5	9.8	21.5	5.0	no sample	
2018	4.9	0.1	43.6	7.8	22.2	3.1	11.0	1.0
2017	4.6	0.1	50.0	9.4	16.5	3.6	29.2	9.0
2016	4.9	0.1	33.5	5.1	17.0	3.5	21.3	5.8
2015	3.7	0.2	38.7	9.9	7.3	3.0	20.5	3.2
2014	3.9	0.1	36.8	8.3	10.0	4.3	17.2	3.5
2013	3.4	0.2	25.2	6.3	3.2	0.8	10.8	2.8
2012	4.4	0.1	26.0	5.3	7.2	1.7	20.8	3.9
2011	4.6	0.1	37.2	9.3	14.8	3.6	19.5	4.4
2010	5.0	0.1	67.6	14.2	38.4	8.5	no sample	
2009	5.3	0.1	45.7	8.8	28.8	5.2	16.4	3.3
2008	5.0	0.1	54.9	14.3	30.0	7.4	55.6	12.1
2007	4.8	0.1	54.3	12.8	21.2	4.2	49.5	10.0
2006	5.1	0.1	39.0	9.9	21.3	5.8	49.0	9.2
2005	4.4	0.1	58.7	16.1	16.9	6.6	27.9	5.5
2004	5.2	0.1	45.2	7.1	25.4	4.6	24.8	4.1
2003	4.9	0.1	38.9	10.6	15.1	3.8	79.7	10.5
2002	5.0	<0.1	75.6	14.2	37.6	9.4	61.2	9.4

BBRPSDEW.D03-D05

BBRDLLSF.D02

BBRWRDEW.D03-D04

BBRSCDEW.D03

EFDDLLSF.D02-D23

EFDDLLSS.D06-D10, D12-D19, D21-D23

EFDDLLAS.D08

EFDDLLAF.D13, D18

Table 58. Number of fish and mean relative weight (W_r) for length groups of Largemouth and Spotted bass collected at Dewey Lake during September 2023. Standard errors are in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		≥15.0 in	
		No.	W_r	No.	W_r	No.	W_r
Largemouth Bass	Lower	34	84 (1)	9	92 (3)	9	89 (3)
	Upper	45	86 (1)	25	89 (2)	27	99 (3)
	Total	79	85 (1)	34	90 (2)	31	96 (2)
Spotted Bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in	
		No.	W_r	No.	W_r	No.	W_r
	Lower	12	92 (3)	5	92 (3)	0	0 (0)
	Upper			1	83 (0)		
	Total	12	92 (3)	6	91 (3)	0	0 (0)

EFDDLFSF.D23

Table 59. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in approximately 2.5 hours of 15-minute nocturnal electrofishing samples at Fishtrap Lake (1,143 acres) on 20 April 2023.

Area	Species	Inch class															Total	CPUE	SE
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Lower	Smallmouth Bass					1			1			1			1		4	3.2	3.2
	Spotted Bass		1														1	0.8	0.8
	Largemouth Bass	2	2	3	6	9	19	8	15	20	11	7	1	1	1	2	107	85.6	11.4
Upper	Smallmouth Bass																0	0.0	0.0
	Spotted Bass																0	0.0	0.0
	Largemouth Bass			1		4	8	5	15	15	19	6	2	1	1	1	78	62.4	9.4
Total	Smallmouth Bass					1			1			1			1		4	1.6	1.6
	Spotted Bass		1														1	0.4	0.4
	Largemouth Bass	2	2	4	6	13	27	13	30	35	30	13	3	2	2	3	185	74.0	8.0

EFDLSS.D23

Table 60. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of Largemouth Bass at Fishtrap Lake (1,143 acres) from 2000-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	1.6	0.9	20.0	4.2	31.2	3.0	21.2	2.6	1.2	0.6	74.0	8.0
2022	12.4	3.6	13.2	2.9	23.2	3.5	12.0	3.0	0.4	0.4	60.8	6.4
2021	6.8	2.2	23.2	4.87	28.8	2.6	12.4	2.7	0.4	0.4	71.2	6.6
2020	62.0	15.3	30.7	5.2	38.0	7.8	15.3	3.0	1.3	0.8	146.0	9.9
2019	34.0	5.7	17.6	1.9	31.2	5.9	6.8	1.7	0.4	0.4	89.6	8.7
2018	no sample											
2017	62.0	17.7	22.7	5.5	20.7	6.5	4.0	1.5	0.7	0.7	109.3	25.6
2016	no sample											
2015	23.6	3.5	48.4	6.8	33.6	4.6	18.0	2.6	2.4	0.9	123.6	8.6
2014	25.6	5.5	32.8	10.2	35.2	5.9	16.8	5.3	3.2	1.5	110.4	15.2
2013	no sample											
2012	54.7	9.0	20.7	1.9	12.0	2.3	12.7	4.3	3.3	2.6	100.0	9.4
2011	no sample											
2010	52.4	3.1	35.6	5.6	20.4	2.8	10.4	2.5	0.4	0.4	118.8	11.3
2009	44.2	10.7	61.4	11.8	20.4	4.8	9.9	2.4	0.6	0.6	135.9	15.1
2008	39.5	12.7	31.1	3.5	32.0	5.8	9.4	2.7	0.0		111.9	15.0
2007	28.7	4.7	53.9	8.3	33.0	3.5	7.9	1.9	1.2	0.9	123.5	13.5
2006	52.5	8.8	37.6	1.9	33.0	3.4	4.0	0.7	0.0		127.1	11.6
2005	61.8	10.2	67.6	10.0	38.9	6.5	14.9	2.0	0.0		183.3	20.8
2004	44.7	6.8	45.1	5.8	19.3	2.2	13.1	3.9	1.5		122.2	10.7
2003	43.0	4.4	25.0	7.6	16.0	4.9	11.0	3.4	2.0		95.0	4.1
2002	no sample											
2001	20.3	3.7	32.7	4.3	17.3	2.5	10.3	2.9	1.3		80.7	7.7
2000	28.7	4.2	29.0	2.3	19.0	2.6	23.0	4.3	3.4		99.7	9.9

EFDLSS.D00-D23

Table 61. PSD and RSD values for each species of black bass in each area of Fishtrap Lake (1,143 acres) on 20 April 2023. Numbers in parentheses are 95% confidence intervals.

Area	Smallmouth Bass			Spotted Bass			Largemouth Bass		
	≥ Stock size	PSD	RSD ₁₄	≥ Stock size	PSD	RSD ₁₄	≥ Stock size	PSD	RSD ₁₅
Lower	4	75 (26-124)	50 (0-107)	1			103	64 (55-73)	22 (14-30)
Upper	0			0			78	83 (75-92)	38 (28-49)
Total	4	75 (26-124)	50 (0-107)	1			181	72 (66-79)	29 (23-36)

EFDLSS.D23

Table 62. Spring population assessment for Largemouth Bass collected from Fishtrap Lake (1,143 acres) from 2008-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year											
	2008	2009	2010	2012	2014	2015	2017	2019	2020	2021	2022	2023
Mean length age 3 at capture	4 (13.6)	4 (13.6)	2 (11.7)	2 (11.7)	2 (11.7)	2 (11.7)	2 (11.8)	2 (11.8)	2 (11.8)	2 (11.8)	2 (11.8)	4 (13.8)
Spring CPUE age 1	3 (38.5)	4 (44.2)	4 (51.6)	4 (50.8)	3 (24.2)	2 (22.1)	4 (61.3)	3 (35.6)	4 (64.0)	1 (10.4)	2 (13.2)	1 (2.4)
Spring CPUE 12.0-14.9 in	4 (32.0)	2 (20.4)	2 (20.4)	1 (12.0)	4 (35.2)	4 (33.6)	2 (20.7)	4 (31.2)	4 (38.0)	3 (28.8)	3 (23.2)	4 (31.2)
Spring CPUE \geq 15.0 in	2 (9.4)	2 (9.9)	2 (10.4)	2 (12.7)	3 (16.8)	3 (18.0)	1 (4.0)	2 (6.8)	3 (15.3)	2 (12.4)	2 (12.0)	4 (21.2)
Spring CPUE \geq 20.0 in	1 (0.0)	3 (0.6)	2 (0.4)	4 (3.3)	4 (3.2)	4 (2.4)	3 (0.7)	2 (0.4)	4 (1.3)	2 (0.4)	2 (0.4)	3 (1.2)
Total score	14	15	12	13	16	15	12	13	17	10	11	16
Assessment rating	Good	Good	Fair	Good	Good	Good	Fair	Good	Excellent	Fair	Fair	Good
Instantaneous mortality (z)	0.59	0.67	0.66	0.50	0.43	0.52						0.33
Annual mortality (A)	44.30	49.10	48.20	39.20	35.20	40.70						27.80

EFDFLLSS.D06-D23
 EFDFLLAS.D10, D23
 EFDFLLAF.D09-D17

Table 63. Mean back-calculated length (in) at each annulus for Largemouth Bass collected from Fishtrap Lake (1,143 acres) on 19 April 2023, including 95% confidence intervals.

Year class	No.	Age							
		1	2	3	4	5	6	7	8
2022	4	7.3							
2021	31	6.3	10.7						
2020	21	6.6	11.1	13.4					
2019	23	6.9	11.3	13.2	14.5				
2018	13	7.5	11.9	13.9	15.2	16.4			
2017	3	6.3	11.0	12.6	13.7	14.8	15.8		
2016	2	7.2	12.5	14.6	16.7	18.0	18.7	19.5	
2015	2	7.2	12.3	14.2	15.4	16.4	17.3	18.3	19.3
Mean		6.7	11.1	13.5	14.8	16.3	17.1	18.9	19.3
Number		99	95	64	43	20	7	4	2
Smallest		4.7	8.6	10.9	11.8	12.9	13.9	17.7	18.6
Largest		9.3	13.9	15.6	17.3	18.7	19.4	20.1	19.9
SE		0.1	0.1	0.1	0.2	0.3	0.7	0.5	0.6
95% CI LO		6.5	10.9	13.2	14.4	15.7	15.8	18.0	18.0
95% CI HI		6.9	11.4	13.7	15.2	16.9	18.4	19.8	20.5

Intercept = 0

EFDLLAS.D23

Table 64. Age frequency and CPUE (fish/hour) of Largemouth Bass collected at Fishtrap Lake (1,143 acres) on 19 April 2023.

Age	Inch class															Total	Age%	CPUE	SE
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
1	2	2	1													5	3	2.1	0.9
2			3	6	13	27	4									53	28	20.9	4.2
3							5	25	18	2						50	27	19.8	2.1
4							5	3	15	25	3					51	27	19.9	2.6
5									3	2	9	2	1			17	9	7.0	1.1
6								3			1	1				5	2	1.8	0.4
7													1		3	4	2	1.6	0.6
8														2		2	1	0.8	0.5
Total	2	2	4	6	13	27	14	31	36	29	13	3	2	2	3	187	100		
%	1	1	2	3	7	15	7	16	19	16	7	2	1	1	2				

EFDLLAS.D23

EFDLLSS.D23

Table 65. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in approximately 2.50 hours of 15-minute nocturnal electrofishing runs at Fishtrap Lake (1,143 acres) on 5 October 2023.

Area	Species	Inch class																			Total	CPUE	SE						
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21					
Lower	Smallmouth Bass																				1			1			3	2.4	1.0
	Spotted Bass									1			1		1												4	3.2	2.0
	Largemouth Bass	15	27	5	7	4	4	4				8	7	11	13	10	5	3	6	1	2	3				135	108.0	11.0	
Upper	Smallmouth Bass																								1	1	0.8	0.8	
	Spotted Bass																										0	0.0	0.0
	Largemouth Bass			4	3	12	11	2				5	4	2	9	4	5	6	1				1			69	55.2	15.2	
Total	Smallmouth Bass																							1	1	1	4	1.6	0.7
	Spotted Bass									1			1		1												4	1.6	1.1
	Largemouth Bass	15	31	8	19	15	6	4				13	11	13	22	14	10	9	7	1	2	4				204	81.6	12.5	

EFDLLSF.D23

Table 66. Indices of year class strength at age 0 and age 1 and mean length (in) of age-0 Largemouth Bass collected by nocturnal electrofishing from 2003-2023 at Fishtrap Lake (1,143 acres).

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.5	0.2	37.2	8.1	15.6	4.2		
2022	5.4	0.1	30.0	7.5	20.8	7.8	2.4	1.2
2021	5.2	0.1	40.0	9.8	21.6	5.3	13.2	3.3
2020	5.2	0.1	66.0	15.9	34.8	10.8	10.4	2.5
2019	4.8	0.1	58.5	19.6	24.5	12.3	64.0*	15.1
2018	5.0	<0.1	184.5	24.5	88.0	14.0	35.6	5.4
2017	5.4	0.1	105.8	20.5	76.9	15.9	no sample	
2016	4.7	<0.1	105.2	25.1	32.0	6.3	61.3*	17.9
2015	4.9	0.1	139.0	25.2	62.0	16.7	no sample	
2014	4.8	0.1	54.0	8.8	21.2	3.6	22.1	3.1
2013	4.6	0.1	63.5	16.4	19.5	5.2	24.2	6.2
2012	5.1	0.1	72.7	24.3	38.0	12.0	no sample	
2011	5.1	0.1	119.4	26.9	69.1	13.3	50.8	8.2
2010	5.2	0.1	111.6	16.4	61.6	8.4	no sample	
2009	4.8	0.1	83.3	15.1	39.3	5.4	51.6	3.2
2008	4.6	0.1	75.3	25.9	26.3	9.5	44.2	10.7
2007	5.1	0.1	114.2	23.7	63.5	11.0	38.5	12.1
2006	5.0	0.1	72.7	14.1	36.5	8.0	28.3	4.5
2005	4.5	0.1	108.0	41.3	24.0	11.1	52.5	8.8
2004	5.0	<0.1	256.0	51.1	122.7	23.9	61.5	10.2
2003	5.1	<0.1	106.2	32.9	59.6	15.9	35.4	6.0

* Includes supplemental spring stocked fish

EFDLFSF.D03-D23

EFDLSS.D04-D23

EFDLLAS.D04, D10

EFDLLAF.D17

Table 67. Number of fish and mean relative weight (W_r) for length groups of Largemouth, Smallmouth, and Spotted bass collected at Fishtrap Lake during October 2023. Standard errors are in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		≥15.0 in	
		No.	W_r	No.	W_r	No.	W_r
Largemouth Bass	Lower	19	91 (1)	34	87 (1)	20	93 (2)
	Upper	9	95 (3)	15	89 (3)	13	96 (2)
	Total	28	93 (1)	49	88 (1)	33	94 (1)
Spotted Bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in	
		No.	W_r	No.	W_r	No.	W_r
	Lower	2	95 (6)	2	89 (8)	0	0 (0)
	Upper	0	0 (0)	0	0 (0)	0	0 (0)
	Total	2	95 (6)	2	89 (8)	0	0 (0)
Smallmouth Bass		No.	W_r	No.	W_r	No.	W_r
	Lower	0	0 (0)	1	89 (0)	2	96 (12)
	Upper	0	0 (0)	0	0 (0)	1	71 (0)
	Total	0	0 (0)	1	89 (0)	3	88 (11)

EFDLFSF.D23

Table 68. Length frequency and CPUE (fish/nn) for White Crappie collected at Fishtrap Lake (1,143 acres) in 30 net-nights on 27-28 November and 4 December 2023.

Inch class													Total	CPUE	SE
2	3	4	5	6	7	8	9	10	11	12	13				
3	261	685	26	4	35	20	106	75	30	6	2	1253	41.8	11.7	

EFDLCTF.D23

Table 69. PSD and RSD₁₀ values calculated for White Crappie collected in trap nets at Fishtrap Lake (1,143 acres) on 27-28 November and 4 December 2023; 95% confidence intervals are in parentheses.

≥ Stock size	PSD	RSD ₁₀
304	79 (74-83)	37 (32-43)

EFDLCTF.D23

Table 70. Mean back-calculated length (in) at each annulus for White Crappie collected from Fishtrap Lake (1,143 acres) on 27-28 November and 4 December 2023, including the length range of crappie at each age and the 95% confidence intervals for each age group.

Year class	No.	Age								
		1	2	3	4	5	6	7	8	9
2022	20	4.8								
2021	15	5.7	8.3							
2020	14	4.8	8.0	9.7						
2019	6	5.0	7.4	9.1	10.0					
2018	7	4.7	7.7	9.1	10.2	10.8				
2014	1	5.3	7.5	8.6	9.7	10.8	11.4	12.1	12.5	13.0
Mean		5.0	8.0	9.4	10.1	10.8	11.4	12.1	12.5	13
Number		63	43	28	14	8	1	1	1	1
Smallest		3.9	6.4	7.9	8.8	9.7	11.4	12.1	12.5	13
Largest		6.9	9.9	11.3	11.2	11.9	11.4	12.1	12.5	13
SE		0.1	0.1	0.2	0.2	0.2				
95% CI LO		4.9	7.7	9.0	9.7	10.4				
95% CI HI		5.2	8.2	9.7	10.5	11.3				

Intercept = 0

EFDLCAF.D23

Table 71. Age frequency and CPUE (fish/nn) of White Crappie collected by trap netting for 30 net-nights at Fishtrap Lake (1,143 acres) on 27-28 November and 4 December 2023.

Age	Inch class											Total	Age%	CPUE	SE	
	3	4	5	6	7	8	9	10	11	12	13					
0	261	685	26										972	78	32.4	12.2
1				4	35	7							46	4	1.5	4.8
2						9	58	28	5				100	8	3.3	0.2
3						4	29	19	11	4			67	5	2.2	0.6
4							19	9	5	1			34	3	1.2	<0.1
5								19	8	1	1		29	2	1.0	<0.1
9												1	1	0	<0.1	<0.1
Total	261	685	26	4	35	20	106	75	29	6	2		1249	100		
%	21	55	2	0	3	2	8	6	2	0	0		99			

CPUE of ≥ 8.0 in (quality size) = 8.0 fish/nn

CPUE of ≥ 10.0 in (preferred size) = 3.8 fish/nn

EFDLCAF.D23

EFDLCTF.D23

Table 72. Population assessment for White Crappie collected from Fishtrap Lake (1,143 acres) from 2005-2023. Actual assessment values are in parentheses. Scoring based on statewide assessment.

Parameter	Year										
	2005	2007	2008	2010	2011	2013	2015	2017	2019	2021	2023
CPUE age 1 and older	4 (38.9)	3 (6.7)	4 (31.9)	4 (27.2)	4 (74.9)	4 (117.0)	4 (20.4)	3 (8.0)	2 (4.0)	2 (3.0)	3 (9.4)
CPUE age 1	2 (2.1)	2 (3.2)	4 (10.8)	4 (10.6)	4 (15.1)	4 (27.8)	2 (1.1)	1 (0.8)	2 (1.9)	1 (0.3)	2 (1.5)
CPUE age 0	4 (22.5)	3 (2.7)	4 (18.8)	3 (3.1)	4 (14.0)	4 (12.1)	2 (1.1)	2 (1.1)	2 (1.4)	4 (4.5)	4 (32.4)
CPUE \geq 8.0 in	4 (25.9)	2 (2.9)	4 (8.8)	4 (10.4)	4 (25.1)	4 (69.2)	4 (19.0)	4 (7.1)	2 (2.7)	2 (2.7)	4 (8.0)
Mean length age 2 at capture	2 (8.2)	2 (8.8)	1 (7.8)	1 (7.5)	1 (7.3)	2 (8.8)	2 (8.5)	3 (9.6)	3 (10.2)	3 (9.5)	3 (9.8)
Total score	16	12	17	16	17	18	14	13	11	12	16
Assessment rating	Good	Fair	Excellent	Good	Excellent	Excellent	Good	Good	Fair	Fair	Good
Instantaneous mortality (z)	0.56	0.80	0.78	1.19	0.75	0.87	0.21	0.25	0.21	0.33	0.65
Annual mortality (A)	43.1	54.9	54.4	69.7	53.0	58.2	19.0	22.1	18.7	28.1	47.6
EFDLCTF.D05-D23											
EFDLCAF.D05-D23											

Table 73. Length frequency and gillnetting CPUE (fish/nn) of White Bass and hybrid Striped Bass collected in 3 net-nights at Fishtrap Lake (1,143 acres) on 6-7 December 2023.

