

Commonwealth of Kentucky

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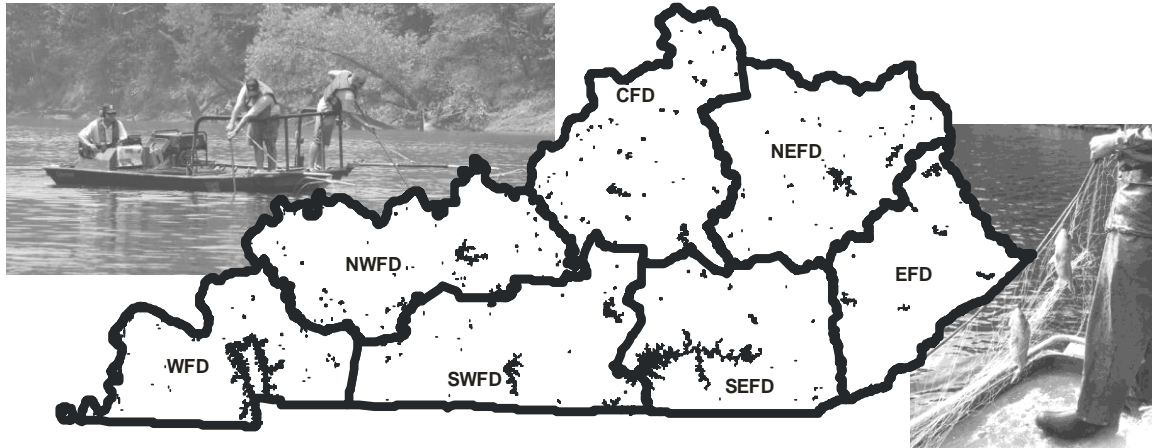
Sport Fish Restoration Grant F-50, Segment 41

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through  
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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, 817 black bass were collected by diurnal electrofishing (120 PPS, DC current). During this sampling period, 767 largemouth bass (66.7 fish/hr) were collected from Blood River, Jonathan Creek, Big Bear, and Sugar Bay (Table 2). The catch rates (fish/hr) for largemouth bass between embayments varied (52.3 to 88.0 fish/hr). This variation could be due to changing weather conditions during the sampling period. The highest catch rates came from Sugar Bay, while catch rates from other embayments may have been negatively affected by fluctuating elevation (Table 1).

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 “Fair”. Growth will be reassessed in 2020. The catch rate of age-1 largemouth bass in the sample was low. Future habitat plans will be focused on increasing recruitment of largemouth bass in the reservoir.

The size structure parameters used to assess the fishery by standards set in the Kentucky Lake Fish Management Plan (KLFMP) showed an average catch of (<8.0 in) bass (Table 4). The catch rate of intermediate-size bass (12.0-14.9 in) which was (7.9 fish/hr) was below the plan recommendation. The catch rate of harvestable-size bass (≥15.0 in) was also down from previous years’ data, and below the plan recommendation. The catch rate of trophy-size largemouth bass (≥20.0 in) was the highest since 2010, but was still below the KLFMP recommendation.

Proportional Size Distributions (PSD) values were calculated for black bass collected from each embayment sampled during the spring (Table 5). The average PSD and RSD<sub>15</sub> values for largemouth bass were 47 and 28, respectively. These average values were used in the KLFMP assessment. The PSD value was below the assessment preferred range (55-75; Table 4). The RSD<sub>15</sub> value was 28, which falls inside the targeted range (RSD<sub>15</sub> of 20-40).

During October, 370 black bass were collected by diurnal electrofishing (120 PPS, DC current) from two embayments; Blood River, and Jonathan Creek (Table 6). Largemouth bass comprised 78% (44.6 fish/hr) of this sample. During the 2017 fall sample, the largemouth bass catch rate was 50.2 fish/hr.

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 90 (Table 8). This value was up from the 2017 estimated relative weight value of 88, but is still below 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. As silver and bighead carp numbers continue to 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	$\text{Log}_{10}(\text{weight}) = -3.51800 + 3.18731 \times \text{Log}_{10}(\text{length})$
Smallmouth bass	$\text{Log}_{10}(\text{weight}) = -3.60913 + 3.26384 \times \text{Log}_{10}(\text{length})$

Otoliths were collected from a subsample of largemouth bass (<12.0 in) during fall sampling in 2018. Otoliths were used to age bass so that the catch rate and growth of age-0 fish could be evaluated. The catch rate of age-0 largemouth bass during the fall sample was 18.6 fish/hr (Table 7). The 2018 year class appears to be below average, with good growth. The mean length of the age-0 largemouth bass was (5.7 in) at time of capture in the fall.

The age-length key from 2016 was also used to assess the age frequency of largemouth bass > age-1. Few older fish were collected this fall (Table 9). The low catch rates may have been impacted by poor sampling conditions (Table 1).

Trap nets were fished for crappie in Blood River and Jonathan Creek embayments for 80 net-nights (nn) during October and November. In addition, Ledbetter Bay was sampled for 40 nn. This is the third time Ledbetter Bay has been sampled for crappie. The combined sampling effort yielded 1,060 crappie (8.8 fish/nn), of which 3.3 fish/nn (37%) were white crappie and 5.6 fish/nn (63%) were black crappie (Table 10). The Blood River and Jonathan Creek data is listed as “sub-total” on this table. The total catch rate of crappie > age-0 was 8.4 fish/nn which is below the goal of 20.0 fish/nn set in the KLFMP (Table 11). The low total catch rate is a reflection of the weak spawns in 2016 and 2017. However, the catch rate of 3.1 fish/nn for age-0 crappie this fall was an encouraging sign of an average spawn in 2018.

The number of crappie  $\geq 8.0$  in and  $\geq 10.0$  in collected in trap nets was 6.5 and 2.6 fish/nn, respectively (Table 11). The KLFMP objective for crappie is to maintain a catch rate of at least 10.0 fish/nn for crappie  $\geq 8.0$  in, and 4.0 fish/nn for crappie  $\geq 10.0$  in. Neither objective was met this year.

Crappie at Kentucky Lake had typical growth rates in 2017. 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 9.9 in (Table 11).

Another management objective in the KLFMP is to maintain a catch rate of age-1 crappie of at least 11.0 fish/nn (Table 11). The catch rate for this age group of crappie was 1.6 fish/nn. This is the second lowest catch rate ever recorded at Kentucky Lake and indicates another poor spawn in 2017. For a discussion of the potential impacts of environmental factors on the 2017 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 "fair" this year (Table 12). The crappie fishery will be assessed with a creel survey in 2020.

The fall trap netting data was used to calculate proportional size distributions and length-weight equations for crappie. PSD and RSD<sub>10</sub> values are reported in Table 13. The PSD and RSD<sub>10</sub> values are up considerably, and reflect a higher proportion of large-size crappie in the population from a good year class in 2015 and a lower proportion of small fish due to recent weak year classes.

The mean relative weights of keeper-size (>10.0 in) white crappie and black crappie were 94 and 89, respectively (Table 14). These relative weights are not ideal, but are an improvement over 2017.

Length-weight equations for white and black crappie are listed below.

White crappie	$\text{Log}_{10}(\text{weight}) = -3.67771 + 3.34450 \times \text{Log}_{10}(\text{length})$
Black crappie	$\text{Log}_{10}(\text{weight}) = -3.65733 + 3.36569 \times \text{Log}_{10}(\text{length})$

Tables 15 and 16 list the back-calculated lengths at age for white and black crappie, respectively. The low length at age-1 (3.4 in) is concerning as this may be a reflection of the lower densities of large-bodied zooplankton reported by Hancock Biological Station this year (Hancock Biological Station, unpublished data). The age frequencies for white and black crappie collected are listed in Tables 17 and 18, respectively.

During the spring of 2018, ichthyoplankton sampling was conducted in the Jonathan Creek embayment of Kentucky Lake. Samples were conducted using a rectangular neuston net with a 100-micron mesh size, towed 50 feet behind a boat, at a speed of 1.5 mph. Tow duration was either 5 or 3 minutes 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 was begun 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 six sample sites were used to evaluate overall densities during each week (Table 19). The standard error and coefficients of variation of the mean and geometric mean were used to evaluate sample accuracy. In 2015 the peak weekly density of crappie occurred on May 12<sup>th</sup> and was 70.50 crappie/1000m<sup>3</sup>. In 2016 the peak weekly density of crappie occurred on May 19<sup>th</sup> and was only 3.88 crappie/1000m<sup>3</sup>. In 2017 the peak weekly density of crappie occurred on May 19<sup>th</sup> and was 31.99 crappie/1000 m<sup>3</sup>. In 2018 the peak weekly density of crappie occurred on May 19<sup>th</sup> and was 27.74 crappie/1000 m<sup>3</sup>. Based on these results, the spawn of crappie in Jonathan Creek in 2018 appears to have been better than 2016, but not as good as 2015. This will still need to be verified with trap netting in 2019. For the third year in a row the peak weekly density has occurred on May 19<sup>th</sup>.

In order to determine the hatch dates of crappies more precisely, based on growth rates, all crappie that were 8–11 mm in total length were assumed to represent a one-week cohort (Table 20). Just like last year, crappie in the 8–11 mm range appeared to be fully recruited to the gear, and were well represented in the sample. It is possible that crappie shorter than 8 mm were not located in the pelagic sample sites yet, and that crappie over 11 mm were more likely to avoid capture. This length range was also chosen because an 8 mm crappie would grow to 11.8 mm in one week (our sample interval), based on a growth rate of 0.67 mm per day after swim up. This was our estimated daily growth rate from daily otolith ring counts of Jonathan Creek crappie collected later in the year (next section).

In addition to weekly cohorts, we also estimated daily cohorts of hatched crappie. All crappie that were captured outside of the 8–11 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 21). A hatch date was then back-calculated for each individual fish using the assumed growth rate (0.67 mm/day) and the total length of each fish. A total length at hatch (4mm) 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 22 days and extended at least until the middle of May (Table 21). The truncated spawning period was likely influenced by the rapid rise in water temperature this year. Because of our limited larval sampling window, we cannot be sure that crappie did not spawn before or after our sampling window. The literature reports most crappie spawns to be relatively short (1-2 months; Mitzner 1991 and Travnichek, et. al.1996). A strong peak in spawning activity was observed during the first week of May immediately following a brief lake elevation rise of 2 feet above normal. The lake was up to summer pool (359.0) by 17-April, but larval sampling did not indicate any successful spawning activity until 23-April when the lake was rising above summer pool elevation. The highest numbers of crappie were spawned after the lake returned to summer pool elevation and water temps climbed into the 60’s. Water temperatures quickly rose this year and the spawning activity appeared to end as temperatures reached the high 70’s. Similar to prior-year surveys we found much higher densities of larval crappie farther into the embayment (Table 19; Appendix A).

In June 2018 an effort was made to capture YOY crappie using a benthic otter trawl. Crappie were identified to species using dorsal fin counts, and a subsample of otoliths was collected from approximately 200 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 down 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 1-2 days, but if the difference between readers was less than 10% of the fish's age, the counts were averaged and accepted. In 2018, no fish were excluded from Jonathan Creek or Blood River based on reader disagreement. 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 accurate estimate of crappie hatch dates in Jonathan Creek as described earlier (Table 21). There is no way to practically differentiate between crappie species in the larval samples. Thusly, the estimated growth rate used in the larval hatch date back calculation combined both species together.

Differences in growth rates and hatch dates between species and embayments were initially compared with an F-test for variances. Due to unequal variances, the hatch dates and growth rates were then compared using T-tests for unequal variances. In Jonathan Creek the mean hatch date of white crappie (May 13<sup>th</sup>) (n=78) was significantly later than the mean hatch date of black crappie (May 10<sup>th</sup>) (n=26) (t=2.7 df=37 P=.005) (Table 22). Daily growth rates for black crappie were statistically significantly higher (0.70mm/day) than white crappie (0.067mm/day) (t=1.68 df=45 P=0.049).

In Blood River, the average black crappie hatched significantly sooner (May 10<sup>th</sup>) (n=9) than the average white crappie (May 15<sup>th</sup>) (n=89) (t=2.43 df=9 P=<0.02) (Table 22). Daily growth rates for black crappie were statistically significantly higher (0.71mm/day) than white crappie (.067mm/day) (t=2.71 df=14 P=0.0084).

When both species were grouped together, crappie in Blood River and Jonathan Creek each had an average daily growth rate of 0.68mm/day. The average crappie in Blood River hatched significantly later (May 14<sup>th</sup>), than the average crappie in Jonathan Creek (May 12<sup>th</sup>) (t=3.17 df=196 P=<0.0009). The slight difference in hatch dates may be due to differences in embayment morphology or unknown temperature differences, but was more likely influenced by the higher proportion of white crappie collected in Blood River.

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 69 catfish were collected during 29 electrofishing runs (Table 23). Each run lasted 300 seconds, for a total sample time of 2.4 hours over a three-day period. Of the samples, blue catfish had the highest catch rate at 23.8 fish/hr, and made up 83% of the catfish collected. The catch rate was much lower than observed in most previous years, but consistent with last year's results. Relative weight values are listed in Table 24. The relative weight values are all high, suggesting the fish are healthy.

Otoliths were collected during catfish sampling in 2014. That age data was applied to the 2018 dataset to calculate age frequencies. Age frequency data for blue catfish is presented in Table 25.

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### **Lake Barkley**

Black bass were collected by diurnal electrofishing (120 PPS, DC current) during the spring at sampling sites historically used on Lake Barkley. A total of 513 black bass were collected at a rate of 48.9 fish/hr (Table 26). Spotted and smallmouth bass accounted for about 8% of the total black bass sampled. Catch rates declined slightly over last year, and were still below the long-term average. At best, it was felt that sampling yielded only fair results. Although sampling during some years (2011, 2012, 2016) was believed to be affected by weather conditions, the lack of a strong spawn between 2009 and 2016 has likely reduced the overall numbers of bass in Lake Barkley. This might explain the drop in intermediate and large-size bass during the most recent study. The largemouth bass catch rate was 44.9 fish/hr which falls below the ten-year average of 83.4 fish/hr (Table 27).

The overall PSD and RSD<sub>15</sub> values for largemouth bass at Lake Barkley, along with values for individual embayments are listed in Table 28. The PSD value (67) is within the objective goal (PSD of 55-75) established in the Barkley Lake Fish Management Plan (BLFMP). This value indicates a bass fishery with a balanced size structure. The RSD<sub>15</sub> (51) was higher than the set goal (20-40). This higher value indicates that the bass population is slightly skewed toward larger fish. The spring catch rates of small ( $\leq 8.0$  in), medium (8.0-14.9 in), and larger ( $\geq 15.0$  in) largemouth bass all declined this year and remain lower than historical averages (Table 27).

The lake specific assessment score for Lake Barkley was “fair” (Table 29). The score was “good” for several years prior to 2010. Flood conditions in 2010, 2011, and 2013 as well as drought conditions in 2012 likely influenced sampling resulting in spurious lower ratings for these years. The fishery showed improvement in these ratings in 2017 and was again rated as “good”. However, in 2018, low catch rates of 12.0- to 14.9-in largemouth bass and largemouth bass  $\geq 15.0$  in 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 26% as determined using catch-curve regression of fall-caught largemouth (Table 29).

Black bass were sampled in October to collect length-weight data to assess condition factors and to determine the strength of the 2018 year-class. A total of 271 bass were collected, with 89% being largemouth bass (Table 30). Largemouth bass were caught at a rate of 34.7 fish/hr. This catch rate was much lower than previous years. Unseasonably warm water temperatures for the first couple weeks of October likely affected catch rates this year. Relative weights were determined for all bass, but very few spotted and smallmouth bass were collected (Table

31). The relative weight for harvestable-size ( $\geq 15.0$  in) largemouth bass was 102.5. The length-weight equation for largemouth bass at Lake Barkley is:

$$\text{Largemouth Bass } \log_{10}(\text{weight}) = -3.59927 + 3.29547 \times \log_{10}(\text{length})$$

During 2015, largemouth bass age and growth data was collected in the fall instead of the spring. This statewide change in sampling procedure was made to simplify the reading of otoliths by eliminating the need to add an unseen annulus onto the outer edge. Age and growth data collected in the fall of 2015 were coupled with fall 2018 data to yield an estimate of the age distribution for largemouth bass. Catch rates for fall-caught fish by age-class are shown in Table 32. Ages ranged from 0-11 and the most abundant age-class was age-0. Moderate catch rates of age-1 and age-2 bass were also observed.

Mean length of the age-0 cohort of largemouth bass was 6.3 in (Table 33). It has been suggested that bass that reach at least 5.0 in by the fall will have a better chance of survival during their first winter. This year's catch rate of age-0 largemouth bass (9.6 fish/hr) was below average.

Trap nets were fished for crappie in Little River and Donaldson Creek embayments for 79 net-nights (nn) during October and November. A total of 778 crappie were collected at a rate of 9.9 fish/nn (Table 34). Additionally, Crooked Creek (LBL) was sampled for 40 net-nights. Crooked Creek provided a reasonable sample (6.4 fish/nn), and will be sampled again in the future if possible. Eddy Bay was not sampled this year but may be added back to the sampling schedule in upcoming surveys if possible.

White crappie accounted for 70% of the total catch, and were caught at 5.8 fish/nn. Black crappie accounted for the remaining 30% of the total catch, and were collected at a rate of 2.9 fish/nn (Table 34). Little River contained lower proportions of black crappie than Donaldson Creek and Crooked Creek. The mean relative weights for keeper-size ( $> 10.0$  in) black and white crappie were 99 and 102, respectively (Table 35). For historical comparisons, only data from Little River and Donaldson Creek were used in the standardized population parameters of Lake Barkley crappie in Table 36. The catch rate of harvestable-size ( $\geq 10.0$  in) crappie was 0.6 fish/nn, which is lower than the ten-year average of 1.6 fish/nn. The catch rate of quality-size ( $\geq 8.0$  in) crappie was 1.3 fish/nn, which is below the management objective (4.0 fish/nn) set in the BLFMP. The catch rate of age-1 crappie (2.0 fish/nn) was also below the management objective (5.0 fish/nn).

The length-weight equations of white and black crappie from Lake Barkley are:

White crappie	$\log_{10}(\text{weight}) = -3.95707 + 3.67571 \times \log_{10}(\text{length})$
Black crappie	$\log_{10}(\text{weight}) = -3.77626 + 3.56237 \times \log_{10}(\text{length})$

Crappie collected in trap nets were used to determine stock densities. The PSD (64) and RSD<sub>10</sub> (32) of white crappie were similar to the 2016 and 2017 samples, and suggests a balanced size distribution of white crappie (Table 37). The PSD (29) value of black crappie decreased from 2016 and 2017 samples, suggesting a shift towards more small fish in the population in 2018. The RSD<sub>10</sub> (11) value of black crappie was identical to last year.

Otoliths from 263 crappie were used for age and growth analysis. Ages ranged from 0-4 years for white crappie and 0-3 years for black crappie (Tables 38 and 39). Growth continues to be good as crappie reached 10.0 in between age 1 and 2. The average lengths of age 2 white crappie and black crappie at capture were 11.8 in and 10.9 in, respectively (Table 36). In addition, we calculated age-2 crappie mean length at capture as outlined by Murphy and Willis (1996) going back to 2009. 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 (Table 36).

Age frequencies were estimated by combining catch data with age data. Nearly three quarters of white crappies captured were age-0 fish while age-1 fish made up another 22% of the catch, suggesting average year classes in 2017 and 2018 and a weak 2016 year class (Table 40). Similar to last year, very few white crappie older than age-3 were collected which contrasts our data suggesting relatively strong spawns in 2014 and 2015. The black crappie catch in Little River and Donaldson Creek was also dominated by age-0 fish, suggesting at least an average spawn in 2018 (Table 41).



Assessment of the crappie population yielded a rating of “Fair” at Lake Barkley in 2017 (Table 42). The catch of age-1 crappie was similar to 2017 but remains below the 10-year average; however, catches of age-0 fish were above average. While the catch rate of crappie  $\geq 8.0$  in was at a 10 year low in 2018, the average length of age-2 fish was at a 10-year high. As expected, the population of larger fish dropped in 2018, due to combined effects of mortality of the strong 2014 year class and in response to the weak 2016 year class. We are hopeful to see more large fish in the next couple of years following the potentially good spawn in 2018.

The catfish population was sampled at Lake Barkley during June-July by using low-pulse (15 PPS) boat electrofishing with one dipper along the main lake river channel. A chase boat with one dipper was also utilized to help collect catfish around the electrofishing boat for a total of two dippers. A total of 1154 catfish were collected during the 52 electrofishing runs made (Table 43). Each run lasted 300 seconds, for a total sample time of 4.3 hours over a four-day period. Of the sample, blue catfish had the highest catch rate at 244.8 fish/hr, and made up 92% 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 and are listed in Table 44.

Age data from catfish collected in 2014 were used to calculate an age frequency for catfish collected during 2018. Age frequency data is presented in Table 45 for blue catfish and Table 46 for channel catfish. These tables should be used with caution as some larger size classes were unrepresented in 2014, and were therefore excluded from this age frequency data. Of the blue catfish, almost 80% of the sample consisted of age 1-3 fish.

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#### Lake Barkley Creel Survey

A random, non-uniform probability, roving creel survey was conducted on the Kentucky portion (45,600 a) of Lake Barkley from 16 February to 30 November 2018. The Kentucky portion of the lake was divided into eight creel areas (Appendix B). The survey was conducted five days per week, six hours per day. One hour each day was randomly chosen to conduct an angler count. The remaining five hours were 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 Little River and Eddy Creek areas from March through May, and October and November, than were assigned to the other six areas. Equal probabilities were assigned to all areas from June to September. An angler attitude questionnaire concerning fishing on Lake Barkley was conducted by the creel clerk throughout the survey period (Appendix C).

During the 2018 creel, the typical angler was a male (88%) resident (75%) who was casting (57%) or still fishing (40%) from a boat (85%) (Table 47). Of the crappie anglers, 42% used a spider rig (defined as 3 or more poles per angler) for fishing. The average fishing trip for all anglers was 4.3 hours. There was a slight increase in the number of trips of (94,732) since the last creel survey in 2016. However, this is the second lowest number of trips ever recorded in a Lake Barkley creel survey, and represents only a 6% increase since 2016. Anglers also caught a record low number of fish (364,496). Length frequencies of all harvested or released fish are presented in Table 48.

Table 49 provides fish catch and harvest statistics for the 2018 creel survey. Crappie anglers accounted for 20% of fishing trips to Lake Barkley in 2018 (24% in 2016, 17% in 2012). Estimated catch and harvest rates for crappie were below average. Crappie anglers caught 1.02 fish/hr which is just below the long-term average of 1.14 fish/hr. However, of the crappie caught, 61% were above the harvestable size (Table 50). This higher proportion of legal-size crappie corresponds to fall trap netting data that suggest good year classes in 2014 and 2015. Ninety percent of crappie were caught from March - May (Table 51). As part of our efforts to evaluate harvest by method, crappie anglers were recorded as using the following methods: casting, still fishing (1-2 poles), spider rigging (3 poles), spider rigging (4-5 poles), spider rigging (>5 poles). During this survey, 42% of crappie anglers used 3 or

more poles. The percentage of crappie anglers using (>5 poles) increased to 19% in 2018 compared to only 8% of crappie anglers in 2016 (Table 52).

Black bass anglers accounted for 45% of all fishing trips to Lake Barkley during 2018 (Table 49). There were 42,476 black bass fishing trips in the 2018 creel, which is below the long-term average for Lake Barkley. 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 0.05 bass per hour for anglers actually targeting bass (Table 53). However, when tournament and “mock tournament” harvested bass were removed from the actual harvest, the harvest rate dropped to 0.003 bass/hr. Largemouth bass accounted for 84% of the harvested black bass while smallmouth bass accounted for the remaining 16% of harvest. (Table 54).

About 6% of all trips to Lake Barkley in 2018 targeted panfish (Table 49). This value approximately equals the historic average; however, it is lower than each creel survey at Lake Barkley going back to 1999. Catch and harvest rates of panfish were well below long-term averages. About 74% of the panfish were harvested during May (Table 55). Bluegill and redear sunfish accounted for 99.7% of the panfish harvested. Of the bluegill, only 56% of the fish caught were harvested, while 81% of the redear sunfish caught were harvested (Table 56). Although fish are observed by the creel clerk whenever possible, it is possible that a some percentage of misidentification took place by anglers when reporting panfish catch.

Catfish anglers accounted for 17% of all fishing trips on Lake Barkley in 2018 (Table 49). The number of trips for catfish was slightly below the long-term average but was an increase from the 2016 creel on Lake Barkley. The catfish fishery remains highly harvest oriented as 82% of the catfish caught were harvested (Table 57). Harvest rates for fish (>12.0 in) were 96% and 87% for blue catfish and channel catfish, respectively. To further understand the motivations of catfish anglers, we asked a subsample of anglers “If you fish for catfish in Lake Barkley, which is more important to you: catching trophy fish, or catching more keeper size fish to eat?”. Only 10% of catfish anglers responded that they considered catching trophy fish to be more important (Appendix C). However, an additional 28% responded that both were equally important. While catfish management has traditionally pursued maximum sustainable yield, future investigations should attempt to monitor the motivations of catfish anglers to ensure management goals reflect the goals of anglers. The highest monthly total of catfish caught was reported in May (Table 58). These were likely anglers targeting channel catfish in the embayments. The total catch of channel catfish was more than double the catch of blue catfish (Table 57).

Only about 2% of the anglers fishing Lake Barkley during 2018 sought *Morone* (Table 49). This group includes; white bass, yellow bass, striped bass and hybrids. In an effort to quantify angler goals, this year we added a target code for anglers specifically targeting yellow bass. No anglers reported that they were specifically targeting yellow bass. Yellow bass represented approximately 77% of the *Morones* caught and made up 64% of the *Morone* harvest. However, white bass accounted for 76% of the harvested *Morone* weight. About 78% of yellow bass were released after being caught (Table 59). While the majority of yellow bass were released, 77% of the largest yellow bass caught (8.0-10.0 in) were harvested (Table 48). The harvest rates drop to 51% for 7.0-in yellow bass with only 11% of yellow bass (< 7.0 in) harvested. Although purely speculative, harvest rates might be increased in the future by encouraging harvest with social influencing or even by creating a length limit of (6.0 in) so that anglers begin to view harvesting legal size yellow bass as a goal. Based on monthly catch rates, the peak *Morone* fishing activity occurs during the summer months (Table 60).

### **Lake Barkley Winter Creel Survey**

A random uniform probability roving creel survey was conducted in Eddy Creek (Appendix B, area 3), Little River (Appendix B, area 5), and the Kuttawa area of northern Lake Barkley (Appendix B, area 2) (17,090 acres) on Lake Barkley from 01 December 2018 through 15 February 2019. The primary objective of the survey was to assess the wintertime crappie fishery. The survey was conducted 15 days per month, six hours per day. One hour each day was randomly chosen to conduct an angler count. The remaining five hours was dedicated to creeling

anglers actively fishing. The overall temporal sampling scheme was 15 days per month, consisting of five weekend days and 10 weekdays. Varying time period probabilities were assigned to each month. Equal probabilities were assigned to all three areas. An angler attitude questionnaire concerning fishing on Lake Barkley was conducted by the creel clerk throughout the survey period (Appendix C).

During the winter creel, the typical angler was a male (96%) resident (99%) who was casting for crappie (60%) from a boat (77%) (Table 61). These results suggest that the wintertime crappie fishery draws much fewer non-resident anglers than was observed throughout the warmer months. Of the crappie anglers, 33% used a spider rig (defined as 3 or more poles per angler) for fishing. The average fishing trip for all anglers was 2.3 hours. Length frequencies of all harvested or released fish are given in Table 62.

Table 63 provides fish catch and harvest statistics for the 2018-2019 winter creel survey. Crappie anglers accounted for 20% of fishing trips to Lake Barkley in 2018 (24% in 2016, 17% in 2012) (Table 49). However, the winter creel showed that crappie anglers accounted for a much higher percentage of the fishing trips (64%; Table 63). Wintertime crappie anglers caught (0.75 fish/hr) which was slightly lower than the rate (1.01 fish/hr) observed in the warmer months of 2018. Of the crappie caught, 34% were under harvestable size (Table 64). The catch rates for crappie were highest during January (Table 65). Low sample size (5 total interviews, only one interviewed angler targeting crappie) in the first half of February likely contributed to the low effort during that month. As part of our efforts to evaluate harvest by method, crappie anglers were recorded as using the following methods: casting, still fishing (1-2 poles), spider rigging (3 poles), spider rigging (4-5 poles), spider rigging (>5 poles). During this survey, 33% of crappie anglers used 3 or more poles. This percentage is lower than that observed in warmer months of 2018 (42%).

Black bass anglers accounted for 19.5% of all fishing trips to Lake Barkley during the 2018-2019 winter creel (Table 63). 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. Throughout the entire winter survey, no angler reported any harvest of black basses (Tables 66 and 67).

About 6% of all trips were taken to catch panfish in Lake Barkley during 2018 (Table 49), whereas about 3% of all trips were taken to catch panfish in the 2018-2019 winter creel (Table 63). However, only one angler accounts for this targeted panfish angling. Such low sample size makes accurate extrapolation of data difficult, if not impossible, but it seems that the wintertime panfish fishery is very small (Tables 68 and 69).

Catfish anglers accounted for 17% of all fishing trips on Lake Barkley in 2018 (Table 49), whereas about 14% of all trips were taken to catch catfish in the 2018-2019 winter creel (Table 63). The catch of blue catfish more than doubled the catch of channel catfish, while no flathead catfish were caught. Catch and harvest of catfish was only observed in December; however, sample size is quite low (Tables 70 and 71).

Only about 3% of the anglers fishing Lake Barkley during 2018 sought *Morones* (Table 49). This group includes; white bass, yellow bass, striped bass, and hybrids. During the 2018-2019 winter creel there were no anglers who indicated that they were targeting *Morones* (Table 63). Some white bass and yellow bass were harvested while a few striped bass were also caught during the winter creel (Tables 72 and 73).

### **Lake Beshear**

Largemouth bass were collected by diurnal electrofishing (120 PPS, DC current) during April at Lake Beshear. One-hundred and forty-nine largemouth bass were collected at a rate of 59.6 fish/hr. (Table 74). The catch rate of harvestable-size ( $\geq 12.0$  in) largemouth bass was 43.6 fish/hr (Table 75). This year's sample falls slightly below the objective in the Lake Beshear Fish Management Plan (LBFMP) to maintain a catch rate of at least 45.0 fish/hr for harvestable-sized largemouth bass. The catch of age-1 fish was low this year (6.0 fish/hr), but low

recruitment is typical in Lake Beshear. Other objectives are to maintain high catch rates of bass  $\geq 15.0$  and  $\geq 20.0$  in. Ideally, these catch rates should be greater than 30.0 and 3.0 fish/hr, respectively. The catch rates for these length groups of bass were above the management objectives. Lake Beshear continues to have a quality bass fishery with high numbers of bass  $\geq 15.0$  in. The fishery rated as “good” in 2018 (Table 76).

Largemouth bass were collected by diurnal electrofishing (120 PPS, DC current) in October (Table 74). The catch rate (86.8 fish/hr) was an improvement over last year, but the catch was skewed towards smaller fish. Sampling conditions were reported to be fair, although water temperatures were still around 80 degrees. Relative weight data suggests that larger bass ( $\geq 15.0$  in) are healthy with regard to their length-weight ratio. The average relative weight value was 98 for these larger bass and 85 for all sizes of bass. The length-weight equation for largemouth bass at Lake Beshear is:

$$\text{Log}_{10}(\text{weight}) = -3.53848 + 3.17297 \times \text{Log}_{10}(\text{length})$$

Otoliths were removed from a subsample of largemouth bass  $\leq 10.0$  in to determine the mean fall length of the age-0 cohort, and to determine their catch rate. The catch rate for age-0 largemouth bass was 50.7 fish/hr (Table 77). The average length of an age-0 bass was 5.3 in.

The catfish population at Lake Beshear was sampled in June using trotlines and tandem hoopnets. A total of 231 channel catfish were collected in the hoopnets for a catch rate of 57.8 fish/set, but the sample variation was highly influenced by one extraordinarily productive net location (Table 78). A total of 25 channel catfish and 10 blue catfish were collected on trotlines baited with cut bait (Table 79). The mean relative weights for channel catfish and blue catfish were 96 and 87, respectively (Table 80). Relative weights for larger fish were in excess of 100, which indicates that current stocking levels are appropriate.

Otoliths were removed from a subsample of fish to assess growth rates and monitor for successful natural spawns (Tables 81 and 82). Although sample size was low, the mean length of age-3 blue catfish was around 14.0 in (Table 83). Growth rates of channel catfish have improved since changing the stocking schedule to a 3-year rotation (Table 84). The mean length at age-3 from earlier channel catfish stockings was around (8.0 in), but the more recent stockings averaged around (15.0 in). Given the lack of significant natural reproduction, a mortality estimate was not appropriate. However, survival appears to be adequate based on the presence of older fish in the system (Tables 83 and 84).

### **Lake Pennyrile**

Electrofishing for all species of sportfish in Lake Pennyrile was conducted on 25 April, 2018. One-hundred and one largemouth bass were captured at a rate of 101.0 fish/hr (Table 85). This catch rate is slightly below the 10-year average of 111.0 fish/hr (Table 86). The majority of largemouth bass were still below 15.0 in. Only two (2%) bass over 15.0 in were captured in this year’s sample, while only nine (9%) were 12.0 in or larger. The catch rate of fish  $\geq 15.0$  in (2.0 fish/hr) is slightly below the 10-year average of 3.1 fish/hr (Table 86). The catch rate of largemouth bass 8.0-11.9 in was 63.0 fish/hr, which falls below the management objective of 80.0 fish/hr. A high catch rate of intermediate-size largemouth bass is desirable in order to maintain good numbers of large sunfish in this system.

The catch rate of bluegill  $\geq 8.0$  in was above average at 27.0 fish/hr. (Table 87). The catch rate for large-size ( $\geq 8.0$  in) redear was also above average at 27.0 fish/hr. Over the past four years, the catch rate of large bluegill and redear sunfish has been above the 10-year average. The most probable explanation for these high catch rates is that there are too few large piscivorous predators and too little angler harvest to limit the abundance of large sunfish in the system.

PSD and RSD values for largemouth bass, bluegill and redear sunfish are listed in Table 88. The PSD value for largemouth bass suggests a population skewed toward small bass. The largemouth bass fishery is likely stunted which is our goal when managing for large panfish. PSD’s and RSD’s are generally above average for bluegill and redear, and skewed toward more large, adult fish.

An accurate lake specific assessment for Lake Pennyrile largemouth bass has not been possible in recent years without good age and growth estimates. In 2011 a small sample of bass were aged. In 2011, the largemouth bass population was rated as “fair” (Table 89). In more recent years, assessments have been completed using the age data from 2011. Due to the shift in management focus towards trophy sunfish, it is unlikely that largemouth bass populations will ever be rated highly.

A voluntary creel survey was also conducted at Lake Pennyrile from March 15, 2018-March 1, 2019. Creel survey cards and dropoff boxes were placed at the only 4 entry points around the lake. Cards were also made available inside the lodge facilities and the guest rooms at Lake Pennyrile State Park. The original survey design called for park staff to conduct a daily angler count on a randomized schedule, but park staff did not follow through with their part of the plan as designed.

Based on completed or mostly completed voluntary card returns (n=67), the majority (69%) of angler trips occurred during April and May (Table 90). Seventy-nine percent of anglers were Kentucky residents and the majority were fishing from the bank.

Length distributions for sportfish generally aligned with the results of our electrofishing survey. Seventy-three percent of bluegill reported during the creel survey were >6.0 in (Table 91) compared to 64% being >6.0 in during our spring electrofishing survey (Table 87). The reported catch of black bass indicated a population skewed towards small fish, but interestingly, 83% of the legal size (>12.0 in) bass were harvested. Few anglers reported catching catfish, despite 24% of anglers indicating they were targeting catfish. The low catfish catch strongly supports the stocking of more catfish in the future.

Catch rates for all anglers who reported their effort are provided in Table 92. Catch rates for anglers targeting specific species are reported in Table 93. The number of fishing trips and effort (angler hours) were highest for black bass (36 and 105.9, respectively) (Table 94). However, bluegill and redear effort was also high. Anglers often indicated that they intended to target multiple species during the same trip, therefore targeted effort and catch rates must be interpreted with caution. Currently the management plan for Lake Pennyrile is intended to improve the size structure of the sunfish population by maintaining a stunted overabundant largemouth bass population. Based on the results of this survey, we may need to consider some management actions such as targeted bass removal that would improve the largemouth bass size structure as well.

Anglers submitted 25 general comments during the Lake Pennyrile creel survey (Appendix D). Several of the comments suggested increasing access to the lake for fishing from the bank or creating a launch site for personal watercraft. Many other anglers, especially catfish anglers, indicated poor or slow fishing and suggested stocking the lake with catfish. The remaining comments largely suggested good fishing and a relaxing atmosphere.

### **Ballard County Wildlife Management Area Lakes**

During April-May of 2018, several Ballard County Wildlife Management Area lakes (Little Turner, Gravel Pit, Shelby, and Castor) were sampled with electrofishing (2- 900-second runs at each lake). Little Turner, Shelby, and Castor are old oxbows of the Ohio River, which are primarily managed for waterfowl. The fisheries in these systems fluctuate greatly due to the nearly annual connection with the river during flood events. Each of the lakes shows potential for good panfishing, despite low numbers of bluegill >6.0 in (Table 95).

Gravel Pit Lake was created as a public fishing opportunity that would not routinely be connected to the river during flood events. This lake had good numbers of large panfish and catfish (Table 95). The largemouth bass population is stunted, but provides a great opportunity to catch high numbers of fish. This lake will be monitored more routinely in the future.

Table 1. 2018 yearly summary of sampling conditions by waterbody, species sampled, and date.

Water body	Location	Species	Date	Effort	Gear	Weather	Water temp. °F	Water level	Secchi (in)	Water conditions	Pertinent sampling comments
Barkley	Nickel Branch	black bass	4/30/2018	2.5 hr	electrofishing	sunny/calm	59.0		29	elevation falling	good sample
Barkley	Fords Bay	black bass	5/7/2018	3.0 hr	electrofishing	sunny/calm	65.0	359.4	37	slightly rising	good sample
Barkley	Little River	black bass	5/11/2018	2.5 hr	electrofishing	sunny/breezy	72.0	359.3	33	stable	pollen on water surface, detection difficult
Barkley	Eddy Bay	black bass	5/9/2018	2.5 hr	electrofishing	sunny/breezy	69.0	359.5	32	stable	good sample
Barkley	Nickel Branch	black bass/shad	10/9/2018	2.0 hr	electrofishing	sunny/breezy		355.5		elevation falling	good sample
Barkley	Eddy Bay	black bass	10/16/2018	2.5 hr	electrofishing	partly cloudy	63.0	355.1		elevation falling	good sample
Barkley	Little River	black bass	10/18/2018	2.5 hr	electrofishing	sunny/ light wind	59.0	355.2		slightly rising	rapid drop in water temp this week
Pennyrile		sportfish	4/25/2018	1.0 hr	electrofishing	partly cloudy	59.0	high	19	calm	good sample
Barkley	Devils elbow	catfish	6/14/2018	1.67 hr	electrofishing	cloudy/light wind	82.5	359.5		calm/stable	good sample
Barkley	Nickel Branch	catfish	6/29/2018	1.0 hr	electrofishing	sunny/calm	83.0			calm	used chaseboat
Barkley	Cravens Bay	catfish	7/3/2018	0.25 hr	electrofishing	cloudy/windy	88.0	359.8	28	choppy	sample cut short, poor weather
Barkley	Cravens Bay	catfish	7/5/2018	1.42 hr	electrofishing	sunny/calm	88.0	359.8	28	calm/stable	discharge 28,000
Barkley	Crooked Creek	crappie	10-23 - 10/26	40 nn	trapnet	variable	57.1	354.9	25	stable	fair sample
Barkley	Little River	crappie	10-30 - 11-2	39 nn	trapnet	variable	57.3	354.9		variable	fair sample
Barkley	Donaldson Bay	crappie	11-6 - 11-9	40 nn	trapnet	cloudy/windy	55.0	355.4	14	rising	muddy, high water
Kentucky	Jonathan Creek	crappie	3/30/2018	6 tow s	neustonic tow net	dusk	55.5	354.6			
Kentucky	Jonathan Creek	crappie	4/7/2018	6 tow s	neustonic tow net	dusk	53.5	355.5			
Kentucky	Jonathan Creek	crappie	4/15/2018	6 tow s	neustonic tow net	dusk	52.1	358.2			
Kentucky	Jonathan Creek	crappie	4/21/2018	6 tow s	neustonic tow net	dusk	59.3	359.3			
Kentucky	Jonathan Creek	crappie	4/28/2018	6 tow s	neustonic tow net	dusk	61.7	360.9			
Kentucky	Jonathan Creek	crappie	5/5/2018	6 tow s	neustonic tow net	dusk	66.3	359.3			
Kentucky	Jonathan Creek	crappie	5/12/2018	6 tow s	neustonic tow net	dusk	74.5	359.3			
Kentucky	Jonathan Creek	crappie	5/19/2018	6 tow s	neustonic tow net	dusk	78.5	359.5			
Kentucky	Jonathan Creek	crappie	5/25/2018	6 tow s	neustonic tow net	dusk	80.4	359.2			
Kentucky	Jonathan Creek	crappie	6/1/2018	6 tow s	neustonic tow net	dusk	81.6	359.6			
Kentucky	Jonathan Creek	crappie	6/9/2018	6 tow s	neustonic tow net	dusk	82.9	359.3			
Kentucky	Jonathan Creek	crappie	6/16/2018	6 tow s	neustonic tow net	dusk	90.0	359.4			
Lake Beshear		black bass	4/26/2018	2.5 hr	electrofishing	cloudy	59.0	1' high	30	stable	good sample
Kentucky	Big bear	black bass	4/27/2018	2.5 hr	electrofishing	sunny	60.0	362.0	22	high water	fair sample. water cold, but in the bushes
Kentucky	Jonathan Creek	black bass	5/1/2018	2.5 hr	electrofishing	sunny/ light wind	63.0	360.2	18	falling water	fair sample, fish pulling out of bushes
Kentucky	Blood River	black bass	5/3/2018	3.5 hr	electrofishing	cloudy/stormfront	64.0	359.3	21	falling water	split over 2 days. fair sample
Kentucky	Sugar Bay	black bass	5/8/2018	3 hr	electrofishing	sunny	66.0	359.4		falling slightly	good sample
Ballard WMA	gravel pit pond	sportfish	5/31/2018	.5 hr	electrofishing	cloudy	84.4	normal	34	windy/drizzle	fair sample
Ballard WMA	Castor	sportfish	6/1/2018	.5 hr	electrofishing	sunny	82.0	normal		calm/stable	fair sample
Ballard WMA	Little Turner	sportfish	6/1/2018	.5 hr	electrofishing	sunny	82.0	normal		calm	fair sample
Ballard WMA	Shelby	sportfish	6/1/2018	.5 hr	electrofishing	sunny	82.0	normal		calm	fair sample
Kentucky	Fenton	catfish	6/11/2018	.83 hr	low pulse	very windy	83.6	359.3		choppy	poor sample/cut short

Table 1 (cont).

Water body	Location	Species	Date	Effort	Gear	Weather	Water temp. °F	Water level	Secchi (in)	Water conditions	Pertinent sampling comments
Kentucky	Big bear	catfish	6/15/2018	1.3 hr	low pulse	cloudy/calm	83.3	359.4	48	calm	excluded, w rong settings/w eak amperage
Kentucky	Patterson Landing	catfish	6/25/2018	1.0 hr	low pulse	w indy/cloudy	82.7	359.5	28	choppy	poor sample/fish deep
Lake Beshear		catfish	6/5-6/7 2018	3 nn	trotline/hoopnets	sunny	82.0	normal		stable	fair sample
Lake Beshear		black bass	10/8/2018	2.5 hr	electrofishing	sunny/ light w ind	79.0	.5' high		calm	fair sample/hot w ater
Kentucky	Jonathan Creek	black bass	10/12/2018	2.5 hr	electrofishing	sunny/w indy	72.0	355.3		cam	fair sample/ few big fish shallow
Kentucky	Blood River	black bass	10/17/2018	2.5 hr	electrofishing	sunny/light w ind	60.5	355.1		rising slightly	rapid drop in w ater temp this w eek
Kentucky	Jonathan Creek	black bass	10/19/2018	1.5 hr	electrofishing	sunny	62.2	355.5		stable	repeat sample only used for Wr
Kentucky	Ledbetter	crappie	10/22 - 10/26	40 nn	trapnet	variable	58.2	355.0	45	steady	fair sample
Kentucky	Jonathan	crappie	10/30 - 11/02	40 nn	trapnet	variable	56.0	354.8		variable	fair sample
Kentucky	Blood River	crappie	11/06 - 11/9	40 nn	trapnet	variable	54.0	355.5	13	w ater rising	fair sample

Table 2. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 11.5 hours (22- 30-minute runs) of diurnal electrofishing at Kentucky Lake during April-May 2018.

Area	Inch class																	Total	CPUE	Std err		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21	
<b>Blood River</b>																						
Smallmouth bass		2	3	1	2			1	1											10	2.9	1.7
Largemouth bass	3	11	33	14	11	22	23	10	4	4	13	15	6	2	7	3	1	1	183	52.3	4.7	
<b>Jonathan Creek</b>																						
Smallmouth bass	1	1	1																	3	1.2	1.2
Spotted bass						1				1										2	0.8	0.5
Largemouth bass	1	10	21	19	8	15	26	14	8	4	13	10	5	4	10	4	4	2	178	71.2	17.0	
<b>Big Bear</b>																						
Largemouth bass	2	6	15	5	9	13	19	14	3	3	6	11	9	8	5	9	2	3	142	56.8	10.3	
<b>Sugar Bay</b>																						
Smallmouth bass	4	10	8	4	1	1	3	1	2	1										35	11.7	3.4
Largemouth bass	6	50	48	29	13	25	25	16	10	10	13	8		4	4	1	2		264	88.0	4.9	
<b>Total</b>																						
Smallmouth bass	5	13	12	5	3	1	3	2	3	1										48	4.2	1.4
Spotted bass						1					1									2	0.2	0.5
Largemouth bass	12	77	117	67	41	75	93	54	25	21	45	44	20	18	26	17	9	6	767	66.7	5.3	

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Table 3. Lake specific assessment for largemouth bass collected at Kentucky Lake from 2009-2018. 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 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				
2018	13.2**		24.7	7.9	12.2	1.3			***0.456	36.6
Score	2		2	1	1	2	8	F		
2017	13.2**		95.8	14.1	16.4	1.1			***0.513	40.1
Score	2		4	2	3	2	13	G		
2016	13.2	13.7	4.0	25.9	19.1	0.8			***0.410	33.7
Score	2		1	4	3	1	11	F		
2015	13.9**		10.2	22.0	15.6	1.2			0.408	33.5
Score	4		1	3	2	2	12	G		
2014	13.9**		32.6	15.0	15.7	0.9			0.452	36.3
Score	4		2	1	2	1	10	F		
2013	13.9**		40.2	9.6	15.8	0.8			0.446	35.9
Score	4		2	1	2	1	10	F		
2012*	13.9	14.2	35.6	26.9	17.5	0.8			0.588	44.5
Score	4		2	2	2	1	11	F		
2011*	12.9	12.4	7.4	34.0	8.6	0.9				
Score	3		1	2	1	1	8	F		
2010*	13.8		34.4	42.9	12.4	1.3				
Score	4		2	3	1	1	11	F		
2009**	13.8		27.9	24.3	13.5	1.4			0.429	34.9
Score	4		2	2	1	1	10	F		
Average	13.5		31.3	22.3	14.7	1.0	10.4		0.464	36.938

Data from 1985 to 2008 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.

2010\*, 2011\* and 2013\* samples were hampered by high water levels during flooding, sample was later than normal; overall a poor sample and not all embayments were sampled.

2012\* sample was hampered by low water levels during drought.

\*\*\* 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 2009-2018.

Year	Mean length		Age-1		Length group										Total		PSD	RSD <sub>15</sub>
	age-3 at capture (in)	*Mean length age-3 at capture (in)	CPUE	Std err	<8.0 in		12.0-14.9 in		≥15.0 in		≥18.0 in		≥20.0 in		CPUE	Std err		
					CPUE	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err		
2018	13.2	**13.7	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	13.2	**13.7	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	13.9	14.2	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	13.9	14.2	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
2013	13.9	14.2	40.2	7.0	30.5	6.4	9.6	1.3	15.8	1.6	3.3	0.5	0.8	0.3	78.2	7.1	53	33
2012	13.9	14.2	35.6	5.3	25.6	4.0	26.9	3.5	17.5	2.2	2.7	0.6	0.8	0.3	86.2	6.7	73	29
2011	12.4	12.4	7.4	1.6	5.1	1.1	34.0	5.4	8.6	2.0	3.7	1.0	0.9	0.6	61.1	7.7	76	15
2010	13.8	13.5	34.4	5.9	29.7	5.5	42.9	3.6	12.4	1.6	3.7	1.0	1.3	0.4	121.6	11.0	60	14
2009	13.8	13.5	27.9	5.0	29.5	5.3	24.3	2.2	13.5	1.2	4.2	0.6	1.4	0.3	112.6	10.3	46	16
Average	13.3	13.5	31.3		25.3		22.3		14.5		3.8		1.0		86.4		61.1	25.0
KLFMP	≥ 12.0 in		≥ 30				> 22		≥ 18				≥ 2				55-75	20-40

(Kentucky Bass Database.xls)

Data for 1985-2008 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 RSD<sub>15</sub> values calculated for largemouth bass collected during diurnal electrofishing at Kentucky Lake during April-May 2018; 95% confidence limits are shown in parentheses.

Area	No. ≥8.0 in	PSD	RSD <sub>15</sub>
Blood River	122	45 (+/-9)	29 (+/-7)
Jonathan Creek	127	50 (+/-9)	31 (+/-8)
Big Bear	114	52 (+/-8)	41 (+/-8)
Sugar Bay	131	40 (+/-8)	15 (+/-5)
Total	494	47 (+/-6)	28 (+/-4)

wfdpsdsky.d18

Table 6. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.5 hours (13- 30-minute runs) of diurnal electrofishing at Kentucky Lake during October 2018.

Area / Species	Inch class																	Total	CPUE	Std err		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20	21
<b>Blood River</b>																						
Smallmouth bass	1	18	12	8	4	1	2	4	1			1								52	20.8	10.9
Largemouth bass	3	10	7	9	7	2	3	8	9	6	1	3	2	2	2	1	2			77	30.8	5.6
<b>Jonathan Creek</b>																						
Smallmouth bass	2	9	2	1			1	1		2	2									20	5.0	1.4
Spotted bass		1	2				2	2			1									8	2.0	0.5
Largemouth bass	8	10	22	15	13	8	26	28	30	14	11	11	3	3	4	2	3	1	1	213	53.3	5.7
<b>TOTAL</b>																						
Smallmouth bass	3	27	14	9	4	1	3	5	1	2	2	1								72	11.1	4.6
Spotted bass		1	2				2	2			1									8	1.2	0.4
Largemouth bass	11	20	29	24	20	10	29	36	39	20	12	14	5	5	6	3	5	1	1	290	44.6	5.0

wfdwrk.d18

Table 7. Age-0 CPUE (fish/hr) and mean length (in) of largemouth bass collected in the fall, and CPUE of age-1 largemouth bass collected the following spring during diurnal electrofishing at Kentucky Lake.

Year class	Age 0 <sup>A</sup>		Age 0 <sup>A</sup>		Age 0 ≥5.0 in <sup>A</sup>		Age 1 <sup>B</sup>	
	Mean length	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err
2018	5.7	0.1	18.6	2.8	13.0	2.48		
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
2013	5.7	0.1	31.3	5.2	21.5	4.1	32.6	6.2
2012	6.4	0.1	63.0	13.9	55.9	12.5	40.2	7.0
2011	5.7	0.1	75.9	8.3	54.1	6.4	35.6	5.3
2010	5.7	0.1	24.3	4.9	17.4	2.6	7.4	1.6
2009	5.0	0.1	30.9	5.4	16.7	2.8	34.4	5.9
Average	5.5		38.4		25.8		31.6	

<sup>A</sup> 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.

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

\*2010, 2011 and 2013 spring data was poor due to high water levels.

\*2012 spring data was poor due to low water levels.

Data from 1990 to 2008 is listed in previous year reports.

wfdwrky.dxx, wfdwragk.dxx, wfdpsdky.dxx

Table 8. Number of bass and relative weight (Wr) for each length group of black bass collected at Kentucky Lake during October 2018.

Species	Area	Length group									Total		
		8.0-11.9 in			12.0-14.9 in			≥15.0 in			No.	Wr	Std err
		No.	Wr	Std err	No.	Wr	Std err	No.	Wr	Std err			
Largemouth bass	Blood River	22	91	2	10	91	3	9	85	3	41	90	2
	Jonathan Creek	92	94	1	36	92	1	17	93	3	145	93	1
	Total	114	93	1	46	92	1	26	90	2	186	92	1

Species	Area	Length group									Total		
		7.0-10.9 in			11.0-13.9 in			≥14.0 in			No.	Wr	Std err
		No.	Wr	Std err	No.	Wr	Std err	No.	Wr	Std err			
Spotted bass	Total	4	93	3	1	94					5	93	3
Smallmouth bass	Total	13	88	2	5	88	2	1	81		19	88	1

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Table 9. Age frequency and CPUE (fish/hr) of largemouth bass collected during diurnal electrofishing at Kentucky Lake in October 2018.

Age	Inch class																		Total	%	CPUE	Std err
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				
0		9	19	28	20	16	6	10											108	49.1	18.6	2.8
1						1	1	10	24	13	4								53	24.1	10.6	2.4
2									2	6	4	1							13	5.9	2.7	0.5
3										6	2	5	2	1					16	7.3	3.2	0.6
4										4	4	3	2	1	1	1			16	7.3	3.4	0.6
5											2	1	3	1	2	2	1		12	5.5	2.2	0.6
6																			0	0.0	0.0	0.0
7																		2	2	0.9	0.4	0.3
Total	0	9	19	28	20	17	7	20	26	29	16	10	7	3	3	3	1	2	220	100		
%	0	4	9	13	9	8	3	9	12	13	7	5	3	1	1	1	0	1	100			

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Table 10. Species composition, relative abundance, and CPUE (fish/nn) of crappie collected by trap nets fished during 120 net-nights of effort at three embayments of Kentucky Lake during October-November 2018. The Sub-Total is used for historical comparison and excludes the data for an embayment which historically had not been sampled.

Area	Species	Inch class											Total	CPUE	Std err
		2	3	4	5	6	7	8	9	10	11	12			
Blood River	White crappie	48	7		6	5	1	2	5	9	11	4	98	2.5	0.4
	Black crappie	74	14	2	9	8	10	34	82	50	18		301	7.5	1.2
Jonathan Cr.	White crappie	50	7	1	30	5	5	13	37	58	32	3	241	6.0	1.0
	Black crappie	38	9	16	28	10	16	69	70	21	3		280	7.0	1.2
<b>Sub-Total</b>	<b>White crappie</b>	<b>98</b>	<b>14</b>	<b>1</b>	<b>36</b>	<b>10</b>	<b>6</b>	<b>15</b>	<b>42</b>	<b>67</b>	<b>43</b>	<b>7</b>	<b>339</b>	<b>4.2</b>	<b>0.6</b>
	<b>Black crappie</b>	<b>112</b>	<b>23</b>	<b>18</b>	<b>37</b>	<b>18</b>	<b>26</b>	<b>103</b>	<b>152</b>	<b>71</b>	<b>21</b>		<b>581</b>	<b>7.3</b>	<b>0.8</b>
Ledbetter	White crappie	41	6	1	1						2		51	1.3	0.5
	Black crappie	48	20	1	1					9	10		89	2.2	0.4
<b>TOTAL</b>	<b>White crappie</b>	<b>139</b>	<b>20</b>	<b>2</b>	<b>37</b>	<b>10</b>	<b>6</b>	<b>15</b>	<b>42</b>	<b>67</b>	<b>45</b>	<b>7</b>	<b>390</b>	<b>3.3</b>	<b>0.4</b>
	<b>Black crappie</b>	<b>160</b>	<b>43</b>	<b>19</b>	<b>38</b>	<b>18</b>	<b>26</b>	<b>103</b>	<b>152</b>	<b>80</b>	<b>31</b>		<b>670</b>	<b>5.6</b>	<b>0.6</b>

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Table 11. 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 (fish/nn) excluding age-0			CPUE (fish/nn) age-0			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
2018	2.8	5.6	8.4	1.4	1.7	3.1	10.7	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	8.2	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	9.3	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	8.8	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	8.8	9.7	8.8	1.7	2.3	3.9	2.4	4.3	6.7	1.2	1.1	2.3
2013	2.5	7.4	9.9	2.5	3.1	5.5	10.4	8.8	9.4	9.5	2.4	6.3	8.7	0.5	1.8	2.3	1.7	2.9	4.6
2012 <sup>A</sup>	4.2	8.7	12.9	0.0	0.2	0.2	10.5	9.6	10.0	9.7	3.4	7.0	10.4	2.8	2.5	5.3	1.4	3.1	4.5
2011	3.2	15.6	18.8	2.3	1.1	3.4	10.5	9.6	10.0	9.3	2.0	10.3	12.3	2.3	6.7	9.0	0.9	2.5	3.4
2010 <sup>A</sup>	5.2	13.5	18.7	9.1	3.7	12.8	11.5	10.4	10.6	10.6	2.7	5.7	8.4	4.1	9.0	13.0	1.9	3.3	5.2
2009	2.0	14.2	16.2	1.4	2.0	3.4	11.5	10.4	10.6	10.7	1.6	12.0	13.6	1.8	3.0	4.9	0.3	10.1	10.4
Averag	3.6	10.3	13.9	2.1	1.6	3.8	10.5	9.3	9.8	9.4	2.5	6.4	8.9	2.0	3.7	5.7	1.2	2.7	3.8
KLFMP	≥ 20			≥ 8			≥ 9.5 in				≥ 10			≥ 11			≥ 4		

<sup>A</sup> Indicates year where age and growth data was not collected. Age and growth data from the previous year was used to calculate the appropriate value.

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

Data from 1985 to 2008 is listed in previous annual reports.

KLFMP - Kentucky Lake Fish Management Plan objective goal.

Kentucky Lake Crappie Database

Table 12. Lake specific assessment for crappie collected at Kentucky Lake (Blood River and Jonathan Creek) from 2009-2018. 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 $\geq 8.0$ in	Mean length age-2 at capture	*Mean length age-2 at capture	Total score	Assessment rating	Z	A
2018	8.4	1.6	3.1	6.5	9.9	9.8			0.504	39.6
Score	1	1	2	2	3		9	F		
2017	13.1	1.5	1.1	10.6	8.9	8.7			0.805	55.3
Score	1	1	1	3	1		7	P		
2016	8.0	2.9	0.9	5.3	9.7	8.9			1.072	65.8
Score	1	1	1	1	2		6	P		
2015	22.7	9.9	4.3	9.3	9.2	8.4			0.925	60.3
Score	4	3	3	3	1		14	G		
2014	10.5	6.7	2.9	3.9	9.7	8.8			0.910	59.7
Score	1	1	2	1	2		7	P		
2013	9.9	2.3	5.5	8.7	9.4	9.5			0.657	48.2
Score	1	1	3	2	1		8	P		
2012	13.0	5.3	0.5	10.4	10.0	9.7			1.028	64.2
Score	1	1	1	3	3		9	F		
2011	18.8	9.0	3.4	12.3	10.0	9.3			0.916	60.0
Score	3	2	2	3	3		13	F		
2010	18.7	13.0	12.8	8.4	10.6	10.6			0.556	42.6
Score	3	3	4	2	4		16	F		
2009	16.2	4.9	3.4	13.6	10.6	10.7			0.758	53.1
Score	2	1	1	4	4		12	F		
Average	13.9	5.7	3.8	8.9	9.8	9.4	10.1		0.813	54.88

\*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 13. Proportional stock density (PSD) and relative stock density (RSD<sub>10</sub>) of white and black crappie collected with trap nets (120 net-nights) at Kentucky Lake (Blood River, Jonathan Creek and Ledbetter Bay) during October and November 2018. 95% confidence intervals are shown in parentheses.

Location	Species	N	PSD	RSD <sub>10</sub>
Blood River	White crappie	43	72 (+ 14)	56 (+ 15)
	Black crappie	211	87 (+ 4)	32 (+ 7)
Jonathan Creek	White crappie	183	94 (± 3)	29 (± 6)
	Black crappie	217	70 (± 4)	9 (± 3)
<b>Sub Total</b>	<b>White crappie</b>	<b>226</b>	<b>77 (+ 5)</b>	<b>52 (+ 6)</b>
	<b>Black crappie</b>	<b>428</b>	<b>81 (+ 3)</b>	<b>21 (+ 3)</b>
Ledbetter	White crappie	3	67 (+66)	67 (+ 66)
	Black crappie	20	95 (+ 10)	95 (+ 10)
<b>Total</b>	<b>White crappie</b>	<b>229</b>	<b>77 (+ 6)</b>	<b>52 (+ 7)</b>
	<b>Black crappie</b>	<b>448</b>	<b>82 (+ 3)</b>	<b>25 (+ 4)</b>

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Table 14. Number of fish and the relative weight (Wr) values for each length group of black and white crappie collected at Kentucky Lake during trapnetting in October and November 2018.

Species	Area	Length group								
		5.0-7.9 in			8.0-9.9 in			>10.0 in		
		No.	Wr	Std err	No.	Wr	Std err	No.	Wr	Std err
White crappie	Blood River	12	81	2	7	95	7	24	95	2
	Jonathan Creek	35	85	3	49	85	2	91	93	1
	Ledbetter	1	97					2	100	2
	Total	48	84	2	56	86	2	117	94	1

Species	Area	Length group								
		5.0-7.9 in			8.0-9.9 in			>10.0 in		
		No.	Wr	Std err	No.	Wr	Std err	No.	Wr	Std err
Black crappie	Blood River	27	86	4	115	88	1	68	88	1
	Jonathan Creek	48	84	2	139	85	1	24	87	1
	Ledbetter	1	85					19	96	2
	Total	76	85	2	254	87	0	111	89	1

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Table 15. 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 Kentucky Lake (Blood River, Jonathan Creek and Ledbetter Bay) in fall 2018. Supplemental otoliths were also collected at a crappie tournament.

Year class	N	Age				
		1	2	3	4	5
2017	35	3.4				
2016	13	5.6	8.9			
2015	49	4.5	7.8	9.4		
2014	42	4.1	6.8	9.2	10.0	
2013	3	3.6	7.0	8.9	10.1	10.8
Mean	142	4.2	7.5	9.3	10.0	10.8
Smallest		2.6	5.1	6.7	8.4	9.7
Largest		7.6	10.7	12.0	12.8	11.4
Std err		0.1	0.1	0.1	0.1	0.5
Low 95% CI		4.0	7.3	9.1	9.8	9.7
High 95% CI		4.3	7.8	9.5	10.3	11.8

\* Intercept = 0.

wfdtnagk.d18

Table 16. 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 Kentucky Lake (Blood River, Jonathan Creek and Ledbetter Bay) in fall 2018. Supplemental otoliths were collected at a crappie tournament.

Year class	N	Age						
		1	2	3	4	5	6	7
2017	45	3.4						
2016	28	5.1	8.2					
2015	49	4.3	6.9	8.3				
2014	28	4.0	6.7	8.8	9.7			
2012	19	3.8	6.5	8.0	9.5	10.4	11.3	
2011	2	3.7	6.3	8.3	9.4	10.2	10.9	11.2
Mean	171	4.1	7.1	8.4	9.6	10.3	11.0	11.2
Smallest		0.4	4.7	5.9	8.0	8.9	10.3	10.7
Largest		7.5	12.2	13.7	11.2	11.5	11.4	11.7
Std err		0.1	0.1	0.1	0.1	0.1	0.3	0.5
Low 95% CI		3.9	6.8	8.2	9.4	10.1	10.3	10.2
High 95% CI		4.2	7.3	8.6	9.8	10.6	11.7	12.2

\* Intercept = 0.

wfdtnagk.d18

Table 17. Age frequency and CPUE (fish/nn) of white crappie collected in trap nets fished for 80 net-nights in Kentucky Lake (Blood River and Jonathan Creek) during October and November 2018.

Age	Inch class											Total	%	CPUE	Std err
	2	3	4	5	6	7	8	9	10	11	12				
0	98	14										112	33	1.4	0.3
1			1	36	10	4	4					55	16	0.7	0.1
2						1		4	8	7	1	21	6	0.3	0.1
3						1	9	28	23	19	3	83	24	1.0	0.2
4							3	11	35	15	2	66	19	0.8	0.2
5									2	2	1	5	1	0.1	<0.1
Total	98	14	1	36	10	6	16	43	68	43	7	342		4.28	
%	29	4	0	11	3	2	5	13	20	13	2				

wfdtpntk.d18, wfdtnagk.d18

Table 18. Age frequency and CPUE (fish/nn) of black crappie collected in trap nets fished for 80 net-nights in Kentucky Lake (Blood River and Jonathan Creek) during October and November 2018.

Age	Inch class											Total	%	CPUE	Std err
	2	3	4	5	6	7	8	9	10	11	12				
0	112	23	2									137	24	1.7	0.4
1			16	37	12	9						74	13	0.9	0.2
2					5	7	4	6	19	6		47	8	0.6	0.1
3					1	10	81	108	7	2		209	36	2.6	0.4
4							18	19	31	6		74	13	0.9	0.1
5								19	14	7		40	6.9	0.5	0.1
7										1		1	0.2	0.0	0.0
Total	112	23	18	37	18	26	103	152	71	22		582		7.3	
%	19	4	3	6	3	4	18	26	12	4					

wfdtpntk.d18, wfdtnagk.d18

Table 19. Length frequency, CPUE (fish/1000M<sup>3</sup>), median catch, and geometric mean catch (standard error given in parentheses) of each 0.5 mm class of crappie collected during nocturnal neustonic tow net sampling (72 tows) at 6 sample sites in the Jonathan Creek embayment of Kentucky Lake from 30 March-16 June 2018. See Appendix A for sample site locations.

Date	Location	mm class											CPUE	*Median	*Geometric Mean			
		5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10				10.5	11	11.5
3/30/2018	JC002															0	0.0	0.0
	JC003															0		
	JC004															0		
	JC006															0		
	JC007															0		
	JC005														0			
4/7/2018	JC002														0	0.0	0.0	
	JC003														0			
	JC004														0			
	JC006														0			
	JC007														0			
	JC005													0				
4/15/2018	JC002														0	0.0	0.0	
	JC003														0			
	JC004														0			
	JC006														0			
	JC007														0			
	JC005													0				
4/21/2018	JC002														0	0.0	0.0	
	JC003														0			
	JC004														0			
	JC006														0			
	JC007														0			
	JC005													0				
4/28/2018	JC002														0	0.0	0.0	
	JC003														0			
	JC004														0			
	JC006														0			
	JC007														0			
	JC005													0				
5/5/2018	JC002														0	0.0	0.0	
	JC003														0			
	JC004														0			
	JC006														0			
	JC007														0			
	JC005													0				
5/12/2018	JC002					4				4					9	29.2	26.29 (15.10)	
	JC003					5									5			
	JC004					9		18	4	4								
	JC006					4	4	4	4	4					21			
	JC007					8	12	28	24	8					80			
	JC005		4	4	65	17									92			
5/19/2018	JC002										4				4	32.0	27.74(35.07)	
	JC003									4	4				7			
	JC004					7	4	26	11	30	26	55	26	22	7	214		
	JC006					4				8	15	23	8	8	4	68		
	JC007									4	4	4				12		
	JC005					4	4	8	8	4	12		4					
5/25/2018	JC002														12	15.3	13.13 (15.81)	
	JC003						3			7	10	7	3	3	33			
	JC004					11	11	4	4	4	14	4	14	11	74			
	JC006						8		4	4	4				17			
	JC007														0			
	JC005										4				4			
6/1/2018	JC002														0	9.3	8.49 (7.30)	
	JC003								8			4			12			
	JC004										3	3	3.5	3	10	24		
	JC006													4		4		
	JC007															0		
	JC005															0		
6/9/2018	JC002														0	4.7	3.41 (1.35)	
	JC003														0			
	JC004														0			
	JC006														0			
	JC007														0			
	JC005														0			
6/16/2018	JC002														0	0.00	0.00	
	JC003														0			
	JC004														0			
	JC006														0			
	JC007														0			
	JC005														0			

\*includes all lengths of yoy crappie collected

Table 20. Geometric mean catch rates for pelagic larval fish captured in neuston tow nets from 30 March-16 June 2018 (six tows per sample night). Standard errors given in parentheses. Temperature (degrees Fahrenheit) and water elevation (feet above sea level) also provided.

Day	Geometric Mean (Standard Error)					Temp	Elevation
	Pomoxis spp.		Dorosoma spp.	Lepomis spp.	Atherinidae		
	8.0-11.0mm	Total Catch	Total Catch		Total Catch		
3/30/2018	0.0	0.0	0.0	0.0	0.0	55.6	354.6
4/7/2018	0.0	0.0	0.0	0.0	0.0	55.6	355.8
4/15/2018	0.0	0.0	0.0	0.0	0.0	57.2	358.2
4/21/2018	0.0	0.0	0.0	0.0	0.0	67.5	359.2
4/28/2018	0.0	0.0	0.0	0.0	0.0	61.8	360.9
5/5/2018	0.0	0.0	1.28 (0.58)	0.0	0.0	66.3	359.4
5/12/2018	7.02 (25.87)	26.29 (15.10)	67.14 (47.92)	1.73 (0.88)	0.0	71.55	359.3
5/19/2018	25.50 (31.83)	27.74(35.07)	1316.37 (268.29)	52.78 (75.62)	1.31 (0.69)	74.71	359.34
5/25/2018	10.96 (15.07)	13.13 (15.81)	1651.97 (398.58)	38.33 (38.33)	4.18 (45.34)	79	359.5
6/1/2018	3.10 (37.55)	8.49 (7.30)	675.67 (606.86)	165.22 (122.73)	35.36 (29.19)	79.63	359.6
6/9/2019	0.0	3.41 (1.35)	1232.77 (309.34)	0.00	54.74 (32.89)	*82.9	359.2
6/16/2019	0.0	0.0	341.82 (252.39)	0.00	20.85 (9.25)	*90	359.5

\* represents temperature readings taken during the larval sampling events

Table 21. 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 2018. Hatch dates from Jonathan Creek and Blood River derived solely from daily ring counts of juveniles 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 <sup>3</sup>	# spawned / 1000m <sup>3</sup>	# hatch	# spawned	# hatch	# spawned			
16-Apr	0.0	0.0		1			358.62	98494	56.57
17-Apr	0.0	0.0					359.16	120782	57.13
18-Apr	0.0	0.0					358.9	136317	57.34
19-Apr	0.0	0.0	1				359.3	139,326	57.7
20-Apr	0.0	0.0					359.3	145,794	58.2
21-Apr	0.0	0.0					359.2	143,967	59.3
22-Apr	0.0	0.0					359.2	135,326	59.4
23-Apr	0.0	0.0					360.2	127,856	59.7
24-Apr	0.0	3.3		1			361.0	133,228	60.1
25-Apr	0.0	3.0					361.5	163,514	60.6
26-Apr	0.0	3.8					361.5	181,310	61.1
27-Apr	3.3	0.0	1			1	361.3	191,778	61.6
28-Apr	3.0	3.2					360.9	189,650	61.8
29-Apr	3.8	3.2		1			360.7	188,244	62.0
30-Apr	0.0	8.7			1		360.3	186,861	62.4
1-May	3.2	11.0		3		1	359.9	183,100	63.1
2-May	3.2	2.2	1	7			359.4	155,483	64.2
3-May	8.7	2.3		2		2	359.3	105,126	65.0
4-May	11.0	2.0	3	2	1	1	359.3	73,570	65.6
5-May	2.2	1.6	7	3		4	359.4	74,182	66.3
6-May	2.3	3.7	2		2	2	359.6	74,222	66.7
7-May	2.0	4.3	2	7	1	2	359.7	76,471	67.6
8-May	1.6	1.3	3	5	4	6	359.6	81,724	68.2
9-May	3.7	3.3		6	2	8	359.5	80,890	68.5
10-May	4.3	0.0	7	11	2	7	359.4	73,550	69.7
11-May	1.3	1.7	5	11	6	12	359.3	65,218	70.6
12-May	3.3	1.7	6	7	8	12	359.3	49,949	71.6
13-May	0.0	1.3	11	10	7	5	359.4	46,650	73.2
14-May	1.7	1.3	11	16	12	8	359.3	64,693	74.4
15-May	1.7	1.4	7	6	12	6	359.3	63,894	75.6
16-May	1.3	0.0	10	2	5	13	359.4	54,811	76.6
17-May	1.3	0.0	16	2	8	4	359.3	63,569	77.3
18-May	1.4	0.0	6	1	6	4	359.4	71,104	76.8
19-May	0.0	0.0	2		13	2	359.3	75,097	77.0
20-May	0.0	0.0	2		4		359.4	83,982	76.7
21-May	0.0	0.0	1		4		359.4	71,464	76.5
22-May	0.0	0.0			2		359.4	71,467	77.1
23-May	0.0	0.0					359.3	72,172	77.9
24-May	0.0	0.0					359.3	65,532	78.8
25-May	0.0	0.0					359.5	66,710	79.0
26-May	0.0	0.0					359.5	67,625	78.8
27-May	0.0	0.0					359.4	67,941	79.3
28-May	0.0	0.0					359.4	99,148	80.4
29-May	0.0	0.0					359.1	117,150	80.2
30-May	0.0	0.0					359.9	145,017	79.6
31-May	0.0	0.0					359.8	154,221	79.5
1-Jun	0.0	0.0					359.6	152,887	79.6
2-Jun	0.0	0.0					359.4	151,540	79.9
3-Jun	0.0	0.0					359.2	150,343	80.2
4-Jun	0.0	0.0					359.17	135,432	80.2

Table 22. Estimated hatch dates of black and white crappie in Jonathan Creek and Blood River, derived using daily ring counts of juveniles in 2018. "# 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.

	<b>Jonathan Creek</b>		<b>Blood River</b>		<b>Environmental variables</b>		
	White Crappie #hatch	Black Crappie #hatch	White Crappie #hatch	Black Crappie #hatch	Elevation	Discharge (cfs)	Temp. F
16-Apr					358.62	98494	56.57
17-Apr					359.16	120782	57.13
18-Apr					358.9	136317	57.34
19-Apr	1				359.3	139,326	57.7
20-Apr					359.3	145,794	58.2
21-Apr					359.2	143,967	59.3
22-Apr					359.2	135,326	59.4
23-Apr					360.2	127,856	59.7
24-Apr					361.0	133,228	60.1
25-Apr					361.5	163,514	60.6
26-Apr					361.5	181,310	61.1
27-Apr		1			361.3	191,778	61.6
28-Apr					360.9	189,650	61.8
29-Apr					360.7	188,244	62.0
30-Apr				1	360.3	186,861	62.4
1-May					359.9	183,100	63.1
2-May		1			359.4	155,483	64.2
3-May					359.3	105,126	65.0
4-May	1	2	1		359.3	73,570	65.6
5-May	4	3			359.4	74,182	66.3
6-May	1	1	2		359.6	74,222	66.7
7-May	1	1	1		359.7	76,471	67.6
8-May	1	2	1	3	359.6	81,724	68.2
9-May			1	1	359.5	80,890	68.5
10-May	5	2	1	1	359.4	73,550	69.7
11-May	3	2	6		359.3	65,218	70.6
12-May	5	1	7	1	359.3	49,949	71.6
13-May	9	2	7		359.4	46,650	73.2
14-May	10	1	12		359.3	64,693	74.4
15-May	6	1	10	2	359.3	63,894	75.6
16-May	8	2	5		359.4	54,811	76.6
17-May	15	1	8		359.3	63,569	77.3
18-May	3	2	6		359.4	71,104	76.8
19-May	2		12	1	359.3	75,097	77.0
20-May	1	1	4		359.4	83,982	76.7
21-May	1		4		359.4	71,464	76.5
22-May			2		359.4	71,467	77.1
23-May					359.3	72,172	77.9
24-May					359.3	65,532	78.8
25-May					359.5	66,710	79.0
26-May					359.5	67,625	78.8
27-May					359.4	67,941	79.3
28-May					359.4	99,148	80.4
29-May					359.1	117,150	80.2
30-May					359.9	145,017	79.6
31-May					359.8	154,221	79.5
1-Jun					359.6	152,887	79.6
2-Jun					359.4	151,540	79.9
3-Jun					359.2	150,343	80.2
4-Jun					359.17	135,432	80.2

Table 23. Length frequency and CPUE (fish/hr) of channel, blue, and flathead catfish collected from Kentucky Lake in June 2018 using low pulse (15 PPS) electrofishing along the main river channel. A chase boat was used. A total of 2.4 hours of sampling consisting of 29- 300-second runs.

Species	Inch class															Total	CPUE	Std err								
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				25	28	32	33	40	44	45	
Blue catfish	2	2	3	5	4	2	3	5	1	6	3	4	3	6	3	3	1	1						57	23.8	7.5
Channel catfish								2	1															3	1.3	0.9
Flathead catfish		1			1	1		1					1						1	1	1	1		9	3.8	1.7

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Table 24. Relative weight (Wr) of each length group of blue, channel, and flathead catfish collected from Kentucky Lake during June 2018. Fish were collected using low pulse (15 PPS) electrofishing.

Species	Length group									Total		
	12.0-19.9 in			20.0-29.9 in			≥30.0 in			N	Wr	Std err
	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err
Blue catfish	27	118	2	17	111	2	1	124		45	115	2

Species	Length group									Total		
	11.0-15.9 in			16.0-23.9 in			≥24.0 in			N	Wr	Std err
	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err
Channel catfish				3	99	3				3	99	3

Species	Length group									Total		
	12.0-19.9 in			20.0-29.9 in			≥30.0 in			N	Wr	Std err
	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err
Flathead catfish	2	85	3	1	94		1	84		4	87	3

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Table 25. Age frequency and CPUE (fish/hr) of blue catfish collected from low pulse (15 PPS) electrofishing at Kentucky Lake in June 2018.

Age	Inch class															*Total	%	CPUE	Std err	
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					25
2	2	2															4	7	1.7	1.0
3			3	4	1												8	15	3.3	1.6
4				1	3	2	3	5	1								15	27	6.3	2.0
5										4	1	2		1			8	15	3.3	1.5
6										2	2	2		5			11	20	4.6	1.7
7													3		3		6	11	2.5	1.4
8																3	3	5	1.3	0.9
Total	2	2	3	5	4	2	3	5	1	6	3	4	3	6	3	3	55			
%	4	4	5	9	7	4	5	9	2	11	5	7	5	11	5	5				

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\*catfish larger than 25 inches not included because they were missing from the 2014 age sample

Table 26. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 10.5 hours (21- 30-minute runs) of diurnal electrofishing at Lake Barkley from 30 April to 11 May 2018.

Area	Species	Inch class																			Total	CPUE	Std err
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
<b>Lower</b>																							
Donaldson Cr.	Smallmouth bass		4	1				1		1	1			3	1		1				13	13.0	13.0
	Spotted bass				1					1											2	2.0	2.0
	Largemouth bass	3	2	1	3	4			2	1	1			1				1			19	19.0	3.0
Fords	Smallmouth bass			1																	1	0.5	0.5
	Spotted bass											1									1	0.5	0.5
	Largemouth bass	2	7	8	12	2	1	2	1	1	1	1	2	4	2	8	11	7		1	73	36.5	7.0
<b>Middle</b>																							
Little River	Smallmouth bass				2	1		1		2											6	2.4	1.5
	Spotted bass							1													1	0.4	0.4
	Largemouth bass		3	3	5	2			7	4	6	4	2	2	7	7	5	9	1		67	26.8	10.5
Eddy Cr.	Smallmouth bass		2	3			1	3		2	1			1	1						14	5.6	3.3
	Largemouth bass	1	1	7	4	3	2	8	19	8	6	6	11	11	13	14	8	4	7		133	53.2	13.2
<b>Upper</b>																							
Demumbers Bay	Smallmouth bass				1		1														2	4.0	<0.1
	Largemouth bass		1	6	5	1	1	5	6	1		3	1	1	3	7	2	2	1		46	92.0	<0.1
Nickell Cr.	Smallmouth bass						1	1													2	2.0	<0.1
	Largemouth bass		1	5	4	3	7	8	4	3	2	3	4	2	5	7	4	2	2		66	66.0	6.0
Willow	Largemouth bass		1	3	5	5	7	9	8		1	2	4	3	3	7	8	1			67	67.0	5.0
Total	Smallmouth bass		6	5	3	1	3	6		5	2			3	2	1	1				38	3.6	1.4
	Spotted bass				1			1		1			1								4	0.4	0.2
	Largemouth bass	6	16	33	38	20	18	32	47	18	17	19	24	24	33	50	39	25	11	1	471	44.9	5.8

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Table 27. Spring diurnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Lake Barkley during late April/early May since 2009. Mean length at capture of age-3 fish also provided.

Year	Mean length age-3 at capture	Mean length age-3 at capture**	Length group													
			Age-1		<8.0 in		8.0-11.9 in		12.0 -14.9 in		≥15.0 in		≥20.0 in		Total	
			CPUE	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err
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
2013			18.2	2.7	14.6	2.3	16.2	2.4	22.9	3.2	19.3	2.1	0.7	0.3	73.0	7.9
2012	13.0	13.5	10.0	1.7	8.7	1.8	13.1	2.0	32.4	5.4	24.1	5.0	1.5	0.5	78.4	10.6
2011	Did not sample due to flooding															
2010			17.1	1.8	15.5	1.5	34.3	3.4	28.4	2.4	18.9	1.9	2.2	0.5	97.1	5.4
2009			69.2	7.4	63.9	7.5	42.5	3.5	38.8	2.7	34.0	3.4	2.4	0.4	179.3	10.2
Average	13.2	13.6	21.7		18.8		18.2		22.8		23.6		1.5		83.4	

(Revised\_Barkley\_Bass\_Database.xlsx)

Data is available since 1985 in previous annual reports

\* back-calculated fall age data used in 2015

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

Table 28. PSD and RSD<sub>15</sub> values calculated for largemouth bass collected during 10.5 hours (21- 30-minutes runs) of spring diurnal electrofishing at each area of Lake Barkley from 30 April to 11 May 2018. 95% confidence intervals are shown in parentheses.

Area	No. $\geq 8.0$ in	PSD	RSD <sub>15</sub>
Donaldson	6	50 (+/-44)	33 (+/-41)
Fords	42	88 (+/-10)	79 (+/-13)
Little River	54	80 (+/-11)	44 (+/-13)
Eddy Creek	117	68 (+/-8)	49 (+/-9)
Demumbers Bay	33	61 (+/-17)	48 (+/-17)
Nickell	53	58 (+/-13)	42 (+/-13)
Willow	53	55 (+/-14)	42 (+/-13)
Total	358	67 (+/-5)	51 (+/-5)

wfdpsdb.d18



Table 30. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 7.0 hours of diurnal electrofishing (13- 30-minute runs and 2- 15-minute runs) for black bass in each area of Lake Barkley October 9, 16, and 18, 2018.

Area / Species	Inch class																				Total	CPUE	Std err		
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21					
<b>Little River</b>																									
Smallmouth bass		1		2					2														5	2.0	0.6
Largemouth bass		5	6	4	8	6	4	2	4	9	5	4	11	3	5	3	7	1	1	1			89	35.6	4.8
<b>Eddy Creek</b>																									
Smallmouth bass			2	4				1	2														9	3.6	2.4
Spotted bass													1										1	0.4	0.4
Largemouth bass		1	2	5	7	5	3	1	5	7	12	11	13	3	12	7	4	3		1	1		103	41.2	7.4
<b>Nickell Branch</b>																									
Smallmouth bass			5	1	2				1	1	1	2									1		14	11.2	1.8
Largemouth bass			1	2	1	1			1	2	4	3			1	1							17	13.6	5.3
<b>Willow Creek</b>																									
Smallmouth bass												1											1	1.3	1.0
Largemouth bass				1	4	2			3	2	5	4	8	1	1	1							32	42.7	22.0
<b>Total</b>																									
Smallmouth bass		1	7	7	2				1	5	1	2	2							1			29	4.1	1.2
Spotted bass													1										1	0.1	0.1
Largemouth bass		6	9	12	20	14	7	6	12	23	25	26	25	7	19	11	11	4	2	2			241	34.7	4.8

w fdw rb.d18

Table 31. Number of fish and the relative weight (Wr) values for each length group of largemouth and smallmouth bass collected at Lake Barkley during 7.0 hours (13- 30-minute runs and 2- 15-minute runs) of diurnal electrofishing in October 2018.

Species	Area	Length group								
		8.0-11.9 in			12.0-14.9 in			≥15.0 in		
		No.	Wr	Std err	No.	Wr	Std err	No.	Wr	Std err
Largemouth bass	Little River	19	106	2	20	108	2	21	102	2
	Eddy Creek	16	103	3	36	100	1	31	104	1
	Nickell Branch	3	97	1	7	99	4	2	105	7
	Willow Creek	10	101	3	13	104	1	2	96	9
	Total	48	103	1	76	103	2	56	103	1

Species	Area	Length group								
		7.0-10.9 in			11.0-13.9 in			≥14.0 in		
		No.	Wr	Std err	No.	Wr	Std err	No.	Wr	Std err
Smallmouth bass	Little River	2	108	5						
	Eddy Creek	3	94	10						
	Nickell Branch	1	100		4	90	4	1	94	
	Willow Creek				1	88				
	Total	6	100	5	5	89	3	1	94	

wfdwrb.d18

Table 32. Age frequency and CPUE (fish/hr) of largemouth bass collected during diurnal electrofishing at Lake Barkley in October 2018.

Age	Inch class																			Total	%	CPUE	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				
0	6	9	12	20	14	7	1													69	29	9.6	
1							5	11	22	13	2										53	22	7.6
2								1	1	12	16	11									41	17	5.9
3											7	10	5	1							23	10	3.3
4											1	2	1	6	3						13	5	1.9
5												2		7	5	3					17	7	2.4
6														2	1		1				4	2	0.6
7													1	3	1	8	2	2			17	7	2.4
8																					0	0	0.0
9																					0	0	0.0
11															1		1			2	4	2	0.6
Total	6	9	12	20	14	7	6	12	23	25	26	25	7	19	11	11	4	2	2	241	100	34.7	
%	1	2	3	4	3	2	1	3	5	5	6	5	2	4	2	2	1	0	0	100			

wfdwrb.d18, wfdlbagb.d15



Table 33. Age-0 CPUE (fish/hr) and mean length (in) of 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 <sup>A</sup>		Age-0 <sup>A</sup>		Age-0 $\geq$ 5.0 in <sup>A</sup>		Age-1 <sup>B</sup>	
	Mean length	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err
2018	6.3	0.2	9.6	2.1	7.6	1.5		
2017	4.8	0.1	25.1	4.8	10.2	3.0	10.9	1.4
2016	5.5	0.9	22.7	4.5	14.9	3.1	26.5	5.0
2015	4.7	0.1	46.4	6.5	16.6	6.5	10.8	1.8
2014	4.8	0.1	24.8	4.4	11.0	1.9	10.3	2.0
2013	5.8	0.1	55.0	8.7	43.3	6.0	22.2	3.7
2012	6.1	0.1	40.6	6.9	35.7	5.7	22.2	2.7
2011	5.5	0.1	18.6	2.7	13.4	2.4	10.0	1.7
2010	6.5	0.1	46.0	7.8	42.0	6.9	*	
2009	5.6	0.1	37.6	4.8	29.2	3.4	17.1	1.8
2008	6.2	0.1	55.6	6.7	50.2	6.3	69.2	7.4
Average	5.6		34.7		24.9		22.1	

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

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

\* Data not collected in spring of 2011 due to flood conditions.

wfdwrb.dxx, wfdpsdb.dxx

Table 34. Length frequency and CPUE (fish/nn) of each inch class of white and black crappie collected by trap nets (119 net-nights) at Lake Barkley from 23 October-9 November 2018. Sub-Total is shown for comparisons with historical data which included only Little River and Donaldson Creek.

Area	Species	Inch class												Total	CPUE	Std err	
		2	3	4	5	6	7	8	9	10	11	12	13				14
Little River	White crappie	134	178	40	2	2		4	20	15	8	8	5	2	418	10.7	2.1
	Black crappie	38	62	7	3			3	1	1		1			116	3.0	0.9
Donaldson Creek	White crappie	28	17	12	26	10	9	8	11	5					126	3.2	0.5
	Black crappie	57	16	9	11	11	7	3	1	2	1				118	3.0	0.5
<b>Sub-Total</b>	<b>White crappie</b>	<b>162</b>	<b>195</b>	<b>52</b>	<b>28</b>	<b>12</b>	<b>9</b>	<b>12</b>	<b>31</b>	<b>20</b>	<b>8</b>	<b>8</b>	<b>5</b>	<b>2</b>	<b>544</b>	<b>6.9</b>	<b>1.2</b>
	<b>Black crappie</b>	<b>95</b>	<b>78</b>	<b>16</b>	<b>14</b>	<b>11</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>1</b>			<b>234</b>	<b>3.0</b>	<b>0.5</b>
Crooked Creek	White crappie	32	31	7		3	8	11	35	14	4	3			148	3.7	0.6
	Black crappie	18	12	5	18	9	9	10	14	6	6	1			108	2.7	0.4
<b>TOTAL</b>	<b>White crappie</b>	<b>194</b>	<b>226</b>	<b>59</b>	<b>28</b>	<b>15</b>	<b>17</b>	<b>23</b>	<b>66</b>	<b>34</b>	<b>12</b>	<b>11</b>	<b>5</b>	<b>2</b>	<b>692</b>	<b>5.8</b>	<b>0.8</b>
	<b>Black crappie</b>	<b>113</b>	<b>90</b>	<b>21</b>	<b>32</b>	<b>20</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>9</b>	<b>7</b>	<b>2</b>			<b>342</b>	<b>2.9</b>	<b>0.4</b>

wfdtpntb.d18

Table 35. Number of fish and the relative weight (Wr) values for each length group of black and white crappie collected by trap nets (119 net-nights) at Lake Barkley from 23 October-9 November 2018.

Species	Area	Length group								
		5.0-7.9 in			8.0-9.9 in			≥10.0 in		
		No.	Wr	Std err	No.	Wr	Std err	No.	Wr	Std err
Black crappie	Crooked Creek	36	98	2	24	100	2	13	97	1
	Little River	3	79	4	4	100	2	2	97	0
	Donaldson Bay	29	94	3	4	111	4	3	107	4
	Total	68	96	2	32	101	1	18	99	1

Species	Area	Length group								
		5.0-7.9 in			8.0-9.9 in			≥10.0 in		
		No.	Wr	Std err	No.	Wr	Std err	No.	Wr	Std err
White crappie	Crooked Creek	10	100	3	45	104	1	21	103	2
	Little River	4	86	5	24	98	1	38	101	1
	Donaldson Bay	44	89	2	19	105	1	5	110	5
	Total	58	91	2	88	102	1	64	102	1

wfdtpntb.d18

Table 36. Crappie population parameters used to manage the population at Lake Barkley for 2009-2018, 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
2018	1.8	0.5	2.3	0.1	0.0	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
2013	2.2	0.8	3.0	0.8	0.4	1.2	11.1	10.6	10.9	11.0	2.2	0.8	3.0	0.3	0.0	0.4	1.9	0.6	2.5
2012	4.1	2.6	6.7	2.9	1.5	4.4	10.9	10.0	10.5	10.5	4.0	2.2	6.3	1.1	0.9	2.0	2.8	0.9	3.7
2011 <sup>A</sup>	4.6	2.8	7.4	0.3	0.2	0.5	11.6	10.5	11.1	10.4	3.0	0.7	3.6	4.2	2.6	6.8	0.8	0.2	1.0
2010	4.1	3.1	7.2	0.3	0.4	0.7	11.6	10.5	11.0	10.5	3.1	2.1	5.2	3.5	2.5	6.1	1.3	0.5	1.8
2009 <sup>A</sup>	1.3	1.0	2.3	0.2	0.2	0.4	11.3	11.3	11.3	11.0	1.7	0.9	2.6	1.1	0.7	1.7	0.7	0.3	1.0
Average	3.9	2.1	6.0	0.8	0.5	1.3	11.4	10.3	10.9	10.7	2.5	1.2	3.6	2.8	1.4	4.3	1.2	0.4	1.6

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

<sup>A</sup> Indicates year where age and growth data was not collected. Age and growth data from the previous year was used to calculate the appropriate value.

Data from 1985 to 2008 is listed in previous annual reports.

Revised\_Barkley\_Crappie\_Database

Table 37. Proportional stock density (PSD) and relative stock density (RSD<sub>10</sub>) of white and black crappie collected by trap-nets (119 net-nights) at Lake Barkley from 23 October-9 November 2018. Sub-Total uses only data collected from Little River and Donaldson Creek. Numbers in parentheses represent 95% confidence intervals.

Location	Species	N	PSD	RSD <sub>10</sub>
Little River	White crappie	66	94 (+/-6)	58 (+/-12)
	Black crappie	9	67 (+/-33)	22 (+/-29)
Donaldson	White crappie	69	35 (+/-11)	7 (+/-6)
	Black crappie	36	19 (+/-13)	8 (+/-9)
<b>Sub-Total</b>	<b>White crappie</b>	<b>135</b>	<b>64 (+/-8)</b>	<b>32 (+/-8)</b>
	<b>Black crappie</b>	<b>45</b>	<b>29 (+/-13)</b>	<b>11 (+/-9)</b>
Crooked Creek	White crappie	78	86 (+/-8)	27 (+/-10)
	Black crappie	73	51 (+/-12)	18 (+/-9)
<b>Total</b>	<b>White crappie</b>	<b>213</b>	<b>72 (+/-6)</b>	<b>30 (+/-6)</b>
	<b>Black crappie</b>	<b>118</b>	<b>42 (+/-9)</b>	<b>15 (+/-7)</b>

wfdtpntb.d18 wfdtpnb1.d18

Table 38. 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) from 23 October-9 November 2018. Additional otoliths were collected at a fishing tournament on 12 November 2018.

Year class	N	Age			
		1	2	3	4
2017	113	3.8			
2016	8	4.8	9.1		
2015	9	4.6	8.5	10.7	
2014	11	4.4	8.4	10.3	11.7
Mean	141	4.0	8.6	10.5	11.7
Smallest		1.9	6.7	9.1	10.7
Largest		8.6	11.2	12.0	13.1
Std err		0.1	0.2	0.2	0.3
Low 95% CI		3.8	8.3	10.1	11.2
High 95% CI		4.2	9.0	10.9	12.3

\* Intercept = 0.

wfdtnagb.d18

Table 39. 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) from 23 October-9 November 2018. Additional otoliths were collected at a fishing tournament on 12 November 2018.

Year class	N	Age		
		1	2	3
2017	59	3.6		
2016	5	4.6	8.5	
2015	1	3.0	5.5	7.7
Mean	65	3.6	8.0	7.7
Smallest		2.7	5.5	7.7
Largest		5.7	9.8	7.7
Std err		0.1	0.7	
Low 95% CI		3.4	6.7	
High 95% CI		3.8	9.4	

\* Intercept = 0.  
wfdtnagb.d18

Table 40. Age frequency and CPUE (fish/nn) of white crappie collected during 119 net-nights at Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) from 23 October-9 November 2018. Little River and Donaldson Creek also shown separately for historical comparison.

#### Little River and Donaldson Creek

Age	Inch class													Total	%	CPUE	Std err	
	2	3	4	5	6	7	8	9	10	11	12	13	14					
0	162	195	40	7	1										405	74	5.1	1.1
1			12	21	11	9	12	31	18	4					118	22	1.5	0.2
2									2	2	2				6	1	0.1	<0.1
3										1	3	2			6	1	0.1	<0.1
4										1	3	3	2		9	2	0.1	0.1
Total	162	195	52	28	12	9	12	31	20	8	8	5	2		544		6.9	1.2
%	30	36	10	5	2	2	2	6	4	1	1	1	0					

#### Lake Barkley Total

Age	Inch class													Total	%	CPUE	Std err	
	2	3	4	5	6	7	8	9	10	11	12	13	14					
0	194	226	45	7	1										473	68	4.0	0.7
1			14	21	14	17	23	66	31	6					192	28	1.6	0.2
2									3	3	3				9	1	0.1	<0.1
3										1	5	2			8	1	0.1	<0.1
4										2	4	3	2		11	2	0.1	<0.1
Total	194	226	59	28	15	17	23	66	34	12	12	5	2		693		5.8	0.8
%	28	33	9	4	2	2	3	10	5	2	2	1	0					

wfdtpnb1.d18 and wfdtnagb.d18

Table 41. Age frequency and CPUE (fish/nn) of black crappie collected during 119 net-nights at Lake Barkley (Little River, Donaldson Creek, and Crooked Creek) from 23 October-9 November 2018. Little River and Donaldson Creek also shown separately for historical comparison.

**Little River and Donaldson Creek**

Age	Inch class											Total	%	CPUE	Std err
	2	3	4	5	6	7	8	9	10	11	12				
0	95	78	15	5								193	82	2.4	0.5
1			1	9	11	7	6	2	2			38	16	0.5	0.1
2									1	1	1	3	1	0.04	0.0
3									1			1	0	0.01	<0.1
<b>Total</b>	95	78	16	14	11	7	6	2	4	1	1	235		3.0	0.5
<b>%</b>	40	33	7	6	5	3	3	1	2	0	0				

**Lake Barkley Total**

Age	Inch class											Total	%	CPUE	Std err
	2	3	4	5	6	7	8	9	10	11	12				
0	113	90	20	11								234	68	2.0	0.3
1			1	21	20	16	16	13	5	2		94	27	0.8	0.1
2								3	2	5	2	12	4	0.1	<0.1
3									2			2	1	<0.1	<0.1
<b>Total</b>	113	90	21	32	20	16	16	16	9	7	2	342		2.9	0.4
<b>%</b>	33	26	7	9	6	5	5	5	3	2	1				

wfdtpnb1.d18 and wfdtnagb.d18

Table 42. Lake specific assessment for crappie collected at Lake Barkley (Little River and Donaldson Creek) from 2009-2018. 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 age-1 and older	CPUE age-1	CPUE age-0	CPUE $\geq 8.0$ in	Mean length	*Mean length	Total score	Assessment rating	Z	A
					age-2 at capture	age-2 at capture				
2018	2.3	2.0	7.6	1.3	11.5	11.5			0.849	57.2
Score	1	2	4	1	4		12	F		
2017	3.1	1.7	7.9	2.4	10.7	10.5			0.949	61.0
Score	1	2	4	1	3		11	F		
2016	9.7	6.7	1.5	4.9	10.3	9.9			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			0.680	49.3
Score	4	4	3	3	3		17	G		
2014	3.5	3.0	9.2	1.9	11.2	11.5			0.418	34.2
Score	1	2	4	1	4		12	F		
2013	3.0	0.4	2.8	3.0	10.9	11.0			0.788	54.5
Score	1	1	2	2	4		10	F		
2012	6.7	2.0	0.4	6.3	10.5	10.5			0.857	57.6
Score	2	2	1	4	3		12	F		
2011	7.4	6.8	10.0	3.6	10.9	10.4			1.188	69.5
Score	3	4	4	2	4		17	G		
2010	7.2	6.3	23.3	5.2	10.9	10.5			1.209	70.1
Score	3	4	4	3	4		18	E		
2009	2.3	1.7	5.3	2.6	11.3	11.0			1.330	73.5
Score	1	1	3	2	4		11	F		
Average	6.0	4.3	7.3	3.6	10.9		13.4		0.974	60.39

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 43. Length frequency and CPUE (fish/hr) of channel, blue, and flathead catfish collected from Lake Barkley in June-July 2018 using low pulse (15 PPS) electrofishing along the main lake river channel. A chase boat was used. A total of 4.3 hours of sampling consisting of 52- 300-second runs.

Species	Inch class																												Total	CPUE	Std err					
	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	30				31	34	35	37	46
Blue catfish	1	4	4	44	82	232	250	87	56	43	34	58	59	33	28	23	10	5			2					2	1		1				1	1060	244.8	25.2
Channel catfish		1	8	8	1	22	12	5	7	1	3	1	1																					70	16.2	4.6
Flathead catfish														2		2		1	2	1			3	2	1	3		1	1		2	2	1	24	5.5	1.8

wfdcatb.d18

Table 44. Relative weight (Wr) of each length group of blue, channel, and flathead catfish collected from Lake Barkley during June-July 2018. 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	Wr	Std err	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err
Blue catfish	269	97	1	10	99	4	1	111		280	97	1

Species	Length group											
	11.0-15.9 in			16.0-23.9 in			≥24.0 in			Total		
	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err
Channel catfish	12	97	3							12	97	3

Species	Length group											
	12.0-19.9 in			20.0-29.9 in			≥30.0 in			Total		
	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err
Flathead catfish	4	100	5	14	103	2	3	106	5	21	103	2

wfdcatb.d18



Table 45. Age frequency and CPUE (fish/hr) of blue catfish (<21.0 in TL) collected from low pulse (15 PPS) electrofishing at Lake Barkley in June-July 2018. Age and growth data from 2014 was used to calculate the appropriate values.

Age	Inch class																	*Total	%	*CPUE	Std err	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19					20
1	1	4	4	44	82	77													212	20	49.0	7.1
2						155	250	87	42										534	51	123.3	14.2
3									14	43	34								91	9	21.0	3.3
4												58	59						117	11	27.0	4.5
5														22		7			29	3	6.7	1.4
6														11	28	16	3		58	6	13.4	2.1
7																	7		7	1	1.6	0.7
9																		5	5	0	1.2	0.5
Total	1	4	4	44	82	232	250	87	56	43	34	58	59	33	28	23	10	5	1053		*243.2	25.2
%	0	0	0	4	8	22	24	8	5	4	3	6	6	3	3	2	1	0				

wfdcatb.d18 and wfdcatag.d14

\* fish >21.0 in TL were excluded, as these fish were not represented in the 2014 age data set.

Table 46. Age frequency and CPUE (fish/hr) of channel catfish (<14.0 in TL) collected from low pulse (15 PPS) electrofishing at Lake Barkley in June-July 2018. Age and growth data from 2014 was used to calculate the appropriate values.

Age	4	5	6	7	9	10	11	12	13	*Total	%	*CPUE	Std err
1	1	8	8	1						18	38	4.2	1.0
2					12	3	1			16	34	3.7	1.7
3						3	6	1		10	21	2.3	1.2
4									3	3	6	0.7	0.5
Total	1	8	8	1	12	6	7	1	3	47		*15.7	4.6
%	2	17	17	2	26	13	15	2	6				

wfdcatb.d18 and wfdcatag.d14

\* fish >14.0 in TL were excluded, as these fish were not represented in the 2014 age data set.

Table 47. Fishery statistics derived from a creel survey at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

<u>Fishing Trips</u>	No. of fishing trips (per acre)	94,732	(2.1)
<u>Fishing Pressure</u>	Total angler-hours (S.E.)	408,414	(18466)
	Angler-hours/acre	9.0	
<u>Catch / Harvest</u>	No. of fish caught (S.E.)	364,496	(45,610)
	No. of fish harvested (S.E.)	164,666	(23,995)
	Lb of fish harvested	124,532	
<u>Harvest Rates</u>	Fish/hour	0.42	
	Fish/acre	3.61	
	Pounds/acre	2.73	
<u>Catch Rates</u>	Fish/hour	0.92	
	Fish/acre	7.99	
<u>Miscellaneous Characteristics (%)</u>	Male	88.29	
	Female	11.71	
	Resident	75.11	
	Non-resident	24.89	
<u>Method (%)</u>	<b><u>Non-Crappie Anglers</u></b>		
	Still fishing	40.01	
	Casting	57.01	
	Trolling	0.79	
	Trotline/Jugging	2.18	
	Bow Fishing	<.01	
	<b><u>Crappie Anglers Only</u></b>		
	Casting	48.14	
	Still fishing (1-2 poles)	9.92	
	Spider Rig (3 Poles)	18.18	
	Spider Rig (4-5 Poles)	4.55	
	Spider Rig (>5 Poles)	19.21	
<u>Mode (%)</u>	Boat	85.43	
	Bank	11.51	
	Dock	2.46	

Table 48. Length distribution for each species of fish harvested or released (lengths of released fish were estimated by anglers) at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

Species	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	
White crappie	H								6,601	22,247	16,306	4,687	2,443	263												
	R		193		644	966	3,670	14,680	1,159	322	1,352	773	193													
Black crappie	H								1,520	1,124	463	1,123														
	R				118	1,770	2,006	826	236	117																
Largemouth bass	H										165		55	439	110		220	110				54				
	R						1,708	285	6,605	1,651	16,114	2,904	12,356	6,434	7,003	3,644	5,808	1,196	1,423	456	285	342		55		
Smallmouth bass	H													109	55								55			
	R				265	53	796	53	955		1,592	478	584	265	955	372	106	265	53	55						
Spotted bass	R			48					95		48															
Bluegill	H		55	818	1,963	8,778	12,103	2,398																		
	R	54	161	6,136	11,680	2,099	323	108																		
Redear sunfish	H						280	112	337	841	112	168	57													
	R					51	101	152		152																
Longear sunfish	R	604	3,457	329	55																					
Warmouth	R	59			117																					
Green sunfish	H	96																								
Channel catfish	H						159		740		9,622	3,912	8,141	5,974	4,652	2,643	2,802	159	1,269		53			158		
	R			212	159		1,640	53	582		1,693	1,005	952	740	476	264	529	106	264							
Blue catfish	H						154		257		3,347	618	3,965	2,111	3,913	824	2,060	103	1,133	309	309	51	206			
	R						1,546		1,596	299	399		50			50		249					50			
Flathead catfish	H													55					164							
	R												52													
White bass	H								1,019	1,555	2,789	536	161	54	107	53										
	R				807	461	1,325	58	1,959	576	1,959	864	864	173	58	58	58									
Yellow bass	H			1,341	3,248	3,248	2,217	1,186																		
	R	106	2,593	6,033	12,913	14,553	3,122	476	370	160																
Sauger	R														55											
Yellow perch	H								55																	
	R								55																	
Drum	H							111	56		111		112													
	R				62	62	373		683	62	1,056		373	683	994	62	311		435	435				62		
Skipjack herring	H								62																	
	R						135	135		271	135		272													
Carp	R																								43	
Gar	R										51						102									

Table 48 (cont).

Species	Inch class																				Total				
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	44	45	46	47		48	49	56	
White crappie	H																								52,547
	R																								23,952
Black crappie	H																								4,230
	R																								5,073
Largemouth bass	H																								1,153
	R																								68,269
Smallmouth bass	H																								219
	R																								6,847
Spotted bass	R																								191
Bluegill	H																								26,115
	R																								20,561
Redear sunfish	H																								1,907
	R																								456
Longear sunfish	R																								4,445
Warmouth	R																								176
Green sunfish	H																								96
Channel catfish	H																								40,284
	R	52																							8,727
Blue catfish	H	154	51	51		154		104																	19,874
	R			50																					4,289
Flathead catfish	H																								219
	R			53																					105
White bass	H																								6,274
	R																								9,220
Yellow bass	H																								11,240
	R																								40,326
Sauger	R																								55
Yellow perch	H																								55
	R																								55
Drum	H																								390
	R			186																					5,839
Skipjack herring	H																								62
	R																								948
Carp	R																								43
Gar	R			51						50															254

Table 49. Fish harvest statistics derived from a creel survey at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

	<b>Black bass group</b>	Largemouth bass	Smallmouth bass	Spotted bass	<b>Crappie group</b>	White crappie	Black crappie	<b>Catfish group</b>	Channel catfish	Flathead catfish	Blue catfish	<b>Panfish group</b>	Bluegill	Redear sunfish	Longear sunfish	Warmouth	Green sunfish
No. caught	<b>76,678</b>	69,422	7,065	191	<b>85,803</b>	76,500	9,303	<b>76,678</b>	49,011	324	24,064	<b>53,756</b>	46,676	2,364	4,445	176	96
(per acre)	<b>(1.68)</b>	(1.52)	(0.15)	T	<b>(1.88)</b>	(1.68)	(0.20)	<b>(1.68)</b>	(1.07)	(0.01)	(0.53)	<b>(1.18)</b>	(1.02)	(0.05)	(0.10)	T	T
No. harvested	<b>1,372</b>	1,153	219	0	<b>56,778</b>	52,547	4,230	<b>60,378</b>	40,284	219	19,874	<b>28,118</b>	26,115	1,907	0	0	96
(per acre)	<b>(0.03)</b>	(0.03)	T	(0.00)	<b>(1.25)</b>	(1.15)	(0.09)	<b>(1.32)</b>	(0.88)	T	(0.44)	<b>(0.62)</b>	(0.57)	(0.04)	(0.00)	(0.00)	T
% of total no. harvested	<b>0.8</b>	0.7	0.1	0.0	<b>34.5</b>	31.9	2.6	<b>36.7</b>	24.5	0.1	12.1	<b>17.1</b>	15.9	1.2	0.0	0.0	0.1
Lb. harvested	<b>3,036</b>	2,507	529	0	<b>42,201</b>	38,896	3,305	<b>67,342</b>	39,719	575	27,048	<b>5,731</b>	4,574	1,155	0	0	2
(per acre)	<b>(0.07)</b>	(0.05)	(0.01)	(0.00)	<b>(0.93)</b>	(0.85)	(0.07)	<b>(1.48)</b>	(0.87)	(0.01)	(0.59)	<b>(0.13)</b>	(0.10)	(0.03)	(0.00)	(0.00)	T
% of total lb. harvested	<b>2.4</b>	2.0	0.4	0.0	<b>33.9</b>	31.2	2.7	<b>54.1</b>	31.9	0.5	21.7	<b>4.6</b>	3.7	0.9	0.0	0.0	T
Mean length (in)		16.3	17.3			11.6	11.1		13.6	19.2	15.8		3.6	9.2			3.0
Mean weight (lb)		2.29	2.42			0.76	0.75		0.83	2.80	1.36		0.17	0.55			0.02
No. of fishing trips for that species	<b>42,476</b>				<b>19,316</b>			<b>16,307</b>				<b>5,256</b>					
% of all trips	<b>44.8</b>				<b>20.4</b>			<b>17.2</b>				<b>5.5</b>					
Hours fished for that species	<b>183,124</b>				<b>83,275</b>			<b>70,304</b>				<b>22658</b>					
(per acre)	<b>(4.02)</b>				<b>(1.83)</b>			<b>(1.54)</b>				<b>(0.50)</b>					
No. harvested fishing for that species	<b>598</b>				<b>56,258</b>			<b>49,220</b>				<b>23,527</b>					
Lb harvested fishing for that species	<b>1,326</b>				<b>41,836</b>			<b>57,822</b>				<b>4,501</b>					
No./hour harvested fishing for that species	T				<b>0.66</b>			<b>0.80</b>				<b>1.71</b>					
% success fishing for that species	<b>1.0</b>				<b>49.6</b>			<b>54.4</b>				<b>45.3</b>					

T = < .005

Table 49 (cont.).

	Sauger	Morone Group	White bass	Yellow bass	Drum	Skipjack herring	Gar	Carp	Yellow perch	Anything
No. caught	55	<b>67,061</b>	15,494	51,567	6,229	1,010	254	43	109	
(per acre)	T	(1.47)	(0.34)	(1.13)	(0.14)	(0.02)	(0.01)	T	T	
No. harvested	0	<b>17,515</b>	6,274	11,241	390	62	0	0	55	
(per acre)	(0.00)	<b>(0.38)</b>	(0.14)	(0.25)	T	T	(0.00)	(0.00)	T	
% of total no. harvested	0.00	<b>10.64</b>	3.81	6.83	0.24	0.04	0.00	0.00	0.03	
Lb. harvested	0	<b>5,927</b>	1,423	1,423	253	17	0	0	24.7	
(per acre)	(0.00)	<b>(0.13)</b>	(0.03)	(0.03)	(0.01)	T	(0.00)	(0.00)	T	
% of total lb. harvested	0.00	<b>4.76</b>	3.62	1.14	0.20	0.01	0.00	0.00	0.02	
Mean length (in)			12.8	7.0	11.5	10.0			10.0	
Mean weight (lb)			0.88	0.13	0.70	0.28			0.45	
No. of fishing trips for that species		<b>2,332</b>								<b>8,999</b>
% of all trips		<b>2.5</b>								<b>9.5</b>
Hours fished for that species		<b>10053</b>								<b>38,796</b>
(per acre)		<b>(0.22)</b>								<b>(0.85)</b>
No. harvested fishing for that species		<b>14,217</b>								
Lb harvested fishing for that species		<b>4,107</b>								
No./hour harvested fishing for that species		<b>2.37</b>								
% success fishing for that species		<b>44.9</b>								<b>16.6</b>

T = &lt; 0.005

Table 50. Crappie catch and harvest statistics derived at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

	White crappie				Black crappie			
	Harvested		Released		Harvested		Released	
	≥10.0 in	<10.0 in	≥10.0 in	Total	≥10.0 in	<10.0 in	≥10.0 in	Total
*Total no. of crappie	52,547	20,153	3,799	76,500	4,230	4,720	353	9,303
% of crappie harvested by number	92.5				7.5			
*Total weight of crappie (lb)	38,896	6,535	1,231	46,662	3,305	1,126	85	4,516
% of crappie harvested by weight	92.2				7.8			
Mean length (in)	11.6				11.1			
Mean weight (lb)	0.76				0.75			
*Catch rate (fish/hr)	0.19				0.02			
*Harvest rate (fish/hr)	0.115				0.009			

\* Includes effort and catch of non-crappie anglers

Table 51. Monthly crappie angling success at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

	Total no. of crappie caught	Total no. of crappie harvested	*Total no. of crappie harvested	No. of 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
Mar	16,568	8,944	8,944	2,394	10,322	16,567	1.20	8,943	0.65
Apr	27,151	20,703	19,006	8,226	35,465	26,879	0.82	18,802	0.57
May	33,926	23,328	23,328	5,262	22,684	33,270	1.42	23,054	0.98
Jun	389	389	389	415	1,790	389	0.50	389	0.50
Jul	256	170	170	249	1,073	213	0.11	128	0.07
Aug	716	239	239	213	918	717	0.63	239	0.21
Sept	1,117	744	744	646	2,785	1,054	0.52	744	0.37
Oct	3,345	2,154	2,154	1,500	6,465	3,300	0.51	2,154	0.33
Nov	2,335	1,805	1,805	412	1,774	2,336	1.38	1,805	1.06
Total	85,803	58,475	*56,778	19,316	83,275	84,725		56,258	
Mean	9,534	6,497	*6,309	2,146	9,253	9,414	0.98	6,251	0.66

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

Table 52. Crappie angling methods at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

Year	Casting (1 pole)	Still-fishing (1-2 poles)	Spider Rig (3 poles)	Spider Rig (4-5 poles)	Spider Rig (>5 poles)
2018	48.1%	9.9%	18.2%	4.5%	19.2%
2016	57.4%	3.3%	26.5%	4.7%	8.0%
Mean	52.78%	6.62%	22.36%	4.61%	13.61%



Table 53. Monthly black bass angling success at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

Month	Total no. of bass caught	Total no. of bass harvested	*Total no. of bass harvested	No. of 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
Mar	3,959	880	0	5,611	24,192	3,959	0.17	880	0	0.04	0.00
Apr	13,779	1,425	136	8,952	38,594	13,101	0.29	1,358	68	0.03	<0.01
May	22,672	3,988	656	8,263	35,624	20,596	0.40	3,496	164	0.07	<0.01
Jun	10,436	4,885	333	7,108	30,646	10,103	0.24	4,718	167	0.11	<0.01
Jul	6,304	1,320	0	3,622	15,615	6,133	0.36	1,320	0	0.08	0.00
Aug	4,107	191	48	1,728	7,449	3,917	0.43	143	0	0.02	0.00
Sept	7,009	1,365	62	2,871	12,376	6,886	0.41	1,365	62	0.08	<0.01
Oct	7,881	596	137	4,059	17,499	7,744	0.43	596	137	0.03	0.01
Nov	531	0	0	262	1,129	531	0.38	0	0	0.00	0.00
Total	76,678	14,650	*1,372	42,476	183,124	72,970		13,876	*598		
Mean	8,520	1,628	*152	4,720	20,347	8,108	0.34	1,542	*66	0.05	0.003

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

Table 54. Black bass catch and harvest statistics derived at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

	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	13,220	31,229	14,733	69,422	1,430	2,633	895	7,065	0	48	0	191
*Total no. of bass	(*1,153)		(*26,646)		(*219)		(*2,071)					
% of bass harvested by number	84.1				15.9				0.0			
Total weight of bass (lb)	34,001	38,044	17,947	102,465	3,224	2,077	704	7,668	0	20	0	80
*Total weight of bass (lb)	(*2,507)		(*37,806)		(*529)		(*2,023)					
% of bass harvested by weight	82.6				17.4				0.0			
Mean length (in)	17.1				16.7							
Mean weight (lb)	2.63				2.21							
**Catch rate (fish/hr)	0.17				0.02				0.0005			
**Harvest rate (fish/hr)	0.03				0.004				0.00			

\* 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 55. Monthly panfish angling success at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

Month	Total no. of panfish caught	Total no. of panfish harvested	No. of 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
Apr	543	272	0	0	0	0.00	0	0.00
May	39,826	21,415	4,002	17,253	32,123	3.03	18,246	1.72
Jun	3,164	888	363	1,566	389	0.33	111	0.10
Jul	1,959	1,533	359	1,550	1,874	3.41	1,533	2.79
Aug	1,098	382	142	612	765	1.37	287	0.51
Sept	5,149	3,536	323	1,392	4,777	6.16	3,350	4.32
Oct	2,016	92	0	0	0	0.00	0	0.00
Total	53,756	28,118	5,189	22,373	39,928		23,527	
Mean	7,679	4,017	741	3,196	5,704	2.89	3,361	1.71

Table 56. Panfish catch and harvest statistics derived from Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

	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	26,115	2,422	108	46,676	1,907	152	304	2,364	
% of panfish harvested by number	92.9				6.8				
Total weight of panfish (lb)	4,574	178	7	6,084	1,155	57	116	1,328	
% of panfish harvested by weight	79.8				20.2				
Mean length (in)	6.3				9.2				
Mean weight (lb)	0.17				0.55				
*Catch rate (fish/hr)	0.11				0.01				
*Harvest rate (fish/hr)	0.064				0.005				

\* includes effort and catch of non-panfish anglers

Table 57. Catfish catch and harvest statistics derived at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

	Blue catfish			Channel catfish			Flathead catfish					
	Harvest	Release	Total	Harvest	Release	Total	Harvest	Release	Total			
	8.0-11.9 in	≥12.0 in		8.0-11.9 in	≥12.0 in		8.0-11.9 in	≥12.0 in				
Total no. of catfish	19,874	3,441	849	24,164	40,284	2,275	6,081	49,011	219	0	105	324
% of catfish harvested by number	32.9				66.7				0.4			
Total weight of catfish (lb)	27,048	1,645	406	29,099	39,719	1,521	4,071	45,558	575	0	522.6	1,098
% of catfish harvested by weight	40.2				59.0				0.9			
Mean length (in)	15.8				13.6				19.2			
Mean weight (lb)	1.36				0.83				2.80			
*Catch rate (fish/hr)	0.06				0.12				0.001			
*Harvest rate (fish/hr)	0.049				0.099				0.0005			

\* includes effort and catch of non-catfish anglers

Table 58. Monthly catfish angling success at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

Month	Total no. of catfish caught	Total no. of catfish harvested	No. of 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
Mar	293	293	748	3,226	293	0.15	293	0.15
Apr	3,326	3,122	1,331	5,737	2,444	0.80	2,376	0.78
May	29,118	25,731	4,706	20,288	19,339	1.07	18,520	1.03
Jun	8,215	4,996	2,750	11,856	6,661	0.71	4,052	0.43
Jul	11,415	8,859	2,129	9,178	10,222	0.84	8,135	0.67
Aug	5,922	5,206	1,539	6,633	5,778	0.91	5,205	0.82
Sept	6,389	4,404	1,507	6,497	6,017	1.26	4,156	0.87
Oct	7,652	6,598	1,112	4,793	5,682	1.14	5,316	1.07
Nov	1,168	1,168	486	2,097	1,167	0.61	1,167	0.61
Total	73,499	60,378	16,307	70,304	57,603		49,220	
Mean	8,167	6,709	1,812	7,812	6,400	0.94	5,469	0.80

Table 59. Morone catch and harvest statistics derived at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

	White bass				Yellow bass			
	Harvest	Release		Total	Harvest	Release		Total
		12.0-14.9 in	≥15.0 in			12.0-14.9 in	≥15.0 in	
Total no. of <i>Morone</i>	6,274	3,687	347	15,494	11,241	0	0	51,567
% of <i>Morone</i> harvested by number	35.8				64.2			
Total weight of <i>Morone</i> (lb)	4,505	2,047	190	9,620	1,423	0	0	3934.1
% of <i>Morone</i> harvested by weight	76.0				24.0			
Mean length (in)	12.8				7.0			
Mean weight (lb)	0.88				0.13			
*Catch rate (fish/hr)	0.04				0.13			
*Harvest rate (fish/hr)	0.015				0.028			

\* includes effort and catch of non-morone anglers

Table 60. Monthly Morone angling success at Lake Barkley (45,600 acres) from 1 March through 30 November 2018.

Month	Total no. of Morone caught	Total no. of Morone harvested	No. of 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
Mar	4,105	293	0	0	0	0.00	0	0.00
Apr	4,276	272	0	0	0	0.00	0	0.00
May	10,271	1,530	519	2,236	2,294	2.20	655	0.63
Jun	11,491	4,718	467	2,013	7,050	8.36	4,441	5.26
Jul	12,309	3,237	608	2,622	9,242	5.51	3,024	1.80
Aug	11,940	2,818	379	1,633	7,451	5.45	2,675	1.96
Sept	5,955	3,350	215	928	3,907	6.49	3,101	5.15
Oct	5,865	1,191	103	446	413	2.25	321	1.75
Nov	849	106	0	0	0	0.00	0	0.00
Total	67,061	17,515	14,607	14,607	30,357		14,217	
Mean	7,451	1,946	255	1,098	3,373	5.27	1,580	2.37



Table 61. Fishery statistics derived from a creel survey at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

<u>Fishing Trips</u>	No. of fishing trips (per acre)	11,874	(0.7)
<u>Fishing Pressure</u>	Total angler-hours (S.E.)	27,515	(5794.9)
	Angler-hours/acre	1.6	
<u>Catch / Harvest</u>	No. of fish caught (S.E.)	25,959	(11,096)
	No. of fish harvested (S.E.)	11,077	(5,071)
	Lb of fish harvested	8,575	
<u>Harvest Rates</u>	Fish/hour	0.40	
	Fish/acre	0.65	
	Pounds/acre	0.50	
<u>Catch Rates</u>	Fish/hour	0.95	
	Fish/acre	1.52	
<u>Miscellaneous Characteristics (%)</u>	Male	95.56	
	Female	4.44	
	Resident	98.89	
	Non-resident	1.11	
<u>Method (%)</u>	Still fishing	12.22	
	Casting	18.89	
	Trolling		
	Trotline/Jugging	2.22	
	Bow Fishing		
	<b><u>Crappie Anglers Only</u></b>		
	Casting	60.00	
	Still fishing (1-2 poles)	6.67	
	Spider Rig (3 Poles)	6.67	
	Spider Rig (4-5 Poles)	10.00	
	Spider Rig (>5 Poles)	16.67	
<u>Mode (%)</u>	Boat	76.67	
	Bank	13.33	
	Dock	10.00	

Table 62. Length distribution for each species of fish harvested or released (lengths of released fish were estimated by anglers) at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

Species		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	
White crappie	H										1,532	2,089	975	556													
	R					139	139		3,899	278	975	278	139	139		140											
Black crappie	H										532	799															
	R								133																		
Largemouth bass	H																										
	R				0			143				572	143	1,002	429					144							
Smallmouth bass	H																										
	R																										
Spotted Bass	H																										
	R																										
Bluegill	H																										
	R			852																							
Redear sunfish	H																										
	R																										
Longear sunfish	H																										
	R																										
Warmouth	H																										
	R																										
Green sunfish	R																										
Channel catfish	H															295						147			147		
	R																										
Blue catfish	H											884			147			147									
	R																										
Flathead catfish	H																										
	R																										
White bass	H									706		282															
	R				139	139		974		139	139	974		419													
Striped bass	H																										
	R																									147	
Yellow bass	H					852		853																			
	R				1,242		497	248																			
Sauger	H																										
	R																										
Bullhead	R																										
Buffalo	R																										
Drum	H																										
	R																										133
Shad	R																										
Skipjack herring	H																										
	R																										
Common Carp	R																										
Silver Carp	R																										
Grass Carp	R																										
Golden Shiner	R																										
Yellow perch	H											133															
	R																										

Table 62 (cont).

Species	Inch class																				Total				
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	44	45	46	47		48	49	56	
White crappie	H																								5,152
	R																								6,126
Black crappie	H																								1,331
	R																								133
Largemouth bass	H																								0
	R																								2,433
Smallmouth bass	H																								0
	R																								0
Spotted Bass	H																								0
	R																								0
Bluegill	H																								0
	R																								852
Redear sunfish	H																								0
	R																								0
Longear sunfish	H																								0
	R																								0
Warmouth	H																								0
	R																								0
Green sunfish	R																								0
Channel catfish	H																								589
	R																								0
Blue catfish	H																								1,178
	R		147																						147
Flathead catfish	H																								0
	R																								0
White bass	H																								988
	R																								2,923
Hybrid striped bass	H																								0
	R																								147
Yellow bass	H																								1,705
	R																								1,987
Sauger	H																								0
	R																								0
Bullhead	H																								0
Buffalo	R																								0
Drum	H																								0
	R																								133
Shad	R																								0
Skipjack herring	H																								0
	R																								0
Common Carp	R																								0
Silver Carp	R																								0
Grass Carp	R																								0
Golden Shiner	H																								0
Yellow perch	H																								133
	R																								0

Table 63. Fish harvest statistics derived from a creel survey at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

	<b>Black bass group</b>	Largemouth bass	Smallmouth bass	Spotted bass	<b>Crappie group</b>	White crappie	Black crappie	<b>Catfish group</b>	Channel catfish	Flathead catfish	Blue catfish	Bullhead	<b>Panfish group</b>	Bluegill	Redear sunfish	Longear sunfish	Warmouth	Green sunfish
No. caught	<b>2,433</b>	2,433	0	0	<b>12,743</b>	11,278	1,464	<b>1,915</b>	589	0	1,326	0	<b>852</b>	852	0	0	0	0
(per acre)	<b>(0.14)</b>	(0.14)	(0.00)	(0.00)	<b>(0.75)</b>	(0.66)	(0.09)	<b>(0.11)</b>	(0.03)	(0.00)	(0.08)	(0.00)	<b>(0.05)</b>	(0.05)	(0.00)	(0.00)	(0.00)	(0.00)
No. harvested	<b>0</b>	0	0	0	<b>6,483</b>	5,152	1,331	<b>1,767</b>	589	0	1,178	0	<b>0</b>	0	0	0	0	0
(per acre)	<b>(0.00)</b>	(0.00)	(0.00)	(0.00)	<b>(0.38)</b>	(0.30)	(0.08)	<b>(0.10)</b>	(0.03)	(0.00)	(0.07)	(0.00)	<b>(0.00)</b>	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
% of total no. harvested					<b>58.5</b>	46.5	12.0	<b>16.0</b>	5.3		10.6							
Lb. harvested					<b>5,665</b>	4,517	1,149	<b>2,055</b>	1,227		828							
(per acre)					<b>(0.33)</b>	(0.26)	(0.07)	<b>(0.12)</b>	(0.07)		(0.05)							
% of total lb. harvested					<b>66.1</b>	52.7	13.4	<b>24.0</b>	14.3		9.7							
Mean length (in)						12.1	11.6		18.8		13.1							
Mean weight (lb)						0.88	0.86		2.08		0.70							
No. of fishing trips for that species	<b>2,246</b>				<b>7,377</b>			<b>1,551</b>					<b>349</b>					
% of all trips	<b>19.5</b>				<b>64.0</b>			<b>13.5</b>					<b>3.0</b>					
Hours fished for that species	<b>5,204</b>				<b>17,094</b>			<b>3,595</b>					<b>810</b>					
(per acre)	<b>(0.30)</b>				<b>(1.00)</b>			<b>(0.21)</b>					<b>(0.05)</b>					
No. harvested fishing for that species	<b>0</b>				<b>6,483</b>			<b>1,620</b>					<b>0</b>					
Lb harvested fishing for that species	<b>0</b>				<b>5,665</b>			<b>1,902</b>					<b>0</b>					
No./hour harvested fishing for that species	<b>0.00</b>				<b>0.41</b>			<b>0.47</b>					<b>0.00</b>					
% success fishing for that species					<b>35.1</b>			<b>18.2</b>										

Table 63 (cont.).

	Sauger	Morone Group	White bass	Yellow bass	Striped bass	Drum	Skipjack herring	Gar	Buffalo	Silver carp	Common Carp	Grass carp	Shad	Yellow perch
No. caught	0	<b>7,750</b>	3,911	3,692	147	133	0	0	0	0	0	0	0	133
(per acre)	(0.00)	<b>(0.45)</b>	(0.23)	(0.22)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
No. harvested	0	<b>2,693</b>	988	1,705	0	0	0	0	0	0	0	0	0	133
(per acre)	(0.00)	<b>(0.16)</b>	(0.06)	(0.10)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
% of total no. harvested		<b>24.3</b>	8.9	15.4										1.2
Lb. harvested		<b>755</b>	530	225										99
(per acre)		<b>(0.04)</b>	(0.03)	(0.01)										(0.01)
% of total lb. harvested		<b>8.81</b>	6.18	2.63										1.16
Mean length (in)			10.5	7.0										12.0
Mean weight (lb)			0.52	0.13										0.74
No. of fishing trips for that species		<b>0</b>												
% of all trips		<b>0.0</b>												
Hours fished for that species (per acre)		<b>0</b>												
No. harvested fishing for that species		<b>0</b>												
Lb harvested fishing for that species		<b>0</b>												
No./hour harvested fishing for that species		<b>0.00</b>												
% success fishing for that species														

Table 64. Crappie catch and harvest statistics derived at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

	White crappie				Black crappie				
	Harvested		Released		Total	Harvested		Released	Total
	≥10.0 in	<10.0 in	≥10.0 in			≥10.0 in	<10.0 in	≥10.0 in	
*Total no. of crappie	5,152	4,177	1,949	11,278	1,331	133	0	1,464	
% of crappie harvested by number	79.5				20.5				
*Total weight of crappie (lb)	4,517	1,786	832	7,135	1,149	50	0	1,199	
% of crappie harvested by weight	79.7				20.3				
Mean length (in)	12.1				11.6				
Mean weight (lb)	0.88				0.86				
*Catch rate (fish/hr)	0.41				0.05				
*Harvest rate (fish/hr)	0.187				0.048				

\* Includes effort and catch of non-crappie anglers

Table 65. Monthly crappie angling success at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

Month	Total no. of crappie caught	Total no. of crappie harvested	*Total no. of crappie harvested	No. of crappie fishing trips	No. of interviews targeting crappie	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
Dec	5,155	2,357	2,357	4,089	35	9,475	5,155	0.54	2,357	0.25
Jan	7,587	4,126	4,126	2,939	24	6,809	7,587	1.11	4,126	0.61
Feb	0	0	0	**349.47	1	**809.81	0	0.00	0	0.00
Total	12,743	6,483	*6483	7,377	60	17,094	12,742		6,483	
Mean	4,248	2,161	*2161	2,459	20	5,698	4,247	0.55	2161.00	0.28

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

\*\*Use with caution; Extrapolated effort for this month in which no anglers interviewed successfully caught crappie

Table 66. Monthly black bass angling success at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

Month	Total no. of bass caught	Total no. of bass harvested	*Total no. of bass harvested	No. of black bass fishing trips	No. of interviews targeting bass	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
Dec	1,767	0	0	935	8	2,166	1,767	0.82	0	0	0.00	0.00
Jan	666	0	0	612	5	1,419	532	0.38	0	0	0.00	0.00
Feb	0	0	0	**698.95	2	**1619.62	0	0.00	0	0	0.00	0.00
Total	2,433	0	0	2,246	15	5,204	2,299		0	0		
Mean	811	0	*0	749	5	1,735	766	0	0	*0	0	0

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

\*\*Use with caution; Extrapolated effort for this month in which no anglers interviewed successfully caught black bass

Table 67. Black bass catch and harvest statistics derived at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

	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	0	1,717	573	2,433	0	0	0	0	0	0	0
*Total no. of bass	(*0.0)		(*573)								
% of bass harvested by number											
Total weight of bass (lb)		2,221	740	3,146							
*Total weight of bass (lb)			(*740)								
% of bass harvested by weight											
Mean length (in)											
Mean weight (lb)											
**Catch rate (fish/hr)	0.09										
**Harvest rate (fish/hr)											

\* 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 68. Monthly panfish angling success at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

Month	Total no. of panfish caught	Total no. of panfish harvested	No. of panfish fishing trips	No. of interviews targeting panfish	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
Dec	0	0	0	0	0	0	0.00	0	0.00
Jan	0	0	0	0	0	0	0.00	0	0.00
Feb	852	0	349	1	810	852	1.05	0	0.00
Total	852	0	349	1	810	852		0	
Mean	284	0	116	0	270	284	0	0	0

Table 69. Panfish catch and harvest statistics derived from Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

	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	0.0	0	0.0	852	0	0	0	0.0
% of panfish harvested by number								
Total weight of panfish (lb)				36				
% of panfish harvested by weight								
Mean length (in)								
Mean weight (lb)								
*Catch rate (fish/hr)	0.03							
*Harvest rate (fish/hr)								

\* includes effort and catch of non-panfish anglers

Table 70. Monthly catfish angling success at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

Month	Total no. of catfish caught	Total no. of catfish harvested	No. of catfish fishing trips	No. of interviews targeting catfish	Hours fished by catfish anglers	Catfish caught by anglers	Catfish caught/ hour by catfish anglers	Catfish harvested by catfish anglers	Catfish harvested/ hour by catfish anglers
Dec	1,915	1,767	467	4	1,083	1,767	1.63	1,620	1.50
Jan	0	0	*929	6	*2153	0	0.00	0	0.00
Feb	0	0	*155	1	*359	0	0.00	0	0.00
Total	1,915	1,767	1,551	11	3,595	1,767		1,620	
Mean	638	589	517	4	1,198	589	1	540	0

\*Use with caution; Extrapolated effort for this month in which no anglers interviewed successfully caught catfish

Table 71. Catfish catch and harvest statistics derived at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

	Blue catfish			Channel catfish			Flathead catfish					
	Harvest	Release		Total	Harvest	Release		Total	Harvest	Release		Total
		8.0-11.9 in	≥12.0 in			8.0-11.9 in	≥12.0 in			8.0-11.9 in	≥12.0 in	
Total no. of catfish	1,178	0	147	1,325.6	589	0	0	589	0	0	0	0
% of catfish harvested by number	66.7				33.3							
Total weight of catfish (lb)	828		1,320		1,227			1,227				
% of catfish harvested by weight	40.3				59.7							
Mean length (in)	13.1				18.8							
Mean weight (lb)	0.70				2.08							
*Catch rate (fish/hr)	0.05				0.02							
*Harvest rate (fish/hr)	0.043				0.021							

\* includes effort and catch of non-catfish anglers

Table 72. Monthly Morone angling success at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

Month	Total no. of <i>Morone</i> caught	Total no. of <i>Morone</i> harvested	No. of <i>Morone</i> fishing trips	No. of interviews targeting <i>Morone</i>	Hours fished by <i>Morone</i> anglers	<i>Morone</i> caught by <i>Morone</i> anglers	<i>Morone</i> caught/ hour by <i>Morone</i> anglers	<i>Morone</i> harvested by <i>Morone</i> anglers	<i>Morone</i> harvested/ hour by <i>Morone</i> anglers
Dec	2,504	589	0	0	0	0	0.00	0	0.00
Jan	2,263	399.3	0	0	0	0	0.00	0	0.00
Feb	2,984	1,705	0	0	0	0	0.00	0	0.00
Total	7,750	2,693	0	0	0	0		0	
Mean	2583	898	0	0	0	0	0	0	0

\*No interviewed anglers targeted *Morone*

Table 73. Morone catch and harvest statistics derived at Lake Barkley (Eddy Creek, Little River, northern Lake Barkley) from 1 December 2018 through 15 February 2019.

	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			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>	988	1,393	0	3,911	1,705	0	3,692	0	0	0	0.0	0	0	147	147
% of <i>Morone</i> harvested by number	36.7			63.3											
Total weight of <i>Morone</i> (lb)	530	677		1,953	225		356							470.7	471
% of <i>Morone</i> harvested by weight	70.2			29.8											
Mean length (in)	10.5			7.0											
Mean weight (lb)	0.52			0.13											
*Catch rate (fish/hr)	0.14			0.13						0.01					
*Harvest rate (fish/hr)	0.036			0.062											

\* includes effort and catch of non-morone anglers

Table 74. Species composition, relative abundance, and CPUE (fish/hr) of largemouth bass collected during diurnal electrofishing at Lake Beshear during 2018.

Season	Inch class																		Total	CPUE	Std err		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21	22
Spring	5	5		5	2	6	5	6	6	3	5	6	11	5	18	25	16	11	7	2	149	59.6	4.6
Fall	9	44	51	17	13	24	28	10	4	5	3	3	2	1	1	1				1	217	86.8	5.2

w fdpsdlb.d18 and w fdw rlb.d18

Table 75. Spring diurnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Lake Beshear during April or May of 2009 to 2018.

Year	Mean length age-3 at capture	*Mean length age-3 at capture	Age-1		Length group												Total		PSD	RSD <sub>15</sub>
			CPUE	Std err	<8.0 in	≥12.0 in	12.0-14.9 in	≥15.0 in	≥18.0 in	≥20.0 in	CPUE	Std err								
2018	13.8	13.8	6	1.3	6.8	0.8	43.6	2.7	5.6	1	38	3	24.4	2	8	1.8	59.6	4.6	83	72
2017 <sup>A</sup>	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
2016AB	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 <sup>B</sup>	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 <sup>A</sup>	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
2013 <sup>A</sup>	13.3	13.4	33.8	9.6	37.5	10.3	63.0	11.8	18.0	5.5	45.0	7.2	23.5	5.6	6.0	1.4	127.0	18.4	70	50
2012 <sup>A</sup>	13.3	13.4	27.6	5.5	34.4	4.9	46.8	3.6	8.8	2.2	38.0	4.6	18.4	1.8	4.4	1.0	114.8	7.0	58	47
2011	13.3	13.4	11.7	2.2	13.5	1.7	65.0	9.2	17.5	4.8	47.5	5.9	23.5	3.0	5.5	1.7	92.5	10.3	82	60
2010 <sup>A</sup>	13.8	13.9	22.3	4.9	9.0	1.7	51.0	6.9	11.3	1.3	39.7	6.1	14.0	3.8	3.7	1.9	82.7	15.7	69	54
2009 <sup>A</sup>	13.8	13.9	5.2	1.6	3.6	1.7	35.6	3.0	6.0	0.6	29.6	2.9	13.6	1.7	4.4	1.6	47.2	4.6	82	68
<b>Average</b>	<b>13.6</b>	<b>13.7</b>	<b>15.0</b>		<b>14.9</b>		<b>55.6</b>		<b>12.6</b>		<b>43.0</b>		<b>21.8</b>		<b>5.5</b>		<b>87.5</b>		<b>75.8</b>	<b>58.9</b>
LBFMP	≥ 12.0 in		≥ 10		≥ 45		≥ 15		≥ 30		≥ 3								55 - 75 20 - 40	

(Lake Beshear Bass Database.xls)

Data for 1985-2008 is listed in previous year reports.

<sup>A</sup> age and growth data was not collected. Previous year data used for age estimates.

<sup>B</sup> 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

Table 76. Lake specific assessment for largemouth bass collected at Lake Beshear from 2009-2018. This table includes the parameter estimates and the individual score as well as the total score and assessment rating. The final two columns list the instantaneous mortality (Z) and annual mortality (A).

Year	Mean length	*Mean	CPUE age-1	Length group			Total score	Assessment rating	Z	A
	age-3 at capture	length age-3 at capture		12.0-14.9 in CPUE	≥15.0 in CPUE	≥20.0 in CPUE				
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 <sup>B</sup>	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 <sup>A</sup>	13.3	13.4	1.9	18.0	43.6	4.4			0.145	13.5
Score	3		1	4	4	3	15	G		
2013 <sup>A</sup>	13.3	13.4	33.8	18.0	45.0	6.0			0.355	29.9
Score	3		4	4	4	4	19	E		
2012 <sup>A</sup>	13.3	13.4	27.6	8.8	38.0	4.4			0.291	25.2
Score	3		4	2	3	3	15	G		
2011	13.3	13.4	11.7	17.5	47.5	5.5			0.194	17.6
Score	3		3	4	4	4	18	G		
2010 <sup>A</sup>	13.8	13.9	22.3	11.3	39.7	3.7			0.297	25.7
Score	3		4	3	3	2	15	G		
2009 <sup>A</sup>	13.8	13.9	5.2	6.0	29.6	4.4			0.142	13.2
Score	3		2	1	2	3	11	G		
Average	13.6	13.7	15.0	12.6	43.0	5.5	15.5		0.294	25.1

Data from 1985 to 2008 is listed in previous year reports.

<sup>A</sup> age and growth data was not collected. Previous year data used for age estimates.

<sup>B</sup> 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.

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 77. Age-0 CPUE (fish/hr) and mean length (in) of 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 <sup>A</sup>		Age 0 <sup>A</sup>		Age 0 ≥5.0 in <sup>A</sup>		Age 1 <sup>B</sup>	
	Mean length	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err
2018	5.3	0.1	50.7	4.3	29.6			
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
2009	3.6	0.1	24.8	5.3	2.0	0.6	22.3	4.9
Average	4.6		37.8		14.6		16.1	

<sup>A</sup> 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.

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

WFDWRLB.Dxx, WFDWRAGB.Dxx, WFDPSDLB.Dxx

Table 78. Length frequency and CPUE (fish/set) of channel catfish collected from Lake Beshear in June 2018 using hoopnets. Four tandem hoop nets were baited with Zote brand soap and fished for 3 consecutive nights.

Species	Inch class															Total	CPUE	Std err	
	7	8	9	11	12	13	14	15	16	17	18	19	20	21	22				23
Channel catfish	3	78	43	2	3	26	27	23	5	3	1	2	11	2	1	1	231	57.8	26.6

wfdcatlb.d18

Table 79. Length frequency and CPUE (fish/hr) of channel and blue catfish collected from Lake Beshear in June 2018 using trotlines. A total of eight, 100 hook/night sets were used. Trotlines were baited with cutbait.

Species	Inch class														Total	CPUE	Std err
	8	9	12	13	14	15	16	17	18	19	21	22	23	27			
Blue catfish				5	1	2	1							1	10	1.3	0.5
Channel catfish	5	2	1	2	3	4	2	1	1	1	1	1	1		25	3.1	0.7

wfdcatlb.d18

Table 80. Relative weight (Wr) of each length group of blue and channel catfish collected from Lake Beshear during June 2018. Fish were collected using trotlines and hoopnets.

Species	Length group											
	12.0-19.9 in			20.0-29.9 in			≥30.0 in			Total		
	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err
Blue catfish	9	85	3	1	109					10	87	4

Channel catfish	Length group											
	11.0-15.9 in			16.0-23.9 in			≥24.0 in			Total		
	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err	N	Wr	Std err
	57	89	1	33	109	3				90	96	2

wfdcatb.d18

Table 81. Age frequency of blue catfish collected at Lake Beshear in June 2018. No CPUE was calculated since multiple sampling methods were used.

Age	Inch class					Total	%
	13	14	15	16	28		
3	5	1	2	1		9	90
11					1	1	10
Total	5	1	2	1	1	10	
%	50	10	20	10	10		

wfdcatlb.d18 and wfdlbcag.d18



Table 82. Age frequency of channel catfish collected from Lake Beshear in June 2018. No CPUE was calculated since multiple methods were used.

Age	Inch class														Total	%	
	8	9	11	12	13	14	15	16	17	18	19	20	21	22			23
1	83	45														128	50
3			2	4	28	30	27	6	4	1	1					103	40
6												3		1		4	2
10															2	2	1
11								1			1	6	2	1		11	4
12												2	2			4	2
13									1	1						2	1
14														1		1	0
Total	83	45	2	4	28	30	27	7	4	2	3	11	4	3	2	255	
%	33	18	1	2	11	12	11	3	2	1	1	4	2	1	1		

wfdcatlb.d18 and wfdlbcag.d18

Table 83. Mean back-calculated length (in) at each annulus of blue catfish including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Lake Beshear in June 2018.

Year class	N	Age											
		1	2	3	4	5	6	7	8	9	10	11	
2015	9	6.6	10.6	14.3									
2007	1	5.4	9.0	12.4	14.0	16.2	18.5	20.3	22.3	27.8	27.1	28.2	
Mean	10	6.5	10.5	14.1	14.0	16.2	18.5	20.3	22.3	27.8	27.1	28.2	
Smallest		5.4	8.8	12.4									
Largest		8.3	12.4	16.3									
Std err		0.3	0.3	0.3									
Low 95% CI		5.9	9.8	13.4									
High 95% CI		7.1	11.2	14.8									

\* Intercept = 0.

wfdlbcag.d18

Table 84. Mean back-calculated length (in) at each annulus of channel catfish including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Lake Beshear in June 2018.

Year class	N	Age																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
2017	19	8.2																		
2015	46	5.9	10.7	14.5																
2012	3	7.7	10.4	15.4	17.6	19.5	21.3													
2008	1	5.2	7.3	11.2	13.5	15.3	17.4	19.3	20.7	22.4	23.0									
2007	9	3.8	6.5	8.5	10.4	11.9	13.4	14.8	16.3	17.7	19.1	20.3								
2006	2	3.5	6.5	8.2	9.9	11.5	12.7	14.3	15.6	16.8	17.9	19.5	20.6							
2005	2	3.3	5.1	6.7	8.3	9.7	10.9	11.9	13.3	14.2	15.3	16.7	17.8	19.0						
2004	1	3.2	5.6	8.2	9.9	11.2	12.8	14.6	16.0	17.3	18.4	19.4	20.5	21.6	22.4					
1999	1	2.3	3.7	6.5	7.6	8.5	9.3	10.2	10.9	11.6	12.2	12.8	13.6	14.5	15.2	16.1	16.9	17.7	18.4	19.2
Mean	83	6.1	9.6	13.1	11.5	13.0	14.5	14.7	16.1	17.4	18.6	19.6	19.5	19.9	22.4	16.1	16.9	17.7	18.4	19.2
Smallest		3.0	4.8	6.0	7.5	8.9	10.3	11.6	13.0	14.0	15.1	16.3	17.4	18.5						
Largest		10.9	13.8	18.4	18.2	20.0	22.5	19.3	20.7	22.4	23.0	22.8	21.1	21.6						
Std err		0.2	0.3	0.4	0.7	0.8	0.8	0.5	0.5	0.6	0.6	0.5	0.7	0.9						
Low 95% CI		5.7	9.1	12.4	10.0	11.5	12.9	13.7	15.1	16.3	17.6	18.6	18.1	18.1						
High 95% CI		6.5	10.2	13.9	12.9	14.5	16.1	15.6	17.0	18.5	19.7	20.6	20.8	21.7						

\* Intercept = 0.

wfdlbcag.d18

Table 85. Species composition, relative abundance, and CPUE (fish/hr) of fish collected during 1.0 hour (4- 900s-runs) of diurnal electrofishing at Lake Pennyrile on 25 April, 2018.

Species	Inch class																Total	CPUE	Std err
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	16	20			
Largemouth bass			1	11	12	5		21	10	20	12	2	2	3	1	1	101	101.0	21.3
Bluegill	4	31	51	24	19	39	95	27									290	290.0	35.2
Redear sunfish		2	12	13	8	11	13	18	9								86	86.0	19.1
White crappie								1	1		1						3	3.0	1.9
Longear sunfish		2	15	7	18	4											46	46.0	14.4
Yellow bullhead								1	2								3	3.0	1.0
Warmouth		4	9	16	9	11	6										55	55.0	3.8
Topminnow		1															1	1.0	1.0

wfdpsdp.d18

Table 86. Spring, diurnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Pennyrile Lake from 2009-2017.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	Std err
	CPUE	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err	CPUE	Std err		
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			61.0	8.2
2013	63.0	11.8	48.0	4.9	11.0	3.0	2.0	1.2	1.0	1.0	124.0	12.3
2012*												
2011	32.0	10.4	68.0	7.7	12.0	2.5	1.6	1.0	0.8	0.8	113.6	18.3
2010	46.4	9.3	64.3	10.7	12.5	3.3	7.1	1.6	4.5	1.8	130.4	17.0
2009*												
Mean	38.8		59.6		9.4		3.1		1.4		111.0	

wfdpsdp.dxx

Data from 1990 to 2008 is listed in previous year reports.

\*Did not sample

Table 87. Spring electrofishing CPUE (fish/hr) for each length group of bluegill and redear sunfish collected at Lake Pennyrite during May from 2009-2018.

Species	Year	Length group								Total	
		<3.0 in		3.0-5.9 in		6.0-7.9 in		≥8.0 in		CPUE	Std err
Bluegill	2018	35.0	12.8	94.0	20.8	134.0	9.0	27.0	7.7	290.0	35.2
	2017	6.0	2.58	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	
	2014			12.0	4.3	15.0	6.6			27.0	7.9
	2013*	1.0	1.0	18.0	5.8	21.0	6.2			40.0	12.1
	2012	Did Not Sample									
	2011	1.6	1.0	36.8	20.2	41.6	14.2	5.6	1.6	85.6	35.7
	2010	3.6	1.9	81.3	17.2	40.2	6.2	6.3	2.7	131.3	17.0
	2009	Did Not Sample									
Mean		17.5		59.8		51.2		21.8		142.6	
Redear sunfish	2018	2.0	1.2	33.0	12.8	24.0	5.4	27.0	4.1	86.0	19.1
	2017			15.0	3.0	14.0	10.4	25.0	18.4	54.0	30.4
	2016			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	
	2014			8.0	5.4	17.0	5.7	8.0	3.7	33.0	12.5
	2013*			4.0	2.3	9.0	5.5	12.0	2.8	25.0	6.6
	2012	Did Not Sample									
	2011			9.6	4.5	17.6	8.1	28.0	11.9	55.2	21.4
	2010			3.6	1.9	8.9	2.3	17.9	5.0	30.4	5.4
	2009	Did Not Sample									
Mean		1.4		12.6		13.8		22.6		49.4	

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Data from 1990 to 2008 is listed in previous year reports.

\*2013 sample collected in June due to water conditions at normal sample time in May

Table 88. PSD and RSD values obtained for largemouth bass, bluegill and redear sunfish collected during 1.0 hour of diurnal electrofishing (4 - 900s-runs) at Lake Pennyrite on 25 April 2018. 95% confidence intervals are in parentheses.

Species	N	PSD	RSD*
Largemouth bass	72	13 (+/-8)	3 (+/-4)
Bluegill	255	63 (+/-6)	11 (+/-4)
Redear sunfish	72	56 (+/-12)	13 (+/-8)

\* Largemouth =  $RSD_{15}$ , Bluegill =  $RSD_8$ , Redear sunfish =  $RSD_9$ .

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Table 89. Lake specific assessment for largemouth bass collected at Pennyrile Lake from 2009-2018. 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	Age-1 CPUE	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in	Mean length	Total score	Assessment rating	Z	A
					age-3 at capture				
2018	29.0	7.0	2.0	1.0	11.7				
Score	1	1	2	4	4	12	F		
2017	28.0	4.0	5.0	1.0	11.7				
Score	1	1	4	4	4	14	G		
2016	38.0	13.0	3.0	1.0	11.7				
Score	2	2	2	4	4	14	G		
2015	36.0	8.8	3.2	0.8	11.7				
Score	2	1	2	4	4	13	G		
2014	19.8	7.0	1.0		11.7				
Score	1	1	1		4	7	P		
2013	10.6	11.0	2.0	1.0	11.7				
Score	1	2	2	4	4	13	G		
2012	Did not sample								
Score									
2011	31.0	12.0	1.6	0.8	11.7			0.488	38.6
Score	1	2	1	4	4	12	F		
2010	36.1	12.3	7.1	4.5					
Score	2	2	4	4	1	13	G		
2009	Did not sample								
Score									
Average	28.6	9.4	3.1	1.3	11.7				

Rating

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

Table 90. Fishery statistics derived from a creel survey at Lake Pennyrile (47 acres) from 15 March 2018 through 1 March 2019.

<u>Creel Card Returns</u>	<u>Frequency</u>	<u>(%)</u>
Blank card	5	(6.3)
Irrelevant messages	5	(6.3)
Comments only	3	(3.8)
Incomplete card	15	(18.8)
Complete card	52	(65.0)
<u>Reported Fishing Trips by Month</u>		
April	19	(30.6)
May	24	(38.7)
June	8	(12.9)
July	6	(9.7)
August	2	(3.2)
September	3	(4.8)
<u>Effort per Fishing Trip (hours)</u>		
0-1.0	7	(10.9)
>1.0-2.0	22	(34.4)
>2.0-3.0	13	(20.3)
>3.0-4.0	10	(15.6)
>4.0-5.0	4	(6.3)
>5.0-6.0	7	(10.9)
>6.0-7.0	1	(1.6)
<u>License Status</u>		
Resident	50	(79.4)
Non-resident	13	(20.6)
<u>Method</u>		
Cork or bobber	23	(34.8)
Bottom fishing	18	(27.3)
Casting and retrieving	42	(63.6)
Fly fishing	2	(3.0)
<u>Target Species</u>		
Bluegill	29	(46.0)
Black bass	38	(60.3)
Catfish	15	(23.8)
Crappie	17	(27.0)
Redear	18	(20.6)
Anything	13	(28.6)
<u>Mode</u>		
Boat	19	(29.2)
Bank	31	(47.7)
Dock	23	(35.4)

Table 91. Length distribution for each species harvested (H) or released (R) (lengths estimated by anglers) at Lake Pennyrile (47 acres) from 15 March 2018 through 1 March 2019.