Species	Inch class														Total	CPUE	SE		
	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21	22
White Bass				2	1	4	4		3	1							15	5.0	2.7
Hybrid Striped Bass	1			8	5	16	38	35	3	1	1	3	4	5	1	3	124	41.3	4.7

EFDFLHGF.D23

Table 74. Mean back-calculated length (in) at each annulus for hybrid Striped Bass collected from Fishtrap Lake (1,143 acres) in 2023, including the length range of bass at each age and the 95% confidence intervals for each age group.

Year class	No.	Age			
		1	2	3	4
2022	35	7.6			
2021	21	7.8	12.7		
2020	4	8.4	14.7	18.1	
2019	3	8.6	14.7	18.1	20.5
Mean		7.8	13.2	18.1	20.5
Number		63.0	28.0	7.0	3.0
Smallest		5.5	9.0	17.4	19.2
Largest		11.1	17.0	18.9	21.8
SE		0.2	0.4	0.2	0.7
95% CI LO		7.5	12.3	17.6	19.0
95% CI HI		8.1	14.0	18.5	21.9

intercept=0

EFDFLHAF.D23

Table 75. Mean back-calculated length (in) at each annulus for White Bass collected from Fishtrap Lake (1,143 acres) in 2023, including the length range of bass at each age and the 95% confidence intervals for each age group.

Year class	No.	Age				
		1	2	3	4	5
2022	4	6.5				
2021	6	7.0	11.0			
2019	3	7.5	11.6	12.9	13.9	
2018	2	6.3	11.7	13.5	14.5	15.2
Mean		6.9	11.3	13.1	14.1	15.2
Number		15	11	5	5	2
Smallest		5.4	10.5	12.7	13.3	14.5
Largest		8.3	12.0	14.1	14.9	15.8
SE		0.2	0.1	0.3	0.3	0.6
95% CI LO		6.5	11.0	12.6	13.6	13.9
95% CI HI		7.3	11.6	13.6	14.7	16.4

intercept=0
EFDLHAF.D23

Table 76. Age frequency and CPUE (fish/nn) of hybrid Striped Bass collected at Fishtrap Lake (1,143 acres) in December 2023.

Age	Inch class														Total	Age%	CPUE	SE		
	7	8	9	10	11	12	13	14	15	16	17	18	19	20					21	22
0	1																1	1	0.3	0.3
1				7	4	5	30	35	3	1							85	68	28.1	3.9
2				1	1	11	8				1	3	4	2			31	26	10.6	2.4
3														2	1	1	4	3	1.3	1.2
4														1		2	3	2	1.0	0.7
Total	1			8	5	16	38	35	3	1	1	3	4	5	1	3	124	100		
%	1			6	4	13	31	28	2	1	1	2	3	4	1	2				

EFDLHAF.D23
EFDLHGF.D23

Table 77. Age frequency and CPUE (fish/nn) of White Bass collected at Fishtrap Lake (1,143 acres) in December 2023.

Age	Inch class						Total	Age%	CPUE	SE
	10	11	12	13	14	15				
0										
1	2	1	1				4	27	1.3	1.2
2			3	3			6	40	2.0	1.3
3							0	0		
4				1		2	3	20	1.0	0.4
5						1	1	13	0.7	0.5
Total	2	1	4	4		3	1	15	100	
%	13	7	27	27		20	7			

EFDLHAF.D23

EFDLHGF.D23

Table 78. Hybrid Striped Bass population assessment for fish gill netted at Fishtrap Lake (1,143 acres) from 2004-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameters	Year							
	2004	2005	2007	2009	2011	2014	2018	2023
CPUE	3	4	4	4	4	4	3	4
(excluding age 0)	(15.0)	(29.1)	(26.8)	(77.7)	(67.3)	(53.3)	(20.7)	(41.0)
Mean length age 2+ at capture	1	3	3	3	2	4	4	1
	(13.7)	(17.3)	(17.6)	(17.4)	(16.9)	(18.5)	(19.4)	(14.8)
CPUE \geq 15.0 in	3	4	4	4	4	4	4	3
	(5.0)	(14.9)	(17.8)	(58.0)	(48.3)	(26.3)	(17.3)	(7.0)
CPUE age 1	2	3	3	4	4	4	4	4
	(4.6)	(9.4)	(9.3)	(20.3)	(16.9)	(27.7)	(9.3)	(28.1)
Total score	9	14	14	15	14	16	15	12
Assessment rating	Fair	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Good
Instantaneous mortality	0.45	0.62	0.44	1.01	0.62	0.40	0.61	1.21
Annual mortality	36.00	46.40	35.60	63.40	46.10	33.20	45.60	70.10

EFDLHAF.D04-D23

EFDLHGF.D04-D23

Table 79. White Bass population assessment for fish gill netted at Fishtrap Lake (1,143 acres) during 2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameters	Year	
	2018	2023
CPUE	4	2
(excluding age 0)	(19.7)	(5.0)
Mean length age 2+ at capture	4	2
	(14.5)	(13.0)
CPUE \geq 12.0 in	4	3
	(12.7)	(4.0)
CPUE age 1	4	1
	(8.33)	(1.3)
Total score	16	8
Assessment rating	Excellent	Fair
Instantaneous mortality	0.49	0.16
Annual mortality	38.50	14.60
EFDLHAF.D23		
EFDLHGF.D23		

Table 80. Number of fish and mean relative weight (Wr) for each length category of morones collected at Fishtrap Lake (1,143 acres) on 6-7 December 2023. Standard errors are in parentheses.

<7.9 in		8.0-11.9 in		Hybrid Striped Bass 12.0-14.9 in		\geq 15.0 in		Total	
No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
		13	84 (2)	45	84 (1)	15	86 (1)	79	84 (1)
\leq 5.9 in		6.0-8.9 in		White Bass 9.0-11.9 in		\geq 12.0 in		Total	
No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
				3	96 (2)	12	90 (2)	15	91 (1)

EFDLHGF.D23

Table 81. Length frequency and electrofishing CPUE (fish/hr) of Largemouth Bass collected in approximately 1.0 hour of 7.5-min nocturnal electrofishing runs in Fishpond Lake (32 acres) on 17 April 2023.

Species	Inch class																		Total	CPUE	SE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21	22
Largemouth Bass	4	1	5	2	12	18	30	51	49	28	33	8	4	4	4	2	3	3	3	1	265	265.0	26.8

EFDPLSS.D23

Table 82. Nocturnal spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Fishpond Lake (32 acres) from 1990-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	24.0	5.9	148.0	17.0	69.0	10.9	24.0	5.9	7.0	2.4	265.0	26.8
2021	32.0	8.4	57.1	10.8	53.7	10.7	35.4	3.4	9.1	2.1	178.3	26.5
2019	30.7	10.8	101.3	19.1	40.0	2.9	30.7	9.1	8.0	4.1	202.7	28.7
2017	4.0	2.7	45.3	4.9	81.3	6.0	53.3	9.6	9.3	3.8	184.0	14.5
2015	14.9	4.4	38.9	8.5	58.3	7.1	30.9	7.7	11.4	3.0	142.9	15.2
2013	17.1	8.3	50.3	11.5	76.6	10.2	36.6	11.4	11.4	4.9	180.6	22.4
2011	17.1	5.9	35.4	6.7	28.6	6.0	28.6	4.6	4.6	2.4	109.7	13.5
2010	4.6	2.4	34.3	6.7	26.3	2.9	13.7	4.2	4.6	2.4	78.9	9.1
2009	11.4	2.4	43.4	6.7	64.0	10.6	21.7	4.2	10.3	2.9	140.6	15.5
2008	5.0	2.0	109.3	13.6	61.8	6.2	16.9	3.3	11.6	2.4	192.9	15.4
2006	31.9	5.5	168.1	9.9	14.7	3.8	30.4	2.4	7.9	2.9	245.0	12.5
2004	78.9	12.2	76.0	7.9	45.2	5.9	39.4	6.7	3.9	2.9	239.5	14.9
2001	28.0		118.0		32.0		8.7		4.0		186.7	
2000	5.9		246.4		11.1		7.4		0.7		270.7	
1999	193.6		107.2		19.2		24.8		0.8		344.8	
1998	11.7		29.6		49.4		21.5		0.0		112.2	
1997	4.0		33.3		32.7		6.0		0.7		76.0	
1996	2.3		99.6		25.5		10.4		1.2		137.8	
1994	57.0		28.0		0.0		5.0		0.0		90.0	
1993	9.0		83.0		42.0		0.0		0.0		134.0	
1991	216.3		192.3		62.8		10.7		0.7		80.0	
1990	19.2		43.6		14.1		2.6		0.0		79.5	

EFDPLSS.D90-D23

Table 83. PSD and RSD₁₅ values obtained for Largemouth Bass taken in nocturnal spring electrofishing samples at Fishpond Lake (32 acres) on 17 April 2023; 95% confidence intervals are in parentheses.

\geq Stock size	PSD	RSD ₁₅
241	39 (32-45)	10 (6-14)

EFDLSS.D23

Table 84. Length frequency and CPUE (fish/hr) of black bass and Walleye collected in 1.25 hours of 15-min nocturnal electrofishing runs in Martins Fork Lake (330 acres) on 26 April 2023.

Species	Inch class														Total	CPUE	SE
	4	5	6	7	8	9	10	11	12	13	14	15	16	17			
Largemouth Bass	7	23	14	8	34	43	37	28	9	7	3	2	2	1	218	174.4	28.6
Spotted Bass	7	11	3	13	14	5	9	1							63	50.4	12.3
Smallmouth Bass				1	1	1	1								4	3.2	1.5
Coosa Bass															0		
Walleye															0		

EFDMLLSS.D23

Table 85. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Martins Fork Lake (330 acres) from 2003-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	41.6	14.0	113.6	24.2	15.2	4.3	4.0	1.8	0.0		174.4	28.6
2022	104.8	22.0	60.0	11.2	13.6	5.5	4.0	1.3	0.0		182.4	26.3
2021	28.8	9.6	44.0	10.1	12.8	3.9	3.2	2.0	0.8	0.8	88.8	16.0
2020	no sample											
2019	73.6	24.0	64.0	16.0	12.0	4.2	14.4	1.6	0.0		164.0	15.0
2018	19.2	7.7	38.4	3.7	15.2	3.9	6.4	1.6	0.0		79.2	8.7
2017	no sample											
2016	no sample											
2015	26.4	5.7	46.4	7.9	40.8	8.3	20.8	2.9	1.6	1.0	134.4	14.9
2014	38.0	6.6	46.0	12.5	11.0	6.2	11.0	2.5	1.0	1.0	106.0	18.9
2013	no sample											
2012	16.8	4.6	12.0	3.8	5.6	2.4	10.4	4.3	0.8	0.8	44.8	8.3
2011	23.2	5.6	34.4	9.7	16.8	3.9	16.0	3.4	0.8	0.8	90.4	12.8
2010	17.6	6.3	26.4	16.4	8.0	2.8	19.2	2.7	0.8	0.8	71.2	22.8
2009	11.2	4.1	19.9	3.3	9.6	2.0	11.2	1.5	1.6	1.0	51.8	7.4
2008	7.8	4.8	19.5	7.2	20.2	3.7	19.4	2.4	0.8	0.8	66.9	12.2
2007	7.9	3.3	48.6	13.3	15.7	2.6	21.1	5.3	1.6	1.0	93.3	19.3
2006	9.3	2.0	19.9	6.0	13.3	3.0	9.3	2.7	0.7	0.7	51.7	10.7
2005	4.8	2.3	23.2	6.0	17.6	4.8	4.8	2.0	0.0		50.4	10.8
2004	2.7	2.7	89.3	19.2	4.0	2.3	5.3	3.5	0.0		101.3	26.8
2003	14.0	3.7	22.0	3.8	3.3	1.2	5.3	2.0	0.0		68.0	15.7

EFDMLLSS.D03-D23

Table 86. PSD and RSD values obtained for each black bass species taken in nocturnal spring electrofishing samples in Martins Fork Lake (330 acres) on 26 April 2023; 95% confidence intervals are in parentheses.

Largemouth Bass			Spotted Bass			Smallmouth Bass		
≥ Stock size	PSD	RSD ₁₅	≥ Stock size	PSD	RSD ₁₄	≥ Stock size	PSD	RSD ₁₄
166	15	3	42	2		4		
	(9-20)	(0-6)		(0-7)				

EFDMLLSS.D23

Table 87. Spring electrofishing population assessment for Largemouth Bass collected from Martins Fork Lake (330 acres) from 2008-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year											
	2008	2009	2010	2011	2012	2014	2015	2018	2019	2021	2022	2023
Mean length age 3 at capture	4 (14.3)	4 (11.8)	4 (11.8)	4 (11.8)	4 (11.8)	3 (10.9)	3 (10.9)	3 (10.9)	3 (10.9)	2 (10.4)	2 (10.4)	2 (10.4)
Spring CPUE age 1	2 (10.0)	1 (7.2)	1 (4.8)	2 (11.2)	2 (8.8)	3 (22.0)	3 (22.4)	2 (17.6)	4 (71.2)	3 (29.6)	4 (106.0)	3 (43.2)
Spring CPUE 12.0-14.9 in	2 (20.2)	1 (9.6)	1 (8.0)	2 (16.8)	1 (5.6)	1 (11.0)	3 (40.8)	2 (15.2)	1 (12.0)	1 (12.8)	2 (13.6)	2 (15.2)
Spring CPUE \geq 15.0 in	3 (19.4)	2 (11.2)	3 (19.2)	3 (16.0)	2 (10.4)	2 (11.0)	3 (20.8)	2 (6.4)	3 (14.4)	1 (3.2)	1 (4.0)	1 (4.0)
Spring CPUE >20.0 in	2 (0.8)	3 (1.6)	2 (0.8)	2 (0.8)	2 (0.8)	2 (1.0)	3 (1.6)	1 (0.0)	1 (0.0)	2 (0.8)	1 (0.0)	1 (0.0)
Total score	13	11	11	13	11	11	15	10	12	9	10	9
Assessment rating	Good	Fair	Fair	Good	Fair	Fair	Good	Fair	Fair	Fair	Fair	Fair
Instantaneous mortality (z)	0.48	0.54	0.37	0.33	0.54							
Annual mortality (A)	38.40	41.60	31.30	28.40	41.60							

EFDMLLSS.D08-D12, D14-D15, D18-D19, D21-D23

EFDMLLAS.D09, D11

EFDMLLAF.D14-D19

Table 88. Length frequency and CPUE (fish/hr) of black bass and Walleye collected at Martins Fork Lake (330 acres) during 1.25 hours of 15-minute nocturnal electrofishing samples on 12 October 2023.

Species	Inch class											Total	CPUE	SE			
	3	4	5	6	7	8	9	10	11	12	13				16	20	
Smallmouth Bass		2													2	1.6	1.6
Spotted Bass		4	1	1	3	5	4	6	2						26	20.8	7.1
Largemouth Bass	18	32	46	5		5	13	30	23	5		1	1		179	143.2	31.6
Coosa Bass															0	0.0	0.0
Walleye					1	3	7	2		1	3				17	13.6	5.7

EFDMLLSF.D23

Table 89. Indices of year class strength at age 0 and age 1 and mean length (in) of age-0 Largemouth Bass collected by nocturnal electrofishing from 2002-2023 at Martins Fork Lake (330 acres).

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1		
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE	
2023	4.9	0.1	80.8	21.3	40.8	9.6			
2022	5.1	0.1	66.4	18.1	38.4	8.1	43.2	14.6	
2021	4.9	0.1	87.2	16.9	36.8	5.9	106.0	22.6	
2020	4.5	0.2	16.0	3.9	4.7	2.4	29.6	9.7	
2019	5.0	0.1	46.0	10.5	21.0	7.6	no sample		
2018	5.4	0.1	67.0	11.1	44.0	8.2	71.2	23.3	
2017	4.5	0.1	95.0	24.6	25.0	4.4	17.6	7.4	
2016	4.5	0.1	67.0	26.5	15.0	9.0	no sample		
2015	4.6	0.1	59.0	24.4	18.0	7.4	no sample		
2014	4.9	0.1	39.2	11.8	21.6	8.2	22.4	4.1	
2013	4.0	0.2	21.0	6.6	6.0	1.2	22.0	5.3	
2012	4.8	0.2	28.8	4.6	13.6	3.9	no sample		
2011	4.7	0.1	20.0	6.8	7.2	1.5	8.8	2.7	
2010	5.2	0.2	40.0	11.6	26.7	9.3	11.2	3.4	
2009	4.3	0.2	23.2	8.3	7.2	2.3	4.8	2.0	
2008	4.4	0.2	31.9	14.3	10.3	2.7	7.2	2.9	
2007	4.6	0.2	28.7	8.7	10.4	3.0	10.0	5.1	
2006	4.5	0.1	38.4	14.5	11.2	3.2	10.1	3.4	
2005	4.4	0.2	32.0	4.3	10.0	2.6	10.0	2.3	
2004			no fall sample					24.6	5.9
2003			no fall sample					77.5	18.5
2002	5.5	0.1	34.4	8.6	25.6	7.9	15.3	3.6	

EFDMLLSF.D02, D05-D23

EFDMLLSS.D03-D19, D23

EFDMLLAS.D03, D09

EFDMLLAF.D20

Table 90. Number of fish and mean relative weight (W_r) for length groups of black bass collected at Martins Fork Lake during October 2023. Standard errors are in parentheses.

Species	Length group					
	8.0-11.9 in		12.0-14.9 in		≥15.0 in	
	No.	W_r	No.	W_r	No.	W_r
Largemouth Bass	71	78 (1)	5	74 (3)	2	87 (4)
	7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	No.	W_r	No.	W_r	No.	W_r
Spotted Bass	18	94 (3)	2	89 (10)	0	0 (0)
	No.	W_r	No.	W_r	No.	W_r
Smallmouth Bass	0	0 (0)	0	0 (0)	0	0 (0)
	10.0-14.9 in		15.0-19.9 in		≥20.0 in	
	No.	W_r	No.	W_r	No.	W_r
Walleye	6	75 (2)	0	0 (0)	0	0 (0)

EFDMFLSF.D23

Table 91. Length frequency and electrofishing CPUE (fish/hr) of Largemouth Bass collected in 1.0 hour of 7.5-min. electrofishing runs in Pikeville City Lake (20 acres) on 18 April 2023.

Species	Inch class																			Total	CPUE	SE
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				
Largemouth Bass	4	1	1	3	5	4	4	4	1	3	4	7	8	8	9	1	7	1	75	75.0	6.9	

EFDHALSS.D23

Table 92. Spring electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Pikeville City Lake (20 acres) from 2004-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE		
2023	9.0	5.3	17.0	3.5	8.0	3.0	41.0	6.3	8.0	2.1	75.0	6.9
2021	2.0	1.3	21.0	3.0	14.0	3.9	57.0	8.2	5.0	3.4	94.0	9.7
2017	10.7	5.3	18.7	4.0	8.0	2.1	32.0	7.5	5.3	4.0	69.3	11.6
2016	no sample											
2015	10.7	2.7	20.0	3.4	17.3	4.8	37.3	9.6	6.7	3.8	85.3	7.4
2014	11.4	3.4	22.9	2.1	13.7	3.4	57.1	9.1	11.4	3.0	105.1	8.8
2013	no sample											
2012	8.0	2.9	6.7	2.5	4.0	2.7	36.0	6.8	1.3	1.3	54.7	9.1
2011	no sample											
2010	22.9	3.2	21.7	5.4	21.7	7.6	52.6	4.9	8.0	1.8	118.9	10.1
2009	22.7	4.8	18.7	4.9	9.3	3.2	25.3	4.8	8.0	2.1	76.0	6.1
2008	10.7	3.4	48.0	7.5	10.7	2.7	50.7	7.4	10.7	4.9	120.0	16.7
2007	43.2	15.1	11.2	3.2	8.0	4.4	46.4	6.9	6.4	3.0	108.8	24.3
2006	5.1	2.5	34.8	4.1	4.0	2.7	49.0	6.2	1.3		92.9	9.1
2005	12.8	4.3	11.5	3.3	1.3	1.3	51.3	9.5	8.9		76.9	8.1
2004	5.1	2.6	12.8	12.8	15.4	7.7	30.8	8.9	2.6		64.1	2.6

EFDHALSS.D04-D17, D21, D23

Table 93. PSD and RSD₁₅ values obtained for Largemouth Bass from spring electrofishing samples in Pikeville City Lake (20 acres) on 18 April 2023; 95% confidence intervals are in parentheses.

No.	PSD	RSD ₁₅
66	74 (64-85)	62 (50-74)

EFDHALSS.D23

Table 94. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in approximately 2.5 hours of 15-minute nocturnal electrofishing runs in Paintsville Lake (1,150 acres) on 21 April 2023.