Species	Length group				Total	
	3-5 in	6-7 in	≥8 in			
Bluegill	H	1	60	30	91	
	R	62	60	22	144	
Redear	H	2	12	11	25	
	R	32	3		35	
<hr/>						
Crappie	Length group			Total		
	5-7 in	8-9 in	≥10 in			
Crappie	H	8	21	4	33	
	R	2			2	
<hr/>						
Black bass	Length group				Total	
	<8 in	8-11 in	12-14 in	15-19 in		
Black bass	H	4	3	24	1	32
	R	39	64	5		108
<hr/>						
Catfish	Length group			Total		
	8-11 in	12-14 in	≥15 in			
Catfish	H			1	1	
	R	4	1	1	6	
<hr/>						
Pumpkinseed	Length group				Total	
	3-5 in					
Pumpkinseed	R	1			1	

Table 92. CPUE (fish/hr) for sportfish species harvested (H) or released (R) (lengths estimated by anglers) by all anglers who reported effort (total reported effort = 185.5 hr) at Lake Pennyrile (47 acres) from 15 March 2018 through 1 March 2019.

Species	Inch class				Total	
	3-5 in	6-7 in	≥8 in			
Bluegill	H	0.01	0.32	0.16	0.49	
	R	0.33	0.32	0.12	0.78	
Redear	H	0.01	0.07	0.06	0.14	
	R	0.17	0.02		0.19	
<hr/>						
Crappie	Length group			Total		
	5-7 in	8-9 in	≥10 in			
Crappie	H	0.04	0.11	0.02	0.18	
	R	0.01			0.01	
<hr/>						
Black bass	Length group				Total	
	<8 in	8-11 in	12-14 in	15-19 in		
Black bass	H	0.02	0.02	0.13	0.01	0.17
	R	0.21	0.35	0.03		0.58
<hr/>						
Catfish	Length group			Total		
	8-11 in	12-14 in	≥15 in			
Catfish	R	0.01	0.01	0.01	0.02	



Table 93. CPUE (fish/hr) for sportfish species harvested (H) or released (R) (lengths estimated by anglers) by anglers specifically targeting each species who reported effort at Lake Pennyrile (47 acres) from 15 March 2018 through 1 March 2019.

Target species		Inch class			Total	
		3-5 in	6-7 in	≥8 in		
Bluegill	H	0.01	0.59	0.22	0.82	
	R	0.53	0.57	0.19	1.28	
Redear	H		0.23	0.21	0.44	
	R	0.19	0.02		0.21	
		5-7 in	8-9 in	≥10 in		
Crappie	H	0.12	0.31	0.06	0.48	
	R	0.02			0.02	
		<8 in	8-11 in	12-14 in	15-19 in	
Black bass	H	0.04		0.23	0.01	0.27
	R	0.34	0.51	0.04		0.89
		8-11 in	12-14 in	≥15 in		
Catfish	R	0.04	0.02	0.02		0.08

Table 94. Effort statistics derived from a creel survey at Lake Pennyrile (47 acres) from 15 March 2018 through 1 March 2019 including only trips that included reported effort.

	Species						Total
	Bluegill	Redear	Crappie	Black bass	Catfish	Anything	
No. of fishing trips targeting that species*	28	12	15	36	13	18	<b>63</b>
Hours fished for that species*	99.0	52.2	68.8	105.9	51.3	47.9	<b>185.5</b>

\* ~5% of card returns did not report effort and target

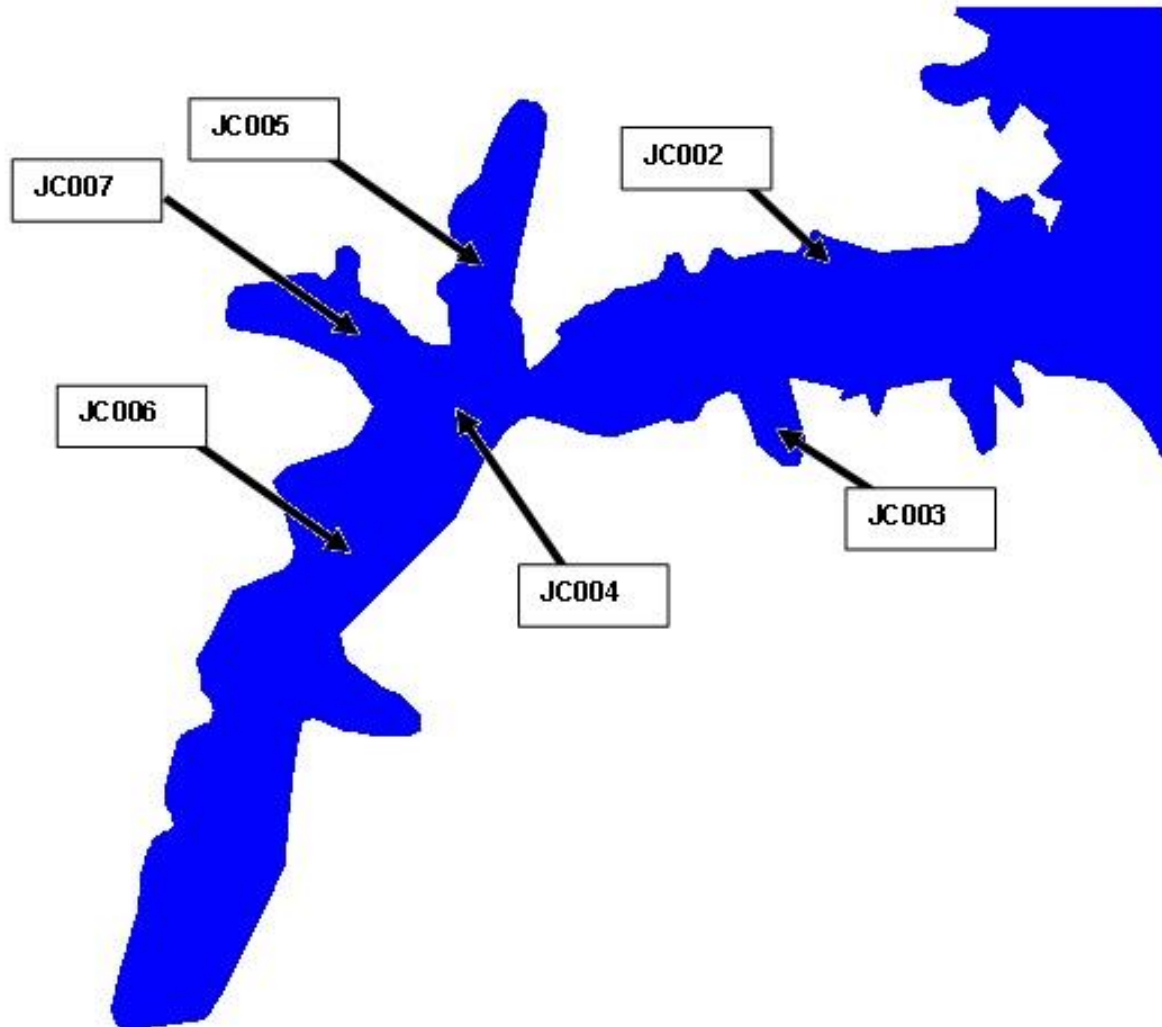
\*\*Many anglers reported multiple target species

Table 95. Species composition, relative abundance, and CPUE (fish/hr) of sportfish collected from Ballard Wildlife Management Area lakes during April-May 2018. A total of 0.5 hrs (2- 900-second runs) of electrofishing was conducted at each lake.

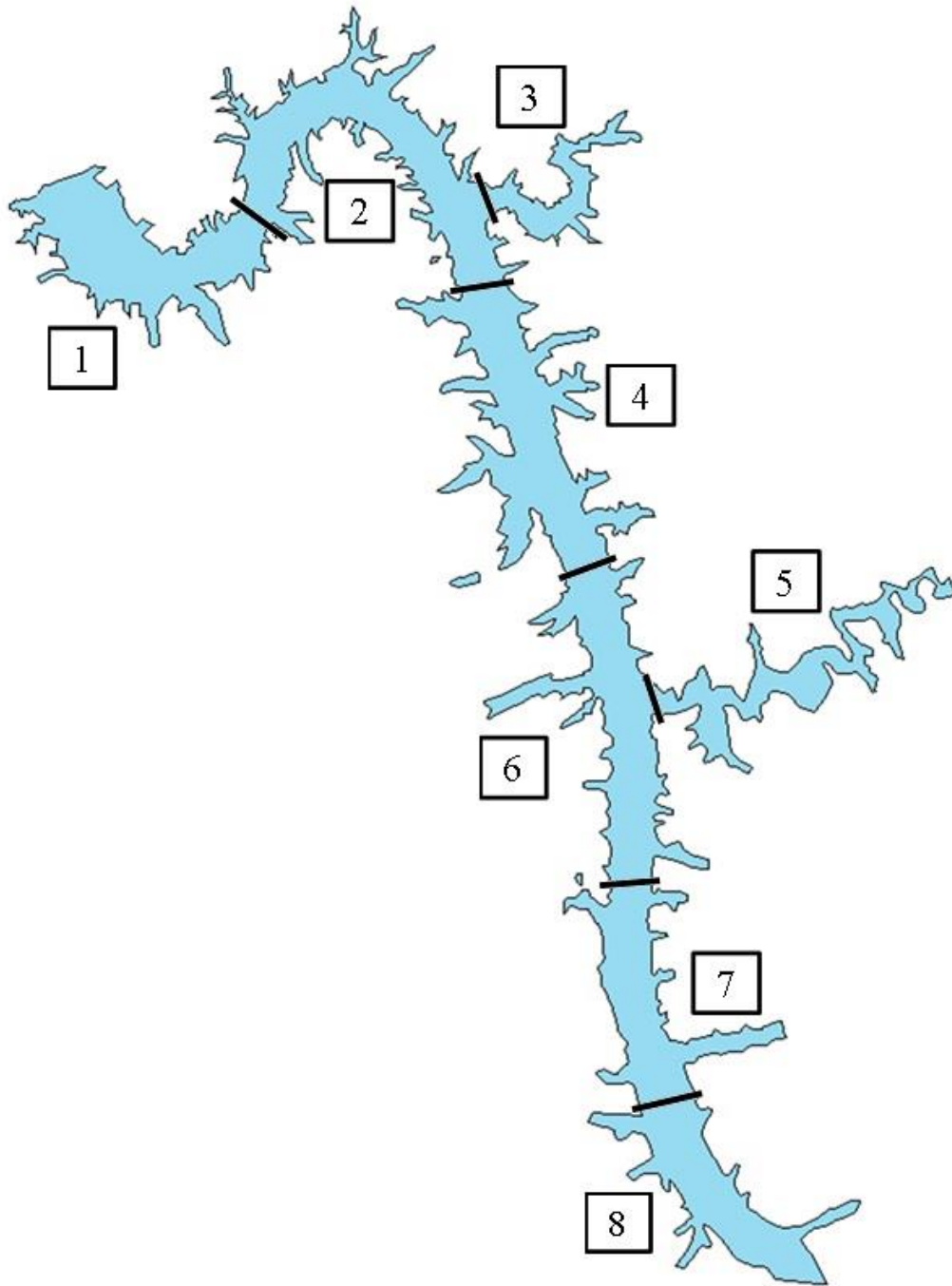
Area	Inch class																		Total	CPUE	Std err	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				
<b>Little Turner</b>																						
Bluegill		2	7	7	3	3	1													23	46.0	2.0
Largemouth bass					1				1	1	1	2	3	1						10	20.0	8.0
<b>Gravel pit</b>																						
Bluegill	11	18			5	4	16	1												55	110.0	34.0
Redear sunfish								1												1	2.0	2.0
Largemouth bass						1	11	5	2	20	12	6	2							59	118.0	34.0
Channel catfish											1		3			1	1	4	10	20.0		
White crappie									1	3	2								6	12.0	12.0	
<b>Shelby</b>																						
Bluegill		11	15	9	1	5														41	82.0	26.0
Spotted bass				1	1			1	1		1									5	10.0	6.0
Largemouth bass			1	6	1			1			1	1				1			12	24.0	12.0	
<b>Castor</b>																						
Bluegill	2	6	3	14	4	5	2													36	72.0	16.0
Redear sunfish					1		1													2	4.0	4.0
Largemouth bass				2	3	1	1		1	3	4	1	3		1				20	40.0	8.0	

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Appendix A. 2018 Larval fish sample sites in Jonathan Creek embayment, Kentucky Lake.



Appendix B. Lake Barkley creel survey areas, 2018.



## Appendix C. LAKE Barkley ANGLER ATTITUDE SURVEY 2018.

1. Have you been surveyed this year?    Yes - stop survey                      No – continue
2. Name \_\_\_\_\_ (Optional)                      and Zip Code \_\_\_\_\_
3. How many times do you fish Lake Barkley each year?  
       First time here 5.6%                      1 to 4 9.6%                      5-10 19.7%                      More than 10 65.2%
4. Which species of fish do you fish for at Lake Barkley (**check all that applies**)?  
       Redear 16.7%    Bluegill 23.4%    Black Bass 60.2%    Crappie 53.2%    Catfish 33.7%    White bass 17.0%    Yellow bass 7.5%  
       **Other-** Asian carp 0.3%; Striped bass, Sauger, Anything each 0.6%
5. Which one species do you fish for most at Lake Barkley (**check only one**)?  
       Redear 1.7%    Bluegill 3.4%                      Black Bass 45.0%    Crappie 29.5%    Catfish 16.1%    White bass 3.4%    Yellow  
       bass 0.6%                      **Other-** Anything 0.3%

### 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 Lake Barkley?  
       Very satisfied 13.3%    Somewhat satisfied 45.0%    Neutral 21.7%    Somewhat dissatisfied 11.7%  
       Very dissatisfied 3.3%    No opinion 5.0%
- 6a. If you responded with somewhat or very dissatisfied in question (6) – what is the single most important reason for your dissatisfaction?  
       Number of fish 100.0%    Size of fish 0.0%    Not happy with regulations 0.0%    Don't know how to catch them 0.0%

#### Bluegill Anglers

7. In general, what level of satisfaction or dissatisfaction do you have with the bluegill fishing at Lake Barkley?  
       Very satisfied 41.9%    Somewhat satisfied 31.4%    Neutral 7.0%    Somewhat dissatisfied 7.0%  
       Very dissatisfied 2.3%    No opinion 10.5%
- 7a. If you responded with somewhat or very dissatisfied in question (7) – what is the single most important reason for your dissatisfaction?  
       Number of fish 85.7%                      Size of fish 14.3%                      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 Lake Barkley?  
       Very satisfied 15.7%    Somewhat satisfied 32.7%    Neutral 14.3%    Somewhat dissatisfied 19.8%  
       Very dissatisfied 10.6%    No opinion 6.9%
- 8a. If you responded with somewhat or very dissatisfied in question (8) – what is the single most important reason for your dissatisfaction?  
       Number of fish 88.3%                      Size of fish 1.7%                      Not happy with regulations 0.0%    **Other-** Too many tournaments, No grass, Water level too low each 1.7%; Asian carp 5.0%

#### Crappie Anglers

9. In general, what level of satisfaction or dissatisfaction do you have with crappie fishing at Lake Barkley?  
       Very satisfied 17.7%    Somewhat satisfied 35.9%    Neutral 14.6%    Somewhat dissatisfied 15.6%  
       Very dissatisfied 4.7%    No opinion 11.5%
- 9a. If you responded with somewhat or very dissatisfied in question (9) – what is the single most important reason for your dissatisfaction?  
       Number of fish 97.1%                      Size of fish 0.0%                      Not happy with regulations 0.0%    **Other-** Poor weather 2.9%

#### Catfish Anglers

10. In general, what level of satisfaction or dissatisfaction do you have with the catfish fishing at Lake Barkley?  
       Very satisfied 73.8%    Somewhat satisfied 18.0%    Neutral 2.5%    Somewhat dissatisfied 0.8%  
       Very dissatisfied 0.0%    No opinion 4.9%
- 10a. If you responded with somewhat or very dissatisfied in question (10) – what is the single most important reason for your dissatisfaction?  
       Number of fish 100.0%    Size of fish 0.0%    Not happy with regulations 0.0%    Too much commercial fishing 0.0%

## White Bass Anglers

11. In general, what level of satisfaction or dissatisfaction do you have with the white bass fishing at Lake Barkley?  
 Very satisfied 61.3%    Somewhat satisfied 25.8%    Neutral 3.2%    Somewhat dissatisfied 6.5%    Very  
 dissatisfied 0.0%    No opinion 3.2%
- 11a. If you responded with somewhat or very dissatisfied in question (11) – what is the single most important reason for your dissatisfaction?  
 Number of fish 75.0%    Size of fish 0.0%    Not happy with regulations 0.0%    **Other-** Asian carp 25.0%

## All Anglers

12. Are you satisfied with the current size and creel limits on all sport fish at Lake Barkley? Yes 94.4%    No 5.6%
- 12a. If you responded “No” to Question 11, which species are you dissatisfied with and what size and creel limits would you prefer?    Creel Limit (CL), Length Limit (LL), Slot Limit (SL)
- Crappie - 15 CL, 11” LL, 12” LL, 12-15” SL
- Bass – Largemouth 12” LL, Smallmouth 12” LL, Spotted 15” LL
- Catch photo release bass tournaments only, limit bass tournament anglers to 3 fish, ban all bass tournaments
13. Are you aware that the Kentucky Department of Fish and Wildlife creates and maintains shallow water stakebeds marked with white poles, and deepwater brushpiles marked with white buoys as fish attractors in Lake Barkley?  
 Yes 81.0%    No 19.0%
- 13a. When you fish Lake Barkley, how regularly do you fish around Department placed fish attractors?  
 Always 0.7%    Frequently 16.1%    Occasionally 37.8%    Rarely 23.4%    Never 22.0%
- 13b. If you answered “Rarely” or “Never”, what is the single most important reason you don’t fish around Department placed fish attractors?  
 Over fished 2.4%    No boat 7.1%    No success 7.1%    Don’t know their location 33.3%    Wrong water depth 9.5%  
 Fishes own stuff 24.6%    Boat too big 0.0%    Get snagged 0.8%    **Other-** only while crappie fishing, only in fall and spring, only in spring, only fishes the channel, doesn’t fish for crappie, no experience with attractors, only fishes ledges each 0.8%; wrong species, 1<sup>st</sup> time at Lake Barkley each 1.6%; only fishes docks 2.4%; only catfishes 4.0%
14. If you fish for crappie, do you spider rig (three or more poles per angler at the same time) as your primary method of crappie fishing?  
 Yes 13.9%    No 41.8%    Don’t Fish 44.3%
- 14a. If “Yes”, how many poles do you use?    3 26.1%    4 52.2%    5 2.2%    6 8.7%    >6 10.9%
15. Do you support or oppose a pole limit while fishing for crappie? Support 23.1%    Oppose 14.1%    No Opinion 62.8%
- 15a. If you support a pole limit, what should be the pole limit per person?  
 1 8.8%    2 33.8%    3 40.0%    4 15.0%    5 2.5%    6 0.0%    >6 0.0%
16. If you fish for catfish, do you fish with multiple poles at the same time? Yes 15.1%    No 20.1%    Don’t Fish 64.8%
- 16a. If “Yes”, how many poles do you use?    2 69.2%    3 19.2%    4 11.5%    5 0.0%    6 0.0%    >6 0.0%
17. Do you support or oppose a pole limit while fishing for catfish? Support 13.5%    Oppose 24.6%    No Opinion 61.9%
- 17a. If you support a pole limit, what should be the pole limit per person?  
 1 23.5%    2 23.5%    3 29.4%    4 23.5%    5 0.0%    6 0.0%    >6 0.0%
18. If you fish for catfish in Lake Barkley, which is more important to you: catching trophy fish, or catching more keeper size fish to eat?  
 Trophy fish 10.6%    Catching keeper fish to eat 61.0%    Both equally important 27.6%    No opinion 0.8%
19. If you fish for bluegill, what do you consider to be a keeper size (inches) fish?  
 6 18.4%    7 5.3%    8 3.9%    9 0.3%    10 0.0%    don’t fish 71.0%    **Other-** 3 0.3%; 5 0.8%
- 19a. Which do you consider to be more important: Catching more keeper size bluegill, or more trophy size (>10in) bluegill?  
 More keepers 95.2%    More trophy size 3.8%    No Opinion 1.0%

20. If you fish for redear sunfish, what do you consider to be a keeper size (inches) fish?  
 6 7.2% 7 1.9% 8 12.3% 9 1.7% 10 3.3% don't fish 72.4% **Other-** 3 0.3%; 5 0.6%; 12 0.3%
- 20a. Which do you consider to be more important: Catching more keeper size redear, or more trophy size (>10in) redear?  
 More keepers 84.4% More trophy size 15.6% No Opinion 0.0%
21. Currently, sunfish ( bluegill, longear, and redear <6 inches) are allowed to be used as bait. How often do you use sunfish as bait?  
 Always 0.3% Frequently 0.6% Occasionally 3.3% Rarely 7.0% Never 88.9%
22. Are you aware that Asian carps are generally considered to be an excellent fish to eat? Yes 66.3% No 33.7%

#### Appendix D. Comments from Lake Pennyrile Voluntary Creel Survey Cards.

- Wish it would be easier to use/load my own boat with electric trolling motor. In the past, have accessed the back of the lake in my own canoe and had good fishing
- Been coming to Pennyrile for 20-22 years- seems like the bluegill was a bit slower this year and the bass had picked up
- 15 people fishing
- Fantastic bluegill fishing- I have fished here for the last 3 years in June. Quiet and relaxing fishing. Keep it like this!!!
- 2-3 years- no catfish whatsoever. Seemed like bluegill and redear were a little slow. Love coming here to fish. Estimate 325 miles from Letcher County. A hidden gem in my opinion
- Please build a dock just for fishing
- All were returned
- Need ramp to bring own small boat or kayak
- Make more spots available from the banks
- More bank access around lake along trail
- We fish in here, a big joke
- My son played around with a net and got 2 mud turtles
- Stock the lake, used to catch fish here
- A God @\*!# waste of time and money
- Came back today, not as good as yesterday
- I come frequently and love it. The staff is very friendly
- Very peaceful and quiet
- Very difficult to locate fish!
- Sucked
- Whatever you did the other year to the water killed all the fish. When you turned the water blue you killed the fishing. I used to catch a lot of fish. Not a thing now.
- It was great!!
- The fishing was fruitless
- There is no fish at all!!!
- Need to clear out places to fish from shore/ very grown up (vegetation)
- Nothing Terrible



## 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 2018 field season.

#### **Nolin River Lake**

##### Crappie Sampling

Nolin River Lake was sampled for crappie November 5-6 (Tables 2-6). Trap nets were set on the 5<sup>th</sup>, but heavy rain that night caused the lake to rise several feet and the nets had to be pulled on the 6<sup>th</sup>. The lake remained high for several weeks and nets could not be re-set. Sampling data are being included, but no inferences as to population structure or catch rate should be made. Weights and otoliths were collected from a sample of each inch class. Length at age data indicate excellent growth, which has been the case for the last several years.

#### **Rough River Lake**

##### Black bass Sampling

Spring sampling for largemouth bass could not be conducted in 2018 due to high water levels throughout the sampling period; therefore, population structure and catch rate data could not be collected. Rough River Lake was sampled in October to collect age-growth and length-weight data (Tables 7-10). Both the length at age data and condition data are good and very similar to those data collected in previous years.

##### Crappie Sampling

Trap netting to sample Rough River Lake's crappie population was conducted the last week of October (Tables 11-15). A total of 507 crappie (417 white crappie) were collected during 71 net-nights for a total CPUE of 7.1 fish/nn. Weights were taken and otoliths removed from a representative sample of each inch class. The CPUE's observed were much lower than anything previously recorded. The low catch rates are most likely due to the unseasonably warm temperature and stable weather pattern encountered during the week of sampling. The length and age distribution of the population is satisfactory and similar to past observations. Growth rate is similar to that collected over the last few years, but is still lower than growth rates observed from 2002-2009. Growth rates began declining in 2011 as the result of several overly abundant year classes back to back. Length at age continues to remain rangy with age groups showing significant overlap of inch classes.

##### Hybrid Striped Bass Sampling

Gill netting to monitor the hybrid striped bass population was conducted during last week of October (Tables 16-20). The Northwestern Fishery District ran nets on the South Fork and the Urban Fisheries Research Section ran nets on the North Fork. Catch rates in 2018 were slightly higher than the last couple of years, but in-line with previous collections. The catch rate of age-1 fish was significantly greater than it has been in many years. Growth rate is excellent as it has been for the last couple of years. Growth was fairly consistent from 1999 to 2014 and then began increasing in 2016. The age composition of the hybrid population in 2018 was unlike what is typically found. In 2018, age-0 (31.7%) and age-1 (59.8%) fish accounted for 91.5% of the population. In previous surveys, a higher percentage of age-2 to age-5 fish have been present in the population. Gill netting will continue in 2019 as part of a project to detect differences in survival and growth rate of reciprocal and original crosses. The hybrid striped bass population continues to be relatively stable and thriving. Mortality estimates for 2018 were the highest of record. This is supported by sampling data that indicated a lower frequency of larger/older fish. In addition, a creel survey was conducted at Rough River Lake in 2018 with which to cross-reference. The creel survey indicated a substantial increase in hybrids caught and harvested in 2018 compared to previous surveys, which mirrors the sampling data

and mortality estimates. Another creel survey and continued net sampling will be conducted in 2019 to see if this trend continues.

In response to frequent angler complaints about not being able to find or catch fish during the summer months, a radio telemetry project was initiated in 2018 to determine summer locations and patterns. Hybrid striped bass were collected via electrofishing from the upper lake/river area (Eveleigh to Adkins Camp boat ramps). Thirty-nine hybrid striped bass from 15.8-22.3 in were surgically implanted with VEMCO V13T transmitters (13x43mm, 12.0 g air). Twelve VEMCO VR2W receivers were deployed throughout the lake on May 11, 2018. Receivers will remain in place through 2020. All data will be compiled, analyzed and reported in 2020.

### Channel Catfish Sampling

Gill netting to assess the channel catfish population was conducted concurrently with hybrid striped bass sampling. A total of 74 channel catfish were collected over 10 net-nights for a CPUE of 7.4 fish per net-night (Tables 21-22). The catch rate and length distribution documented in 2018 is similar to previous collections. Weights were recorded for each catfish sampled and indicate condition (Wr) is good and similar to previous collections.

### Dissolved Oxygen – Temperature Profiles

Dissolved oxygen and temperature profiles were conducted in June, July, August, and October in 2018 (Tables 23-26) to document seasonal changes in water temperature and dissolved oxygen levels throughout the water column. Profiles were conducted at five sites (upper, middle, and lower South Fork and middle and lower North Fork) along the main channel of the lake. Profiles have been conducted since 2013 as part of two ongoing projects. One documenting survival and growth of stocked original and reciprocal hybrid striped bass, and the other monitoring seasonal movement and habitat use with radio telemetry equipment. D.O./temp profiles collections will continue through 2020.

### Creel Survey

A random, stratified, roving, creel survey was scheduled for 16 days per month at Rough River Lake from April 01 to October 31, 2018 to estimate angling pressure and angler catch/harvest statistics (Tables 27-33). The survey did not begin until April 11<sup>th</sup> due to lake conditions. Creel interviews and angler attitude surveys were collected using an iPad for the first time in 2018.

For survey purposes, the lake is divided into North Fork and South Fork sections with one section being surveyed per day (6-hour time period) during either a morning or afternoon time period. Each section (North and South forks) was further divided into three equal subsections that were randomly and progressively counted and interviewed spending an equal amount of time (2-hours) in each.

As has been the case in previous creel surveys conducted at Rough River Lake (1993, 1997, 1999, 2005, and 2010), the estimated angling effort declined from the preceding survey (22.95 man-hours/acre in 2018 vs. 24.50 man-hours/acre in 2010). This decline has been minimal in the 2000's (< 5 man-hours/acre) but was more precipitous in the 1990's. Despite the decline in angler effort, estimates for the total number of fish caught (371,981) and harvested (133,895) in 2018 were increases from 210 (213,787 fish caught and 68,683 harvested).

Black bass were the most sought after species in 2018, as they have been in every survey, with 11.52 man-hours per acre expended toward them. Black bass are followed by crappie with 5.57 man-hours per acre, hybrid striped bass at 1.4 man-hours per acre, and panfish and catfish very similar at 0.93 and 0.89 man-hours per acre, respectively. Those anglers indicating they were fishing for "Anything" expended 2.63 man-hours per acre. In 2018, an estimated 20.85 largemouth bass per acre were caught and 1.74 largemouth bass per acre were harvested averaging 15.1 in. The estimated 20.85 fish/acre caught is the highest ever recorded and is almost double the second highest value of 11.10 fish/acre in 1997. The 1.74 fish harvested/acre and average length of 15.1 in are also the highest values recorded for those statistics but are similar to prior estimates.

The estimated 5.57 hours per acre expended by crappie anglers in 2018 is the lowest amount of angling pressure for crappie recorded in any previous survey. Despite angling pressure in 2018 being the lowest recorded, the 30.37

white crappie caught per acre, the 16.70 white crappie harvested per acre, and the 2.99 white crappie harvested per hour are the highest values recorded to date for those parameters. The mean length of harvested white crappie in 2018 was similar to previous observations.

Overall, with the exception of black bass, angling pressure was lower in 2018. At the same time, the numbers of fish caught and harvested increased in 2018, indicating an increased rate of success for anglers.

The 1.40 angler-hours per acre estimated in 2018 for hybrid striped bass is similar to what has been estimated in past surveys, however, the 4.28 hybrid striped bass caught, 1.52 hybrid striped bass harvested per acre, and 0.91 hybrid striped bass harvested per hour greatly exceed these parameter values recorded in previous surveys. The mean length (16.7 in) of harvested hybrid striped bass is similar to previous surveys.

An angler attitude (AA) survey was conducted during the creel survey to determine angler preferences, satisfaction, and general knowledge of KDFWR projects (Figure 1). The number of angler attitude surveys completed in 2018 (N=793) is nearly four times greater than collected during the previous creel survey in 2010. Each respondent was asked for their home zip code. Ninety percent of respondents were Kentucky residents with the remaining ten percent originating from up to 13 different states. There is likely an overrepresentation of non-residents caused by data entry error (zip code). In general, species preference and satisfaction results are similar to the AA survey from 2010. Bass and crappie are, by far, the primary species most frequently targeted (80.9%). The vast majority of anglers (97.8% of bass anglers and 99.8% of crappie anglers) were “Satisfied” with the fishery (very or somewhat satisfied). Only 23 anglers indicated that they fish primarily for hybrid striped bass (2.9%), while 144 (18.2%) respondents indicated that they do fish for hybrids. Ninety-five percent of hybrid anglers were “Satisfied” with the fishery. The vast majority of respondents fish at Rough River Lake more than 10 times per year (73.6%), while another 22.7% fish at Rough River Lake between five and ten times annually. These two groups encompass 96.3% of respondents, which is a 20% increase from the 2010 survey. Questions 11-15 relate to habitat improvement efforts and were asked for the first time at Rough River Lake in 2018. The majority of respondents indicated they were aware that we (KDFWR) place fish habitat structures within the lake (69.9%, N = 554), and 94.8% (N = 525) indicated that they have fished around the structures previously. The majority of respondents discovered the structures while the lake was at winter pool (67.0%), while 16.6% learned about the structures from the KDFWR website. Furthermore, 75.1% of respondents indicated they were aware that the locations of KDFWR-placed structures are available on our website. Finally, 76.2% of respondents feel that the addition of these structures has improved their fishing success. The summation of the habitat structure questions affirms the emphasis we have placed on habitat improvement in recent years and provides the evidence desired to continue such efforts.

**Figure 1. Results of Rough River Lake angler attitude survey conducted April 01-October 31, 2018.**

**ROUGH RIVER LAKE ANGLER ATTITUDE SURVEY 2018 (N = 793)**

- Have you been surveyed this year?    Yes - stop survey                      No – continue
1. Home Zip Code **114 unique zip codes**
  2. Which species of fish do you fish for at Rough River Lake (**check all that apply**)?  
 Bass **61.3%**    Bluegill **40.2%**    Crappie **58.3%**    Hybrid Striped Bass **18.2%**    Channel Catfish **21.1%**    Flathead  
 Catfish **12.0%**
  3. Which one species do you fish for most at Rough River Lake (**check only one**) (**N = 791**)?  
 Bass **44.6%**    Bluegill **8.8%**    Crappie **36.3%**    Hybrid Striped Bass **2.9%**    Channel Catfish **6.3%**    Flathead  
 Catfish **1.0%**

**-Answer the following questions for each species you fish for – (see question 3)**

**Bass Anglers**

4. What level of satisfaction or dissatisfaction do you have with bass fishing at Rough River Lake? (N = 451)  
 Very satisfied **27.1%**    Somewhat satisfied **70.7%**    Neutral **1.8%**    Somewhat dissatisfied **0.4%**    Very dissatisfied **0%**    No opinion **0%**
5. If you responded with somewhat or very dissatisfied in question (4) - What is the single most important reason for your Dissatisfaction? (N = 2)  
 Number of fish **50%**    Size of fish **50%**    Not happy with regulations **0%**    Too many anglers **0%**    Other **0%**

**Crappie Anglers**

6. In general, what level of satisfaction or dissatisfaction do you have with crappie fishing at Rough River Lake? (N = 429)  
 Very satisfied **58.3%**    Somewhat satisfied **41.5%**    Neutral **0.1%**    Somewhat dissatisfied **0%**  
 Very dissatisfied **0%**    No opinion **0%**
7. If you responded with somewhat or very dissatisfied in question (6) - What is the single most important reason for your Dissatisfaction? (N = 0)  
 Number of fish **N/A**    Size of fish **N/A**    Not happy with regulations **N/A**    Too many anglers **N/A**    Other **N/A**

Hybrid Striped Bass Anglers

8. In general, what level of satisfaction or dissatisfaction do you have with hybrid striped bass fishing at Rough River Lake? (N = 127)  
 Very satisfied **11.8%**    Somewhat satisfied **83.5%**    Neutral **3.9%**    Somewhat dissatisfied **0.8%**    Very dissatisfied **0%**    No opinion **0%**
9. If you responded with somewhat or very dissatisfied in question (8) - What is the single most important reason for your Dissatisfaction? (N = 1)  
 Number of fish **0%**    Size of fish **100%**    Not happy with regulations **0%**    Too many anglers **0%**    Other **0%**

**All Anglers**

10. On average, how many times do you fish Rough River Lake in a year? (N = 793)  
 First time **0.8%**    1 to 4 **2.9%**    5 to 10 **22.7%**    More than 10 **73.6%**
11. Are you aware KDFWR places fish habitat (i.e. fish attractors/structures) within the lake? (N = 793)    Yes **69.9%**    No **30.1%**
12. How often do you fish around KDFWR placed fish attractors/structures at Rough River Lake? (N = 554)  
 Very often **1.6%**    Often **9.4%**    Sometimes **58.5%**    Not very often **25.3%**    Never **5.2%**
13. How did you find these attractors/structures at Rough River Lake? (N = 549)  
 On my own **9.7%**    Winter pool **67.0%**    Friend/word of mouth **6.2%**    KDFWR website **16.6%**    Other **0.5%**
14. Do you feel the addition of KDFWR placed attractors/structures has improved your fishing success? (N = 554)    Yes **76.2%**    No **23.8%**
15. Are you aware the locations of all KDFWR placed attractors/structures are available on our website? (N = 554)    Yes **75.1%**    No **24.9%**

## Lake Malone

### Largemouth Bass Sampling

Electrofishing to assess the largemouth bass population at Lake Malone was conducted during April (Tables 34-37). With the exception of fish < 8.0 in, catch rates for the remaining length groups increased from 2017 to 2018. The three most abundant inch classes were those currently protected by the slot limit (12.0 – 14.9 in). Catch rate for fish  $\geq 15.0$  in was among the highest recorded, while catch rate for fish  $\geq 20.0$  in was the highest documented to date. Total CPUE is similar to previous collections. While Lake Malone has historically been plagued by an overabundance of bass < 12.0 in, catch rates for fish < 12.0 in declined somewhat in 2017 and 2018. CPUE of age-1 fish has historically been mediocre at Lake Malone, however catch rates for the length groups used for assessment do not appear to be negatively affected, and it is possible we are not effectively sampling these smaller fish. Based on sampling data, the largemouth bass population at Lake Malone is in Good- to- Excellent condition based on statewide assessment values. Age-growth data will be collected in 2019 or 2020.

## Mauzy Lake

### Largemouth Bass Sampling

Electrofishing to assess the largemouth bass population at Mauzy was conducted in April (Tables 36, 38-42). The catch rate of largemouth bass less than 12.0 in remains high and in line with the past several years. There was a slight uptick in catch rate of larger fish ( $\geq 15.0$  and  $\geq 20.0$  in) in 2018 but overall the fishery is dominated by 8.0- to 12.0-in fish. Mauzy was sampled again in October to collect fish for age and growth analysis. The catch was anemic due to very clear water and excessive Eurasian watermilfoil. Fifty-six fish were collected and used for age-growth determination. Mean length at age data has decreased once again and is the lowest recorded since 2001. The back-calculated lengths at age-1 show a decline since 2013. The lake has not had consecutive years of stable pool elevation in the past decade. The lake was again drawn down during the winter of 2018-2019 in an attempt to control vegetation. However, consistent rains prevented the lake from remaining down at a stable elevation for much of the winter and it is yet to be determined if the drawdown will be successful in reducing the vegetation. Lake fertilization efforts were discontinued in 2008 and could be contributing to increases in water clarity, aquatic vegetation growth, and a decline in fish growth. A fertilization program will be re-initiated in 2019 in hopes of offsetting these negative effects.

### Bluegill Redear Sunfish Sampling

Electrofishing to assess the bluegill and redear sunfish populations was conducted in May (Tables 43-49). In 2018, bluegill catch rate was the lowest documented since 2000. Catch rates in 2018 declined for bluegill < 3.0 and 3.0-5.9 in, but nearly doubled for 6.0- to 7.9-in fish compared with 2017. Bluegill were collected in October for age-growth analysis. Back-calculated mean length at age-2 (3.1 in) was the lowest documented since 2001. Years to reach 6.0 in is still greater than 5 years as it was in 2015 when fish were last aged.

Beginning in 2014, catch rates for redear sunfish topped those of bluegill. Redear sunfish CPUE in 2018 was down slightly from the two previous years but still within the expected range. Catch rates for redear sunfish 3.0-5.9 in and 6.0-7.9 in decreased in 2018 while the catch rate for fish  $\geq 8.0$  in increased once again. We have yet to see a redear top the 9.0-in mark, which is surprising given the prolific submersed aquatic vegetation present the past few years. Redear were collected in October in conjunction with bluegill and largemouth bass for age-growth analyses. Back-calculated mean length at age-3 (6.2 in) and years to 8.0 in ( $\geq 6$ ) continues to be poor. Back-calculated lengths at age suggest growth may be improving slightly but not to the desired ranges. Lake fertilization efforts will hopefully increase redear growth as well.

Ultimately, Mauzy Lake would benefit from another, more complete, renovation. 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 will be created in 2019 and will then be in place to move forward when possible. Mauzy Lake is wholly contained within a WMA and renovation efforts could easily be accomplished.

## **Carpenter Lake**

### Largemouth Bass

Largemouth bass were sampled at Carpenter Lake in April 2018 (Tables 36, 50-54). Total CPUE was within the range of previous samples. Catch rate for fish 12.0-14.9 in is the highest recorded (CPUE 108.0 fish/hr), surpassing 2017's catch rate of 100.0 fish/hr. Catch rate for fish  $\geq 15.0$  in (49.3 fish/hr) was the highest recorded since a nocturnal sample in 2001 (66.7 fish/hr). The catch rate for bass 8.0-11.9 in was the lowest on record (17.3 fish/hr) and will need to be followed in upcoming years to determine if it was simply a sampling anomaly, or if the fish are not present in the population. Bass were collected again in October for age-growth analysis. Mean length age-3 at capture was 11.3 in and the best documented since the 2003 age-growth analysis. The bass population at Carpenter is relatively stable and performing as expected.

Saugeye will be stocked in 2019 in an attempt to reduce the gizzard shad and crappie spp. populations.

### Bluegill/Redear Sunfish Sampling

Electrofishing to assess the bluegill and redear sunfish populations was conducted in May (Tables 45, 53, 55-58). Total catch rate for bluegill is within the range of collections over the past eight years. Beginning in 2011, the total catch rate for bluegill increased substantially and has mostly lingered within this "new" range since. Catch rate for 3.0- to 5.9-in bluegill was the highest on record (528.0 fish/hr.), while the catch rate for bluegill 6.0-7.9 in was the third lowest on record (8.1 fish/hr.). Bluegill were collected for age-growth determination in October. Back-calculated mean length age-2 decreased slightly from 2015, but remains high. Back-calculated length at age data suggests growth may be declining for fish ages 2 and 3. Bluegill greater than 8.0 in have not been collected in Carpenter Lake since 2007. Gizzard shad were first discovered in the lake in 2006 and are most likely negatively affecting the bluegill population. After two failed shad eradication efforts, saugeye will be stocked at 70 fish/acre beginning in 2019 in an attempt to reduce the gizzard shad and small crappie populations and increase bass predation on the bluegill. Increased predation on the bluegill should positively affect bluegill growth and produce bluegill greater than 8.0 inches in the future.

Forty redear sunfish were collected in May in conjunction with bluegill sampling. Total catch rate and catch rates for standard length groups are all within expected ranges. Redear sunfish less than 3.0 in have not been collected since 2010. That is likely a result of sampling inefficiencies rather than lack of reproduction as evidenced by the CPUE of 3.0- to 5.9-in fish observed this year. Numbers remain fairly low but quality-fish are available. Only three redear sunfish were collected in October, therefore age-growth analyses were postponed.

## **New Kingfisher Lakes**

### Largemouth Bass

Electrofishing to assess the largemouth bass population at New Kingfisher Lake was conducted in April and October (Tables 36, 59-62). A total of 59 largemouth bass were collected in 0.375 hours of spring sampling, but only 16 fish were collected in the fall. Largemouth bass recruitment seems to be limited, possibly due to egg and fry predation by the overabundant sunfish population. Stocking of advanced largemouth bass fingerlings is planned for fall 2019, pending spring sampling results. Catch rate for fish greater than 15.0 and 20.0 in is the highest collected in New Kingfisher Lake. The largemouth bass fishery should continue to grow over the next few years as multiple year classes develop and stabilize.

### Bluegill Redear Sunfish Sampling

The sunfish population was sampled via electrofishing in May (Tables 45, 63-65). Total bluegill CPUE was the highest collected since 1999 with bluegill 3.0-5.9 in accounting for 90% of the total. The first bluegill greater than 8.0 in (at least for the last 30 years) was sampled in New Kingfisher in 2018. Growth is likely slower than ideal due to sheer number of sunfish in the lake. Total sunfish CPUE does not take into account the presence of green sunfish

and warmouth. A shoreline rotenone treatment will be conducted during summer 2019 to reduce undesirable sunfish as well as knock back some of the overabundant bluegill/redear sunfish. Until the largemouth bass population grows and stabilizes, sunfish growth and size structure will suffer. Age-growth data will be collected in a few years after populations have stabilized.

Gizzard shad were documented in both spring and fall samples. The bluegill population will be monitored to ensure adequate growth and size structure develops. If not, shad control methods (winter rotenone treatments and/or saugeye stocking if it proves successful in Carpenter Lake) will be invoked.

## **Old Kingfisher Lake**

### Largemouth Bass

Electrofishing to assess the largemouth bass population was conducted at Old Kingfisher Lake in April and October (Tables 36, 66-69). A total of 35 bass were collected in April ranging from 5.0 to 20.0 in. Total CPUE declined from 2017 to 2018. There are noticeable gaps in the length distribution. Growth does not appear to be fast enough that fish are skipping inch classes, but too few fish were collected in October for growth analysis. The large group of less than 8.0-in fish documented in 2017 is not visible within the 2018 sampling data. This population will continue to be tracked spring and fall to dictate future management steps. Depending on spring electrofishing results, advanced fingerling largemouth bass may be stocked in fall 2019.

### Bluegill Redear Sunfish Sampling

The sunfish population at Old Kingfisher Lake was sampled via electrofishing in May (Tables 45, 70-72). Total bluegill CPUE was 1149.7 fish/hr, which is similar to the 2017 total CPUE (1333.3 fish/hr). Catch rate for each length group declined. The majority (78%) of fish collected were 4.0 to 5.0 in. A shoreline rotenone treatment will be attempted summer 2019 to reduce undesirable sunfish as well as knock back some of the overabundant bluegill/redear sunfish. Until the largemouth bass population grows and stabilizes, sunfish growth and size structure will suffer. Age-growth data will be collected after populations have stabilized. Gizzard shad were documented during 2018 at Old Kingfisher Lake and will be monitored along with the sunfish to determine if shad control strategies need to be employed. Two potential options for controlling the shad are winter shad eradications and saugeye stocking.

Old and New Kingfisher are now connected by a six-foot metal culvert and should presumably develop nearly identical fish populations. If, after several years, both Old and New Kingfisher show similar population characteristics, sampling data may be combined and reported together as Kingfisher Lake.

\*Old and New Kingfisher were drawn down December 2012 to complete renovation work. The lakes were allowed to dry during 2013 and renovation work was completed during the summer of 2014. As water levels increased, channel catfish, bluegill and advanced fingerling largemouth bass were stocked in fall of 2015.

## **Washburn Lake**

### Largemouth Bass

Electrofishing to assess the largemouth bass population at Washburn Lake was conducted in April and October (Tables 36, 73-76). The population has been relatively stable over the past several years and comprised mostly of fish less than 12.0 in with one or two larger fish collected. Catch rate for bass less than 12.0 in declined in 2018 but it appears those fish have moved into the 12.0- to 14.9-in and  $\geq$  15.0-in length groups. Catch rates for those two groups are among the highest recorded. Total CPUE fell within the expected range. Age-growth data collected in 2017 show back-calculated mean length at age continues to decline from a high of 13.1 inches in 2007. The fertility issue has yet to be resolved and water clarity can range from 8-foot+ to < 18 in within a week's time. Submerged aquatic vegetation has also become an issue that requires chemical treatment multiple times a year. There are likely several factors contributing to the poor quality of this fishery. A different formulation of fertilizer (powder, 10-52-4) will be used in 2019 and will hopefully have the desired effect, improve fish growth, and limit nuisance aquatic vegetation growth. Fifty-four grass carp were also stocked in 2019 to help with aquatic vegetation control.

### Bluegill Redear Sunfish Sampling

The sunfish population was sampled via electrofishing in May (Tables 45, 77-83). Approximately equal numbers of bluegill and redear sunfish were collected again in 2018. Total bluegill catch rate is the highest recorded since renovation (2001). Catch rate for 3.0- to 5.9-in bluegill increased substantially and is the highest on record. Catch rates for other length groups are within the normal range for Washburn. Bluegill were collected in October for age-growth determination. Back-calculated mean length at age-2 (3.5 in) has been declining since 2003 and continued in 2018. It appears fish are growing slowly for their first two to three years and then growth rate is increasing to expected rates. This needs to be confirmed with a subsequent age sample if adequate 6.0- to 8.0-in fish can be collected. CPUE of fish greater than 6.0 in is very good but their ages are uncertain.

Redear sunfish have been on a general rise since 2012. Sampling conducted in May revealed the highest total catch rate for redear sunfish to date. There were substantial increases in catch rate for 6.0- to 7.9-in and  $\geq 8.0$ -in length groups. Thirty-six redear were collected in October for age-growth analysis. All growth parameters are excellent for redear sunfish at Washburn Lake, in addition to CPUE of fish  $\geq 8.0$  in. While there has yet to be a 10.0+ in fish collected, data indicate those fish could be seen in 2019 and subsequent years. A reduction in submerged aquatic vegetation may impact redear growth and will be monitored in successive years.

Despite a decent sunfish fishery, Washburn Lake needs another renovation. Plans to dredge and deepen extensive shallow areas, create more bank fishing access, install fish habitat, lime the lake, renovate the fishery, and replace the existing water control structure will be created in 2019. 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.



Table 1. Annual summary of sampling conditions by waterbody, species sampled and date for Northwestern Fishery District lakes during 2018.

Water body	Species	Date	Time (24hr)	Gear	Weather	Water temp. F	Water level	Secchi (in)	Conditions	Pertinent sampling comments
Nolin River Lake	Crappie	11/5-&6	930	Trap Net	Cloudy 55°, heavy rain overnight 11/4	60	508.25	44"	Poor	Heavy rain, lake rising, pulled nets after 1 night
Rough River Lake	HSB	5/2,8,9	930	Shock	-	66-71.1	504.3-501.8	-	Good	Collect HSB for telemetry project
Rough River Lake	HSB	5/11	930	Deploy	-	76.9	500.8	-	Good	Deploy VR2W for HSB telemetry project
Rough River Lake	HSB	6/7	930	Temp/DO	Sunny, calm, 85°	82.6-86.2	495.5	33-56"	Good	
Rough River Lake	HSB	7/18	830	Temp/DO	Sunny, 75°	85.2-88.3	495.15	37-51"	Good	
Rough River Lake	HSB	8/23	1015	Temp/DO	Sunny, 80°	82.4-84.2	495.2	30-66"	Good	
Rough River Lake	HSB	10/5	930	Temp/DO	Sunny	77.3-79.8	495.63	-	Good	
Rough River Lake	LMB	10/12&18	930	Shock	Sunny, breezy, 50°	68.4-74.5	494.8-493.8	24-44"	Fair	Fish collection for A&G
Rough River Lake	Crappie	10/23-10/26	930	Trap Net	Sunny to cloudy, clear to rainy, 50-70°	57-64	492-488	14-26"	Good	
Rough River Lake	HSB	10/30-31	930	Gill Net	Sunny to cloudy, breezy, 65°, front coming in 10/31	60-62	488-487.19	24"	Good	Urban crew ran nets on NF
Lake Malone	LMB	4/27	1030	Shock	Sunny, light breeze, 65°	61.3	pool	26"	Good	
Lake Malone	LMB	4/30	1030	Shock	Sunny, breezy, ~10 mph w ind, 58°	61.5	pool	20"	Good	
Mauzy Lake	LMB	4/18	1000	Shock	Sunny, w indy (15-20mph), 70°	57.7	+ 1'	37"	Good	
Mauzy Lake	BG/RE	5/14	1000	Shock	Sunny, clear, 80°	79.5	pool	80"	Fair	
Mauzy Lake	ALL	10/8	1000	Shock	Sunny, clear, 80°	78.6	pool	108"	Poor	Fish collection for A&G
Carpenter Lake	LMB	4/25	900	Shock	Sunny, 60°	59.9	pool	34"	Good	
Carpenter Lake	BG/RE	5/17	1000	Shock	Partly sunny, light breeze, 75°	79.0	pool	24"	Good	
Carpenter Lake	ALL	7/10	1015	Temp/DO	-	79	pool	22-24"	Good	
Carpenter Lake	ALL	10/9	1000	Shock	Partly sunny, w indy 75°	78.4	pool	19"	Good	Fish collection for A&G
New Kingfisher Lake	LMB	4/25	1130	Shock	Sunny, 65°	62.4	pool	32"	Good	
New Kingfisher Lake	BG/RE	5/17	1200	Shock	Partly sunny, light breeze, 80°	80.8	pool	30"	Good	
New Kingfisher Lake	ALL	7/10	1140	Temp/DO	-	91.5	pool	29"	Good	
New Kingfisher Lake	LMB	10/9	1300	Shock	Partly sunny, w indy 75°	83.8	- 1'	22"	Good	
Old Kingfisher Lake	LMB	4/25	1030	Shock	Sunny, 65°	61.9	pool	22"	Good	
Old Kingfisher Lake	BG/RE	5/17	1330	Shock	Partly sunny, light breeze, 80°	82.4	pool	22"	Good	
Old Kingfisher Lake	ALL	7/10	1045	Temp/DO	-	88.9	pool	30"	Good	
Old Kingfisher Lake	LMB	10/9	1200	Shock	Partly sunny, w indy 75°	79.3	pool	16"	Good	
Washburn Lake	LMB	5/1	1000	Shock	Sunny, 70°, light breeze	65.1	pool	63"	Good	
Washburn Lake	BG/RE	5/15	1000	Shock	Sunny, 75°	82.9	pool	24"	Good	
Washburn Lake	ALL	10/10	930	Shock	Cloudy, 75°	78.4	pool	68"	Poor	Water clear, no veg, fish collection for A&G

Table 2. Length frequency and CPUE (fish/nn) for each species of crappie collected in 19 net-nights of sampling at Nolin River Lake during November 2018.

Species	Inch class											Total	CPUE	SE
	2	3	4	5	6	7	8	9	10	11	12			
White crappie	4	353	422	112			4	2	12	11	2	922	48.5	17.6
Black crappie	2	83	33	1	3	4	1	2	5	1	1	136	7.2	2.1

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Table 3. PSD and RSD<sub>10</sub> values calculated for crappie collected in trap nets from Nolin River Lake during November 2018; 95% confidence limits are in parentheses.

Lake/Species	No.	PSD	RSD <sub>10</sub>
Nolin River Lake			
White crappie	143	22 (± 7)	17 (± 6)
Black crappie	18	55 (± 24)	39 (± 23)

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Table 4. Mean back calculated lengths (in) at each annulus for white crappie collected at Nolin River Lake in November 2018.

Year class	No.	Age							
		1	2	3	4	5	6	7	8
2017	4	4.7							
2016	24	5.3	8.7						
2010	1	4.2	7.2	9.2	10.9	11.4	12.0	12.5	12.7
Mean		5.2	8.6	9.2	10.9	11.4	12.0	12.5	12.7
No.	29	29	25	1	1	1	1	1	1
Smallest		3.9	6.2	9.2	10.9	11.4	12.0	12.5	12.7
Largest		6.8	10.7	9.2	10.9	11.4	12.0	12.5	12.7
Std error		0.1	0.2						
95% CI (±)		0.2	0.3						

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Table 5. Age-frequency and CPUE (fish/nn) per inch class of white crappie trap netted for 19 net-nights at Nolin River Lake in November 2018.

Age	Inch class											No.	CPUE	SE	Age %
	2	3	4	5	6	7	8	9	10	11	12				
0	4	353	422	112								891	36.4		96.6
1							3		1			4	0.2	0.1	0.4
2							1	2	11	11	1	26	1.4	0.5	2.8
8												1	0.1	0.1	0.1
Total	4	353	422	112			4	2	12	11	2	922	48.5	17.6	
(%)	0.4	38.3	45.8	12.1			0.4	0.2	1.3	1.2	0.2				100.0

nwd1tn.d18, nwd1wca.d18

Table 6. Population assessment for white crappie based on fall trapnetting at Nolin River Lake from 2001-2018 (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
2018*	1.6	0.2	36.4	1.6	10.7 (4)				
2017									
2016	5.6 (2)	2.6 (2)	5.6 (4)	3.3 (3)	10.7 (4)	1.112	67.1	15	Good
2015									
2014	14.0 (3)	9.5 (4)	1.5 (2)	10.4 (4)	10.2 (3)	1.14	68.2	16	Good
2013									
2012	6.7 (3)	4.5 (3)	1.1 (2)	3.2 (2)	10.1 (3)	1.112	67.1	13	Good
2011	5.7 (2)	4.4 (3)	1.6 (3)	3.5 (3)	10.9 (4)	1.274	72.3	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)	1.638	80.6	17	Excellent
2008	6.0 (2)	3.5 (3)	2.4 (3)	4.8 (3)	10.4 (4)	0.976	62.3	15	Good
2007	7.4 (3)	3.7 (3)	0.4 (1)	6.1 (4)	10.4 (4)	0.882	58.6	15	Good
2006	5.9 (2)	3.2 (2)	2.0 (3)	4.4 (3)	9.7 (3)	0.876	58.3	13	Good
2005	8.8 (3)	3.6 (3)	1.4 (2)	7.4 (3)	9.7 (3)	0.749	52.7	15	Good
2004	8.6 (3)	4.2 (3)	5.1 (4)	6.9 (4)	9.7 (3)	0.630	46.7	17	Excellent
2003	13.2 (3)	8.0 (4)	2.0 (3)	8.7 (4)	9.8 (3)	1.107	66.9	17	Excellent
2002	12.0 (3)	10.0 (4)	4.3 (4)	8.8 (4)	9.5 (2)	1.571	79.2	17	Excellent
2001	10.2 (3)	4.8 (3)	2.6 (3)	3.9 (3)	9.1 (2)	0.910	59.7	14	Good

\* One day of sampling

Table 7. Length frequency and CPUE (fish/hr) for black bass collected in 3 hrs of electrofishing at Rough River Lake during October 2018.

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	26	56	32	35	34	29	41	43	35	25	24	13	14	8	6	4	6	3	2	436	145.3	24.2
Spotted bass	6	5	2	8	8	3	5	2	1	5	1	1								47	15.7	4.1

nwd2lmb.d18

Table 8. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at Rough River Lake during October 2018. Standard errors are 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	83	88 (1)	62	91 (1)	41	96 (1)

nwd2lmb.d18

Table 9. Mean back calculated lengths (in) at each annulus for largemouth bass collected at Rough River Lake in October 2018.

Year class	No.	Age								
		1	2	3	4	5	6	7	8	9
2017	48	5.4								
2016	23	6.3	10.8							
2015	16	5.1	10.5	13.2						
2014	8	5.8	10.4	13.0	14.5					
2013	1	6.7	11.8	15.2	16.9	17.7				
2012	5	6.6	9.4	12.0	13.7	15.1	16.2			
2011	2	5.2	8.5	10.5	12.0	13.2	14.6	15.8		
2009	3	6.6	12.4	14.5	16.1	17.3	18.4	19.1	19.6	21.7
Mean		5.7	10.6	13.0	14.4	15.6	16.5	17.8	19.6	21.7
No.		106	58	35	19	11	10	5	3	3
Smallest		3.4	6.7	10.4	11.4	12.1	12.2	15.8	18.4	21.7
Largest		10.3	13.5	16.1	17.7	19.3	20.4	20.9	21.4	21.7
SE		0.2	0.2	0.3	0.4	0.7	0.8	1.0	0.9	
95% CI ( $\pm$ )		0.3	0.4	0.5	0.9	1.4	1.5	1.8	1.8	

nwd2lmba.d18

Table 10. Population assessment for largemouth bass based on spring electrofishing at Rough River Lake from 1999-2018 (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
2018 <sup>a</sup>	13.2* (3)								
2017 <sup>a</sup>									
2016		33.8 (3)	29.3 (3)	23.3 (4)	2.0 (4)			> 14	G-E
2015 <sup>a</sup>									
2014									
2013	12.3 (2)		32.4 (4)	31.3 (4)	3.3 (4)			> 14	G-E
2012		36.4 (3)	29.3 (3)	32.00 (4)	3.6 (4)			> 14	G-E
2011 <sup>a</sup>									
2010 <sup>a</sup>									
2009	12.6 (3)	28.4 (3)	42.7 (4)	17.6 (3)	0.7 (3)	0.884	58.7	16	Good
2008 <sup>a</sup>									
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	17	Good
2004	13.6 (4)	38.8 (3)	12.9 (1)	9.8 (2)	0.2 (2)	0.862	57.8	12	Good
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	Good
1999	12.5 (3)	3.0 (1)	21.3 (2)	8.9 (2)	0.4 (2)			10	Fair

<sup>a</sup> Unable to sample due to high water

\* Back-calculated from age-growth table

Table 11. Length frequency and CPUE (fish/nn) for each species of crappie collected in 71 net-nights of sampling at Rough River Lake during October 2018.

Species	Inch class											Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13			
White crappie	34	131	37	25	87	31	33	22	11	4	2	417	5.9	1.1
Black crappie		1	8	61	18	2						90	1.3	0.3

nwd2tn.d18

Table 12. PSD and RSD<sub>10</sub> values calculated for crappie collected in trap nets from Rough River Lake during October 2018; 95% confidence limits are in parentheses.

Lake/Species	No.	PSD	RSD <sub>10</sub>
Rough River Lake			
White crappie	252	41 (± 7)	15 (± 4)
Black crappie	89	2 (± 3)	0

nwd2tn.d18

Table 13. Mean back calculated lengths (in) at each annulus for white crappie collected at Rough River Lake in October 2018.

Year class	No.	Age						
		1	2	3	4	5	6	7
2017	32	4.7						
2016	18	4.7	7.4					
2015	13	4.8	7.0	8.8				
2014	10	4.3	6.6	8.5	9.7			
2011	1	4.9	7.5	9.2	10.4	11.2	11.9	12.5
Mean		4.7	7.1	8.7	9.8	11.2	11.9	12.5
No.		74	42	24	11	1	1	1
Smallest		3.5	5.8	6.7	7.3	11.2	11.9	12.5
Largest		6.8	8.9	11.0	12.6	11.2	11.9	12.5
SE		0.1	0.1	0.3	0.5			
95% CI (±)		0.1	0.2	0.5	0.8			

nwd2wca.d18

Table 14. Age-frequency and CPUE (fish/nn) per inch class of white crappie collected 71 in net-nights at Rough River Lake during October 2018.

Age	Inch class											No.	CPUE	SE	Age (%)	
	3	4	5	6	7	8	9	10	11	12	13					
0	34	131	37										202	2.8		48.2
1				23	51	17	15	2					108	1.5	0.3	25.8
2				2	29	3	15	9	2				60	0.8	0.2	14.3
3					7	8	3	6	5	2			31	0.4	0.1	7.4
4						3		6	5	2	1		17	0.2	0.1	4.1
5																
6																
7											1		1	<0.1	0.0	0.2
Total	34	131	37	25	87	31	33	23	12	4	2		419			
(%)	8.1	31.3	8.8	6.0	20.8	7.4	7.9	5.5	2.9	1.8	0.5					100.0

nwd2wca.d18, nwd2tn.d18



Table 15. Population assessment for white crappie based on fall trapnetting at Rough River Lake from 2000-2018 (scoring based on statewide assessment).

Year	CPUE				Mean length age 2+ at capture	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
	(excluding age-0)	CPUE age-1	CPUE age-0	CPUE ≥ 8.0 in					
2018	3.0 (1)	1.5 (1)	2.8 (1)	1.5 (1)	9.2 (3)	0.612	54.2	7	Poor
2017									
2016									
2015	38.9 (4)	25.5 (4)	1.4 (1)	7.2 (3)	9.3 (3)			15	Good
2013	18.6 (3)	3.8 (2)	6.0 (2)	9.0 (3)	8.3 (1)			11	Fair
2012*									
2011	15.6 (3)	10.3 (3)	1.0 (1)	4.9 (2)	9.2 (3)	1.230	70.9	12	Fair
2010	10.2 (2)	5.8 (2)	1.9 (1)	3.4 (2)					
2009	28.1 (4)	26.1 (4)	12.4 (4)	7.8 (3)	10.8 (4)	2.040	87.1	19	Excellent
2008	4.6 (2)	3.1 (2)	20.0 (4)	4.3 (2)	10.7 (4)	1.030	64.3	14	Good
2006	8.2 (2)	7.5 (3)	2.3 (1)	4.0 (2)	10.7 (4)	2.180	88.7	12	Fair
2005	4.6 (2)	3.5 (2)	4.6 (2)	3.3 (2)	10.4 (4)	0.869	58.1	12	Fair
2004	8.2 (2)	5.5 (2)	1.8 (1)	7.1 (3)	10.4 (4)	0.734	52.0	12	Fair
2003	13.1 (3)	10.8 (3)	18.9 (4)	9.9 (3)	10.6 (4)	1.066	65.5	17	Good
2002	8.4 (3)	4.5 (2)	4.5 (2)	7.3 (3)	10.3 (4)	0.871	58.5	14	Good
2000	4.0 (1)	1.4 (1)	2.1 (1)	3.1 (2)	9.2 (3)	1.160	68.7	8	Fair

\* No drawdown few fish collected

Table 16. Length frequency and CPUE (fish/nn) for hybrid striped bass collected in 10 net-nights of sampling at Rough River Lake during late October 2018.

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			
Hybrid striped bass	8	38	69	39	11	1	43	132	117	19	10	16	6	3	6	1			1	520	52.0	11.9

nwd2gn.d18

Table 17. Number of fish and the relative weight (Wr) for each length group of hybrid striped bass collected at Rough River Lake during November 2018. Standard errors are in parentheses.

Species	Length group					
	8.0-11.9 in		12.0-14.9 in		≥ 15.0 in	
	No.	Wr	No.	Wr	No.	Wr
Hybrid striped bass	156	93 (1)	176	87 (1)	179	86 (1)

nwd2gn.d18

Table 18. Mean back calculated lengths (in) at each annulus for hybrid striped bass collected at Rough River Lake in November 2018.

Year class	No.	Age											
		1	2	3	4	5	6	7	8	9	10	11	
2017	261	9.8											
2016	28	11.7	16.9										
2015	6	10.2	16.1	18.1									
2014	6	9.2	16.0	19.0	20.7								
2013	2	10.5	15.8	18.6	19.9	20.6							
2012	1	6.9	14.0	16.8	18.2	19.4	19.7						
2007	1	9.6	16.8	20.1	20.6	22.6	23.9	24.5	24.8	25.2	25.4	25.5	
Mean		9.9	16.5	18.5	20.3	20.8	21.8	24.5	24.8	25.2	25.4	25.5	
No.	305	305	44	16	10	4	2	1	1	1	1	1	
Smallest		6.2	14.0	16.8	18.2	19.4	19.7	24.5	24.8	25.2	25.4	25.5	
Largest		13.2	18.3	20.1	21.2	22.6	23.9	24.5	24.8	25.2	25.4	25.5	
SE		0.1	0.1	0.2	0.3	0.7	2.1						
95% CI (±)		0.1	0.2	0.4	0.6	1.4	4.1						

nwd2hsba.d18

Table 19. Age-frequency and CPUE (fish/nn) per inch class of hybrid striped bass collected in 10 net-nights of sampling at Rough River Lake during November 2018.

Age	Inch class															No.	CPUE	SE	Age (%)		
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21					22	25
0	8	38	69	39	11													165	16.5		31.7
1						1	43	132	117	18								311	31.1	7.4	59.8
2										1	10	12	5					28	2.8	0.8	5.4
3												4	1			1		6	0.6	0.2	1.1
4														1	5			6	0.6	0.4	1.1
5														1		1		2	0.2	0.1	0.1
6														1				1	0.1	0.1	0.1
11																	1	1	0.1	0.1	0.1
Total	8	38	69	39	11	1	43	132	117	19	10	16	6	3	6	1	1	520			
(%)	1.5	7.3	13.3	7.5	2.1	0.1	8.3	25.4	22.5	3.6	1.9	3.1	1.1	0.1	1.1	0.1	0.1				100.0

nwd2gn.d18, nwd2hsba.d18

Table 20. Population assessment for hybrid striped bass based on fall gill net sampling at Rough River Lake from 1999-2018 (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 (A)%	Total score	Assessment rating
2018	35.5 (4)	18.2 (4)	17.9 (4)	31.1 (4)	1.698	81.7	16	Excellent
2017	16.8 (3)	18.5 (4)	16.7 (4)	8.2 (4)	0.635	47.0	15	Excellent
2016	22.3 (3)	17.6 (3)	21.0 (4)	4.8 (3)	0.523	40.7	13	Good
2014	43.8 (4)	16.8 (2)	32.6 (4)	14.2 (4)	0.457	36.7	14	Excellent
2012	35.1 (4)	16.7 (2)	25.1 (4)	11.6 (4)	0.717	51.2	14	Excellent
2010	60.2 (4)	16.8 (2)	34.5 (4)	28.9 (4)	0.525	40.8	14	Excellent
2008	25.1 (4)	16.3 (1)	19.3 (4)	6.3 (3)	0.544	42.0	12	Good
2006	23.7 (4)	16.9 (2)	14.5 (4)	8.9 (4)	0.447	36.1	14	Excellent
2003	33.9 (4)	16.5 (2)	30.9 (4)	3.1 (2)	0.680	49.8	12	Good
2001	29.9 (4)	15.9 (1)	16.8 (4)	13.1 (4)			13	Good
1999	26.4 (4)	16.5 (2)	18.5 (4)	8.1 (4)			14	Excellent

Table 21. Length frequency and CPUE (fish/nn) for channel catfish collected in 10 net-nights of sampling at Rough River Lake during November 2018.

Species	Inch class															Total	CPUE	SE
	13	14	15	16	17	18	19	20	21	22	23	24	25	26				
Channel catfish	1	1	2	5	7	3	9	11	10	8	11	1	3	2	74	7.4	2.3	

nwd2gn.d18

Table 22. Number of fish and the relative weight (Wr) for each length group of channel catfish collected at Rough River Lake during November 2018. Standard errors are in parentheses.

Species	Length group					
	11.0-15.9 in		16.0-23.9 in		≥ 24.0 in	
	No.	Wr	No.	Wr	No.	Wr
Channel catfish	4	78 (4)	64	85 (1)	6	94 (5)

nwd2gn.d18

Table 23. Dissolved oxygen (ppm) and temperature profile conducted at three sites on Rough River Lake on 07 June 2018.

Depth	Location									
	Site: 1 9:37 AM		Site: 2 1:54 PM		Site: 3 1:12 PM		Site: 5 9:57 AM		Site: 6 10:21 AM	
	Temp	DO	Temp	DO	Temp	DO	Temp	DO	Temp	DO
Surface	82.6	8.79	86.2	8.73	85.9	10.80	82.8	8.66	82.6	8.11
2	82.4	8.83	84.9	9.18	82.6	10.40	82.8	8.66	82.6	8.12
4	82.1	8.85	83.1	9.58	79.2	9.28	82.5	8.66	82.4	8.07
6	81.7	8.89	82.6	9.44	79.6	9.26	82.2	8.51	82.3	7.84
8	81.5	8.84	81.2	7.66	74.3	5.42	81.7	7.86	81.7	7.20
10	81.1	8.35	80.3	6.56	71.0	3.82	79.8	5.28	80.5	5.24
12	79.4	5.59	78.8	4.82	68.3	3.49	78.5	3.52	79.2	3.41
14	77.1	2.43	75.7	3.16	67.7	3.38	77.1	2.18	77.2	1.05
16	75.5	1.21	71.7	1.61	67.5	3.34	75.4	0.89	73.7	0.19
18	74.2	0.72	70.1	1.46	67.4	3.32	74.1	0.29	72.2	0.16
20	72.8	0.28	69.4	1.24	67.3	3.31	72.6	0.18	70.9	0.14
22			68.9	1.12	67.2	3.12				
24			24 feet deep							
25	67.5	0.14			25 feet deep		67.1	0.13	66.6	0.10
26										
28										
30	60.3	0.07					62.9	0.08	29 feet deep	
32										
34										
36										
38										
40										
45	46 ft deep						44 ft deep			
50										
Secchi	56"		42"		33"		46"			

Table 24. Dissolved oxygen (ppm) and temperature profile conducted at three sites on Rough River Lake on 18 July 2018.

Depth	Location									
	Site: 1 8:23 AM		Site: 2 10:23 AM		Site: 3 11:02 AM		Site: 5 8:50 AM		Site: 6 9:28 AM	
	Temp	DO	Temp	DO	Temp	DO	Temp	DO	Temp	DO
Surface	85.2	6.90	87.0	6.79	88.3	8.08	86.2	7.09	86.8	6.43
2	85.5	6.88	87.0	6.79	88.3	8.11	86.4	7.05	86.7	6.44
4	85.8	6.87	87.0	6.77	87.7	8.10	86.5	7.03	86.6	6.38
6	85.8	6.85	87.0	6.76	87.1	7.22	86.5	6.99	86.5	6.36
8	85.8	6.83	86.7	6.51	86.2	4.91	86.4	6.36	86.4	6.38
10	85.7	6.73	86.4	6.21	85.1	2.73	86.0	5.04	86.1	4.79
12	85.6	6.60	86.3	6.15	83.5	1.36	85.2	3.41	85.4	1.67
14	83.3	1.80	86.2	5.68	81.3	0.94	84.0	1.19	84.5	0.20
16	80.9	0.29	81.7	0.34	77.8	0.44	81.1	0.23	81.6	0.16
18	78.9	0.18	79.6	0.23	75.3	0.42	79.0	0.18	79.2	0.14
20	76.8	0.16	77.0	0.21	72.9	0.21	77.5	0.18	76.5	0.13
22	75.3	0.15	75.1	0.17	71.8	0.17	76.7	0.17	74.9	0.12
24										
25	74.0	0.14	73.0	0.2			73.9	0.14	73.3	0.12
26					23 ft deep					
27			72.1	0.1						
28									28 feet deep	
29			70.3	0.1						
30										
35			29 ft deep							
40										
45										
50	45 ft deep						42 ft deep			
55										
Secchi	51"		46"		37"		50"		48"	

Table 25. Dissolved oxygen (ppm) and temperature profile conducted at three sites on Rough River Lake on 23 August 2018.

Depth	Location									
	Site: 1 11:52 AM		Site: 2 12:35 PM		Site: 3 1:03 PM		Site: 5 11:34 AM		Site: 6 10:17 AM	
	Temp	DO	Temp	DO	Temp	DO	Temp	DO	Temp	DO
Surface	82.7	6.34	84.2	6.54	83.5	9.41	83.2	7.30	82.4	6.81
2	82.5	6.27	84.2	6.52	82.6	8.96	83.1	7.37	82.4	6.74
4	82.0	6.12	83.4	6.75	81.6	8.42	82.7	7.33	82.1	6.50
6	81.6	5.85	82.5	6.31	81.2	7.59	82.1	6.91	81.8	5.50
8	81.5	5.66	82.2	5.84	81.0	7.20	82.0	6.45	81.6	5.67
10	81.5	5.54	82.0	5.45	80.8	7.16	81.9	6.39	81.6	5.75
12	81.4	5.53	81.9	5.20	80.3	6.03	81.7	6.02	81.6	5.78
14	81.4	5.60	81.9	5.29	76.8	0.37	81.4	4.90	81.6	5.68
16	81.2	5.68	81.9	5.22	76.2	0.31	81.3	3.97	81.4	5.06
18	80.9	4.27	81.9	5.15	76.1	0.27	81.0	2.67	80.8	3.42
20	79.8	0.70	79.9	0.58	76.0	0.25	79.6	0.35	79.5	0.44
22										
24					75.7	0.22				
25	77.2	0.26	77.6	0.3			76.3	0.23	76.7	0.22
26					24 ft deep					
27										
28							29 feet deep		29 feet deep	
29										
30										
35			29 ft deep							
40										
45										
50	42 ft deep									
55										
Secchi	66"		48"		30"		51"		51"	

Table 26. Dissolved oxygen (ppm) and temperature profile conducted at three sites on Rough River Lake on 5 October 2018.

Depth	Location									
	Site: 1	9:27 AM	Site: 2	11:15 AM	Site: 3	11:49 PM	Site: 5	11:34 AM	Site: 6	10:17 AM
	Temp	DO	Temp	DO	Temp	DO	Temp	DO	Temp	DO
Surface	78.5	8.88	79.8	9.58	77.3	10.91	78.8	8.82	78.8	8.85
2	78.2	8.97	79.4	9.55	75.1	9.31	78.6	8.83	78.7	8.87
4	78.0	8.78	78.3	9.48	74.5	9.13	78.3	8.90	78.3	8.82
6	77.7	8.64	78.0	9.28	73.4	8.15	78.0	8.39	78.1	8.63
8	77.5	8.25	77.7	8.84	72.2	7.12	77.5	7.71	76.8	5.05
10	76.7	6.01	76.1	7.54	69.3	4.15	76.8	6.03	76.7	4.47
12	76.2	4.58	75.5	6.18	68.0	3.36	76.1	3.81	75.9	3.17
14	75.6	2.41	74.1	4.45	67.6	3.25	75.4	2.66	74.8	1.57
16	75.2	2.07	72.4	3.36	67.4	3.29	75.0	2.14	74.3	1.80
18	75.1	2.01	71.2	3.18	67.2	3.34	74.8	1.57	74.0	1.91
20	75.0	1.99	70.7	2.88	67.2	3.36	74.7	1.16	73.3	1.81
22	75.0	1.87	70.3	2.74	67.1	3.25	74.5	0.95	73.1	1.79
24	74.8	1.43	70.2	2.81	67.0	3.05	74.4	0.79	72.7	1.21
25							74.3	0.88	72.1	0.54
26	74.6	0.74	70.0	2.69	24 ft deep		73.8	0.68	71.8	0.29
27							73.4	0.44	71.8	0.24
28	74.5	0.36	70.0	2.63						
29										
30	74.4	0.2	70.0	2.53						
35			30 ft deep						29 ft deep	
40										
45							44 ft deep			
50	45 ft deep									
55										



Table 27. Fishery statistics derived from a creel survey at Rough River Lake (5,200 acres) from 01 April through October 30 2018.

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<u>Fishing trips</u>	
No. of fishing trips (per acre)	29,586 (5.80)
<u>Fishing pressure</u>	
Total man-hours (S.E.)	117,059 (2,423.66)
Man-hours/acre	22.95
<u>Catch/harvest</u>	
No. of fish caught (S.E.)	371,981 (23,738.02)
No. of fish harvested (S.E.)	133,895 (10,857.79)
Lb of fish harvested	97,699
<u>Harvest rates</u>	
Fish/hour	1.15
Fish/acre	26.25
Lb/acre	19.16
<u>Catch rates</u>	
Fish/hour	3.31
Fish/acre	72.94
<u>Miscellaneous characteristics (%)</u>	
Male	90.1%
Female	10.0%
Resident	95.0%
Non-resident	5.0%
<u>Method (%)</u>	
Still fishing	26.8%
Casting	67.3%
Trolling	4.0%
Crappie Spider-Rig 3	0.5%
Crappie-Casting	0.1%
Crappie-Still < 3	0.3%
Jugging/Trotline	1.1%
<u>Mode (%)</u>	
Boat	91.9%
Bank	3.9%
Dock	4.1%
Other	0.1%

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Table 28. Fish harvest statistics derived from a creel survey at Rough River Lake (5,200 acres) during 01 April through 30 October 20018.

	<i>Black bass group</i>	<i>Largemouth bass</i>	<i>Spotted Bass</i>	<i>Crappie group</i>	<i>White crappie</i>	<i>Black crappie</i>	<i>Panfish group</i>	<i>Bluegill</i>	<i>Longear sunfish</i>	<i>Catfish group</i>	<i>Channel catfish</i>	<i>Flathead catfish</i>	<i>Morone group</i>	<i>Hybrid Striped Bass</i>	<i>Anything group</i>	<i>Carp</i>	<i>Drum</i>	<i>Buffalo</i>
No. caught	134,796	106,341	28,454	161,778	154,874	6,904	44,470	43,839	631	7,909	6,570	1,339	21,828	21,828		324	845	32
(per acre)	26.43	20.85	5.58	31.72	30.37	1.35	8.72	8.60	0.12	1.55	1.29	0.26	4.28	4.28		0.06	0.17	0.01
No. harvested	9,858	8,890	968	91,616	85,168	6,448	18,266	17,782	484	6,271	5,087	1,183.60	7,770	7,770			113	
(per acre)	1.93	1.74	0.19	17.96	16.70	1.26	3.58	3.49	0.09	1.23	1.00	0.23	1.52	1.52			0.02	
% of total no. harvested	7.36	6.64	0.72	68.42	63.61	4.82	13.64	13.28	0.36	4.68	3.80	0.88	5.8	5.80			0.08	
Lb harvested	16,799	15,989	811	44,005	40,632	3,373	2,174	2,125	49	15,180	9,810	5,370	19,332	19,332				
(per acre)	3.29	3.14	0.16	8.63	7.97	0.66	0.43	0.42	0.01	2.98	1.92	1.05	3.79	3.79			0.04	
% of total lb harvested	17.20	16.37	0.83	45.04	41.59	3.45	2.23	2.18	0.05	15.54	10.04	5.5	19.79	19.79			0.21	
Mean length (in)		15.10	12.47		10.11	9.85		5.80	5.57		18.05	21.23		16.71			16.75	
Mean weight (lb)		1.78	0.83		0.47	0.50		0.12	0.10		1.91	3.86		2.40			2.02	
No. of fishing trips for that species	14,853			7,182			1,196			1,152			1,807		3,396			
% of all trips	50.20			24.27			4.04			3.89			6.11		11.48			
Hours fished for that species	58,765			28,414			4,733			4,558			7,151		13,438			
(per acre)	11.52			5.57			0.93			0.89			1.4		2.63			
No. harvested fishing for that species	8,747			83,485			10,834			4,843			6,677					
Lb harvested fishing for that species	15,109			40,119			1,333			12,940			17,004					
No./hour harvested fishing for that species	0.13			2.99			2.93			1.03			0.91					
% success fishing for that species	22.02			91.28			77.22			84.51			77.57		48.28			

Table 28 cont.

	Anything group	Drum	Illegal HSB	Illegal white crappie	Illegal bass
No. caught (per acre)				782 0.15	
No. harvested (per acre)				782 0.15	
% of total no. harvested				0.01	
Lb harvested (per acre)					
% of total lb harvested					
Mean length (in)				8	
Mean weight (lb)					
No. of fishing trips for that species					
% of all trips					
Hours fished for that species (per acre)					
No. harvested fishing for that species					
Lb harvested fishing for that species					
No./hour harvested fishing for that species					
% success fishing for that species					

Table 29. Length distribution for each species of fish harvested or released at Rough River Lake (5,200 a) during 01 April - 30 October 2018.

Species	Inch class																																					
	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	30	32	34	35	36							
Largemouth bass																																						
Harvested								230		620	758	1,286	2,665	2,205	666	322	23	69	23		23																	
Released						6,647	2,470	59,117	422	11,868	1,667	3,112	6,847	3,092	823	964	60	281	40		41																	
Spotted Bass																																						
Harvested								41		515	288	82	42																									
Released				142	102	5,201	467	17,309	264	3,454	305	203	20		20																							
White crappie																																						
Harvested						782	12,761	52,965	13,565	4,201	782	89		23																								
Released						1,112	791	471	342	21	21	23																										
Black crappie																																						
Harvested							972	4,822	505	149																												
Released									22																													
Hybrid striped bass																																						
Harvested										558	24	194	1,773	1,748	631	996	97	1,044	437	73	146	24		25														
Released						73	24	2,033		6,809	49	220	2,743	955	171	539		367			24	24		27														
Channel catfish																																						
Harvested										165		165	1,545	474	62	474	41	1,236	21	103	21	391	62	185	21	21	100											
Released						22	22	131		501		22	327	44		22		349	22				20															
Flathead catfish																																						
Harvested										53		26	26	53	53	105		447		79			26	26			184		79				27					
Released																26		78				26					26											
Bluegill																																						
Harvested		2,585	1,366	12,780	925	84	21	21																														
Released	803	18,023	6,058	1,151	22																																	
Longear sunfish																																						
Harvested			242	242																																		
Released		147																																				
Drum																																						
Harvested										38				19		38				18																		
Released				18				36		71		54																										
Buffalo																																						
Harvested																																						
Released																																						
Illegal white crappie																																						
Harvested						782																																

Table 30. Monthly black bass angling success at Rough River Lake (5,200 a) from 01 April - 30 Oct. 2018 creel survey period; data does not include bass < 8.0 in that were caught and released.

Month	Total no. of bass caught	Total no. of bass harvested	No. of black bass fishing trips	Hours fished by bass anglers	Bass caught by bass anglers	Bass caught/hr by bass anglers	Bass harvested by bass anglers	Bass harvested/hr by bass anglers
Apr	11,872	2,668	2,098	8,300	11,601	1.16	2,591	0.26
May	13,614	486	1,361	5,383	11,854	2.01	347	0.06
Jun	17,037	1,244	2,002	7,921	14,516	1.74	1,021	0.12
Jul	13,844	1,467	1,824	7,217	12,607	1.69	1,261	0.17
Aug	17,288	589	2,139	8,461	16,406	1.83	505	0.06
Sep	38,334	2,547	3,301	13,061	37,741	2.78	2,423	0.18
Oct	22,807	856	2,128	8,421	22,173	2.64	599	0.07
Total	134,796	9,858	14,853	58,765	126,898	13.85	8,747	0.92
Mean						1.98	1,250	0.13

Table 31. Black bass catch and harvest statistics derived from a creel survey at Rough River Lake (5,200 a) from 01 April - October 30, 2018.

	Largemouth bass						Spotted bass			
	Harvest			Catch and release			Harvest	Catch and release		
	< 15.0 in	≥ 15.0 in	Total	< 15.0 in	≥ 15.0 in	Total	Total	< 15.0 in	≥ 15.0 in	Total
Total no. of bass	2,894	5,996	8,890	85,303	12,147	97,450	968	27,203	39	27,242
% of black bass harvested			90.00				10			
Total weight of fish (lb)			15,989				811			
% of bass harvested by			95.00				5			
Mean length			15.10				12.47			
Mean weight			1.78				0.83			
Rate (f/hr)			0.07				0.01			

Table 32. Monthly hybrid striped bass angling success at Rough River Lake (5,200 a) from 01 April - 30 Oct. 2018 creel survey period.

Month	Total no. of hybrid striped bass caught	Total no. of hybrid striped bass harvested	No. of hybrid striped bass fishing trips	Hours fished by hybrid striped bass anglers	Hybrid striped bass caught by HSB anglers	Hybrid striped bass caught/hour by HSB anglers	Hybrid striped bass harvested by HSB anglers	Hybrid striped bass harvested/hour by HSB anglers
April	1,199	696	133	525	580	0.45	464	0.36
May	4,168	1,204	194	769	3,473	4.76	1,019	1.40
June	6,604	2,074	607	2,403	4,722	1.99	2,010	0.85
July	4,928	1,650	368	1,454	4,286	2.73	1,604	1.02
Aug	2,944	1,304	301	1,192	2,755	2.36	1,283	1.10
Sept	906	328	178	703	672	1.43	297	0.63
Oct	1,079	514						
Total	21,828	7,770	1,807	7,151	16,488	13.72	6,677	5.36
Mean						2.28	1,113	0.91

Table 33. Monthly crappie angling success at Rough River Lake (5,200 a) from 01 April - 30 Oct. 2018 creel survey period.

Month	Total no. of crappie caught	Total no. of crappie harvested	No. of crappie fishing trips	Hours fished by crappie anglers	Crappie caught by crappie anglers	Crappie caught/hour by crappie anglers	Crappie harvested by crappie anglers	Crappie harvested/hour by crappie anglers
April	8,662	7,695	1,381	5,463	7,618	1.66	6,767	1.48
May	34,174	18,569	1,211	4,792	26,672	5.58	15,165	3.17
June	34,552	19,238	900	3,560	31,171	7.82	17,484	4.38
July	14,440	8,022	476	1,885	13,454	5.96	7,518	3.33
Aug	16,931	8,371	693	2,741	15,921	5.26	7,929	2.62
Sept	21,753	12,205	1,067	4,220	19,909	5.24	11,517	3.03
Oct	31,265	17,516	1,454	5,754	30,272	5.17	17,105	2.92
Total	161,778	91,616	7,182	28,414	145,017	36.63	83,485	20.93
Mean						5.25	11,926	2.99

Table 34. Length frequency and CPUE (fish/hr) of largemouth bass collected during 2.5 hours of 30-minute diurnal electrofishing at Lake Malone in April 2018.

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	1	2	3	4	4	11	19	27	37	48	52	51	41	27	20	14	19	11	12	4	407	162.8	17.8

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Table 35. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Lake Malone 1999-2018.

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
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
2002 <sup>a</sup>	8.6	3.3	43.4	5.0	43.4	8.5	41.7	7.6	8.0	3.0	137.1	17.5
2001 <sup>a</sup>	18.0	8.1	66.0	12.0	50.0	8.0	31.3	6.3	0.7	0.7	165.3	15.6
2000 <sup>a</sup>	13.3	3.4	46.0	4.2	51.3	7.8	24.0	4.0	2.0	0.9	134.7	14.5
1999 <sup>a</sup>	n/d		48.7	9.8	61.3	7.0	23.3	4.9	2.7	1.3	133.3	12.7

<sup>a</sup> Nocturnal sample

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Table 36. PSD and RSD<sub>15</sub> values obtained for largemouth bass taken in spring electrofishing samples at NWFD state-owned lakes during 2018; 95% confidence intervals are in parentheses.

Lake	Species	No. $\geq$ 8.0 in	PSD	RSD <sub>15</sub>
Malone	Largemouth	393	76 ( $\pm$ 4)	38 ( $\pm$ 5)
Mauzy	Largemouth	199	19 ( $\pm$ 5)	10 ( $\pm$ 4)
Carpenter	Largemouth	131	90 ( $\pm$ 5)	28 ( $\pm$ 8)
New Kingfisher	Largemouth	55	78 ( $\pm$ 11)	71 ( $\pm$ 13)
Old Kingfisher	Largemouth	17	82 ( $\pm$ 19)	65 ( $\pm$ 23)
Washburn	Largemouth	137	26 ( $\pm$ 8)	5 ( $\pm$ 4)

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nwd4psd.d18  
nwd5psd.d18  
nwd6psd.d18  
nwd7psd.d18  
nwd8psd.d18



Table 37. Population assessment for largemouth bass based on spring electrofishing at Lake Malone from 2001-2018 (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								
2018		5.6 (1)	60.4 (4)	59.2 (4)	10.8 (4)			≥ 14	G - E
2017		12.8 (1)	44.8 (3)	37.2 (4)	5.6 (4)			≥ 13	Good
2015	10.8 (3)*		60.8 (4)	42.8 (4)	8.4 (4)			≥ 16	G - E
2014		7.8 (1)	23.2 (2)	29.8 (3)	5.0 (4)			≥ 11	F - G
2012		31.2 (2)	48.8 (3)	48.8 (4)	2.8 (3)			≥ 13	Good
2011		41.2 (2)	35.2 (3)	34.4 (4)	4.0 (4)			≥ 14	G - E
2010	10.4 (2)	15.1 (1)	49.6 (3)	62.0 (4)	3.6 (3)	0.397	32.7	13	Good
2009	10.3 (2)	8.8 (1)	51.2 (4)	37.2 (4)	5.6 (4)	0.293	25.4	15	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 (2)	30.8 (2)	37.6 (4)	3.6 (3)	0.330	28.1	13	Good
2006	11.5 (4)	20.2(2)	22.4 (2)	28.0 (3)	5.2 (4)	0.526	40.9	15	Good
2005	11.5 (4)	19.0 (2)	32.0 (2)	53.6 (4)	8.4 (4)	0.387	32.0	16	Good
2004	11.5 (4)	19.0 (2)	26.4 (2)	53.2 (4)	6.0 (4)	0.365	31.1	16	Good
2003	11.5 (4)	35.0 (2)	35.0 (3)	48.0 (4)	8.5 (4)	0.416	34.1	17	Excellent
2002	11.5 (4)	6.0 (1)	43.4 (3)	41.7 (4)	8.0 (4)			16	Good
2001	12.9 (4)	14.0 (1)	50.0 (4)	31.3 (4)	0.7 (1)			14	Good

\* Back calculated from age table

Table 38. Length frequency and CPUE (fish/hr) of largemouth bass collected during 1.0 hour of diurnal electrofishing at Mauzy Lake in April 2018.

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	24
Largemouth bass	8	11	7	1	8	30	40	57	35	8	7	3	4	3	1	1	2		6	1		1	234	234.0	11.5

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Table 39. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Mauzy Lake during spring 1999-2018.

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
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 <sup>a</sup>												
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 <sup>b</sup>	98.6	18.7	163.2	31.9	73.6	6.1	20.8	6.4	2.8	2.8	356.3	58.7
2002 <sup>c</sup>	36.0	14.1	169.3	40.6	9.3	1.3	6.7	2.7	1.3	1.3	221.3	45.4
2001 <sup>c</sup>	12.0	2.3	246.7	53.5	26.7	10.7	4.0	2.3	0.0		289.3	64.2
2000 <sup>c</sup>	37.3	5.8	224.0	20.5	2.7	1.3	5.3	3.5	0.0		269.3	25.3
1999 <sup>c</sup>	n/d		165.3	8.7	17.3	5.4	4.0	2.3	1.3	1.3	186.7	14.1

<sup>a</sup> Lake drawn down for repairs in 2009

<sup>b</sup> Lake renovated in 2003

<sup>c</sup> Nocturnal sample

nwd4psd.d18

Table 40. Length frequency and CPUE (fish/hr) of largemouth bass collected during 0.75 hour of diurnal electrofishing at Mauzy Lake in October 2018.

Species	Inch class																Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17				
Largemouth bass	1	24	5	9	12	9	18	20	4	1	1				1	105	140.0	18.5	

nwd4lmb.d18

Table 41. Mean back calculated lengths (in) at each annulus for largemouth bass collected at Mauzy Lake in October 2018.

Year class	No.	Age				
		1	2	3	4	5
2017	27	4.9				
2016	15	5.3	8.4			
2015	13	5.5	8.3	9.8		
2013	1	5.6	8.2	9.9	10.9	11.6
Mean		5.2	8.4	9.8	10.9	11.6
No.	56	56	29	14	1	1
Smallest		3.9	7.5	9.2	10.9	11.6
Largest		6.5	10.5	10.3	10.9	11.6
SE		0.1	0.1	0.1		
95% CI (±)		0.3	0.3	0.4		

nwd4lmba.d18

Table 42. Population assessment for largemouth bass based on spring electrofishing at Mauzy Lake from 2001-2018 (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
2018	9.8 (1)*	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)*		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) <sup>a</sup>	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 <sup>b</sup>									
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 (0)	0.374	31.2	13	Good
2006	10.3 (2)	24.0 (2)	24.0 (2)	60.0 (4)	0.0 (0)	0.755	53.0	10	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 (0)	0.884	58.7	6	Poor
2003 <sup>c</sup>	10.3 (2)	86.8 (4)	73.6 (4)	20.8 (3)	2.8 (3)			16	Good
2002	10.3 (2)	25.3 (2)	9.3 (1)	6.7 (2)	1.3 (2)			9	Fair
2001	10.3 (2)	5.3 (1)	26.7 (2)	4.0 (2)	0.0 (0)			7	Poor

<sup>a</sup> Only one age-3 fish

<sup>b</sup> Lake drawn down for repairs in 2009

<sup>c</sup> Lake renovated in 2003

\* Back calculated from age table

Table 43. Length frequency and CPUE (fish/hr) for bluegill and redear sunfish collected during 0.875 hour of electrofishing at Mauzy Lake in May 2018.

Species	Inch class								Total	CPUE	SE
	1	2	3	4	5	6	7	8			
Bluegill	3		10	9	27	37	28		114	130.3	27.8
Redear sunfish			2	17	17	74	152	69	331	378.3	52.5

nwd4bg.d18

Table 44. Spring electrofishing CPUE (fish/hr) for each length group of bluegill (2000-2018) and redear sunfish (2007-2018) collected at Mauzy Lake during spring samples.

Year	Bluegill											Total	
	Length group												
	< 3.0 in		3.0-5.9 in		6.0-7.9 in		≥ 8.0 in		≥ 10.0 in		CPUE	SE	
2018	3.4	2.4	52.6	13.3	74.3	19.5	0.0			0.0		130.3	27.8
2017	13.3	7.9	197.3	24.4	37.3	9.61	0.0			0.0		248.0	30.8
2015	17.3	12.1	165.3	27.1	44.0	7.1	0.0			0.0		226.7	31.2
2014	10.3	2.3	253.7	55.6	104.0	21.0	0.0			0.0		368.0	69.1
2013	91.2	21.1	417.6	54.0	73.6	11.1	0.0			0.0		582.4	60.9
2012	23.0	7.8	553.0	108.5	55.0	14.3	0.0			0.0		631.0	126.7
2011	182.4	72.9	726.4	144.1	216.0	51.4	121.6	43.3		0.0		1246.4	195.0
2010	238.4	76.5	280.0	41.0	97.6	34.0	0.0			0.0		616.0	74.4
2009 <sup>a</sup>													
2008 <sup>a</sup>													
2007	101.3	11.1	621.3	39.6	38.7	8.9	0.0			0.0		761.3	44.5
2006	96.0	27.9	614.0	137.7	10.0	7.6	0.0			0.0		720.0	163.4
2005	289.7	45.5	596.2	101.3	14.1	5.8	0.0			0.0		900.0	86.6
2004	101.1	18.0	84.6	17.5	64.8	12.0	1.1	1.1		0.0		251.7	36.1
2003 <sup>b</sup>													
2002	9.3	3.5	94.7	19.6	125.3	29.2	1.3	1.3		0.0		230.7	48.0
2001	5.3	3.5	65.3	16.2	137.3	27.9	1.3	1.3		0.0		209.3	40.7
2000	1.3	1.3	52.0	4.0	73.3	5.3	4.0	2.3		0.0		130.7	10.9

Year	Redear											Total	
	Length group												
	< 3.0 in		3.0-5.9 in		6.0-7.9 in		≥ 8.0 in		≥ 10.0 in		CPUE	SE	
2018	0.0		41.1	10.8	258.3	39.2	78.9	20.3	0.0			378.3	52.5
2017	0.0		109.3	22.9	304.0	50.6	37.3	16.2	0.0			450.7	54.4
2015	0.0		140.0	17.4	254.7	53.9	18.7	7.4	0.0			413.3	59.5
2014	1.1	1.1	112.0	19.7	208.0	26.1	27.4	6.0	0.0			348.6	33.1
2013	0.0		72.0	11.0	161.6	26.0	65.6	15.5	0.0			299.2	40.8
2012	0.0		107.0	13.7	39.0	7.6	33.0	8.6	0.0			179.0	21.9
2011	3.2	2.0	8.0	6.2	32.0	32.0	35.2	26.4	0.0			78.4	65.3
2010	0.0		16.0	10.1	240.0	48.3		7.3	0.0			270.4	61.0
2009 <sup>a</sup>													
2008 <sup>a</sup>													
2007	2.7	1.7	41.3	13.1	14.7	3.8	6.7	5.2	0.0			65.3	12.6

<sup>a</sup> Lake draw n down for repairs in 2008-2009

<sup>b</sup> Lake renovated in 2003

nw d4bg.d18

Table 45. PSD and RSD<sup>a</sup> values obtained for bluegill and redear sunfish collected in spring electrofishing samples at NWFD state-owned lakes during 2018; 95% confidence intervals are in parentheses.

Lake	Species	No.	PSD	RSD <sup>a</sup>
Mauzy	Bluegill	111	59 (± 10)	0
	Redear sunfish	329	67 (± 5)	0
Carpenter	Bluegill	433	9 (± 3)	0
	Redear sunfish	39	36 (± 15)	8 (± 8)
New Kingfisher	Bluegill	360	8 (± 3)	0
	Redear sunfish	11	82 (± 24)	18 (± 23)
Old Kingfisher	Bluegill	336	17 (± 4)	0
	Redear sunfish	1	-	-
Washburn	Bluegill	146	34 (± 8)	8 (± 5)
	Redear sunfish	152	68 (± 8)	4 (± 3)

<sup>a</sup> Bluegill = RSD<sub>8</sub>, redear = RSD<sub>9</sub>

nwd4bg.d18

nwd5bg.d18

nwd6bg.d17

nwd7bg.d18

nwd8bg.d18

Table 46. Mean back calculated lengths (in) at each annulus for bluegill collected at Mauzy Lake in October 2018.

Year class	No.	Age					
		1	2	3	4	5	6
2017	5	2.1					
2016	4	1.8	3.1				
2015	3	1.7	3.3	4.7			
2014	2	1.6	2.8	4.2	5.5		
2013	2	1.7	2.8	4.0	5.3	5.9	
2012	1	1.5	3.1	4.0	5.2	6.2	6.6
Mean		1.8	3.0	4.3	5.4	6.0	6.6
No.	17	17	12	8	5	3	2
Smallest		1.2	2.2	3.9	5.2	5.7	6.6
Largest		3.1	4.3	5.4	5.6	6.2	6.6
SE		0.1	0.2	0.2	0.1	0.1	-
95% CI (±)		0.3	0.3	0.4	0.2	0.3	-

nwd4bga.d18

Table 47. Population assessment for bluegill based on spring electrofishing at Mauzy Lake from 2001-2018 (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
2018	3.1 (1)*	≥5 (1)	74.3 (3)	0.0 (1)			7	Fair
2017			37.3 (2)	0.0 (1)			≥ 5	P - G
2015	3.4 (1)	≥5 (1)	44.0 (2)	0.0 (1)			5	Poor
2014			104.0 (4)	0.0 (1)			≥ 7	F - G
2013			73.6 (3)	0.0 (1)			≥ 5	P - G
2012	4.0 (2)	4-4+ (2)	55.0 (3)	0.0 (1)	0.884	58.7	8	Fair
2011			337.6 (4)	121.6 (4)			≥ 10	G - E
2010			97.6 (4)	0.0 (1)			≥ 7	F - G
2009 <sup>a</sup>								
2008 <sup>a</sup>								
2007	3.3 (1)	4-4+ (2)	38.7 (2)	0.0 (1)	0.642	35.8	6	Poor
2006	3.7 (2)	4-4+ (2)	10.0 (1)	0.0 (1)	0.755	53.0	6	Poor
2005	4.3 (2)	2-2+ (4)	14.1 (1)	0.0 (1)			8	Fair
2004	4.3 (2)	2-2+ (4)	65.9 (3)	1.1 (2)			11	Good
2003 <sup>b</sup>								
2002	4.3 (2)	2-2+ (4)	126.7 (4)	1.3 (2)			12	Good
2001	4.3 (2)	2-2+ (4)	138.7 (4)	1.3 (2)			12	Good

<sup>a</sup> Lake drawn down for repairs in 2009

<sup>b</sup> Lake renovated in 2003

\* Back calculated from age table



Table 48. Mean back calculated lengths (in) at each annulus for redear sunfish collected at Mauzy Lake in October 2018.

Year class	No.	Age							
		1	2	3	4	5	6	7	8
2017	1	2.6							
2016	12	2.2	4.2						
2015	10	2.6	4.7	6.2					
2014	2	2.6	4.7	6.0	7.2				
2013	3	2.4	4.1	5.6	6.3	7.2			
2012	4	2.6	4.3	5.2	6.0	6.5	7.1		
2010	1	2.6	3.9	4.7	5.5	6.0	6.8	7.3	7.8
Mean		2.5	4.4	5.8	6.3	6.7	7.0	7.3	7.8
No.	33	33	32	20	10	8	5	1	1
Smallest		1.9	3.3	4.7	5.5	6.0	6.6	7.3	7.8
Largest		3.6	6.0	6.9	7.5	7.7	7.5	7.3	7.8
SE		0.1	0.1	0.1	0.2	0.2	0.2		
95% CI (±)		0.2	0.2	0.3	0.4	0.4	0.3		

nwd4bga.d18

Table 49. Population assessment for redear sunfish based on spring electrofishing at Mauzy Lake from 2007-2018 (scoring based on statewide assessment).

Year	Mean length		CPUE ≥ 8.0 in	CPUE ≥ 10.0 in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
	age-3 at capture	Years to 8.0 in						
2018	6.2 (1)*	≥ 6 (1)	78.9 (4)	0.0 (1)			7	Fair
2017			37.3 (4)	0.0 (1)			≥ 7	F - G
2015	5.9 (2)	≥ 6 (1)	18.7 (4)	0.0 (1)			8	Fair
2014			27.4 (4)	0.0 (1)			≥ 7	F - G
2013			65.6 (4)	0.0 (1)			≥ 7	F - G
2012	7.6 (4)	4-4+ (3)	33.0 (4)	0.0 (1)			12	Good
2011			35.2 (4)	0.0 (1)			≥ 7	F - G
2010			14.4 (3)	0.0 (1)			≥ 6	P - G
2009 <sup>a</sup>								
2008 <sup>a</sup>								
2007	8.2 (4)	3-3+ (4)	6.7 (2)	0.0 (1)	0.790	54.6	11	Good

<sup>a</sup> Lake drawn down for repairs in 2009

\* Back calculated from age table

Table 50. Length frequency and CPUE (fish/hr) of largemouth bass collected during 0.75 hours of 15-minute diurnal electrofishing at Carpenter Lake in April 2018.

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	1	14	8	7		3	4	1	5	7	31	43	14	15	2	3	2		1	161	214.7	10.4

nwd5psd.d18

Table 51. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Carpenter Lake 1999-2018.

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
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
2002 <sup>a</sup>	12.0	4.6	52.0	4.6	12.0	0.0	21.3	3.5	0.0		97.3	4.8
2001 <sup>a</sup>	14.7	8.7	29.3	5.3	90.7	9.3	66.7	2.7	1.3		201.3	17.6
2000 <sup>a</sup>	2.7	1.3	45.3	7.1	48.0	2.3	0.0				96.0	8.3
1999 <sup>a</sup>	1.3	1.3	142.7	18.5	29.3	13.5	1.3	1.3			174.7	31.0

<sup>a</sup> Nocturnal sample

nwd5psd.d18

Table 52. Mean back calculated lengths (in) at each annulus for largemouth bass collected at Carpenter Lake in October 2018.

Year class	No.	Age		
		1	2	3
2017	16	5.6		
2016	17	5.4	9.4	
2015	3	6.9	9.6	11.3
Mean		5.6	9.4	11.3
No.	36	36	20	3
Smallest		3.8	7.9	10.9
Largest		8.1	11.2	11.9
SE		0.2	0.2	0.3
95% CI (±)		0.4	0.4	0.6

nwd5lmba.d18

Table 53. Length frequency of fish collected during of diurnal electrofishing at Carpenter Lake in October 2018. Fish were collected for age and growth only, no CPUE.

Species	Inch class																		Total		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		22	
Bluegill	1		11	14	10	10															46
Redear sunfish					1				1		1										3
Largemouth bass				6	11	2		7	8	7	3	9	5	10	5	4	1	2	1		81

nwd5lmb.d18

Table 54. Population assessment for largemouth bass based on spring electrofishing at Carpenter Lake from 2001-2018 (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
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	G - E
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

\* Back calculated from age table

Table 55. Length frequency and CPUE (fish/hr) of bluegill and redear sunfish collected during 0.75 hour of electrofishing at Carpenter Lake in May 2018.

Species	Inch class									Total	CPUE	SE
	2	3	4	5	6	7	8	9	10			
Bluegill	13	134	194	68	33	4				446	594.7	93.9
Redear sunfish		1		15	10	2	9	2	1	40	53.3	6.4

nwd5bg.d18

Table 56. Spring electrofishing CPUE (fish/hr) for each length group of bluegill (1999-2018) and redear sunfish (2010-2018) collected at Carpenter Lake during spring samples.

Bluegill	Length group										Total	
	< 3.0 in		3.0-5.9 in		6.0-7.9 in		≥ 8.0 in		≥ 10.0 in			
Year	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
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		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	0.0
2001			198.7	74.7	152.0	22.7	41.3	12.7	0.0		392.0	108.9
2000			4.0	2.3	10.7	4.8	12.0	6.1	0.0		26.7	9.6
1999			10.7	2.6	82.7	10.9	12.0	8.0	0.0		105.3	18.0

nw d5bg.d18

Redear	Length group										Total	
	< 3.0 in		3.0-5.9 in		6.0-7.9 in		≥ 8.0 in		≥ 10.0 in			
Year	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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

nw d5bg.d18

Table 57. Mean back calculated lengths (in) at each annulus for bluegill collected at Carpenter Lake in October 2018.

Year class	No.	Age			
		1	2	3	4
2017	10	2.5			
2016	20	3.8	4.8		
2015	3	3.4	5.0	5.6	
2014	1	2.7	5.3	5.8	5.9
Mean		3.3	4.8	5.6	5.9
No.	34	34	24	4	1
Smallest		1.8	3.5	4.9	5.9
Largest		4.8	5.8	6.2	5.9
SE		0.2	0.1	0.3	
95% CI (+)		0.4	0.3	0.5	

nwd5bga.d18



Table 58. Population assessment for bluegill based on spring electrofishing at Carpenter Lake from 2001-2018 (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						
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 0.375 hour of 7.5-minute diurnal electrofishing at New Kingfisher Lake in April 2018.

Species	Inch class														Total	CPUE	SE	
	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20
Largemouth bass	1	3	6	3	3			2	2	6	8	17	2	4	2	59	157.3	29.7

nwd6psd.d18

Table 60. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at New Kingfisher Lake during spring samples 1999-2018.

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
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 <sup>c</sup>	56.0	21.2	2.7	2.7	26.7	2.7	61.3	30.1			146.7	43.7
2012-2016	No sampling											
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 <sup>b</sup>	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
2002 <sup>a</sup>	116.3		258.1		4.7		0.0				379.1	
2001 <sup>a</sup>	89.7		364.1		20.5		2.6				476.9	
2000 <sup>a</sup>	137.8		493.3		24.4		6.7				662.2	
1999 <sup>a</sup>			315.6		17.8		2.2				335.6	

<sup>a</sup> Nocturnal sample

<sup>b</sup> Major fish kill 9/5/08

<sup>c</sup> First standardized sample since renovation

nwd6psd.d18

Table 61. Length frequency and CPUE (fish/hr) of largemouth bass collected during 0.333 hour of diurnal electrofishing at New Kingfisher Lake in October 2018.

Species	Inch class															Total	CPUE	SE
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Largemouth bass	3	1		1	1		1	1	2			2	1	1	2	16	42.7	14.9

nwd6lmb.d18

Table 62. Population assessment for largemouth bass based on spring electrofishing at New Kingfisher Lake from 2001-2018 (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	
2018		10.7 (2)	10.7 (1)	104.0 (4)	5.33 (4)			≥ 12	F - G	
2017 <sup>c</sup>			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 <sup>b</sup>	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	
2002 <sup>a</sup>	11.0 (3)	116.3 (4)	4.7 (1)	0.0 (1)	0.0 (1)			10	Fair	
2001 <sup>a</sup>	11.0 (3)	89.7 (4)	20.5 (2)	2.6 (1)	0.0 (1)			11	Fair	

<sup>a</sup> Nocturnal sample

<sup>b</sup> Major fish kill 9/5/08

<sup>c</sup> First standardized sample since renovation

Table 63. Length frequency and CPUE (fish/hr) of bluegill and redear sunfish collected in 0.375 hours of electrofishing at New Kingfisher Lake in May 2018.

Species	Inch class								Total	CPUE	SE
	2	3	4	5	6	7	8	9			
Bluegill	8	67	142	123	26	1	1		368	981.3	335.4
Redear sunfish			2			5	2	2	11	29.3	17.5

nwd6bg.d18

Table 64. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at New Kingfisher Lake during spring samples 1999-2018.

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
2018	21.3	17.5	885.3	314.5	72.0	12.2	2.7	2.7	0.0		981.3	335.4
2017	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 <sup>b</sup>	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
2002 <sup>a</sup>			9.3		62.8		7.0		0.0		79.1	0.0
2001 <sup>a</sup>			61.5		66.7		7.7		0.0		135.9	0.0
2000 <sup>a</sup>			31.1		66.7		11.1		0.0		109.0	0.0
1999 <sup>a</sup>			6.7		20.0		4.4		0.0		31.1	0.0

<sup>a</sup> Nocturnal sample

<sup>b</sup> Major fish kill 9/5/08

<sup>c</sup> First standardized sample since renovation

nwd6bg.d17

Table 65. Population assessment for bluegill based on spring electrofishing at New Kingfisher Lake from 2001-2018 (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
2018			74.7 (3)	2.7 (3)			≥ 8	F - G
2017 <sup>c</sup>			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 <sup>b</sup>	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
2002 <sup>a</sup>	5.7 (4)	2-2+ (4)	69.8 (3)	7.0 (2)			13	Good
2001 <sup>a</sup>	5.7 (4)	2-2+ (4)	64.4 (3)	6.7 (2)			13	Good

<sup>a</sup> Nocturnal sample

<sup>b</sup> Major fish kill 9/5/08

<sup>c</sup> First standardized sample since renovation

Table 66. Length frequency and CPUE (fish/hr) of largemouth bass collected during 0.310 hour of diurnal electrofishing at Old Kingfisher Lake in April 2017.

Species	Inch class																Total	CPUE	SE
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth bass	3	7	8	3				2	1		1	3	3	1	2	1	35	112.9	0.0

nwd7psd.d18

Table 67. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Old Kingfisher Lake during spring sampling 2018.

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
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.d18

Table 68. Length frequency and CPUE (fish/hr) of largemouth bass collected during 0.535 hours of diurnal electrofishing at Old Kingfisher Lake in October 2018.

Species	Inch class															Total	CPUE	SE		
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20	
Largemouth bass	1	1		1	4			1						1	1	1	1	12	22.4	0.0

nwd7lmb.d18

Table 69. Population assessment for largemouth bass based on spring electrofishing at Old Kingfisher Lake 2017-2018 (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
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 0.294 hours of electrofishing at Old Kingfisher Lake in May 2018.

Species	Inch class						Total	CPUE	SE
	2	3	4	5	6	7			
Bluegill	2	18	145	117	55	1	338	1149.7	0.0
Redear sunfish						1	1		

nwd7bg.d18

Table 71. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Old Kingfisher Lake during spring sampling 2017-2018.

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		
2018	2.0	0.0	280.0	0.0	56.0	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.d18

Table 72. Population assessment for bluegill based on spring electrofishing at Old Kingfisher Lake for 2018 (scoring based on statewide assessment).

Year	Mean length	Years to 6.0 in	CPUE	CPUE	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
	age-2+ at capture		≥ 6.0 in	≥ 8.0 in				
2018			56.0 (3)	0.0 (1)			≥ 6	P - G
2017			309.3 (4)	0.0 (1)			≥ 7	F - G

\*First standardized sample since renovation  
nwd7bg.d18

Table 73. 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 April 2018.

Species	Inch class															Total	CPUE	SE
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Largemouth bass	6	17	3	7	43	35	16	13	10	6	3	2		1	1	163	434.7	44.4

nwd8psd.d18

Table 74. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Washburn Lake during spring samples 2001-2018.

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
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.d17



Table 75. Length frequency and CPUE (fish/hr) of largemouth bass collected during 0.375 hour of diurnal electrofishing at Washburn Lake in October 2017.

Species	Inch class											Total	CPUE	SE					
	5	6	7	8	9	10	11	12	13	14	15								
Largemouth bass	11	7	2	7	19	12	6	12	4	1						1	82	218.70	2.70

nwd8lmb.d17

Table 76. Population assessment for largemouth bass based on spring electrofishing at Washburn Lake 2003-2018 (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
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) for bluegill and redear sunfish collected in 0.375 hours of electrofishing at Washburn Lake in May 2018.

Species	Inch class									Total	CPUE	SE
	1	2	3	4	5	6	7	8	9			
Bluegill	1	8	32	45	20	14	24	11		155	413.3	55.7
Redear			10	19	21	9	49	48	6	162	432.0	127.6

nwd8bg.d18

Table 78. Spring electrofishing CPUE (fish/hr) for each length group of bluegill (2001-2018) and redear sunfish (2012-2018) collected at Washburn Lake during spring samples.

Bluegill	Length group											
	< 3.0 in		3.0-5.9 in		6.0-7.9 in		≥ 8.0 in		≥ 10.0 in		Total	
Year	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
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

nw d8bg.d18

Redear	Length group											
	< 3.0 in		3.0-5.9 in		6.0-7.9 in		≥ 8.0 in		≥ 10.0 in		Total	
Year	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE	CPUE	SE
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

nw d8bg.d18

Table 79. Length frequency of fish collected during diurnal electrofishing at Washburn Lake in October 2018. Fish were collected for age and growth only, no CPUE.

Species	Inch class									Total
	2	3	4	5	6	7	8	9		
Bluegill	7	14	13	9	2					45
Redear sunfish		2	10	10	12	2	1			37
Largemouth bass			2	10	12	6		1		31

nwd8all.d18

Table 80. Mean back calculated lengths (in) at each annulus for bluegill collected at Washburn Lake in October 2018.

Year class	No.	Age	
		1	2
2017	27	2.1	
2016	8	1.9	3.5
Mean		2.1	3.5
No.	35	35	8
Smallest		1.3	2.8
Largest		3.5	4.4
SE		0.1	0.2
95% CI ( $\pm$ )		0.2	0.4

nwd8bga.d18

Table 81. Population assessment for bluegill based on spring electrofishing at Washburn Lake 2003-2018 (scoring based on statewide assessment).

Year	Mean length age-2 at capture	Years to 6.0 in	CPUE $\geq 6.0$ in	CPUE $\geq 8.0$ in	Instantaneous mortality (z)	Annual mortality (A)%	Total score	Assessment rating
2018	3.5 (1)	4-4+ (2)	130.7 (4)	29.3 (4)			11	Good
2017			80.0 (3)	37.3 (4)			$\geq 9$	F - G
2015			130.0 (4)	8.0 (4)			$\geq 10$	F - G
2014			141.3 (4)	8.0 (4)			$\geq 10$	F - G
2013			112.0 (4)	2.7 (3)			$\geq 9$	F - G
2012			86.0 (3)	22.0 (4)			$\geq 9$	F - G
2011			38.7 (2)	5.3 (4)			$\geq 8$	P - G
2010			32.0 (2)	0.0 (1)			$\geq 5$	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 82. Mean back calculated lengths (in) at each annulus for redear sunfish collected at Washburn Lake in October 2018.

Year class	No.	Age		
		1	2	3
2017	18	2.5		
2016	17	2.4	4.3	
2015	1	4.2	7.3	8.4
Mean		2.5	4.5	8.4
No.	36	36	18	1
Smallest		1.7	3.4	8.4
Largest		4.2	7.3	8.4
SE		0.1	0.2	
95% CI (+)		0.2	0.5	

nwd8bga.d18

Table 83. Population assessment for redear sunfish based on spring electrofishing at Washburn Lake 2003-2018 (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
2018	8.4 (4)	3-3+ (4)	144.0 (4)	0.0 (1)			13	Good
2017			53.3 (4)	0.0 (1)			≥ 9	F - G
2015			94.0 (4)	0.0 (1)			≥ 10	F - G
2014			98.7 (4)	0.0 (1)			≥ 10	F - G
2013			0.0 (1)	0.0 (1)			≥ 9	P - F
2012			0.0 (1)	0.0 (1)			≥ 4	P - F

## 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

Spring black bass were not sampled due to high water levels (8-10 ft. above summer pool)

Fall young of year sampling (Tables 2 and 3) suggested a very good 2018 year-class. Largemouth bass made up the majority of the fall sample (93%), while spotted bass only made up 6% of the sample (Table 2). Smallmouth bass remain poorly represented in samples. Age-0 CPUE (215.2 fish/hr; Table 3) and age-0 CPUE  $\geq 5.0$  in (48.8 fish/hr) was higher than the average from the past 15 years. Age-0 largemouth bass mean length (3.9 in) was average compared to most years.

#### **Marion County Lake (25 acres)**

##### Sunfish

Diurnal electrofishing results for bluegill and redear sunfish are presented in Tables 4-9. The overall catch rate for bluegill (101.7 fish/hr) was the lowest it has ever been since 2002, while the catch rate for redear (56.0 fish/hr) was also low relative to previous years (Tables 4-6). The size structure of both populations was very good (bluegill PSD = 44, redear PSD = 61) when compared to previous years (Table 7). The catch rate of  $\geq 6.0$ -in bluegill (36.6 fish/hr) was one of the third lowest since 2005 and the catch rate of  $\geq 8.0$ -in bluegill (6.9 fish/hr) was slightly above average; these factors resulted in a “Good” rating in the population assessment (Table 8). The catch rate of  $\geq 8.0$ -in redear (26.3 fish/hr) decreased from the previous sample in 2016 but met the management objective of 25.0 fish/hr (Table 9). The catch rate of  $\geq 10.0$ -in fish (10.3 fish/hr) was the highest it has been since 2005; these factors resulted in an “Excellent” rating in the redear population assessment (Table 9).

#### **West Fork Drakes (88 acres)**

##### Black Bass

Results of diurnal bass electrofishing in early May (Tables 10-13) seemed to indicate a lower-density largemouth population (114.0 fish/hr) with a decent size structure (PSD 40). Similar to previous years, the largemouth bass length frequency was truncated after 12.0-14.0 in. Lack of larger fish seems to suggest moderate harvest and/or fishing pressure. The lake is in an urban setting, located just outside of Franklin, KY and seems to have the right recipe for higher pressure and maybe harvest. The lake is a shallow river-run system with good productivity (secchi depths in 2- to 3-foot range) and immense shallow cover or nursery areas. The largemouth bass population assessment decreased from previous years to “Fair” due to a decrease in the number larger  $\geq 15.0$ -in fish (Table 13).

##### Sunfish

Electrofishing results for bluegill and redear from early May were the second lowest since sampling started in 2007 (Tables 14-16). This was characterized by an overall decrease in the number of larger fish ( $\geq 3.0$ -in bluegill and  $\geq 6.0$ -in redear). This decrease in the number of larger redear influenced the size structure (PSD = 38) but the population assessment rating remained “Fair” (Tables 17-19). Bluegill size structure (PSD = 14) and population assessment decreased to “Fair”, due to a very low catch rate of  $\geq 6.0$ -in fish.

## Green River Lake (8,210 Acres)

### Muskie

Muskellunge sampling remains problematic as multiple attempts (Table 1) were made with diurnal and nocturnal electrofishing with poor results. Prior to this year, sampling results seemingly did not reflect the true population status as prior creel data (angler catch rates and attitude surveys) suggested the fishery was staying true to historic trends. Creel data for 2018 (presented later) does not offer such assurances. Fyke netting for muskie will be attempted again in 2019 in order to better assess the population. Due to poor sampling results, no catch data is presented for this year. Muskie growth rates and condition data will be presented in the Fish Habitat Branch Annual Performance Report.

### Black Bass

Nocturnal bass electrofishing was conducted on the upper and lower ends of each lake arm (Green River and Robinson Creek) during late-April and early- to-mid May (Table 20). The overall largemouth CPUE of 137.2 fish/hr dipped from last year's high mark due to a poor 2017 year class. The catch rate of largemouth  $\geq 15.0$  in (45.8 fish/hr) remains well above average (Tables 21 and 23). Largemouth bass size structure indices were similar to previous years (PSD=69; RSD=37; Table 22). The population assessment for largemouth bass remained "Excellent"; similar to the last ten years (Table 23).

Spotted bass catch rate (43.8 fish/hr) remained near historic levels (approximately 50.0 fish/hr). The population continues to produce notable numbers of fish  $>12.0$  inches in length (PSD =33; Table 22), which was rare prior to alewife introduction in 2004, when few spotted bass achieved such lengths.

Fall YOY sampling (Tables 24 and 25) suggests a very good largemouth bass year class in 2018 as age-0 overall CPUE (72.2 fish/hr) and age-0 CPUE  $\geq 5.0$  in (36.8 fish/hr) were both well below average. Mean age-0 largemouth bass length (5.2 in) was slightly above average.

### Crappie

Trap netting for crappie was conducted during mid-November (Table 1). The white crappie population remains strongly dominated by 6.0- to 7.0-in fish from multiple persisting year classes (Table 26 and 28). White crappie size structure index (PSD = 47; Table 27) improved markedly from previous years. Mean age-2+ size (8.7 in) of white crappie improved to its best mark in the last 10 years (Table 32). Age-2+ crappie lengths in years prior to the persisting population increase were typically 9.0-in plus. The white crappie population assessment remained "Good"; similar to most years. The length-weight equation for white crappie in 2018 was similar to previous years:

$$\text{Log}_{10}(\text{weight}) = -3.84944 + 3.53456 \times \text{Log}(\text{length})$$

Black crappie remain at low densities in trapnet samples (n=35; Table 26), but are represented by multiple year classes (n=6; Table 29).

### Walleye/White bass

Experimental gill net sampling for white bass and walleye was conducted during mid-November (Table 1). White bass CPUE (8.8 fish/nn) continued to slide from a high in 2015 with diminished contribution from the strong 2014 year class (age-4+; Table 34). The moderate 2015 year class currently supports this fishery (41% of catch; Table 34) and indicates good natural reproduction resulting from lower adult densities during that time frame. Growth rates (mean length age-2+ = 13.9 in; Table 36) and condition indices for all length groups (Wr = 93 – 94; Table 37) of white bass remains excellent. The white bass population assessment remained "Good". The length-weight equation for white bass (n=82) was similar to previous years:

$$\text{Log}_{10}(\text{weight}) = -3.40854 + 3.06587 * \text{Log}_{10}(\text{Length})$$

Walleye CPUE (2.1 fish/nn) dipped slightly from 2017, but is represented by multiple year classes (Tables 33 and 35). Growth rate (19.5 inches by age-2+; Table 38) and condition indices for all length groups ( $W_r = 95-99$ ; Table 39) remain excellent. The walleye population assessment fell to “Fair” due to lower CPUE of larger fish. The length-weight equation for walleye ( $n=23$ ) was similar to previous years:

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

### **Green River Lake Creel (8,210 acres)**

**Creel survey:** A roving, daytime creel survey was conducted from March 15- November 30; results are presented in Tables 40-49. Anglers made an estimated 26,847 trips and fished for 109,033 hours with the average trip approximating 4.06 hours. Total trips dipped slightly from 2014 (28,374), but were still much lower than 2009 (40,095) and previous years. There was a notable drop in hours fished from previous years (152,198 in 2014; 169,561 in 2009). Trip length (4.06 hours) dipped from 2014 (5.36 hours); however, trip length has varied greatly over the years (ranging from 3.4 to 6 hours). Overall catch (2.2 fish/hour) and harvest rate (0.73 fish/hour) returned to more normal levels from highs noted in 2014 (Table 40). Bass narrowly returned to top billing as most sought-after fish, accounting for 44.3% of the effort followed by crappie (43.3%) and catfish (5 %; Table 41).

Crappie angler success returned to normal levels (61%) from a high in 2014 of 78% (Table 41). Crappie harvest rate (1.43 crappie/hr; Table 43) slid slightly from 2017, but remained well above the average harvest rate from the previous creel (0.75 crappie/hr). Crappie harvest was highest in November (2.43 fish/hour). Crappie angler hours (47,188) dropped well below the previous creel (80,249 in 2014), but trips (11,619) were only slightly above previous years.

Bass angler trips (11,905; Table 44) were slightly higher than previous surveys (10,543 on 2009; 10,485 in 2014). Overall catch rate by bass anglers (0.55 fish/hr) was similar to recent years. Bass size ranges caught by all anglers were similar to previous years (Table 41 and 48).

Catfish angler hours (5,211) and trips (1,283) remained similar to 2014 (5,543 hours and 1,033 trips), but were in stark contrast to 2009 (15,639 hours; 3,698 trips). Differences in effort are not reflective of the fishery quality as catch (0.62 fish/hr) and harvest (0.52 fish/hr) rates remained similar to previous years (Table 45).

Muskie angler hours plummeted to an all-time low (710 hours; Table 46), well below the previous two surveys (4,234 hours in 2014; 5,198 in 2009) and well below historic values (11,671 in 2003; 20,980 in 1998). Muskie anglers only accounted for 7% ( $n=21$ ) of total muskies caught ( $n=292$ ). Legal-size muskie (36 in) catch rate was 33.8 hours/fish. Anecdotally, we have spoken to a few muskie anglers that fished the lake in 2018 and they did not notice any change in numbers or size range of muskie.

Walleye angler trips (131) and hours (529) fell off further from 2014 (422 hours; 2,265 trips) and 2009 (6,701 hours; 1,585 trips) surveys (Table 47). The 2009 creel survey marked the highest angler use of walleye since creation of the fishery in the late 1990's. Anecdotal conversation with walleye anglers that fished the lake in 2018 did not suggest a major drop off in the fishery.

**Angler attitude survey:** Results of the angler attitude survey are presented in Figure 1. Only 181 anglers were interviewed for attitude information, much lower than previous surveys that ranged from 508 to 987. Angler use of Green River Lake was dominated by anglers who fish there more than 10 times annually (q. 3; 66.3%), similar to previous years. Similar to creel data (trips and hours), anglers targeted bass most often (q. 5; 46.8%) and in general (q.4; 59.7%). Angler satisfaction with bass (87.6%), catfish (89.3%) and crappie (92.9%) was overwhelmingly good (responses falling in the “very satisfied or somewhat satisfied” categories). Not enough anglers were interviewed to assess satisfaction with other fisheries.

Bass anglers identified “fish size” (q. 6a; 66.7%) as the primary reason for satisfaction with the fishery. “Fish number” was also a significant reason (38.1%) for satisfaction with the bass fishery.

Crappie angler satisfaction with the fishery was skewed toward “number of fish” (q.7a; 63%) versus quality or size (27.2%); dissimilar to the previous survey (2014) where satisfaction equally divided between “size of fish” (49.8%)



and “number of fish” (46.8%).

Similarly, catfish angler satisfaction with the fishery flipped from the 2014 survey to “number of fish” (q. 8a; 76.5%) with fish size (23.5%) the being next most important factor of satisfaction. Similar to the previous surveys (2009 and 2014), “hook and line” was the most common method used by catfish anglers (q. 9; 53.6%). Only 35.7% of catfish anglers used jugs to pursue catfish, similar to the 2014 survey. Low sample size (n=19 for 2018 and n=31 in 2014) may explain low use when compared to 2009 where 81% of catfish anglers claimed to use jugs to pursue catfish. Jug fishermen fished, on average, 13 days annually with the range spanning from 5 to 40 days. No catfish anglers in this survey identified themselves as noodlers/hand grabbers. The low number of angler interviews seems the likely factor as this segment of anglers represented 19% of catfish anglers in 2014.

Few muskie anglers were contacted in angler surveys (n=9, only 4 interviews for AAS), and is likely just reflective of low angler contacts overall. However, as noted in the creel data, this fishery seems to have slipped in use by anglers over the years, though satisfaction with the fishery has remained high. Other methods for monitoring this population such as angler diaries/reporting may be in order.

Anglers, overall, were very satisfied with current regulations (q. 14; 80.6%). Anglers that did express displeasure (q. 14), desired a higher crappie size limit.

Most anglers (88.4%; q. 15) were aware KDFWR does fish attractor work at Green River Lake and produces a map with sites depicted (78.5%; q. 16). The majority of anglers still seemingly preferred to find fish habitat on their own (q.16a), as use of printed maps (38.5%) and/or website site maps and/or coordinates (44.3%) rated lower. Angler preferences for fish attractor material was split between “any/all” (42.4%) and “natural brush” (47.4%), with no anglers expressing devotion to plastics. Seemingly reflective of the lack of use of the website and printed maps, was angler lack of awareness of plastic pallet tree sites (q.18; 87.6%). Anglers also noted difficulty locating such structures with electronics. Limited angler review (q. 18a; n=21) of plastic pallet trees was mixed, with “less hang ups/snagging” being the predominant benefit and “fewer fish” being the primary complaint.

## **Metcalfe County Lake (22 acres)**

### Bluegill

Information from diurnal bluegill sampling on May 1 (Table 1) is presented in Tables 49-52. Overall CPUE (710.0 fish/hr) was similar to recent surveys. Size structure index (PSD = 26) dipped below historic values (PSD = 37- 47 for 2005 - 2016). The bluegill population assessment remained “Good”, similar to previous years.

## **Mill Creek Lake (109 acres)**

### Sunfish

Results of diurnal sunfish electrofishing on May 1 are presented in Tables 53-56. The overall bluegill CPUE (462.9 fish/hr) was similar to previous years (Table 54). The bluegill population size structure remains dominated by intermediate-size fish (420.6 fish/hr; PSD = 5), similar to previous years (Tables 54-55). The population assessment remains “Poor” (Table 63), though the bass population is well balanced. The presence of a substantial gizzard shad population and lower productivity seem the likely factor hindering population improvement.

### Channel catfish

Channel catfish were sampled with tandem set hoop nets in mid-September with moderate success (5.1 fish/set-night; Table 57). Fish were present up to the 22.0-in inch class (Table 58). Condition (Wr = 85) of channel catfish was fair for the 11.0- to 15.9-in length group, and good (Wr = 89; Table 59) for the 16.0- to 23.9-in length group. Hoopnets picked up redear size ranges that were missing or perhaps underrepresented during electrofishing sampling in May.

### **Spurlington Lake (25 acres)**

#### *Sunfish*

The sunfish population was sampled by diurnal electrofishing on April 20 (Table 1 and Table 60). The catch rate of the 3.0- to 5.9-in bluegill length group (604.0 fish/hr) returned to normalcy; however, the 6.0- to 7.9-in length group catch rate (52.0 fish/hr) was significantly lower than recent years (Table 61). Bluegill size structure is dominated by intermediate-size fish (PSD = 11; Table 63), but the population assessment remained “Excellent” (Table 64), similar to previous years. A redear population assessment is not available due to the lack of fish numbers for suitable age data. Spring redear sampling was outperformed by late summer/early fall hoopnetting in 2017 (golden opportunity missed for age data collection).

### **Shanty Hollow Lake (136 acres)**

#### *Black Bass*

Nocturnal bass sampling on April 26 yielded an overall largemouth bass CPUE of 249.3 fish/hr (Table 65), similar to historic data. The size structure index (PSD = 38, Table 67) was similar to previous years; however, the population still suffers from persisting poor recruitment to larger length classes (15.0-in plus; Table 66). The population assessment slipped to “Good” due to a lower CPUE of 20-in plus fish (Table 68). Removal of smaller-size bass (n=171) plus resumption of fertilization in 2016 did not seem to improve bass size structure or bluegill production. Chronic low water levels (6-12 ft. reductions) from late-summer through fall still plague the lake annually and likely serve to confound bass and sunfish interactions.

Table 1. Lake sampling conditions in the Southwestern Fisheries District in 2018.

Lake	Date	Species	Weather	Water temp. surface (F)	Conductivity (umhos)	Secchi (in.)	Comments
Barren River	9/11	YOY bass	overcast/calm	80		24	summer pool & steady w / 496 cfs outflow
	9/11	YOY bass	overcast/calm			52	summer pool & steady w / 496 cfs outflow
	9/12	YOY bass	partly sunny/calm	79	206		summer pool & steady w / 110 cfs outflow
	9/12	YOY bass	partly sunny/calm				summer pool & steady w / 110 cfs outflow
Green River	1/30	Muskie EF	sunnys 30's air temp	38-39			1-ft above w inter pool & falling w ith 3000 cfs outflow (6 fish)
	2/8	Muskie EF			120	18	2-ft above w inter pool & rising w / 1500 cfs outflow (3 fish)
	2/9	Muskie EF			130	12-16	2-ft above w inter pool & falling w / 1400 cfs outflow (5 fish)
	2/13	Muskie EF			130	26	5-ft above summer pool & steday w / 2100 cfs outflow (no fish)
	2/15	Muskie EF			126	6	5-ft above summer pool & steday w / 2100 cfs outflow (4 fish)
	3/23	Muskie EF	overcast	45	130	30	2.5-ft above w inter pool & falling w ith 4655 cfs outflow (3 fish)
	3/27	Muskie NEF	w indy/cloudy	49	132	26	5-ft above w inter pool & steady w / 4100 cfs outflow (1 fish)
	4/30	Bass	sunny/calm	63-65	122		summer pool & steady w / 407 cfs outflow
	5/1	Bass	sunny/calm	66	118		summer pool & steady w / 407 cfs outflow
	5/2	Bass	partly sunny/w indy	66	113		summer pool & steady w / 407 cfs outflow
	5/3	Bass	partly sunny/w indy	61	108		summer pool & steady w / 407 cfs outflow
	10/29	YOY bass	sunny/calm	63		26	summer pool & steady w / 458 cfs outflow
	10/30	YOY bass	sunny/calm	64-65			summer pool & steady w / 458 cfs outflow
	10/30	YOY bass	sunny/calm	64-65	139	34	summer pool & steady w / 458 cfs outflow
	10/31	YOY bass	overcast/w indy		149	48	summer pool & steady w / 458 cfs outflow
	11/8-11/9	Crappie	overcast/w indy	53-56		6-26	3-ft above summer pool & rising w / 2000 cfs outflow
11/14-11/15	Crappie	overcast/w indy	53-55		30	1-ft above summer pool & falling w / 4222-1686 cfs outflow	
11/29-11/30	White Bass & Walleye	overcast/calm	42-48			6-ft below summer pool & falling w / 2000 cfs outflow	
Marion	4/30	Bluegill & Redear	sunny/calm	70-72	113	42	Normal
Metcalfe	5/1	Bluegill	sunny/w indy	71	239	28	Normal
Mill Creek	5/1	Bluegill, Redear, & Crappie	sunny/w indy	65-71	219	28	Normal
	9/7-9/10	Channel catfish	sunny/calm; overcast/calm	79-83			Normal
Shanty Hollow	4/26	Bass	overcast/calm	60-61	112	72	
	8/29-8/31	Channel catfish	overcast/calm	85		36	
Spurlington	4/30	Bluegill & Redear	sunny/calm	66-71	160	24	Normal
West Fork Drakes Cr.	5/10	Bass, Bluegill & Redear	sunny/w indy	68-71	235	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 on September 11-12, 2018.

Area	Species	Inch class																		Total	CPUE	Std err
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Peninsula	Smallmouth bass		1			1	1													3	2.0	0.0
	Spotted bass	41	9		8	1	1	3	1	1	4	1	1	2	1					74	49.3	8.5
	Largemouth bass	218	52	9	5	7	5	5	5	6	4	5	2	2	1					326	217.3	37.6
Beaver Creek	Smallmouth bass																			0		
	Spotted bass																			0		
	Largemouth bass	52	120	11	25	61	73	16	2	7	13	8	9	7	3					407	271.3	27.4
Peter Creek	Smallmouth bass																			0		
	Spotted bass	1	12	5		1						1		1						21	14.0	9.0
	Largemouth bass	81	200	26	10	15	7	1	11	7	4	2	3	4	4	3	2	2	1	383	255.3	79.3
Walnut Creek	Smallmouth bass																			0		
	Spotted bass		1	2																3	2.0	2.0
	Largemouth bass	99	105	25	22	23	19	1	11	11	6	4	1	3		1				332	221.3	49.3
TOTAL	Smallmouth bass		1			1	1													3	0.5	0.3
	Spotted bass	42	22	7	8	2	1	3	1	1	4	2	1	3	1					98	16.3	6.5
	Largemouth bass	450	477	71	62	106	104	23	29	31	27	19	15	16	8	4	2	2	2	1448	241.3	23.3

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Table 3. 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 2002-2018.

Year-class	Age-0 <sup>A</sup>		Age-0 <sup>A</sup>		Age-0 $\geq$ 5.0 in <sup>A</sup>		Age-1 <sup>B</sup>	
	Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2002	4.0	0.05	171.7	25.8	34.2	4.1	26.9	3.7
2003	4.4	0.04	198.0	30.8	84.0	18.7	44.9	13.3
2004	3.7	0.04	108.4	22.2	20.8	3.9	11.2	2.5
2005	3.7	0.04	160.7	25.6	25.3	4.2	17.5	3.6
2006	3.4	0.02	299.7	87.2	21.8	5.6	18.0	4.8
2007	4.2	0.06	61.5	12.8	14.0	2.5	13.8	1.5
2008	3.8	0.03	307.5	46.9	59.7	10.5	18.9	4.4
2009	3.2	0.02	401.3	76.1	36.8	8.6	35.7	5.2
2010	5.7	0.05	166.6	19.1	105.0	18.7	ND	
2011	4.5	0.05	175.5	33.7	65.7	10.8	43.8	9.4
2012	5.1	0.08	70.0	16.7	32.7	11.0	ND	
2013	3.9	0.03	369.3	92.2	61.5	10.0	44.5	13.1
2014	4.4	0.08	108.5	27.5	33.0	6.3	19.2	na
2015	3.8	0.03	167.7	23.5	18.7	3.4	8.0	1.7
2016	4.3	0.04	191.8	38.9	46.5	13.9	39.5	12.1
2017	4.0	0.04	150.2	36.3	23.5	3.8	ND	
2018	3.9	0.05	215.2	24.1	48.8	13.2		

<sup>A</sup> 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.

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

ND = no data available

swdbrlbb.d02 - d17  
swdbrlag. d02 - d18  
swdbrlyy. d02 - d18

Table 4. Length frequency and CPUE (fish/hr) of each inch class of bluegill and redear sunfish collected by 0.875 hours of diurnal electrofishing (7- 0.125-hour runs) at Marion Co. Lake on 30 April 2018.

Species	Inch class										Total	CPUE	Std. error
	1	2	3	4	5	6	7	8	9	10			
Bluegill	4	12	11	13	17	16	10	6			89	101.7	20.0
Redear sunfish					7	12	7	6	8	9	49	56.0	11.7

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Table 5. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Marion Co. Lake 2002-2018. 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	
2002	57.1 (30.3)	152.0 (40.5)	78.9 (6.4)	16.0 (3.5)	304.0 (67.2)
2003	164.0 (33.9)	212.0 (34.1)	118.7 (23.9)	5.3 (4.0)	500.0 (60.4)
2004	303.0 (59.0)	255.0 (38.7)	35.0 (10.0)	1.0 (1.0)	594.0 (85.9)
2005	102.0 (18.6)	210.0 (31.9)	63.0 (16.7)	3.0 (2.1)	378.0 (53.1)
2006	77.3 (15.1)	501.3 (25.5)	25.3 (7.6)	4.0 (2.7)	608.0 (34.1)
2007	73.0 (22.8)	291.0 (39.5)	39.0 (7.5)	3.0 (1.5)	406.0 (50.1)
2008	60.0 (31.6)	73.0 (13.6)	130.0 (14.6)	11.0 (4.0)	274.0 (45.1)
2009	48.0 (22.2)	109.7 (20.9)	58.3 (10.6)	1.1 (1.1)	217.1 (35.4)
2010	55.0 (27.7)	72.0 (10.5)	25.0 (9.1)	5.0 (2.1)	157.0 (25.8)
2011	499.4 (112.4)	107.4 (16.3)	73.1 (10.7)	14.9 (2.7)	694.9 (126.5)
2012	270.0 (86.0)	213.0 (45.5)	32.0 (4.3)	7.0 (3.8)	522.0 (95.5)
2014	49.0 (19.0)	267.0 (72.6)	112.0 (28.9)	1.0 (1.0)	429.0 (101.8)
2016	52.0 (18.0)	138.0 (24.5)	141.0 (39.6)	9.0 (4.1)	340.0 (65.4)
2018	18.3 (9.5)	46.9 (11.9)	29.7 (9.0)	6.9 (3.7)	101.7 (20.0)

swdmclbg.d02 - d18

Table 6. Spring electrofishing CPUE (fish/hr) for each length group of redear sunfish collected at Marion Co. Lake 2002-2018. 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	
2002	1.1 (1.1)	51.4 (11.3)	11.4 (4.2)	57.1 (13.0)		121.1 (19.2)
2003	5.3 (2.7)	46.7 (9.3)	9.3 (4.8)	28.0 (10.7)	2.7 (2.7)	89.3 (15.4)
2004	2.0 (2.0)	40.0 (15.1)	18.0 (7.1)	7.0 (3.8)	1.0 (1.0)	67.0 (16.3)
2005		34.0 (5.8)	30.0 (9.8)	25.0 (7.3)	3.0 (1.5)	89.0 (16.5)
2006		17.3 (6.7)	17.3 (7.0)	24.0 (6.2)	2.7 (1.7)	58.7 (12.8)
2007		21.0 (6.2)	7.0 (2.4)	11.0 (6.6)	1.0 (1.0)	39.0 (11.9)
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)
2009		52.6 (10.2)	34.3 (6.9)	17.1 (5.4)	2.3 (2.3)	104.0 (14.8)
2010	7.0 (7.0)	20.0 (6.1)	20.0 (6.9)	15.0 (2.8)		62.0 (12.5)
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)
2012	1.0 (1.0)	3.0 (2.1)	5.0 (2.1)	48.0 (18.1)		57.0 (18.0)
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)
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)
2018		8.0 (2.5)	21.7 (3.8)	26.3 (9.8)	10.3 (5.4)	56.0 (11.7)

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Table 7. Proportional stock density (PSD) and relative stock density (RSD) of bluegill and redear sunfish collected by diurnal electrofishing at Marion Co. Lake on 30 April 2018. Numbers in parentheses represent 95% confidence intervals

Species	No. of fish ≥stock size	PSD	RSD <sup>A</sup>
Bluegill	73	44 (12)	8 (6)
Redear sunfish	49	61 (14)	35 (14)

<sup>A</sup> Bluegill=RSD<sub>8</sub>; redear sunfish=RSD<sub>9</sub>  
swdmclbg.d18

Table 8. Bluegill population assessments from 2007-2018 at Marion County Lake (scoring based on statewide assessment).

Parameter	Year																	
	<u>2007</u>		<u>2008</u>		<u>2009</u>		<u>2010</u>		<u>2011</u>		<u>2012</u>		<u>2014</u>		<u>2016</u>		<u>2018</u>	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-2 at capture	3.7	1	3.7*	1	3.7*	1	3.7*	1	3.7*	1	4.3	3	4.3*	3	4.3*	3	4.3*	3
Years to 6.0 in	3.7	3	3.7*	3	3.7*	3	3.7*	3	3.7*	3	2.8	4	2.8*	4	2.8*	4	2.8*	4
CPUE ≥6.0 in	42.0	2	141.0	4	59.4	3	30.0	2	88.0	3	39.0	2	113.0	4	150.0	4	36.6	2
CPUE ≥8.0 in	3.0	3	11.0	4	1.1	2	5.0	4	14.9	4	7.0	4	1.0	2	9.0	4	6.9	4
Instantaneous mortality (z)	-1.03										-0.746							
Annual mortality (A)	64.2										52.6							
Total score:	9		12		9		10		11		13		13		15		13	
Assessment rating	Fair		Good		Fair		Good		Good		Good		Good		Excellent		Good	

\*No age data, values carried over from years with age data  
sw dmclag.d07, sw dmclag.d12  
sw dmclbg.d05 - d18

Table 9. Redear sunfish population assessments from 2007-2018 at Marion County Lake (scoring based on statewide assessment).

Parameter	Year																	
	2007		2008		2009		2010		2011		2012		2014		2016		2018	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-3 at capture	8.3*	4	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	2.8*	4	2.8*	4	2.8*	4	2.8*	4	2.8*	4	2.8	4	2.8*	4	2.8*	4	2.8*	4
CPUE $\geq$ 8.0 in	11.0	3	28.0	4	17.1	3	15.0	3	74.3	4	48.0	4	25.0	4	52.0	4	26.3	4
CPUE $\geq$ 10.0 in	1.0	3	6.0	4	2.3	4	0.0	0	4.6	4	0.0	0	5.0	4	2.0	4	10.3	4
Instantaneous mortality (z)	NA						NA											
Annual mortality (A)	NA						NA											
Total score:	14		16		15		11		16		12		16		16		16	
Assessment rating	Excellent		Excellent		Excellent		Good		Excellent		Good		Excellent		Excellent		Excellent	

\*No age data or too little for calculation, values carried over from years with age data

NA (data not amenable to calculations)

sw dmclag.d07, sw dmclag.d12

sw dmclbg.d05 - d18

Table 10. Largemouth bass length frequency and CPUE (fish/hr) collected during 1.0 hour (4- 900-sec runs) of diurnal electrofishing at West Fork Drakes Reservoir 10 May 2018.

Species	Inch class																		Total	CPUE	Std err
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18					
Largemouth bass	5	18	5	7	1	5	6	18	18	12	6	9	1		1	2	114	114.0	24.6		

swdwfddb.d18

Table 11. Spring diurnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at West Fork Drakes Reservoir from 2007 - 2018. Missing years are non-sampling years.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	Std. error
	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error		
2007	27.0	15.3	31.9	5.7	29.9	5.8	6.0	2.7	2.0	1.3	95.0	23.7
2009	42.0	11.0	47.0	5.7	16.0	2.3	9.0	2.5	1.0	1.0	114.0	11.5
2012	45.0	8.4	104.0	16.3	31.0	3.0	12.0	1.6	5.0	1.0	192.0	25.8
2015	28.0	7.3	42.0	7.4	67.0	10.5	8.0	2.3	2.0	1.2	145.0	10.0
2018	36.0	16.3	47.0	15.3	27.0	11.5	4.0	4.0	0.0		114.0	24.6

swdwfddb.d07-18

Table 12. Proportional stock density (PSD) and relative stock density (RSD<sub>15</sub>) for largemouth bass collected by spring diurnal electrofishing at West Fork Drakes Reservoir on 10 May 2018. Numbers in parentheses represent 95% confidence intervals.

Species	No. of fish ≥stock size	PSD	RSD <sub>15</sub>
Largemouth bass	78	40 (11)	5 (5)

swdwfddb.d18

Table 13. Population assessment of largemouth bass based on diurnal spring sampling at West Fork Drakes Reservoir from 2007-2018 (scoring based on statewide assessment). Missing years are non-sampling years.

Parameter	Year									
	2007		2009		2012		2015		2018	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-3 at capture	11.3	3	11.3	3	11.3	3	11.3*	3	11.3*	3
Spring CPUE age-1	19.0	2	34.0	3	21.0	2	28.0	3	28.0	3
Spring CPUE 12.0-14.9 in	29.9	3	16.0	2	31.0	3	67.0	4	27.0	3
Spring CPUE $\geq$ 15.0 in	6.0	2	9.0	2	12.0	2	8.0	2	4.0	1
Spring CPUE $\geq$ 20.0 in	2.0	3	1.0	2	5.0	4	2.0	3	0.0	1
Instantaneous mortality (z)					-0.451					
Annual mortality (A)%					36.3					
Total score	13		12		14		15		11	
Assessment rating	Good		Fair		Good		Good		Fair	

\*No age data collected, value carried over from 2012

swdwfdag.d12

swdwfdbb.d07-18

Table 14. Length frequency and CPUE (fish/hr) of bluegill and redear sunfish collected by 0.5 hours (4- 450-sec runs) of diurnal electrofishing at West Fork Drakes Reservoir on 10 May 2018.

Species	Inch class								Total	CPUE	Std. error
	1	2	3	4	5	6	7	8			
Bluegill	1	20	36	71	34	22	1		185	370.0	58.3
Redear sunfish				3	13	24	22	3	65	130.0	43.3

swdwfdbg.d18

Table 15. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at West Fork Drakes Reservoir from 2007 - 2018. Standard errors are in parentheses. Missing years are non-sampling years.

Year	Length group				Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	
2007	10.0 (7.6)	392.0 (68.4)	156.0 (25.0)	0.0	558.0 (88.3)
2009	38.0 (13.6)	390.0 (68.7)	180.0 (51.7)	0.0	608.0 (115.5)
2012	8.0 (4.6)	264.0 (72.3)	90.0 (29.1)	0.0	362.0 (73.0)
2015	24.0 (3.3)	376.0 (28.5)	194.0 (6.0)	0.0	594.0 (33.5)
2018	42.0 (31.7)	282.0 (34.2)	46.0 (8.3)	0.0	370.0 (58.3)

swdwfdbg.D07 - D18

Table 16. Spring electrofishing CPUE (fish/hr) for each length group of redear sunfish collected at West Fork Drakes Reservoir from 2007 - 2018. Standard errors are in parentheses. Missing years are non-sampling years.

Year	Length group					Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	≥10.0 in	
2007	0.0	38.0 (22.2)	32.0 (12.7)	18.0 (8.3)		88.0 (36.5)
2009	2.0 (2.0)	112.0 (50.3)	198.0 (32.9)	8.0 (4.6)	0.0	320.0 (80.5)
2012	0.0	92.0 (29.3)	104.0 (37.2)	0.0	0.0	196.0 (59.0)
2015	10.0 (3.8)	30.0 (11.9)	132.0 (20.8)	28.0 (10.1)	0.0	200.0 (37.4)
2018	0.0	32.0 (9.8)	92.0 (32.7)	6.0 (3.8)	0.0	130.0 (43.3)

swdwfdbg.D07 - D18

Table 17. Proportional stock density (PSD) and relative stock density (RSD) of bluegill and redear sunfish collected by diurnal electrofishing at West Fork Drakes Reservoir on 10 May 2018. Numbers in parentheses represent 95% confidence intervals.

Species	No. of fish ≥stock size	PSD	RSD <sup>a</sup>
Bluegill	164	14 (5)	0
Redear	65	38 (11)	0

<sup>a</sup> Bluegill=RSD<sub>8</sub>; redear sunfish=RSD<sub>9</sub>  
swdwfdbg.d18

Table 18. Bluegill population assessments from 2007 - 2018 at West Fork Drakes Reservoir (scoring based on statewide assessment). Missing years are non-sampling years.

Parameter	Year									
	<u>2007</u>		<u>2009</u>		<u>2012</u>		<u>2015</u>		<u>2018</u>	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-2 at capture	4.2	2	4.2	2	4.2*	2	4.2*	2	4.2*	2
Years to 6.0 in	3.4	3	3.4	3	3.4*	3	3.4*	3	3.4*	3
CPUE ≥6.0 in	156.0	4	180.0	4	88.0	3	194.0	4	46.0	2
CPUE ≥8.0 in	0.0	1	0.0	1	0.0	1	0.0	1	0.0	1
Instantaneous mortality (z)	-1.03168									
Annual mortality (A)	64.4									
Total score:	10		10		9		10		8	
Assessment rating:	Good		Good		Fair		Good		Fair	

\*No age data collected; values carried over from 2009

ND - no age data collected

swdwfdag.d09

swdwfdbg.D07 - D18

Table 19. Redear sunfish population assessments from 2007 - 2018 at West Fork Drakes Reservoir (scoring based on statewide assessment). Missing years are non-sampling years.