Area	Species	Inch class																			Total	CPUE	SE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Lower	Spotted Bass							1													1	0.8	0.8
	Largemouth Bass	5	11	21	27	8	24	45	31	19	6	5	4	6	3	2	4			1	222	177.6	32.6
Upper	Spotted Bass		1		1		3			1											6	4.8	2.9
	Largemouth Bass		1	1	14	8	26	22	17	19	11	6	5	5	3	2		2	1		143	114.4	4.7
Total	Spotted Bass		1		1		3	1		1											7	2.8	1.6
	Largemouth Bass	5	12	22	41	16	50	67	48	38	17	11	9	11	6	4	4	2	1	1	365	146.0	18.8

EFDPLLSS.D23

Table 95. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of Largemouth Bass collected at Paintsville Lake (1,150 acres) from 1988-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	SE
2023	38.4	10.4	81.2	11.1	14.8	1.9	11.6	2.7	0.8	0.5	146.0	18.8
2022	32.4	6.2	62.0	9.5	28.0	3.4	9.6	2.8	1.6	0.7	132.0	16.7
2021	26.4	5.1	46.0	8.1	16.4	2.8	6.8	2.3	0.8	0.8	95.6	13.3
2020	no sample											
2019	50.9	16.4	52.6	5.0	12.0	2.5	11.4	3.0	1.7	1.2	126.9	16.2
2018	64.6	17.1	43.4	7.3	13.1	2.1	4.0	1.6	0.0	0.0	126.9	15.4
2017	35.2	5.3	61.2	11.3	6.4	1.4	6.4	1.5	0.8	0.5	109.2	16.3
2016	67.6	6.2	80.0	7.8	9.2	2.0	10.4	2.1	1.2	0.6	167.2	9.1
2015	83.6	7.4	68.4	11.5	17.8	3.6	10.7	3.0	2.7	1.5	180.4	15.4
2014	62.4	8.1	64.5	6.0	24.8	3.8	4.3	1.3	0.8	0.4	156.0	8.6
2013	58.6	4.9	60.0	5.6	4.6	1.1	4.0	1.0	0.3	0.3	127.1	7.0
2012	63.2	10.5	61.6	7.0	9.9	1.6	2.1	0.7	1.3	0.5	136.8	14.8
2011	40.6	7.2	56.9	5.1	9.4	1.9	3.7	0.9	1.1	0.5	110.6	11.6
2010	51.2	16.4	86.4	11.6	13.3	1.7	5.6	1.1	1.9	0.5	156.5	26.3
2009	28.1	8.0	69.2	24.6	6.2	2.6	2.3	1.0	0.0	0.0	105.9	16.4
2008	37.8	6.6	79.3	11.9	9.8	1.8	4.0	1.6	0.4	0.4	130.8	14.1
2007	39.8	9.5	81.6	23.0	11.1	3.1	6.5	0.8	0.0	0.0	139.0	20.5
2006	30.6	4.4	65.1	12.6	13.6	1.9	2.6	1.1	0.0	0.0	111.9	14.3
2005	80.4	31.9	133.3	38.9	35.1	6.0	6.2	1.2	0.4	0.4	255.1	72.7
2004	62.7	10.9	92.0	19.2	17.0	3.4	2.0	0.9	0.0	0.0	173.7	25.4
2003	106.0	21.2	71.0	10.8	19.7	5.7	3.0	1.3	0.3	0.3	199.7	35.2
2002	41.8	1.8	70.5	2.7	36.0	1.4	2.2	0.2	0.0	0.0	150.9	14.2
2001	42.3	5.5	63.0	10.8	46.7	4.8	4.3	0.9	0.7	0.5	156.3	17.5
2000	12.7	5.0	95.0	19.6	27.0	7.8	2.0	0.8	0.0	0.0	136.7	28.0
1999	36.3		65.7		36.7		2.3		0.0		141.0	12.1
1998	25.7		87.7		26.3		0.0		0.0		139.7	17.9
1997	29.0		40.0		26.3		1.0		0.3		96.3	11.5
1996	no sample											
1995	no sample											
1994	34.0		47.4		26.6		3.6		0.3		111.6	15.6
1993	16.4		26.3		22.5		2.8		0.6		68.0	
1992	16.4		44.0		21.3		0.7		0.0		82.4	
1991	26.6		33.1		12.0		0.4		0.4		72.0	
1990	34.0		31.3		2.7		2.0		0.0		70.0	
1989	15.4		16.0		3.4		0.9		0.0		36.3	
1988	6.8		10.6		1.6		0.3		0.0		19.3	

EFDPLLSS.D88-D23

Table 96. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples in each area of Paintsville Lake (1,150 acres) on 24 April 2023; 95% confidence intervals are in parentheses.

Area	Largemouth Bass			Spotted Bass		
	≥ Stock size	PSD (95% CI)	RSD ₁₅ (95% CI)	≥ Stock size	PSD (95% CI)	RSD ₁₄
Lower	150	21 (14-27)	11 (6-16)	1	0	0
Upper	119	29 (21-38)	11 (5-17)	4	25 (0-74)	0
Total	269	25 (19-30)	11 (7-14)	5	20 (0-59)	0

EFDPLLSS.D23

Table 97. Spring nocturnal electrofishing population assessment for Largemouth Bass collected in Paintsville Lake (1,150 acres) from 2011-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	2011	2012	2013	2014	2015	2016	2017	2018	2019	2021	2022	2023
Mean length age 3 at capture	1 (10.6)	2 (11.2)	2 (11.2)	2 (11.2)	2 (11.2)	2 (11.2)	2 (11.2)	2 (11.9)	2 (11.9)	2 (11.9)	2 (11.9)	1 (11.0)
Spring CPUE age 1	3 (35.6)	4 (68.8)	4 (64.9)	4 (63.7)	4 (90.7)	4 (71.2)	3 (39.2)	4 (56.6)	4 (42.9)	3 (24.0)	2 (21.6)	3 (34.0)
Spring CPUE 12.0-14.9 in	1 (9.4)	1 (9.9)	1 (4.6)	3 (24.8)	2 (17.8)	1 (9.2)	1 (6.4)	1 (13.1)	1 (12.0)	2 (16.4)	3 (28.0)	1 (14.8)
Spring CPUE \geq 15.0 in	1 (3.7)	1 (2.1)	1 (4.0)	1 (4.3)	2 (10.7)	2 (10.4)	2 (6.4)	1 (4.0)	2 (11.4)	2 (6.8)	2 (9.6)	2 (11.6)
Spring CPUE \geq 20.0 in	3 (1.1)	4 (1.3)	2 (0.3)	3 (0.8)	4 (2.7)	3 (1.2)	3 (0.8)	1 (0.0)	4 (1.7)	3 (0.8)	4 (1.6)	3 (0.8)
Total score	9	10	10	13	14	12	11	9	13	12	13	10
Assessment rating	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair	Good	Fair
Instantaneous mortality (z)	0.57											
Annual mortality (A)	83.70											

EFDPLLSS.D11-D19, D21-D23

EFDPLLAS.D11, D23

EFDPLLAF.D12, D18

Table 98. Mean back-calculated length (in) at each annulus for Largemouth Bass collected from Paintsville Lake (1,139 acres) over 3 days in February and March 2023, including 95% confidence intervals.

Year class	No.	Age										
		1	2	3	4	5	6	7	8	9	10	
2022	12	6.0										
2021	20	6.0	9.2									
2020	13	5.2	9.0	11.0								
2019	19	6.0	9.7	11.5	12.7							
2018	13	5.8	9.9	11.4	12.9	14.2						
2017	11	6.8	10.1	12.0	13.2	14.4	15.7					
2016	3	7.2	10.5	12.7	14.6	16.2	17.6	18.8				
2015	5	7.3	11.1	13.7	15.4	17.1	18.6	19.5	20.1			
2013	1	8.4	12.0	13.9	15.2	17.1	19.1	19.7	20.7	21.4	22.0	
Mean		6.2	9.7	11.7	13.3	15.0	16.9	19.3	20.2	21.4	22.0	
Number		97	85	65	52	33	20	9	6	1	1	
Smallest		3.5	5.9	7.7	8.4	10.5	11.6	17.4	18.0	21.4	22.0	
Largest		8.6	12.0	15.3	18.1	19.9	20.6	21.4	22.3	21.4	22.0	
SE		0.1	0.1	0.2	0.3	0.4	0.6	0.5	0.7			
95% CI LO		6.0	9.5	11.4	12.8	14.2	15.8	18.4	18.8			
95% CI HI		6.4	9.9	12.1	13.8	15.8	18.0	20.2	21.7			

Intercept = 0
 EFDPLLAS.D23

Table 99. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 2.5 hours of 15-minute nocturnal electrofishing runs in Paintsville Lake (1,150 acres) on 10 October 2023.

Area	Species	Inch class																			Total	CPUE	SE
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Lower																							
	Spotted Bass					1			1		1										3	2.4	1.6
	Largemouth Bass		7	11	4	2	25	23	34	17	3	7	1	1	1	2		1			139	111.2	12.0
Upper																							
	Spotted Bass				1	1		1					1								4	3.2	2.0
	Largemouth Bass	1	4	4	3		6	20	17	22	14	2	2	2		1	1		3	1	103	82.4	12.5
Total																							
	Spotted Bass				1	2		1	1			1	1								7	2.8	1.2
	Largemouth Bass	1	11	15	7	2	31	43	51	39	17	9	3	3	1	3	1	1	3	1	242	96.8	9.5

EFDPLLSF.D23

Table 100. Indices of year class strength at age 0 and age 1 and mean length (in) of age-0 Largemouth Bass collected by nocturnal electrofishing from 2003-2023 at Paintsville Lake (1,150 acres).

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.4	0.1	14.0	2.5	3.2	1.2		
2022	4.9	0.1	106.0	22.5	52.0	16.6	34.0	10.7
2021	4.5	0.1	81.8	30.0	26.7	7.6	21.6	5.0
2020	3.3	0.1	71.2	13.9	6.0	4.3	24.0	8.3
2019	4.4	0.1	74.7	9.3	25.3	4.5	no sample	
2018	4.6	0.1	50.9	9.8	22.9	7.8	42.9	15.9
2017	5.0	0.1	125.2	20.2	62.4	12.9	56.6	14.6
2016	5.0	0.1	70.0	6.3	34.0	8.6	39.2	6.1
2015	4.9	0.1	95.1	17.7	42.2	6.7	71.2	5.6
2014	4.8	0.1	60.0	11.0	27.0	7.3	90.7	7.4
2013	4.9	<0.1	111.7	13.8	53.1	5.0	63.7	8.3
2012	5.0	0.1	58.1	10.6	32.3	7.3	64.9	5.0
2011	5.1	0.1	36.3	7.2	19.7	4.3	68.8	11.1
2010	4.6	0.1	86.4	19.5	31.5	6.9	35.6	6.7
2009	4.6	0.1	64.6	13.3	23.1	10.7	58.1	17.6
2008	4.6	0.1	24.8	8.8	8.1	5.2	35.6	9.7
2007	5.1	0.1	52.4	24.0	30.2	15.6	51.5	7.3
2006	4.9	0.1	72.4	12.0	33.6	5.1	44.0	8.4
2005	4.5	0.1	46.0	9.6	10.7	2.7	43.5	5.9
2004	5.1	0.1	65.7	10.8	37.3	8.6	75.6	29.2
2003	4.8	0.1	31.3	6.1	14.0	2.2	61.4	10.7
2002			66.6				95.2	20.1

EFDPLLSF.D03-D23
EFDPLLSS.D02-D19, D23
EFDPLLAS.D03, D06, D11
EFDPLLAF.D12, D18

Table 101. Number of fish and mean relative weight (W_r) for length groups of Largemouth and Spotted bass collected at Paintsville Lake during October 2023. Standard errors are in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		≥15.0 in	
		No.	W_r	No.	W_r	No.	W_r
Largemouth Bass	Lower	69	75 (<1)	8	79 (2)	4	98 (5)
	Upper	73	79 (<1)	6	87 (2)	6	95 (3)
	Total	142	77 (<1)	14	83 (2)	10	96 (3)
Spotted Bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in	
		No.	W_r	No.	W_r	No.	W_r
	Lower	1	95 (<1)	1	99 (<1)	0	0 (0)
	Upper	1	91 (<1)	1	101 (<1)	0	0 (0)
	Total	2	93 (2)	2	100 (1)	0	0 (0)

EFDPLLSF.D23

Table 102. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in approximately 3.0 hours of 15-minute nocturnal electrofishing runs at Yatesville Lake (2,280 acres) on 25 April 2023.

Area	Species	Inch class																		Total	CPUE	SE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Lower	Spotted Bass																			0	0.0	0.0
	Largemouth Bass	3	18	16	11	19	54	18	13	14	7	10	13	7	17	11	2		1	234	156.0	14.1
Upper	Spotted Bass																			0	0.0	0.0
	Largemouth Bass	7	32	43	23	16	62	34	11	13	15	11	10	7	5	6	2	2	1	300	200.0	25.2
Total	Spotted Bass																			0	0.0	0.0
	Largemouth Bass	10	50	59	34	35	116	52	24	27	22	21	23	14	22	17	4	2	2	534	178.0	15.3

EFDYLLSS.D23

Table 103. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of Largemouth Bass at Yatesville Lake (2,280 acres) from 1993-2023.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	62.7	10.8	73.0	9.6	22.0	3.1	20.3	3.0	0.7	0.5	178.0	15.3
2022	49.0	8.8	68.3	5.9	30.0	3.5	23.0	2.8	1.0	0.5	170.3	12.8
2021	26.3	5.3	27.0	7.7	14.7	2.3	11.0	2.0	0.3	0.3	79.0	14.6
2020	71.5	15.8	46.0	6.7	20.0	2.9	13.0	2.6	0.5	0.5	150.5	20.8
2019	49.7	5.2	58.3	6.6	28.3	5.4	15.7	3.1	0.0		152.0	11.9
2018	55.3	7.2	64.3	7.1	23.0	3.9	14.0	4.1	0.3	0.3	156.7	9.4
2017	76.7	11.1	55.3	8.7	37.3	4.8	21.0	4.1	0.7	0.7	190.3	17.0
2016	57.3	9.9	50.7	8.8	16.0	4.8	16.7	4.6	0.7	0.7	140.7	16.5
2015	57.3	7.3	67.3	5.4	23.0	3.1	23.3	3.8	0.7	0.5	171.0	8.6
2014	46.0	2.7	67.7	6.7	23.3	2.7	16.7	2.6	0.3	0.3	153.7	10.3
2013							no sample					
2012	23.2	2.8	49.2	7.4	21.6	2.6	8.4	2.1	0.8	0.5	102.4	10.3
2011							no sample					
2010	44.0	6.3	57.0	8.7	19.3	3.8	11.0	2.8	0.7	0.5	131.3	11.7
2009	28.6	5.4	68.3	7.5	30.6	2.8	16.6	3.2	0.0		144.1	9.7
2008	47.0	8.4	38.3	3.8	20.4	3.7	16.6	4.9	0.0		122.3	10.3
2007	47.7	5.9	62.3	5.7	31.3	4.2	15.8	2.7	0.0		157.1	10.7
2006	47.3	7.4	68.0	10.3	20.3	2.2	16.0	4.0	0.7		151.7	17.5
2005	43.7	7.8	61.3	6.6	42.0	4.7	21.7	2.1	0.3		168.7	15.4
2004	12.7	2.8	40.3	10.5	23.7	5.1	9.0	2.2	0.0		85.7	19.4
2003							no sample					
2002	54.3	7.8	50.0	4.4	19.3	2.9	16.7	3.2	0.0		140.3	7.4
2001	35.0	7.0	58.3	7.5	19.3	3.2	9.7	2.1	0.3		122.3	7.8
2000	63.3	8.0	55.7	7.9	9.3	1.1	7.0	1.6	0.0		135.5	13.7
1999	42.7		29.0		16.3		13.7		0.3		101.7	12.2
1998	10.7		25.7		16.3		5.7		0.0		58.3	7.2
1997	50.7		23.7		16.7		2.0		0.0		93.0	10.5
1996	21.5		65.5		7.8		1.5		0.0		96.3	11.5
1995							no sample					
1994							no sample					
1993	153.7		82.9		20.1		7.4		0.0		264.0	

EFDYLLSS.D93-D23

Table 104. PSD and RSD values for black bass species taken in spring electrofishing samples in each area of Yatesville Lake (2,280 acres) on 25 April 2023; 95% confidence intervals are in parentheses.

Area	Largemouth Bass			Spotted Bass		
	≥ Stock size	PSD	RSD ₁₅	≥ Stock size	PSD	RSD ₁₄
Lower	167	41 (33-48)	23 (16-29)	0		
Upper	179	33 (26-40)	13 (8-18)			
Total	346	37 (32-42)	18 (14-22)			

EFDYLLSS.D23

Table 105. Spring nocturnal electrofishing population assessment for Largemouth Bass collected at Yatesville Lake (2,280 acres) from 2012-2023. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year										
	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Mean length age 3 at capture	2 (12.4)	2 (12.4)	1 (11.1)	1 (11.1)	1 (11.1)	1 (11.1)	1 (11.1)	1 (11.1)	3 (12.6)	3 (12.6)	3 (12.6)
Spring CPUE age 1	2 (19.4)	3 (37.0)	4 (54.3)	4 (56.7)	4 (73.3)	4 (51.3)	4 (46.0)	4 (70.0)	3 (23.2)	4 (52.3)	4 (75.3)
Spring CPUE 12.0-14.9 in	2 (21.6)	3 (23.3)	3 (23.0)	1 (16.0)	4 (37.3)	3 (23.0)	3 (28.3)	2 (20.0)	1 (14.7)	3 (30.0)	2 (22.0)
Spring CPUE \geq 15.0 in	2 (8.4)	3 (16.7)	4 (23.3)	3 (16.7)	4 (21.0)	3 (14.0)	3 (15.7)	2 (13.0)	2 (11.0)	4 (23.0)	4 (23.3)
Spring CPUE \geq 20.0 in	3 (0.8)	2 (0.3)	3 (0.7)	3 (0.7)	3 (0.7)	2 (0.3)	1 (0.0)	3 (0.5)	2 (0.3)	3 (1.0)	3 (0.7)
Total score	11	13	15	12	16	13	12	12	11	17	16
Assessment rating	Fair	Good	Good	Fair	Good	Good	Fair	Fair	Fair	Excellent	Good
Instantaneous mortality (z)	0.79	0.77									
Annual mortality (A)	54.60	53.70									

EFDYLLSS.D12, D14-D23

EFDYLLAS.D12, D23

EFDYLLAF.D21*

* Back calculated fall age file

Table 106. Length frequency and nocturnal electrofishing CPUE (fish/hr) of black bass collected at Yatesville Lake (2,280 acres) during 3.0 hours of 15-minute samples on 4 October 2023.

Area	Species	Inch class																		Total	CPUE	SE		
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20	
Lower	Spotted Bass					1				1		1									3	2.4	1.6	
	Largemouth Bass		7	11	4	2	25	23	34	17	3	7	1	1	1	2		1			139	111.2	12.0	
Upper	Spotted Bass				1	1		1					1								4	3.2	2.0	
	Largemouth Bass	1	4	4	3		6	20	17	22	14	2	2	2		1	1			3	1	103	82.4	12.5
Total	Spotted Bass				1	2		1	1			1	1								7	2.8	1.2	
	Largemouth Bass	1	11	15	7	2	31	43	51	39	17	9	3	3	1	3	1	1	3	1	242	96.8	9.5	

EFDYLLSF.D23

Table 107. Indices of year class strength at age 0 and age 1 and mean length (in) of age-0 Largemouth Bass collected by nocturnal electrofishing from 2003-2023 at Yatesville Lake (2,280 acres).