Parameter	Year									
	2007		2009		2012		2015		2018	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-3 at capture	6.6	2	6.6	2	6.6*	2	6.6*	2	6.6*	2
Years to 8.0 in	5	2	5	2	5*	2	5*	2	5*	2
CPUE $\geq$ 8.0 in	18.0	3	8.0	2	0.0	1	28.0	4	6.0	2
CPUE $\geq$ 10.0 in	0.0	1	0.0	1	0.0	1	0.0	1	0.0	1
Instantaneous mortality (z)			-0.642							
Annual mortality (A)			47.4							
Total score:	8		7		6		9		7	
Assessment rating	Fair		Fair		Poor		Fair		Fair	

\* No age data collected; values carried over from 2009

ND - data collected

swdwfdag.d09

swdwfdbg.D07 - D18

Table 20. 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 from April 30 - May 3, 2018.

Area	Species	Inch class																Total	CPUE	Std err			
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				19	20	21
<b>Green River Arm</b>																							
Holmes Bend	Smallmouth bass		1					1													2	1.3	1.3
	Spotted bass	1			1	2	5	8	7	3	1	2	2								32	21.3	5.9
	Largemouth bass	1	3	11	31	19	7	37	39	38	21	24	20	17	19	12	7	4	3	1	314	209.3	25.5
Ramp 1	Smallmouth bass	2	1			7	9	1	2		2			1							25	16.7	9.7
	Spotted bass	1	1		7	9	15	20	9	5	5	10	3	5	1	1					92	61.3	2.9
	Largemouth bass			3	5	11	11	8	16	28	27	20	17	17	7	10	6	7	3		196	130.7	7.7
<b>Robinson Creek Arm</b>																							
Smith Ridge	Smallmouth bass													1							1	0.7	0.7
	Spotted bass				3	3	4	8	3	1	4	2		2							30	20.0	10.3
	Largemouth bass			1		1	3		5	10	12	9	8	7	16	8	14	9	2	1	106	70.7	10.9
Lone Valley	Smallmouth bass		1		1	3		2	3	1	1	1	1		2		1				17	11.3	1.8
	Spotted bass				3	12	8	19	25	12	8	9	7	3	3						109	72.7	10.9
	Largemouth bass	5	1	4	1	2	5	8	10	21	15	25	25	30	15	14	18	6	1	1	207	138.0	8.1
TOTAL	Smallmouth bass		2	3		1	10	9	4	5	1	3	1	1	2	2		1			45	7.5	3.0
	Spotted bass	1	2	3	23	22	43	61	31	17	19	21	8	10	1	1					263	43.8	7.9
	Largemouth bass	5	2	11	17	45	38	23	68	98	92	75	74	74	55	51	50	29	10	5	1	823	137.2

sw dgrlbb.d18



Table 21. Spring diurnal electrofishing CPUE (fish/hr) of largemouth bass by length group collected at Green River Lake during late-April to early-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	Std. error
	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error		
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
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
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
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
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
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
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
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
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
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
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
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
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
2010							no data due to flooding					
2011							no data due to flooding					
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
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
2014							no data due to flooding					
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
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
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
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

sw dgrlbb.D97-D18

Table 22. 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 from April 30 - May 3, 2018. 95% confidence intervals are in parentheses.

Area	Species	No. $\geq$ stock size	PSD	RSD <sup>A</sup>
Green River Arm				
Holmes Bend	Largemouth bass	268	61 (5)	31 (6)
	Spotted bass	30	27 (16)	7 (8)
	Smallmouth bass	1	*	*
Ramp 1	Largemouth bass	177	64 (7)	28 (7)
	Spotted bass	83	36 (9)	12 (7)
	Smallmouth bass	22	13 (14)	5 (9)
Robinson Creek Arm				
Smith Ridge	Largemouth bass	104	83 (7)	55 (10)
	Spotted bass	27	33( 18)	7 (10)
	Smallmouth bass	1	*	*
Lone Valley	Largemouth bass	194	77 (6)	44 (7)
	Spotted bass	94	32 (10)	6 (5)
	Smallmouth bass	15	47 (26)	27 (23)
Total	Largemouth bass	743	69 (3)	37 (4)
	Spotted bass	234	33 (6)	9 (4)
	Smallmouth bass	39	28 (14)	15 (11)

<sup>A</sup> Largemouth bass = RSD<sub>15</sub>, spotted bass and smallmouth bass = RSD<sub>14</sub>.  
swdgrlbb.d18

Table 23. Population assessment of largemouth bass based on nocturnal spring sampling at Green River Lake from 2007-2018 (scoring based on statewide assessment).

Parameter	Year																	
	<u>2007</u>		<u>2008</u>		<u>2009</u>		<u>2012</u>		<u>2013</u>		<u>2015</u>		<u>2016</u>		<u>2017</u>		<u>2018</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	14.4	4	14.4	4	14.6	4	14.6	4	14.6	4	13.1	4	13.1	4	13.1	4	13.1	4
Spring CPUE age-1	3.8	1	22.8	3	7.2	1	15.5	2	3.8	1	16.0	2	17.3	2	34.5	3	17.7	2
Spring CPUE 12.0-14.9 in	33.7	4	27.8	3	13.0	1	35.3	4	44.0	4	23.7	3	25.0	2	40.8	4	40.2	4
Spring CPUE $\geq$ 15.0 in	22.2	4	30.2	4	42.8	4	39.3	4	52.8	4	51.7	4	40.0	4	59.8	4	45.8	4
Spring CPUE $\geq$ 20.0 in	0.5	3	0.8	3	1.7	4	1.3	4	3.3	4	2.7	4	2.5	4	4.0	4	2.7	4
Instantaneous mortality (z)					-0.610								-0.473					
Annual mortality (A)%					45.7								37.71					
Total score	16		17		14		16		17		17		16		19		18	
Assessment rating	Good		Excellent		Good		Good		Excellent		Excellent		Good		Excellent		Excellent	

sw dgrlag.D03, D09, 15

sw dgrlbb.D02-D18

Table 24. 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 on October 29-31, 2018.

Area	Species	Inch class																				Total	CPUE	Std err	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				22
Green River Arm																									
Holmes Bend	Smallmouth bass		1		1							1											3	2.0	1.2
	Spotted bass	50	43	14	6	8	9	9	2	2	2		2										147	98.0	30.6
	Largemouth bass	19	41	38	25	12	6	6	8	6	1	7	4	1	3	1	2	1	1		1		183	122.0	8.3
Ramp 1																									
Ramp 1	Smallmouth bass		23	8	3	7	6		2	3	1		2	1				1				57	38.0	11.7	
	Spotted bass	14	55	13	12	9	9	5	3	5		1			1							127	84.7	27.9	
	Largemouth bass	2	12	14	23	23	11	1	3	1	1	4	2	4	4		1	3	1			110	73.3	7.4	
Robinson Creek Arm																									
Smith Ridge																									
Smith Ridge	Smallmouth bass		3											1								4	2.7	2.7	
	Spotted bass	3	74	70	9	6	7	8	5	8	5	2	2									199	132.7	12.1	
	Largemouth bass		28	43	23	20	24	11	7	7	12	1	7	2	1	1	1					1	189	126.0	31.4
Lone Valley																									
Lone Valley	Smallmouth bass	3	45	9	3	6			2			3	1	1								74	49.3	3.7	
	Spotted bass	27	81	9	13	9	9	8	7	5	5	3	1	2	3	2						184	122.7	14.4	
	Largemouth bass	15	34	4	4	1	1		1	1	1		2	2	2		2	2	3			75	50.0	8.7	
TOTAL																									
TOTAL	Smallmouth bass	3	72	17	7	13	6		4	3	1	5	3	2		1		1				138	23.0	6.9	
	Spotted bass	44	260	135	48	30	33	30	24	20	12	8	3	4	4	2						657	109.5	11.3	
	Largemouth bass	17	93	102	88	69	48	18	17	17	20	6	18	12	8	4	5	7	5	1		2	557	92.8	12.2

sw dgrlly.d18

Table 25. Largemouth bass mean length (in) at age-0 and catch rates at age 0 and age 1 collected at Green River Lake since 2002.

Year class	Age 0 <sup>A</sup>		Age 0 <sup>A</sup>		Age 0 $\geq$ 5.0 in <sup>A</sup>		Age 1 <sup>B</sup>	
	Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2002	3.9	0.1	32.7	9.7	5.3	1.2	7.3	1.6
2003	3.9	0.1	32.8	9.7	5.5	1.2	11.9	2.1
2004	5.0	0.1	60.8	9.0	28.0	3.6	65.3	7.7
2005	5.2	0.1	31.7	7.4	16.8	4.3	14.3	2.4
2006	4.3	0.1	13.5	3.4	3.7	1.2	3.8	1.0
2007	4.2	0.1	21.8	5.3	5.8	2.2	22.8	9.5
2008	4.8	0.1	23.7	5.8	11.5	3.6	7.2	1.8
2009	3.7	0.1	66.8	9.8	11.5	3.9	ND	
2010	4.8	0.1	45.0	8.1	18.3	4.9	ND	
2011	3.9	0.1	28.8	7.5	5.8	1.5	15.5	4.0
2012	4.2	0.1	16.5	4.2	5.0	2.0	3.8	0.8
2013	5.9	0.1	26.0	15.4	19.3	12.9	ND	
2014	data collected too late in year for reasonable comparisons							
2015	5.7	0.1	65.0	22.6	44.7	15.8	17.5	4.2
2016	5.1	0.1	55.3	8.7	30.3	7.9	34.7	8.8
2017	4.8	0.1	19.0	6.6	7.0	2.5	17.7	4.5
2018	5.2	0.1	72.2	9.4	36.8	6.9		

<sup>A</sup> 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.

<sup>B</sup> Data collected during the following spring (May) nocturnal electrofishing.

swdgrlbb.D02 - D18

swdgrlag. D02 - D18

swdgrlyy. D02 - D13, 15-

Table 26. Length frequency and CPUE (fish/nn) for each inch class of crappie collected by trap net (59 net-nights) at Green River Lake on November 7-9 and 13-15, 2018 .

Species	Inch class											Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12			
White crappie	4	91	110	34	268	355	185	188	166	42	6	1449	24.6	5.0
Black crappie			3	5	3	11	7	4	1	2		36	0.6	0.2

swdgrltn.d18

Table 27. Proportional stock density (PSD) and relative stock density (RSD<sub>10</sub>) of white crappie collected by trap nets (59 net-nights) at Green River Lake from mid-November 2018. Numbers in parentheses represent 95% confidence intervals.

Species	N	PSD	RSD <sub>10</sub>
White crappie	1244	47 (3)	17 (2)

swdgrltn.D18

Table 28. Age frequency and CPUE (fish/nn) of white crappie collected during 59 net-nights at Green River Lake during mid-November 2018.

Age	Inch class												Total	Percent	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12	13				
0	4	91	110	8									213	14.7	3.6	0.7
1				26	186	118	8						338	23.2	5.7	1.3
2					23	74	56	85	17				255	17.5	4.3	1.1
3					47	89	72	60	42	15			325	22.3	5.5	1.3
4						30	40	17	75	15	3		180	12.4	3.1	0.8
5					12	30		9	17	4	3		75	5.2	1.2	0.3
6							8	9	8		1	1	27	1.9	0.5	0.1
7							15		9	8	9		41	2.8	0.7	0.2
Total	4	91	110	34	268	356	184	189	167	43	7	1	1454	100.0	24.6	
%	0	6	8	2	19	25	13	13	11	3	1	0	100			

\* fish taken in gillnets during late-Nov. were also used in age-growth calculations

swdgrltn.d18; swdgrlag.d18

Table 29. Age frequency and CPUE (fish/nn) of black crappie collected during 59 net-nights at Green River Lake during mid-November 2018.

Age	Inch class							Total	Percent	CPUE	Std. error	
	4	5	6	7	8	9	10					11
0	2	2						4	11.0	0.1	<.1	
1	1	3	2	8	1			15	42.0	0.3	0.1	
2			1		3	1		5	15.0	0.1	<.1	
3				3	1	1		2	7	20.0	0.1	0.1
4					1	2		3	9.0	0.1	<.1	
5												
6					1			1	3.0	<.1	<.1	
Total	3	5	3	11	7	4	2	35	100			
%	9	14	9	31	20	11	6	100				

swdgrltn.d18; swdgrlag.d18

Table 30. Mean back calculated length (in) at each annulus for white crappie collected from Green River Lake in mid-late November 2018, 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	6	7
2017	32	4.0						
2016	26	4.8	7.0					
2015	39	4.9	6.6	8.1				
2014	29	4.3	6.3	7.9	9.3			
2013	11	4.2	6.3	7.5	8.5	9.5		
2012	5	4.6	6.5	7.6	8.5	9.3	9.9	
2011	8	4.2	6.5	7.4	7.9	8.5	9.2	9.9
Mean		4.5	6.6	7.9	8.8	9.1	9.5	9.9
No.		150	118	92	53	24	13	8
Smallest		2.4	4.0	4.8	5.3	5.8	6.3	6.8
Largest		6.5	8.7	11.1	13.2	12.2	12.9	11.5
Std error		0.1	0.1	0.1	0.2	0.4	0.5	0.5
95% CI (+/-)		0.1	0.2	0.3	0.4	0.7	0.9	1.0

Otoliths were used for age-growth determinations; intercept = 0  
swdgrlag.d18

Table 31. Mean back calculated length (in) at each annulus for black crappie collected from Green River Lake in mid-late November 2018, 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
2017	16	4.0				
2016	6	4.2	6.3			
2015	8	4.7	6.8	8.3		
2014	3	2.4	4.4	6.8	8.2	
2013	1	2.8	4.5	6.2	7.3	8.0
Mean		4.0	6.1	7.7	8.0	8.0
No.		34	18	12	4	1
Smallest		2.1	4.1	6.2	7.3	8.0
Largest		5.7	9.4	10.1	9.1	8.0
Std error		0.2	0.3	0.4	0.4	
95% CI (+/-)		0.3	0.6	0.8	0.8	

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

swdgrlag.d18



Table 32. White crappie assessment from trap net samples at Green River Lake from 1993 - 2018 (scoring based on statewide assessment).

White crappie															
Year	CPUE excluding age 0		CPUE age 1		CPUE age 0		CPUE ≥8.0 in		Mean length age-2 at capture		Mortality		Assessment	Rating	
	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Instantaneous (z)	Annual (A)			
1993	24.8	4	7.0	3	1.2	2	15.5	4	9.0	2	-0.949191	61.3	15	G	
1994	8.7	4	2.5	2	11.8	4	6.1	4	9.3	2	-0.767229	53.6	16	G	
1995	16.2	4	11.1	4	13.2	4	10.7	4	10.0	3	-1.055474	65.2	19	E	
1996	13.4	3	6.5	3	3.2	3	6.0	4	9.2	2	-0.895818	59.2	15	G	
1997	14.1	3	3.9	3	1.9	3	8.1	4	8.7	2	-1.121453	67.4	15	G	
1998	9.2	4	2.5	2	3.8	3	8.0	4	9.3	2	-0.850455	57.3	15	G	
1999	3.0	3	5.2	3	1.0	2	2.9	2	9.9	3	NA		13	G	
2000	6.3	2	1.5	2	0.0	1	5.2	3	9.7	3	-0.824828	56.2	11	F	
2001	4.3	2	0.2	1	10.8	4	4.2	3	9.5	2	-1.09953	66.7	12	F	
2002	10.9	4	9.7	4	0.5	2	4.1	3	ND	2	-0.759078	53.2	15	G	
2003	13.0	3	5.1	3	3.3	3	6.8	4	9.1	2	-1.075599	65.9	15	G	
2004	17.7	4	9.6	4	3.8	3	7.9	4	8.4	2	-1.53876	78.5	17	E	
2005*	13.8	3	3.0	2	1.7	3	8.0	3	ND	2	ND		13	G	
2006	16.4	4	10.2	4	1.4	2	6.5	4	9.9	3	-1.090892	66.4	14	G	
2007*	15.9	4	10.5	4	4.4	4	6.7	4	8.9	2	NA		18	E	
2008	9.0	3	0.7	1	0.9	2	4.7	3	7.8	1	-0.728739	51.7	10	F	
2009	20.1	4	4.1	3	0.9	2	9.7	4	ND	1	ND		14	G	
2010	17.8	4	0.7	1	1.3	2	11.1	4	7.5	1	-1.10117	66.8	12	F	
2011	22.9	4	8.3	4	2.6	3	10.0	4	7.9	1	NA		16	G	
2012	18.2	4	3.8	3	0.1	1	8.8	4	8.1	2	NA		14	G	
2013								no data							
2014	23.1	4	8.8	4	2.6	3	11.2	4	8.5	2	-0.58989	44.6	17	E	
2015								no data							
2016	16.8	4	2.2	2	2.3	3	4.5	3	7.5	1	NA		13	G	
2017								no data							
2018	21.0	4	5.7	3	3.6	3	10.0	4	8.7	2	NA		16	G	

\* Age assessment data extrapolated from previous years age data

NA - catch data not amenable to mortality estimates

ND - no age data collected

sw dgltn.D86 - D16

sw dgrlag.d86-16

Table 33. Length frequency and CPUE (fish/nn) for white bass and walleye collected by experimental gillnets (14 net-nights) on November 28-30 at Green River Lake, KY 2018.

Species	Inch class																Total	CPUE	Std. error	
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				22
White bass	1	2	6	2		4	16	24	27	22	17	1	1					123	8.8	2.7
Walleye				1	1			1	4	2	1	3	6	4	2	1	3	29	2.1	1.0

swdgrlgn.d18

Table 34. Age frequency and CPUE (fish/nn) of white bass collected from experimental gillnets (14 net-nights) during November 28-30 at Green River Lake in 2018.

Age	Inch class													Total	Percent	CPUE	Std. error		
	6	7	8	9	10	11	12	13	14	15	16	17	18						
0	1	2	6	2												11	9	0.8	0.4
1						4	16	19	1							40	33	2.9	0.7
2								4	1							5	4	0.4	0.1
3								1	25	15	10					51	41	3.6	1.4
4										6	7	1				14	11	1.0	0.6
5									1							1	1	0.1	0.1
6														1		1	1	0.1	0.1
Total	1	2	6	2		4	16	24	27	22	17	1	1			123			
%	1	2	5	2		3	13	20	22	18	14	1	1			100			

swdgrlgn.D18, swdgrlag.D18

Table 35. Age frequency and CPUE (fish/nn) of walleye collected from experimental gillnets (14 net nights) during November 28-30 at Green River Lake in 2018.

Age	Inch class												Total	Percent	CPUE	Std. error		
	9	10	11	12	13	14	15	16	17	18	19	20					21	22
0	1	1													2	7	0.1	0.1
1					1	4	2	1	3		3				14	48	1.0	0.4
2									6	1	2			2	11	38	0.8	0.3
3																		
4														1	1	3	0.1	0.1
5													1		1	3	0.1	0.1
Total	1	1			1	4	2	1	3	6	4	2	1	3	29	100.0	2.07	0.98
%	3	3			3	14	7	3	10	21	14	7	3	10	100			

swdgrlgn.D18, swdgrlag.D18

Table 36. White bass population assessment from experimental gillnetting at Green River Lake 1996-2007, 2015, 2017-2018 (scoring based on statewide assessment).

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				
1991	22.2	4	14.0	4	10.7	4	14.6	4	1.204	70.0	16	E
1992	33.8	4	13.4	3	16.8	4	10.1	4	1.542	78.6	15	E
1993	32.3	4	13.7	4	16.3	4	15.0	4	0.964	61.9	16	E
1994	22.6	4	13.4	3	15.6	4	4.5	3	0.347	29.4	14	E
1995	17.6	3	13.5	3	11.9	4	9.1	4	NA		14	E
1996	33.1	4	13.6	3	18.9	4	18.4	4	1.012	63.7	15	E
1997	17.1	3	12.9	2	10.9	4	3.8	3	0.680	49.3	12	G
1998	19.1	4	12.9	2	6.3	3	6.4	3	1.187	69.5	12	G
1999	26.6	4	13.3	2	13.4	4	16.2	4	1.117	67.3	14	E
2000	11.5	3	13.6	3	9.4	4	2.8	2	0.619	46.2	12	G
2001	8.0	3	14.0	4	4.9	3	0.1	1	0.646	47.6	11	G
2002	10.2	3	13.8	4	4.4	3	5.4	3	0.735	52	13	G
2003	18.9	4	12.5	2	1.3	2	2.3	2	0.660	48.3	10	G
2004	5.8	2	12.8	2	0.5	1	3.5	3	1.320	73.3	8	F
2005	7.4	3	12.4	1	3.5	2	5.8	3	NA		9	F
2006	5.8	2	13.8	4	4.1	3	2.1	2	0.341	28.9	11	G
2007	3.2	1	14.0	4	2.6	2	1.1	1	0.575	43.7	8	F
2015	24.8	4	NA	4	23.8	4	24.0	4	NA		16	E
2017	9.4	3	14.3	4	9.4	4	0.7	1	NA		11	G
2018	8.0	3	13.9	4	7.7	3	2.9	2	NA		11	G

NA - data not available or not amenable for use

sw dgrlgn.d91-d08, 15, 17-18

sw dgrlag.d91-08, 15, 17-18

Table 37. Relative weight (Wr) for each length group of white bass collected by gill nets (14 net-nights) at Green River Lake from November 28-30, 2018. Standard errors are in parentheses.

	Length group		
	6.0-8.9 in	9.0-11.9 in	≥12.0 in
Wr	94 (3)	94 (2)	93 (1)
N	8	4	70

swdgrlgn.D18

Table 38. Walleye population assessment from experimental gillnetting at Green River Lake 1996-2018 (scoring based on statewide assessment).

Year	CPUE excluding age-0		Mean length age-2+ at capture		CPUE $\geq 20.0$ in		CPUE age 1		Mortality		Assessment	Rating
	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Instantaneous mortality (z)	Annual mortality (A)		
1996	1.81	1	18.5	3	0.12	1	1.44	2	NA		7	F
1997	0.75	1	17.3	1	0.19	2	0.44	1	NA		5	P
1998	0.50	1	17.6	2	0.06	1	0.29	1	NA		5	P
1999	3.20	2	17.3	1	0.13	1	1.67	3	NA		7	F
2000	5.04	3	18.1	2	0.17	2	4.07	4	-0.684	49.6	11	G
2001	5.75	3	17.8	2	0.00	1	5.03	4	NA		10	G
2002	2.57	2	17.8	2	0.39	2	0.74	1	-0.778	54.1	7	F
2003	2.12	1	18.3	3	0.50	2	1.62	2	NA		8	F
2004	1.13	1	16.4	1	0.00	1	0.75	1	NA		4	P
2005	0.63	1	17.8	2	0.13	1	0.50	1	NA		5	P
2006	2.29	1	17.9	2	0.14	1	1.64	2	-0.489	38.7	6	P
2007	6.75	4	18.6	3	0.75	3	3.88	4	-0.689	49.8	14	E
2008	3.67	2	19.6	4	0.93	3	1.07	2	-0.357	30.0	11	G
2009	4.06	3	19.6	4	1.13	4	2.31	3	-0.657	48.2	14	E
2010	3.56	2	18.8	3	1.00	3	1.69	3	-0.566	43.2	11	G
2011	1.79	1	19.3	4	0.79	3	0.42	1	-0.409	33.5	9	F
2012	3.10	2	19.2	4	0.90	3	1.32	2	-0.479	38.1	11	G
2013	2.81	2	19.2	4	0.88	3	1.06	2	NA		11	G
2014	1.00	1	20.1	4	0.67	3	0.13	1	NA		9	F
2015	2.13	1	19.5	4	1.13	4	0.75	1	NA		10	G
2017	2.14	1	19.5	4	0.79	3	1.14	2	NA		10	F
2018	1.93	1	19.5	4	0.43	2	1.00	2	NA		9	F

NA - catch data not amenable to mortality estimates

sw dgrlgn.d96-15, 17-18

sw dgrlag.d96-15, 17-18

Table 39. Relative weight (Wr) for each length group of walleye collected by gill nets (14 net-nights) at Green River Lake from November 28-30, 2018. Standard errors are in parentheses.

	Length group		
	10.0-14.9 in	15.0-19.9 in	≥20.0 in
Wr	97 (2)	99 (1)	95 (5)
N	6	12	5

swdgrlgn.D18

Table 40. Fish harvest statistics derived from a creel survey at Green River Lake (8210 acres) from 15 March through 30 November 2018.

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<u>Fishing trips</u>		
Number of fishing trips (per acre)	26,847	(3.27)
Average trip length	4.06	
<u>Fishing pressure</u>		
Total man-hours (S.E.)	109,033	(3615.4)
Man-hours/acre	13	
<u>Catch/harvest</u>		
Number of fish caught (S.E.)	240,222	(24624.0)
Number of fish harvested (S.E.)	79,500	(8926.4)
Pounds of fish harvested	49,635	
<u>Harvest rates</u>		
Fish/hour	0.73	
Pounds/hour	0.93	
Fish/acre	9.68	
Pounds/acre	6.05	
<u>Catch rates</u>		
Fish/hour	2.2	
Fish/acre	29.26	
<u>Miscellaneous characteristics (%)</u>		
Male	92.61	
Female	7.39	
Resident	98.85	
Non-resident	1.15	
<u>Method (%)</u>		
Still fishing	28.63	
Casting	53.31	
Jugging	1.25	
Trolling	4.95	
Spider rigging	11.87	
<u>Mode (%)</u>		
Boat	95.89	
Bank	3.38	
Dock	0.73	

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Table 41. Fish harvest statistics derived from a creel survey at Green River Lake from 15 March to 30 November 2018.

	Muskellunge	Channel catfish	Flathead catfish	White bass	Bluegill	Smallmouth bass	Spotted bass	Largemouth bass	White crappie	Walleye	Drum
No. caught (per acre)	293 (0.04)	6,928 (0.84)	134 (0.02)	1,110 (0.14)	11,447 (1.39)	2202 (0.27)	6,760 (0.82)	20,156 (2.46)	183,354 (22.33)	117 (0.01)	260 (0.03)
No. Harvested (per acre)	0	4,231 (0.52)	14 (0.00)	120 (0.01)	1,907 (0.23)	353 (0.04)	724 (0.09)	5,329 (0.65)	65,406 (7.97)	66 (0.00)	0
% total harvest	0	5.32	0.02	..15	2.4	0.44	0.91	6.7	82.27	0.08	0
Lb harvested (per acre)	0	9860 (1.20)	44 (0.01)	137.1 (0.02)	351 (0.04)	537.6 (0.07)	823.7 (0.10)	10488.4 (1.28)	26575.6 (3.24)	181 (0.02)	0
% of total lb harvested	0	19.87	0.09	0.28	0.71	1.08	1.66	21.13	53.54	0.36	0
Mean length (in)		19.6	20	14.5	6.33	13.72	13.92	15.61	9.71	18.88	
Mean weight (lb)		2.48	3.16	1.18	0.17	1.26	1.13	1.96	0.41	2.3	
	Muskie	Catfish group		W. bass	Panfish group		Black bass group		Crappie group	Walleye	Anything
No. of fishing trips for that species	409	1,283		0	620		11,905		11,619	130	881
% of all trips	1.52	4.78			2.31		44.34		43.28	0.49	3.28
Hours fishing for that species	1,660	5,210			2,520		48,349		47,188	529	3,576
No. harvested fishing for that species	0	3,678			1,196		6,257		66,321	40	0
Lb harvested fishing for that species	0.0	8,512.1			241.9		11,551.5		27,064.6	125.9	0.0
No./hour harvested for that species	0	0.52			0.53		0.13		1.43	0.1	0
% success fishing for that species	0	51.4			12.73		17.23		61.37	7.14	12.68

Table 42. Length distribution and species composition (released fish lengths were estimates) for each species of fish harvested at Green River Lake from 15 March to 30 November 2018.

Species	Status	Inch class																																					
		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	30	32	33	34	35	36	37	38	42	48	
Muskellunge	Harvest																																						
	Released												24						49				24				24		49		18		24	24		24		27	
Channel catfish	Harvest										32	16	65	227	243	227	292	162	486	357	697	130	373	162	276	259	130	81											
	Released						160	231	177	142	479	124	213	231	160	53	231	18	124	36	106	18	18	71	35	18		35	19										16
Flathead catfish	Harvest																																						
	Released												100									14																20	
White bass	Harvest											17	17	17	51		18																						
	Released				57	95	19	114	19	171	152	190	95	19	19							20																	
Rock bass	Harvest																																						
	Released	16	146	471	163	195		163		16																													
Warmouth	Harvest																																						
	Released		810	810	213																																		
Green sunfish	Harvest		40	40																																			
	Released	30	369	695	177																																		
Bluegill	Harvest	286	515	324	4314	1317	1718	248	20																														
	Released	99	3132	1236	1681		115																																
Longear	Harvest																																						
	Released		233	127																																			
Redear	Harvest																																						
	Released	20	20	21																																			
Smallmouth bass	Harvest													92	15	77	46	61	31	15																		16	
	Released			19	149	56	131	75	523	75	187	224	187	93	56	19	37																						19
Spotted bass	Harvest				17						17	151	185	151	67	50	17	17	34	18																			
	Released		17	134	419	184	822	352	1995	905	587	285	134	67	34			101																				20	



Table 44. Monthly black bass angling success at Green River Lake during the 2014 daytime creel survey period (March 15 - November 30).

Month	Total number of black bass caught	Total number of black bass harvested	Number of black bass fishing trips	Hours fished by black bass anglers	Number caught by bass anglers	Number caught/hour by bass anglers	Number harvested by bass anglers	Number harvested/hour by bass anglers
March	3,324	641	2,245	9,116	2,963	0.36	641	0.08
April	4,336	1,996	2,117	8,597	4,057	0.40	1,996	0.20
May	7,304	1,174	1,791	7,173	6,013	0.81	1,150	0.15
June	3,911	698	1,337	5,430	3,253	0.70	619	0.13
July	2,254	252	1,106	4,492	2,058	0.58	224	0.06
August	1,132	79	649	2,635	1,039	0.48	78	0.04
September	2,847	807	1,243	5,047	2,785	0.64	791	0.18
October	3,055	423	772	3,137	2,291	0.81	423	0.15
November	954	335	645	2,620	904	0.33	335	0.12
Total	29,117	6,405	11,905	48,247	25,363	0.55	6,257	0.13

Table 45. Monthly catfish angling success at Green River Lake during the 2018 daytime creel survey period (March 15 - November 30).

Month	Total number of catfish caught	Total number of catfish harvested	Number of catfish fishing trips	Hours fished by catfish anglers	Number caught by catfish anglers	Number caught/hour by catfish anglers	Number harvested by catfish anglers	Number harvested/hour by catfish anglers
March	40	0	0	0	0	0	0	0
April	86	21	0	0	0	0	0	0
May	1,926	869	327	1,329	846	0.72	752	0.65
June	1,018	579	195	791	459	0.53	459	0.53
July	1,218	882	232	944	1,022	0.8	770	0.60
August	711	382	181	736	355	0.25	342	0.24
September	1,644	1,279	240	974	1,522	0.76	1,218	0.62
October	368	191	79	321	163	0.96	98	0.56
November	50	42	29	116	42	0.83	42	0.83
Total	7,061	4,245	1,283	5,211	4,409	0.62	3,681	0.52

Table 46. Monthly muskie angling success at Green River Lake during the 2018 daytime creel survey period March 15 - November 30).

Month	Total number of muskie caught	Total number of muskie harvested	Number of muskie fishing trips	Hours fished by muskie anglers	Number caught by muskie anglers	Number caught/hour by muskie anglers	Number harvested by muskie anglers	Number harvested/hour by muskie anglers
March	160	0	0	0	0	0	0	0
April	64	0	69	280	21	0.18	0	0
May	0	0	0	0	0	0	0	0
June	0	0	91	369	0	0	0	0
July	0	0	0	0	0	0	0	0
August	0	0	15	61	0	0	0	0
September	0	0	0	0	0	0	0	0
October	68	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0
Total	292	0	175	710	21	0.07	0	0

Table 47. Monthly walleye angling success at Green River Lake during the 2018 daytime creel survey period (March 15 - November 30).

Month	Total number of w alleye caught	Total number of w alleye harvested	Number of w alleye fishing trips	Hours fished by w alleye anglers	Number caught by w alleye anglers	Number caught/hour by w alleye anglers	Number harvested by w alleye anglers	Number harvested/hour by w alleye anglers
March	0		0					
April	0		0					
May	23	0	0	0	0	0	0	0
June	0	0	26	105	0	0	0	0
July	14	0	56	227	14	0.08	0	0
August	66	53	38	153	53	0.28	40	0.21
September	0	0	11	44	0	0	0	0
October	14	14	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0
Total	117	67	131	529	67	0.13	40	0.08

Table 48. Black bass catch and harvest statistics for all anglers derived from a 2018 (March 15 - November 30) daytime creel survey at Green River Lake (8,210 acres).

	Largemouth bass						Spotted bass						Smallmouth bass					
	Harvest			Catch and release			Harvest			Catch and release			Harvest			Catch and release		
	12.0-14.9 in	≥ 15.0 in	Total	12.0-14.9 in	≥ 15.0 in	Total	12.0-14.9 in	≥ 15.0 in	Total	12.0-14.9 in	≥ 15.0 in	Total	12.0-14.9 in	≥ 15.0 in	Total	12.0-14.9 in	≥ 15.0 in	Total
Total number of bass	2,877	2,451	5,328	5,654	3,596	9,250	487	202	723	1,006	202	1,208	184	168	352	598	224	822
% of black bass harvested by number	83.2						11.3						5.5					
Total weight of fish (lb)	10,488.4			5,863.0	3,727.0	9,590.0	823.7			463.0	91.0	554.0	537.6			429.0	162.0	591.0
% of bass harvested by weight	88.5						7.0						4.5					
Mean length (in)	15.6						13.9						13.7					
Mean weight (lb)	2.0						1.1						1.3					
Rate (fish/hour)	0.1						0.01						0.004					

Table 49. Length frequency and CPUE (fish/hr) of bluegill collected by diurnal electrofishing (0.5 hours; 4- 450-second runs) at Metcalfe County Lake on 1 May 2018 .

Species	Inch class									Total	CPUE	Std. error
	2	3	4	5	6	7	8	9				
Bluegill	9	42	108	105	75	16				355	710.0	72.6
White crappie						30	16	2		48	96.0	75.1

swdmetbg.D18

Table 50. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Metcalfe County Lake during early-mid May from 2005-2018 . Standard error in parentheses.

Year	Length group				Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	>8.0 in	
2005	66.8 (9.4)	807.7 (113.5)	366.2 (61.8)	0.0	1240.7 (165.1)
2007	108.0 (33.1)	886.0 (171.7)	568.0 (132.8)	0.0	1562.0 (270.1)
2011	102.0 (25.6)	1032.0 (156.7)	194.0 (39.1)	0.0	1328.0 (196.9)
2014	22.4 (9.3)	326.4 (53.2)	288.0 (50.0)	0.0	636.8 (107.7)
2016	116.0 (44.1)	274.0 (99.6)	160.0 (53.4)	0.0	550.0 (193.2)
2018	18.0 (10.5)	510.0 (63.1)	182.0 (29.1)	0.0	710.0 (72.6)

swdmetbg.D05, D07, D11, D14, D16, D18

Table 51. PSD and RSD<sub>15</sub> values obtained for bluegill collected during 0.5 hours (4-0.125-hour runs) of spring diurnal electrofishing at Metcalfe Co. Lake on 1 May 2018. 95% confidence intervals are in parentheses.

Species	No. $\geq$ 3.0 in	PSD ( $\pm$ 95% CI)	RSD <sub>8</sub> ( $\pm$ 95% CI)
Bluegill	346	26 (5)	*

\* No fish greater than 8.0 in collected  
swdmetbg.D18

Table 52. Bluegill population assessments from 2005 - 2018 at Metcalfe County Lake (scoring based on statewide assessment).

Parameter	Year											
	2005		2007		2011		2014		2016		2018	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-2 at capture	4.4*	3	4.4	3	4.4*	3	4.4*	3	4.4*	3	4.4*	3
Years to 6.0 in	3.6*	3	3.6	3	3.6*	3	3.6*	3	3.6*	3	3.6*	3
CPUE $\geq$ 6.0 in	366.2	4	568.0	4	194.0	4	288.0	4	160.0	4	182.0	4
CPUE $\geq$ 8.0 in	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Instantaneous mortality (z)			1.07									
Annual mortality (A)			66.0									
Total score:	10		10		10		10		10		10	
Assessment rating	Good		Good		Good		Good		Good		Good	

\* No age data; values carried over from years with age data

swdmetag.D07

swdmetbg.D05 - D18

Table 53. Length frequency and CPUE (fish/hr) of bluegill and redear sunfish collected during 0.875 hours (7- 450-sec runs) of diurnal electrofishing at Mill Creek Lake (Monrone Co.) on 1 May 2018.

Species	Inch class								Total	CPUE	Std. error
	2	3	4	5	6	7	8				
Bluegill	6	108	163	97	23	8			405	462.9	85.1
Redear sunfish			2	4	3	5	1		15	17.1	7.3

swdmillbg.D18



Table 54. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Mill Creek Lake from 2005 - 2018. Standard errors are in parentheses. No data collected in missing years.

Year	Length group				Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	>8.0 in	
2005	76.8 (32.0)	350.4 (53.4)	88.8 (20.7)	0.0	516.0 (72.8)
2010	74.4 (20.1)	568.0 (75.6)	56.0 (11.1)	0.0	698.4 (76.1)
2013	184.0 (76.5)	412.0 (43.8)	47.2 (6.4)	0.0	644.0 (96.0)
2016	59.0 (15.2)	549.0 (50.1)	31.0 (5.3)	0.0	639.0 (52.5)
2018	6.9 (4.4)	420.6 (82.1)	35.4 (6.7)	0.0	462.9 (85.1)

SWDMILBG.D05 - D18

Table 55. Proportional stock density (PSD) and relative stock density (RSD) of bluegill and redear sunfish collected by diurnal electrofishing at Mill Creek Lake on 1 May 2018. Numbers in parentheses represent 95% confidence intervals.

Species	N	PSD	RSD <sup>a</sup>
Bluegill	399	8 (3)	0
Redear sunfish	15	40 (26)	NA

<sup>a</sup> Bluegill=RSD<sub>8</sub>; redear=RSD<sub>9</sub>

swdmilbg.D18

Table 56. Bluegill population assessments from 2005, 2010, 2013, 2016 and 2018 at Mill Creek Lake (scoring based on statewide assessment).

Parameter	2005		2010		2013		2016		2018	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-2 at capture	3.6*	1	3.6*	1	3.6	1	3.6*	1	3.6*	1
Years to 6.0 in	4.3*	2	4.3*	2	4.3	2	4.3*	2	4.3*	2
CPUE $\geq$ 6.0 in	88.8	3	56.0	3	47.2	2	31.0	2	35.4	2
CPUE $\geq$ 8.0 in	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Instantaneous mortality (z)	ND		-0.75661		ND		ND		ND	
Annual mortality (A)			53.1							
Total score:		6		6		5		5		5
Assessment rating		Poor		Poor		Poor		Poor		Poor

\* - age data carried over from year collected

swdmilag.d13

swdmilbg.D05 - D18

Table 57. Species composition, relative abundance, and CPUE (fish/set-night) of channel catfish collected in baited, tandem set hoopnets (8 set-nights; 4 nets per set w/3-day soak time) at Mill Creek Lake September 4 -10, 2018.

Species	Inch class																Total	CPUE	Std err
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
Channel catfish				1		4	9	7	6	7	1	4		1		1	41	5.1	2.1
Redear sunfish	11	11	4														26	3.4	1.8

swdmilgcc.d18

Table 58. Age frequency and CPUE (fish/set-night) of channel catfish collected from tandem hoopnetting at Mill Creek Lake on September 4-10, 2018.

Age	Inch class											Total	Percent	CPUE	Std. error	
	13	14	15	16	17	18	19	20	21	22						
0																
1																
2	4	4	3									11	30	1.4	0.7	
3	3	3	3	5	1	2						17	45	2.0	0.9	
4	3			2								5	14	0.6	0.3	
5																
6																
7							1				1	2	6	0.3	0.1	
8							1					1	3	0.1	0.1	
9									1				1	3	0.1	0.1
Total	10	7	6	7	1	4		1		1	37	100.0				
%	25	19	17	19	3	11		3		3	100					

swdmilcc.D18, swdmilag.D18

Table 59. Relative weight (Wr) for each length group of channel catfish collected by tandem set hoopnets (8 set-nights) at Mill Creek Lake from September 4 -10 October 2018. Standard errors are in parentheses.

	Length group		
	11.0-15.9 in	16.0-23.9 in	≥24.0 in
Wr	85( 1)	89( 2)	
N	26	14	0

swdmilcc.D18

Table 60. Length frequency and CPUE (fish/hr) of bluegill collected by diurnal electrofishing (4-0.125-hour runs) at Spurlington Lake on 30 April 2018.

Species	Inch class											Total	CPUE	Std. error	
	1	2	3	4	5	6	7	8	9	10	11				
Bluegill	20	91	137	135	30	15	11	12	1			452	904.0	201.0	
Redear sunfish			3	2	2	4	6	4			2	23	46.0	8.3	
Warmouth				1		1						2	4.0	4.0	
White crappie				5	16	13	3				1	1	39	78.0	42.0

swdsplbg.d18

Table 61. Diurnal spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Spurlington Lake from 2005-2018. 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	
2005	66.0 (14.4)	216.0 (45.7)	50.0 (15.8)	16.0 (8.6)	348.0 (68.9)
2006	138.0 (47.7)	302.0 (54.7)	46.0 (8.9)	14.0 (2.0)	482.0 (100.2)
2007	496.0 (85.2)	606.0 (73.5)	50.0 (18.3)	4.0 (4.0)	1156.0 (137.4)
2008	198.0 (38.4)	550.0 (145.6)	120.0 (43.2)	14.0 (14.0)	882.0 (236.3)
2009	246.4 (37.6)	571.2 (82.8)	156.8 (30.2)	14.4 (7.8)	988.8 (119.6)
2010	310.0 (134.0)	468.0 (75.7)	100.0 (42.1)	2.0 (2.0)	880.0 (195.7)
2011	713.6 (111.1)	1057.6 (187.3)	156.8 (54.4)	8.0 (3.6)	1936.0 (256.1)
2012	150.0 (42.4)	788.0 (178.0)	60.0 (7.7)	14.0 (5.0)	1012.0 (227.6)
2014	104.0 (37.4)	465.0 (76.5)	204.8 (40.5)	22.4 (6.9)	796.8 (131.8)
2016	92.0 (28.8)	276.0 (99.2)	92.0 (20.0)	10.0 (3.8)	470.0 (145.5)
2018	222.0 (116.8)	604.0 (90.4)	52.0 (7.7)	26.0 (6.0)	904.0 (201.0)

sw dsplbg.D05 - D18

Table 62. Spring electrofishing CPUE (fish/hr) for each length group of redear sunfish collected at Spurlington Lake during early-mid May 2009-2018. 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	
2009	1.6 (1.6)	6.4 (3.0)	28.8 (12.6)	24.0 (11.0)	*	60.8 (22.4)
2010	24.0 (12.7)	18.0 (10.5)	10.0 (5.0)	12.0 (5.2)	*	64.0 (27.1)
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)
2012	*	8.0 (5.7)	18.0 (6.8)	8.0 (0.0)	*	34.0 (3.8)
2014	*	8.0 (2.6)	30.4 (17.8)	11.2 (6.0)	*	49.6 (22.4)
2016	2.0 (2.0)	6.0 (3.8)	10.0 (7.6)	8.0 (8.0)		26.0 (15.5)
2018	*	14.0 (6.8)	20.0 (6.9)	12.0 (6.9)	4.0 (4.0)	46.0 (8.3)

swdsplbg.D09-18

Table 63. Proportional stock density (PSD) and relative stock density (RSD) of bluegill and redear sunfish collected by diurnal electrofishing at Spurlington Lake on 30 April 2018. Numbers in parentheses represent 95% confidence intervals.

Species	N	PSD	RSD <sup>A</sup>
Bluegill	341	11 (3)	4 (2)
Redear	20	60 (22)	NA

<sup>A</sup> Bluegill=RSD<sub>8</sub>; redear sunfish=RSD<sub>9</sub>

\* No fish of sufficient size were collected during sampling.

swdsplbg.d18

Table 64. Bluegill population assessments from 2007 - 2018 at Spurlington Lake (scoring based on statewide assessment).

Parameter	Year																	
	2007		2008		2009		2010		2011		2012		2014		2016*		2018*	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-2 at capture	5.6	4	5.6	4	5.6	4	5.6	4	5.6	4	5.6	4	5.6	4	5.1	4	5.1	4
Years to 6.0 in	3.2*	3	3.2	3	3.2*	3	3.2*	3	3.2*	3	3.2*	3	3.2*	3	3.9	3	3.9	3
CPUE ≥6.0 in	54.0	3	134.0	4	171.2	4	102.0	4	164.8	4	74.0	3	227.2	4	102.0	4	78.0	3
CPUE ≥8.0 in	4.0	3	14.0	3	14.4	3	2.0	3	8.0	4	14.0	4	22.4	4	10.0	4	26.0	4
Instantaneous mortality (z)	ND		-1.091		ND		ND		ND		ND		ND		ND		ND	
Annual mortality (A)			66.4															
Total Score:	13		14		14		14		15		14		15		15		14	
Assessment rating	Good		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 - D18

Table 65. Largemouth bass length frequency and CPUE (fish/hr) collected during 1.5 hours (6- 900-sec runs) of nocturnal electrofishing at Shanty Hollow Lake on 26 April 2018.

Species	Inch class																						Total	CPUE	Std err
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22						
Largemouth bass	7	18	8	5	13	85	56	55	65	35	14	7			3	1	1		1	374	249.3	20.4			

swdshlbb.D18

Table 66. Spring nocturnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Shanty Hollow Lake during mid-late April / May, 2001-2015. Missing years are non-sampling years.

Year	Length group										Total CPUE	Std. error
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error		
2001	17.1	3.4	49.1	7.3	45.1	8.6	21.7	3.6	1.7	0.8	133.1	6.5
2002	20.0	4.1	52.0	8.0	69.7	6.2	16.0	2.6	1.1	0.7	157.7	11.1
2003	17.7	4.0	125.1	12.5	76.6	6.7	32.0	5.0	8.0	2.0	251.4	18.0
2004	19.4	3.6	133.7	9.7	36.6	5.0	24.0	2.8	3.4	0.6	213.7	17.0
2005	76.7	10.8	174.0	18.2	44.7	3.8	16.0	3.6	1.3	1.3	311.3	28.0
2006	86.0	15.8	214.7	11.4	30.0	3.1	11.3	3.8	5.3	2.0	342.0	26.7
2007	8.0	2.4	124.5	16.8	13.0	3.1	8.5	1.4	4.0	1.1	154.0	21.0
2008	30.0	6.9	204.5	13.5	57.5	4.7	5.5	1.5	1.0	0.7	297.5	12.3
2009	21.1	4.0	140.6	8.7	88.0	5.7	12.0	3.9	2.9	1.7	261.7	11.4
2010	26.0	5.2	165.0	12.4	74.5	4.7	11.5	2.7	1.5	0.7	277.0	15.3
2011	77.0	8.5	128.5	9.1	66.5	5.1	11.0	2.4	1.0	0.7	283.0	5.2
2012	81.0	11.4	210.0	11.4	56.5	4.8	14.5	2.4	1.0	0.7	362.0	13.8
2015	68.0	7.3	140.5	9.8	47.5	7.1	8.0	1.7	4.5	1.2	264.0	11.3
2018	25.3	5.2	139.3	14.6	76.0	7.9	8.7	2.4	1.3	0.8	249.3	20.4

swdshlbb.D00 - D18

Table 67. Proportional stock density (PSD) and relative stock density (RSD<sub>15</sub>) values from spring nocturnal electrofishing at Shanty Hollow Lake on 26 April 2018. Numbers in parentheses represent 95% confidence intervals.

Species	N	PSD	RSD <sub>15</sub>
Largemouth bass	336	38 (5)	4 (2)

swdshlbb.D18

Table 68. Population assessment of largemouth bass based on nocturnal spring sampling at Shanty Hollow Lake from 2006-2018 (scoring based on statewide criteria). Missing years are non-sampling years.

Parameter	Year																	
	2006		2007		2008		2009		2010		2011		2012		2015*		2018	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-3 at capture	13.7	3	13.7	3	13.7	3	12.8	4	12.8	4	12.8	4	12.8	4	12.6	4	12.6	4
Spring CPUE age-1	68.7	4	6.0	1	22.0	3	20.0	2	21.5	3	59.5	4	78.5	4	52.5	3	23.3	3
Spring CPUE 12.0-14.9 in	30.0	3	13.0	1	57.5	4	88.0	4	74.5	4	66.5	4	56.5	4	47.5	4	76.0	4
Spring CPUE ≥15.0 in	11.3	2	8.5	2	5.5	1	12.0	2	11.5	2	11.0	2	14.5	3	8.0	2	8.7	2
Spring CPUE ≥20.0 in	5.3	4	4.0	4	1.0	2	2.9	3	1.5	2	1.0	2	1.0	2	4.5	4	1.3	2
Instantaneous mortality (z)							-0.68											
Annual mortality (A)%							49.4											
Total score	16		11		13		15		15		16		17		17		15	
Assessment rating	Good		Fair		Good		Good		Good		Good		Excellent		Excellent		Good	

\*Age data collected in the fall. Previous years age data derived from spring samples.

sw dshlag.d04 & 09

sw dshlbb.D03-D18

Table 69. Length frequency and CPUE (fish/net set) of channel catfish collected from 4 set-nights of tandem hoop nets (4 sets with 3 nets each with 72 hour soak time) at Shanty Hollow Lake in 28-31, August 2018.

Species	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	25	Total	CPUE	Std err
Channel catfish					10	18	11	1								1	1	42	10.5	3.3
Redear sunfish	3	1	6	6	13													29	7.3	5.3

swdshlcc.d18



Figure 1. 2018 Green River Lake angler attitude survey results

**Green River Lake Angler Attitude Survey 2018 (n=181)**

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 Green River Lake in a year? (n=165)  
 First time (1.8%)                      1 to 4 (21.7%)                      5 to 10 (10.2%)                      More than 10 (66.3%)
4. Which species of fish do you fish for at Green River Lake (**check all that apply**)?  
 Bass 59.7%      Crappie 56.4%      Catfish 15.5%      Walleye 5.5%      Bluegill 7.2%      Muskie 5%
5. Which one species do you fish for most at Green River Lake (**check only one**)? (n=171)  
 Bass 46.8%      Crappie 43.3 %      Catfish 3.5%      Walleye 0.6%      Bluegill 2.3%      Muskie 2.9%

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

**Bass Anglers (n=105)**

6. In general, what level of satisfaction or dissatisfaction do you have with bass fishing at Green River Lake?  
 Very satisfied 38.1%      Somewhat satisfied 49.5%      Neutral 11.5%      Somewhat dissatisfied 1%      Very dissatisfied 0%      No opinion 0%
- 6a. If you responded with very or somewhat satisfied in question (6) - What is the single most important reason for your satisfaction? (n=96)  
 Number of fish 31.3%      Size of fish 66.7%      Size limit 1%      Creel limit       Low angler pressure 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)  
 Number of fish       Size of fish       Size limit       Creel limit       Too many anglers   
 Other \_\_\_\_\_

**Crappie Anglers (n=89)**

7. In general, what level of satisfaction or dissatisfaction do you have with crappie fishing at Green River Lake?  
 Very satisfied 40.4%      Somewhat satisfied 52.5%      Neutral 1.1%      Somewhat dissatisfied 5.6%      Very dissatisfied 0%      No opinion 0%
- 7a. If you responded with very or somewhat satisfied in question (7) - What is the single most important reason for your satisfaction? (n=81)  
 Number of fish 63%      Size of fish 27.2%      Size limit 2.5%      Creel limit 2.5%      Low angler pressure 0%      Close by 3.7%
- 7b. If you responded with somewhat or very dissatisfied in question (7) – what is the single most important reason for your dissatisfaction? (n=9)  
 Number of fish 22.2%      Size of fish 44.4%      Size limit 11.1%      Creel limit 11.1%      Too many anglers 11.1%

**Catfish Anglers (n=19)**

8. In general, what level of satisfaction or dissatisfaction do you have with catfish fishing at Green River Lake?  
 Very satisfied 47.2%      Somewhat satisfied 42.1%      Neutral 0%      Somewhat dissatisfied 10.5%      Very dissatisfied 0%      No opinion 0%
- 8a. If you responded with very or somewhat satisfied in question (8) - What is the single most important reason for your satisfaction? (n=17)  
 Number of fish 76.5%      Size of fish 23.5%      Size limit 0%      Creel limit 0%      Other 0%
- 8b. If you responded with somewhat or very dissatisfied in question (8) – what is the single most important reason for your dissatisfaction? (n=2)  
 Number of fish 50%      Size of fish 50%      Size limit       Creel limit       Other \_\_\_\_\_
9. What methods do you use fishing for catfish at Green River Lake? (**check all that apply**)  
 Jugging 35.7%      Trotline 7.1%      Hook & Line 53.6%      Hand grabbing/noodling 0%
- 9a. How many days per year do you fish using each of the following methods? (**enter number of days**)  
 Jugging < 5 = 50%      6-10 = 20%      > 10 = 30%      Trotline 3 = 50%      4 = 50%      Hook & Line < 5 = 25.1%      6-10 = 12.6%      10-20 = 12.6%      25-50 = 6.3%      > 50 = 12.6%      Hand grabbing/noodling 0%
- 9b. (IF A HAND GRABBER/NOODLER) What do you use to grab fish? (n=0)                      Hand                       Hook                       Poled hook

**Walleye Anglers (n=5)**

10. In general, what level of satisfaction or dissatisfaction do you have with walleye fishing at Green River Lake?  
 Very satisfied 20%      Somewhat satisfied 20%      Neutral 20%      Somewhat dissatisfied 20%      Very dissatisfied 20%      No opinion 0%
- 10a. If you responded with very or somewhat satisfied in question (10) - What is the single most important reason for your satisfaction?  
 Number of fish 0%      Size of fish 50%      Size limit 0%      Creel limit 0%      Convenient/close by 50%
- 10b. If you responded with somewhat or very dissatisfied in question (10) – what is the single most important reason for your dissatisfaction?  
 Number of fish 100%
11. What % of time do you fish for walleye during the day = 100%      and at night = 0%
12. Do you ever fish below Green River Lake dam for walleye? (n=3)                      Yes 33.3%      No 66.7%

12a. If **NO**, then why not? Wasn't aware of the fishery 50% Not interested = 50%

12b. If **YES**, what level of satisfaction do you have with the walleye fishing at the Green River Lake Tailwater?

Very satisfied 0% Somewhat satisfied 0% Neutral 100% (n=1) Somewhat dissatisfied 0% Very dissatisfied 0% No opinion 0%

**Muskie Anglers (n=4)**

13. In general, what level of satisfaction or dissatisfaction do you have with muskie fishing at Green River Lake?

Very satisfied 25% Somewhat satisfied 50% Neutral 25% Somewhat dissatisfied 0% Very dissatisfied 0% No opinion 0%

13a. If you responded with very or somewhat satisfied in question (13) - What is the single most important reason for your satisfaction?

Number of fish 75% Size of fish 25%

13b. If you responded with somewhat or very dissatisfied in question (13) – what is the single most important reason for your dissatisfaction? (n=0)

Number of fish Size of fish Size limit Creel limit Too many anglers Other

**All Anglers (n=175)**

14. Are you satisfied with the current size and creel limits on all sport fish at Green River Lake? Yes 80.6% No 19.4%

14a. If you responded "No" to Question 14, which species are you dissatisfied with and what size and creel limits would you prefer? (n=34)

Crappie 10-inch size limit – 74.4%

Higher crappie creel limit – 10.9%

Crappie creel limit 15 fish – 4.3%

Bass size limit 15-inch – 6.4%

Muskie size limit  $\geq$  40-inch – 2.2%

15. Are you aware that KDFWR places fish attractors/habitat in Green River Lake? (n=181) Yes 88.4% No 11.6%

16. Are you aware KDFWR produces a fish attractor map for Green River Lake? Yes 78.5% No 21.5% **(if YES, go to question 16a; otherwise 17)**

16a. Do use printed map Yes 38.5% No 61.5% &/or website GPS coordinates? Yes 44.3% No 55.7%

17. What type of fish habitat/attractors do you prefer to fish? (n=177)

Any/all 42.4% Natural brushpiles 47.4% Stakebeds 1% Hingecut/laydown trees 4.5% Plastics 0% None 0.04%

Specifics (if any): Rock – 2.3% No cedar – 1% Natural cover – 0.04%

18. Have you fished the plastic-pallet tree fish attractors at Green River Lake? (n=170) Yes 12.4% No 87.6% **(if YES, go to question 18a)**

18a. What did you like or dislike about these plastic structures? (n=21) (list comments below in appropriate column)

**LIKES** (n=9): Less hangups/snags 77.7% Lots of fish 11.1% Hold fish in spring 11.1%

**DISLIKES** (n=12): Fewer fish 58.3% Hard to find on electronics 16.7% Too shallow for fall & winter 8.3%

Can't spider rig them 8.3% Too crowded/fished heavy 8.3%

Other notes: Too many bass tournaments – 4 Snake Creek needs repair – 1 Open Holmes Bend bathrooms yr round – 1

Bass mortality after tournaments - 2

## CENTRAL FISHERY DISTRICT

### Project 1: Lake and Tailwater Fishery Surveys

#### FINDINGS

Lake sampling conditions for 2018 are summarized in Table 1.

#### **Taylorville Lake (3,050 acres)**

Spring diurnal electrofishing was completed in April 2018 to assess the black bass population. Three sections (Big Beech Creek, Ashes/Jacks Creek, and Van Buren area) of Taylorville Lake were sampled for 7.5 hours (2.5 hours per section; 30-minute runs). Length distribution and CPUE for largemouth bass are presented in Tables 2 and 3. The catch rate of bass collected in 2019 (184.4 fish/hr) was higher than the lake's historical average of 118.3 fish/hr. Catch rate for keeper bass ( $\geq 15.0$  in) was 35.3 fish/hr; higher than the lake average (19.0 fish/hr) and was the highest catch rate recorded for harvestable-size fish. The Ashes Creek area recorded its highest catch rate for largemouth bass. The PSD for largemouth bass was 48, which was lower than the lake's average of 56 (Table 4). Additionally, the  $RSD_{15}$  value was 22; which is the lake's average. The largemouth bass population assessment score, based on spring electrofishing data, was 17 "Excellent", which is above the average rating of "Good" at Taylorville Lake (Table 5).

Length frequency, relative weights, age and growth, and index for year class strength at age-0 and age-1 of largemouth bass based on September electrofishing are presented in Tables 6–9. The growth rates of largemouth bass at Taylorville Lake are very good. Largemouth bass growth rates indicated bass are reaching harvestable size (15.0 in) during the fourth growing season (Table 7). Average body condition for largemouth bass in 2018 ( $W_r = 92$ ) was the same as last year, but lower than the lake's historical average ( $W_r = 96$ ; Table 8). Catch rate of age-0 largemouth bass in the fall of 2018 (23.7 fish/hr) was lower than the lake's historic average of 41.1 fish/hr (Table 9). The year class strength model indicated below average recruitment for young-of-the-year largemouth bass in 2018. Therefore, 30,503 (10.0 fish/acre) largemouth bass (4.0–4.5 in) were stocked into Taylorville Lake in October 2018. Largemouth bass fingerlings have been stocked almost annually since 2000 at rates ranging from 5.0 to 10.0 fish/acre and from 1985 to 1992. The need for stocking and the numbers stocked in reservoirs are based (since 2004) on results of the age-0 year class strength sampled in early September and the predicted age-1 year class strength the following spring.

Trap netting effort for crappie (Table 10) resulted in the collection of 558 white crappie and 116 black crappie. Crappie were sampled with trap nets during 48 net-nights. PSD and  $RSD_{10}$  values are shown in Table 11. Age and growth determinations and age frequency for black and white crappie were completed using otoliths (Tables 12–15). Age studies indicated both white and black crappie reach 9.0 in between age-2 and age-3. The crappie population assessment scores (Tables 16 and 17) rated both white and black crappie as "Fair". Historically, the crappie population at Taylorville Lake has been very cyclic with peaks occurring every 7 to 9 years. In an effort to help recruitment on the lake, white crappie were stocked from 2009 through 2013. Significant spawns have occurred in both 2013 and 2015, however the 2016, 2017 and 2018 spawn appeared to be poor based off trap net data. Body condition of white and black crappie in the fall of 2018 were good (Table 18).

Fall gill netting for hybrid striped bass, white bass, and saugeye was conducted in October 2018 (Tables 19–29). A total of 152 hybrid striped bass were collected in 2018 compared to 125 in 2017, 167 in 2016, 47 in 2015, and 90 in 2014. Hybrid striped bass were captured in 13 net-nights (nn) for a CPUE of 11.7 ( $\pm 5.3$ ) fish/nn. The hybrid striped bass population has exhibited notable fluctuations since 1990. The density of hybrid striped bass in Taylorville Lake appeared to be negatively correlated with the amount of tailwater discharge (due to rainfall) and fishing pressure. It is theorized that above-normal discharge leads to escapement of hybrid striped bass but has little effect on the white bass density in the lake. Additionally, a late fall water quality issue with low oxygen in the lower portion of Taylorville Lake may be causing additional stress on the hybrid striped bass. Age and growth studies were completed for hybrid striped bass using otoliths (Tables 20 and 21). Data indicate hybrid striped bass reached 15.0 in between one to two years. This is good growth for hybrid striped bass at Taylorville Lake. The relative weight ( $W_r$ ) index for hybrid striped bass (87) continues to show a lower than expected body condition at

Taylorville Lake (Table 22). The average  $W_r$  for Taylorville Lake is 86. The population assessment for hybrid striped bass was rated at “Good”, higher than the average rating for hybrid striped bass “Fair” at Taylorville Lake (Table 23). Taylorville Lake was stocked with 60,405 (19.8 fish/acre; 1.6 in) hybrid striped bass in June 2018. The 2018 hybrid striped bass stocking in Taylorville Lake included both crosses of hybrid striped bass (30,099 reciprocal cross hybrids (no OTC mark) and 30,306 original cross hybrid striped bass (OTC marked)). Data for white bass collected during fall 2018 gillnetting studies are presented in Tables 19 and 24-27. White bass comprised about 39% of the *Morones* sampled, compared to 17% in 2017, 35% in 2016, 27% in 2015, and 47% in 2014. Age and growth studies indicated white bass reach 12.0 in by age 3 (Tables 24 and 25). Relative weight values ( $W_r=94$ ) revealed acceptable body condition for all sizes of white bass (Table 26). The white bass population assessment was rated “Poor”, an average rating for white bass at Taylorville Lake (Table 27).

Saugeye were collected during fall gill netting conducted in October. A total of 167 saugeye were collected ranging from the 7.0- to 23.0-in size class (Table 19). Age and growth studies were completed using otoliths. Calculations indicated that on average, saugeye reach 15.0 in between age-1 and age-2, and 20.0 in between age-2 and age-3 (Tables 28). All four stocked year classes were represented in this sample (Table 29). Taylorville Lake was stocked with 61,000 (20.0 fish/acre; 1.1 in) saugeye in 2018.

Summer diurnal low-pulse electrofishing was completed in July 2018 to assess the blue catfish population. Two sections (Lower Lake: Big Beech Creek and Ashes/Jacks Creek, and Upper Lake: Chowning Lane and Van Buren areas) of Taylorville Lake were sampled for 3.0 hours (15-minute runs). Two hundred and twenty-eight blue catfish were collected in the lower section compared to 298 blue catfish collected in the upper section of the lake (Table 30). The number of blue catfish collected in 2018 (175.3 fish/hr) was higher than the lake’s historic average of 127.5 fish/hr (Table 31). Relative weight values revealed good body condition for all sizes of blue catfish (Table 32). A total of 23,500 (7.7 fish/acre) blue catfish (6.7-7.1 in) were stocked in Taylorville Lake during October 2018.

### **Herrington Lake (2,410 acres)**

Spring diurnal electrofishing studies were completed in May 2018 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 33. Largemouth bass (89.6%) dominated the black bass fishery at Herrington Lake. Numbers of largemouth bass collected in 2018 (184.5 fish/hr) was higher than the lake’s historic average of 116.7 fish/hr (Table 34). Fluctuations in the overall catch rates over the past couple of years seem to be related to lake level during sampling. The higher the lake level the lower the catch rate of bass at Herrington Lake. The lake level during the 2018 spring electrofishing sample was low, which may have led to a slight increase in the catch rate for largemouth bass. Catch rate for keeper bass ( $\geq 12.0$  in) was 88.4 fish/hr, higher than the lake’s historical average (47.3 fish/hr). The PSD for largemouth bass was 64, comparable to the lake’s average of 57 (Table 35). Additionally, the  $RSD_{15}$  value was 21, which is lower than the lake average of 24. The largemouth bass population assessment score, based on spring electrofishing data, was 19 “Excellent”, which is an above average rating for Herrington Lake (Table 36).

Length frequency, relative weights and index of year class strength at age-0 and age-1 of largemouth bass based on September electrofishing at Herrington Lake are presented in Tables 37-39. Largemouth bass condition ( $W_r=91$ ) was slightly lower than the lake’s historical average ( $W_r=92$ ; Table 38). The year class strength model for Herrington Lake indicated a below average recruitment year for young-of-year largemouth bass based on age-1 CPUE (Table 39). Age-0 CPUE (11.6 fish/hr) was less than the lake average (35.0 fish/hr). Herrington Lake was stocked with 24,172 (10.0 fish/acre) largemouth bass (4.1-4.4 in) in October 2018.

In May 2018, small bass were removed from Beaver Lake to address overcrowding issues. A total of 2,059 largemouth bass (4.0-9.9 in) were removed from Beaver Lake and stocked into Cane Run Creek, which is located in to lower portion of Herrington Lake.

Gill netting for hybrid striped bass and white bass was completed in October 2018. During the 14 net-night sampling period, 162 hybrid striped bass and 46 white bass were collected (Table 40). Otoliths were taken from both species for age and growth determinations. Results of these studies indicated excellent growth rates for both hybrids (Tables 41-42) and white bass (Tables 45-46). Hybrid striped bass continue to reach 15.0 in between age-1

and age-2 (Table 41), as they have historically. Of the hybrid striped bass sampled, 74% were age-1+ or older (Table 42). Condition of hybrid striped bass in 2018 ( $W_r=97$ ) was higher than the lake's historical average ( $W_r=93$ ; Table 43). The population assessment for hybrid striped bass indicated a "Good" population (Table 44). White bass age and growth determinations showed they reached 12.0 in between age-1 and age-2 (Table 45). Of the white bass sampled, 89% were age-1+ and older (Table 46). The white bass population assessment indicated a "Fair" population, which is an average rating (Table 47). Body condition of white bass ( $W_r=98$ ) was higher than the lake's historical average ( $W_r=96$ ; Table 48). Herrington Lake was stocked with 51,092 (21.2 fish/acre; 1.6 in) hybrid striped bass in June 2018. The hybrid striped bass stocking was divided into 25,880 reciprocal cross hybrids (no mark) and 25,212 original cross hybrids (OTC marked).

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 2010. Table 49 provides descriptive statistical parameters of the lake fishery during the present survey (2018) and the last 3 surveys (2010, 2004 and 1996). The number of fishing trips in 2018 (13,438) increased slightly from 2010 (11,692). Accordingly, fishing pressure (man-hours), number of fish caught, numbers and pounds of fish harvested, and catch rates (fish/hr and fish/acre) have increased since 2010. Other parameters such as gender, residency, method and mode were similar to surveys completed in past years.

In 2018, largemouth bass was the predominant black bass species caught; however, spotted bass and smallmouth bass were represented in lower numbers (Tables 50 and 51). Mean length of largemouth bass harvested increased from 13.5 inches in 2010 to 13.9 inches in 2018. Overall, 12.6% 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, all tournament anglers harvested bass were changed to released which reduced harvest estimates to 2.3% for largemouth bass. The number of fishing trips for black bass in 2018 was 6,653, an increase from 4,207 in 2010. Black bass continued to be the most sought-after group fished for in Herrington Lake. Catch rate of bass by bass anglers were similar from 2018 (0.85 fish/hr) to those in 2010 (0.90 fish/hr). Bass angler success rate (8.0%) was less than that reported in 2010 (14.7%). Black bass catch, harvest and monthly angling success are shown in Tables 52 and 53.

The catfish group was the second most sought after at Herrington Lake. In 2018, there were 1,482 trips by catfish anglers compared to 771 trips by catfish anglers in 2010. Channel catfish contributed 90% of the catfish caught, compared to 78% in 2010. Pounds of catfish harvested continues to increase from 2,680 lbs in 2004, to 5,407 lbs in 2010 and 6,796 lbs in 2018. Pounds of flathead catfish harvested by catfish anglers has remained stable 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 15.5 in (13.2 in 2010) while that of flathead catfish was 21.0 in (15.5 inches in 2010). Harvest rate by catfish anglers decreased from 0.52 fish/hr (2010) to 0.09 fish/hr (2018). Success rate for catfish anglers in 2018 (75.0%) was similar to those observed in 2010 (77%). Catfish catch, harvest and monthly angling success are shown in Tables 54 and 55.

Numbers of crappie caught increased from 3,172 in 2010 to 15,773 in 2018. Additionally, the number of crappie harvested increased from 3,045 fish in 2010 to 13,755 fish in 2018. Mean length of crappie harvested was 11.7 in for white crappie and 11.8 in for black crappie. Crappie are the third most sought-after group fished for in Herrington Lake. The number of fishing trips for crappie in 2018 (6,487 trips) increased from 1,599 trips in 2004 and 1,506 in 2010. Harvest rate by crappie anglers increased from 0.48 fish/hr in 2010 to 2.01 fish/hr in 2018. Percent success of crappie anglers increased from 48% in 2010 to 79.2% in 2018. Black crappie represented 83% of the crappie caught and 81% of the crappie harvested. Crappie catch, harvest and monthly angling success are shown in Tables 56 and 57.

The *Morone* group (hybrid striped bass and white bass) was the fourth most sought-after group at Herrington Lake in 2018. The number of hybrid striped bass (HSB) caught decreased from 7,309 fish in 2010 to 4,020 fish in 2018. Additionally, the number of hybrid striped bass harvested decreased from 4,408 fish in 2010 to 592 fish in 2018. The number of white bass (WB) caught decreased dramatically from 5,321 fish caught in 2010 (3,082 harvested) to 106 fish caught in 2018 (none harvested). Pounds of HSB harvested in 2018 totaled 1,079 lbs (0.45 lbs/acre), whereas in 2010 it was 6,415 lbs (2.66 lbs/acre). Mean length of HSB harvested in 2018 was 15.4 in while in 2010 it was 14.2 in. The number of trips for *Morones* decreased from 2,102 trips in 2010 to 1,187 trips in 2018. Hours spent fishing for these fish also decreased from 10,368 hrs (4.30 hrs/acre) in 2010 to 5,652 hrs (2.40

hrs/acre). Harvest rate for *Morone* anglers decreased from 0.52 fish/hr in 2010 to 0.07 fish/hr in 2018. Success rate for these anglers decreased from 56% in 2010 to 16% in 2018. *Morone* catch, harvest and monthly angling success are shown in Tables 58 and 59.

Panfish (bluegill) were the fifth most sought after fish group at Herrington Lake in 2018. The number of panfish caught in 2018 (24,794 fish) increased from 20,883 fish caught in 2010. Pounds harvested in 2018 were more than that seen in 2010, increasing from 1,679 lbs (0.70 lbs/acre) in 2010 to 2,662 lbs (1.1 lbs/acre). The average length of bluegill harvested was 6.1 in, compared to the average size caught in 2010 (5.5 in). Trips for panfish decreased from 1,498 trips in 2010 to 602 trips in 2018. The harvest rate for panfish was 2.78 fish/hr (1.50 fish/hr in 2010). The percentage of successful panfish anglers was 53% while in 2010 it was 77%. Panfish catch, harvest and monthly angling success are shown in Tables 60 and 61.

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 348 surveys were completed by anglers (130 surveys in 2010). The attitude survey reflected the largest majority of anglers fish for largemouth bass (61.6%) followed by crappie (15.5%), channel catfish (9.9%), hybrid striped bass (9.9%) and other species (7.7%). The majority of anglers expressed satisfaction for their species of preference in 2018. The majority of anglers (99.1%) 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 2018 (Table 62). Total largemouth bass catch rate (251.7 fish/hr) was higher than the lake average of 167.2 fish/hr (Table 63). The PSD for largemouth bass was 54 compared to the lake average of 66 (Table 64). The RSD<sub>15</sub> was 27 compared to the lake average of 40. The population assessment gave a rating of “Excellent”, the average rating for the past 5 years at Guist Creek Lake (Table 65). Fall largemouth bass sampling was conducted for relative weights and index of year class strength at age-0 and age-1 (Tables 66-68). Relative weights indicated good body condition for bass, especially for bass over 15.0 in (Table 67). Mean length of age-0 largemouth bass (4.8 in) was larger than the lake average of 4.2 in and catch rate of age-0 largemouth bass (29.3 fish/hr) was less than average recruitment (avg. = 46.3 fish/hr; Table 68). Largemouth bass were stocked at 10.0 fish/acre (3,171 fish) that averaged 5.0 in at Guist Creek Lake in October 2018.

Saugeye were collected during the spring largemouth bass sample (Table 62). Sampling yielded 21 saugeye (7.0 fish/hr) ranging in size from the 10.0- to 20.0-in size class. Additionally, saugeye were collected during the fall largemouth bass electrofishing (Table 66). Sampling yielded 19 saugeye (12.7 fish/hr) ranging in size from the 8.0- to 23.0-in size class. During October, electrofishing was completed targeting saugeye. Nineteen saugeye (12.7 fish/hr) were sampled from the 15.0- to 24.0-in size class (Table 69). Guist Creek Lake was stocked with 28,810 (90.9 fish/acre; 1.1 in) saugeye in 2018. Saugeye have been stocked annually into Guist Creek Lake since 2013.

Guist Creek Lake was stocked with 19,046 (60.1 fish/acre; 1.5 in) hybrid striped bass in June 2018.

Channel catfish were sampled in November using three sets of three tandem hoop nets at Guist Creek Lake in 2018. Although population parameters are presented, only three fish were collected. Length frequency results for channel catfish showed a size distribution between the 7.0-in and 26.0-in size classes (Table 70). The PSD and RSD<sub>24</sub> for channel catfish were 100 and 67, respectively (Table 71). Relative weights indicated very good body condition ( $W_r = 103$ ) for channel catfish (Table 72). Overall catch rates (1.0 fish/set) were much lower than the lake average of 114.4 fish/set (Table 73). Guist Creek Lake was not stocked with channel catfish in 2018.

### **A.J. Jolly Lake (175 acres)**

Spring diurnal electrofishing was completed in April 2018 to assess the black bass population (Table 74). Results indicated largemouth bass catch rates (110.0 fish/hr) were greater than the lake’s historical average (86.7 fish/hr; Table 75). The PSD for largemouth bass was 58 and the RSD<sub>15</sub> was 24 (Table 76). The population assessment indicated a “Good” bass population, the average rating since 2010 (Table 77). Fall diurnal electrofishing was conducted for relative weights and to index year class strength of age-0 largemouth bass in October (Tables 78-

80). Relative weights indicated acceptable body condition ( $W_r = 87$ ; Table 79). Fall sampling indicated an above average number of age-0 bass, (42.5 fish/hr; average= 25.3 fish/hr) and above average size of age-0 bass (5.3 in; average=4.6 in; Table 80). Largemouth bass were not stocked during 2018.

A.J. Jolly Lake was stocked with 14,830 (84.7 fish/acre; 1.1 in) saugeye in 2018. Saugeye have been stocked annually since 2013. Saugeye were collected during the spring largemouth bass sample (Table 74). Sampling yielded 19 saugeye (7.6 fish/hr) ranging in size from the 8.0- to 23.0-in size class. Additionally, saugeye were collected during the fall largemouth bass sample (Table 78). Sampling yielded 48 saugeye (24.0 fish/hr) ranging in size from the 9.0- to 24.0-in size class.

Channel catfish were not stocked into A.J. Jolly Lake in 2018.

On June 13, 2018 a total of 170 common carp were removed from AJ Jolly Lake. The average weight of a common carp removed from AJ Jolly Lake was 3.8 lbs. Therefore, it was estimated that 646 lbs of common carp were removed. The eight-year total for common carp removed from AJ Jolly Lake is 2,124 fish at an estimated weight of 6,913 lbs (3.3 lbs average weight per fish).

### **Beaver Lake (158 acres)**

During March, April, September and November, an effort was made to reduce the crowded largemouth bass population at Beaver Lake. Four thousand four hundred sixty-two (28.2 fish/acre) largemouth bass were removed from Beaver Lake during five separate events with fish transported to Herrington, Willisburg and 4 FINS lakes. Largemouth bass ranging in size from 4.0 to 11.0 in (<8.0 in = 2,574 (57.9%); 8.0-10.9 in = 1,728 (38.7%); 11.0 in = 160 (3.4%)) were removed from Beaver Lake.

A spring diurnal electrofishing sample was completed in May 2018 to assess the black bass population (Table 81). The CPUE for all sizes was 386.5 fish/hr, greater than the lake average of 255.0 fish/hr (Table 82). The PSD and  $RSD_{15}$  for largemouth bass were 13 and 1, respectively, compared to the current lake average of 28 and 4 (Table 83). The population assessment score indicated a “Fair” bass population (Table 84), compared to the average assessment rating of “Good” for Beaver Lake. Fall diurnal electrofishing was conducted for age and growth, relative weights, and index age-0 year class strength of largemouth bass (Tables 85 – 88). Largemouth bass growth rates at Beaver Lake indicated bass are reaching harvestable size (12.0 in) between age 4 and age 5 (Table 86). Additionally, the age and growth study showed largemouth bass were reaching 15.0 in between age 7 and age 8. The overall relative weight index continues to improve following efforts to reduce overcrowding of largemouth bass ( $W_r = 86$ ); which is higher than the lake average of 85 (Table 87). Fall sampling indicated above average numbers of age-0 bass, (196.0 fish/hr; average = 134.1 fish/hr) and the average size of largemouth bass (5.2 in) was higher than the lake’s average of 4.3 in (Table 88).

Spring diurnal electrofishing was completed in May 2018 to assess the panfish populations (Tables 89-92). Length frequency results showed a good size distribution of bluegill up to the 8.0-in size class (Table 89). The PSD for bluegill was 52 compared to the lake average of 32 (Table 90). The  $RSD_8$  was 4, compared to the lake average of 1. CPUE for all length groups of bluegill was 314.4 fish/hr; higher than the lake average of 252.8 fish/hr (Table 91). The population assessment for bluegill indicated an “Excellent” population rating, which is above average for Beaver Lake (Table 92). Redear sunfish catch rates were 16.8 fish/hr, which is lower than the lake’s average catch rate (66.6 fish/hr) for all sizes. The catch rate of redear sunfish  $\geq 8.0$  in was 4.0 fish/hr and was lower than the lake average of 22.5 fish/hr (Table 93). Redear sunfish PSD and  $RSD_9$  were 45 and 10, respectively (Table 90). The population assessment indicated a “Good” redear sunfish fishery (Table 94). Relative weights for bluegill and redear sunfish were collected during the fall diurnal electrofishing sample. Overall, relative weight data for bluegill was fair while the body condition of redear sunfish was good (Table 95). Redear sunfish (47,400 fish; 300.0 fish/acre) were stocked in September 2018 at an average size of 1.7 in.

Beaver Lake was stocked with 3,700 (25.0 fish/acre; 7.0-9.0 in) channel catfish in March 2018.

No applications of aquatic herbicides were completed at Beaver Lake in 2018. No liquid fertilizer applications have been made since 2001. Finally, no gizzard shad were collected at Beaver Lake in 2018.

### **Benjy Kinman Lake (88 acres)**

A spring nocturnal electrofishing sample was completed in May 2018 at Benjy Kinman Lake to assess the black bass population (Table 96). The CPUE for all sizes was 128.0 fish/hr, compared to the lake average of 125.4 fish/hr (Table 97). The PSD and RSD<sub>15</sub> for largemouth bass were 24 and 10, respectively (Table 98). The population assessment score indicated a “Fair” bass population (Table 99). Fall largemouth bass sampling was conducted for relative weights and index of year class strength at age-0 in September 2018 (Tables 100-102). Relative weights indicated below average body condition for bass ( $W_r = 83$ ) 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. CPUE for both age-0 and age-0  $\geq 5.0$  in were collected for the fifth time at Benjy Kinman Lake (Table 102).

A spring diurnal electrofishing sample was completed at Benjy Kinman Lake in May 2018 to assess the panfish populations (Tables 103-106). Length frequency results showed a good distribution of bluegill through the 6.0-in size range (Table 103 and 105). The PSD and RSD<sub>8</sub> for bluegill was 35 and 0, respectively (Table 104). Length frequency results showed the majority of the redear sunfish were in the 4.0- to 7.0-in size range (Table 103 and 106). Redear sunfish PSD and RSD<sub>9</sub> was 7 and 0, respectively (Table 104). Benjy Kinman Lake was stocked with 26,400 (300.0 fish/acre; 1.7 in) redear sunfish in September 2018.

Channel catfish were sampled in October 2018 using tandem hoop nets. This was the second channel catfish sample at Benjy Kinman Lake. Length frequency results for channel catfish showed a size distribution between the 13.0-in and 24.0-in size class (Table 107). PSD and RSD<sub>24</sub> were 77 and 7, respectively (Table 108). Catch rates and size distribution have improved since the previous sample in 2015 (Table 109). Relative weights indicated an acceptable body condition for channel catfish ( $W_r = 92$ ) (Table 110).

In July, Big Bone State Park Lake was drained due to a dam issue. Fish were relocated from Big Bone State Park Lake to Benjy Kinman Lake. Benjy Kinman was stocked with 264 (3 fish/acre; 4.0-15.0 in) largemouth bass, 5 (0.1 fish/acre; 16.0-17.0 in) channel catfish, and 14 (0.2 fish/acre; 6.0-7.0 in) bluegill from Big Bone State Park Lake. In August, General Butler State Park Lake was lowered due to dam repairs. Fish were relocated from General Butler State Park Lake to Benjy Kinman Lake. Benjy Kinman was stocked with 246 (2.8 fish/acre; 3.0-19.0 in) largemouth bass, 24 (0.3 fish/acre; 12.0-16.0 in) channel catfish, 217 (2.5 fish/acre; 4.0-6.0 in) bluegill, 122 (1.4 fish/acre; 4.0-7.0 in) redear sunfish, and 6 (0.1 fish/acre; 6.0-8.0 in) crappie from General Butler State Park Lake.

Eleven rough fish removal events took place from August 2018- December 2018 resulting in a total of 563 bigmouth buffalo, smallmouth buffalo, common carp, freshwater drum and longnose gar being removed from Benjy Kinman Lake. The average weight of rough fish removed in 2018 was 9.7 lbs. Therefore, it was estimated that 5,475 lbs of rough fish were removed. The five-year total for rough fish removed from Benjy Kinman Lake is 3,953 fish at an estimated weight of 29,701 lbs (7.5 lbs average weight per fish).

A soil test completed during the fall of 2017 at Kinman Lake resulted in a soil pH level of 5.3. Based on the pH it was recommended to apply 5 tons/acre of agricultural lime. Therefore, 121 tons of agricultural lime was washed into the upper third of Kinman Lake during the fall of 2017. During November 2018, 97 tons of agricultural lime was washed into the middle third of Kinman Lake. A total of 218 tons of lime has been washed into Benjy Kinman Lake, which equals a rate of 2.5 tons per acre. The final liming is planned for the lower third of the lake next year.

Kinman Lake was lowered 3.4 feet from October 2018-March 2019 in an effort to crowd the fish, assist with rough fish removal and allow for winter wheat to be planted on the exposed shoreline. A total of 400 lbs. of winter wheat was planted, which should assist in suspending nutrients as it decomposes while providing additional shoreline fish habitat.

One hundred and twenty gallons of liquid fertilizer (9-18-9) was applied in May 2018. During the first treatment, 100 gallons were distributed throughout the entire lake. An additional treatment of 20 gallons was applied in the four upper creek arms of the lake.



### **Boltz Lake (92 acres)**

Spring nocturnal electrofishing was completed in May 2018 to assess the black bass population (Table 111). Results indicated largemouth bass catch rates (219.5 fish/hr) were higher than the lake's historical average (193.1 fish/hr; Table 112). The PSD for largemouth bass was 53 compared to the lake average of 43 (Table 113). The RSD<sub>15</sub> was 12, lower than the lake average of 17. The population assessment indicated a "Good" bass population (Table 114). Fall diurnal electrofishing was conducted for length frequency, relative weights and index of age-0 year class strength in September (Tables 115-117). Relative weights indicated acceptable body condition ( $W_r = 92$ ), higher than the lake's average relative weight of 90 (Table 116). Fall sampling indicated above average numbers of age-0 bass, (191.3 fish/hr; average= 64.2 fish/hr) and the average size (4.3 in) was comparable to the lake's average size of 4.2 in (Table 117).

Saugeye were collected during the spring largemouth bass sample (Table 111). Sampling yielded 61 saugeye (30.5 fish/hr) ranging in size from the 9.0- to 18.0-in size class. Saugeye were also collected during fall largemouth bass sampling at a rate of 9.3 fish/hr with fish ranging from the 14.0- to 21-in size class (Table 115).

Fall sampling for bluegill was completed for age and growth and relative weight index. On average, bluegill have "excellent" growth, reaching 6.0 in between age-2 and age-3 (Table 118). Relative weights reflected above average condition for bluegill ( $W_r = 95$ ; lake average  $W_r = 90$ ) (Table 119).

Diurnal fall crappie electrofishing was completed in October 2018 for length frequency, CPUE, age/growth and relative weight. A total of 79 white crappie were collected in 1.25 hrs of electrofishing (Table 120). Age and growth studies indicate that white crappie on average reach 9.2 in at age 3 (Table 121). Relative weights indicated acceptable body condition ( $W_r = 89$ ) (Table 122).

Channel catfish were sampled in October 2018 using tandem hoop nets. Although only four fish were collected, population parameters are provided below. Length frequency from sampling resulted in a size distribution of 15.0-in to 19.0-in size classes (Table 123). The PSD and RSD<sub>24</sub> for channel catfish was 75 and 0, respectively (Table 124). Relative weights indicated "good" body condition for channel catfish ( $W_r = 94$ ), and were higher than the lake average ( $W_r = 92$ ; Table 125). Overall, catch rates at Boltz Lake remain lower than the lake average of 53.3 fish/hr (Table 126). Channel catfish were not stocked during 2018. An attempt was made to sample blue catfish at Boltz Lake in 2018. A few fish were observed during electrofishing, but were not collected.

Redear sunfish (27,600 fish; 300.0 fish/acre) were stocked in September 2018 at an average size of 1.7 in.

A total of 14 common carp averaging 11.2 lbs/fish were removed from Boltz Lake in May 2018. In total, 587 common carp (estimated 4,811 lbs) have been removed from Boltz Lake since 2008.

Boltz Lake does not have a known population of gizzard shad present in the lake; however, during spring largemouth bass sampling an 18.7-inch gizzard shad was collected. This was the first gizzard shad collected in Boltz Lake; therefore, additional observation will be needed to determine the presence of a shad population.

### **Bullock Pen Lake (134 acres)**

Spring nocturnal electrofishing was completed in May 2018 to assess the black bass population (Table 127). The total catch rate of largemouth bass (225.0 fish/hr) was much higher than the lake's average catch rate of 143.9 fish/hr (Table 128). The PSD for largemouth bass was 71, higher than the lake average of 70 (Table 129). The RSD<sub>15</sub> for largemouth bass was 38, lower than the lake average of 40. The population assessment for largemouth bass was rated "Excellent"; which is better than the lake's average rating of "Good" (Table 130). Fall diurnal electrofishing was conducted in September to determine length frequency, age and growth, relative weights and index of age-0 year class strength for largemouth bass (Tables 131-134). Age and growth studies show that largemouth bass reach 12.0 in between age 3 and age 4 and 15.0 in between age 5 and age 6 (Table 132). Relative weights indicated acceptable body condition for bass ( $W_r = 90$ ), but were lower than the lake's average ( $W_r = 94$ ). Larger fish exhibited better condition compared to smaller length groups, which is a function of the shad forage base (Table 133). Age-0 CPUE (34.0 fish/hr) was higher than the lake average (21.7 fish/hr); therefore, no largemouth bass were stocked in 2018 (Table 134).

Saugeye were collected during the spring largemouth bass sample. Only one saugeye (0.5 fish/hr) was collected (Table 121). Saugeye were not stocked from 2015-2017 due to potential dewatering of the lake for dam repairs. Bullock Pen Lake was stocked with 11,875 (88.6 fish/acre; 1.1 in) saugeye in May 2018.

In fall of 2018, KDFWR began construction of a new boat ramp and parking lot at the property that was purchased in 2017 adjacent to the old ramp.

### **Corinth Lake (96 acres)**

Spring nocturnal electrofishing was completed in May 2018 to assess the black bass population (Table 135). The total catch rate of largemouth bass (276.5 fish/hr) was higher than the lake's average catch rate of 243.4 fish/hr (Table 136). The PSD for largemouth bass was 37, higher than the lake average of 21 (Table 137). The  $RSD_{15}$  for largemouth bass was 2, lower than the lake average of 7. The population assessment for largemouth bass was rated "Good"; the average rating since 2005 (Table 138). Fall diurnal electrofishing for largemouth bass was conducted to determine length frequency, year class strength and relative weight (Tables 139-141). Relative weights of largemouth bass continue to be below average, except for largemouth bass  $\geq 15.0$  in. The overall relative weight in 2018 ( $W_r = 84$ ) was equal to the historical average relative weight at Corinth Lake ( $W_r = 84$ ; Table 140). The year class strength model indicated that 2018 was a below average recruitment year for young-of-year largemouth bass (Table 141). Age-0 CPUE (62.7 fish/hr) remained below the lake average (86.7 fish/hr); however, largemouth bass were not stocked into Corinth Lake in 2018.

Spring diurnal electrofishing for bluegill and redear sunfish was completed in May 2018 to obtain length frequency, CPUE and population assessment data (Table 142). Bluegill PSD (49) was higher than the lake average of 33 (Table 143). The bluegill catch rate (320.8 fish/hr) continued to increase and was higher than the lake average (243.0 fish/hr; Table 144). The population assessment indicated a "Good" population, which is the average rating (Table 145). The redear sunfish catch rate (251.2 fish/hr) continued to increase and was higher than the lake's average (80.8 fish/hr; Table 146). Redear sunfish PSD was 49, lower than the lake average of 56 (Table 143). Catch rate for redear sunfish  $\geq 8.0$  in was 36.8 fish/hr; remaining higher than the lake average of 28.7 fish/hr (Table 146). The population assessment for redear sunfish was rated as "Fair" (Table 147). Fall diurnal electrofishing for bluegill and redear sunfish was conducted for age and growth and relative weights. Age and growth studies show that bluegill reach 6.0 in between age 3 and age 4 and redear sunfish reach 8.0 in at age 5 (Table 148-149) Relative weights indicated fair condition for bluegill (88) and good condition for redear sunfish (96; Table 150).

One hundred gallons of fertilizer was applied on May 15, 2018.

A time-lapse camera was installed at Corinth Lake from March 2018- February 2019 to estimate total usage (trips) and pressure (hours) at this public access area. 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 this site was by anglers. The time-lapse camera recorded a picture of the entire fishing area (parking lot, boat ramp and fishing pier) every 10-minutes during daylight hours throughout the study period. Images were analyzed by randomly selecting 16 days each month, which included an a.m. or p.m. period. During those selected dates and times, individual vehicles were selected for each fishing type (trailer boat, carry-down boat, bank), party size per vehicle and total trip lengths were recorded. A total individual vehicle count was also collected for the entire day. From these counts, monthly averages were calculated.

Overall, it was estimated that 5,059 trips were taken to Corinth Lake from March 2018-February 2019. Monthly trip totals ranged from 15 trips in February to 1,239 trips in May (Figure 1). Eighty-six percent of the trips to Corinth Lake occurred from April-September. The average trip length for the year was 3.4 hours. Trip lengths ranged from 2.5 hours in February to 4.8 hours in June. May (4,001 hours) and June (3,691 hours) recorded the highest usage rates (Figure 2). It was estimated that Corinth Lake received 17,486 hours of recreational pressure during this 12-month study period.

An angler attitude survey was conducted at Corinth Lake while personnel completed annual fish surveys, site maintenance and downloaded pictures from the time-lapse camera. Fifty-two surveys were completed by anglers. The attitude survey reflected the largest majority of anglers fish for largemouth bass (75.0%) followed by

bluegill (30.8%), crappie (26.9%), channel catfish (15.4%), redear sunfish (11.5%) and anything (5.8%). The majority of anglers expressed satisfaction for their species of preference in 2018, except for crappie anglers. The majority of anglers (95.9%) are satisfied with the current regulations on Corinth Lake. Overall, anglers were satisfied with the facilities (parking lot, boat ramp, fishing pier, courtesy dock and restroom) at Corinth Lake. However, while anglers were satisfied with the facilities, several anglers were dissatisfied with the amount of waterfowl and bird excrement on the boat ramp, courtesy dock and parking lot. Other anglers recommended expanding the parking lot and improving areas for bank fishing access.

### **Elmer Davis Lake (149 acres)**

Spring diurnal electrofishing studies were conducted in May 2018 for length frequency, PSD and CPUE for largemouth bass (Table 152). The total catch rate (331.5 fish/hr) was higher than the historical lake average of 307.6 fish/hr (Table 153). Largemouth bass PSD and  $RSD_{15}$  were 64 (average = 30) and 12 (average = 8), respectively (Table 154). The population assessment indicated an “Excellent” bass population, which has been the average rating since 2016 (Table 155). Fall electrofishing evaluated largemouth bass relative weight and index of year class strength at age-0 (Tables 156-158). Largemouth bass relative weight ( $W_r=87$ ) was equal to the historical lake average ( $W_r=87$ ; Table 157). The year class strength model indicated that 2018 was a below average year for young-of-year largemouth bass. Age-0 CPUE (100.7 fish/hr) was lower than the lake average (140.3 fish/hr; Table 158). However, no largemouth bass were stocked during 2018.

Diurnal spring electrofishing for length frequency, CPUE, and population assessment data was conducted for bluegill and redear sunfish in May 2018 (Table 159). The total bluegill catch rate (242.4 fish/hr) remains lower than the lake average of 255.3 fish/hr (Table 160). The PSD value for bluegill (28) was lower than the lake average of 35 (Table 161). The  $RSD_8$  (3) was higher than the lake average of 2. The population assessment for bluegill was “Good”, the highest rating since 2012 (Table 162). The total catch rate of redear sunfish (31.2 fish/hr) was lower than the lake average of 69.5 fish/hr (Table 163). The PSD for redear sunfish was 67 compared to the lake average of 55. The  $RSD_9$  was 57 compared to the lake average of 19 (Table 161). The redear sunfish population assessment indicated a “Good” population, which is equal to the lake’s average rating (Table 164). Relative weight index reflects average condition bluegill ( $W_r = 94$ ) and above average condition for redear sunfish ( $W_r = 112$ ; Table 165). Elmer Davis Lake was stocked with 39,600 (266 fish/acre; 1.7 in) redear sunfish in September 2018.

Channel catfish were sampled in October 2018 using tandem hoop nets at Elmer Davis Lake. Channel catfish collected ranged from the 14.0- to 26.0-in size classes (Table 166). Channel catfish were collected at 16.3 fish/set in 2018 which is lower than the lake average of 78.5 fish/set (Table 167). The PSD and  $RSD_{24}$  for channel catfish was 94 and 4, respectively (Table 168). Relative weights of channel catfish were excellent ( $W_r = 101$ ; Table 169).

### **Kincaid Lake (183 acres)**

Fall diurnal electrofishing for relative weights and index of year class strength at age 0 were conducted in October 2018 (Tables 170-172). Overall, relative weight values for largemouth bass ( $W_r = 92$ ) were equal to the lake average ( $W_r = 92$ ; Table 171). Age-0 CPUE (48.0 fish/hr) was higher than the lake average (37.9 fish/hr; Table 172). Largemouth bass were not stocked into Kincaid Lake in 2018.

### **McNeely Lake (51 acres)**

Spring diurnal electrofishing studies were conducted in April 2018 for PSD, length frequency and CPUE for largemouth bass (Table 173). Total catch rate in 2018 (334.0 fish/hr) was higher than the lake average of 229.2 fish/hr (Table 174). Largemouth bass PSD and  $RSD_{15}$  was 36 (average = 37) and 9 (average = 11), respectively (Table 175). The population assessment indicated an “Excellent” bass population, compared to the lake average assessment of “Good” (Table 176).

Channel catfish were not sampled at McNeely Lake in 2018. McNeely Lake was stocked with 1,275 (25.0 fish/acre; 7.0 -9.0 in) channel catfish in March 2018.

McNeely Lake was stocked with 100 (2.0 fish/acre; 8.0-10.0 in) grass carp in October 2018 for vegetation control.

Currently, McNeely Lake does not contain a population of gizzard shad.

### **Big Bone State Park Lake**

During July 2018, electrofishing was completed at Big Bone State Park Lake in an effort to remove fish in response to dam failure and complete dewatering of the lake. Fish removed were relocated to Benjy Kinman Lake in Henry County (Table 177).

### **General Butler State Park Lake**

During August 2018, electrofishing was completed at General Butler State Park Lake in an effort to reduce the biomass of sportfish in response to a drawdown to complete dam repairs. Fish removed were relocated to Benjy Kinman Lake in Henry County (Table 178).

### **Kentucky River WMA (Boone Tract) Ponds**

Length frequency, relative abundance, and CPUE of fishes collected in August 2018 by electrofishing at the 15-acre lake on the Boone Tract of the Kentucky River WMA are shown in Table 179. Largemouth bass were collected from the 4.0- to 15.0-in size classes. Bluegill were collected up to the 9.0-in size class. Black crappie were also collected during this sample. No other species of fish were observed.

Length frequency, relative abundance, and CPUE of fishes collected in August 2018 by electrofishing at the 6-acre lake on the Boone Tract of the Kentucky River WMA are shown in Table 180. Largemouth bass were collected from the 4.0- to 21.0-in size classes. Bluegill were collected up to the 8.0-in size class. Black crappie and redear sunfish were also collected. Gizzard shad, bullhead catfish and smallmouth buffalo were observed while completing this sport fish sample.

Length frequency, relative abundance, and CPUE of fishes collected in August 2018 by electrofishing at the 4-acre pond (Prather Pond) on the Boone Tract of the Kentucky River WMA are shown in Table 181. Largemouth bass were collected from the 4.0- to 18.0-in size classes. Bluegill and redear sunfish were collected up to the 6.0-in and 8.0-in size classes, respectively. White crappie were also collected. Gizzard shad were observed while completing this sport fish sample.

### **Sympson Lake**

Relative abundance and CPUE of largemouth bass collected in April 2018 are shown in Table 182. Largemouth bass were collected from the 5.0- to 21.0-in size classes. Good numbers of bass were present above the 15.0-in size limit. Good numbers and size distribution of white crappie was observed during this sample. An abundant population of common carp are also present in the lake.

### **Willisburg Lake (126 acres)**

Relative abundance and CPUE of largemouth bass collected in May 2018 are shown in Table 183. Largemouth bass were collected from the 3.0- to 20.0-in size classes. Good numbers of bass were present above the 12.0-in size limit. Willisburg Lake was stocked with 1,463 largemouth bass (11.6 fish/acre; 4.0-11.0 in) that were removed from Beaver Lake.

Willisburg Lake was stocked with 3,150 (25.0 fish/acre; 7.0-9.0 in) channel catfish in March 2018.

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
Sympson Lake	LMB	4/27	1000	Shock	Sunny/clear	61	Full	45	Good	All sized of crappie observed, large common carp
McNeely Lake	LMB	4/30	1100	Shock	Sunny/clear	62	Full	72	Good	Excellent numbers of quality size BLG/RES observed
Corinth Lake	LMB	4/30	2030	Shock	Clear/calm	63	Full	56	Good	Good sample
A.J. Jolly Lake	LMB/Saugeye	4/30	1000	Shock	Sunny	58.5	Full	8	Muddy	Lots of small crappie observed
Bullock Pen Lake	LMB	5/1	1100	Shock	Sunny/breezy	61	Full	---	Good	Good sample
Guist Creek Lake	LMB/Saugeye	5/1	2045	Shock	Clear/calm	65	Above Pool	28	Good	Good sample
Elmer Davis Lake	LMB	5/2	1100	Shock	Mostly cloudy/breezy	---	Full	36	Good	Good sample
Benjy Kinman Lake	LMB	5/2	2045	Shock	Calm	69	Full	41	Good	Good sample
Boltz Lake	LMB	5/3	2030	Shock	Mostly cloudy	67	Full	42	Good	Good sample
Beaver lake	LMB	5/3	1100	Shock	Mostly cloudy/breezy	67	Full	52	Good	Good sample
Herrington Lake (Gwinn Island)	LMB	5/7	1100	Shock	Mostly cloudy	70	725.0 ft	37	Good	Good sample
Taylorville Lake (Big Beech)	LMB	5/7	2300	Shock	Clear/cool	66	549.1 ft	27	Good	Good sample
Taylorville Lake (Van Buren)	LMB	5/8	2100	Shock	Clear	72	548.9	---	Good	Good sample
Herrington Lake (Cane Run)	LMB	5/9	1300	Shock	Mostly cloudy	74	723.6 ft	46	Good	Good sample
Taylorville Lake (Ashes/Jacks)	LMB	5/9	2030	Shock	---	72	548.2 ft	---	Good	Good sample
Herrington Lake (Kings Mill)	LMB	5/10	1100	Shock	Mostly sunny	67	722.2 ft	20	Good	Good sample
Willisburg Lake	LMB	5/14	1000	Shock	Sunny/clear	77	Full	37	Good	Good sample
Beaver Lake	BLG/RES	5/16	1000	Shock	---	80	Full	---	Good	Good sample
Elmer Davis Lake	BLG/RES	5/21	1000	Shock	Sunny/light wind	80	Full	49	Good	Good sample
Corinth Lake	BLG/RES	5/22	1000	Shock	Cloudy w/rain	79	Full	39	Good	Good sample
Boltz Lake	BLG/RES	5/23	1030	Shock	---	76	Full	17	Good	Good sample
Benjy Kinman Lake	BLG/RES	5/24	1030	Shock	---	82	Above Pool	27	Good	About 15" above pool
Taylorville Lake (Chowning Lane)	Blue catfish	7/17	830	Shock	Sunny/calm	84	547.0 ft	20	Good	Thermocline at 12 ft
Taylorville Lake (Settlers Trace)	Blue catfish	7/18	830	Shock	Sunny/clear	83	547.0 ft	32	Good	Thermocline at 15 ft
Bullock Pen Lake	LMB	9/4	1100	Shock	Sunny/calm/hot	86	Below Pool	42	Good	Lake about 12" below pool
Taylorville Lake (Upper Lake)	Blue catfish	7/17	840	Shock	Mostly sunny/calm	84	547.0 ft	20	Good	Good sample
Taylorville Lake (Lower Lake)	Blue catfish	7/18	830	Shock	Clear/calm/hot	83	547.0 ft	32	Good	Good sample
Boone Tract (4 acre pond)	Sport fish	8/28	1030	Shock	---	85	Full	28	Good	Good sample
Boone Tract (6 acre pond)	Sport fish	8/28	1030	Shock	---	85	Full	28	Good	Good sample
Boone Tract (15 acre pond)	Sport fish	8/28	1030	Shock	---	82	Full	120	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
Bullock Pen Lake	LMB	9/4	1100	Shock	Sunny/clear/hot	86	~12 in low	42	Good	Good sample
Benjy Kinman Lake	LMB	9/10	1045	Shock	Cloudy/cool	76	Full	28	Good	Good sample
Corinth Lake	LMB/BLG/RES	9/11	1030	Shock	Cloudy/cool	72	Full	63	Good	Good sample
Boltz Lake	LMB/BLG/Saugeye	9/12	1115	Shock	---	70	Full	---	Good	Good sample
Elmer Davis Lake	LMB/BLG/RES	9/14	1030	Shock	Sunny/clear	74	Full	26	Good	Good sample
Herrington Lake (Kings Mill)	Black bass	9/18	945	Shock	Sunny/clear	77	733.4	---	Good	Good sample
Herrington Lake (Gwinn Island)	Black bass	9/19	1000	Shock	Clear/hot	79	733.5	64	Good	Good sample
Herrington Lake (Cane Run)	Black bass	9/20	1030	Shock	Sunny/clear	79	733.6	---	Good	Good sample
Taylorville Lake (Van Buren)	LMB/Saugeye	9/21	930	Shock	Mostly sunny	--	547.1	33	Good	Good sample
Beaver Lake	LMB/BLG/RES	9/25	1030	Shock	---	---	Full	---	Good	Good sample
Guist Creek Lake	LMB/Saugeye	10/1	1030	Shock	---	73	Full	22	Good	Good sample
Kincaid Lake	LMB	10/2	1030	Shock	Mostly cloudy	72	High	19	Good	Good sample
Boltz Lake	Crappie	10/3	1100	Shock	---	75	Full	25	Good	Good sample
Taylorville Lake (Big Beech)	LMB/Saugeye	10/8	1000	Shock	---	77	549.1	27	Good	Good sample
Taylorville Lake (Ashes/Jacks)	LMB/Saugeye	10/9	1000	Shock	Sunny	77	547.9	28	Good	Good sample
AJ Jolly Lake	LMB/Saugeye	10/9	1100	Shock	Cloudy	78	Full	24	Good	Urban Crew Sampled
Guist Creek Lake	Saugeye	10/17	1100	Shock	Mostly sunny	62	Full	--	Good	Good sample
Benjy Kinman Lake	Channel catfish	10/18	1300	Hoop net	Sunny/cool	62	~20 in low	---	Good	Good sample
Elmer Davis Lake	Channel catfish	10/18	1000	Hoop net	Sunny/cool	59	Low	---	Good	Good sample
Taylorville Lake	Morones/ crappie	10/23	1000	Gillnet trap net	Overcast	62	547.1	---	Good	Good sample
		10/24	1000		Overcast	62	547.1			
		10/25	1000		Overcast	63	547.1			
		10/26	1000		Overcast	63	547.1			
Herrington Lake	Morones	10/30	1000	Gillnet	Sunny/cool	67	729.7	---	Good	Good sample
		10/31	1000		Sunny/cool	66	729.2			

Table 2. Length distribution and CPUE (fish/hr) of black bass and saugeye collected in 7.5 hours of 30-minute electrofishing runs in Taylorsville Lake in May 2018; numbers in parentheses are standard errors.

Species	Inch class																		Total	CPUE
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
Van Buren																				
Largemouth bass	3	21	33	30	14	23	87	87	41	24	32	28	17	14	5	2	1		462	184.8 (11.4)
Saugeye				1	1	1	1	2											6	2.4 (1.9)
Ashes Creek																				
Largemouth bass	5	18	24	24	17	41	122	87	39	49	53	55	26	21	11	4			596	238.4 (19.9)
Saugeye					1	2	5	8	3					1					20	8.0 (1.9)
Big Beech Creek																				
Largemouth bass	3	8	6	7	9	25	57	57	36	23	13	27	24	19	6	3	1	1	325	130.0 (14.7)
Saugeye				1	8	12	9	6	1					1				1	39	15.6 (7.8)
Total																				
Largemouth bass	11	47	63	61	40	89	266	231	116	96	98	110	67	54	22	9	2	1	1,383	184.4 (14.5)
Saugeye				2	10	15	15	16	4					2				1	65	8.7 (2.9)

Dataset = cfdpstvl.d18

Table 3. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Taylorsville Lake from 1984-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1984	50.4 (1.8)	88.0 (6.0)	6.0 (2.2)	0.0 (0.0)	0.0 (0.0)	144.4 (5.6)
1985	0.8 (0.6)	43.8 (5.4)	74.8 (9.2)	3.4 (1.0)	0.0 (0.0)	122.2 (14.4)
1986	1.8 (0.2)	11.2 (1.4)	21.0 (1.8)	24.4 (3.0)	0.0 (0.0)	59.0 (5.4)
1987	3.6 (0.6)	5.4 (0.6)	9.2 (1.0)	29.2 (2.6)	0.3 (0.1)	48.0 (3.8)
1988	3.2 (0.8)	8.4 (1.2)	6.0 (1.0)	19.6 (3.0)	0.2 (0.1)	37.2 (4.8)
1989	58.6 (15.6)	33.4 (5.8)	22.2 (3.4)	13.8 (3.0)	0.0 (0.0)	128.2 (24.0)
1990	57.0 (8.4)	54.2 (6.8)	22.8 (2.6)	21.8 (3.4)	0.5 (0.2)	154.4 (15.0)
1991	26.0 (2.8)	37.2 (2.8)	22.8 (2.1)	11.8 (1.4)	0.1 (0.1)	98.6 (5.2)
1992	58.5 (5.5)	42.6 (2.5)	36.9 (2.9)	17.6 (1.6)	0.1 (0.1)	155.6 (7.3)
1993	21.0 (3.6)	53.2 (4.8)	36.4 (13.8)	14.8 (1.9)	0.1 (0.1)	128.3 (8.6)
1994	25.1 (3.0)	39.9 (3.6)	40.7 (5.1)	15.0 (1.5)	0.1 (0.1)	122.3 (9.8)
1995	28.2 (3.5)	69.6 (3.9)	20.3 (1.3)	11.6 (1.4)	0.0 (0.0)	129.6 (6.8)
1996	16.2 (2.4)	41.0 (3.9)	49.8 (3.2)	16.0 (3.2)	0.1 (0.1)	122.6 (9.8)
1997	33.2 (6.3)	43.4 (4.0)	46.4 (1.8)	15.2 (1.8)	0.1 (0.1)	138.3 (7.7)
1998	20.0 (3.0)	26.4 (2.7)	30.5 (2.6)	21.7 (2.6)	0.4 (0.2)	98.7 (7.2)
1999	19.1 (2.8)	38.7 (3.2)	20.9 (3.0)	22.7 (2.6)	0.4 (0.39)	101.3 (7.1)
2000	17.7 (3.3)	33.1 (3.9)	16.1 (2.6)	10.5 (1.5)	0.5 (0.2)	77.5 (6.1)
2001	32.4 (4.1)	44.1 (3.7)	27.6 (3.6)	15.5 (2.7)	0.3 (0.2)	119.6 (8.3)
2002	33.7 (4.4)	22.3 (2.2)	12.8 (2.2)	9.6 (1.8)	0.5 (0.2)	78.4 (7.0)
2003	19.5 (2.9)	58.5 (4.8)	24.9 (2.2)	15.2 (2.1)	0.8 (0.4)	118.1 (9.2)
2004	14.1 (2.5)	26.7 (2.7)	42.9 (3.4)	13.2 (1.6)	0.3 (0.3)	96.9 (5.2)
2005	35.5 (5.9)	35.7 (4.9)	40.3 (4.3)	34.3 (3.4)	0.5 (0.4)	145.7 (12.7)
2006	20.3 (4.0)	39.6 (3.7)	20.3 (3.7)	16.5 (2.7)	0.3 (0.2)	96.7 (11.0)
2007	13.5 (2.5)	35.5 (4.1)	33.7 (3.6)	14.4 (2.4)	0.3 (0.2)	97.1 (9.1)
2008	13.9 (2.9)	30.1 (2.8)	33.6 (3.1)	22.5 (3.2)	0.0 (0.0)	100.1 (8.9)
2009	15.9 (3.5)	32.9 (3.6)	22.3 (2.5)	13.6 (2.1)	0.1 (0.1)	84.7 (6.9)
2010	45.7 (8.3)	36.3 (2.7)	49.7 (5.1)	16.4 (1.8)	0.3 (0.2)	148.1 (12.4)
2011	Sampling was not conducted due to extreme weather and lake conditions.					
2012	27.9 (4.0)	59.1 (6.0)	36.9 (3.0)	14.5 (1.2)	0.3 (0.2)	138.4 (8.6)
2013	19.6 (2.1)	49.9 (4.6)	42.0 (4.5)	22.1 (2.9)	0.4 (0.2)	133.6 (10.5)
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)
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)
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)
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)
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)

Dataset = cfdpstvl.d18- .d84

Table 4. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing samples in each area of Taylorsville Lake in 2018; confidence intervals are in parentheses.

Area	Species	No. ≥8.0 in	PSD	RSD <sub>15</sub>
Big Beech	Largemouth bass	301	51 (± 6)	27 (± 5)
Ashes Creek	Largemouth bass	525	49 (± 4)	22 (± 4)
Van Buren	Largemouth bass	375	44 (± 5)	18 (± 4)
Total	Largemouth bass	1,201	48 (± 3)	22 (± 2)

Dataset = cfdpstvl.d18



Table 5. Population assessment for largemouth bass collected during spring electrofishing at Taylorsville Lake from 2000-2018 (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
2018	Value Score	13.4 4	26.3 3	41.3 4	35.3 4	0.4 2			17	Excellent
2017	Value Score	12.9* 3	21.2 2	74.4 4	46.9 4	0.5 3			16	Good
2016	Value Score	12.9* 3	24.6 3	98.8 4	44.8 4	0.9 3			17	Excellent
2015	Value Score	12.9* 3	16.8 2	32.7 4	19.3 3	0.3 2			14	Good
2014	Value Score	12.9 3	23.6 3	35.1 4	21.3 4	0.5 3			17	Excellent
2013	Value Score	13.1* 3	17.2 2	42.0 4	22.1 4	0.4 2			15	Good
2012	Value Score	13.1* 3	28.1 3	39.9 4	14.5 3	0.3 2			15	Good
2011	Value Score	Sampling was not conducted due to extreme weather and lake conditions.								
2010	Value Score	13.1 3	49.5 4	49.7 4	16.4 3	0.3 2	0.574	43.7	16	Good
2009	Value Score	12.9* 3	14.6 2	22.3 2	13.6 3	0.1 1			11	Fair
2008	Value Score	12.9* 3	12.2 2	33.6 4	22.5 4	0.0 1			14	Good
2007	Value Score	12.9* 3	10.3 1	33.7 4	14.4 3	0.3 2			13	Good
2006	Value Score	12.9 3	17.5 2	20.3 2	16.5 3	0.3 2	0.824	56.1	12	Fair
2005	Value Score	12.6* 3	38.3 3	40.3 4	34.3 4	0.5 3			17	Excellent
2004	Value Score	12.6* 3	14.9 2	42.9 4	13.2 3	0.3 2			14	Good
2003	Value Score	12.6* 3	21.2 2	24.9 3	15.2 3	0.8 3			14	Good
2002	Value Score	12.6 3	34.8 3	12.8 1	9.6 2	0.5 3	0.495	39.0	12	Fair
2001	Value Score	10.8 1	20.5 2	27.6 3	15.5 3	0.3 2	0.539	41.7	11	Fair
2000	Value Score	10.1 1	14.1 2	16.1 1	10.5 2	0.5 3	0.455	36.6	9	Fair

\* 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 6. Length distribution and CPUE (fish/hr) of largemouth bass and saugeye collected in 4.5 hours of 15-minute electrofishing runs for black bass in Taylorsville Lake in September 2018; 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	19			
Van Buren																					
Largemouth bass			1	9	13	18	2	10	13	4	16	9	2	2	1		1		101	67.3 (10.0)	
Saugeye						2	3			4		2							11	7.3 (2.2)	
Ashes Creek																					
Largemouth bass	1		3	12	9	5	7	12	21	7	8	6	5	5	3	2			106	70.7 (10.9)	
Saugeye											1							1	2	1.3 (0.8)	
Big Beech Creek																					
Largemouth bass		4	46	4		5	9	11	25	20	11	9	4	7	4	1	1	2	163	108.7 (10.2)	
Saugeye								1			6	4	6	2					19	12.7 (2.8)	
Total																					
Largemouth bass	1	4	50	25	22	28	18	33	59	31	35	24	11	14	8	3	2	2	370	82.2 (7.2)	
Saugeye						2	3	1		4	7	6	6	2				1	32	7.1 (1.6)	

Dataset = cfdwrtvl.d18

Table 7. Mean back calculated lengths (in) at each annulus for largemouth bass otoliths collected from Taylorsville Lake in the fall 2018.

Year	No.	Age							
		1	2	3	4	5	6	7	8
2017	33	5.8							
2016	27	6.2	10.5						
2015	7	7.4	11.1	13.4					
2014	9	6.4	10.5	12.8	14.7				
2013	6	6.0	9.8	12.2	13.9	15.0			
2012	1	7.9	11.9	15.0	16.8	18.2	19.2		
2011	1	6.9	9.7	11.8	12.9	14.1	15.0	16.0	
2010	1	4.9	9.9	13.5	15.2	16.0	16.8	17.6	18.4
Mean	85	6.2	10.5	12.9	14.5	15.4	17.0	16.8	18.4
Smallest		3.8	7.2	11.8	12.9	13.8	15.0	16.0	18.4
Largest		9.9	13.2	15.0	16.8	18.2	19.2	17.6	18.4
Std Error		0.1	0.1	0.2	0.3	0.5	1.2	0.8	
95% ConLo		5.9	10.2	12.6	13.9	14.4	14.6	15.2	
95% ConHi		6.4	10.8	13.3	15.0	16.3	19.4	18.4	

Intercept value = 0.00

Dataset = cfdagtv1.d18

Table 8. Numbers of fish and the relative weight ( $W_r$ ) for each length group of largemouth bass collected at Taylorsville Lake in September 2018; 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	Van Buren	29	93 (2)	26	92 (2)	4	99 (2)	59	93 (1)
	Ashes	43	86 (1)	19	89 (2)	10	102 (2)	72	89 (1)
	Big Beech	53	94 (1)	24	95 (2)	15	90 (2)	92	93 (1)
	Total	125	91 (1)	69	92 (1)	29	95 (2)	223	92 (1)

Dataset = cfdwrtv1.d18

Table 9. 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 in 2010 due to prolonged flood conditions in spring.

Year class	Area	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1 (natural)	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2001	Total	4.6	1.3	63.6	11.7	13.3	1.0	34.8	4.3
2002	Total	5.3	0.1	29.1	4.8	18.7	3.5	21.2	2.8
2003	Total	5.4	0.1	32.2	5.4	19.1	3.4	14.9	2.5
2004	Total	4.4	0.1	50.0	6.2	15.1	3.6	38.3	6.2
2005	Total	4.9	0.1	31.8	4.2	15.3	2.5	17.5	3.8
2006	Total	4.9	0.1	54.7	4.9	25.8	2.9	10.3	2.0
2007	Total	4.4	0.1	22.4	3.2	6.7	1.8	12.2	2.6
2008	Total	5.5	0.1	20.9	3.9	16.7	3.5	14.6	3.1
2009	Total	4.9	0.1	90.2	14.5	39.8	6.5	49.5	8.7
2010	Total	5.2	0.1	45.2	4.9	27.7	3.3	*	*
2011	Total	4.8	0.1	40.4	2.8	17.8	1.6	27.5	3.8
2012	Total	5.1	0.1	54.4	5.3	27.8	3.3	17.2	2.2
2013	Total	4.9	0.1	50.0	6.0	23.8	4.3	23.6	3.7
2014	Total	5.5	0.1	21.1	4.3	15.4	3.0	16.8	3.7
2015	Total	6.0	0.1	14.4	2.1	12.7	2.1	24.6	3.0
2016	Total	5.0	0.1	49.3	7.1	21.3	2.7	25.1	2.6
2017	Total	5.2	0.1	46.2	3.9	26.2	3.7	27.7	3.7
2018*	Total	6.3	0.1	23.7	3.2	22.0	2.9		

Dataset = cfdwrtvl.d18

\*Data only collected at Van Buren and Ashes Creek due to YOY stocking

Table 10. Length distribution and CPUE (fish/nn) of each species of crappie collected at Taylorsville Lake in 48 net-nights in October 2018.

Species	Inch class										Total	CPUE	Std. error	
	3	4	5	6	7	8	9	10	11	12				13
White crappie	1	23	6			62	184	207	66	8	1	558	11.6	1.7
Black crappie	2				1	19	56	29	7	2		116	2.4	1.0

Dataset = cfdntnvl.d18

Table 11. PSD and RSD<sub>10</sub> values calculated for crappie collected at Taylorsville Lake in 48 net-nights during October 2018.

Species	No. $\geq$ 5.0 in	PSD	RSD <sub>10</sub>
White crappie	534	99 ( $\pm$ 1)	53 ( $\pm$ 4)
Black crappie	114	99 ( $\pm$ 2)	33 ( $\pm$ 9)

Dataset = cfdntnvl.d18

Table 12. Mean back calculated lengths (in) at each annulus for otoliths from white crappie trap netted and gill netted at Taylorsville Lake in 2018.

Year class	No.	Age				
		1	2	3	4	5
2017	8	4.7				
2016	8	5.4	8.0			
2015	43	5.3	8.1	9.4		
2014	4	5.3	9.0	10.6	11.3	
2013	1	4.9	8.3	9.7	10.3	10.7
Mean	64	5.2	8.1	9.5	11.1	10.7
Smallest		3.9	6.6	7.2	9.5	10.7
Largest		6.9	10.7	11.6	12.3	10.7
Std error		0.1	0.1	0.2	0.5	
95% ConLo		5.1	7.9	9.2	10.1	
95% ConHi		5.4	8.4	9.9	12.1	

Intercept value = 0.00

Dataset = cfdagtnvl.d18

Table 13. Age frequency and CPUE (fish/nn) per inch class of white crappie trap netted for 48 net-nights at Taylorsville Lake in 2018.

Age	Inch class										Total	% CPUE	Std err	
	3	4	5	6	7	8	9	10	11	12				
0+	1	23	6								30	5	0.6	0.2
1+						16	26				42	8	0.9	0.2
2+						7	66	15	5		93	17	1.9	0.3
3+						39	92	177	56	5	369	66	7.7	1.1
4+								15		3	18	3	0.4	0.1
5+									5		5	1	0.1	0.1
Total	1	23	6			62	184	207	66	8	557	100	11.6	1.7
(%)	0	4	1	0	0	11	33	37	12	1	100			

Dataset = cfdntvl.d18 and cfdagtl.d18

CPUE of  $\geq 8.0$  in white crappie =  $11.0 \pm 1.7$  fish/nn;  $\geq 10.0$  in =  $5.9 \pm 0.9$  fish/nn

Table 14. Mean back calculated lengths (in) at each annulus for otoliths from black crappie trap netted at Taylorsville Lake in 2018.

Year class	No.	Age			
		1	2	3	4
2017	13	4.5			
2016	5	5.1	8.2		
2015	15	5.0	7.8	9.4	
2014	14	4.4	7.7	8.9	9.6
Mean	47	4.7	7.8	9.2	9.6
Smallest		3.4	6.4	7.9	8.3
Largest		6.8	9.3	11.4	11.1
Std error		0.1	0.1	0.1	0.2
95% ConLo		4.5	7.6	8.9	9.3
95% ConHi		4.9	8.1	9.4	10.0

Intercept value = 0.00

Dataset = cfdagtl.d18

Table 15. Age frequency and CPUE (fish/nn) per inch class of black crappie trap netted for 48 net-nights at Taylorsville Lake in 2018.

Age	Inch class							Total	%	CPUE	Std err
	3	7	8	9	10	11	12				
0+	2							2	2	0.1	0.1
1+		1	15	20				36	32	0.8	0.3
2+			2	5	6			13	11	0.3	0.1
3+				5	17	3	2	27	23	0.6	0.2
4+			2	25	6	4		37	32	0.8	0.3
Total	2	1	19	55	29	7	2	116	100	2.4	1.0
%	2	1	16	48	25	6	2	100			

Dataset = cfdntvl.d18 and cfdagtl.d18

CPUE of  $\geq 8.0$  in black crappie =  $2.4 \pm 1.0$  fish/nn;  $\geq 10.0$  in =  $0.8 \pm 0.3$  fish/nn

Table 16. Population assessment for white crappie collected during fall trap netting at Taylorsville Lake from 2000-2018 (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+	Total score	Assessment rating
2018	Value	11.0	9.5	11.0	0.9	0.6		
	Score	3	2	4	1	2	12	Fair
2017	Value	12.5	9.3	10.8	2.2	0.3		
	Score	3	2	4	2	1	12	Fair
2016	Value	16.8	11.3	7.9	16.4	0.4		
	Score	4	4	4	4	1	17	Excellent
2015	Value	5.6	10.5	3.5	4.4	16.9		
	Score	2	4	3	3	4	16	Good
2014	Value	2.9	10.9	2.2	2.5	0.4		
	Score	2	4	2	2	1	11	Fair
2013	Value	1.7	10.2	1.4	1.3	6.7		
	Score	1	3	1	2	4	11	Fair
2012	Value	0.7	10.1	0.6	0.5	1.1		
	Score	1	3	1	1	2	8	Poor
2011	Value	0.7	11.0	0.6	0.6	1.0		
	Score	1	4	1	1	2	9	Fair
2010	Value	0.4	9.5	0.3	0.4	1.0		
	Score	1	2	1	1	2	7	Poor
2009	Value	0.02	9.6*	0.02	0.02	0.2		
	Score	1	3	1	1	1	7	Poor
2008	Value	0.1	9.6*	0.1	0.1	0.1		
	Score	1	3	1	1	1	7	Poor
2007	Value	0.3	9.6*	0.3	0.0	0.04		
	Score	1	3	1	1	1	7	Poor
2006	Value	0.9	9.6	0.9	0.0	0.04		
	Score	1	3	1	1	1	7	Poor
2005	Value	3.2	9.6	1.5	2.7	0.0		
	Score	2	3	2	2	1	10	Fair
2004	Value	1.7	10.3	1.0	1.4	1.4		
	Score	1	3	1	2	2	9	Fair
2003	Value	1.8	10.1*	1.7	1.0	0.5		
	Score	1	3	2	2	2	10	Fair
2002	Value	1.6	10.1	1.5	0.6	0.7		
	Score	1	3	2	1	2	9	Fair
2001	Value	4.5	9.4	4.3	2.6	0.1		
	Score	2	2	3	2	1	10	Fair
2000	Value	6.5	8.6	6.3	0.5	0.5		
	Score	2	2	4	1	2	11	Fair

\* Age data not collected

Table 17. Population assessment for black crappie collected during fall trap netting at Taylorsville Lake from 2000-2018 (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+	Total score	Assessment rating
2018	Value	2.3	9.9	2.4	0.8	0.1		
	Score	2	4	3	2	1	12	Fair
2017	Value	3.8	9.4	3.4	0.7	0		
	Score	3	3	3	2	1	12	Fair
2016	Value	4.8	9.0	3.0	2.1	0.1		
	Score	3	2	3	3	1	12	Fair
2015	Value	8.6	9.2	2.0	6.0	1.2		
	Score	3	3	3	4	3	16	Good
2014	Value	6.3	9.3	2.4	5.2	0.9		
	Score	3	3	3	4	2	15	Good
2013	Value	4.5	9.1	4.1	0.9	2.2		
	Score	3	3	4	2	4	16	Good
2012	Value	9.8	9.6	1.7	9.3	0.9		
	Score	4	3	3	4	2	16	Good
2011	Value	0.8	9.8	0.5	0.5	2.5		
	Score	1	4	1	1	4	11	Fair
2010	Value	3.2	8.4	1.3	3.1	0.5		
	Score	2	2	2	3	2	11	Fair
2009	Value	0.2	9.8*	0.1	0.2	0.4		
	Score	1	4	1	1	2	9	Fair
2008	Value	0.6	9.8	0.5	0.2	0.4		
	Score	1	4	1	1	2	9	Fair
2007	Value	1.7	9.2	1.0	1.4	0.02		
	Score	1	3	2	2	1	9	Fair
2006	Value	3.3	9.5	3.3	0.1	0.5		
	Score	2	3	3	1	2	11	Fair
2005	Value	5.8	9.0	4.5	1.3	0.04		
	Score	3	2	4	2	1	12	Fair
2004	Value	12.0	9.3	1.2	11.7	1.2		
	Score	4	3	2	4	3	16	Good
2003	Value	1.3	10.3	1.1	1.0	1.3		
	Score	1	4	2	2	3	12	Fair
2002	Value	2.2	10.2	1.6	1.8	0.1		
	Score	2	4	3	3	1	13	Good
2001	Value	1.8	10.1	1.5	1.5	0.1		
	Score	2	4	2	3	1	12	Fair
2000	Value	0.8	9.6	0.7	0.5	0.2		
	Score	1	3	2	1	1	8	Poor

\* Age data not collected

Table 18. Number of fish and the relative weight (Wr) for each length group of crappie at Taylorsville Lake in October 2018.

Species	Area	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	Total	3	101 (11)	105	98 (1)	127	98 (1)	235	98 (1)
Black crappie	Total	1	90	44	97 (3)	23	95 (2)	68	96 (2)

Dataset = cfdntnl.d18



Table 19. Length distribution and CPUE (fish/nn) of white bass, hybrid striped bass, and saugeye collected during 13 net-nights of gill netting in Taylorsville Lake in October 2018: 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		
White bass	2	31	32	3	2	19	6	3	1											99	7.6 (1.8)
Hybrid striped bass		6	11	36	9	5	4	21	22	17		4	2	1		4	7	2	1	152	11.7 (5.3)
Reciprocal		4	6	16	8	5		5	8	8		3	1	1		3	6	2	1	77	5.9 (2.5)
Original		2	5	20	1		4	16	13	9		1	1			1	1			74	5.7 (2.9)
Saugeye				12	11	1	4	13	31	50	34	5	2	1	1		1	1		167	12.9 (5.7)

Dataset = cfdgntvl.d18

Table 20. Mean back calculated lengths (in) at each annulus for otoliths from hybrid striped bass gill netted at Taylorsville Lake in 2018.

Year class	No.	Age					
		1	2	3	4	5	6
2017	65	8.9					
2016	5	9.7	15.1				
2015	8	12.0	16.7	19.5			
2014	3	8.6	16.1	19.1	21.0		
2013	4	11.0	15.7	19.1	21.0	22.4	
2012	1	9.6	16.0	18.3	19.7	21.3	22.4
Mean	86	9.3	16.0	19.3	20.9	22.2	22.4
Smallest		5.3	12.9	15.9	19.7	21.3	22.4
Largest		15.8	19.7	21.5	22.0	23.4	22.4
Std error		0.2	0.3	0.4	0.3	0.3	
95% ConLo		8.9	15.3	18.5	20.3	21.5	
95% ConHi		9.7	16.7	20.0	21.4	22.9	

Intercept Value = 0.00

Dataset = cfdagvtl.d18

Table 21. Age frequency and CPUE (fish/nn) per inch class of hybrid striped bass gill netted for 13 net-nights at Taylorsville Lake in 2018.

Age	Inch class													Total	%	CPUE	Std err					
	7	8	9	10	11	12	13	14	15	16	17	18	19					20	21	22	23	24
0+	6	11	36	9	3														65	43	5.0	2.5
1+					2	4	21	22	17										66	43	5.1	2.4
2+											3	2							5	3	0.4	0.3
3+											1		1	2	4				8	5	0.6	0.3
4+														2		1			3	2	0.2	0.1
5+															2	1	1		4	3	0.3	0.1
6+															1				1	1	0.1	0.1
Total	6	11	36	9	5	4	21	22	17		4	2	1	4	7	2	1	152	100	11.7	5.3	
%	4	7	24	6	3	3	14	14	11		3	1	1	3	5	1	1	100				

Dataset = cfdagtlv.d18 and cfdgntvl.d18

Table 22. Number of fish and the relative weight ( $W_r$ ) for each length group of hybrid striped bass collected at Taylorsville Lake in October 2018.

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		
Hybrid striped bass	Total	61	88 (1)	47	86 (1)	38	87 (1)	146	87 (1)

Dataset = cfdgntvl.d18

Table 23. Population assessment for hybrid striped bass collected during fall gill netting at Taylorsville Lake from 2000-2018 (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
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				
2013	Value	3.5	18.3	1.5	2.0	-	-	8	Fair
	Score	2	3	1	2				
2012	Value	2.2	17.0	0.8	1.3	-	-	6	Poor
	Score	1	2	1	2				
2011	Value	11.5	16.4	3.1	7.9	-	-	10	Good
	Score	3	2	2	3				
2010	Value	3.8	16.7	1.0	2.9	-	-	7	Fair
	Score	2	2	1	2				
2009	Value	11.4	15.7	0.9	10.4	1.104	66.9%	9	Fair
	Score	3	1	1	4				
2008	Value	0.6	17.1	0.4	0.2	0.370	30.9%	5	Poor
	Score	1	2	1	1				
2007	Value	16.8	16.2	10.8	6.0	0.798	55.0%	10	Good
	Score	3	1	3	3				
2006	Value	8.5	16.8	0.8	8.0	1.262	71.7%	9	Fair
	Score	3	2	1	3				
2005	Value	1.1	15.2	0.4	0.6	0.437	35.4%	4	Poor
	Score	1	1	1	1				
2004	Value	4.6	16.0	1.0	3.6	0.964	61.9%	6	Poor
	Score	2	1	1	2				
2003	Value	9.4	16.6	6.6	2.6	1.522	78.2%	10	Good
	Score	3	2	3	2				
2002	Value	22.8	15.8	10.1	12.4	0.658	48.2%	12	Good
	Score	4	1	3	4				
2001	Value	13.3	16.0	2.0	11.1	1.437	76.2%	9	Fair
	Score	3	1	1	4				
2000	Value	9.9	15.9	5.9	3.1	1.263	71.1%	9	Fair
	Score	3	1	3	2				

Table 24. Mean back calculated lengths (in) at each annulus for otoliths from white bass gill netted at Taylorsville Lake in 2018.

Year class	No.	Age			
		1	2	3	4
2017	20	8.3			
2016	6	8.7	11.5		
2014	2	7.4	9.7	11.4	12.9
Mean	28	8.3	11.1	11.4	12.9
Smallest		6.8	9.3	11.2	12.7
Largest		9.0	11.9	11.6	13.2
Std error		0.1	0.3	0.2	0.2
95% ConLo		8.1	10.5	10.9	12.4
95% ConHi		8.5	11.7	11.8	13.4

Intercept Value = 0.00

Dataset = cfdagtlv.d18

Table 25. Age frequency and CPUE (fish/nn) per inch class of white bass gill netted for 13 net-nights at Taylorsville Lake in 2018.

Age	Inch class										Total	%	CPUE	Std err
	6	7	8	9	10	11	12	13	14					
0+	2	31	32	3							68	69	5.2	1.4
1+					2	19	3				24	24	1.8	0.6
2+							3	2			5	5	0.4	0.3
3+											0	0	0.0	0.0
4+								1	1		2	2	0.2	0.1
Total	2	31	32	3	2	19	6	3	1		99	100	7.6	1.8
%	2	31	32	3	2	19	6	3	1		100			

Dataset = cfdagtlv.d18 and cfdgntvl.d18

Table 26. Number of fish and the relative weight ( $W_r$ ) for each length group of white bass collected at Taylorsville Lake in October 2018.

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	65	95 (1)	24	92 (1)	10	93 (2)	99	94 (1)

Dataset = cfdgntvl.d18

Table 27. Population assessment for white bass collected during fall gill netting at Taylorsville Lake from 2000-2018 (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
2018	Value	2.4	13.0	0.8	1.8				
	Score	1	2	1	2			6	Poor
2017	Value	1.4	10.5	0.3	1.1				
	Score	1	1	1	1			4	Poor
2016	Value	3.4	12.0	1.5	1.0				
	Score	2	1	2	1			6	Poor
2015	Value	3.2	12.5	0.8	1.3				
	Score	1	2	1	1			5	Poor
2014	Value	4.5	11.3*	0.5	4.5				
	Score	2	1	1	3			7	Fair
2013	Value	1.4	11.3*	0.0	1.4	-	-		
	Score	1	1	1	1			4	Poor
2012	Value	3.3	11.3	0.5	2.2	1.037	64.5		
	Score	2	1	1	2			6	Poor
2011	Value	18.4	11.9	5.0	8.9	1.506	77.8		
	Score	4	1	3	4			12	Good
2010	Value	11.0	12.1	1.8	7.8	1.920	85.3		
	Score	3	1	2	4			10	Good
2009	Value	1.3	NS	0.1	1.1	1.030	64.3		
	Score	1	1	1	1			4	Poor
2008	Value	2.0	12.1	0.3	1.6	1.157	68.6		
	Score	1	1	1	2			5	Poor
2007	Value	6.4	11.7	0.8	4.6	1.102	66.8		
	Score	2	1	1	3			7	Fair
2006	Value	4.3	11.7	0.8	3.0	1.040	64.6		
	Score	2	1	1	2			6	Poor
2005	Value	5.0	11.6	1.2	1.8	1.054	65.2		
	Score	2	1	1	2			6	Poor
2004	Value	8.6	11.4	0.1	7.3	2.030	86.9		
	Score	3	1	1	4			9	Fair
2003	Value	6.9	11.7	2.0	3.5	0.944	61.1		
	Score	2	1	2	3			8	Fair
2002	Value	5.9	11.8	1.3	2.6	1.113	67.1		
	Score	2	1	2	2			7	Fair
2001	Value	23.5	12.1	6.8	14.9	0.971	62.1		
	Score	4	1	3	4			12	Good
2000	Value	20.8	12.2	8.1	7.4	0.766	53.5		
	Score	4	1	4	4			13	Good

\* Age data not collected because no fish were captured at this age

Table 28. Mean back calculated lengths (in) at each annulus for otoliths from saugeye gill netted at Taylorsville Lake in 2018.

Year class	No.	Age		
		1	2	3
2017	47	10.6		
2016	4	12.5	16.6	
2015	2	14.2	18.4	21.4
Mean	53	10.9	17.2	21.4
Smallest		7.5	15.4	21.1
Largest		15.2	18.7	21.7
Std error		0.2	0.5	0.3
95% ConLo		10.4	16.1	20.7
95% ConHi		11.4	18.3	22.0

Intercept Value = 0.00

Dataset = cfdagtv1.d18

Table 29. Age frequency and CPUE (fish/nh) per inch class of saugeye gill netted for 13 net-nights at Taylorsville Lake in 2018.

Age	Inch class													Total	%	CPUE	Std err		
	9	10	11	12	13	14	15	16	17	18	19	20	21					22	23
0+	12	11	1													24	14	1.9	1.1
1+				4	13	31	50	34	4	1						137	82	10.5	4.8
2+									1	1	1	1				4	2	0.3	0.2
3+														1	1	2	1	0.2	0.1
Total	12	11	1	4	13	31	50	34	5	2	1	1		1	1	167	100	12.9	5.7
%	7	7	1	2	8	19	30	20	3	1	1	1		1	1	100			

Dataset = cfdagtv1.d18 and cfdgntvl.d18

Table 30. Length distribution and CPUE (fish/hr) of blue catfish collected in 3.0 hours of 15-minute electrofishing runs for blue catfish in Taylorsville Lake in July 2018; numbers in parentheses are standard errors.

Area	Inch class																				Total	CPUE									
	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	33	35	38	
Upper				2	14	40	39	38	37	24	34	21	9	5	9	5	7	2		1		2	2	2		2	1	1	1	298	198.7 (31.2)
Lower	5	8	8	36	24	17	25	22	16	17	9	14	8	4	6		1	1		2	1	2		1	1				228	152.0 (30.2)	
Total	5	8	10	50	64	56	63	59	40	51	30	23	13	13	11	7	3	1	1	2	3	4	2	1	3	1	1	1	526	175.3 (21.8)	

Dataset = cfdpstvl.d18

Table 31. Electrofishing CPUE (fish/hr) for each length group of blue catfish collected from Taylorsville Lake from 2007-2018; numbers in parentheses are standard errors.

Year	Length group				Total
	<12.0 in	12.0-19.9 in	20.0-29.9 in	≥30.0 in	
2007	32.8 (10.9)	188.8 (25.8)	14.4 (4.2)	0.0	236.0 (36.5)
2008	No Sample				
2009	6.8 (3.1)	96.1 (19.9)	16.3 (4.7)	0.0	119.1 (24.3)
2010	25.9 (12.2)	73.4 (13.5)	16.2 (4.2)	0.7 (0.4)	116.1 (21.2)
2011	3.9 (3.1)	14.0 (2.9)	8.1 (5.0)	1.1 (0.6)	27.1 (5.9)
2012	28.3 (9.1)	58.3 (15.7)	15.0 (4.7)	2.3 (1.2)	104.0 (22.8)
2013	4.0 (1.6)	42.0 (6.5)	11.0 (2.6)	3.0 (0.9)	60.0 (8.2)
2014	31.1 (11.3)	119.4 (21.1)	11.4 (2.5)	5.2 (1.7)	167.1 (27.5)
2015	31.4 (16.0)	47.1 (16.6)	4.6 (2.1)	1.9 (1.0)	84.9 (24.6)
2016	35.3 (15.4)	53.0 (21.5)	6.7 (2.7)	1.7 (1.2)	96.7 (31.5)
2017	87.3 (23.7)	118.0 (21.2)	9.0 (5.5)	2.3 (1.3)	216.7 (30.8)
2018	45.7 (8.5)	111.7 (16.1)	15.7 (3.4)	2.3 (0.9)	175.3 (21.8)

Dataset = cfdpstvl.d18-.d07

Table 32. Numbers of fish and the relative weight ( $W_r$ ) for each length group of blue catfish collected at Taylorsville Lake on 17 and 18 July 2018; standard errors are in parentheses.

Species	Area	Length group						Total	
		12.0-19.9 in		20.0-29.9 in		≥30.0 in		No.	$W_r$
		No.	$W_r$	No.	$W_r$	No.	$W_r$		
Blue catfish	Upper	104	95 (1)	30	96 (2)	5	119 (5)	139	96 (1)
	Lower	81	93 (1)	17	92 (2)	2	107 (2)	100	93 (1)
	Total	185	94 (1)	47	94 (1)	7	116 (4)	239	95 (1)

Dataset = cfdpstvl.d18

Table 33. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected in 7.5 hours of 15-minute electrofishing runs in Herrington Lake, May 2018; numbers in parentheses are standard errors.

Location/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			
Upper																							
Largemouth bass		6	6	16	11	12	15	8	23	30	34	39	25	15	14	9	4	3	2			272	108.8 (9.4)
Spotted bass	1						1	4	3	7	2	1										19	7.6 (2.1)
Middle																							
Largemouth bass		1	2	10	26	23	36	10	29	57	57	61	59	42	18	15	10	11	6	1		474	189.6 (18.6)
Spotted bass					3	6	4	6	11	8	19	7	2									66	26.4 (6.5)
Lower																							
Largemouth bass		5	23	115	64	20	33	65	36	39	43	55	66	36	13	14	6	3	2			638	255.2 (14.4)
Spotted bass		1	2		4	15	10	16	7	7	6	6	1									75	30.0 (8.1)
Total																							
Largemouth bass		12	31	141	101	55	84	83	88	126	134	155	150	93	45	38	20	17	10	1		1,384	184.5 (13.8)
Spotted bass	1	1	2		7	22	18	25	25	17	26	13	3									160	21.3 (3.9)

Dataset = cfdpsher.d18



Table 34. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Herrington Lake from 1994-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1994	4.9 (0.9)	30.1 (4.4)	21.5 (2.6)	17.9 (1.8)	2.1 (0.5)	74.4 (5.4)
1995	8.8 (2.3)	20.0 (4.4)	25.6 (4.0)	20.4 (1.4)	3.2 (0.7)	74.8 (9.6)
1996	9.5 (2.4)	24.4 (3.9)	20.3 (2.8)	26.5 (2.6)	3.1 (0.7)	80.9 (6.7)
1997	15.6 (2.3)	19.9 (3.4)	27.3 (2.6)	22.0 (1.7)	2.9 (0.6)	84.8 (6.1)
1998	37.2 (3.8)	45.3 (4.1)	30.9 (2.5)	21.3 (2.2)	1.9 (0.6)	134.8 (7.2)
1999	43.2 (5.2)	69.1 (6.6)	40.4 (3.9)	21.6 (2.4)	1.1 (0.3)	174.3 (14.3)
2000	15.6 (3.9)	53.5 (6.6)	26.9 (2.2)	12.3 (1.4)	0.3 (0.2)	108.3 (10.8)
2001	37.1 (6.7)	40.1 (6.3)	34.1 (4.5)	12.5 (1.5)	0.5 (0.3)	123.9 (15.3)
2002	19.5 (2.6)	32.1 (4.7)	25.5 (3.5)	24.0 (2.2)	1.6 (0.5)	101.1 (9.7)
2003	20.8 (4.4)	23.9 (2.4)	30.1 (2.8)	17.9 (1.7)	1.2 (0.4)	92.7 (4.2)
2004	29.6 (5.5)	64.8 (12.2)	38.7 (5.7)	29.7 (3.4)	1.5 (0.4)	162.8 (23.9)
2005	70.9 (9.7)	59.6 (7.1)	23.5 (3.0)	22.3 (3.4)	0.8 (0.4)	176.3 (15.4)
2006	24.7 (4.8)	36.7 (4.8)	38.4 (3.8)	19.3 (1.8)	0.4 (0.2)	119.1 (9.2)
2007	78.1 (10.4)	68.8 (7.3)	20.0 (2.5)	17.3 (2.3)	0.5 (0.3)	184.3 (17.1)
2008	31.3 (2.9)	39.7 (4.6)	29.5 (3.0)	22.1 (3.1)	1.5 (0.5)	122.7 (8.6)
2009	5.3 (1.2)	9.4 (1.1)	15.3 (2.2)	10.8 (1.4)	0.4 (0.2)	40.6 (4.4)
2010	41.5 (4.4)	34.0 (4.4)	28.7 (3.2)	25.1 (2.3)	0.9 (0.3)	129.2 (10.2)
2011	24.5 (3.7)	22.7 (2.0)	10.9 (1.3)	10.8 (1.5)	0.3 (0.2)	68.9 (1.4)
2012	69.6 (10.1)	70.7 (10.9)	40.9 (4.6)	14.8 (2.1)	1.1 (0.5)	196.0 (23.7)
2013	11.7 (2.2)	29.6 (4.0)	18.5 (2.7)	12.9 (1.9)	1.5 (0.6)	72.8 (7.0)
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)
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)
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)
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)
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)

Dataset = cfdpsher.d18- .d94

Table 35. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing samples in each area of Herrington Lake in 2018; confidence intervals are in parentheses.

Area	Species	No. ≥8.0 in	PSD	RSD <sub>15</sub>
Lower	Largemouth bass	411	58 (± 5)	18 (± 4)
Middle	Largemouth bass	412	68 (± 5)	25 (± 4)
Upper	Largemouth bass	221	66 (± 6)	21 (± 5)
Total	Largemouth bass	1,044	64 (± 3)	21 (± 3)

Dataset = cfdpsher.d18

Table 36. Population assessment for largemouth bass collected during spring electrofishing at Herrington Lake from 2000-2018 (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
2018	Value	13.4*	39.6	58.5	29.9	1.5			19	Excellent
	Score	4	3	4	4	4				
2017	Value	13.4*	31.1	30.8	16.3	1.2			16	Good
	Score	4	3	3	3	3				
2016	Value	13.4*	59.2	16.4	17.7	1.1			16	Good
	Score	4	4	2	3	3				
2015	Value	13.4	36.8	20.9	17.6	0.8			15	Good
	Score	4	3	2	3	3				
2014	Value	13.8*	33.9	28.5	18.0	1.3			17	Excellent
	Score	4	3	3	3	4				
2013	Value	13.8*	15.1	18.5	12.9	1.5			14	Good
	Score	4	2	2	2	4				
2012	Value	13.8*	111.7	40.9	14.8	1.1			18	Excellent
	Score	4	4	4	3	3				
2011	Value	13.8	18.7	10.9	10.8	0.3	0.539	41.7%	11	Fair
	Score	4	2	1	2	2				
2010	Value	13.7*	49.6^	28.7	25.1	0.9			18	Excellent
	Score	4	4	3	4	3				
2009	Value	13.7*	6.2^	15.3	10.8	0.4			10	Fair
	Score	4	1	1	2	2				
2008	Value	13.7*	34.6^	29.5	22.1	1.5			18	Excellent
	Score	4	3	3	4	4				
2007	Value	13.7	96.5	20.0	17.3	0.5	0.485	38.4%	16	Good
	Score	4	4	2	3	3				
2006	Value	13.7*	25.1^	38.4	19.3	0.4			16	Good
	Score	4	3	4	3	2				
2005	Value	13.7*	72.1^	23.5	22.3	0.8			18	Excellent
	Score	4	4	3	4	3				
2004	Value	13.7*	33.5^	38.7	29.7	1.5			19	Excellent
	Score	4	3	4	4	4				
2003	Value	13.7	20.9	30.1	17.9	1.2	0.498	39.2%	15	Good
	Score	4	2	3	3	3				
2002	Value	11.7*	16.7^	25.5	24.0	1.6			15	Good
	Score	2	2	3	4	4				
2001	Value	11.7	28.2	34.1	12.5	0.5	0.455	36.6%	14	Good
	Score	2	3	4	2	3				
2000	Value	11.0	13.1	26.9	12.3	0.3	0.620	46.2%	10	Fair
	Score	1	2	3	2	2				

\* 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 37. Length distribution and CPUE (fish/hr) of black bass collected in 4.5 hours of 15-minute electrofishing runs in Herrington Lake in September 2018; numbers in parentheses are standard errors.

Species	Inch class																	Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Lower																			
Largemouth bass		3	9	1	2	3	9	8	8	5	5	3	3			1	1	61	40.7 (5.2)
Spotted bass	1			3	1			1	2									8	5.3 (1.7)
Middle																			
Largemouth bass		1	3	12	2	2	3	2	3	4	1	1	2	1	1	1		39	26.0 (5.7)
Spotted bass				5	1		4	3	2	2	3	1						21	14.0 (4.1)
Upper																			
Largemouth bass	2	4	6	3	4		3		3	5	6	5	4	1	1	2		49	32.7 (5.2)
Spotted bass				1					2		1							4	2.7 (1.3)
Total																			
Largemouth bass	2	8	18	16	8	5	15	10	14	14	12	9	9	2	2	4	1	149	33.1 (3.3)
Spotted bass	1			9	2		4	4	6	2	4	1						33	7.3 (1.9)

Dataset = cfdwrher.d18

Table 38. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at Herrington Lake on 18-20 September 2018. 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		
Largemouth bass	Lower	28	89 (2)	13	84 (2)	5	92 (3)	46	88 (1)
	Middle	10	93 (2)	6	93 (1)	5	99 (4)	21	95 (1)
	Upper	6	95 (3)	16	90 (3)	8	94 (4)	30	92 (2)
	Total	44	91 (1)	35	88 (2)	18	95 (2)	97	91 (1)

Dataset = cfdwrher.d18

Table 39. 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.

Year class	Area	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1 (natural)	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2001	Total	4.5	0.1	18.3	2.9	5.9	0.9	16.7	2.2
2002	Total	4.6	0.2	9.8	2.0	4.9	1.2	20.9	4.3
2003	Total	4.6	0.1	51.1	6.0	27.3	5.3	33.5	6.0
2004	Total	4.9	0.1	15.6	3.0	9.0	2.1	72.1	9.5
2005	Total	5.3	0.1	24.2	5.1	16.9	4.5	25.1	4.9
2006	Total	4.8	0.1	40.9	5.8	20.4	4.3	96.5	11.6
2007	Total	5.1	0.1	8.0	2.5	5.3	1.9	34.6	3.0
2008	Total	5.1	0.1	25.8	4.9	13.8	3.7	6.2	1.2
2009	Total	4.7	0.1	109.8	16.2	55.1	15.5	49.6	5.4
2010	Total	5.8	0.1	22.0	3.4	17.6	3.3	26.6	3.6
2011	Total	5.8	0.1	54.5	7.8	43.8	6.7	111.7	17.7
2012	Total	5.4	0.1	33.6	6.2	21.8	4.9	11.3	2.1
2013	Total	4.5	0.1	49.1	4.9	19.3	3.1	33.9	4.3
2014	Total	4.7	0.1	36.9	6.0	20.0	3.5	38.4	3.9
2015	Total	5.2	0.1	67.8	10.3	44.8	7.9	59.7	7.8
2016	Total	5.4	0.1	24.9	3.6	16.7	2.8	39.1	4.2
2017	Total	5.0	0.1	26.0	4.2	13.3	3.5	42.5	7.7
2018	Total	5.8	0.1	11.6	1.6	9.3	1.5		

Dataset = cfdwrher.d18

Table 40. Length distribution and CPUE (fish/nn) of white bass and hybrid striped bass collected during 14 net-nights of gill netting in Herrington Lake in October 2018; numbers in parentheses are standard errors.

Species	Inch class																Total	CPUE
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
White bass		1	2	4	4	10	11	11	3								46	3.3 (1.2)
Hybrid striped bass	1	3	22	16			1	1	27	62	12		3	3	8	3	162	11.6 (3.5)
Reciprocal	1	2	11	13			1		15	34	7		1	2	5	3	95	6.8 (2.1)
Original		1	11	3				1	12	28	5		2	1	3		67	4.8 (1.5)

Dataset = cfdgnher.d18

Table 41. Mean back calculated lengths (in) at each annulus for otoliths from hybrid striped bass gill netted at Herrington Lake in 2018.

Year class	No.	Age		
		1	2	3
2017	99	13.4		
2016	3	14.9	19.4	
2015	14	14.7	19.2	21.2
Mean	116	13.6	19.2	21.2
Smallest		7.7	18.2	19.6
Largest		16.2	20.4	22.5
Std error		0.1	0.1	0.2
95% ConLo		13.5	19.0	20.8
95% ConHi		13.8	19.5	21.7

Intercept Value = 0.00

Dataset = cfdagher.d18

Table 42. Age frequency and CPUE (fish/nn) per inch class of hybrid striped bass gill netted for 14 net-nights at Herrington Lake in 2018.