Year class	Age 0		Age 0		Age 0 \geq 5.0 in		Age 1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2023	4.4	0.1	32.3	7.5	6.0	2.9		
2022	4.6	0.1	51.7	5.8	18.7	3.1	75.3	11.3
2021	4.7	0.1	52.7	13.4	21.0	5.5	52.3	9.0
2020	4.8	0.1	53.7	9.8	22.0	4.5	23.2	8.4
2019	5.0	0.1	85.3	16.1	34.7	9.5	70.0	15.3
2018	5.3	0.1	79.6	17.8	49.2	14.4	46.0	5.2
2017	5.1	0.1	84.4	8.7	46.4	7.1	51.3	7.1
2016	5.8	0.1	67.3	7.1	61.3	7.2	73.3	10.9
2015	5.0	0.1	92.0	11.3	48.7	9.9	56.7	9.9
2014	4.7	0.1	79.3	14.8	29.3	7.8	54.3	7.7
2013	5.2	0.1	39.6	5.8	25.6	5.0	37.0	2.9
2012	5.0	0.1	82.9	20.0	45.1	10.1	no sample	
2011	4.9	0.1	55.3	9.6	28.7	4.9	19.4	2.5
2010	5.1	0.1	78.6	11.5	45.1	8.7	no sample	
2009	4.9	0.1	32.7	6.5	16.3	4.0	42.6	6.4
2008	5.1	0.1	45.9	7.8	28.4	6.0	28.2	5.3
2007	5.3	0.1	37.4	10.6	23.2	6.1	45.0	8.1
2006	4.9	0.1	29.5	7.8	13.8	3.8	47.0	6.0
2005	4.7	0.1	47.0	12.3	20.0	7.1	45.9	7.2
2004	4.8	0.1	69.5	13.5	32.5	10.8	42.3	7.1
2003	5.3	0.1	46.0	6.3	29.3	4.4	12.7	2.8

EFDYLLSS.D03-D23

EFDYLLSF.D03-D23

EFDYLLAS.D05, D06, D12

EFDYLLAF.D15

Table 108. Number of fish and mean relative weight (W_r) for length groups of Largemouth and Spotted bass collected at Yatesville Lake during October 2023. Standard errors are in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		≥15.0 in	
		No.	W_r	No.	W_r	No.	W_r
Largemouth Bass	Lower	78	77 (1)	8	84 (5)	10	94 (3)
	Upper	121	81 (<1)	13	87 (2)	7	95 (3)
	Total	199	79 (<1)	21	85 (2)	17	95 (2)
Spotted Bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in	
		No.	W_r	No.	W_r	No.	W_r
	Lower	2	82 (2)	0	0 (0)	0	0 (0)
	Upper	1	91 (<1)	1	90 (<1)	0	0 (0)
	Total	3	85 (3)	1	90 (<1)	0	0 (0)

EFDPLLSF.D23

Appendix A. Buckhorn Lake Angler Attitude Survey 2023

Frequency Table (N=77)

Q1. Home Zip Code

(N=77): Unique Zips = 29 (4 States: KY, OH, TN, VA)

Q3. On average, how many times do you fish Buckhorn Lake in a year?

	Frequency	Percent
First Time	8	10.4%
1 to 4	4	5.2%
5 to 10	21	27.3%
More than 10	44	57.1%
Total	77	

Q4. Which species of fish do you fish for at Buckhorn Lake?

	Frequency	Percent
Bass	36	46.8%
Crappie	53	68.8%
Catfish	6	7.8%
Muskellunge	2	2.6%
Bluegill/Redear	18	23.4%
Other	1	1.3%
Total	77	

Q5. Which one species do you fish for most at Buckhorn Lake?

	Frequency	Percent
Bass	28	36.4%
Crappie	35	45.5%
Catfish	4	5.2%
Muskellunge	1	1.3%
Bluegill/Redear	9	11.7%
Total	77	

Q6. In general, what level of satisfaction do you have with Bass fishing at Buckhorn Lake?

	Frequency	Percent
Very Satisfied	8	22.2%
Somewhat Satisfied	10	27.8%
Neutral	11	30.6%
Somewhat Dissatisfied	7	19.4%
Very Dissatisfied	0	0.0%
No opinion	0	0.0%
Total	36	

Q6a. If you responded with somewhat or very Satisfied in Question 6 - What is the single most important reason for your Satisfaction?

	Frequency	Percent
Number of fish	10	55.6%
Size of fish	6	33.3%
Size limit	0	0.0%
Creel limit	0	0.0%
Low angler pressure	2	11.1%
Total	18	

Q6b. If you responded with somewhat or very Dissatisfied in Question 6 - What is the single most important reason for your Dissatisfaction?

	Frequency	Percent
Number of fish	6	85.7%
Size of fish	1	14.3%
Size limit	0	0.0%
Creel limit	0	0.0%
Too many anglers	0	0.0%
Total	7	

Q7. In general, what level of satisfaction do you have with Crappie fishing at Buckhorn Lake?

	Frequency	Percent
Very Satisfied	28	52.8%
Somewhat Satisfied	16	30.2%
Neutral	9	17.0%
Somewhat Dissatisfied	0	0.0%
Very Dissatisfied	0	0.0%
No opinion	0	0.0%
Total	53	

Q7a. If you responded with somewhat or very Satisfied in Question 7 - What is the single most important reason for your Satisfaction?

	Frequency	Percent
Number of fish	40	90.9%
Size of fish	4	9.1%
Size limit	9	20.5%
Creel limit	0	0.0%
Low angler pressure	0	0.0%
Total	44	

Q7b. If you responded with somewhat or very Dissatisfied in Question 7 - What is the single most

	Frequency	Percent
Number of fish	0	0.0%
Size of fish	0	0.0%
Size limit	0	0.0%
Creel limit	0	0.0%
Too many anglers	0	0.0%
Total	0	

Q8. In general, what level of satisfaction do you have with catfish fishing at Buckhorn Lake?

	Frequency	Percent
Very Satisfied	2	33.3%
Somewhat Satisfied	3	50.0%
Neutral	1	16.7%
Somewhat Dissatisfied	0	0.0%
Very Dissatisfied	0	0.0%
No opinion	0	0.0%
Total	6	

Q8a. If you responded with somewhat or very Satisfied in Question 8 - What is the single most important reason for your Satisfaction?

	Frequency	Percent
Number of fish	4	80.0%
Size of fish	1	20.0%
Size limit	0	0.0%
Creel limit	0	0.0%
Low angler pressure	0	0.0%
Total	5	

Q8b. If you responded with somewhat or very Dissatisfied in Question 8 - What is the single most important reason for your Dissatisfaction?

	Frequency	Percent
Number of fish	0	0.0%
Size of fish	0	0.0%
Size limit	0	0.0%
Creel limit	0	0.0%
Too many anglers	0	0.0%
Total	0	

Q9. In general, what level of satisfaction do you have with Muskie fishing at Buckhorn Lake?

	Frequency	Percent
Very Satisfied	1	50.0%
Somewhat Satisfied	0	0.0%
Neutral	0	0.0%
Somewhat Dissatisfied	1	50.0%
Very Dissatisfied	0	0.0%
No Opinion	0	0.0%
Total	2	

Q9a. If you responded with somewhat or very Satisfied in Question 9 - What is the single most important reason for your Satisfaction?

	Frequency	Percent
Number of fish	1	100.0%
Size of fish	0	0.0%
Size limit	0	0.0%
Creel limit	0	0.0%
Too many anglers	0	0.0%
Total	1	

Q9b. If you responded with somewhat or very Dissatisfied in Question 9 - What is the single most important reason for your Dissatisfaction?

	Frequency	Percent
Number of fish	1	100.0%
Size of fish	0	0.0%
Size limit	0	0.0%
Creel limit	0	0.0%
Too many anglers	0	0.0%
Total	1	

Q9c. Over the past 3 years, has your catch rate of Muskie less than 40 inches at Buckhorn Lake:

	Frequency	Percent
Stayed the same	1	50.0%
Decreased	1	50.0%
Increased	0	0.0%
Don't know	0	0.0%
Total	2	

Q9d. Over the past 3 years, has your catch rate of Muskie greater than 40 inches at Buckhorn Lake:

	Frequency	Percent
Increased	2	100.0%
Stayed the same	0	0.0%
Decreased	0	0.0%
Don't know	0	0.0%
Total	2	

Q9e. Do you fish Muskie tournaments on Buckhorn Lake?

	Frequency	Percent
Yes	2	100.0%
No	0	0.0%
Total	2	

Q9f. About how many Muskie tournaments did you fish in Buckhorn Lake in the last 12 months?

	Frequency	Percent
1	0	0.0%
2	1	50.0%
3	0	0.0%
4	1	50.0%
5	0	0.0%
6 or greater	0	0.0%
Total	2	

Q10. In general, what level of satisfaction do you have with Bluegill/Redear fishing at Buckhorn Lake?

	Frequency	Percent
Very Satisfied	5	27.8%
Somewhat Satisfied	6	33.3%
Neutral	7	38.9%
Somewhat Dissatisfied	2	11.1%
Very Dissatisfied	0	0.0%
No Opinion	0	0.0%
Total	18	

Q10a. If you responded with somewhat or very Satisfied in Question 10 - What is the single most important reason for your Satisfaction?

	Frequency	Percent
Number of fish	8	72.7%
Size of fish	3	27.3%
Size limit	0	0.0%
Creel limit	0	0.0%
Low angler pressure	0	0.0%
Total	11	

Q10b. If you responded with somewhat or very Dissatisfied in Question 10 - What is the single most important reason for your Dissatisfaction?

	Frequency	Percent
Number of fish	0	0.0%
Size of fish	0	0.0%
Size limit	0	0.0%
Creel limit	0	0.0%
Too many anglers	0	0.0%
Total	0	

Q11. Are you satisfied with the current size and creel limits at Buckhorn Lake?

	Frequency	Percent
Yes	75	97.4%
No	2	2.6%
No opinion	0	0.0%
Total	77	

Q11b. If you responded No to Question 11, which species regulations are you dissatisfied with and what size and creel limits would you prefer?

	Frequency	Percent
Bass; 12" size limit	1	50.0%
Crappie; 10" size limit	1	50.0%
Total	2	

Q12. Do you fish the immediate tailwaters of Buckhorn Lake?

	Frequency	Percent
Yes	16	20.8%
No	60	77.9%
No answer	1	1.3%
Total	77	

Q12a. Which species do you fish for in the tailwaters of Buckhorn Lake?

	Frequency	Percent
Trout	3	18.8%
Walleye	1	6.3%
Catfish	4	25.0%
Bass	6	37.5%
Muskie	3	18.8%
Crappie	11	68.8%
Bluegill	4	25.0%
Total	16	

Appendix B. Actual numbers of larval Gizzard and Threadfin shad collected by 1000M Neuston net on Paintsville Lake by week for 2023. Three lake sections (upper, middle and lower) were sampled and two samples were collected at each site (6 total samples) on each date. Volume of water sampled at each site was calculated using a General Oceanics flow meter. Catch rates and volume for all six samples were combined for each sample date in this Appendix.

Paintsville Lake Ichthyoplankton sample							
Sample Date	Water volume (m ³) sampled	Gizzard Shad	CPUE/m ³	CPUE/100m ³	Threadfin Shad	CPUE/m ³	CPUE/100m ³
5/10/2023	2105.6	1	0.0005	0.05	0	0.0000	0.00
5/18/2023	2984.9	22	0.0074	0.74	0	0.0000	0.00
5/24/2023	2995.8	125	0.0417	4.17	0	0.0000	0.00
6/1/2023	3173.6	713	0.2247	22.47	27	0.0085	0.85
6/8/2023	3026.2	188	0.0621	6.21	7	0.0023	0.23
6/15/2023	3107.8	237	0.0763	7.63	20	0.0064	0.64
6/21/2023	3079.0	191	0.0620	6.20	18	0.0058	0.58
6/29/2023	3051.2	28	0.0092	0.92	15	0.0049	0.49
7/6/2023	3074.0	25	0.0081	0.81	11	0.0036	0.36
7/20/2023	3045.2	17	0.0056	0.56	13	0.0043	0.43
8/2/2023	3121.8	7	0.0022	0.22	9	0.0029	0.29
8/17/2023	3010.8	2	0.0007	0.07	54	0.0179	1.79
8/31/2023	3093.0	0	0.0000	0.00	65	0.0210	2.10
9/14/2023	3098.4	0	0.0000	0.00	60	0.0194	1.94
10/3/2023	3099.4	0	0.0000	0.00	17	0.0055	0.55
10/19/2023	3113.0	0	0.0000	0.00	2	0.0006	0.06

WESTERN FISHERY DISTRICT

Project 3: Technical Guidance

FINDINGS

No on-site private pond technical guidance visits were conducted by the Western Fishery District during the 2023 project year (April 1, 2023 - March 31, 2024). However, approximately 100 telephone calls to the office regarding technical guidance and stocking were handled, as well as numerous emails requesting farm pond technical guidance information.

NORTHWESTERN FISHERY DISTRICT

Project 3: Technical Guidance

FINDINGS

Requests for technical guidance information were received via e-mails, phone calls, and office visits. Problems included unbalanced populations, new pond construction, stocking, fish disease and fish kills, water quality issues, aquatic vegetation control, and general pond management. Requested information was relayed via phone, e-mail, office visit, and referencing the Pond Management section of the web site. There were two on-site visits conducted in 2023, providing various recommendations or surveying fish populations. On-site visits are only conducted for City, County, State, or Federally owned properties with public fishing opportunities.

SOUTHWESTERN FISHERY DISTRICT

Project 3: Technical Guidance

FINDINGS

Emails, phone calls, texts and a few office visits were the means of providing technical guidance to landowners. Fish stocking and aquatic vegetation remained as the most frequent requests made.

CENTRAL FISHERIES DISTRICT

Project 2: Stream Fishery Surveys – Warmwater Streams

FINDINGS

Stream sampling conditions for 2023 are summarized in Table 1.

Diurnal electrofishing for black bass and Rock Bass was conducted during May 2023 at two locations on Elkhorn Creek. These studies were conducted to assess the black bass, especially Smallmouth Bass and Rock Bass, populations. Length distribution and CPUE data of black bass and Rock Bass from Elkhorn Creek are presented in Table 2. Smallmouth Bass comprised 72.8% of the black bass sampled in the North Fork Elkhorn Creek, whereas Smallmouth Bass comprised 85.4% of the black bass sampled on the main stem Elkhorn Creek. The catch rate of Smallmouth Bass (76.0 fish/hr) on the main stem of Elkhorn Creek was lower than the historical average of 94.5 fish/hr (Table 3). The catch rate of Rock Bass (19.0 fish/hr) on the main stem Elkhorn Creek was lower than the historical catch rate (29.8 fish/hr; Table 4). The Smallmouth Bass population assessment score for the North Fork Elkhorn Creek was 18, which results in an “Excellent” rating (Table 5). The Rock Bass population assessment score for North Fork Elkhorn Creek was 14, which results in an “Excellent” rating (Table 6). The Largemouth Bass population assessment score for North Fork Elkhorn Creek was 17, which results in an “Excellent” rating (Table 7). For the main stem Elkhorn Creek, the Smallmouth Bass population assessment score was 19, which results in an “Excellent” rating (Table 8). The Rock Bass population assessment score was 6, which results in a “Fair” rating (Table 9). Finally, the Largemouth Bass population assessment score was 16, which results in an “Excellent” rating (Table 10).

Diurnal electrofishing for sport fish, especially black bass and Rock Bass, was conducted during May 2023 at two locations on South Fork Licking River. Length distribution and CPUE data of sport fish from South Fork Licking River are presented in Table 11. Smallmouth bass (87.5%) comprised the majority of the black bass sampled in South Fork Licking River. This portion of the sample has been combined with 3 additional sites surveyed by the Northeastern Fishery District on the South Fork Licking River. A comprehensive summary of these findings is presented in the District Fisheries Management (F-50 Segment 45) Annual Performance Report (Project 2: Northeastern Fishery District Stream Fishery Surveys).

Table 1. Yearly summary of sampling conditions by waterbody, species sampled, and date.

Water body	Species	Date	Time (24hr)	Gear	Weather	Water temp. F	Water level	Secchi (in)	Conditions	Pertinent sampling comments ^c
South Fork Licking River (Falmouth)	Black Bass/Rock Bass	5/10	1030	shock	Sunny	67	4.66 ft. at Hayes, KY Gauge	clear	good	
South Fork Licking River (Robinson Dam)	Black Bass/Rock Bass	5/11	1030	shock	Sunny	67	4.20 ft. at Hayes, KY Gauge	clear	good	
North Fork Elkhorn Creek (Great Crossings)	Black Bass/Rock Bass	5/23	1100	shock	Sunny	68	4.45 ft North Fork Elkhorn gauge	clear	good	
Elkhorn Creek (Peaks Mill)	Black Bass/Rock Bass	5/25	1200	shock	Mostly sunny	70	3.92 ft Peaks Mill gauge	clear	good	

Table 2. Length-frequency and CPUE (fish/hr) of selected fish species collected in 2.50 hours of 15-minute electrofishing runs at two sites on Elkhorn Creek in May 2023; numbers in parentheses are standard errors.

Species	Inch class																	Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Below dam at Great Crossings																			
Rock Bass	1	2	19	10	12	21	10	2										77	51.3 (9.6)
Smallmouth Bass		5	11	3	4	17	37	27	16	8	5	5	1	3				142	94.7 (11.2)
Largemouth Bass		1	3	4	5	1	1	5	10	4	4	1	4	1	2	2	5	53	35.3 (6.2)
Peaks Mill																			
Rock Bass					7	10	1	1										19	19.0 (7.7)
Smallmouth Bass		3	8	3	5	5	7	7	9	15	4	5	3	1	1			76	76.0 (13.0)
Largemouth Bass		1	1		2		1	2	2			2					1	13	13.0 (5.0)
Total																			
Rock Bass	1	2	19	10	19	31	11	3										96	38.4 (8.2)
Smallmouth Bass		8	19	6	9	22	44	34	25	23	9	10	4	4	1			218	87.2 (8.6)
Largemouth Bass		2	4	4	7	1	2	7	12	4	4	3	4	1	2	3	6	66	26.4 (5.4)

Dataset = cfdpseh.c.d23

Table 3. Electrofishing CPUE (fish/hr) for each length group of Smallmouth Bass collected from main stem Elkhorn Creek (Forks of Elkhorn to confluence with Kentucky River) from 2012-2023; numbers in parentheses are standard errors. Number of samples and locations vary between years.

Year	Length group					Total
	<4.0 in	4.0-8.9 in	>9.0 in	>12.0 in	>14.0 in	
2023	3.0 (1.0)	28.0 (7.1)	45.0 (9.2)	14.0 (6.0)	5.0 (1.9)	76.0 (13.0)
2022			No Sample			
2021	4.2 (2.0)	53.2 (11.0)	49.2 (5.9)	20.5 (3.2)	5.9 (1.0)	106.6 (13.6)
2020			No Sample			
2019			No Sample			
2018	1.9 (0.8)	47.4 (6.9)	35.6 (3.9)	13.5 (2.5)	5.3 (1.3)	85.0 (9.8)
2017			No Sample			
2016	7.7 (2.7)	91.0 (13.0)	63.3 (5.3)	23.0 (2.8)	10.8 (2.0)	162.0 (15.6)
2015			No Sample			
2014	1.3 (0.7)	40.8 (7.5)	44.7 (5.2)	23.7 (3.5)	12.0 (2.7)	86.8 (8.7)
2013	1.6 (0.5)	18.9 (3.1)	37.5 (5.9)	20.9 (3.8)	10.2 (2.6)	58.0 (7.2)
2012	9.4 (1.9)	27.6 (4.6)	18.0 (2.7)	5.9 (1.0)	2.1 (0.8)	55.0 (7.8)

Dataset = cfdpseh.c.d12 - .d23

Table 4. Electrofishing CPUE (fish/hr) for each length group of Rock Bass collected from main stem Elkhorn Creek (Forks of Elkhorn to Confluence with Kentucky River) from 2012-2023; numbers in parentheses are standard errors. Number of samples and locations vary between years.

Year	Length group				Total
	<4.0 in	4.0-5.9 in	>6.0 in	>8.0 in	
2023	0.0 (0.0)	0.0 (0.0)	19.0 (7.7)	2.0 (2.0)	19.0 (7.7)
2022			No Sample		
2021	0.2 (0.2)	2.4 (0.6)	9.7 (2.7)	4.0 (1.1)	12.2 (3.1)
2020			No Sample		
2019			No Sample		
2018	0.8 (0.6)	5.5 (1.6)	14.3 (3.6)	1.7 (0.7)	20.6 (5.2)
2017			No Sample		
2016	0.7 (0.4)	7.0 (1.4)	41.2 (4.6)	14.0 (2.1)	48.8 (5.5)
2015			No Sample		
2014	0.0 (0.0)	8.3 (2.6)	31.0 (4.3)	5.5 (1.1)	39.3 (6.5)
2013	0.2 (0.2)	4.7 (1.4)	17.6 (4.7)	4.6 (1.1)	22.6 (5.3)
2012	2.9 (0.7)	4.4 (0.9)	18.5 (4.1)	1.6 (0.6)	25.8 (5.0)

Dataset = cfdpseh.c.d12 - .d23

Table 5. Population assessment for Smallmouth Bass collected by boat electrofishing in the North Fork Elkhorn Creek from 2014-2023 (scoring based on statewide assessment).