Age	Inch class														Total	% CPUE		Std err		
	8	9	10	11	12	13	14	15	16	17	18	19	20	21		22	23			
0+	1	3	22	16													42	26	3.0	1.3
1+							1	1	27	62	12						103	64	7.4	2.3
2+													1	1	1		3	2	0.2	0.1
3+													2	2	7	3	14	9	1.0	0.3
Total	1	3	22	16			1	1	27	62	12		3	3	8	3	162	100	11.6	3.5
%	1	2	14	10			1	1	17	38	7		2	2	5	2	100			

Dataset = cfdagher.d18 and cfdgnher.d18

Table 43. Number of fish and the relative weight ( $W_r$ ) for each length group of hybrid striped bass collected at Herrington Lake in October 2018.

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
Hybrid striped bass	Total	42	97 (1)	1	98	119	97 (1)	162	97 (1)

Dataset = cfdgnher.d18

Table 44. Population assessment for hybrid striped bass collected during fall gill netting at Herrington Lake from 2000-2018 (scoring based on statewide assessments).

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
2018	Value	8.6	21.4	8.5	7.4			13	Good
	Score	3	4	3	3				
2017	Value	3.1	21.1	3.1	0.7			8	Fair
	Score	1	4	2	1				
2016	Value	4.3	20.1	4.2	4.0			11	Good
	Score	2	4	2	3				
2015	Value	2.8	21.2	1.9	1.1			8	Fair
	Score	1	4	1	2				
2014	Value	2.8	20.9	2.8	1.6			9	Fair
	Score	1	4	2	2				
2013	Value	1.8	20.6	1.8	0.8	-	-	7	Fair
	Score	1	4	1	1				
2012	Value	1.1	19.6	1.0	0.8	-	-	7	Fair
	Score	1	4	1	1				
2011	Value	5.3	19.7	5.3	3.7	-	-	12	Good
	Score	2	4	3	3				
2010	Value	5.3	20.0	4.7	4.9	1.211	70.2	11	Good
	Score	2	4	2	3				
2009	Value	2.7	19.3	2.7	2.1	1.109	66.3	9	Fair
	Score	1	4	2	2				
2008	Value	6.0	20.2	6.0	3.6	0.912	59.8	11	Good
	Score	2	4	3	2				
2007	Value	6.2	20.6	4.9	5.6	1.122	67.4	12	Good
	Score	2	4	3	3				
2006	Value	1.3	21.4	1.3	4.0	0.633	46.9	9	Fair
	Score	1	4	1	3				
2005	Value	0.4	19.5	0.4	0.3	NA	NA	7	Fair
	Score	1	4	1	1				
2004	Value	2.5	20.8	2.2	0.1	NA	NA	8	Fair
	Score	1	4	2	1				
2003	Value	3.1	19.8	2.9	1.1	0.601	45.2	9	Fair
	Score	1	4	2	2				
2002	Value	8.2	20.8	7.0	3.6	0.770	53.7	12	Good
	Score	3	4	3	2				
2001	Value	4.7	20.1	4.7	0.8	NA	NA	9	Fair
	Score	2	4	2	1				
2000	Value	8.9	18.9	8.9	5.5	1.282	72.3	13	Good
	Score	3	4	3	3				

Table 45. Mean back calculated lengths (in) at each annulus for otoliths from white bass gill netted at Herrington Lake in 2018.

Year class	No.	Age			
		1	2	3	4
2017	10	9.0			
2016	12	9.4	12.8		
2015	6	9.5	12.4	13.8	
2014	13	8.6	12.6	13.9	14.7
Mean	41	9.1	12.6	13.9	14.7
Smallest		5.8	11.0	12.8	13.5
Largest		11.2	14.0	15.4	16.1
Std error		0.2	0.1	0.2	0.2
95% ConLo		8.7	12.4	13.5	14.3
95% ConHi		9.4	12.9	14.2	15.2

Intercept Value = 0.00

Dataset = cfdagher.d18

Table 46. Age frequency and CPUE (fish/nn) per inch class of white bass gill netted for 14 net-nights at Herrington Lake in 2018.

Age	Inch class								Total	% CPUE	Std err	
	9	10	11	12	13	14	15	16				
0+	1	1	3						5	11	0.4	0.1
1+		1	1	4	3		1		10	22	0.7	0.3
2+					5	6	1		12	26	0.9	0.4
3+					1	2	2	1	6	13	0.4	0.2
4+					1	3	7	2	13	28	0.9	0.4
Total	1	2	4	4	10	11	11	3	46	100	3.3	1.2
%	2	4	9	9	22	24	24	7	100			

Dataset = cfdagher.d18 and cfdgnher.d18



Table 47. Population assessment for white bass collected during fall gill netting at Herrington Lake from 2000-2018 (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
2018	Value	2.9	14.2	2.8	0.7				
	Score	1	4	2	1			8	Fair
2017	Value	2.3	14.1	2.3	0.4				
	Score	1	4	2	1			8	Fair
2016	Value	5.2	13.3	4.4	1.0				
	Score	2	2	3	1			8	Fair
2015	Value	5.7	13.9	4.8	5.3				
	Score	2	4	3	3			12	Good
2014	Value	0.9	14.0	0.8	0.3				
	Score	1	4	1	1			7	Fair
2013	Value	2.2	14.1	2.2	0.3	-	-		
	Score	1	4	2	1			8	Fair
2012	Value	9.8	13.7	5.9	5.4	0.975	62.3		
	Score	3	4	3	3			13	Good
2011	Value	10.8	13.7	9.2	4.4	0.877	58.4		
	Score	3	4	4	3			14	Excellent
2010	Value	7.9	13.6	4.0	6.2	1.351	74.1		
	Score	3	3	3	3			12	Good
2009	Value	3.4	13.1	2.3	2.7	0.900	59.3		
	Score	2	2	2	2			8	Fair
2008	Value	6.7	13.3	5.8	2.1	0.717	51.2		
	Score	2	2	3	2			9	Fair
2007	Value	5.6	13.6	3.8	2.9	0.722	51.4		
	Score	2	3	3	2			10	Good
2006	Value	1.9	13.9	1.3	0.9	*	*		
	Score	1	4	2	1			8	Fair
2005	Value	2.1	13.5	2.0	0.2	0.371	31.0		
	Score	1	3	2	1			7	Fair
2004	Value	10.1	13.9	6.7	9.2	0.726	51.6		
	Score	3	4	3	4			14	Excellent
2003	Value	2.5	14.1	1.9	0.6	0.381	31.7		
	Score	1	4	2	1			8	Fair
2002	Value	2.9	14.1	2.4	2.0	0.841	56.9		
	Score	1	4	2	2			9	Fair
2001	Value	1.9	14.0	1.8	1.1	0.418	34.2		
	Score	1	4	2	1			8	Fair
2000	Value	3.5	13.9	2.8	2.0	0.741	52.4		
	Score	2	4	2	2			10	Good

Table 48. Number of fish and the relative weight (Wr) for each length group of white bass collected at Herrington Lake in October 2018.

Species	Area	Length group						Total	
		6.0–8.9 in		9.0–11.9 in		≥12.0 in		No.	Wr
		No.	Wr	No.	Wr	No.	Wr		
White bass	Total	0		7	105 (3)	39	96 (1)	46	98 (1)

Dataset = cfdgnher.d18

Table 49. Fishery statistics derived from a daytime creel survey at Herrington Lake (2,410 acres) during 16 March through 31 October 2018.

	<u>2018</u>		<u>2010</u>		<u>2004</u>		<u>1996</u>	
Fishing Trips	(3/16 to 10/31)		(3/16 to 10/31)		(3/7 to 10/31)		(3/3 to 11/02)	
No. of fishing trips (per acre)	13,438	(5.6)	11,692	(4.9)	12,878	(5.3)	60,557	(25.1)
Fishing Pressure								
Total man-hours (S.E.) <sup>a</sup>	63,989	(4,447)	57,680	(1,455)	72,958	(1,861)	202,422	(12,228)
Man-hours/acre	26.6		23.9		30.3		84.0	
Catch / Harvest								
No. of fish caught (S.E.)	77,427	(11,510)	57,910	(5,352)	79,836	(8,260)	259,639	(25,876)
No. of fish harvested (S.E.)	40,563	(7,304)	33,396	(3,445)	27,343	(3,532)	120,406	(11,916)
Lb of fish harvested	28,114		18,903		13,606		57,629	
Harvest Rates								
Fish/hour	0.58		0.58		0.37		0.59	
Lb/hour	0.86		0.53		0.45		0.28	
Fish/acre	16.83		13.86		11.35		49.96	
Lb/acre	11.67		7.84		5.65		23.91	
Catch Rates								
Fish/hour	1.24		0.99		1.10		1.28	
Fish/acre	32.13		24.03		33.13		107.73	
Miscellaneous Characteristics								
Male	90.21		89.66		88.23		87.09	
Female	9.79		10.34		11.77		12.91	
Resident	98.02		98.37		98.06		94.13	
Non-resident	1.98		1.63		1.94		5.87	
Method (%)								
Still fishing	36.01		58.07		41.40		54.29	
Casting	54.08		33.45		50.81		40.74	
Fly	0.23		0.35		0.16		0.98	
Trolling	9.44		8.01		7.63		3.69	
Jugging	0.23		0.12					
Mode (%)								
Boat	79.25		77.00		90.16		84.04	
Bank	9.44		15.21		5.48		10.54	
Dock	8.97		7.78		4.35		5.42	
Other	2.33							

<sup>a</sup> S.E. = Standard Error

Table 50. Fish harvest derived from a creel survey on Herrington Lake (2,410 acres) from 16 March to 31 October 2018.

	Black bass group	Largemouth bass	Spotted bass	Smallmouth bass	Crappie group	White crappie	Black crappie	Catfish group	Channel catfish	Flathead catfish	Blue catfish
No. caught (per acre)	27,244 (11.3)	25,744 (10.7)	1,463 (0.6)	37 (t)	15,773 (6.5)	2,747 (1.1)	13,026 (5.4)	5,282 (2.2)	4,753 (2.0)	521 (0.2)	8 (t)
No. harvested (per acre)	3,256 (1.4)	3243 (1.3)	13 (t)		13,755 (5.7)	2,576 (1.1)	11,179 (4.6)	4,926 (2.0)	4,411 (1.8)	507 (0.2)	8 (t)
% of total no. harvested	8.0	8.0	t		33.9	6.4	27.6	12.1	10.9	1.3	T
Lb harvested (per acre)	4,583 (1.9)	4571 (1.9)	12 (t)		12,931 (5.4)	2,037 (0.8)	10,895 (4.5)	6,796 (2.8)	5,068 (2.1)	1,712 (0.7)	17 (t)
% of total lb harvested	16.3	16.3	t		46.0	7.2	38.8	24.2	18.0	6.1	0.1
Mean length (in)		13.9	13.0			11.7	11.8		15.5	21.0	18.0
Mean weight (lb)		1.41	0.92			0.85	0.93		1.21	4.99	2.03
No. of fishing trips for that species	6,653				1,362			1,482			
% of all trips	49.5				10.1			11.0			
Hours fished for that species (per acre)	31,682 (13.1)				6,487 (2.3)			7,059 (2.9)			
No. harvested fishing for that species	3,088				12,977			3,946			
Lb harvested fishing for that species	4,374				12,002			5,817			
No./hour harvested fishing for that species	0.091				2.009			0.634			
% success fishing for that species	8.0				79.2			75.0			

t = <0.05

Table 50 (cont).

	Morone group	Hybrid striped bass	White bass	Panfish group	Bluegill	Drum	Gar	Anything
No. caught (per acre)	4,126 (1.7)	4,020 (1.7)	106 (0.0)	24,794 (10.3)	24,794 (10.3)	84 (0.0)	125 (0.1)	
No. harvested (per acre)	592 (0.25)	592 (0.25)		17,959 (7.5)	17,959 (7.5)		73 (t)	
% of total no. harvested	1.5	1.5		44.3	44.3		0.2	
Lb harvested (per acre)	1,079 (0.45)	1,079 (0.45)		2,662 (1.1)	2,662 (1.1)		62 (t)	
% of total lb harvested	3.8	3.8		9.5	9.5		0.2	
Mean length (in)		15.4			6.1		21.3	
Mean weight (lb)		1.88			0.15		0.85	
No. of fishing trips for that species	1,187			602				2,151
% of all trips	8.8			4.5				16.0
Hours fished for that species (per acre)	5,652 (2.4)			2,865 (1.2)				10,244 (4.3)
No. harvested fishing for that species	548			9,775				
Lb harvested fishing for that species	988			1,319				
No./hour harvested fishing for that species	0.068			2.783				
% success fishing for that species	16.3			53.2				47.1

Table 51. Length distribution (Length of released fish are estimated) for each species of fish harvested at Herrington Lake from 16 March – 31 October 2018.

	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	30	36	38
Largemouth bass																														
Harvested											1236	283	695	463	77	257	154	78												
Released							364	1458	2964	1993	6561	2964	2478	2236	559	292	194	97	194	73	74									
Spotted bass																														
Harvested												13																		
Released										283	167	667	250	50	33															
Smallmouth bass																														
Released											18		19																	
White crappie																														
Harvested								201	443	282	765	523	332	40																
Released						43	128																							
Black crappie																														
Harvested								325	1382	2480	2561	2561	1789	81																
Released						161	522	843	161	80	80																			
Bluegill																														
Harvested	25	49	1013	4200	4397	5731	2273	247		24																				
Released		144	1848	2224	1586	932	130																							
Hybrid striped bass																														
Harvested											59	59	59	148	178	30			30	29										
Released									137	183	366	640	388	594	343	228	251	46	23	91		23	91				23			
White bass																														
Released										53		53																		
Channel catfish																														
Harvested							22	44	328	131	284	742	284	699	437	284	480	87	218	131	44		175				21			
Released							19	76		38		95	19	38		38														
Flathead catfish																														
Harvested										22	22		44	22	66		66	22	44	22			88	22				22	22	23
Released																				13										
Blue catfish																														
Harvested																		8												
Drum																														
Released												14	28	28			14													
Gar																														
Harvested																	18			18		18			19					
Released														17									17			18				

Table 52. 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 2018.

	Largemouth bass				Spotted bass				Smallmouth bass			
	Harvest	Catch and Release		Total	Harvest	Catch and Release		Total	Harvest	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 bass	3,243	12,003	3,719	25,744	13	967	33	1,463		19		37
% of black bass harvested by no.	99.6				0.4							
Total weight of fish (lbs)	4,571	12,068	7,936	27,191	12	704	42	1,070		23		34
% of black bass harvest by weight	99.7				0.3							
Mean length	13.9				13.0							
Mean weight	1.41				0.93							
Rate (fish/h)	0.050				0.0004							

Table 53. Monthly black bass angling success at Herrington Lake during the 2018 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	1,514	505	1,066	5,074	1,388	0.25	505	0.09
April	6,895	36	2,184	10,402	6,680	0.59	36	t
May	6,005	801	877	4,174	5,116	1.27	801	0.20
June	3,923	1,746	637	3,035	3,903	1.16	1,746	0.52
July	4,436	37	876	4,172	4,309	1.04	-	-
August	1,899	66	368	1,752	1,607	0.96	-	-
September	1,089	66	184	875	815	0.96	-	-
October	1,723	-	461	2,197	1,429	0.65	-	-
Total	27,244	3,256	6,653	31,681	25,247		3,088	
Mean						0.85		0.08

t = < 0.01

Table 54. 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 2018.

	Harvest	Channel catfish Catch and Release			Harvest	Flathead catfish Catch and Release			Harvest	Blue catfish Catch and Release		
		8.0 – 11.9 in	≥12.0 in	Total		8.0 – 11.9 in	≥12.0 in	Total		8.0 – 11.9 in	≥12.0 in	Total
Total no of catfish	4,411	133	190	4,733	507		13	520	8			8
% of catfish harvested by no.	89.5				10.3				0.2			
Total weight of fish (lbs)	5,068	74	104	5,246	1,712		49	1,061	17			17
% of catfish harvest by weight	74.6				25.2				0.2			
Mean length	15.5				21.0				18			
Mean weight	1.21				4.99				2.03			
Rate (fish/h)	0.081				0.009				0.0004			

Table 55. Monthly catfish angling success at Herrington Lake during the 2018 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
April	503	503	245	1,168	323	0.36	323	0.36
May	1,557	1,468	333	1,583	1,467	0.88	1,423	0.85
June	924	904	225	1,071	780	0.70	780	0.70
July	1,150	1,077	277	1,317	785	0.62	730	0.58
August	704	611	142	674	479	0.72	439	0.66
September	158	150	33	159	116	0.65	108	0.61
October	286	214	58	275	197	0.86	143	0.63
Total	5,282	4,926	1,482	7,059	4,147		3,946	
Mean						0.67		0.63

Table 56. 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 2018.

	Harvest	White crappie Catch and Release		Total	Harvest	Black crappie Catch and Release		Total
		<10.0 in	≥10.0 in			<10.0 in	≥10.0 in	
Total no of crappie	2,576	171		2,747	11,179	1,526	321	13,026
% of crappie harvested by no.	18.7				81.3			
Total weight of fish (lbs)	2,037	31		2,068	10,895	407	209	11,511
% of crappie harvest by weight	15.7				84.3			
Mean length	11.7				11.8			
Mean weight	0.85				0.93			
Rate (fish/hr)	0.026				0.110			

Table 57. Monthly crappie angling success at Herrington Lake during the 2018 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	315	252	341	1,624	315	0.19	252	0.16
April	4,525	4,417	513	2,441	4,310	1.92	4,202	1.88
May	10,498	8,807	484	2,303	9,519	3.33	8,318	2.92
June	349	205	25	119	349	2.83	205	1.67
July	73	73	-	-	-	-	-	-
August	13	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-
Total	15,773	13,755	6,487	1,362	14,493		12,977	
Mean						2.25		2.01



Table 58. Temperate bass (*Morones*) catch and harvest statistics derived from a creel survey at Herrington Lake (2,410 acres) from 16 March to 31 October 2018.

	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>	592	1,394	1,713	4,020	-	53	-	106	
% of <i>Morones</i> harvested by no.	100.0%				-				
Total weight of fish (lbs)	1,079	1,480	4,521	7,608	-	37	-	66	
% of <i>Morones</i> harvest by weight	100.0%				-				
Mean length	15.4				-				
Mean weight	1.88				-				
Rate (fish/h)	0.008				-				

Table 59. Monthly *Morone* angling success at Herrington Lake during the 2018 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	575	63	85	406	694	1.05	63	0.10
April	-	-	-	-	-	-	-	-
May	1,112	267	363	1,727	978	0.73	222	0.17
June	349	226	162	774	350	0.40	226	0.26
July	1,132	36	300	1,427	1,132	0.68	37	0.02
August	478	-	134	640	478	0.78	-	-
September	83	-	56	265	66	0.22	-	-
October	214	-	87	412	214	0.52	-	-
Total	4,126	592	1,187	5,652	3,912		548	
Mean						0.60		0.07

Table 60. 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 2018.

	Harvest	Bluegill Catch and Release		Total
		6.0–7.9 in	≥8.0 in	
Total no	17,959	2,518	130	24,794
% of panfish harvested by no.	100.0			
Total weight of fish (lbs)	2,662	245	39	3,328
% of panfish harvest by weight	100.0			
Mean length	6.1			
Mean weight	0.15			
Rate (fish/h)	0.291			

Table 61. Monthly panfish angling success at Herrington Lake during the 2018 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	946	757	-	-	-	-	-	-
April	2,442	1,831	22	106	754	6.000	359	2.856
May	6,405	6,316	181	864	6,316	8.606	6,316	8.606
June	4,950	2,917	125	595	1,438	3.182	144	0.318
July	4,400	3,670	115	549	1,717	3.950	1,461	3.361
August	3,732	1,753	127	607	1,753	3.007	1,036	1.777
September	740	108	11	53	207	3.571	66	1.143
October	1,179	607	19	92	393	2.750	393	2.750
Total	24,794	17,959	602	2,865	12,578		9,775	
Mean						4.058		2.783

**HERRINGTON LAKE ANGLER ATTITUDE SURVEY 2018**  
(based on 348 surveys)

16. Have you been surveyed this year? Yes - stop survey No – continue
17. Name \_\_\_\_\_ and Phone number \_\_\_\_\_ (Optional)
18. On average, how many time do you fish Herrington Lake in a year? (n=341)  
First time **12.9%** 1 to 4 **13.2%** 5 to 10 **15.0%** More than 10 **58.9%**
19. Which species of fish do you fish for at Herrington Lake (**check all that apply**)?  
Bass **59.2%** Crappie **15.5%** Channel catfish **15.8%** Hybrid striped bass **12.9%** Flathead catfish **10.3%**  
Anything **7.8%** Bluegill **5.5%** White bass **1.2%** Drum **0.3%** Gar **0.3%**
20. Which one species do you fish for most at Herrington Lake (**check only one**)? (n=313)  
Bass **61.6%** Crappie **10.9%** Channel catfish **9.9%** Hybrid Striped Bass **9.9%**  
Bluegill **3.5%** Anything **2.9%** Flathead catfish **1.0%** Drum **0.3%**

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

**Bass Anglers**

21. In general, what level of satisfaction or dissatisfaction do you have with bass fishing at Herrington Lake? (n=198)  
Very satisfied **92.9%** Somewhat satisfied **5.1%** Neutral **0.5%** Somewhat dissatisfied **1.5%** Very dissatisfied **0.0%**
- 6a. If you responded with somewhat or very satisfied in question (6) – what is the single most important reason for your satisfaction? (n=181)  
Number of fish **86.7%** Size of fish **12.7%** Low angler pressure **0.6%**
- 6b. If you responded with somewhat or very dissatisfied in question (6)- what is the single most important reason for your dissatisfaction? (n=3)  
Size of fish **66.7%** Size limit **33.3%**
7. Do you fish any bass tournaments on Herrington Lake? (n=201)  
Yes **39.8%** No **60.2%**

**Crappie Anglers**

8. In general, what level of satisfaction or dissatisfaction do you have with the crappie fishing at Herrington Lake? (n=56)  
Very satisfied **85.7%** Somewhat satisfied **12.5%** Neutral **0.0%** Somewhat dissatisfied **1.8%** Very dissatisfied **0.0%**
- 8a. If you responded with somewhat or very satisfied in question (8) – what is the single most important reason for your satisfaction? (n=52)  
Number of fish **23.1%** Size of fish **76.9%**
- 8b. If you responded with somewhat or very dissatisfied in question (8) – what is the single most important reason for your dissatisfaction? (n=1)  
Number of fish **100.0%**

**White Bass Anglers**

9. In general, what level of satisfaction do you have with the white bass fishing at Herrington Lake? (n=4)  
Very satisfied **75.0%** Somewhat satisfied **25.0%** Neutral **0.0%** Somewhat dissatisfied **0.0%** Very dissatisfied **0.0%**
- 9a. If you responded with somewhat or very satisfied in question (9) – what is the single most important reason for your satisfaction? (n=4)  
Number of fish **100.0%**
- 9a. 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=46)  
Very satisfied **95.6%** Somewhat satisfied **2.2%** Neutral **0.0%** Somewhat dissatisfied **0.0%** Very dissatisfied **2.2%**
- 10a. If you responded with somewhat or very satisfied in question (10) – what is the single most important reason for your satisfaction? (n=45)  
Number of fish **55.6%** Size of fish **44.4%**

- 10b. If you responded with somewhat or very dissatisfied in question (10) – what is the single most important reason for your dissatisfaction? (n=1)  
Number of fish **100.0%**

#### **Channel Catfish Anglers**

11. In general, what level of satisfaction or dissatisfaction do you have with channel catfish fishing at Herrington Lake? (n=57)  
Very satisfied **100.0%** Somewhat satisfied **0.0%** Neutral **0.0%** Somewhat dissatisfied **0.0%** Very dissatisfied **0.0%**
- 11a. If you responded with somewhat or very satisfied in question (11) – what is the single most important reason for your satisfaction? (n=57)  
Number of fish **45.6%** Size of fish **54.4%**
- 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 channel catfish fishing at Herrington Lake? (n=36)  
Very satisfied **97.2%** Somewhat satisfied **2.8%** Neutral **0.0%** Somewhat dissatisfied **0.0%** Very dissatisfied **0.0%**
- 12a. If you responded with somewhat or very satisfied in question (12) – what is the single most important reason for your satisfaction? (n=35)  
Number of fish **31.4%** Size of fish **68.6%**
- 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=338)  
Yes **99.1%** No **0.9%**
- 13a. If not, which species are you dissatisfied with and what size and creel limits would you prefer?  
Largemouth bass 12-18 inch slot limit (n=1)  
Crappie 9 inch size limit (n=1)  
Crappie 10 inch size limit (n=1)  
Crappie 30 fish daily creel limit (n=1)

Table 62. Species composition, relative abundance, and CPUE (fish/hr) of black bass and saugeye collected in 3.0 hours of 15-minute nocturnal electrofishing runs in Guist Creek Lake, May 2018; numbers in parentheses are standard errors.

Species	Inch class																			Total	CPUE	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			22
Largemouth bass	3	4	5	9	12	36	104	130	65	77	75	42	48	45	40	30	14	9	6	1	755	251.7 (18.3)
Saugeye								3	4			1	3	3	2	1	2	2			21	7.0 (1.8)

Dataset = cfdpsgcl.d18

Table 63. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Guist Creek Lake from 1992-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1992	12.0 (2.1)	16.8 (2.7)	38.4 (5.2)	41.2 (4.7)	3.2 (1.0)	108.4 (7.2)
1993	22.7 (2.6)	25.5 (2.7)	23.8 (2.7)	51.6 (5.0)	5.5 (1.1)	123.6 (9.1)
1994	19.2 (2.7)	29.8 (3.7)	19.6 (2.6)	40.2 (3.9)	2.0 (0.5)	108.8 (8.6)
1995	18.2 (3.0)	40.6 (3.8)	23.2 (2.4)	47.2 (5.5)	5.0 (1.3)	129.2 (9.2)
1996	32.6 (5.5)	28.8 (3.6)	44.8 (2.8)	58.2 (5.2)	5.8 (1.1)	164.4 (10.6)
1997	No Sample					
1998	20.3 (3.1)	45.3 (4.9)	18.7 (3.5)	72.7 (12.3)	5.0 (1.3)	157.0 (14.5)
1999	53.5 (6.9)	56.8 (10.2)	41.7 (6.3)	51.3 (3.4)	8.0 (1.3)	203.3 (19.4)
2000	26.7 (6.1)	19.3 (2.4)	23.0 (2.9)	41.3 (5.4)	3.0 (1.0)	110.3 (7.6)
2001	39.0 (5.3)	42.0 (3.6)	17.3 (2.7)	46.3 (5.2)	1.7 (0.6)	144.7 (10.1)
2002	43.3 (9.9)	32.3 (7.7)	23.3 (3.1)	41.3 (7.8)	2.0 (1.4)	134.3 (18.6)
2003	27.7 (6.7)	96.7 (9.9)	31.0 (4.6)	49.7 (4.0)	2.7 (0.9)	205.0 (19.7)
2004	30.7 (6.0)	62.7 (6.5)	58.0 (7.0)	54.3 (5.9)	3.7 (1.0)	205.7 (17.0)
2005	84.3 (12.2)	67.0 (6.3)	63.0 (5.6)	70.3 (7.5)	4.7 (1.4)	284.7 (25.6)
2006	30.0 (6.6)	69.3 (8.2)	30.3 (3.3)	68.7 (6.4)	3.3 (1.5)	198.3 (19.0)
2007	23.3 (3.0)	59.3 (6.3)	42.0 (4.3)	58.0 (5.5)	3.7 (1.2)	182.7 (11.6)
2008	24.0 (3.6)	19.7 (2.3)	41.3 (5.6)	73.0 (10.3)	4.7 (1.5)	158.0 (12.9)
2009	12.0 (2.7)	23.3 (4.7)	19.3 (3.7)	35.7 (6.0)	4.3 (1.0)	90.3 (11.3)
2010	46.8 (4.1)	25.3 (2.6)	26.3 (2.9)	47.3 (4.6)	3.0 (0.8)	145.8 (8.4)
2011	34.3 (2.6)	67.7 (7.0)	35.0 (3.9)	50.3 (4.7)	5.3 (1.6)	187.3 (9.7)
2012	19.7 (5.2)	81.7 (7.5)	30.0 (4.1)	36.7 (3.8)	4.7 (1.2)	168.0 (7.2)
2013	21.3 (7.0)	44.0 (5.1)	51.0 (5.4)	63.0 (7.4)	5.7 (2.0)	179.3 (11.6)
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)
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)
2016	No Sample					
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)
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)

Dataset = cfdpsgcl.d18- d92

Table 64. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring nocturnal electrofishing samples in Guist Creek Lake in 2018; confidence intervals are in parentheses.

Species	No. ≥8.0 in	PSD	RSD <sub>15</sub>
Largemouth bass	722	54 (± 4)	27 (± 3)

Dataset = cfdpsgcl.d18

Table 65. Population assessment for largemouth bass collected during spring electrofishing at Guist Creek Lake from 2000-2018 (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
2018	Value	12.5*	7.0	64.7	64.3	5.3				
	Score	4	1	4	4	4			17	Excellent
2017	Value	12.5	12.7	36.0	70.0	5.7				
	Score	4	2	3	4	4			17	Excellent
2015	Value	12.2*	13.0	47.0	63.7	3.3				
	Score	4	2	4	4	3			17	Excellent
2014	Value	12.2*	3.7	32.7	49.3	4.3				
	Score	4	1	3	4	4			16	Good
2013	Value	12.2	17.0	51.0	63.0	5.7				
	Score	4	2	4	4	4			18	Excellent
2012	Value	11.0*	13.3	30.0	36.7	4.7				
	Score	3	2	3	4	4			16	Good
2011	Value	11.0*	16.4	34.7	50.7	5.7				
	Score	3	2	3	4	4			16	Good
2010	Value	11.0*	31.5^	26.3	47.3	3.0				
	Score	3	3	3	4	3			16	Good
2009	Value	11.0	6.7	19.3	35.7	4.3	0.341	28.9		
	Score	3	1	2	4	4			14	Good
2008	Value	11.5*	8.1^	41.3	73.0	4.7				
	Score	3	2	3	4	4			16	Good
2007	Value	11.5*	15.5^	42.0	58.0	3.7				
	Score	3	2	3	4	3			15	Good
2006	Value	11.5*	15.2^	30.3	68.7	3.3				
	Score	3	2	3	4	3			15	Good
2005	Value	11.5	21.4	63.0	70.3	4.7	0.510	40.0		
	Score	3	2	4	4	4			17	Excellent
2004	Value	10.2*	22.1^	58.0	54.3	3.7				
	Score	2	3	4	4	3			16	Good
2003	Value	10.2*	16.3^	31.0	49.7	2.7				
	Score	2	2	3	4	3			14	Good
2002	Value	10.2*	23.8^	23.3	41.3	2.0				
	Score	2	3	2	4	3			14	Good
2001	Value	10.2	25.7	17.3	46.3	1.7	0.289	25.1		
	Score	2	3	2	4	3			14	Good
2000	Value	10.0	16.8	23.0	41.3	3.0	0.161	14.9		
	Score	1	2	2	4	3			12	Fair

\* 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 66. Length distribution 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 2018; numbers in parentheses are standard errors.

Species	Inch class																			Total	CPUE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			22	23
Largemouth bass	4	24	14	3	9	22	15	14	28	14	25	7	7	11	14	6	5	3	4			229	152.7 (11.1)
Saugeye						1					1	2	3	2	1	1	1	6		1		19	12.7 (2.8)

Dataset = cfdwrgcl.d18

Table 67. Number of fish and the relative weight (*Wr*) for each length group of largemouth bass collected at Guist Creek Lake on 1 October 2018. 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		
Largemouth bass	Total	79	87 (1)	46	89 (1)	50	96 (1)	175	90 (1)

Dataset = cfdwrgcl.d18



Table 68. 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 $\geq$ 5.0 in		Age-1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2000	Total	3.6	0.1	19.5	4.0	0.0		25.7	5.3
2001	Total	3.9	0.1	65.3	14.0	1.0	0.5	23.8	6.7
2002	Total	4.7	0.1	47.3	7.6	19.3	2.8	16.3	3.3
2003	Total	4.0	0.1	30.7	8.2	6.0	2.0	22.1	4.8
2004	Total	4.0	0.1	40.7	6.0	0.7	0.7	21.4	4.2
2005	Total	4.5	0.1	24.5	4.4	5.0	2.0	15.2	4.5
2006	Total	3.9	0.1	50.7	8.5	10.0	4.2	15.5	2.2
2007	Total	3.8	0.2	12.7	4.2	2.7	1.7	8.1	2.0
2008	Total	3.2	0.1	139.3	23.6	0.7	0.7	6.7	2.4
2009	Total	3.7	0.1	51.3	9.8	0.7	0.7	31.5	3.1
2010	Total	4.9	0.1	41.3	4.2	18.7	2.0	16.4	1.6
2011	Total	4.4	0.1	34.7	13.2	7.3	3.9	13.3	4.2
2012	Total	4.1	0.1	46.0	7.9	7.3	3.2	21.3	7.0
2013	Total	4.0	0.1	38.7	7.0	6.7	2.7	3.7	1.0
2014	Total	4.0	0.1	27.3	5.2	3.3	0.7	13.0	6.4
2015	Total	5.0	0.1	49.3	5.1	28.0	2.3	---	
2016	Total	5.0	0.1	56.0	8.6	29.3	7.4	11.0	3.0
2017	Total	4.1	0.1	75.3	20.3	18.7	4.3	7.0	1.8
2018	Total	4.8	0.1	29.3	6.6	10.7	3.4		

Table 69. Length distribution and CPUE (fish/hr) of saugeye collected in 1.5 hours of 15-minute electrofishing runs in Guist Creek Lake in October 2018; numbers in parentheses are standard errors.

Species	Inch class										Total	CPUE
	15	16	17	18	19	20	21	22	23	24		
Saugeye	2	2	1	3	3	3	4			1	19	12.7 (2.4)

Dataset = cfdwrgcl.d18

Table 70. Length composition, relative abundance, and CPUE (fish/set) of channel catfish at Guist Creek Lake. Channel catfish were collected using baited, tandem hoop nets (72 hours soak time) that were set on 4 October 2018. Nets were pulled three days after setting them and three sets of tandem nets were used for the sampling event.

Species	Inch class										Total	Average per set
	17	18	19	20	21	22	23	24	25	26		
Channel catfish	1							1		1	3	1.0 (0.0)

Dataset = cfdhngcl.d18

Table 71. PSD and RSD<sub>24</sub> values obtained for channel catfish from tandem hoop net samples in Guist Creek Lake in 2018; confidence intervals are in parentheses.

Species	No. $\geq$ stock size	PSD	RSD <sub>24</sub>
Channel catfish	3	100 ( $\pm$ 0)	67 ( $\pm$ 67)

Dataset = cfdhngcl.d18

Table 72. Number of fish and the relative weight (Wr) for each length group of channel catfish collected at Guist Creek Lake in October 2018; standard errors are in parentheses.

Species	Area	Length group				Total	
		11.0–15.9 in		$\geq$ 24.0 in		No.	Wr
		No.	Wr	No.	Wr	No.	Wr
Channel catfish	Total	1	96 (1)	2	112 (6)	3	103 (10)

Dataset = cfdhngcl.d18

Table 73. CPUE (fish/set) for each length group of channel catfish collected by hoop net from Guist Creek Lake from 2006-2018; numbers in parentheses are standard errors.

Year	Length group			Total
	$\geq$ 12.0 in	$\geq$ 15.0 in	$\geq$ 20.0 in	
2006	43.8 (12.5)	6.0 (2.1)	1.8 (0.8)	274.2 (95.6)
2007	208.2 (106.1)	60.0 (32.6)	13.0 (7.6)	382.0 (184.4)
2008	87.4 (24.4)	26.6 (10.4)	7.4 (2.9)	107.2 (29.2)
2009	45.4 (11.9)	22.2 (5.8)	4.4 (1.6)	73.0 (16.0)
2010	42.0 (10.3)	18.8 (4.4)	4.6 (1.6)	78.6 (19.9)
2011	13.2 (3.2)	4.6 (1.7)	0.2 (0.2)	31.6 (7.3)
2012	21.8 (12.0)	8.2 (5.5)	2.4 (1.6)	50.2 (26.4)
2013			No Sample	
2014	47.8 (14.0)	25.0 (9.5)	11.2 (3.3)	79.8 (20.6)
2015			No Sample	
2016	63.0 (25.7)	44.7 (18.6)	16.3 (7.8)	66.0 (26.6)
2017			No Sample	
2018	1.0 (0.0)	1.0 (0.0)	0.7 (0.3)	1.0 (0.0)

Dataset = cfdhngcl.d18- .d06

Table 74. Length frequency, relative abundance, and CPUE (fish/hr) of largemouth bass and saugeye collected in 2.5 hours of 15-minute electrofishing runs in A.J. Jolly Lake, April 2018; numbers in parentheses are standard errors.

Species	Inch class																		Total	CPUE		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			23	
Largemouth bass	4	20	16	9	32	37	10	16	29	23	25	19	12	10	6	5	2				275	110.0 (12.0)
Saugeye					1		3	2	1	3	1	1	1	3			1	1	1		19	7.6 (3.0)

Dataset = cfdpsajj.d18

Table 75. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from A.J. Jolly Lake from 1996-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1996	18.5 (2.8)	13.5 (1.7)	24.0 (5.7)	9.5 (2.5)	0.0	65.5 (7.4)
1997	11.6 (1.9)	37.2 (3.8)	19.6 (2.1)	20.4 (2.6)	0.8 (0.5)	88.8 (4.7)
1998	11.5 (1.9)	42.5 (8.0)	24.5 (2.4)	25.5 (3.5)	2.0 (1.1)	104.0 (11.6)
1999	5.0 (2.4)	21.0 (6.1)	32.0 (6.5)	26.0 (4.5)	4.0 (1.3)	84.0 (13.7)
2000	27.0 (5.4)	25.0 (4.3)	9.5 (1.5)	20.0 (3.3)	1.5 (0.7)	81.5 (7.9)
2001	35.5 (5.9)	48.5 (5.7)	12.0 (2.4)	26.0 (5.2)	2.0 (1.1)	122.0 (13.5)
2002	10.0 (2.1)	44.5 (8.2)	9.5 (1.5)	18.0 (3.1)	0.5 (0.5)	82.0 (10.5)
2003	14.5 (4.3)	40.5 (4.2)	19.0 (4.3)	7.5 (2.2)	0.0	81.5 (7.7)
2004*	No Sampling					
2005	55.5 (10.4)	19.5 (4.0)	12.5 (1.8)	7.0 (2.0)	0.0	94.5 (14.9)
2006	28.0 (6.9)	23.5 (3.5)	5.5 (2.0)	2.5 (1.1)	0.0	59.5 (7.6)
2007	31.6 (4.4)	36.8 (5.9)	15.2 (2.3)	14.0 (2.8)	0.0	97.6 (11.2)
2008	7.2 (1.4)	14.8 (4.1)	14.8 (2.7)	8.0 (3.1)	0.0	44.8 (6.2)
2009	15.6 (2.4)	19.6 (2.6)	12.8 (2.9)	12.8 (2.7)	2.0 (0.9)	60.8 (7.7)
2010	12.4 (2.6)	22.8 (4.0)	20.8 (3.8)	21.2 (3.7)	1.6 (0.9)	77.2 (8.9)
2011	26.8 (5.0)	12.8 (3.3)	12.4 (2.9)	20.4 (3.4)	0.8 (0.8)	72.4 (10.1)
2012	35.6 (6.0)	32.4 (6.9)	19.6 (2.4)	20.0 (4.8)	0.4 (0.4)	107.6 (14.5)
2013	11.6 (2.6)	23.2 (3.7)	24.0 (5.1)	17.2 (2.9)	1.6 (0.9)	76.0 (9.9)
2014	13.6 (2.8)	21.2 (2.9)	16.0 (3.2)	24.0 (5.1)	2.0 (0.9)	74.8 (9.1)
2015	43.2 (6.8)	24.8 (5.1)	12.4 (2.2)	15.2 (4.2)	0.8 (0.5)	95.6 (7.4)
2016	18.0 (3.4)	30.0 (4.2)	19.6 (4.2)	27.2 (9.8)	1.2 (0.9)	94.8 (16.3)
2017	34.4 (3.9)	50.4 (6.7)	22.0 (3.6)	24.8 (2.4)	0.4 (0.4)	131.6 (10.5)
2018	19.6 (2.9)	38.0 (5.5)	30.8 (4.0)	21.6 (4.9)	0.8 (0.8)	110.0 (12.0)

Dataset = cfdpsajj.d96 – d18

\*No spring sample collected in 2004

Table 76. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing samples in A.J. Jolly Lake in 2018; confidence intervals are in parentheses.

Species	No. $\geq 8.0$ in	PSD	RSD <sub>15</sub>
Largemouth bass	226	58 ( $\pm 6$ )	24 ( $\pm 6$ )

Dataset = cfdpsajj.d18

Table 77. Population assessment for largemouth bass collected during spring electrofishing at A.J. Jolly Lake from 2010-2018 (scoring based on statewide assessment).

Year		Mean length age-3 at capture	CPUE age-1	CPUE 12.0-14.9 in	CPUE $\geq 15.0$ in	CPUE $\geq 20.0$ in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2018	Value	12.3*	16.0	30.8	21.6	0.8				
	Score	4	2	3	3	2			14	Good
2017	Value	12.3*	30.0	22.0	24.8	0.4				
	Score	4	3	2	3	2			14	Good
2016	Value	12.3*	5.2	19.6	27.2	1.2				
	Score	4	1	2	4	2			13	Good
2015	Value	12.3	38.8	12.4	15.2	0.8				
	Score	4	3	1	3	2			13	Good
2014	Value	11.9*	8.0	16.0	24.0	2.0				
	Score	4	2	2	3	3			14	Good
2013	Value	11.9*	10.4	24.0	17.2	1.6				
	Score	4	2	2	3	3			14	Good
2012	Value	11.9*	27.2	19.6	20.0	0.4				
	Score	4	3	2	3	2			14	Good
2011	Value	11.9	26.0	12.4	20.4	0.8				
	Score	4	3	1	3	2			13	Good
2010	Value	11.8*	4.0	20.8	21.2	1.6				
	Score	4	1	2	3	3			13	Good

\* Age data not collected

Table 78. Length distribution and CPUE (fish/hr) of largemouth bass and saugeye collected in 2.0 hours of 15-minute electrofishing runs for black bass in A.J. Jolly Lake in October 2018; numbers in parentheses are standard errors.

Species	Inch class																				Total	CPUE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			23	24
Largemouth bass	3	27	31	22	5	12	11	11	9	2	5	8	6	2	3		1						158	79.0 (8.4)
Saugeye							1	6	3	3	7	4	5	2	4	5	3	1	1		2	1	48	24.0 (5.5)

Dataset = cfdwrajj.d18

Table 79. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at A.J. Jolly Lake on 9 October 2018; 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		
Largemouth bass	Total	43	85 (1)	15	87 (2)	12	91 (3)	70	87 (1)

Dataset = cfdwrajj.d18

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 A.J. Jolly Lake.

Year class	Area	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2004	Total	3.5	0.1	36.7	5.2	2.0	0.9	49.8	9.2
2005	Total	4.3	0.1	16.0	3.7	2.7	1.3	23.7	5.7
2006	Total	4.1	0.2	8.7	2.8	0.7	0.7	28.5	4.5
2007	Total	4.4	0.3	5.6	1.8	2.0	0.9	3.6	1.1
2008	Total	4.6	0.1	29.7	4.4	7.4	2.2	12.0	2.0
2009	Total	4.2	0.2	8.4	2.5	1.3	0.7	4.0	1.9
2010	Total	5.2	0.1	42.4	5.2	26.8	4.1	26.0	4.6
2011	Total	4.9	0.1	22.0	3.6	13.5	4.2	27.2	4.8
2012	Total	4.9	0.1	22.0	3.6	12.0	2.9	10.4	2.2
2013	Total	4.5	0.1	23.0	3.4	6.0	2.3	8.0	2.0
2014	Total	4.5	0.2	19.5	5.9	8.0	2.8	38.8	6.4
2015	Total	4.3	0.1	21.5	5.7	5.5	2.8	5.2	2.1
2016	Total	5.1	0.1	44.0	4.5	25.5	4.8	28.0	2.5
2017	Total	5.4	0.1	37.5	5.4	27.0	3.7	16.4	2.8
2018	Total	5.3	0.1	42.5	6.2	27.5	4.5		

Table 81. Length frequency, relative abundance, and CPUE (fish/hr) of largemouth bass collected in 2.0 hours of 15-minute electrofishing runs in Beaver Lake, May 2018; numbers in parentheses are standard errors.

Species	Inch class																Total	CPUE
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
Largemouth bass	27	172	54	7	69	203	114	60	39	16	5	2	2	1	2	773	386.5 (23.7)	

Dataset = cfdpsbvr.d18

Table 82. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Beaver Lake from 1992-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1994	22.5 (2.8)	5.5 (2.5)	41.5 (3.3)	28.5 (4.5)	6.5 (2.8)	96.5 (6.9)
1995	73.0 (8.4)	37.5 (5.9)	10.0 (3.8)	34.0 (7.0)	6.0 (2.3)	154.5 (9.9)
1996	81.0 (11.6)	47.0 (6.3)	8.0 (2.0)	37.5 (2.9)	3.0 (0.7)	173.5 (17.8)
1997	84.5 (12.2)	99.5 (16.7)	8.5 (2.1)	42.5 (9.6)	6.0 (3.2)	235.0 (34.1)
1998	36.0 (4.2)	206.5 (17.6)	14.5 (4.8)	30.5 (6.6)	5.5 (1.7)	287.5 (22.8)
1999	42.0 (11.0)	71.5 (7.3)	17.0 (2.6)	22.0 (3.5)	7.5 (1.6)	152.5 (18.1)
2000	56.0 (7.7)	26.5 (5.6)	28.5 (2.2)	24.5 (2.9)	3.0 (1.3)	137.0 (9.8)
2001	142.5 (8.6)	66.5 (8.6)	25.5 (1.5)	39.0 (6.1)	4.0 (1.5)	273.5 (17.1)
2002	55.5 (10.8)	97.0 (13.6)	16.0 (2.1)	32.0 (4.9)	2.5 (1.1)	200.5 (26.8)
2003	142.5 (9.1)	131.5 (12.9)	20.0 (3.0)	18.0 (2.4)	2.0 (0.8)	312.0 (20.4)
2004	154.5 (5.5)	198.0 (15.1)	48.0 (7.5)	17.0 (3.7)	2.0 (0.8)	417.5 (20.3)
2005	68.5 (11.4)	298.0 (22.7)	42.0 (7.7)	15.0 (3.5)	4.5 (1.4)	423.5 (21.6)
2006	115.0 (11.3)	217.5 (36.5)	40.0 (3.7)	10.0 (2.3)	2.5 (1.1)	382.5 (34.9)
2007	30.5 (4.8)	176.5 (31.1)	42.5 (9.6)	10.0 (2.7)	3.0 (1.0)	259.5 (40.4)
2008	44.5 (6.6)	203.5 (22.4)	61.0 (6.0)	8.5 (1.8)	2.0 (0.8)	317.5 (29.4)
2009	14.5 (2.8)	146.5 (28.5)	84.5 (15.6)	3.5 (2.1)	0.5 (0.5)	249.0 (45.3)
2010	76.7 (6.8)	99.8 (8.5)	58.9 (4.5)	2.9 (0.7)	0.2 (0.2)	238.2 (14.3)
2011	23.5 (5.8)	56.0 (8.2)	70.5 (5.9)	6.5 (1.5)	0.0 (0.0)	156.5 (13.7)
2012	97.0 (11.6)	81.5 (6.4)	73.5 (6.8)	14.0 (2.9)	2.5 (1.1)	266.0 (12.5)
2013	60.0 (8.8)	137.3 (12.3)	48.7 (9.3)	16.7 (2.4)	1.3 (0.8)	262.7 (16.4)
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)
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)
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)
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)
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)

Dataset = cfdpsbvr.d18 - .d92

Table 83. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing samples in Beaver Lake in 2018; confidence intervals are in parentheses.

Species	No. $\geq 8.0$ in	PSD	RSD <sub>15</sub>
Largemouth bass	513	13 ( $\pm 3$ )	1 ( $\pm 1$ )

Dataset = cfdpsbvr.d18

Table 84. Population assessment for largemouth bass collected during spring electrofishing at Beaver Lake from 2000-2018 (scoring based on statewide assessment).

Year		Mean length age-3 at capture	CPUE age-1	CPUE 12.0-14.9 in	CPUE $\geq 15.0$ in	CPUE $\geq 20.0$ in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2018	Value	11.3	126.5	30.0	3.5	0.0				
	Score	3	4	3	1	1			12	Fair
2017	Value	10.8*	279.0	35.5	5.0	0.5				
	Score	3	4	3	1	2			13	Good
2016	Value	10.8*	103.0	38.0	15.0	4.5				
	Score	3	4	3	3	4			17	Excellent
2015	Value	10.8*	46.3	22.8	12.5	2.8				
	Score	3	3	2	2	3			13	Good
2014	Value	10.8	47.3	21.0	14.5	2.0				
	Score	3	3	2	3	3			14	Good
2013	Value	10.7*	50.0	48.7	16.7	1.3				
	Score	2	3	4	3	2			14	Good
2012	Value	10.7*	94.5	73.5	14.0	2.5				
	Score	2	4	4	3	3			16	Good
2011	Value	10.7*	23.4	70.5	6.5	0.0				
	Score	2	3	4	2	1			12	Fair
2010	Value	10.7	76.7	58.9	2.9	0.2	0.293	25.4		
	Score	2	4	4	1	1			12	Fair
2009	Value	10.3*	3.0^	84.5	3.5	0.5				
	Score	2	1	4	1	2			10	Fair
2008	Value	10.3*	23.0^	61.0	8.5	2.0				
	Score	2	3	4	2	3			14	Good
2007	Value	10.3	2.0	42.5	10.0	3.0	0.622	46.3		
	Score	2	1	3	2	3			11	Fair
2006	Value	10.7*	108.3^	40.0	10.0	2.5				
	Score	2	4	3	2	3			14	Good
2005	Value	10.7*	38.7^	42.0	15.0	4.5				
	Score	2	3	3	3	4			15	Good
2004	Value	10.7*	97.6^	48.0	17.0	2.0				
	Score	2	4	4	3	3			16	Good
2003	Value	10.7	133.2	20.0	18.0	2.0	0.540	41.7		
	Score	2	4	2	3	3			14	Good
2002	Value	11.7*	35.4^	16.0	32.0	2.5				
	Score	4	3	2	4	3			16	Good
2001	Value	11.7	47.8	25.5	39.0	4.0				
	Score	4	3	3	4	4			18	Excellent
2000	Value	10.7*	31.5^	30.0	24.5	3.0				
	Score	2	3	3	3	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 85. Length distribution 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 2018; numbers in parentheses are standard errors.

Species	Inch class																			Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Largemouth bass	12	104	130	43	10	50	48	50	37	7	4	5		1				1	502	334.7 (37.5)	

Dataset = cfdwrivr.d18

Table 86. Mean back calculated lengths (in.) at each annulus for otoliths from largemouth bass collected in the fall from Beaver Lake in 2018.

Year	No.	Age									
		1	2	3	4	5	6	7	8	9	10
2017	19	5.7									
2016	20	6.5	9.4								
2015	8	5.5	9.6	11.3							
2014	4	5.3	8.8	10.7	11.7						
2013	4	5.0	8.5	10.7	11.8	12.7					
2012	2	5.9	8.9	10.6	11.8	12.7	13.5				
2011	1	5.9	8.5	10.0	11.5	13.0	13.7	14.2			
2010	1	4.5	8.1	9.6	11.7	12.5	13.4	13.8	14.1		
2008	1	6.2	9.2	11.4	13.2	14.4	15.4	16.8	17.4	18.4	19.4
Mean	60	5.9	9.2	10.9	11.8	12.9	13.9	14.9	15.8	18.4	19.4
Smallest		4.4	7.8	9.6	10.6	11.4	12.0	13.8	14.1		
Largest		8.2	10.6	12.5	13.2	14.4	15.4	16.8	17.4		
Std Error		0.1	0.1	0.2	0.2	0.3	0.6	0.9	1.6		
95% ConLo		5.7	9.0	10.5	11.4	12.3	12.7	13.1	12.5		
95% ConHi		6.1	9.4	11.2	12.3	13.5	15.1	16.8	19.0		

Intercept value = 0.00

Dataset = cfdagivr.d18

Table 87. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at Beaver Lake on 25 September 2018; 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		
Largemouth bass	Total	159	86 (1)	16	83 (1)	2	96 (1)	177	86 (1)

Dataset = cfdwrivr.d18

Table 88. 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 ≥5.0 in		Age-1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2000	Total	3.7	0.1	127.3	32.9	6.7	2.2	47.8	5.7
2001	Total	4.6	0.1	139.3	28.1	40.7	13.9	35.4	8.9
2002	Total	4.4	0.1	104.0	7.5	19.3	4.6	133.2	9.3
2003	Total	3.7	0.1	117.3	22.0	0.0		97.6	5.0
2004	Total	3.7	0.1	86.7	17.1	3.3	1.6	38.7	10.7
2005	Total	4.0	0.1	199.3	26.3	18.7	4.1	108.3	10.2
2006	Total	4.3	0.1	8.0	2.7	0.0		2.0	1.1
2007	Total	4.6	0.1	175.3	31.2	46.7	4.6	23.5	4.4
2008	Total	3.4	0.1	21.3	11.9	0.0		4.5	1.4
2009	Total	5.0	0.1	112.7	21.9	56.7	10.7	76.7	6.8
2010	Total	4.0	0.1	38.7	14.1	4.7	2.2	23.4	5.4
2011	Total	4.2	0.1	142.0	23.9	18.0	4.1	94.5	11.1
2012	Total	4.3	0.1	124.6	24.6	17.7	4.0	50.0	7.1
2013	Total	3.8	0.1	78.7	6.2	3.3	2.2	47.3	7.4
2014	Total	4.1	0.1	94.7	15.0	14.0	3.5	46.3	7.6
2015	Total	4.2	0.1	184.5	23.6	28.5	4.4	103.0	20.9
2016	Total	5.6	0.1	370.0	34.9	320.0	25.8	279.0	37.2
2017	Total	4.8	0.1	227.3	23.1	84.0	13.0	126.5	11.8
2018	Total	5.2	0.1	196.0	31.6	118.7	26.8		

Table 89. 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 2018; numbers in parentheses are standard errors.

Species	Inch class								Total	CPUE
	2	3	4	5	6	7	8	9		
Bluegill	1	21	104	63	77	111	16		393	314.4 (43.0)
Redear sunfish		1	5	3	3	4	3	2	21	16.8 (4.5)

Dataset = cfdpsbvr.d18

Table 90. PSD and RSD values calculated for sunfish collected during 1.25 hours of electrofishing at Beaver Lake during May 2018. Fish were collected in 7.5-minute runs.

Species	No. $\geq$ stock size	PSD	RSD <sup>a</sup>
Bluegill	392	52 ( $\pm$ 5)	4 ( $\pm$ 2)
Redear sunfish	20	45 ( $\pm$ 22)	10 ( $\pm$ 13)

<sup>a</sup>Bluegill = RSD<sub>8</sub>; Redear = RSD<sub>9</sub>

Dataset = cfdpsbvr.d18

Table 91. Electrofishing CPUE (fish/hr) for each length group of bluegill collected from Beaver Lake from 1992-2018; numbers in parentheses are standard errors.

Year	Length group				Total
	<3.0 in	3.0–5.9 in	6.0-7.9 in	$\geq$ 8.0 in	
1992	1.3 (0.9)	54.2 (10.2)	80.9 (15.1)	0.0	136.4 (24.0)
1993	2.5 (1.1)	47.0 (6.2)	79.5 (10.0)	0.0	129.0 (12.6)
1994	2.5 (1.1)	130.0 (21.0)	20.0 (4.0)	0.0	152.5 (24.2)
1995	2.0 (1.1)	174.0 (18.4)	16.5 (4.7)	0.0	192.5 (17.3)
1996	0.5 (0.5)	184.5 (27.3)	65.5 (11.5)	0.0	250.5 (34.5)
1997	2.5 (1.1)	58.0 (12.6)	86.5 (14.4)	0.5 (0.5)	147.5 (27.4)
1998	0.5 (0.5)	28.0 (4.3)	88.0 (15.0)	0.5 (0.5)	117.0 (19.0)
1999	14.0 (4.5)	13.0 (5.5)	10.5 (3.0)	0.0	37.5 (8.3)
2000	50.0 (12.7)	322.0 (23.1)	32.0 (13.6)	7.5 (3.8)	411.5 (41.2)
2001	19.0 (5.1)	211.5 (16.0)	122.0 (15.2)	0.0	352.5 (20.2)
2002	5.6 (1.7)	175.2 (22.9)	152.8 (27.7)	0.0	333.6 (44.7)
2003	33.6 (6.4)	141.6 (17.5)	128.8 (21.9)	0.0	304.0 (30.1)
2004	36.0 (16.0)	118.4 (32.4)	143.2 (29.3)	0.0	297.6 (56.4)
2005	21.6 (4.5)	109.6 (14.6)	97.6 (19.3)	4.0 (2.2)	232.8 (19.7)
2006	20.1 (4.9)	60.9 (8.6)	55.7 (13.5)	8.3 (2.9)	145.1 (24.7)
2007	12.0 (2.6)	34.4 (4.6)	53.6 (9.5)	2.4 (1.7)	102.4 (10.4)
2008	69.6 (11.1)	112.4 (13.3)	38.0 (6.3)	4.0 (1.4)	224.0 (24.6)
2009	17.2 (5.1)	60.4 (10.0)	40.4 (5.9)	1.6 (0.9)	119.6 (15.3)
2010	35.6 (8.2)	134.8 (10.6)	24.4 (5.9)	4.4 (1.5)	199.2 (17.5)
2011	68.4 (20.3)	299.2 (47.8)	51.6 (8.1)	5.2 (1.9)	424.4 (70.4)
2012	5.6 (2.1)	131.2 (26.1)	59.2 (15.1)	0.0	196.0 (32.1)
2013	1.6 (1.1)	192.8 (16.5)	77.6 (9.8)	1.6 (1.6)	273.6 (23.4)
2014	1.6 (1.6)	252.8 (33.4)	252.8 (56.6)	0.0	507.2 (37.4)
2015	0.0 (0.0)	160.8 (16.6)	212.0 (37.0)	0.0	372.8 (44.9)
2016	33.6 (12.0)	213.6 (30.6)	201.6 (45.1)	1.6 (1.1)	450.4 (81.4)
2017	4.0 (1.8)	136.8 (23.5)	247.2 (66.1)	14.4 (3.5)	402.4 (87.8)
2018	0.8 (0.8)	150.4 (18.5)	150.4 (28.9)	12.8 (3.0)	314.4 (43.0)

Dataset = cfdpsbvr.d18 - .d92

Table 92. Population assessment for bluegill collected during spring electrofishing at Beaver Lake from 2001-2018 (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
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				
2013	Value	4.7	2-2+	79.2	1.6	-	-	13	Good
	Score	3	4	3	3				
2012	Value	4.8	2-2+	59.2	0.0	-	-	12	Good
	Score	4	4	3	1				
2011	Value	4.7	2-2+	56.8	5.2	0.834	55.6	14	Excellent
	Score	3	4	3	4				
2010	Value	4.5	3-3+	28.8	4.4	0.594	44.8	10	Good
	Score	3	3	1	3				
2009	Value	4.8	3-3+	42.0	1.6	0.723	51.5	12	Good
	Score	4	3	2	3				
2008	Value	4.2	3-3+	42.0	4.0	0.497	39.2	10	Good
	Score	2	3	2	3				
2007	Value	3.7	3-3+	56.0	2.4	0.666	48.6	10	Good
	Score	1	3	3	3				
2006	Value	3.4	3-3+	64.1	8.3	*	*	11	Good
	Score	1	3	3	4				
2005	Value	4.0	3-3+	101.6	4.0	0.340	28.8	12	Good
	Score	2	3	4	3				
2004	Value	3.9	3-3+	143.2	0.0	*	*	10	Good
	Score	2	3	4	1				
2003	Value	3.9	3-3+	128.8	0.0	*	*	10	Good
	Score	2	3	4	1				
2002	Value	3.9	2-2+	152.8	0.0	*	*	11	Good
	Score	2	4	4	1				
2001	Value	4.5	2-2+	122.0	0.0	*	*	12	Good
	Score	3	4	4	1				

\* Age data not collected

Table 93. Electrofishing CPUE (fish/hr) for each length group of redear sunfish collected from Beaver Lake from 1992-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	≥10.0 in	
1992	0.4 (0.4)	10.2 (2.8)	90.2 (12.9)	1.8 (1.0)	0.4 (0.4)	102.7 (13.2)
1993	0.0	2.0 (1.5)	57.0 (10.7)	5.0 (2.0)	0.0	64.0 (12.2)
1994	0.0	6.5 (1.8)	8.0 (2.6)	2.5 (1.3)	0.0	17.0 (4.1)
1995	0.0	2.0 (1.1)	12.5 (3.6)	7.0 (2.7)	0.0	21.5 (5.2)
1996	0.0	6.0 (2.0)	5.5 (2.5)	8.0 (2.6)	0.0	19.5 (5.1)
1997	0.0	13.0 (1.8)	9.0 (2.1)	8.0 (1.7)	0.0	30.0 (1.5)
1998	0.0	3.5 (1.2)	9.0 (2.0)	9.5 (4.6)	0.0	22.0 (5.7)
1999	0.0	0.0	0.5 (0.5)	7.5 (1.8)	2.0 (1.1)	8.0 (2.0)
2000	1.0 (0.7)	5.5 (2.0)	3.5 (1.8)	6.0 (2.0)	1.5 (1.1)	16.0 (3.7)
2001	0.5 (0.5)	34.5 (6.9)	30.0 (6.8)	8.5 (2.9)	0.5 (0.5)	73.5 (10.5)
2002	0.0	49.6 (11.1)	77.6 (18.1)	7.2 (3.9)	0.8 (0.8)	134.4 (27.8)
2003	0.8 (0.8)	21.6 (6.1)	87.2 (15.0)	7.2 (3.3)	0.0	116.8 (20.0)
2004	0.0	38.4 (9.0)	44.0 (8.7)	26.4 (7.4)	0.0	108.8 (17.1)
2005	1.6 (1.1)	46.4 (7.0)	80.8 (12.4)	62.4 (10.8)	0.0	191.2 (22.6)
2006	0.4 (0.4)	46.1 (6.2)	82.2 (6.2)	35.7 (5.7)	0.0	164.4 (13.8)
2007	0.0	25.2 (6.1)	74.0 (13.5)	32.4 (6.6)	0.0	125.3 (23.2)
2008	10.0 (2.7)	15.2 (2.5)	58.4 (12.2)	90.4 (16.5)	0.0	174.0 (26.8)
2009	0.8 (0.6)	23.6 (4.8)	26.8 (4.8)	29.6 (5.8)	0.0	80.8 (11.5)
2010	0.4 (0.4)	21.6 (3.9)	27.6 (4.4)	33.6 (7.0)	1.2 (0.9)	83.2 (10.5)
2011	0.0	13.6 (3.4)	11.2 (2.0)	23.2 (4.9)	0.0	48.0 (6.3)
2012	0.0	5.6 (1.7)	28.8 (4.3)	68.0 (12.9)	9.6 (2.6)	102.4 (14.1)
2013	0.0	6.4 (2.6)	3.2 (1.3)	12.0 (4.7)	2.4 (1.7)	21.6 (5.2)
2014	0.0	3.2 (2.0)	6.4 (1.6)	12.8 (5.4)	4.8 (3.2)	22.4 (3.0)
2015	0.0	1.6 (1.1)	3.2 (1.3)	1.6 (1.1)	0.0	6.4 (1.6)
2016	0.8 (0.8)	4.8 (1.8)	3.2 (1.8)	2.4 (1.7)	0.0	11.2 (2.1)
2017	0.0	4.0 (2.2)	4.8 (2.1)	7.2 (2.8)	4.0 (2.2)	16.0 (2.9)
2018	0.0	7.2 (3.3)	5.6 (1.7)	4.0 (2.2)	0.0	16.8 (4.5)

Dataset = cfdpsbvr.d18 - .d92

Table 94. Population assessment for redear sunfish collected during spring electrofishing at Beaver Lake from 2001-2018 (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
2018	Value	10.1*	2-2+*	4.0	0.0				
	Score	4	4	2	1			11	Good
2017	Value	10.1	2-2+	7.2	4.0				
	Score	4	4	2	4			14	Excellent
2016	Value	7.0*	3-3+*	2.4	0.0				
	Score	2	4	1	1			8	Fair
2015	Value	7.0	3-3+	1.6	0.0				
	Score	2	4	1	1			8	Fair
2014	Value	8.8*	2-2+	12.8	4.8				
	Score	4	4	3	4			15	Excellent
2013	Value	8.8	2-2+	12.0	2.4				
	Score	4	4	3	4			15	Excellent
2012	Value	7.5	3-3+	68.0	9.6	0.342	29.0		
	Score	2	4	4	4			14	Excellent
2011	Value	7.6	3-3+	23.2	1.6	0.398	32.8		
	Score	3	4	4	3			14	Excellent
2010	Value	7.5	4-4+	33.6	1.2	0.435	35.3		
	Score	2	3	4	3			12	Good
2009	Value	6.7	4-4+	29.6	0.0	0.413	33.9		
	Score	2	3	4	1			10	Good
2008	Value	6.3	4-4+	90.4	0.0	0.243	21.6		
	Score	1	3	4	1			9	Fair
2007	Value	6.4	4-4+	32.4	0.0	0.898	59.3		
	Score	1	3	4	1			9	Fair
2006	Value	5.7	4-4+	35.7	0.0	0.410	33.6		
	Score	1	3	4	1			9	Fair
2005	Value	6.4	4-4+	62.4	0.0	0.373	31.1		
	Score	1	3	4	1			9	Fair
2004	Value	6.6*	4-4+*	26.4	0.0				
	Score	2	3	4	1			10	Good
2003	Value	6.6	4-4+	7.2	0.0				
	Score	2	3	2	1			8	Fair
2002	Value	6.4*	3-3+*	7.2	0.8				
	Score	1	4	2	2			9	Fair
2001	Value	6.4	3-3+	8.5	0.5				
	Score	1	4	2	2			9	Fair

\* Age data not collected

Table 95. Number of fish and the relative weight (Wr) for each length group of bluegill and redear sunfish collected at Beaver Lake on 25 September 2018; standard errors are in parentheses.

Species	Length group						No.	Wr		
	3.0–5.9 in		6.0–7.9 in		≥8.0 in				Total	
Bluegill	49	90 (3)	62	84 (1)	1	78	112	86 (1)		
Redear sunfish	1.0–3.9 in		4.0–6.9 in		7.0–9.0 in		≥9.0 in		Total	
	1	114	12	98 (3)	8	101 (3)	4	93 (3)	25	99 (2)

Dataset = cfdwrivr.d18

Table 96. Length distribution and CPUE (fish/hr) of largemouth bass collected in 2.0 hours of 15-minute electrofishing runs for black bass in Benjy Kinman Lake during May 2018; numbers in parentheses are standard errors.

Species	Inch class																Total	CPUE	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			20
Largemouth bass	4	32	23	4	48	63	19	17	16	7	4	9	4	4			2	256	128.0 (14.1)

Dataset = cfdpsbkl.d18

Table 97. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Benjy Kinman Lake during 2015-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
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.d18-.d15

Table 98. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing sample in Benjy Kinman Lake in 2018; confidence intervals are in parentheses.

Species	No. ≥8.0 in	PSD	RSD <sub>15</sub>
Largemouth bass	193	24 (± 6)	10 (± 4)

Dataset = cfdpsbkl.d18

Table 99. Population assessment for largemouth bass collected during spring electrofishing at Benjy Kinman Lake for 2018 (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
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 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 2018; numbers in parentheses are standard errors.

Species	Inch class																Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Largemouth bass	14	37	54	5	8	39	34	31	11	2		2		3	1	1	242	161.3 (12.3)

Dataset = cfdwrkl.d18

Table 101. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at Benjy Kinman Lake on 10 September 2018. 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		
Largemouth bass	Total	115	83 (1)	4	90 (5)	5	91 (3)	124	83 (1)

Dataset = cfdwrkl.d18



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 $\geq$ 5.0 in		Age-1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2014	Total	4.2	0.1	16.0	5.4	2.5	1.3	11.1	2.2
2015	Total	4.0	0.1	78.0	16.2	8.7	2.4	51.1	9.1
2016	Total	4.7	0.1	43.3	6.0	15.3	3.2	24.0	5.9
2017	Total	4.7	0.1	92.7	13.8	38.7	7.4	29.5	6.4
2018	Total	4.9	0.1	73.3	3.8	39.3	4.7		

Table 103. 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 Benjy Kinman Lake, May 2018; numbers in parentheses are standard errors.

Species	Inch class								Total	CPUE
	1	2	3	4	5	6	7	8		
Bluegill		44	83	73	66	104	17		387	309.6 (22.1)
Redear sunfish				5	6	15	2		28	22.4 (3.3)

Dataset = cfdpsbkl.d18

Table 104. PSD and RSD values calculated for sunfish collected during 1.25 hours of electrofishing at Benjy Kinman Lake during May 2018. Fish were collected in 7.5-minute runs.

Species	No. $\geq$ stock size	PSD	RSD <sup>a</sup>
Bluegill	343	35 ( $\pm$ 5)	0 ( $\pm$ 0)
Redear sunfish	28	7 ( $\pm$ 7)	0 ( $\pm$ 0)

<sup>a</sup>Bluegill = RSD<sub>8</sub>; Redear = RSD<sub>9</sub>

Dataset = cfdpsbkl.d18

Table 105. Electrofishing CPUE (fish/hr) for each length group of bluegill collected from Benjy Kinman Lake; numbers in parentheses are standard errors.

Year	Length group				Total
	<3.0 in	3.0–5.9 in	6.0-7.9 in	$\geq$ 8.0 in	
2016	56.8 (13.4)	225.6 (30.9)	81.6 (15.6)	1.6 (1.1)	365.5 (30.9)
2018	35.2 (8.4)	177.6 (17.2)	96.8 (11.9)	0.0 (0.0)	309.6 (22.1)

Dataset = cfdpsbkl.d18-.d16

Table 106. Electrofishing CPUE (fish/hr) for each length group of redear sunfish collected from Benjy Kinman Lake; numbers in parentheses are standard errors.

Year	Length group					Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	$\geq$ 8.0 in	$\geq$ 10.0 in	
2016	0.0	27.2 (6.4)	22.4 (6.2)	12.0 (3.4)	0.0	61.6 (10.4)
2018	0.0	8.8 (2.8)	13.6 (3.8)	0.0	0.0	22.4 (3.3)

Dataset = cfdpsbkl.d16-.d18

Table 107. Length composition, relative abundance, and CPUE (fish/set) of channel catfish at Benjy Kinman Lake. Channel catfish were collected using baited, tandem hoop nets (72 hours soak time) that were set on 18 October 2018. Nets were pulled three days after setting them, and 3 sets of tandem nets were used for the sampling event.

Species	Inch class												Total	Average per set
	13	14	15	16	17	18	19	20	21	22	23	24		
Channel catfish	1	3	6	7	6	5	4	3	2	2	1	3	43	14.3 (8.4)

Dataset = cfdhnbkl.d18

Table 108. PSD and RSD<sub>24</sub> values obtained for channel catfish from tandem hoop net samples in Benjy Kinman Lake in 2018; confidence intervals are in parentheses.

Species	No. $\geq$ stock size	PSD	RSD <sub>24</sub>
Channel catfish	43	77 ( $\pm$ 13)	7 ( $\pm$ 8)

Dataset = cfdhnbkl.d18

Table 109. CPUE (fish/set) for each length group of channel catfish collected by hoop net from Benjy Kinman Lake from 2015-2018; numbers in parentheses are standard errors.

Year	Length group			Total
	$\geq$ 12.0 in	$\geq$ 15.0 in	$\geq$ 20.0 in	
2015	3.3 (2.0)	0.0	0.0	7.3 (3.7)
2018	14.3 (8.4)	13.0 (7.0)	3.7 (2.3)	14.3 (8.4)

Dataset = cfdhnbkl.d15-.d18

Table 110. Number of fish and the relative weight (Wr) for each length group of channel catfish collected at Benjy Kinman Lake in October 2018; standard errors are in parentheses.

Species	Length group						Total	
	11.0–15.9 in		16.0–23.9 in		$\geq$ 24.0 in		No.	Wr
	No.	Wr	No.	Wr	No.	Wr		
Channel catfish	10	89 (3)	30	91 (2)	3	104 (3)	43	92 (2)

Dataset = cfdhnbkl.d18

Table 111. Species composition, relative abundance, and CPUE (fish/hr) of largemouth bass collected in 2.0 hours of 15-minute nocturnal electrofishing runs in Boltz Lake, May 2018; numbers in parentheses are standard errors.

Species	Inch class																		Total	CPUE		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			22	
Largemouth bass	2	4	11	11	6	44	79	66	72	60	33	16	7	11	10	4	2		1	439	219.5 (12.7)	
Saugeye						1	15	22	4		2	4	6	2	5						61	30.5 (6.6)

Dataset = cfdpsbol.d18

Table 112. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Boltz Lake from 1991-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1991		43.6 (4.9)	10.8 (2.0)	6.5 (1.2)	0.0 (0.0)	60.8 (6.6)
1993	25.2 (6.4)	70.0 (4.8)	12.0 (2.3)	7.3 (2.2)	0.7 (0.7)	114.8 (8.9)
1994	48.4 (9.5)	45.0 (5.7)	32.4 (6.5)	3.6 (1.4)	1.0 (0.7)	129.6 (9.6)
1995	155.2 (10.8)	50.0 (3.3)	31.5 (3.9)	6.0 (1.7)	1.5 (1.1)	242.4 (10.4)
1997	34.8 (8.6)	183.6 (29.4)	36.8 (4.6)	14.4 (2.2)	1.8 (1.0)	268.8 (38.6)
1998	43.2 (6.0)	172.0 (18.8)	22.4 (3.3)	9.6 (2.2)	2.5 (0.7)	247.2 (24.8)
1999	87.2 (16.6)	369.6 (42.4)	90.4 (16.0)	12.8 (6.8)	4.8 (2.3)	560.0 (31.2)
2000	92.0 (30.4)	148.0 (7.7)	226.4 (18.4)	8.8 (2.9)	0.8 (0.8)	475.2 (16.8)
2001	24.0 (5.2)	212.8 (15.8)	133.6 (13.0)	9.6 (3.5)	0.0 (0.0)	380.0 (26.3)
2002	5.6 (2.7)	101.6 (20.1)	67.2 (11.4)	45.6 (9.2)	0.8 (0.8)	220.0 (27.3)
2003	10.7 (2.9)	39.3 (10.4)	61.3 (12.9)	40.0 (5.0)	0.0 (0.0)	151.3 (25.1)
2004	64.0 (12.9)	38.5 (4.9)	19.5 (4.4)	25.5 (5.9)	2.0 (0.8)	147.5 (22.9)
2005	69.0 (10.1)	39.5 (4.0)	21.0 (2.4)	20.0 (6.2)	0.0 (0.0)	149.5 (8.4)
2006	11.5 (1.4)	48.0 (4.7)	17.0 (3.7)	18.0 (2.9)	1.0 (0.7)	94.5 (9.9)
2007	28.5 (3.8)	37.0 (2.4)	17.0 (3.9)	20.0 (3.9)	1.0 (0.7)	102.5 (11.8)
2008	19.0 (2.2)	43.5 (7.3)	18.5 (2.1)	17.5 (3.0)	4.0 (1.5)	98.5 (7.1)
2009	10.0 (2.5)	39.5 (3.2)	22.0 (3.9)	29.5 (5.1)	4.0 (1.5)	101.0 (8.1)
2010	50.5 (5.6)	51.0 (4.9)	32.5 (4.4)	24.5 (2.4)	4.0 (1.3)	148.5 (10.7)
2011	13.0 (3.8)	55.5 (4.6)	33.0 (5.7)	19.0 (4.2)	3.5 (1.2)	120.5 (7.4)
2012	4.5 (1.2)	35.0 (4.0)	15.5 (2.8)	11.0 (2.5)	2.5 (1.5)	66.0 (4.9)
2013	66.5 (14.6)	67.5 (6.7)	17.5 (2.0)	13.5 (2.6)	2.5 (1.1)	165.0 (13.6)
2014	68.5 (10.5)	73.0 (6.5)	18.5 (3.5)	16.0 (3.6)	2.5 (0.7)	176.0 (17.2)
2015	47.5 (6.9)	79.5 (8.4)	22.0 (4.3)	21.5 (3.5)	2.0 (1.1)	170.5 (14.1)
2016	No Sample					
2017	29.0 (5.5)	131.5 (9.1)	40.0 (4.3)	18.0 (1.5)	0.5 (0.5)	218.5 (13.0)
2018	14.0 (3.2)	97.5 (7.6)	82.5 (9.7)	25.5 (2.9)	1.5 (1.1)	219.5 (12.7)

Dataset = cfdpsbol.d18 - .d91

Table 113. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing samples in Boltz Lake in 2018; confidence intervals are in parentheses.