Year		CPUE ≤4.0 in	CPUE 4.0-8.9 in	CPUE ≥9.0 in	CPUE ≥12.0 in	CPUE ≥14.0 in	Total score	Assessment rating
2023	Value Score	3.3 3	48.0 4	43.3 4	9.3 4	2.7 3	18	Excellent
2022	Value Score				No Sample			
2021	Value Score	1.0 2	12.0 3	18.5 4	5.5 3	2.5 3	15	Good
2020	Value Score				No Sample			
2019	Value Score				Nos Sample			
2018	Value Score	3.2 3	46.4 4	33.6 4	17.6 4	5.6 4	19	Excellent
2017	Value Score				No Sample			
2016	Value Score	0.5 1	26.5 4	34.0 4	10.0 4	1.5 2	15	Good
2015	Value Score				No Sample			
2014	Value Score	0.0 0	4.0 2	11.0 3	4.0 2	1.5 2	9	Fair

Table 6. Population assessment for Rock Bass collected by boat electrofishing in the North Fork Elkhorn Creek from 2014-2023 (scoring based on statewide assessment).

Year		CPUE ≤4.0 in	CPUE 4.0-5.9 in	CPUE ≥6.0 in	CPUE ≥8.0 in	Total score	Assessment rating
2023	Value Score	2.0 3	19.3 4	30.0 4	8.0 3	14	Excellent
2022	Value Score				No Sample		
2021	Value Score	4.0 4	2.0 1	1.0 1	0.5 1	7	Fair
2020	Value Score				No Sample		
2019	Value Score				No Sample		
2018	Value Score	3.2 4	12.8 4	34.4 4	6.4 3	15	Excellent
2017	Value Score				No Sample		
2016	Value Score	5.0 4	6.5 3	12.5 3	2.0 2	12	Good
2015	Value Score				No Sample		
2014	Value Score	0.5 1	4.0 2	2.5 1	0.5 1	5	Fair

Table 7. Population assessment for Largemouth Bass collected by boat electrofishing in the North Fork Elkhorn Creek from 2014-2023 (scoring based on statewide assessment).

Year		CPUE ≤4.0 in	CPUE 4.0-8.9 in	CPUE ≥9.0 in	CPUE ≥12.0 in	CPUE ≥15.0 in	Total score	Assessment rating
2023	Value Score	0.7 1	9.3 4	25.3 4	12.7 4	6.7 4	17	Excellent
2022	Value Score				No Sample			
2021	Value Score	0.0 0	7.0 4	24.5 4	14.0 4	6.0 4	16	Excellent
2020	Value Score				No Sample			
2019	Value Score				No Sample			
2018	Value Score	0.0 0	9.6 4	40.8 4	17.6 4	4.8 4	16	Excellent
2017	Value Score				No Sample			
2016	Value Score	0.0 0	12.5 4	29.5 4	15.5 4	7.5 4	16	Excellent
2015	Value Score				No Sample			
2014	Value Score	0.0 0	7.0 4	16.0 4	13.0 4	5.0 4	16	Excellent

Table 8. Population assessment for Smallmouth Bass collected by boat electrofishing in the main stem Elkhorn Creek from 2014-2023 (scoring based on statewide assessment).

Year		CPUE ≤4.0 in	CPUE 4.0-8.9 in	CPUE ≥9.0 in	CPUE ≥12.0 in	CPUE ≥14.0 in	Total score	Assessment rating
2023	Value Score	3.0 3	28.0 4	45.0 4	14.0 4	5.0 4	19	Excellent
2022	Value Score				No Sample			
2021	Value Score	4.2 4	53.2 4	49.2 4	20.5 4	5.9 4	20	Excellent
2022	Value Score				No Sample			
2022	Value Score				No Sample			
2018	Value Score	1.5 2	47.8 4	36.3 4	12.3 4	5.3 4	18	Excellent
2017	Value Score				No Sample			
2016	Value Score	7.7 4	91.0 4	63.3 4	23.0 4	10.8 4	20	Excellent
2015	Value Score				No Sample			
2014	Value Score	1.3 2	40.8 4	44.7 4	23.7 4	12.0 4	18	Excellent

Table 9. Population assessment for Rock Bass collected by boat electrofishing in the main stem Elkhorn Creek from 2014-2023 (scoring based on statewide assessment).

Year		CPUE ≤4.0 in	CPUE 4.0-5.9 in	CPUE ≥6.0 in	CPUE ≥8.0 in	Total score	Assessment rating
2023	Value Score	0.0 0	0.0 0	19.0 3	2.0 2	6	Fair
2022	Value Score			No Sample			
2021	Value Score	0.2 1	2.4 2	9.7 2	4.0 2	7	Fair
2020	Value Score			No Sample			
2019	Value Score			No Sample			
2018	Value Score	0.0 0	3.3 2	8.0 2	0.3 1	5	Fair
2017	Value Score			No Sample			
2016	Value Score	0.7 1	7.0 3	41.2 4	14.0 4	12	Good
2015	Value Score			No Sample			
2014	Value Score	0.0 0	8.3 3	31.0 4	5.5 3	10	Good

Table 10. Population assessment for Largemouth Bass collected by boat electrofishing in the main stem Elkhorn Creek from 2014-2023 (scoring based on statewide assessment).

Year		CPUE ≤4.0 in	CPUE 4.0-8.9 in	CPUE ≥9.0 in	CPUE ≥12.0 in	CPUE ≥15.0 in	Total score	Assessment rating
2023	Value Score	1.0 2	4.0 3	8.0 4	4.0 4	2.0 3	16	Excellent
2022	Value Score			No Sample				
2021	Value Score	0.5 1	3.5 3	4.9 3	1.4 2	0.0 0	9	Fair
2020	Value Score			No Sample				
2019	Value Score			No Sample				
2018	Value Score	0.0 0	0.0 0	0.8 1	0.3 1	0.0 0	2	Poor
2017	Value Score			No Sample				
2016	Value Score	0.2 1	5.2 3	6.3 3	2.2 3	0.3 1	11	Good
2015	Value Score			No Sample				
2014	Value Score	0.0 0	2.3 2	5.8 3	2.5 3	1.2 2	10	Fair

Table 11. Length-frequency and CPUE (fish/hr) of black bass and Rock Bass collected in 2.50 hours of 15-minute electrofishing runs for black bass in May 2023 in the South Fork Licking River; numbers in parentheses are standard errors.

Species	Inch class																Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Falmouth Access																		
Flathead Catfish																	0	0.0 (0.0)
Rock Bass		1	6	26	50	8	5										96	76.8 (17.6)
Bluegill																	0	0.0 (0.0)
Smallmouth Bass	2	8	4	10	7	5	7	16	5	6	5	2	3	1			81	64.8 (7.3)
Spotted Bass							1										1	0.8 (0.8)
Largemouth Bass				2	1	1											4	3.2 (2.3)
Robinson Dam Access																		
Flathead Catfish																	1	0.8 (0.8)
Rock Bass			1	3	5		1										10	8.0 (6.2)
Bluegill	4	3	3	3													13	10.4 (3.3)
Smallmouth Bass		2				1											3	2.4 (1.0)
Spotted Bass							1	1		1							3	2.4 (1.6)
Largemouth Bass				1		2	1										4	3.2 (1.5)
Total																		
Flathead Catfish																	1	0.4 (0.4)
Rock Bass		1	7	29	55	8	6										106	42.4 (14.4)
Bluegill	4	3	3	3													13	5.2 (2.3)
Smallmouth Bass	2	10	4	10	7	6	7	16	5	6	5	2	3	1			84	33.6 (11.0)
Spotted Bass						1	1	1		1							4	1.6 (0.9)
Largemouth Bass				3	1	3	1										8	3.2 (1.3)

Dataset = cfdpssfl.d23

CENTRAL FISHERIES DISTRICT

Project 2: Stream Fishery Surveys – Trout Streams

FINDINGS

Big Bone Creek at Big Bone State Park was monitored for suitability for trout management. Water temperatures were monitored hourly on Big Bone Creek (2 sites) by Hobo TidbiT MX temperature loggers (MX2203) from 1 April to 29 November 2023. The results showed that water temperatures in the upper trout section of Big Bone Creek averaged 62.9°F (min = 34.6°F and max = 80.3°F) and temperatures exceeded 72°F on 73 different days between 9 May and 7 September (Figure 1). Water temperatures for the lower trout section of Big Bone Creek averaged 65.0°F (min = 35.6°F and max = 86.9°F) and temperatures exceeded 72°F on 113 different days between 13 May and 26 September (Figure 2). A total of 1,200 (400 fish/stocking) rainbow trout were stocked into Big Bone Creek during 2023.

Big Bone Creek (Upper)

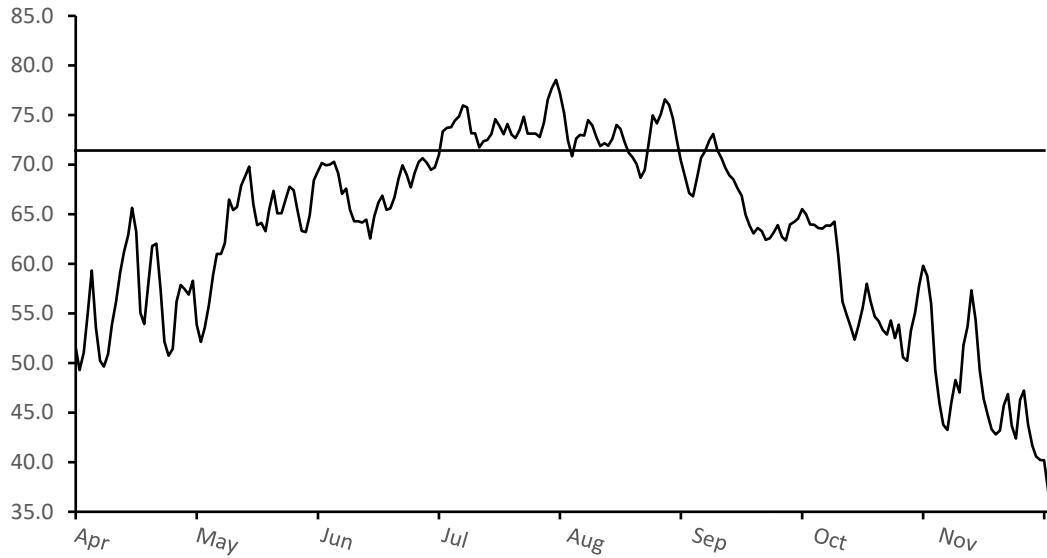


Figure 1. The average daily water temperatures observed in the upper reach of the trout section at Big Bone Creek (Boone Co.) from 1 April to 29 November 2023.

Big Bone Creek (Lower)

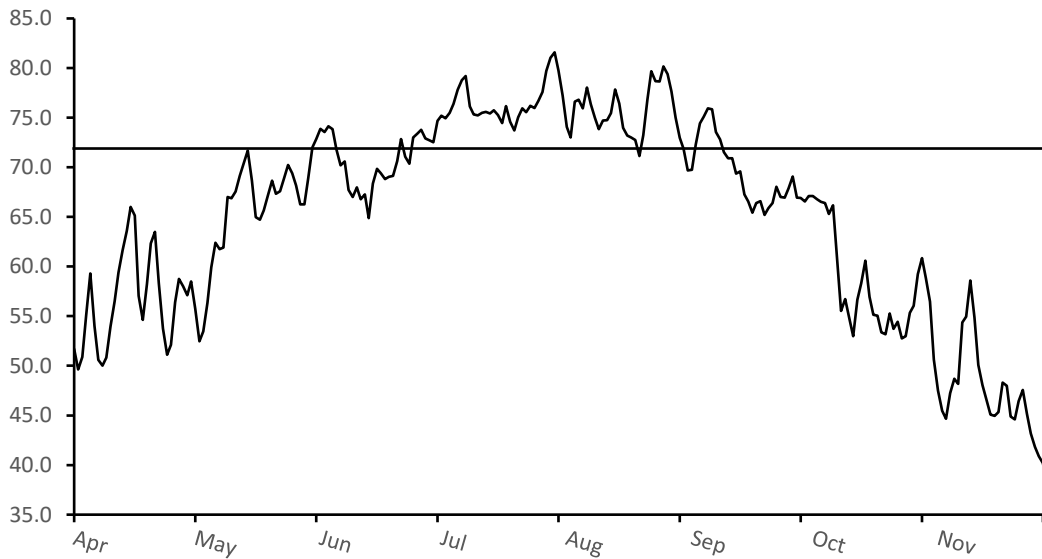


Figure 2. The average daily water temperatures observed in the lower reach of the trout section at Big Bone Creek (Boone Co.) from 1 April to 29 November 2023.

CENTRAL FISHERIES DISTRICT

Project 3: Technical Guidance

FINDINGS

A total of 166 phone calls, 162 e-mails, and 1 walk-in office visits concerning farm pond problems were handled during this project year. Most common problems were unbalanced fish populations and excessive aquatic plant growth. During 2023, two landowners requested a Fisheries Special Management Permit (FMP) for their ponds.

NORTHEASTERN FISHERY DISTRICT

Project 2: Streams Fishery Surveys

FINDINGS

Warm Water Stream Sampling and Activities

Sampling conditions for excursions on the South Fork Licking River and Stoner Creek can be found on Table 1 of Project 1.

Stoner Creek Sampling

On 10 May, Stoner Creek was sampled for 1.5 hours across 2 locations (Fryman's Ramp and Tuttle's Ramp; 3- 15-minute runs at each site) for an assessment of the sport fish, sunfish, and catfish populations. In total, 8 different fish species were collected with the dominant species being Bluegill (46%) and Largemouth Bass (20%; Table 1). Catch rates of larger-size Largemouth Bass were higher than previous years (Table 2). The overall assessment of the Largemouth Bass population on this pool of Stoner Creek was "Excellent" (Table 3).

South Fork Licking River Sampling

On 10 and 11 May, 5 pools of the South Fork of the Licking River were sampled for an assessment of the sport fish, sunfish, and catfish populations. On 10 May, the Robinson Dam and Falmouth pools were sampled by the Central Fishery District (5- 15-minute runs at each) and on 11 May, the Lair, Airport, and Cynthiana pools were all sampled (3- 15-minute runs at each). In total, 9 different species were collected with the dominant species being Rock Bass (30%) followed by Smallmouth Bass (26%; Table 4). Catch rates of Rock Bass were very similar to the average of previous years' sampling (Table 5). The overall assessment of the Rock Bass population on these 5 pools of the South Fork Licking River was "Good" (Table 6). Similarly, catch rates of Smallmouth Bass were near or above average when compared to previous years' sampling efforts (Table 7). The overall assessment of the Smallmouth Bass population on these 5 pools of the South Fork Licking River was "Excellent" (Table 8). Finally, catch rates of Largemouth Bass were all above the average when compared to previous years' sampling (Table 9); however, the overall assessment of this population dropped from "Excellent" in 2017 to "Good" in 2023 (Table 10).

Cold Water Stream Sampling and Activities

Trout Stream Temperature Assessments

Temperature loggers were installed in all NEFD trout designated waters. Data collection spanned from May through November (Table 11). For our put, grow, take trout streams, Big Caney, Chimney Top, Laurel, and Parched Corn all remained at a Class I designation, but East Fork Indian dropped to a Class III designation (Table 12). For our put and take streams, Craney Creek, East Fork Indian, and Middle Fork Red dropped a Class from their 2022 designation (Craney Creek/East Fork Indian Creek from a II to a III and Middle Fork from a III/IV to a IV). All other streams remained at their prior designation (Table 13).

Table 1. Length frequency and CPUE (fish/hour) of selected sport fish collected during 1.5 hours of electrofishing (3- 15-minute sampling runs at each site) at 2 sites in Stoner Creek on 10 May 2023.

Site	Species	Inch class																			Total	CPUE	SE	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20
Fryman's Ramp (0.75 hours)	Bluegill	10	28	25	36	23	7	2													131	174.7	18.7	
	Largemouth Bass			1	3	5		1	4	8	2	13	11	5	8	2	2			1	66	88.0	22.0	
	Longear Sunfish		7	12	6																25	33.3	13.9	
	Warmouth			2	13	6	2														23	30.7	18.7	
	Redear Sunfish		3	2	3	9	15	3	8	2	1										46	61.3	23.7	
	Green Sunfish				1	2															3	4.0	2.3	
	White Crappie											1									1	1.3	1.3	
	Smallmouth Bass																				0			
Tuttles Ramp (0.75 hours)	Bluegill	11	80	49	24	33	19	7													223	297.3	49.9	
	Largemouth Bass		4		2			1		5	7	15	7	6	14	12	6	4	1	2	3	89	118.7	10.9
	Longear Sunfish		7	27	23	12															69	92.0	20.5	
	Warmouth		1	2	23	14	8	3													51	68.0	26.6	
	Redear Sunfish			1	2	4	3	4	3	1											18	24.0	4.6	
	Green Sunfish		2	2	5	5	2														16	21.3	3.5	
	White Crappie					1			1	2	1										5	6.7	1.3	
	Smallmouth Bass							1													1	1.3	1.3	
Total (1.5 hours)	Bluegill	21	108	74	60	56	26	9													354	236.0	36.3	
	Largemouth Bass		4	1	5	5		2	4	13	9	28	18	11	22	14	8	4	1	3	3	155	103.3	13.0
	Longear Sunfish		14	39	29	12															94	62.7	17.2	
	Warmouth		1	4	36	20	10	3													74	49.3	16.8	
	Redear Sunfish		3	3	5	13	18	7	11	3	1										64	42.7	13.7	
	Green Sunfish		2	2	6	7	2														19	12.7	4.3	
	White Crappie					1			1	2	1	1									6	4.0	1.5	
	Smallmouth Bass							1													1	0.7	17.2	

Table 2. Largemouth Bass electrofishing CPUE (fish/hr) from each length group collected during spring sampling on Stoner Creek from 2010-2023.

Year	Length group					Total	SE
	< 4.0 in	4.0-8.9 in	9.0-11.9 in	12.0-14.9 in	≥ 15.0 in		
2023	3.3	10.7	33.3	34.0	22.0	103.3	13.0
2017	1.0	20.0	13.0	11.0	14.0	59.0	7.4
2015	4.7	16.7	12.3	15.3	6.7	55.7	17.1
2012	2.7	31.3	24.0	5.3	2.0	65.3	9.3
2010	0.0	18.0	6.0	24.0	14.0	62.0	18.0

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Table 3. Population assessment of Largemouth Bass collected from Stoner Creek on 10 May 2023.

Year		Length group					Total score	Assessment rating
		CPUE < 4.0 in	CPUE 4.0 - 8.9 in	CPUE ≥ 9.0 in	CPUE ≥ 12.0 in	CPUE ≥ 15.0 in		
2023	Value	3.3	10.7	89.3	56.0	22.0	20	Excellent
	Score	4	4	4	4	4		
2017	Value	1.0	20.0	38.0	25.0	12.0	18	Excellent
	Score	2	4	4	4	4		
2015	Value	3.5	14.1	28.8	17.9	5.4	20	Excellent
	Score	4	4	4	4	4		
2012	Value	2.7	31.3	31.3	7.3	2.0	19	Excellent
	Score	4	4	4	4	3		
2010	Value	0.0	18.0	44.0	38.0	14.0	16	Good
	Score	0	4	4	4	4		

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Table 4. Length frequency and CPUE (fish/hour) of selected sport fish collected during 4.75 hours of electrofishing (19- 15-minute sampling runs) across 5 sites in South Fork Licking River on 11 May 2023.

Location		Inch class																						Total	CPUE	SE	
Specific	Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
Lair Pool (0.75 hours)	Rock Bass		2	1	5	27	12	1	2															50	66.7	17.0	
	Smallmouth Bass			1	1	1		1	4	3	3	1	4	3	1	2								25	33.3	8.1	
	Bluegill	1	9	2	10	6	4	2																34	45.3	4.8	
	Largemouth Bass					3	1		1	1	3	3		2	1	1	1							17	22.7	7.4	
	Redear Sunfish								1															1	1.3	1.3	
	Channel Catfish														1								2	3	4.0	0.0	
	Flathead Catfish																							0			
	Spotted Bass																							0			
	Black Crappie																							0			
Airport Pool (0.75 hours)	Rock Bass			1	1	16	5	2	2															27	36.0	16.2	
	Smallmouth Bass			1	3	3	4	8	7	5	3	11	2	6	1	1								55	73.3	35.0	
	Bluegill	2	6	14	28	11	3																	64	85.3	9.6	
	Largemouth Bass				1	5	4	1	9	5	2			2								1		30	40.0	6.9	
	Redear Sunfish							3	1	1														5	6.7	3.53	
	Channel Catfish																			1	1	1		3	4.0	4.0	
	Flathead Catfish											2			1									3	4.0	2.3	
	Spotted Bass																							0			
	Black Crappie									1														1	1.3	1.3	
Cynthania Pool (0.75 hours)	Rock Bass			1	1	15	12	12	3	3														47	62.7	26.8	
	Smallmouth Bass				1		2		4	7	8	5	4	6		1	1							39	52.0	22.0	
	Bluegill	3	3	15	31	11	2																	65	86.7	9.6	
	Largemouth Bass			2	2	7	9	7	10	11	7	3	7	2	2							1		70	93.3	45.4	
	Redear Sunfish				1	1	1	1		2	2													8	10.7	4.8	
	Channel Catfish										1									2	1			4	5.3	5.3	
	Flathead Catfish												1		1									2	2.7	1.3	
	Spotted Bass																							0			
	Black Crappie																							0			
Robinson Dam Pool (1.25 hours)	Rock Bass				1	3	5		1															10	8.0	6.2	
	Smallmouth Bass			2					1															3	2.4	1.0	
	Bluegill	4	3	3	3																			13	10.4	3.3	
	Largemouth Bass					1		2	1															4	3.2	1.5	
	Redear Sunfish																							0			
	Channel Catfish																							0			
	Flathead Catfish																							1	0.8	0.8	
	Spotted Bass									1	1		1											3	2.4	1.6	
	Black Crappie																							0			
Falmouth Pool (1.25 hours)	Rock Bass			1	6	26	48	8	5	2														96	76.8	17.6	
	Smallmouth Bass			2	8	4	10	7	5	7	16	5	6	5	2	3		1						81	64.8	7.3	
	Bluegill			1																				1	0.8	0.8	
	Largemouth Bass					2	1	1																4	3.2	2.3	
	Redear Sunfish																							0			
	Channel Catfish																							0			
	Flathead Catfish																							0			
	Spotted Bass									1														1	0.8	0.8	
	Black Crappie																							0			
Total (4.75 hours)	Rock Bass		2	4	14	87	82	23	13	3	2													230	48.4	9.2	
	Smallmouth Bass		2	12	9	14	13	15	22	31	19	23	15	17	5	4	2							203	42.7	8.7	
	Bluegill	1	18	15	42	68	26	7																177	37.3	8.8	
	Largemouth Bass			2	3	18	15	11	21	17	12	6	7	6	3	1	1					1	1	125	26.3	9.8	
	Redear Sunfish				1	1	4	3	1	2	2													14	2.9	1.3	
	Channel Catfish										1				1								2	10	2.1	1.0	
	Flathead Catfish											2	1		2					1				6	1.3	0.5	
	Spotted Bass								1	1	1		1								2	2	1	1	4	0.8	0.5
	Black Crappie									1														1	0.2	0.2	

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Table 5. Rock Bass electrofishing CPUE (fish/hr) from each length group collected during spring sampling on South Fork Licking River. (Number of sites and effort have varied across years)

Year	Length group				Total	SE
	< 4.0 in	4.0-5.9 in	6.0-7.9 in	≥ 8.0 in		
2023	1.3	21.3	22.1	3.8	48.4	9.2
2017	1.7	9.7	13.0	7.0	31.3	9.7
2015	4.1	8.3	20.0	4.2	36.7	4.8
2012	1.0	4.0	11.3	1.2	17.5	4.2
2010	2.7	12.7	9.7	0.7	24.5	
2006	1.1	10.6	17.1	2.2	30.9	11.6

nedsflic.d23

Table 6. Population assessment of Rock Bass collected by spring electrofishing on South Fork Licking River from 2006-2023.

Year		Length group				Total score	Assessment rating
		CPUE < 4.0 in	CPUE 4.0 - 5.9 in	CPUE ≥ 6.0 in	CPUE ≥ 8.0 in		
2023	Value	1.3	21.3	25.9	3.8	12	Good
	Score	3	4	3	2		
2017	Value	1.7	9.7	20.0	7.0	12	Good
	Score	3	3	3	3		
2015	Value	4.1	8.3	24.2	4.2	11	Good
	Score	3	3	3	2		
2012	Value	1.0	4.0	12.5	1.2	8	Fair
	Score	2	2	3	1		
2010	Value	2.7	12.7	10.4	0.7	11	Good
	Score	4	4	2	1		
2006	Value	1.1	10.6	19.3	2.2	12	Good
	Score	3	4	3	2		

nedsflic.d23

Table 7. Smallmouth Bass electrofishing CPUE (fish/hr) for each length group collected during spring sampling on South Fork Licking River from 2006-2023. (Number of sites and effort have varied across years).

Year	Length group					Total	SE
	< 4.0 in	4.0-8.9 in	9.0-11.9 in	12.0-13.9 in	≥ 14.0 in		
2023	2.9	15.4	15.4	6.7	2.3	42.7	8.7
2017	1.0	15.3	9.7	2.7	8.0	37.0	6.7
2015	6.4	4.4	5.8	2.7	2.2	28.4	3.2
2012	1.5	12.4	4.3	2.8	1.7	16.8	2.7
2010	1.1	6.5	11.9	2.1	0.6	28.0	
2006	0.0	11.3	8.7	8.4	2.2	23.6	6.5

nedsflic.d23

Table 8. Population assessment of Smallmouth Bass collected by spring electrofishing on South Fork Licking River from 2006-2023.

Year		Length group					Total score	Assessment rating
		CPUE < 4.0 in	CPUE 4.0 - 8.9 in	CPUE ≥ 9.0 in	CPUE ≥ 12.0 in	CPUE ≥ 14.0 in		
2023	Value	2.9	15.4	24.4	9.1	2.3	18	Excellent
	Score	3	4	4	4	3		
2017	Value	1.0	15.3	20.3	10.7	8.0	18	Excellent
	Score	2	4	4	4	4		
2015	Value	6.4	11.3	10.7	4.9	2.2	18	Excellent
	Score	4	3	3	4	4		
2012	Value	1.5	12.4	8.8	4.5	1.7	13	Good
	Score	2	3	3	3	2		
2010	Value	1.1	6.5	14.6	2.7	0.6	10	Fair
	Score	2	2	3	2	1		
2006	Value	0.0	11.3	19.3	10.6	2.2	14	Good
	Score	0	3	4	4	3		

nedsflic.d23

Table 9. Largemouth bass electrofishing CPUE (fish/hr) for each length group collected during spring sampling on South Fork Licking River from 2006-2023. (Number of sites and effort have varied across years).

Year	Length group					Total	SE
	< 4.0 in	4.0-8.9 in	9.0-11.9 in	12.0-14.9 in	≥ 15.0 in		
2023	0.4	14.3	7.4	3.4	0.8	26.3	9.8
2017	0.3	13.7	11.0	6.3	2.3	33.7	11.6
2015	0.1	4.1	4.1	0.8	0.1	9.2	4.4
2012	0.0	1.0	1.2	0.6	0.7	3.5	1.0
2010	0.0	1.5	1.3	0.5	0.2	3.5	
2006	0.0	0.0	0.4	0.0	0.0	0.4	0.4

nedsflic.d23

Table 10. Population assessment of Largemouth Bass collected during spring electrofishing on South Fork Licking River from 2006-2023.

Year		Length group					Total score	Assessment rating
		CPUE < 4.0 in	CPUE 4.0 - 8.9 in	CPUE ≥ 9.0 in	CPUE ≥ 12.0 in	CPUE ≥ 15.0 in		
2023	Value	0.4	14.3	11.6	4.2	0.8	15	Good
	Score	1	4	4	4	2		
2017	Value	0.3	13.7	19.7	8.7	2.3	17	Excellent
	Score	1	4	4	4	4		
2015	Value	0.1	4.1	5.0	0.9	1.0	9	Fair
	Score	2	2	2	2	1		
2012	Value	0.0	1.0	2.5	1.3	0.7	5	Poor
	Score	0	1	2	1	1		
2010	Value	0.0	1.5	2.0	0.7	0.2	6	Poor
	Score	0	2	2	1	1		
2006	Value	0.0	0.0	0.4	0.0	0.0	1	Poor
	Score	0	0	1	0	0		

nedsflic.d23

Table 11. Water temperature data (°F) for designated trout streams in 2023.

Stream name	Stream		Month																				
	Class	Location	May			June			July			August			September			October			November		
			Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Big Caney	I		48.8	55.9	62.1	54.4	60.9	64.9	62.5	65.7	71.6	60.6	66.7	72.4	56.7	63.1	70.2	47.4	55.5	64.1	34.2	45.2	54.7
Chimney Top	I	Upper	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
		Lower	**	**	**	**	**	**	61.5	62.9	78.5	61.7	67.8	72.3	56.9	63.5	70.2	47.6	55.6	63.9	33.1	45.1	56.0
Craney	III	Upper	49.3	61.4	71.7	61.2	68.1	75.6	67.6	72.9	80.5	66.4	72.7	79.0	61.3	67.5	76.0	50.0	57.6	67.7	35.6	45.6	54.7
		Lower	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
EF Indian	I	Upper	47.7	58.7	71.4	57.5	65.3	73.8	63.4	70.0	79.1	63.8	69.9	77.9	60.0	65.9	73.9	51.0	58.3	67.5	37.3	47.5	56.7
		Lower	49.9	61.9	70.2	61.9	68.5	73.5	64.4	73.0	79.1	67.8	72.7	77.7	62.7	67.7	73.6	52.5	59.0	67.2	39.5	48.3	56.6
EF Little Sandy	IV		50.4	62.4	72.1	62.3	69.7	78.6	71.1	75.9	82.9	68.0	74.4	81.4	62.4	68.8	79.8	50.4	59.2	70.6	33.3	46.5	59.3
Laurel Creek	I		46.8	57.1	64.9	55.6	62.6	68.4	62.6	67.2	74.1	61.8	67.9	73.5	56.8	63.9	71.7	46.5	55.5	64.8	32.5	44.1	54.9
MF Red	III	Upper	49.5	62.9	72.6	59.7	68.4	74.5	70.1	78.0	82.0	66.9	73.9	80.4	61.9	68.5	76.4	51.5	59.4	69.7	35.6	48.0	58.6
		Lower	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NF Triplett	IV		50.7	62.5	73.6	65.8	71.0	77.5	70.1	75.6	82.0	68.7	75.2	81.6	62.3	69.6	77.3	51.9	59.3	71.2	37.3	47.4	58.2
Parched Corn	I	Upper	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
		Lower	48.0	55.1	59.2	56.4	60.4	63.9	62.5	66.6	72.4	61.3	67.0	70.8	56.5	62.5	68.8	47.2	54.5	62.8	33.0	44.1	54.3
Station Camp Creek	IV		**	**	**	**	**	**	**	**	**	73.1	76.8	81.6	66.6	71.4	78.2	56.1	62.1	72.1	41.4	50.7	58.7
Sturgeon Creek	IV		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Swift Camp	III	Upper	42.8	59.3	70.0	52.2	65.1	75.7	63.6	71.5	78.2	65.8	71.3	75.2	60.6	65.8	72.1	50.3	56.7	64.9	37.2	45.2	53.0
		Lower	**	**	**	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Triplett Creek	IV		*	*	*	*	*	*	68.2	77.3	85.5	70.0	77.6	84.6	67.6	72.8	80.9	54.3	62.9	75.2	36.8	48.9	58.0

** missing data logger

*data logger set to minutes

Table 12. Stream classification ratings for put, grow, take streams in the Northeastern Fishery District.

Stream	Year	Number of Days Avg Temp ≥ 72 °F in the Year	Max Avg Daily Temp from June- September	Number of Days Avg Temp ≥ 73 °F in June	Max Avg Daily Temperature in June	Stream Classification Rating
Big Caney Creek	2023	0	69.8	0	64.9	I
	2022	0	64.7	0	64.9	I
	2021	0	70.3	0	67.6	I
	2020	0	70.1	0	64.8	I
	2019	0	69.4	0	64.9	I
Chimney Top Creek	2023	0	*	*	*	I
	2022	0	63.8	0	62.0	I
	2021	0	67.8	0	64.8	I
	2020	0	69.7	0	63.5	I
	2019	0	70.8	0	66.9	I
East Fork Indian Creek	2023	9	76.1	0	73.7	III
	2022	20	68.7	5	69.1	II
	2021	0	71.2	0	69.3	I
	2020	25	75.7	0	69.7	III
	2019	11	72.9	0	68	II
Laurel Creek	2023	0	71.9	0	68.4	I
	2022	0	64.3	0	63.1	I
	2021					
	2020					
	2019	1	72.7	0	66.9	I
Parched Corn Creek	2023	0	69.0	0	63.9	I
	2022	0	64.5	0	63.3	I
	2021	0	68.3	0	66.5	I
	2020	0	70.0	0	65.3	I
	2019	0	68.6	0	64.5	I

* Missing Data

Table 13. Stream classification ratings for put and take streams in the Northeastern Fishery District.

Stream	Year	Number of Days Avg Temp ≥ 72 °F in the Year	Max Avg Daily Temp from June- September	Number of Days Avg Temp ≥ 73 °F in June	Max Avg Daily Temperature in June	Stream Classification Rating
Big Caney Creek	2023	0	69.8	0	64.9	I
	2022	0	64.7	0	64.9	I
	2021	0	70.3	0	67.6	I
	2020	0	70.1	0	64.8	I
	2019	0	69.4	0	64.9	I
Craney Creek	2023	49	77.8	0	75.6	III
	2022	52	71.1	2	69.6	III
	2021	20	75.8	2	75.8	III
	2020	52	78.5	2	74.3	III
	2019	48	77.0	0	72.2	III
East Fork Indian Creek	2023	9	76.1	0	73.7	III
	2022	20	38.7	5	69.1	II
	2021	0	71.2	0	69.3	I
	2020	25	75.7	0	69.7	III
East Fork Little Sandy River	2023	72	80.7	1	78.6	IV
	2022	74	71.4	11	72.1	IV
	2021	75	79.4	7	79.4	IV
	2020	85	80.2	6	75.3	IV
Laurel Creek	2023	0	71.9	0	68.4	I
	2022	0	64.3	0	63.1	I
	2021					
	2020					
Middle Fork Red River	2019	1	72.7	0	66.9	I
	2023	63	78.3	0	74.5	IV
	2022	70	71.6	9	71.7	III/IV
	2021	44	75.6	3	75.6	III
	2020	80	79.2	5	75	IV
Station Camp Creek	2019	83	80.2	3	74.4	IV
	2023	*				
	2022					
	2021					
	2020					
Sturgeon Creek	2019	101	80.1	2	74.4	IV
	2023	*				
	2022					
	2021					
	2020					
Swift Camp Creek	2019	83	80.0	3	76.1	IV
	2023	18	75.3	0	75.7	II
	2022	33	69.7	4	70.3	II
	2021	14.0	73.9	2	73.9	II
	2020	25.0	76.6	0	71.9	III
Triplett Creek- North Fork	2019	53.0	81.3	1	73.1	III
	2023	81	79.6	11	77.5	IV
	2022	80	73.2	16	73.6	IV
	2021					
Triplett Creek- North Fork	2020					
	2019	90	81.0	4	78	IV

* Missing Data

NORTHEASTERN FISHERY DISTRICT

Project 3: Technical Guidance

FINDINGS

In 2021, on-site visits were permanently suspended. Consultations will continue to be handled via telephone and written correspondence. In 2023, roughly 100-125 phone calls and about 20 written correspondences were handled. Most vegetation problems and a few population problems were resolved using email pictures, pond harvest log data, or the use of the “Managing Your Farm Ponds” web page. Typical problems responded to include pond stocking, aquatic vegetation problems, undesirable species, fishing information, fish kills, farm pond management, fish pathogens, water quality, pond construction, structural problems with dams, and pond nuisances.

SOUTHEASTERN FISHERY DISTRICT

Project 2: Stream Fishery Surveys – Trout Streams

FINDINGS

Trout Stream Temperature Monitoring

HOBO MX TidbiT 400 (MX2203) temperature data loggers were deployed in Bark Camp Creek, Cane Creek, War Fork Creek, Right Fork Buffalo Creek, and the Laurel River Tailwaters, to evaluate current trout management strategies. Data loggers were deployed at one upstream and one downstream location in Bark Camp Creek, Cane Creek, and War Fork Creek. In Right Fork Buffalo Creek and the Laurel River Tailwaters, only one data logger was deployed in each stream. The temperature data logger deployed in the Laurel River Tailwaters was unable to be retrieved. Water temperatures (°F) were recorded hourly from mid-March to late-October. Temperature data loggers were visually inspected to verify condition and continued submersion in late-July. Temperature data for the Upper and Lower Hatchery Creek sections was obtained from the Wolf Creek National Fish Hatchery. Additionally, temperature data for the Cumberland Tailwaters was obtained from U.S. Geological Survey monitoring stations in Rowena and Burkesville, KY. Monthly mean, maximum, and minimum temperatures for each stream monitored in 2023 are found in Table 1. Stream classification data and rankings for trout streams in the Southeastern Fisheries District can be found in Tables 2-4.

Bark Camp Creek

Bark Camp Creek recorded a low number of days (1) with daily average temperatures equal to or exceeding 72°F, a maximum average daily temperature of 72.2°F between June and September, a maximum average daily temperature of 66.2°F during June, and zero days with an average temperature equal to or exceeding 73°F during June (Table 2). Bark Camp Creek is currently managed as a put-and-take Rainbow Trout fishery and a put-grow-take Brown Trout fishery.

Cane Creek

Cane Creek recorded a low number of days (2) with daily average temperatures equal to or exceeding 72°F, a maximum average daily temperature of 72.3°F between June and September, a maximum average daily temperature of 66.5°F during June, and zero days with an average temperature equal to or exceeding 73°F during June. Observed temperatures from July to September were comparable to temperatures for that time-period during previous temperature monitoring; however, observed temperatures during June were considerably cooler than previously observed (Table 3). Cane Creek is currently managed as a put-and-take Rainbow Trout fishery.

Cumberland Tailwaters

The Cumberland Tailwaters recorded zero days with daily average temperatures equal to or exceeding 72°F, a maximum average daily temperature of 60.8°F between June and September, a maximum average daily temperature of 60.8°F during June, and zero days with an average temperature equal to or exceeding 73°F during June (Table 2). Cumberland Tailwaters is currently managed as both a put-and-take and put-grow-take fishery for Rainbow Trout and a put-grow-take Cutthroat, Brown, and Brook trout fishery.

Hatchery Creek

The upstream and downstream locations of Hatchery Creek recorded zero days with daily average temperatures equal to or exceeding 72°F, a maximum average daily temperature of 59.0°F between June and September, a maximum average daily temperature of 54.0°F during June, and zero days with an average temperature equal to or exceeding 73°F during June (Tables 3 and 4). The upper section of Hatchery Creek is currently managed as a put-and-take trout fishery for all species. The lower section of Hatchery Creek is currently managed as a catch-and-release only trout fishery for all species.

Right Fork Buffalo Creek

Right Fork Buffalo Creek recorded a high number of days (31) with daily average temperatures equal to or exceeding 72°F, a maximum average daily temperature of 75.8°F between June and September, a maximum average daily temperature of 70.2°F during June, and zero days with an average temperature equal to or exceeding 73°F during June (Table 3). Right Fork Buffalo Creek is currently managed as a put-and-take Rainbow Trout fishery.

War Fork Creek

War Fork Creek recorded a low number of days (3) with daily average temperatures equal to or exceeding 72°F, a maximum average daily temperature of 73.1°F between June and September, a maximum average daily temperature of 65.8°F during June, and zero days with an average temperature equal to or exceeding 73°F during June. Observed temperatures from July to September were comparable to temperatures for the time-period during previous temperature monitoring; however, observed temperatures during June were considerably cooler than previously observed (Table 3). War Fork Creek is currently managed as put-and-take Rainbow Trout fishery.

As outlined in the Trout Streams Program in Kentucky (found on the Kentucky Department of Fish and Wildlife Resources website), trout streams are currently classified as Class I, II, III, and IV streams based on four water temperature parameters: 1) the number of days overall stream temperatures average above 72° F in a calendar year, 2) maximum average daily temperature reached in the period June-September, 3) number of days overall stream temperatures average equal to or above 73° F in the month of June and 4) maximum average daily stream temperatures in the month of June. Class I streams have a minimal number of days (<5) above 72° F in a calendar year and have a maximum temperature that remains below 72° F during the period June-September. Class II streams have a low number of days (<25) above 72° F in a calendar year and have a maximum temperature that remains below 75° F during the period June-September. Class III and Class IV streams have a significant number of days (>25) above 72° F in a calendar year and most likely will be unable to provide significant carry-over to the next year. Separation of Class III and IV streams is based on the number of days the stream temperatures remain equal to or greater than 73° F during the month of June and the maximum stream temperature in June. Streams categorized as Class III have the potential to be stocked in June while Class IV streams are considered too warm to be stocked in June.

Based on these four water temperature parameters and historical temperature monitoring, Cane Creek, the Cumberland Tailwater, and the upper and lower sections of Hatchery Creek are classified as Class I trout streams. Bark Camp Creek and War Fork Creek are classified as Class II trout streams and Right Fork Buffalo Creek is classified as a Class III trout stream (Tables 1-4). Changes to current management strategies for each of these streams are not recommended at this time.

Trout Stream Angler Utilization Survey

Browning Dark Ops HD Pro X trail cameras were placed at both the upper and lower sections of War Fork Creek on 22 February 2023 to monitor angler utilization of this trout stream. Angler utilization data was collected monthly from March 2023-February 2024. The trail camera located at the upper section of War Fork Creek went missing sometime during July 2023. This data will be used to establish baseline angler utilization trends for future stocking recommendations.

Between March 2023 and February 2024, an estimated total of 484 anglers utilized War Fork Creek with an estimated utilization rate of 1.0 angler per day. A high percentage of anglers (78%) utilized War Fork Creek between March and July (Table 5). War Fork Creek is currently managed as a put-and-take trout fishery.

Angler utilization rates for other put-and-take and put-grow-take trout fisheries within the Southeastern Fisheries District are shown in Tables 5 and 6.

Table 1. Water temperature data (°F) for designated Southeastern Fishery District trout streams in 2023.

Stream name	Stream class rating	Location	Month																				
			May			June			July			August			September			October			November		
			Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Bark Camp Creek	II	Upper	51	59.1	64	60.3	63.5	66	65	68.5	72	66	68.9	71	60	63.7	68	52	57.5	63	N/A	N/A	N/A
		Lower	51	59.2	64	61	64.0	66	66	69.2	74	66	69.4	72	60	64.1	69	52	57.7	63	N/A	N/A	N/A
Cane Creek	I	Upper	51	59.3	64	58	63.0	67	67	69.0	72	66	69.3	71	59	63.6	69	51	60.1	69	N/A	N/A	N/A
		Lower	51	59.6	64	61	64.1	66	66	69.5	73	66	69.7	72	60	64.3	69	52	60.6	70	N/A	N/A	N/A
War Fork Creek	II	Upper	51	59.4	63	61	64.5	67	66	69.6	75	66	70.3	73	62	65.1	71	53	61.8	70	N/A	N/A	N/A
		Lower	52	58.5	62	61	62.8	65	65	67.7	71	66	68.9	71	62	65.1	70	56	62.4	70	N/A	N/A	N/A
Cumberland Tailwaters ^a	I	USGS Sites	49	55.0	61	51	56.0	61	53	54.0	55	52	54.5	57	52	56.0	60	52	56.0	60	52	56.0	60
Right Fork Buffalo Creek	III	Stocking Site	53	62.4	68	63	67	70	67	71.7	76	67	71.9	75	62	66.2	72	54	62.4	70	N/A	N/A	N/A
Hatchery Creek ^b	I	WCNFH	51	52.2	54	52	53.4	54	54	54.1	55	54	55.1	56	56	57.2	59	59	60.4	61	59	59.7	60

^a Data From USGS Monitoring Stations

^b Data from Wolf Creek National Fish Hatchery

Table 2. Stream classification ratings for put, grow, and take streams in the Southeastern Fishery District.

Stream	Year	# days average temperature ≥ 72 °F in the year	Maximum average daily temperature from June-September	# days average temperature ≥ 73 °F in June	Maximum average daily temperature in June	Stream classification rating
Bark Camp Creek ^a	2023	1	72.2	0	66.2	II
	2021	0	71.7	0	70.2	I
	2018	2	72.2	0	70.8	II
	2011	23	73.8	0	71.6	II
Cumberland Tailwaters ^b	2023	0	60.8	0	60.8	I
	2022	0	63.9	0	60.3	I
	2021	0	58.3	0	56.8	I
Laurel River Lake Tailwaters ^a	2021	0	57.0	0	50.4	I

^a Put, grow, and take for Brown Trout; Put and take for Rainbow Trout

^b Put, grow, and take for all trout species

Table 3. Stream classification ratings for put, take streams in the Southeastern Fishery District.

Stream	Year	# days average temperature ≥ 72 °F in the year	Maximum average daily temperature from June-September	# days average temperature ≥ 73 °F in June	Maximum average daily temperature in June	Stream classification rating
Beaver Creek ^a	2022	41	79.0	13	78.7	IV
	2019	69	77.9	0	70.8	III
	2011	60	78.8	0	72.0	III
Cane Creek ^a	2023	2	72.3	0	66.5	II
	2021	7	72.8	0	69.9	II
	2018	5	73.6	0	71.1	II
Clear Creek ^a	2010	6	72.9	0	70.2	II
	2022	36	76.8	7	76.8	IV
	2018	35	74.9	2	73.5	III
Elk Spring Creek ^a	2011	44	75.9	4	72.7	III
	2022	0	69.8	0	68.2	I
	2019	0	66.1	0	63.2	I
Right Fork Buffalo Creek ^a	2011	0	63.4	0	61.9	I
	2023	31	75.8	0	70.2	III
	2021	21	74.3	0	71.5	II
Rock Creek ^a	2020	58	77.7	0	71.9	III
	2011	39	76.7	1	73.4	III
	2022	32	76.6	6	75.9	IV
War Fork Creek ^a	2019	30	75.4	0	71.6	III
	2011	66	78.6	18	77.1	IV
	2023	3	73.1	0	65.8	II
Upper Hatchery Creek ^b	2021	0	71.3	0	69.3	I
	2020	14	73.8	0	67.1	II
	2011	20	74.4	0	69.9	III
	2010	2	70.0	0	65.9	I
	2023	0	59.0	0	54.0	I
Upper Hatchery Creek ^b	2022	0	62.0	0	51.0	I
	2020	0	58.0	0	57.0	I
	2019	0	64.0	0	58.0	I
	2018	0	58.0	0	58.0	I
	2017	0	64.0	0	57.0	I

^a Put, take for Rainbow Trout

^b Put, take for all trout species

Table 4. Stream classification ratings for catch and release only streams in the Southeastern Fishery District. Data was received from Wolf Creek National Fish Hatchery.

Stream	Year	# days average temperature ≥ 72 °F in the year	Maximum average daily temperature from June-September	# days average temperature ≥ 73 °F in June	Maximum average daily temperature in June	Stream classification rating
Lower Hatchery Creek*	2023	0	59.0	0	54.0	I
	2022	0	62.0	0	51.0	I
	2020	0	58.0	0	57.0	I
	2019	0	64.0	0	58.0	I
	2018	0	58.0	0	58.0	I
	2017	0	64.0	0	57.0	I

*Catch and release for all trout species

Table 5. Cumulative angler counts at put and take trout streams in the Southeastern Fishery District based on trail camera data. No. of Days (D) signifies the number of full days the camera was running, Count (A) is the number of anglers counted at the sites and A/D is the number of anglers counted per day the cameras were running.

Stream	Year	Location	Month																	
			Mar-May			June-July			Aug-Sep			Oct			Nov-Dec			Jan-Feb		
			No. Days	Count (A)	A/D	No. Days	Count (A)	A/D	No. Days	Count (A)	A/D	No. Days	Count (A)	A/D	No. Days	Count (A)	A/D	No. Days	Count (A)	A/D
Beaver Creek ^a	22/23	Upper	86	88	1.0	59	115	1.9	60	58	0.9	31	9	0.3	61	10	0.2	52	9	0.2
		Lower	92	5	0.1	60	5	0.1	60	8	0.1	31	0	0	61	0	0	52	0	0
		Total	178	93	0.5	119	120	1.0	120	66	0.6	62	9	0.1	122	10	0.1	104	9	0.1
Elk Springs Creek ^b	22/23	Stocking Site	89	17	0.2	60	21	0.4	59	15	0.3	31	3	0.1	61	9	0.1	52	5	0.1
War Fork Creek ^c	23/24	Upper ^d	83	137	1.7	39	38	0.9												
		Lower	92	77	0.8	61	95	1.6	61	55	0.9	31	34	1.1	61	33	0.5	60	15	0.3
		Total	175	214	1.2	100	133	1.3	61	55	0.9	31	34	1.1	61	33	0.5	60	15	0.3

^a Stocked in April, May, October

^b Stocked in April, May, June, October

^c Stocked in March-June, October

^d Camera went missing

Table 6. Cumulative angler counts at put, grow, and take trout streams based on trail camera data. No. of Days (D) signifies the number of full days the camera was running, Count (A) is the number of anglers counted at the sites and A/D is the number of anglers counted per day the cameras were running.

Stream	Year	Location	Month											
			Jan -Mar ^a			Apr-June ^a			July-Sep ^a			Oct-Dec ^a		
			No. Days (D)	Count (A)	A/D	No. Days (D)	Count (A)	A/D	No. Days (D)	Count (A)	A/D	No. Days (D)	Count (A)	A/D
Laurel River Tailwaters ^b	21/22	Stocking Site*	57	6	0.1	30	7	0.2	89	28	0.3	90	41	0.5

^a Stocked in March, April, May, June, October

^b Put, grow, and take for Brown Trout; Put and take for Rainbow Trout

SOUTHEASTERN FISHERY DISTRICT

Project 3: Technical Guidance

FINDINGS

Onsite technical guidance was not provided during 2023. Technical guidance requests were handled over the telephone, text, or by written correspondence. Topics encountered and responded to included: fish population balance, aquatic vegetation problems, fish stocking information, water quality problems, and fish disease.

Several other requests for information (approximately 200) about area fisheries and miscellaneous information about fish management in lakes and ponds were handled over the telephone and email.

EASTERN FISHERY DISTRICT

Project 2: Stream Surveys

FINDINGS

Trout Stream Assessments

One stream in the trout stocking program was evaluated. Russell Fork (Pike County) was monitored with in-stream devices that recorded water temperature (°F) once every hour from April – October. Two sites were monitored on Russell Fork; an upstream location in Elkhorn City and a downstream location near Draffin. These two sites are approx. 5 river miles apart.

All stream sites had supporting temperatures for trout during spring and fall time periods. Recorded minimum and maximum temperature ranges are displayed in Table 1. Russell Fork is managed as a put-take fishery. Rainbow Trout are stocked at a rate of 750 fish/mo during April, May, and October. Based on the data collected, this stream should continue with current management strategies (Table 1).

Table 1. Temperature data from Russell Fork, Pike County, Kentucky (April 01 – October 23, 2023).

Month	Temperature Range (°F)	
	Upstream @ old water plant	Downstream ¼ mile below Draffin Bridge
April	49.5-64.8	49.6-65.7
May	51.2-66.1	52.2-68.6
June	56.6-73.6	58.6-77.8
July	60.0-81.4	64.6-84.3
August	62.7-77.9	70.2-81.3
September	58.9-78.1	65.2-80.1
October	50.7-71.2	52.8-71.2

EASTERN FISHERY DISTRICT

Project 3: Technical Guidance

FINDINGS

Onsite technical guidance was not provided during 2023. Technical guidance requests were handled over the telephone, text, or by written correspondence. Topics encountered and responded to included fish population balance, habitat, aquatic vegetation problems, fish stocking information, water quality problems, and fish kills.

Several other requests for information about area fisheries and miscellaneous information about fish management in lakes and ponds were handled over the telephone and email.

Project 4: Fish Habitat Improvement - Public Lakes Fertilization

Lake	County	Size (acres)
<u>Western Fishery District</u>	Subtotal	0
None		0
<u>Northwestern Fishery District</u>	Subtotal	0
None		0
<u>Southwestern Fishery District</u>	Subtotal	204
Marion County Lake	Marion	25
Spurlington Lake	Taylor	25
Briggs Lake	Logan	18
Shanty Hollow Lake	Warren	136
<u>Central Fishery District</u>	Subtotal	234
Beaver Lake	Anderson	146
Benjy Kinman Lake	Henry	88
<u>Northeastern Fishery District</u>	Subtotal	9,588
Cave Run Lake (boat ramps)	Bath, Menifee, Morgan, Rowan	7,977
Grayson Lake (boat ramps)	Elliott	1,425
Lake Carnico	Nicholas	112
Lake Reba	Madison	74
<u>Southeastern Fishery District</u>	Subtotal	0
None		0
<u>Eastern Fishery District</u>	Subtotal	0
None		0

Project 4: Fish Habitat Improvement - Fish Attractors

District / Lake	Fish Attractor Sites
<u>Western Fishery District</u>	
Barkley Lake	1556 cypress trees were planted (~5 ft tall); 175 Christmas trees were used to refurbish 11 existing shallow-water fish attractor sites; 18 Christmas trees were used to refurbish 1 existing deepwater fish attractor site; 189 hardwood trees were used to refurbish 64 existing deepwater fish attractor sites; 7 hardwood trees were used to make 2 new deepwater fish attractor sites; 18 hardwood trees were used to make 18 new experimental shallow-water sites
<u>Northwestern Fishery District</u>	
Nolin River Lake	2 New Sites * 69 reef balls and 12 cedar trees 2 Refurbished Sites * remove old pallets; make block piles at both sites
Mauzy Lake	2 New Sites * 136 Christmas trees * 40-acre Eurasian Watermilfoil treatment
<u>Southwestern Fishery District</u>	
Barren River Lake	3 refurbished xmas tree brush piles at fishing piers. Additional sites were added by the Barren River Lake fish habitat project (see Fish Habitat Branch annual report)
Briggs Lake	Multiple xmas clusters on dam face refurbishing old sites
Green River Lake	10 brush pile sites (2 refurbished xmas tree sites at fishing piers and 8 laydown/drag in tree sites). Additional sites added by Green River Lake fish habitat project (see Fish Habitat Branch annual report)
Jesse W. Thornton Lake	3 xmas tree refurbished brush piles
Marion County Lake	2 refurbished xmas tree sites (dam face and near fishing pier); 6 blow down/drag in sites
Metcalfe County Lake	1 refurbished cedar stake bed, 4 new sites (3 cedar and 1 hardwood)
Mill Creek Lake	3 refurbished brush piles, 4 laydown/drag in
Shanty Hollow Lake	9 hardwood brush piles (laydown/drag in tops) and 1 new cedar stake bed
Spurlington Lake	2 refurbished xmas tree sites on dam face

Project 4: Fish Habitat Improvement - Fish Attractors cont.

District / Lake	Fish Attractor Sites
<u>Central Fishery District</u>	
Beaver Lake	70 Christmas trees (refurbished 1 site)
Benjy Kinman Lake	7 new water willow beds; 47 buttonbushes ~24" tall were planted; 34 bald cypress trees ~36-48" tall were planted; 1,736 Christmas trees (refurbished 34 sites and 2 new brush sites)
Guist Creek Lake	18 brush piles (740 Christmas trees) – 16 sites refurbished and 2 new sites
McNeely Lake	5 brush piles (101 Christmas trees) – 2 sites refurbished and 3 new sites
Taylorville Lake	5 brush piles and 71 hinge style laydowns (105 large cedar trees) – 4 new brush sites – 1 brush site refurbished – 1.4 miles of shoreline with 71 trees (pull into lake to resemble a hinge tree)
<u>Northeastern Fishery District</u>	
Cave Run Lake	Created new mixed sites on the Zilpo Flats using 50 gas pipe/cedar tree structures and 52 reef balls
Grayson Lake	Refurbished 4 brush sites (Christmas tree sites – 150+ trees)
Lake Reba	Refurbished all existing brush sites (Christmas tree sites- 200 trees, cedar trees- 40 trees)
Lake Wilgreen	Refurbished all existing brush sites (Christmas tree sites- 200 trees)
Lake Carnico	Refurbished all existing brush sites (Christmas tree sites- 150 trees)
<u>Southeastern Fishery District</u>	
Cedar Creek Lake	3 new brush sites (80 Christmas trees per site)
Laurel River Lake	4 new brush sites (55-60 Christmas trees per site)

Project 4: Fish Habitat Improvement - Fish Attractors cont.

District / Lake	Fish Attractor Sites
<u>Eastern Fishery District</u>	
Buckhorn Lake	42 hinged cuts (hardwood); 24 new pallet structures
Carr Creek Lake	38 hinge-cut trees (hardwood and pine)
Dewey Lake	3 refurbished shallow water brushpiles (hardwood trees); 2 refurbished reefs (44 Christmas trees and hardwood drift); 40 hinge-cut trees (hardwood); 5 refurbished deep water brush piles (15 christmas trees and hardwood trees); 1 new deep water stake bed with hardwood trees; one refurbished stake bed; 1 refurbished deep water brush pile (hardwood trees and 33 pipe structures)
Fishtrap Lake	2 refurbished reefs (50 Christmas trees and hardwood drift); 1 refurbished brush pile; 27 hinge-cut trees (hardwood and pine)
Yatesville Lake	2 refurbished brush piles (40 Christmas trees); 48 hinge-cut trees (hardwood); 1 refurbished deep water brush pile (21 christmas trees); 2 refurbished reefs (75 christmas trees); 2 refurbished shallow brush piles (9 cedar trees); 70 new pipe structures (with hardwood brush)
Paintsville Lake	100 new corrugated pipe structures

Minor Clark Fish Hatchery 2023 Sport Fish Production

Species	Planned			Actual				
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	No./lb.	Notes
Muskellunge	0	0	West Virginia DNR	45,450				Fry
	0	0	Licking River	909,313				Fry
Total Fry/Eggs				954,763				
	398		9 Kentucky River Pool 11*	398	9.0	48.0	8.3	
	380		9 Kentucky River Pool 12**	380	9.0	45.8	8.3	
	182		9 Kentucky River Pool 13***	182	9.0	21.9	8.3	
	50		9 Kentucky River Pool 2	50	8.5	5.4	9.2	
	50		9 Kentucky River Pool 3	50	8.5	5.4	9.2	
	705		9 Barren River	237	12.9	79.0	3.0	
	500		9 Green River Pool 5	170	12.9	56.7	3.0	
	350		9 South Fork Kentucky River	118	12.9	39.3	3.0	
	375		9 North Fork Kentucky River	126	12.9	42.0	3.0	
	400		9 Licking River	160	9.0	19.3	8.3	
	0		0 Licking River	81	12.9	27.0	3.0	
	200		9 Little Sandy River	200	9.0	24.1	8.3	
	110		9 Tygarts Creek	110	9.0	11.5	8.3	
	145		9 Drakes Creek	49	12.9	16.3	3.0	
	250		9 Green River Pool 4	84	12.9	28.0	3.0	
	500		9 Levisa Fork	168	12.9	56.0	3.0	
	50		9 Kinniconick Creek	30	12.9	10.0	3.0	
	40		9 Redbird River	40	9.0	4.8	8.3	
	30		9 Goose Creek	30	9.0	3.6	8.3	
	85		9 Red River	85	9.0	10.2	8.3	
	30		9 West Fork Drakes Creek	10	12.9	3.3	3.0	
	15		9 Sexton Creek	10	12.9	3.3	3.0	
	15		9 Station Camp	10	12.9	3.3	3.0	
	30		9 Triplett Creek	30	9.0	3.6	8.3	
	20		9 North Fork Triplett Creek	10	12.9	3.3	3.0	
Total	4,910			2,818		571.1		
			*Left Pectoral Fin Clip					
			**Right Pectoral Fin Clip					
			***Left Pelvic Fin Clip					
Muskellunge	2,700		13 Cave Run Lake*	2,700	12.7	835.3	3.2	
	2,700		13 Green River Lake*	2,700	12.7	833.3	3.2	
	400		13 Buckhorn Lake	400	12.9	133.3	3.0	
	375		13 Dewey Lake*	375	12.9	125.0	3.0	
Total	6,175			6,175	12.8	1,926.9	3.2	
Grand Total	11,115			963,756				
			*Left Pectoral Fin Clip					

Species	Planned		Location/Use	Actual			Notes
	Number	Size (in)		Number	Size (in)	Pounds	
Hybrid Striped	200,000	1.5	Barren River Lake	202,155	1.3	116.3	1,738
Bass	15,000	1.5	Grayson Lake	15,030	1.9	32.2	467
	102,000	1.5	Rough River Lake	102,094	1.7	135.2	755
	61,000	1.5	Taylorsville Lake	61,008	1.7	65.9	926
	48,000	1.5	Herrington Lake	48,048	1.6	56.0	858
	23,000	1.5	Fishtrap Lake	23,045	2.1	50.3	458
	7,200	1.5	Lake Linville	7,211	2.1	20.9	345
	9,500	1.5	Guist Creek Lake	9,512	1.7	16.6	573
	4,100	1.5	KY River Pool 4	4,101	1.5	4.8	860
	3,600	1.5	KY River Pool 5	3,610	1.5	4.2	860
	4,700	1.5	KY River Pool 6	4,718	1.5	5.5	860
	3,500	1.5	KY River Pool 8	3,500	1.5	4.0	860
	4,100	1.5	KY River Pool 9	4,101	1.5	4.8	860
			Ohio River				
	54,500	1.5	Markland Pool	62,903	1.7	94.8	664
	41,500	1.5	McAlpine Pool	71,347	1.7	131.1	544
	50,000	1.5	Cannelton Pool	114,095	1.4	85.0	1,342
	36,000	1.5	Newburg Pool	84,457	1.4	66.1	1,278
	43,700	1.5	JT Meyers Pool	43,704	1.4	31.3	1,396
	60,500		Smithland Pool	99,299	1.4	78.2	1,257
	0	0	Kentucky Lake TW	43,082	1.5	38.5	1,119
	0	0	Barkley Lake TW	5,062	1.7	7.4	684
Grand Total	771,900			1,012,082	1.6	1049.1	965
Walleye (Erie)	0	0	Licking River	529,711			Fry
Total				529,711			
	500,000	1.5	Lake Cumberland	351,005	1.4	213.7	1,642
	40,000	1.5	Dale Hollow Lake (KY)	40,016	1.5	32.8	1,220
	280,000	1.5	Laurel River Lake	240,106	1.4	178.4	1,346
	200,000	1.5	Nolin River Lake	75,471	1.5	47.6	1,585
	200,000	1.5	Green River Lake	75,574	1.5	47.6	1,588
	10,000	1.5	Russell Fork	10,042	1.4	6.6	1,522
	35,000	1.5	Carr Creek Lake	35,078	1.4	22.3	1,573
	13,000	1.5	Licking River	13,042	2.4	39.4	331
	57,000	1.5	Paintsville	0			
Total	1,335,000			840,334	1.4	588.4	1,427
Grand Total				1,370,045			

Species	Planned			Actual				
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	No./lb.	Notes
Walleye (Native)								
	7,500	2.5	North Fork Ky River	7,523	2.2	19.4	387	
	7,500	2.5	South Fork Ky River	7,521	2.2	20.0	377	
	5,000	2.5	Middle Fork Ky River	5,023	2.0	10.4	483	
	0	0	Cumberland River*	2,593	4.9	81.5	32	
	0	0	Wood Creek Lake	20,844	1.6	18.3	1,139	
	0	0	Wood Creek Lake	10,659	2.1	20.3	526	
	27,200	2.5	Upper Cumberland River	37,975	2.1	66.5	571	
	3,280	4.5	Rockcastle River*	5,010	4.9	157.5	32	
	8,180	4.5	Lower Barren*	8,184	4.0	126.9	65	
	8,540	4.5	Martins Fork Lake*	8,552	4.5	170.3	50	
Total	47,200	2.5		68,701	2.1	136.6	503	
Total	20,000	4.5		24,339	4.5	536.2	45	
Total				20,844	1.6	18.3	1,139	
Grand Total	67,200			113,884		691.1	165	

* OTC as fingerlings

Saugeye								
	200,000	Eggs	Pfeiffer Hatchery	1,355,160				Eggs
	0		Pfeiffer Hatchery	39,674				Fry
	0		Taylorville Lake	10,720	1.4	6.7	1,600	
Grand Total	200,000			1,405,554				

Striped Bass								
	500,000		Lake Cumberland	502,796	1.6	743.5	676	
	50,000		Kentucky Lake tailwater	7,425	1.5	11	675	
	50,000		Barkley Lake tailwater	45,327	1.4	42.1	1,077	
			Ohio River					
	49,000		Markland Pool	0				
	38,000		McAlpine Pool	0				
	46,000		Cannelton Pool	0				
	33,000		Newburg Pool	0				
	40,000		J.T. Meyers	0				
	55,000		Smithland Pool	37,857	1.3	29.9	1,266	
Grand Total	861,000			593,405	1.6	826.5	718	

Species	Planned		Location/Use	Actual			
	Number	Size (in)		Number	Size (in)	Pounds	No./lb.
Black Nose Crappie							
			Herrington Lake				
	20,250	2.0	Chimney Rock Ramp	40,089	1.8	77.8	515.3
	20,000	2.0	Gwinn Island Ramp	40,089	1.8	77.8	515.3
	20,000	2.0	Bryants Camp Ramp	40,500	1.9	94.8	427.0
			Carr Creek Lake				
	8,875	2.0	Littcar Ramp	8,905	1.6	13.7	650.0
	8,875	2.0	Marina Ramp	8,880	3.0	85.4	104.0
	0		Paintsville Lake	27,560	1.6	42.4	650.0
	0		Laurel River Lake	30,289	1.9	67.8	446.7
Grand Total	78,000			196,312	1.9	459.7	427

Smallmouth Bass							
	100,000	2.0	Laurel River Lake	79,492	1.6	97.4	916
Grand Total	100,000			79,492	1.6	97.4	916

Largemouth Bass							
	15,000	5.0	Tennessee	18,424	5.2	980.0	18.8
Grand Total	15,000			18,424	5.2	980.0	18.8

Nonsport Forage Species

Forage Species

Fathead Minnows	Pounds	Location/use
	1,934	Muskellunge Ponds
	1,230	Walleye Broodstock
	540	Smallmouth Bass
	300	Display Pool

Total Pounds FHM 4,004

Goldfish

	9,750	Muskellunge Ponds
	3,067	Walleye Broodstock
	554	Future Brood stock
	51	Hatchery Oxbow
	4,229	Overwinter Display Pool
	756	Largemouth Bass
	4,066	Smallmouth Bass and Crappie

Total Pounds GOF 22,473

83 Goldfish Ponds

20 Fathead Minnow Ponds

Peter W. Pfeiffer Fish Hatchery 2023 Sport Fish Production

Species	Planned			Actual				Notes
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	No./lb.	
Channel Catfish	120,800	15	FINS program	93,915	15	81,772	1.1	
	62,015	8-10	Stockers	60,642	6-10	7,140	8.5	
	182,815			154,557		88,912		
			KY River Pool 3	10,490	Fry	5	2,231.9	Surplus Fry
Blue Catfish				10,490		5		
	11,000	5-7	Dewey Lake	11,000	5-7	479	23.0	
	11,500	5-7	Fishtrap Lake	11,500	5-7	500	23.0	
	7,100	5-7	Carr Creek Lake	7,100	5-7	309	23.0	
	22,800	5-7	Yatesville Lake	22,800	5-7	991	23.0	
	24,000	5-7	Taylorsville Lake	30,245	5-7	1,315	23.0	
	42,300	5-7	KY River	56,044	5-7			
	118,700			138,689		3,594		
Sauger	5,000	1.5	Kentucky River Pool 2	5,192	1.5	6.3	830.7	
	10,000	1.5	Kentucky River Pool 3	9,926	1.5	12.0	830.6	
	10,000	1.5	Kentucky River Pool 4	10,009	1.5	12.1	830.6	
	10,000	1.5	Kentucky River Pool 5	10,000	1.5	12.0	833.3	
	10,000	1.5	Kentucky River Pool 6	12,113	1.5	19.5	622.8	
	15,000	1.5	Kentucky River Pool 8	17,373	1.5	27.8	626.1	
	10,000	1.5	Kentucky River Pool 9	10,177	1.5	16.2	628.2	
	10,000	1.5	Kentucky River Pool 10	10,000	1.5	15.0	668.0	
	10,000	1.5	Kentucky River Pool 11	11,802	1.5	18.1	651.3	
	10,000	1.5	Kentucky River Pool 12	10,014	1.5	15.4	652.4	
	5,000	1.5	Kentucky River Pool 13	5,000	1.5	8.7	574.7	
	105,000			111,606		162.8		
Saugeye	9,200	1.5	Boltz Lake	9,200	1.5	10	948.5	
	31,700	1.5	Guist Creek Lake	30,803	1.5	36.9	834.8	
	16,900	1.5	Wilgreen Lake	16,900	1.5	18.1	933.7	
	9,600	1.5	Carpenter Lake	9,600	1.5	10.1	950.5	
	11,200	1.5	Lake Carnico	11,200	1.5	11.8	949.2	
	17,500	1.5	A.J. Jolly Lake	17,805	1.5	18.8	947.1	
	61,000	1.5	Taylorsville Lake	61,000	1.5	65.5	932.0	
	147,900			156,508		170.9		
Redear Sunfish		1.5	Elmer Davis Lake	30,984	1.2	39.2	790	
	14,200	1.5	Carr Creek Lake	14,200	1.1	10.6	1,340	
	31,600	1.5	Beaver Lake	31,600	1.1	23.3	1,356	
	1,800	1.5	Martin's Fork Lake	6,700	1.1	5.0	1,340	
		1.5	Cave Run Lake	175,399	1.2	129.4	1,355	
	24,600	1.5	Buckhorn Lake	24,600	1.1	18.2	1,352	
	72,200			283,483		225.7		

Species	Planned			Actual				Notes
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	No./lb.	
Lake Sturgeon			Upper Cumberland River	3,079	3.0	19	166	Early stock/better growth
	6,000	8	Upper Cumberland River	7,143	7.0	282	25	300 PIT tagged
	6,000			10,222		301		
Alligator Gar	8,000	10	Western Kentucky					
			Clarks River	3,243	8.5	310	10	
			Ballard WMA	1,200	8.25	93	13	
			Doug Travis WMA	900	8.25	70	13	
			Boatwright WMA	900	8.25	70	13	
			Obion Creek	2,000	8.25	155	13	
			Mayfield Creek	1,000	8.25	78	13	
			Bayou de Chein	700	8.25	54	13	
	8,000			9,943		830		
Bluegill	5,400		Buffalo Lake	6,615	2.61	7.5	882.0	
	20,000	6-8	FINS Program	13,228	7.0	3,675.0	3.6	
	25,400			19,843		3,682.5		
Grand Total				895,341		97,883		

Trout Stocking Numbers

Species	Waterbody	Actual Number	Length (in)
Brook Trout	Lake Cumberland Tailwater	2,275	11-13
Brook Trout	Parched Corn Creek	300	3-4

Species	Waterbody	Actual Number	Length (in)
Brown Trout	Bark Camp Creek	500	8-9
Brown Trout	Big Caney Creek	250	8-9
Brown Trout	Fagan Branch Lake	1,000	8-9
Brown Trout	Fort Campbell	3,250	8-9
Brown Trout	Greenbo Lake	2,000	8-9
Brown Trout	Herrington Lake Tailwater	300	8-9
Brown Trout	Indian Creek - East Fork	400	8-9
Brown Trout	Jennings Creek	500	8-9
Brown Trout	Lake Cumberland Tailwater	58,382	8-13
Brown Trout	Laurel Creek	250	8-9
Brown Trout	Laurel River Lake Tailwater	250	8-9
Brown Trout	Looney Creek	700	8-9
Brown Trout	Nolin River Lake Tailwater	250	8-9
Brown Trout	Otter Creek	500	8-9
Brown Trout	Paintsville Lake	4,175	8-9
Brown Trout	Roundstone Creek	200	8-9
Brown Trout	Sulphur Springs Creek	200	8-9
Brown Trout	Trammel Creek	600	8-9

Species	Waterbody	Actual Number	Length (in)
Cutthroat Trout	Lake Cumberland Tailwater	22,775	8-10

Species	Waterbody	Actual Number	Length (in)
Rainbow Trout	Alexandria Community Park Lake	4,500	9-12
Rainbow Trout	Anderson County Community Park Lake	1,500	9-11
Rainbow Trout	Bark Camp Creek	4,700	9-11
Rainbow Trout	Beaver Creek	1,500	9-11
Rainbow Trout	Beaver Creek - Right Fork	2,000	9-11
Rainbow Trout	Bert T. Combs Lake	3,950	9-11
Rainbow Trout	Beulah Lake	5,500	9-11
Rainbow Trout	Big Bone Lick State Park	1,600	9-11
Rainbow Trout	Big Caney Creek	2,500	9-11
Rainbow Trout	Bloomfield Park Lake	1,500	9-11
Rainbow Trout	Boone Tract 6 Acre Lake	3,000	9-11
Rainbow Trout	Boulder Lake	800	9-11
Rainbow Trout	Brickyard Pond	3,000	9-11
Rainbow Trout	Buckhorn Lake Tailwater	4,500	9-11

Species	Waterbody	Actual Number	Length (in)
Rainbow Trout	Buffalo Creek	500	9-11
Rainbow Trout	Camp Ernst Lake	4,500	9-11
Rainbow Trout	Cane Creek	2,250	9-11
Rainbow Trout	Cannon Creek Lake	6,000	9-11
Rainbow Trout	Carr Creek Lake Tailwater	3,500	9-11
Rainbow Trout	Casey Creek	8,000	9-11
Rainbow Trout	Cave Run Lake Tailwater	6,000	9-13
Rainbow Trout	Cherokee Park Lake	2,250	9-11
Rainbow Trout	Chimney Top Creek	500	9-11
Rainbow Trout	Clear Creek	1,225	9-11
Rainbow Trout	Clinton Rotary Park Lake	1,500	9-11
Rainbow Trout	Craney Creek	1,000	9-11
Rainbow Trout	Cranks Creek Lake	5,000	9-11
Rainbow Trout	Dewey Lake Tailwater	4,000	9-11
Rainbow Trout	Eagle Lake (Morehead State)	2,000	9-11
Rainbow Trout	Easy Walker Park Pond	1,500	9-11
Rainbow Trout	Elk Spring Creek	1,600	9-11
Rainbow Trout	Fagan Branch Lake	1,500	9-11
Rainbow Trout	Fisherman's Park Lakes	3,750	9-11
Rainbow Trout	Fishpond Lake	4,000	9-11
Rainbow Trout	Fishtrap Lake Tailwater	10,000	9-11
Rainbow Trout	Flemingsburg City Reservoir (Old)	3,025	9-11
Rainbow Trout	Floyds Fork Creek	12,000	9-11
Rainbow Trout	Fort Campbell	2,400	9-11
Rainbow Trout	Grants Branch Lake	4,500	9-11
Rainbow Trout	Grayson Lake Tailwater	5,000	9-11
Rainbow Trout	Greasy Creek	1,400	9-11
Rainbow Trout	Greenbo Lake	11,050	9-11
Rainbow Trout	Gunpowder Creek Nature Park	1,600	9-11
Rainbow Trout	Hatchery Creek	30,025	9-17
Rainbow Trout	Herrington Lake Tailwater	4,600	9-11
Rainbow Trout	Higginson & Henry WMA	500	9-11
Rainbow Trout	Highsplint Lake	2,250	9-11
Rainbow Trout	Indian Creek - East Fork	4,500	9-13
Rainbow Trout	Jacobson Park Lake	9,000	9-11
Rainbow Trout	James Beville Park Lake	2,250	9-11
Rainbow Trout	Jennings Creek	7,000	9-11
Rainbow Trout	Jesse W. Thornton Lake	4,500	9-11
Rainbow Trout	Kentucky Horse Park Lake	3,000	9-11
Rainbow Trout	Kess Creek Park Lake	1,500	9-11
Rainbow Trout	Kingdom Come State Park Lake	1,500	9-11
Rainbow Trout	Lake Cumberland Tailwater	252,250	9-16
Rainbow Trout	Lake Mingo	1,500	9-11
Rainbow Trout	Lake Montgomery	4,525	9-11
Rainbow Trout	Lake Pollywog	2,250	9-11
Rainbow Trout	Laurel Creek	3,500	9-11

Species	Waterbody	Actual Number	Length (in)
Rainbow Trout	Laurel River Lake Tailwater	1,050	9-11
Rainbow Trout	Leary Lake	4,500	9-11
Rainbow Trout	Little Sandy River - East Fork	2,400	9-11
Rainbow Trout	Logan Hubble Park	4,500	9-11
Rainbow Trout	Looney Creek	1,500	9-11
Rainbow Trout	Lower Sportsman's Lake	1,500	9-11
Rainbow Trout	Lusby Lake	1,500	9-11
Rainbow Trout	Lynn Camp Creek	2,500	9-11
Rainbow Trout	Madisonville Park	4,500	9-11
Rainbow Trout	Martin County Lake	2,750	9-11
Rainbow Trout	Martins Fork Lake Tailwater	3,750	9-11
Rainbow Trout	Mason County Recreational Lake	3,000	9-11
Rainbow Trout	Metcalfe County Park Lake	500	9-11
Rainbow Trout	Middlesboro Canal	400	10-13
Rainbow Trout	Middleton Mills Park Lake	3,000	9-11
Rainbow Trout	Mike Miller Park Lake	2,250	9-11
Rainbow Trout	Miles Park Lakes	3,750	9-11
Rainbow Trout	Mill Creek Lake (Wolfe & Powell Co.)	5,000	9-11
Rainbow Trout	Millenium Park Pond	1,500	9-11
Rainbow Trout	Nolin River Lake Tailwater	8,000	9-11
Rainbow Trout	Otter Creek	14,750	9-13
Rainbow Trout	Paintsville Lake	14,375	9-11
Rainbow Trout	Paintsville Lake Tailwater	8,000	9-11
Rainbow Trout	Panbowl Lake	3,200	9-11
Rainbow Trout	Panther Creek Park Lake	2,250	9-11
Rainbow Trout	Peabody WMA	5,250	9-11
Rainbow Trout	Pikeville City Lake	2,500	9-11
Rainbow Trout	Prisoners Lake	2,275	9-11
Rainbow Trout	Red River - Middle Fork	3,350	9-13
Rainbow Trout	Robert Barth Park Lake	2,250	9-11
Rainbow Trout	Rock Creek	15,125	9-14
Rainbow Trout	Roundstone Creek	2,800	9-11
Rainbow Trout	Royal Springs	1,200	9-11
Rainbow Trout	Russell Fork Creek	2,250	9-11
Rainbow Trout	Sandy Watkins Park Lake	1,000	9-11
Rainbow Trout	Scott County Park Lake	1,500	9-11
Rainbow Trout	Sinking Creek	1,200	9-11
Rainbow Trout	Southgate Lake	1,500	9-11
Rainbow Trout	Southland Church Lake	1,500	9-11
Rainbow Trout	Station Camp Creek	750	9-11
Rainbow Trout	Sturgeon Creek	400	9-11
Rainbow Trout	Sulphur Springs Creek	3,000	9-11
Rainbow Trout	Swift Camp Creek	1,000	9-11
Rainbow Trout	Taylorsville Lake Tailwater	3,000	9-11
Rainbow Trout	Tom Wallace Park Lake	3,750	9-11
Rainbow Trout	Trammel Creek	7,000	9-11

Species	Waterbody	Actual Number	Length (in)
Rainbow Trout	Triplett Creek	1,550	9-11
Rainbow Trout	Triplett Creek - North Fork	700	9-11
Rainbow Trout	Upper Sportsman's Lake	4,500	9-11
Rainbow Trout	War Fork Creek	2,500	9-11
Rainbow Trout	Waverly Park Lake	4,500	9-11
Rainbow Trout	Waymond Morris Park	3,000	9-11
Rainbow Trout	West Hickman Creek	1,000	9-11
Rainbow Trout	Whitehall Park Lake	4,500	9-11
Rainbow Trout	Wolfe Creek	2,000	9-11
Rainbow Trout	Wood Creek Lake	8,025	9-11
Rainbow Trout	Yatesville Lake Tailwater	3,000	9-11
Rainbow Trout	Yellow Creek Park Lake	2,250	9-11