Species	No. ≥8.0 in	PSD	RSD <sub>15</sub>
Largemouth bass	411	53 (± 5)	12 (± 3)

Dataset = cfdpsbol.d18

Table 114. Population assessment for largemouth bass collected during spring electrofishing at Boltz Lake from 2000-2018 (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
2018	Value	11.4*	14.0	85.2	25.5	1.5				
	Score	3	2	4	3	2			14	Good
2017	Value	11.4*	26.0	40.0	18.0	0.5				
	Score	3	3	3	3	2			14	Good
2015	Value	11.4	29.5	22.0	21.5	2.0				
	Score	3	2	2	3	3			13	Good
2014	Value	10.7*	57.0	18.5	16.0	2.5				
	Score	2	3	1	2	3			11	Fair
2013	Value	10.7*	21.5	17.5	13.5	2.5				
	Score	2	2	1	2	3			10	Fair
2012	Value	10.7*	3.5	15.5	11.0	2.5				
	Score	2	1	1	2	3			9	Fair
2011	Value	10.7	8.6	33.0	19.0	3.5	0.378	31.5		
	Score	2	1	2	3	3			11	Fair
2010	Value	10.3	16.7	32.5	24.5	4.0	0.290	25.2		
	Score	2	2	2	3	4			13	Good
2009	Value	10.3*	3.5^	22.0	29.5	4.0				
	Score	2	1	2	3	4			12	Good
2008	Value	10.3*	4.0^	18.5	17.5	4.0				
	Score	2	1	1	3	4			11	Fair
2007	Value	10.3*	20.5^	17.0	20.0	1.0				
	Score	2	2	1	3	2			10	Fair
2006	Value	10.3	7.0	17.0	18.0	1.0	0.358	30.1		
	Score	2	1	1	3	2			9	Fair
2005	Value	10.6*	15.5^	21.0	20.0	0.0				
	Score	2	1	2	3	0			8	Fair
2004	Value	10.6*	51.0^	19.5	25.5	2.0				
	Score	2	3	1	3	3			12	Good
2003	Value	10.6	0.0	61.3	40.0	0.0	0.377	31.4		
	Score	2	0	4	4	0			10	Fair
2002	Value	10.7	0.8	67.2	45.6	0.8	0.334	28.4		
	Score	2	1	4	4	1			12	Good
2001	Value	9.0	0.8	133.6	9.6	0.0	0.349	29.5		
	Score	1	1	4	2	0			8	Fair
2000	Value	10.4	55.0	226.4	8.8	0.8	0.550	42.3		
	Score	2	3	4	2	1			12	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 115. Length distribution and CPUE (fish/hr) of largemouth bass collected in 1.5 hours of 15-minute electrofishing runs for black bass in Boltz Lake in September 2018; 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	19	20	21		
Largemouth bass	7	112	112	31	22	3		17	23	32	35	22	12	9	2	1	3	1		1	445	296.7 (31.8)
Saugeye												5	2		4	1	1			1	14	9.3 (2.2)

Dataset = cfdwrbol.d18

Table 116. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at Boltz Lake on 12 September 2018. 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		
Largemouth bass	Total	65	92 (1)	59	93 (1)	17	93 (2)	141	92 (1)

Dataset = cfdwrbol.d18

Table 117. 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. of fish	Age-0		Age-0		Age-0 ≥5.0 in		Age-1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
1997	145	4.2	0.04	96.7	11.3	6.7	1.7	25.9	4.4
1998	147	5.0	0.05	98.0	12.0	48.0	5.8	77.7	31.0
1999	170	5.2	0.07	113.3	16.2	68.7	13.0	55.0	24.7
2000	19	3.0	0.27	12.7	6.7	1.3	1.	0.8	0.8
2001	46	3.2	0.09	30.7	6.9	0.7	0.7	0.8	0.8
2002	50	3.7	0.10	28.6	7.4	1.7	1.2	0.0	0.0
2003*	27	3.7	0.15	18.0	4.5	1.3	0.8	7.0	2.2
2004*	80	4.1	0.07	53.3	7.1	6.7	2.7	15.0	3.4
2005*	34	3.9	0.11	22.7	5.0	1.3	0.8	4.0	1.1
2006	90	4.6	0.06	60.0	7.5	18.7	3.7	20.5	3.6
2007	17	4.2	0.21	11.3	2.6	2.0	0.9	4.0	3.6
2008	108	3.6	0.07	72.0	11.9	5.3	1.7	3.5	1.6
2009	51	4.6	0.13	34.0	8.9	13.3	2.0	16.7	3.6
2010	54	4.9	0.11	36.0	5.8	18.0	5.2	8.6	2.7
2011	91	4.7	0.08	60.7	6.7	23.3	4.2	3.5	1.2
2012	127	4.4	0.07	84.7	12.2	18.7	5.6	21.5	4.3
2013*	102	4.4	0.09	68.0	16.2	20.0	6.7	4.0	0.8
2014	58	4.0	0.10	38.7	10.9	4.0	3.3	29.5	5.2
2015	71	4.1	0.07	47.3	3.6	6.0	1.4	---	
2016	104	4.1	0.1	69.3	7.8	15.3	2.8	20.5	5.3
2017	246	4.3	0.1	164.0	18.9	40.7	8.9	14.0	3.2
2018	287	4.3	0.1	191.3	24.7	37.3	4.5	---	

\*Only includes wild largemouth bass CPUE for age-1 year class; stocked largemouth bass were marked by fin clip and removed from dataset.

Table 118. Mean back calculated lengths (in.) at each annulus for otoliths from bluegill collected from Boltz Lake in 2018.

Year	No.	Age					
		1	2	3	4	5	6
2017	21	2.4					
2016	14	2.3	4.5				
2015	7	2.5	4.7	6.4			
2014	7	2.4	5.0	6.3	7.2		
2013	3	2.7	4.0	5.8	6.3	6.8	
2012	1	2.1	4.8	6.0	6.7	7.1	7.4
Mean	53	2.4	4.6	6.2	6.9	6.9	7.4
Smallest		1.5	3.4	4.9	5.6	6.1	7.4
Largest		3.5	6.1	6.8	7.6	7.3	7.4
Std error		0.1	0.1	0.1	0.2	0.3	
95% ConLo		2.3	4.4	6.0	6.6	6.4	
95% ConHi		2.5	4.9	6.4	7.3	7.4	

Intercept value = 0.00

Dataset = cfdagbol.d18

Table 119. Number of fish and the relative weight (Wr) for each length group of bluegill collected at Boltz Lake on 12 September 2018. Standard errors are in parentheses.

Species	Length group							
	3.0–5.9 in		6.0–7.9 in		≥8.0 in		Total	
	No.	Wr	No.	Wr	No.	Wr	No.	Wr
Bluegill	52	101 (2)	43	89 (1)	3	86 (3.9)	98	95 (1)

Dataset = cfdwrbol.d18



Table 120. Length distribution and CPUE (fish/hr) of white crappie collected in 1.25 hours of 15-minute electrofishing runs for crappie in Boltz Lake in October 2018; numbers in parentheses are standard errors.

Species	Inch class									Total	CPUE
	4	5	6	7	8	9	10	11	12		
White crappie	13	16			1	13	28	7	1	79	63.2 (14.9)

Dataset = cfdwrbol.d18

Table 121. Mean back calculated lengths (in) at each annulus for otoliths from white crappie sampled at Boltz Lake in the fall of 2018.

Year class	No.	Age								
		1	2	3	4	5	6	7	8	9
2017	3	5.3								
2016	7	4.9	8.3							
2015	2	5.4	8.6	10.4						
2014	7	4.4	8.0	9.4	10.4					
2010	1	4.8	6.8	7.9	8.5	9.0	9.4	9.8	10.2	
2009	1	3.5	6.0	7.0	7.7	8.4	8.8	9.1	9.5	9.8
Mean	21	4.8	8.0	9.2	9.9	8.7	9.1	9.5	9.8	9.8
Smallest		3.5	6.0	7.0	7.7	8.4	8.8	9.1	9.5	9.8
Largest		5.8	8.8	10.7	12.2	9.0	9.4	9.8	10.2	9.8
Std Error		0.1	0.2	0.3	0.4	0.3	0.3	0.3	0.3	
95% ConLo		4.5	7.7	8.5	9.1	8.2	8.5	8.8	9.2	
95% ConHi		5.1	8.4	9.9	10.8	9.2	9.7	10.2	10.5	

Intercept Value = 0.00  
Dataset = cfdagbol.d18

Table 122. Number of fish and the relative weight (Wr) for each length group of white crappie at Boltz Lake in October 2018.

Species	Area	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	Total	16	80 (4)	14	93 (1)	36	92 (1)	66	89 (1)

Dataset = cfdwrbol.d18

Table 123. Length composition, relative abundance, and CPUE (fish/set) of channel catfish at Boltz Lake. Channel catfish were collected using baited, tandem hoop nets (72 hours soak time) that were set on 5 October 2018. Nets were pulled three days after setting them, and 3 sets of tandem nets were used for the sampling event.

Species	Inch class					Total	Average per set
	15	16	17	18	19		
Channel catfish	1	1	1	0	1	4	1.3 (0.7)

Dataset = cfdhnbol.d18

Table 124. PSD and RSD<sub>24</sub> values obtained for channel catfish from tandem hoop net samples in Boltz Lake in 2018; confidence intervals are in parentheses.

Species	No. $\geq$ stock size	PSD	RSD <sub>24</sub>
Channel catfish	4	75 ( $\pm$ 49)	0 ( $\pm$ 0)

Dataset = cfdhnbol.d18

Table 125. Number of fish and the relative weight (Wr) for each length group of channel catfish collected at Boltz Lake in October 2018; standard errors are in parentheses.

Species	Area	Length group						Total	
		11.0–15.9 in		16.0–23.9 in		$\geq$ 24.0 in		No.	Wr
		No.	Wr	No.	Wr	No.	Wr		
Channel catfish	Total	1	101	3	92 (2)			4	94 (3)

Dataset = cfdhnbol.d18

Table 126. CPUE (fish/set) for each length group of channel catfish collected by hoop net from Boltz Lake from 2009-2018; numbers in parentheses are standard errors.

Year	Length group			Total
	≥12.0 in	≥15.0 in	≥20.0 in	
2006	43.8 (12.5)	6.0 (2.1)	1.8 (0.8)	274.2 (95.6)
2007	31.2 (3.3)	6.4 (1.0)	0.8 (0.4)	76.8 (12.7)
2008	9.6 (3.1)	1.6 (0.8)	0.2 (0.2)	27.4 (7.2)
2009	29.8 (14.0)	4.0 (1.6)	0.2 (0.2)	57.8 (27.7)
2010	15.6 (3.8)	3.6 (1.3)	0.4 (0.4)	32.6 (9.0)
2011			No Sample	
2012	1.7 (4.7)	1.0 (1.0)	0.3 (0.3)	2.3 (1.2)
2013			No Sample	
2014	1.3 (1.3)	0.3 (0.3)	0.0	2.3 (2.3)
2015			No Sample	
2016	5.7 (3.0)	0.7 (0.7)	0.3 (0.3)	5.7 (3.0)
2017			No Sample	
2018	1.3 (0.7)	1.3 (0.7)	0.0	1.3 (0.7)

Dataset = cfdhnbol.d18 - .d06

Table 127. 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, May 2018; numbers in parentheses are standard errors.

Location/Species	Inch class																		Total	CPUE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			21	22
Largemouth bass	1	7	14	9	9	30	28	21	40	36	46	53	30	33	37	16	18	12	7	3	450	225.0 (11.7)
Saugeye																				1	1	0.5 (0.5)

Dataset = cfdpsbpl.d18

Table 128. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Bullock Lake from 1991-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1991		36.6	22.8	16.4	1.7 (0.7)	75.2
1994	10.0 (2.3)	17.5 (2.8)	37.6 (3.6)	40.0 (9.9)	2.5 (1.1)	104.0 (12.4)
1995	7.0 (1.6)	36.4 (4.7)	33.2 (4.4)	40.8 (5.6)		117.6 (9.9)
1996	10.5 (2.5)	26.5 (4.6)	26.0 (6.0)	30.5 (6.1)		93.6 (11.6)
1997	18.0 (3.5)	71.6 (8.7)	34.4 (3.3)	34.4 (6.1)	2.0 (0.9)	158.4 (17.3)
1998	18.0 (4.4)	43.6 (4.8)	39.6 (9.2)	33.2 (7.2)	3.5 (1.6)	139.2 (19.2)
1999	14.0 (3.6)	40.4 (4.0)	35.2 (4.0)	38.4 (12.0)	0.5 (0.5)	128.0 (14.0)
2000	14.5 (4.8)	35.5 (5.0)	21.0 (3.1)	42.4 (9.8)	0.5 (0.5)	113.5 (6.5)
2001	9.0 (3.2)	33.5 (4.3)	38.5 (7.2)	66.0 (15.2)	2.5 (1.1)	147.2 (16.4)
2002	6.5 (1.7)	29.5 (3.0)	41.5 (7.2)	54.5 (10.4)	1.5 (0.7)	132.0 (16.5)
2003	9.0 (2.5)	19.5 (2.3)	32.5 (4.1)	56.5 (8.8)	0.5 (0.5)	117.5 (9.8)
2004	6.5 (1.3)	31.5 (3.7)	45.0 (8.5)	57.5 (11.4)	2.5 (1.5)	140.5 (13.4)
2005	9.5 (1.3)	17.0 (2.6)	38.0 (5.8)	63.0 (13.7)	3.5 (1.4)	127.5 (15.5)
2006	13.5 (4.3)	35.5 (6.0)	25.5 (3.9)	62.5 (8.4)	1.0 (0.7)	137.0 (8.7)
2007	17.5 (3.5)	44.5 (6.7)	32.0 (2.8)	44.0 (8.1)	0.5 (0.5)	138.0 (6.1)
2008	9.5 (2.9)	47.5 (5.8)	75.0 (5.7)	62.5 (9.3)	1.5 (1.1)	194.5 (11.7)
2009	5.5 (2.0)	45.5 (7.4)	42.5 (5.0)	54.0 (5.4)	7.5 (1.2)	147.5 (13.8)
2010	33.0 (7.1)	26.8 (3.7)	28.3 (3.4)	44.3 (6.2)	1.8 (0.6)	132.3 (13.9)
2011	22.0 (4.3)	39.0 (5.4)	31.0 (3.3)	43.0 (6.4)	0.5 (0.5)	135.0 (11.2)
2012	25.5 (2.4)	80.5 (7.9)	43.0 (4.1)	63.5 (10.0)	3.0 (1.3)	212.5 (9.4)
2013			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)
2015			No sample			
2016			No sample			
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)
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)

Dataset = cfdpsbpl.d18 - .d91

Table 129. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing samples in Bullock Pen Lake in 2018; confidence intervals are in parentheses.

Species	No. ≥8.0 in	PSD	RSD <sub>15</sub>
Largemouth bass	410	71 (± 4)	38 (± 5)

Dataset = cfdpsbpl.d18

Table 130. Population assessment for largemouth bass collected during spring electrofishing at Bullock Pen Lake from 2000-2018 (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
2018	Value	11.5	15.5	67.5	78.0	11.0				
	Score	3	2	4	4	4			17	Excellent
2017	Value	10.5*	21.0	66.0	75.5	12.5				
	Score	2	2	4	4	4			16	Good
2014	Value	10.5*	2.5	57.0	58.0	4.5				
	Score	2	1	4	4	4			15	Good
2012	Value	10.5*	9.5	43.0	63.5	3.0				
	Score	2	2	3	4	3			14	Good
2011	Value	10.5	5.1	31.0	43.0	0.5	0.422	34.4		
	Score	2	1	3	4	2			12	Fair
2010	Value	10.2*	6.4^	28.3	44.3	1.8				
	Score	2	1	3	4	3			13	Good
2009	Value	10.2*	0.8^	42.5	54.0	7.5				
	Score	2	1	3	4	4			14	Good
2008	Value	10.2*	2.1^	75.0	62.5	1.5				
	Score	2	1	4	4	2			13	Good
2007	Value	10.2*	3.4^	32.0	44.0	0.5				
	Score	2	1	3	4	2			12	Fair
2006	Value	10.2	2.5	25.5	62.5	1.0	0.238	21.2		
	Score	2	1	3	4	2			12	Fair
2005	Value	10.7*	1.3^	38.0	63.0	3.5				
	Score	2	1	3	4	3			13	Good
2004	Value	10.7*	0.0^	45.0	57.5	2.5				
	Score	2	1	4	4	3			14	Good
2003	Value	10.7	1.8	32.5	56.5	0.5	0.323	27.6		
	Score	2	1	3	4	2			12	Fair
2002	Value	10.9	0.5	41.5	54.5	1.5	0.375	31.2		
	Score	3	1	3	4	2			13	Good
2001	Value	10.0	0.0	38.5	66.0	2.5	0.174	16.0		
	Score	1	1	3	4	3			12	Fair
2000	Value	9.3	6.8	21.0	42.4	0.5	0.186	17.0		
	Score	1	1	2	4	2			10	Fair

\* 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 131. Length distribution 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 2018; 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	19	20	21		
Largemouth bass	2	11	35	3	5	18	7	6	8	16	13	13	6	3	10	6	3	1	6	2	174	116.0 (17.3)

Dataset = cfdwrblp.d18

Table 132. Mean back calculated lengths (in.) at each annulus for otoliths from largemouth bass collected in the fall from Bullock Pen Lake in 2018.

Year	No.	Age									
		1	2	3	4	5	6	7	8	9	10
2017	21	4.4									
2016	22	5.7	9.1								
2015	12	5.0	8.9	11.3							
2014	9	5.0	9.2	11.8	13.6						
2013	5	4.7	8.4	11.1	12.8	14.1					
2012	3	5.1	9.1	11.7	13.7	15.1	16.1				
2011	1	5.0	9.0	12.0	13.9	14.8	15.7	16.5			
2009	2	6.4	10.1	12.6	15.5	16.8	17.8	18.7	19.6	20.2	
2008	1	5.5	8.8	10.6	12.3	13.2	14.1	15.0	15.5	16.4	17.2
Mean	76	5.1	9.0	11.5	13.5	14.8	16.2	17.2	18.2	18.9	17.2
Smallest		3.0	7.4	9.3	11.1	12.0	13.8	15.0	15.5	16.4	17.2
Largest		8.1	11.1	13.9	16.2	17.7	18.7	19.2	20.0	20.7	17.2
Std Error		0.1	0.1	0.2	0.4	0.6	0.7	0.9	1.4	1.3	
95% ConLo		4.8	8.8	11.1	12.9	13.7	14.8	15.4	15.5	16.4	
95% ConHi		5.3	9.3	12.0	14.2	15.9	17.7	19.1	20.9	21.5	

Intercept value = 0.00

Dataset = cfdagbpl.d18

Table 133. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at Bullock Pen Lake on 4 September 2018; 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		
Largemouth bass	Total	37	86 (1)	31	88 (2)	31	96 (2)	99	90 (1)

Dataset = cfdwrblp.d18

Table 134. 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.

Year class	Area	Age 0		Age 0		Age 0 $\geq$ 5.0 in		Age 1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
1997	Total	3.6	(0.1)	34.0	(11.9)	0.7	(0.7)	3.0	(1.7)
1998	Total	3.5	(0.1)	28.0	(8.4)	1.3	(1.3)	4.0	(0.9)
1999	Total	3.7	(0.1)	30.0	(6.1)	2.0	(1.4)	6.8	(2.6)
2000	Total	3.8	(0.3)	6.3	(1.5)	0.0		0.0	
2001	Total	3.6	(0.2)	12.0	(2.7)	1.3	(0.8)	0.5	(0.5)
2002	Total	3.1	(0.1)	17.3	(4.6)	0.0		1.8	(0.7)
2003	Total	3.3	(0.1)	22.0	(8.1)	0.0		0.0	
2004	Total	4.1	(0.2)	16.0	(3.7)	4.0	(1.5)	*	
2005	Total	3.5	(0.1)	28.0	(8.1)	2.0	(0.9)	2.5	(1.3)
2006	Total	4.2	(0.2)	4.0	(1.5)	0.0		3.4	(1.1)
2007	Total	4.1	(0.2)	6.7	(2.0)	0.7	(0.7)	2.1	(1.1)
2008	Total	4.1	(0.2)	20.7	(5.6)	5.3	(1.7)	0.8	(0.5)
2009	Total	4.5	(0.4)	8.7	(2.4)	4.7	(1.9)	3.7	(1.4)
2010	Total	4.8	(0.1)	42.7	(8.0)	20.0	(3.7)	5.1	(1.6)
2011	Total	3.8	(0.1)	38.0	(4.2)	5.3	(2.0)	9.5	(1.1)
2012	Total	4.0	(0.1)	22.7	(5.2)	1.3	(0.8)	NS	NS
2013	Total	4.0	(0.2)	14.7	(2.0)	1.3	(0.8)	2.5	(0.7)
2014	Total	4.0	(0.2)	16.0	(3.1)	4.0	(1.5)	---	
2017	Total	4.0	(0.1)	32.7	(6.4)	6.0	(2.5)	15.5	(3.9)
2018	Total	4.2	(0.1)	34.0	(6.0)	2.0	(1.4)		

\*Largemouth bass were stocked, and were not able to be distinguished from the wild age-1 largemouth bass

Table 135. 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, May 2018; numbers in parentheses are standard errors.

Species	Inch class																			Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
Largemouth bass	1	4	3	1	81	73	62	79	76	72	38	23	11	11	3	5	4	4	2	553	276.5 (15.6)

Dataset = cfdpscor.d18

Table 136. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Corinth Lake from 1992-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1992	31.0 (9.3)	22.5 (5.3)	5.0 (2.6)	0.0 (0.0)	0.0 (0.0)	58.5 (9.8)
1993	34.0 (8.2)	111.3 (11.5)	7.3 (2.4)	2.0 (1.4)	0.0 (0.0)	154.7 (13.5)
1996	53.5 (10.1)	174.5 (16.7)	14.5 (2.0)	4.5 (1.6)	0.0 (0.0)	247.0 (18.1)
1998	15.5 (3.2)	111.5 (9.8)	19.0 (3.0)	4.0 (1.7)	0.5 (0.5)	150.0 (14.4)
1999	137.0 (14.2)	56.5 (5.2)	24.5 (4.3)	3.5 (1.2)	1.0 (0.7)	221.5 (16.4)
2000	312.8 (47.0)	136.0 (18.2)	22.4 (6.5)	4.8 (2.3)	1.6 (1.0)	476.0 (63.7)
2001	127.2 (16.6)	231.2 (8.0)	20.8 (5.1)	9.6 (3.2)	0.0 (0.0)	388.8 (13.5)
2002	40.7 (8.1)	153.3 (21.7)	13.3 (2.9)	16.7 (2.8)	1.3 (1.3)	224.0 (28.7)
2003	58.0 (13.6)	146.0 (16.4)	23.3 (3.8)	6.0 (2.0)	0.7 (0.7)	233.3 (28.2)
2004	23.0 (4.8)	77.5 (5.0)	40.0 (4.3)	5.0 (1.5)	1.0 (1.0)	145.5 (8.0)
2005	45.5 (3.9)	115.0 (9.3)	72.0 (10.0)	20.5 (3.0)	2.5 (1.3)	253.0 (16.0)
2006	15.0 (2.7)	74.5 (6.8)	29.0 (1.3)	34.5 (4.7)	1.5 (0.7)	153.0 (8.8)
2007	88.5 (14.8)	106.0 (7.0)	21.5 (3.4)	22.5 (3.5)	5.5 (2.4)	238.5 (17.6)
2008	52.0 (9.7)	199.0 (17.0)	69.5 (4.8)	37.5 (3.9)	7.5 (1.9)	358.0 (25.2)
2009	30.0 (8.0)	82.5 (11.2)	17.5 (4.5)	27.5 (4.4)	6.0 (2.1)	157.5 (23.4)
2010	77.5 (7.0)	60.0 (8.3)	8.5 (1.6)	21.0 (4.9)	4.0 (1.3)	167.0 (13.6)
2011	90.0 (9.8)	177.0 (11.2)	37.0 (5.2)	33.0 (3.9)	8.5 (2.1)	337.0 (19.3)
2012	32.5 (6.1)	175.0 (15.3)	37.0 (4.9)	23.5 (4.0)	8.5 (2.3)	268.0 (21.2)
2013	24.5 (4.5)	161.0 (15.3)	22.5 (5.4)	24.5 (6.6)	4.5 (1.9)	232.5 (17.3)
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)
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)
2016	No Sample					
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)
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)

Dataset = cfdpscor.d18 – .d92



Table 137. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing samples in Corinth Lake in 2018; confidence intervals are in parentheses.

Species	No. $\geq 8.0$ in	PSD	RSD <sub>15</sub>
Largemouth bass	463	37 ( $\pm 4$ )	2 ( $\pm 1$ )

Dataset = cfdpscor.d18

Table 138. Population assessment for largemouth bass collected during spring electrofishing at Corinth Lake from 2000-2018 (scoring based on statewide assessment).

Year		Mean length age-3 at capture	CPUE age-1	CPUE 12.0-14.9 in	CPUE $\geq 15.0$ in	CPUE $\geq 20.0$ in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2018	Value	10.8*	4.5	66.5	20.0	3.0				
	Score	3	1	4	3	3			14	Good
2017	Value	10.8*	19.5	26.0	21.0	5.0				
	Score	3	2	3	3	4			15	Good
2015	Value	10.8	29.9	38.0	16.0	3.5				
	Score	3	2	3	2	3			13	Good
2014	Value	11.1*	29.0	17.0	15.0	3.0				
	Score	3	2	1	2	3			11	Fair
2013	Value	11.1*	13.0	22.5	24.5	4.5				
	Score	3	1	2	3	4			13	Good
2012	Value	11.1*	24.5	37.0	23.5	8.5				
	Score	3	2	3	3	4			15	Good
2011	Value	11.1	90.2	37.0	33.0	8.5	0.515	40.2		
	Score	3	4	3	4	4			18	Excellent
2010	Value	11.1*	46.2 <sup>^</sup>	8.5	21.0	4.0				
	Score	3	3	1	3	4			14	Good
2009	Value	11.1*	21.8 <sup>^</sup>	17.5	27.5	6.0				
	Score	3	2	1	3	4			13	Good
2008	Value	11.1*	47.7 <sup>^</sup>	69.5	37.5	7.5				
	Score	3	3	4	4	4			18	Excellent
2007	Value	11.1	86.7	21.5	22.5	5.5	0.498	39.3		
	Score	3	4	2	3	4			16	Good
2006	Value	10.1*	11.1 <sup>^</sup>	29.0	34.5	1.5				
	Score	2	1	2	4	2			11	Fair
2005	Value	10.1*	32.4 <sup>^</sup>	72.0	20.5	2.5				
	Score	2	2	4	3	3			14	Good
2004	Value	10.1*	21.1 <sup>^</sup>	40.0	5.0	1.0				
	Score	2	2	3	2	2			11	Fair
2003	Value	10.1*	54.3 <sup>^</sup>	23.3	6.0	0.7				
	Score	2	3	2	2	1			10	Fair
2002	Value	10.1	35.3	13.3	16.7	1.3	0.688	49.7		
	Score	2	2	1	2	2			9	Fair
2001	Value	8.7	63.4	20.8	9.6	0.0	0.805	55.3		
	Score	1	3	2	2	0			8	Fair
2000	Value	9.1	293.2	22.4	4.8	1.6	0.566	43.2		
	Score	1	4	2	2	2			11	Fair

\* Age data not collected

<sup>^</sup>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 1.5 hours of 15-minute electrofishing runs for black bass in Corinth Lake on 11 September 2018 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	19		
Largemouth bass	1	41	45	7	3	17	27	76	52	30	37	31	7	3	1	3	0	1	382	254.7 (18.6)

Dataset = cfdwrcor.d18

Table 140. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at Corinth Lake on 11 September 2018; standard errors are in parentheses.

Species	Area	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	Total	101	82 (1)	57	85 (1)	8	91 (4)	166	84 (1)

Dataset = cfdwrcor.d18

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 Corinth Lake.

Year class	Area	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
1999	Total	4.3	0.1	74.0	12.3	8.0	2.9	293.2	46.0
2000	Total	4.3	0.1	35.3	7.4	3.3	1.9	63.4	10.9
2001	Total	4.6	0.1	112.7	15.6	32.0	6.8	35.3	7.4
2002	Total	4.6	0.1	163.3	13.7	42.0	4.5	54.3	13.4
2003	Total	4.1	0.1	73.7	9.2	4.6	1.8	21.1	5.1
2004	Total	4.0	0.1	74.0	6.2	2.7	1.3	32.4	4.2
2005	Total	4.4	0.1	41.3	2.7	4.7	1.2	11.1	2.7
2006	Total	4.9	0.1	176.5	15.2	78.0	9.9	86.7	14.3
2007	Total	5.1	0.04	152.7	31.2	89.3	28.8	47.7	9.1
2008	Total	5.1	0.1	112.7	15.0	66.0	12.9	21.8	5.4
2009	Total	4.5	0.1	17.3	2.5	2.0	1.4	39.7	3.3
2010	Total	5.9	0.04	140.0	9.9	134.0	8.2	90.2	9.8
2011	Total	4.3	0.1	116.7	22.0	22.0	3.7	24.5	4.9
2012	Total	5.0	0.1	52.9	5.0	26.2	3.0	13.0	4.6
2013	Total	4.2	0.1	170.7	18.6	34.7	7.4	29.0	4.3
2014	Total	3.4	0.04	56.7	8.9	0.0		29.9	2.5
2015	Total	4.4	0.1	35.3	5.7	2.0	1.4	NS	
2016	Total	4.1	0.1	30.0	3.5	1.3	0.8	19.5	4.0
2017	Total	4.1	0.1	35.3	3.9	1.3	0.8	4.0	0.8
2018	Total	4.1	0.1	62.7	8.1	4.7	1.9		

Dataset = cfdwrcor.d18-.d99

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 Corinth Lake, May 2018; numbers in parentheses are standard errors.

Species	Inch class								Total	CPUE
	2	3	4	5	6	7	8	9		
Bluegill	7	84	70	48	82	104	6		401	320.8 (22.9)
Redear sunfish		10	27	34	95	102	40	6	314	251.2 (26.4)

Dataset = cfdpscor.d18

Table 143. PSD and RSD values calculated for sunfish collected during 1.25 hours of electrofishing at Corinth Lake during May 2018. Fish were collected in 7.5-minute runs.

Species	No. $\geq$ stock size	PSD	RSD <sup>a</sup>
Bluegill	394	49 ( $\pm$ 5)	2 ( $\pm$ 1)
Redear sunfish	304	49 ( $\pm$ 6)	2 ( $\pm$ 2)

<sup>a</sup>Bluegill = RSD<sub>8</sub>; Redear = RSD<sub>9</sub>

Dataset = cfdpscor.d18

Table 144. Electrofishing CPUE (fish/hr) for each length group of bluegill collected from Corinth Lake from 1992-2018; numbers in parentheses are standard errors.

Year	Length group				Total
	<3.0 in	3.0–5.9 in	6.0-7.9 in	$\geq$ 8.0 in	
1992	3.0 (1.7)	36.0 (24.9)	49.0 (8.5)	10.0 (5.5)	98.0 (30.4)
1993	2.7 (1.3)	42.0 (13.1)	54.0 (10.9)	20.7 (5.2)	119.3 (26.2)
1996	6.0 (3.9)	75.0 (12.0)	54.5 (14.5)	1.5 (0.8)	137.0 (25.9)
1998	2.0 (1.1)	80.0 (19.4)	50.5 (10.3)	3.0 (1.0)	135.5 (23.7)
1999	42.0 (17.1)	113.0 (16.5)	32.5 (7.2)	17.0 (5.8)	204.5 (26.6)
2000	8.8 (2.5)	270.4 (20.1)	100.8 (12.0)	20.8 (3.6)	400.8 (25.9)
2001	7.2 (4.0)	185.6 (18.0)	140.0 (14.8)	5.6 (2.1)	338.4 (23.5)
2002	2.4 (1.2)	140.0 (16.7)	56.8 (12.1)	0.0	199.2 (26.6)
2003	14.2 (6.2)	164.4 (14.1)	91.6 (10.7)	0.9 (0.9)	271.1 (23.3)
2004	17.6 (4.9)	174.4 (15.9)	61.6 (10.9)	0.0	253.6 (22.7)
2005	12.0 (4.2)	262.4 (32.7)	82.4 (22.2)	0.0	356.8 (47.8)
2006	40.4 (6.0)	211.2 (17.9)	32.8 (6.4)	0.0	284.4 (14.7)
2007	13.2 (2.6)	148.8 (12.1)	98.0 (10.2)	0.0	260.0 (17.9)
2008	4.8 (1.2)	180.4 (13.7)	105.2 (12.4)	0.4 (0.4)	290.8 (18.8)
2009	9.2 (4.0)	151.6 (15.3)	166.8 (19.4)	0.0	327.6 (30.6)
2010	9.4 (2.6)	126.6 (11.1)	55.1 (6.9)	0.0	191.1 (15.5)
2011	32.0 (6.9)	222.8 (16.4)	60.0 (10.5)	0.0	314.8 (27.0)
2012	2.4 (1.2)	240.0 (24.6)	56.8 (6.1)	0.0	299.2 (27.7)
2013	0.8 (0.8)	60.0 (4.7)	106.4 (13.3)	0.0	167.2 (15.7)
2014	4.8 (2.1)	89.6 (14.4)	64.8 (10.4)	4.0 (1.3)	163.2 (23.1)
2015	4.0 (1.3)	106.4 (16.4)	115.2 (24.1)	4.8 (3.2)	230.4 (16.5)
2016	5.6 (1.7)	60.0 (9.2)	135.2 (13.4)	4.0 (2.2)	204.8 (11.2)
2017	29.6 (14.9)	82.4 (17.3)	142.4 (22.8)	9.6 (2.9)	264.0 (32.6)
2018	5.6 (2.1)	161.6 (11.5)	148.8 (21.3)	4.8 (2.1)	320.8 (22.9)

Dataset = cfdpscor.d18-.d92

Table 145. Population assessment for bluegill collected during spring electrofishing at Corinth Lake from 2000-2018 (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	Total score	Assessment rating
2018	Value	3.6	2-2+*	153.6	4.8		
	Score	1	4	4	4	13	Good
2017	Value	3.8*	2-2+*	152.0	9.6		
	Score	1	4	4	4	13	Good
2016	Value	3.8	2-2+	139.2	4.0		
	Score	1	4	4	3	12	Good
2015	Value	5.5*	3-3+*	120.0	4.8		
	Score	4	3	4	4	15	Excellent
2014	Value	5.5	3-3+	68.8	4.0		
	Score	4	3	3	3	13	Good
2013	Value	4.7*	3-3*	106.4	0.0		
	Score	3	3	4	1	11	Good
2012	Value	4.7	3-3+	56.8	0.0		
	Score	3	3	3	1	10	Good
2011	Value	4.4	3-3+	60.0	0.0		
	Score	3	3	3	1	10	Good
2010	Value	4.0	3-3+	55.1	0.0		
	Score	2	3	2	1	8	Fair
2009	Value	4.8	3-3+	166.8	0.0		
	Score	4	3	4	1	12	Good
2008	Value	4.3	3-3+	105.6	0.4		
	Score	3	3	4	2	12	Good
2007	Value	4.6	3-3+	98.0	0.0		
	Score	3	3	3	1	10	Good
2006	Value	4.1	3-3+	32.8	0.0		
	Score	2	3	2	1	8	Fair
2005	Value	4.0	3-3+	82.4	0.0		
	Score	2	3	3	1	9	Fair
2004	Value	4.1	2-2+	61.6	0.0		
	Score	2	4	3	1	10	Good
2003	Value	4.3	2-2+	92.4	0.9		
	Score	3	4	3	2	12	Good
2002	Value	4.2	2-2+	56.8	0.0		
	Score	2	4	3	1	10	Good
2001	Value	4.3	2-2+	145.6	5.6		
	Score	3	4	4	4	15	Excellent
2000	Value	5.3	2-2+	121.6	20.8		
	Score	4	4	4	4	16	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 146. Electrofishing CPUE (fish/hr) for each length group of redear sunfish collected from Corinth Lake from 1992-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	≥10.0 in	
1992	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
1993	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	2.0 (2.0)	1.3 (1.3)	2.0 (2.0)
1996	0.5 (0.5)	7.0 (2.8)	5.5 (2.7)	10.5 (3.5)	4.0 (1.7)	23.5 (3.9)
1998	0.0 (0.0)	4.0 (0.8)	0.5 (0.5)	19.0 (4.3)	15.5 (3.3)	23.5 (4.0)
1999	0.0 (0.0)	3.7 (1.6)	2.7 (1.1)	5.3 (1.5)	3.2 (1.1)	21.5 (3.5)
2000	0.0 (0.0)	14.4 (4.1)	33.6 (15.8)	52.8 (6.6)	16.8 (4.2)	100.8 (21.9)
2001	1.6 (1.1)	20.8 (5.0)	54.4 (9.2)	72.8 (10.0)	44.0 (8.7)	149.6 (15.6)
2002	0.0 (0.0)	4.0 (1.8)	6.4 (2.0)	82.4 (15.4)	52.0 (8.7)	92.8 (15.9)
2003	0.9 (0.9)	11.6 (3.6)	11.6 (2.4)	28.4 (5.2)	24.9 (5.6)	52.4 (6.1)
2004	0.8 (0.8)	13.6 (1.7)	17.6 (5.2)	19.2 (5.2)	14.4 (3.3)	51.2 (6.8)
2005	0.0 (0.0)	38.4 (4.4)	28.8 (6.4)	31.2 (11.1)	3.2 (1.8)	98.4 (17.3)
2006	0.0 (0.0)	19.6 (3.9)	54.0 (6.6)	7.6 (1.5)	0.4 (0.4)	81.2 (7.2)
2007	0.0 (0.0)	5.2 (1.3)	37.6 (7.1)	21.2 (5.5)	0.0 (0.0)	64.0 (11.7)
2008	0.0 (0.0)	10.4 (2.2)	33.6 (4.5)	27.6 (5.0)	0.0 (0.0)	71.6 (7.9)
2009	0.0 (0.0)	2.4 (1.0)	65.2 (7.6)	38.0 (7.5)	0.4 (0.4)	105.6 (14.1)
2010	0.9 (0.5)	7.1 (1.5)	18.9 (3.0)	12.0 (2.5)	0.0 (0.0)	38.9 (5.0)
2011	1.6 (0.7)	26.0 (4.5)	36.8 (3.0)	20.0 (3.0)	0.0 (0.0)	84.4 (8.0)
2012	0.0 (0.0)	4.8 (2.1)	38.4 (8.4)	24.0 (5.1)	0.0 (0.0)	67.2 (14.2)
2013	0.0 (0.0)	1.6 (1.1)	25.6 (3.7)	29.6 (7.0)	0.8 (0.8)	56.8 (8.6)
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)
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)
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)
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)
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)

Dataset = cfdpscor.d18-.d92

Table 147. Population assessment for redear sunfish collected during spring electrofishing at Corinth Lake from 2002-2018 (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
2018	Value	6.3	5-5+	36.8	0.0		
	Score	1	2	4	1	8	Fair
2017	Value	7.2*	4-4+*	43.2	0.0		
	Score	2	3	4	1	10	Good
2016	Value	7.2	4-4+	33.6	0.0		
	Score	2	3	4	1	10	Good
2015	Value	8.1*	3-3+*	42.4	1.6		
	Score	4	4	4	3	15	Excellent
2014	Value	8.1	3-3+	33.6	0.8		
	Score	4	4	4	2	14	Excellent
2013	Value	7.8*	3-3+*	29.6	0.8		
	Score	3	4	4	2	13	Good
2012	Value	7.8	3-3+	24.0	0.0		
	Score	3	4	4	1	12	Good
2011	Value	7.8	3-3+	20.0	0.0		
	Score	3	4	3	1	11	Good
2010	Value	7.1	3-3+	12.0	0.0		
	Score	2	4	3	1	10	Good
2009	Value	7.7	3-3+	38.0	0.4		
	Score	3	4	4	2	13	Good
2008	Value	8.0	3-3+	27.6	0.0		
	Score	3	4	4	1	12	Good
2007	Value	7.6	3-3+	21.2	0.0		
	Score	3	4	4	1	12	Good
2006	Value	7.3	3-3+*	7.6	0.4		
	Score	2	4	2	2	10	Good
2005	Value	7.6	3-3+	31.2	3.2		
	Score	3	4	4	4	15	Excellent
2004	Value	9.1*	2-2+*	19.2	14.4		
	Score	4	4	3	4	15	Excellent
2003	Value	9.1*	2-2+*	28.4	24.9		
	Score	4	4	4	4	16	Excellent
2002	Value	9.1	2-2+	82.4	52.0		
	Score	4	4	4	4	16	Excellent

\* Age data not collected

Table 148. Mean back calculated lengths (in) at each annulus for otoliths from bluegill collected from Corinth Lake in fall 2018.

Year	No.	Age					
		1	2	3	4	5	6
2017	11	2.1					
2016	19	2.0	3.6				
2015	11	2.0	3.6	4.8			
2014	5	2.0	3.6	5.3	6.3		
2013	1	1.9	3.9	5.6	6.1	6.4	
2012	1	2.9	5.1	6.3	6.7	7.0	7.2
Mean	48	2.1	3.6	5.1	6.3	6.7	7.2
Smallest		1.3	2.3	3.9	5.7	6.4	
Largest		4.2	6.0	6.7	6.7	7.0	
Std error		0.1	0.1	0.2	0.1	0.3	
95% ConLo		1.9	3.3	4.7	6.1	6.1	
95% ConHi		2.2	3.9	5.4	6.6	7.3	

Intercept value = 0.00  
Dataset = cfdagcor.d18

Table 149. Mean back calculated lengths (in) at each annulus for otoliths from redear sunfish collected from Corinth Lake in fall 2018.

Year	No.	Age				
		1	2	3	4	5
2017	6	2.2				
2016	17	2.2	4.0			
2015	12	2.6	4.7	6.1		
2014	6	3.1	5.2	6.6	7.3	
2013	2	2.8	5.4	6.9	7.4	8.0
Mean	43	2.5	4.5	6.3	7.3	8.0
Smallest		1.4	3.1	5.5	7.0	7.8
Largest		3.8	6.1	7.2	7.6	8.1
Std error		0.1	0.1	0.1	0.1	0.2
95% ConLo		2.3	4.3	7.2	7.2	7.6
95% ConHi		2.6	4.7	7.5	7.5	8.3

Intercept value = 0.00  
Dataset = cfdagcor.d18

Table 150. Number of fish and the relative weight (Wr) for each length group of bluegill and redear sunfish collected at Corinth Lake on 11 September 2018; 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	
	58	89 (2)	16	83 (3)	0				74	88 (1)
Redear sunfish	1.0–3.9 in		4.0–6.9 in		7.0–9.0 in		≥9.0 in		Total	
	1	105	50	96 (1)	29	95 (1)	0		80	96 (1)

Dataset = cfdwrcor.d18



Table 151. Fishery statistics derived from a daytime roving creel survey during 2002 and 2010. Trail camera counts used to derive usage statistics in 2018-2019 at Corinth Lake (96 acres) from 1 March 2018 through 28 February 2019.

	<u>2018-2019</u>	<u>2010</u>	<u>2002</u>
Fishing Trips	(3/1 to 2/28)	(3/17 to 10/31)	(4/1 to 6/30)
No. of fishing trips (per acre)	5,059 (52.7)	2,620 (27.3)	2,481 (25.8)
Fishing Pressure*			
Total man-hours (S.E.) <sup>a</sup>	17,486	10,054 (461.7)	10,063 (413.8)
Man-hours/acre	182.1	104.7	104.8
Mode (%)			
Boat	86.9	77.6	82.1
Bank	13.1	22.4	10.7

\*Usage hours (angler and non-angler usage combined)

Figure 1. Number of trips per month at Corinth Lake from March 2018 through February 2019.

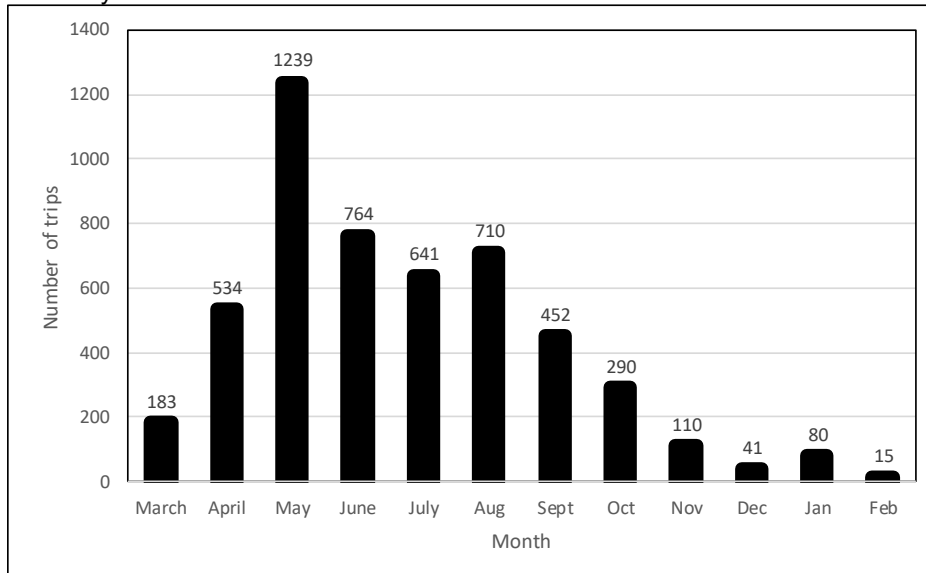
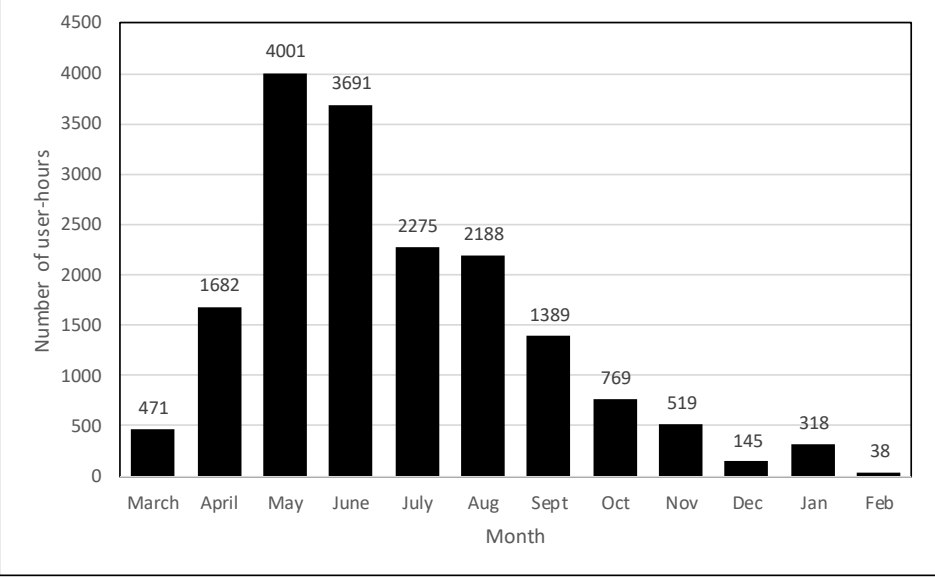


Figure 2. Number of usage hours by month at Corinth Lake from March 2018 through February 2019.



## CORINTH LAKE ANGLER ATTITUDE SURVEY 2018

(based on 52 surveys)

1. On average how many times do you fish Corinth Lake in a year? (n=49)  
First time **32.7%** 1 to 4 **24.5%** 5 to 10 **12.2%** More than 10 **30.6%**
2. Which species of fish do you fish for at Corinth Lake (**check all that apply**)?  
Bass **75.0%** Crappie **26.9%** Bluegill **30.8%** Redear sunfish **11.5%** Channel Catfish **15.4%** Anything **5.8%**
3. Which **ONE** species do you fish for most at Corinth Lake (**check only one**)?  
Bass **64.7%** Crappie **13.7%** Bluegill **9.8%** Redear sunfish **0.0%** Channel Catfish **7.8%** Anything **3.9%**

**-Answer the following questions for each species you fish for – (see question 3)**

### Bass Anglers

4. In general, what level of satisfaction or dissatisfaction do you have with bass fishing at Corinth Lake? (n=34)  
Very satisfied **20.6%** Somewhat satisfied **47.1%** Neutral **20.6%** Somewhat dissatisfied **11.8%** Very dissatisfied **0.0%**
- 4a. If you responded with very or somewhat satisfied in question (5) - What is the single most important reason for your Satisfaction? (n=24)  
Number of fish **58.3%** Size of fish **16.7%** Low Angler Pressure **12.5%** Abundant Vegetation **8.4%** Location **4.2%**
- 4b. If you responded with somewhat or very dissatisfied in question (5) - What is the single most important reason for your Dissatisfaction? (n=4)  
Number of fish **50.0%** Size of fish **25.0%** Don't have boat **25.0%**

### Crappie Anglers

5. In general, what level of satisfaction or dissatisfaction do you have with crappie fishing at Corinth Lake? (n=10)  
Very satisfied **10.0%** Somewhat satisfied **20.0%** Neutral **30.0%** Somewhat dissatisfied **40.0%** Very dissatisfied **0.0%**
- 5a. If you responded with very or somewhat satisfied in question (6) - What is the single most important reason for your Satisfaction? (n=4)  
Number of fish **25.0%** Size of fish **75.0%**
- 5b. If you responded with somewhat or very dissatisfied in question (6) - What is the single most important reason for your Dissatisfaction? (n=3)  
Number of fish **100.0%**

### Bluegill Anglers

6. In general, what level of satisfaction or dissatisfaction do you have with bluegill fishing at Corinth Lake? (n=14)  
Very satisfied **21.4%** Somewhat satisfied **50.0%** Neutral **21.4%** Somewhat dissatisfied **7.1%** Very dissatisfied **0.0%**
- 6a. If you responded with very or somewhat satisfied in question (7) - What is the single most important reason for your Satisfaction? (n=10)  
Number of fish **50.0%** Size of fish **50.0%**
- 6b. If you responded with somewhat or very dissatisfied in question (7) - What is the single most important reason for your Dissatisfaction? (n=1)  
Number of fish **100.0%**

### Redear Sunfish Anglers

7. In general, what level of satisfaction or dissatisfaction do you have with redear sunfish fishing at Corinth Lake? (n=6)  
Very satisfied **16.7%** Somewhat satisfied **66.7%** Neutral **16.7%** Somewhat dissatisfied **0.0%** Very dissatisfied **0.0%**
- 7a. If you responded with very or somewhat satisfied in question (8) - What is the single most important reason for your Satisfaction? (n=5)  
Number of fish **60.0%** Size of fish **40.0%**
- 7b. If you responded with somewhat or very dissatisfied in question (8) - What is the single most important reason for your Dissatisfaction? (n=0)

### Channel Catfish Anglers

8. In general, what level of satisfaction or dissatisfaction do you have with channel catfish fishing at Corinth Lake? (n=4)  
Very satisfied **25.0%** Somewhat satisfied **25.0%** Neutral **50.0%** Somewhat dissatisfied **0.0%** Very dissatisfied **0.0%**
- 8a. 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 **50.0%** Size of fish **50.0%**
- 8b. If you responded with somewhat or very dissatisfied in question (9) - What is the single most important reason for your Dissatisfaction? (n=0)

### All Anglers

9. Are you satisfied with the current size and creel limits on all sport fish at Corinth Lake? (n=49)  
Yes **95.9%** No **4.1%**
- 9a. If not, which species are you dissatisfied with and what size and creel limits would you prefer? (n=2)  
Largemouth bass 12-15 inch slot limit (n=1) Crappie 9 or 10 inch size limit (n=1)
10. In general, what level of satisfaction or dissatisfaction do you have with the current facilities (parking lot, boat ramp, fishing pier, courtesy dock) at Corinth Lake? (n=50)  
Very satisfied **38.0%** Somewhat satisfied **54.0%** Neutral **0.0%** Somewhat dissatisfied **8.0%** Very dissatisfied **0.0%**
- 10a. If you responded with somewhat or very dissatisfied in question (11) - What is the single most important reason for your Dissatisfaction? (n=13)  
Animal waste on ramp/docks **61.5%** Additional shoreline bank fishing access **23.1%** Need additional parking **15.4%**

Table 152. 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, May 2018; 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	19	20	21	22			23
Largemouth bass	3	14	27	61	59	18	4	35	59	76	107	95	48	22	11	7	2	8	2		4	1	663	331.5 (23.6)

Dataset = cfdpselm.d18

Table 153. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Elmer Davis Lake from 1996-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1996	102.0 (15.3)	163.5 (19.5)	37.0 (6.2)	9.5 (3.4)	4.5 (1.4)	312.0 (32.7)
1997	113.5 (20.1)	252.0 (27.2)	39.0 (5.6)	19.0 (3.7)	5.5 (1.8)	423.5 (43.9)
1998	52.5 (9.5)	93.3 (6.8)	16.8 (2.3)	7.5 (1.7)	3.2 (1.1)	170.1 (15.1)
1999	253.5 (32.9)	47.0 (8.3)	36.0 (6.9)	17.5 (5.5)	2.5 (1.1)	354.0 (45.4)
2000	134.5 (14.7)	136.5 (11.0)	31.5 (6.0)	29.0 (4.4)	2.0 (1.3)	331.5 (21.3)
2001	121.0 (17.0)	220.0 (21.2)	18.5 (2.4)	21.0 (4.1)	0.5 (0.5)	380.5 (24.9)
2002	99.0 (16.3)	124.0 (12.3)	4.0 (1.3)	10.0 (2.7)	0.5 (0.5)	237.0 (26.2)
2003	96.0 (10.2)	189.5 (16.5)	14.5 (3.9)	15.0 (2.7)	3.5 (1.6)	315.0 (25.1)
2004	107.5 (10.0)	123.5 (10.0)	22.0 (3.5)	15.0 (1.7)	3.5 (1.6)	268.0 (17.4)
2005	93.0 (10.6)	197.0 (11.2)	60.0 (10.4)	15.0 (2.4)	3.5 (1.2)	365.0 (27.2)
2006	74.5 (11.5)	123.5 (12.2)	40.5 (7.9)	6.5 (1.8)	1.0 (0.7)	245.0 (15.4)
2007	32.5 (5.8)	137.0 (16.4)	41.5 (10.3)	8.0 (2.8)	1.0 (0.7)	219.0 (28.9)
2008	149.0 (17.9)	188.0 (20.7)	45.0 (5.6)	14.5 (4.0)	2.0 (1.3)	396.5 (35.2)
2009	36.0 (6.0)	192.5 (19.0)	76.0 (9.0)	28.0 (3.8)	6.5 (2.3)	332.5 (30.2)
2010	41.0 (5.0)	147.5 (17.9)	71.5 (12.3)	24.0 (5.0)	3.0 (1.3)	284.0 (33.5)
2011	51.0 (6.2)	152.5 (20.4)	69.5 (8.1)	23.0 (4.5)	3.5 (1.2)	296.0 (30.9)
2012	83.5 (8.8)	197.5 (10.9)	85.5 (7.3)	27.5 (3.7)	4.5 (1.2)	394.0 (12.4)
2013	No Sample					
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)
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)
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)
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)
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)

Dataset = cfdpselm.d18 - .d96

Table 154. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing samples in Elmer Davis Lake in 2018; confidence intervals are in parentheses.

Species	No. $\geq 8.0$ in	PSD	RSD <sub>15</sub>
Largemouth bass	481	64 ( $\pm 4$ )	12 ( $\pm 3$ )

Dataset = cfdpselm.d18

Table 155. Population assessment for largemouth bass collected during spring electrofishing at Elmer Davis Lake from 2000-2018 (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 $\geq 15.0$ in	Spring CPUE $\geq 20.0$ in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2018	Value	10.7*	91.0	125.0	28.5	3.5				
	Score	2	4	4	4	3			17	Excellent
2017	Value	10.7*	60.5	95.5	31.0	8.0				
	Score	2	4	4	4	4			18	Excellent
2016	Value	10.7	46.5	126.0	44.5	8.0				
	Score	2	3	4	4	4			17	Excellent
2015	Value	10.5*	28.0	78.5	19.5	4.0				
	Score	2	3	4	3	4			16	Good
2014	Value	10.5*	8.0	75.0	23.5	4.5				
	Score	2	2	4	3	4			15	Good
2013					No Sample					
2012	Value	10.5	78.0	85.5	27.5	4.5	0.392	32.5		
	Score	2	4	4	4	4			18	Excellent
2011	Value	9.8*	32.4	69.5	23.0	3.5				
	Score	1	3	4	3	3			14	Good
2010	Value	9.8*	29.0^	71.5	24.0	3.0				
	Score	1	3	4	3	3			14	Good
2009	Value	9.8*	18.5^	76.0	28.0	6.5				
	Score	1	2	4	4	4			15	Good
2008	Value	9.8	127.5	45.0	14.5	2.0	0.489	38.6		
	Score	1	4	4	3	3			15	Good
2007	Value	10.5*	26.9^	41.5	8.0	1.0				
	Score	2	3	3	2	2			12	Fair
2006	Value	10.5*	68.1^	40.5	6.5	1.0				
	Score	2	4	3	2	2			13	Good
2005	Value	10.5*	78.1^	60.0	15.0	3.5				
	Score	2	4	4	3	3			16	Good
2004	Value	10.5	94.4	22.0	15.0	3.5	0.481	38.2		
	Score	2	4	2	3	3			14	Good
2003	Value	10.3*	57.5^	14.5	15.0	3.5				
	Score	2	4	2	3	3			14	Good
2002	Value	10.3*	80.6^	4.0	10.0	0.5				
	Score	2	4	1	2	2			11	Fair
2001	Value	10.3	52.8	18.5	21.0	0.5	0.516	40.3		
	Score	2	3	2	3	2			12	Fair
2000	Value	10.7	73.8	31.5	29.0	2.0	0.618	46.1		
	Score	2	4	3	4	3			16	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 156. 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 2018; 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	19	20	21	22			23
Largemouth bass	7	76	55	13	9	24	49	36	14	35	45	46	24	19	6	3	7	2	2	1	2	1	476	318.0 (38.0)

Dataset = cfdwreim.d18

Table 157. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at Elmer Davis Lake on 14 September 2018; 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		
Largemouth bass	Total	89	87 (1)	75	85 (1)	44	89 (2)	208	87 (1)

Dataset = cfdwreim.d18

Table 158. 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	Std. error	CPUE	Std. Error	CPUE	Std. error	CPUE	Std. error
2000	Total	3.8	(0.1)	269.6	(33.2)	14.4	(2.0)	52.8	(9.7)
2001	Total	4.5	(0.1)	210.7	(25.0)	47.3	(3.0)	80.6	(13.3)
2002	Total	4.3	(0.1)	67.3	(10.0)	13.3	(3.2)	57.5	(7.9)
2003	Total	4.2	(0.1)	179.0	(32.0)	27.0	(10.0)	94.4	(9.9)
2004	Total	4.3	(0.03)	180.0	(38.5)	24.7	(4.3)	78.1	(9.9)
2005	Total	4.4	(0.04)	190.0	(29.6)	33.3	(5.3)	68.1	(10.2)
2006	Total	3.7	(0.04)	166.0	(17.4)	8.0	(2.5)	26.9	(6.1)
2007	Total	4.3	(0.05)	114.0	(24.6)	17.3	(5.4)	127.5	(16.4)
2008	Total	3.9	(0.1)	73.3	(9.6)	0.7	(0.7)	18.5	(3.7)
2009	Total	4.2	(0.1)	108.0	(14.2)	20.0	(5.0)	29.0	(5.3)
2010	Total	4.7	(0.1)	108.0	(14.1)	34.7	(3.2)	32.4	(3.9)
2011	Total	4.0	(0.1)	74.0	(13.8)	14.7	(3.2)	78.0	(8.9)
2012	Total	3.4	(0.1)	56.0	(7.5)	6.0	(1.7)	NS	NS
2013	Total	3.5	(0.1)	20.0	(6.9)	0.0	(0.0)	8.0	(2.3)
2014	Total							28.0	(5.3)
2015	Total	4.0	(0.1)	77.3	(9.1)	11.3	(3.5)	46.5	(6.2)
2016	Total	4.4	(0.1)	80.0	(7.6)	24.7	(4.9)	60.5	(10.8)
2017	Total	3.9	(0.1)	366.4	(74.7)	71.2	(15.9)	91.0	(10.4)
2018	Total	3.9	(0.1)	100.7	(23.3)	8.7	(1.9)		

Dataset= cfdwreln.d18

Table 159. 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 2018; numbers in parentheses are standard errors.

Species	Inch class									Total	CPUE
	2	3	4	5	6	7	8	9	10		
Bluegill	31	74	95	26	12	58	7			303	242.4 (18.2)
Redear sunfish		2	7	4	1		4	8	13	39	31.2 (5.4)

Dataset = cfdpselm.d18



Table 160. Electrofishing CPUE (fish/hr) for each length group of bluegill collected from Elmer Davis Lake from 1994-2018; numbers in parentheses are standard errors.

Year	Length group				Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	
1994	1.0 (0.7)	12.0 (3.0)	29.0 (5.7)	1.5 (1.1)	43.5 (6.0)
1995	NS				
1996	42.0 (7.9)	75.0 (9.7)	55.0 (11.2)	20.0 (5.4)	192.0 (22.5)
1997	0.5 (0.5)	79.5 (12.5)	59.0 (16.3)	5.5 (2.1)	144.5 (28.6)
1998	2.7 (1.1)	17.1 (4.5)	7.7 (1.6)	2.9 (1.1)	30.4 (5.8)
1999	579.5 (74.5)	502.0 (65.4)	23.0 (7.6)	5.0 (3.4)	1,109.5 (130.9)
2000	No Sample				
2001	1.5 (0.8)	109.5 (28.0)	157.0 (23.5)	0.5 (0.5)	268.5 (49.6)
2002	33.6 (11.8)	78.4 (19.3)	272.8 (55.3)	0.8 (0.8)	385.6 (78.2)
2003	17.6 (4.7)	89.6 (12.9)	151.2 (30.1)	2.4 (1.7)	260.8 (37.1)
2004	40.0 (8.7)	100.8 (13.7)	119.2 (29.8)	8.8 (3.9)	268.8 (44.7)
2005	38.4 (11.4)	92.8 (16.1)	59.2 (9.8)	8.8 (3.0)	199.2 (23.9)
2006	162.4 (35.9)	115.2 (20.1)	42.4 (8.5)	16.0 (4.5)	336.0 (43.8)
2007	7.6 (1.8)	81.2 (7.4)	42.8 (9.7)	9.2 (2.4)	140.8 (14.9)
2008	34.4 (5.7)	133.2 (24.7)	58.8 (9.3)	6.8 (2.3)	233.2 (33.0)
2009	8.8 (1.8)	58.1 (6.5)	33.9 (3.7)	1.1 (0.5)	101.9 (7.3)
2010	51.6 (12.8)	126.8 (16.2)	26.8 (4.1)	0.0 (0.0)	205.2 (23.4)
2011	112.4 (19.6)	226.0 (18.9)	50.0 (7.3)	5.6 (2.5)	394.0 (36.2)
2012	42.4 (7.3)	254.4 (39.6)	68.8 (15.0)	0.8 (0.8)	366.4 (57.9)
2013	49.6 (18.2)	179.2 (28.4)	54.4 (14.8)	0.8 (0.8)	284.0 (56.5)
2014	17.6 (7.4)	117.6 (25.5)	33.6 (10.2)	0.0 (0.0)	168.8 (26.5)
2015	0.8 (0.8)	27.2 (5.0)	18.4 (7.4)	0.0 (0.0)	46.4 (9.6)
2016	No Sample				
2017	12.0 (3.4)	84.8 (11.4)	96.0 (19.6)	1.6 (1.6)	194.4 (26.5)
2018	24.8 (6.4)	156.0 (15.5)	56.0 (5.3)	5.6 (2.4)	242.4 (18.2)

Dataset = cfdpselm.d18

Table 161. PSD and RSD values calculated for sunfish collected during 1.25 hours of electrofishing at Elmer Davis Lake during May 2018. Fish were collected in 7.5-minute runs.

Species	No. ≥stock size	PSD	RSD <sup>a</sup>
Bluegill	272	28 (± 5)	3(± 2)
Redear sunfish	37	67 (± 15)	57 (± 16)

<sup>a</sup>Bluegill = RSD<sub>8</sub>; Redear = RSD<sub>9</sub>

Dataset = cfdpselm.d18

Table 162. Population assessment for bluegill collected during spring electrofishing at Elmer Davis Lake from 2001-2018 (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
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				
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				
2013	Value	4.1	3-3+	55.2	0.8	-	-	9	Fair
	Score	2	3	2	2				
2012	Value	4.2	2-2+	69.6	0.8	1.305	72.9	11	Good
	Score	2	4	3	2				
2011	Value	4.4	2-2+	55.6	5.6	*	*	13	Good
	Score	3	4	2	4				
2010	Value	4.3	2-2+	26.8	0.0	1.471	77.0	9	Fair
	Score	3	4	1	1				
2009	Value	4.4	2-2+	34.9	1.1	*	*	11	Good
	Score	3	4	2	2				
2008	Value	4.1	2-2+	65.6	6.8	0.748	52.7	13	Good
	Score	2	4	3	4				
2007	Value	4.1	2-2+	52.0	9.2	0.718	51.2	12	Good
	Score	2	4	2	4				
2006	Value	5.1	2-2+	58.4	16.0	0.464	37.1	15	Excellent
	Score	4	4	3	4				
2005	Value	4.2	2-2+	68.0	8.8	0.729	51.7	13	Good
	Score	2	4	3	4				
2004	Value	4.3	2-2+	128.0	8.8	*	*	15	Excellent
	Score	3	4	4	4				
2003	Value	4.5	2-2+	153.6	2.4	*	*	14	Excellent
	Score	3	4	4	3				
2002	Value	4.5	2-2+	273.6	0.8	*	*	13	Good
	Score	3	4	4	2				
2001	Value	4.2	2-2+	157.5	0.5	*	*	12	Good
	Score	2	4	4	2				

\* Age data not collected

Table 163. Electrofishing CPUE (fish/hr) for each length group of redear sunfish collected from Elmer Davis Lake from 1994-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<3.0 in	3.0-5.9 in	6.0-7.9 in	≥8.0 in	≥10.0 in	
1994	0.0	0.5 (0.5)	0.5 (0.5)	2.5 (2.0)	1.5 (1.5)	3.5 (1.9)
1995				NS		
1996		7.5 (1.6)	23.5 (3.3)	4.0 (1.1)	1.0 (0.7)	35.0 (4.6)
1997	0.0	1.0 (1.0)	0.5 (0.5)	13.0 (3.8)	0.5 (0.5)	14.5 (4.6)
1998	0.0	0.3 (0.3)	0.0	0.0	0.0	0.3 (0.3)
1999	0.0	19.0 (4.4)	13.0 (2.2)	20.5 (5.3)	0.0	52.5 (7.5)
2000				NS		
2001	0.0	3.5 (2.1)	21.0 (5.1)	3.5 (1.6)	1.0 (0.7)	28.0 (4.8)
2002	0.8 (0.8)	4.0 (1.8)	8.8 (4.7)	15.2 (4.2)	0.8 (0.8)	28.8 (6.1)
2003	1.6 (1.1)	7.2 (5.5)	31.2 (7.4)	19.2 (6.2)	0.8 (0.8)	59.2 (13.5)
2004	4.0 (2.7)	8.0 (3.4)	66.4 (18.4)	24.8 (9.7)	3.2 (2.4)	103.2 (29.1)
2005	0.0	11.2 (2.4)	54.4 (16.7)	63.2 (18.6)	4.8 (1.8)	128.8 (26.9)
2006	0.0	12.8 (4.0)	4.8 (1.8)	30.4 (6.5)	4.0 (1.3)	51.2 (10.0)
2007	0.4 (0.4)	1.6 (0.7)	18.0 (3.5)	15.6 (3.4)	2.0 (1.1)	35.6 (5.6)
2008	1.2 (0.7)	13.2 (2.7)	40.8 (9.2)	17.6 (5.3)	2.8 (1.5)	72.8 (14.7)
2009	0.8 (0.6)	5.6 (1.3)	18.7 (3.2)	6.4 (1.8)	1.9 (0.7)	31.5 (4.3)
2010	1.2 (0.9)	3.2 (1.4)	23.6 (2.7)	13.2 (2.9)	0.8 (0.6)	41.2 (4.7)
2011	4.8 (1.7)	22.4 (4.5)	6.8 (2.0)	58.0 (8.5)	2.4 (1.3)	92.0 (10.3)
2012	5.6 (2.6)	31.2 (5.3)	44.0 (9.3)	31.2 (7.2)	4.8 (1.3)	112.0 (11.6)
2013	32.8 (16.3)	149.6 (40.1)	39.2 (13.6)	20.8 (5.6)	0.8 (0.8)	242.4 (67.2)
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)
2015	0.0	11.2 (3.0)	61.6 (8.9)	13.6 (4.0)	0.0	86.4 (13.1)
2016				NS		
2017	0.0	0.8 (0.8)	4.0 (1.8)	43.2 (13.0)	0.8 (0.8)	48.0 (13.2)
2018	0.0	10.4 (2.7)	0.8 (0.8)	20.0 (5.0)	10.4 (2.9)	31.2 (5.4)

Dataset = cfdpselm.d18

Table 164. Population assessment for redear sunfish collected during spring electrofishing at Elmer Davis Lake from 2001-2018 (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
2018	Value	6.7*	4-4+*	20.0	10.4		
	Score	2	3	3	4	12	Good
2017	Value	6.7*	4-4+*	43.2	0.8		
	Score	2	3	4	2	11	Good
2015	Value	6.7	4-4+	13.6	0.0		
	Score	2	3	3	1	9	Fair
2014	Value	7.7*	3-3+*	27.2	0.8		
	Score	3	4	4	2	13	Good
2013	Value	7.7	3-3+	20.8	0.8		
	Score	3	4	3	2	12	Good
2012	Value	7.7	3-3+	31.2	4.8		
	Score	3	4	4	4	15	Excellent
2011	Value	8.7	2-2+	58.0	2.4		
	Score	4	4	4	4	16	Excellent
2010	Value	8.4	2-2+	13.2	1.2		
	Score	4	4	3	3	14	Excellent
2009	Value	8.0	3-3+	6.4	1.9		
	Score	3	4	2	4	13	Good
2008	Value	8.8	2-2+	17.6	2.8		
	Score	4	4	3	4	15	Excellent
2007	Value	8.6	2-2+	15.6	2.0		
	Score	4	4	3	4	15	Excellent
2006	Value	8.8	2-2+	30.4	4.0		
	Score	4	4	4	4	16	Excellent
2005	Value	8.7	2-2+	63.2	4.8		
	Score	4	4	4	4	16	Excellent
2004	Value	9.0*	2-2+*	24.8	3.2		
	Score	4	4	4	4	16	Excellent
2003	Value	9.0	2-2+	19.2	0.8		
	Score	4	4	3	2	13	Good
2002	Value	6.5*	4-4+*	15.2	0.8		
	Score	1	3	3	2	9	Fair
2001	Value	6.5	4-4+	3.5	1.0		
	Score	1	3	2	3	9	Fair

\* Age data not collected

Table 165. Number of fish and the relative weight (Wr) for each length group of bluegill and redear sunfish collected at Elmer Davis Lake on 14 September 2018; 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	
	62	97 (3)	41	91 (1)	13	88 (3)	116	94 (2)
	4.0–6.9 in		7.0–8.9 in		≥9.0 in		Total	
Redear sunfish	18	118 (13)	8	104 (3)	5	101 (3)	111	112 (8)

Dataset = cfdwreim.d18

Table 166. Length composition, relative abundance, and CPUE (fish/set) of channel catfish at Elmer Davis Lake. Channel catfish were collected using baited, tandem hoop nets (72 hours soak time) that were set on 18 October 2018. Nets were pulled three days after setting them, and 3 sets of tandem nets were used for the sampling event.

Species	Inch class												Total	Average per set	
	14	15	16	17	18	19	20	21	22	23	24	25			26
Channel catfish	1	2	12	8	10	3	6	3	1	1	1		1	49	16.3 (7.0)

Dataset = cfdhnelm.d18

Table 167. CPUE (fish/set) for each length group of channel catfish collected by hoop net from Elmer Davis Lake from 2007-2018; numbers in parentheses are standard errors.

Year	Length group			Total
	≥12.0 in	≥15.0 in	≥20.0 in	
2007	71.2 (26.0)	14.0 (4.2)	0.2 (0.2)	118.4 (45.2)
2008	111.8 (14.6)	23.4 (4.7)	0.4 (0.4)	134.0 (17.9)
2009	103.4 (38.6)	21.4 (7.2)	0.4 (0.2)	106.4 (39.7)
2010	28.0 (10.8)	17.0 (7.3)	2.0 (1.1)	32.4 (11.8)
2011	39.8 (14.3)	20.0 (6.6)	2.6 (1.0)	75.0 (25.4)
2015	54.0 (5.7)	23.7 (3.7)	6.0 (2.0)	66.7 (10.9)
2018	16.3 (7.0)	16.0 (7.1)	4.3 (1.9)	16.3 (7.0)

Dataset = cfdhnelm.d18 - .d07

Table 168. PSD and RSD<sub>24</sub> values obtained for channel catfish from tandem hoop net samples in Elmer Davis Lake in 2018; confidence intervals are in parentheses.

Species	No. ≥stock size	PSD	RSD <sub>24</sub>
Channel catfish	49	94 (± 7)	4 (± 4)

Dataset = cfdhnelm.d18

Table 169. Number of fish and the relative weight (Wr) for each length group of channel catfish collected at Elmer Davis Lake in October 2018; standard errors are in parentheses.

Species	Area	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	Total	3	114 (17)	44	100 (1)	2	103 (10)	49	101 (1)

Dataset = cfdhnelm.d18

Table 170. Length distribution and CPUE (fish/hr) of largemouth bass collected in 1.5 hours of 15-minute electrofishing runs in Kincaid Lake in October 2018; 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	19	20	21			22
Largemouth bass	26	30	10	6	2	17	32	17	27	17	16	9	6	13	14	15	17	9	4	1	1	289	192.7 (11.2)

Dataset = cfdwrkin.d18

Table 171. Number of fish and the relative weight (Wr) for each length group of largemouth bass collected at Kincaid Lake on 2 October 2018; 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		
Largemouth bass	Total	93	86 (1)	31	91 (1)	74	101 (1)	198	92 (1)

Dataset = cfdwrkin.d18

Table 172. 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. of fish	Age 0		Age 0		Age 0 $\geq$ 5.0 in		Age 1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
1999	25	3.1	(0.2)	16.7	(5.7)	0.0		1.5	(1.10)
2000	11	3.1	(0.2)	4.7	(1.6)	0.0		0.0	
2001	36	2.9	(0.1)	20.6	(6.7)	0.0		0.0	
2002	76	2.6	(0.1)	43.4	(10.6)	0.0		0.0	
2003	33	2.8	(0.1)	22.0	(4.7)	0.0		1.0	(0.7)
2004	19	3.0	(0.1)	12.7	(4.3)	0.0		0.0	
2005	259	2.5	(0.03)	129.5	(19.3)	0.0		1.5	(0.7)
2006	64	2.7	(0.1)	42.7	(11.9)	0.0		0.0	
2007	29	3.2	(0.1)	19.3	(4.8)	0.7	(0.7)	1.0	(0.7)
2008	42	3.3	(0.1)	28.0	(2.1)	0.0		2.5	(1.1)
2009	47	2.7	(0.04)	31.3	(8.2)	0.0		1.3	(0.5)
2010	80	4.2	(0.1)	53.3	(12.0)	14.0	(3.4)	5.0	(1.7)
2011	112	3.8	(0.1)	74.7	(28.8)	7.3	(4.2)	4.5	(1.4)
2012	71	3.4	(0.1)	47.3	(9.1)	0.7	(0.7)	1.0	(0.7)
2013	56	3.6	(0.1)	37.3	(13.8)	0.0		NS	
2014	37	2.6	(0.1)	24.7	(7.4)	0.0			
2015				No Sample					
2016	51	3.8	(0.1)	34.0	(6.4)	3.3	(1.9)	2.0	(1.3)
2017	44	3.5	(0.1)	29.3	(8.2)	0.0		NS	
2018	72	3.5	(0.1)	48.0	(8.1)	4.0	(2.1)		

Dataset = cfdwrkin.d18

Table 173. Species composition, relative abundance, and CPUE (fish/hr) of largemouth bass collected in 1.5 hour of 15-minute electrofishing runs for black bass in McNeely Lake in April 2018; numbers in parentheses are standard errors.

Species	Inch class																				Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
Largemouth bass	4	54	43	4	5	85	52	61	62	58	34	16	13	8	7	3	3	1	2	1	516	344.0 (41.4)

Dataset = cfdpsmcl.d18

Table 174. Electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from McNeely Lake from 1996-2018; numbers in parentheses are standard errors.

Year	Length group					Total
	<8.0 in	8.0-11.9 in	12.0-14.9 in	≥15.0 in	≥20.0 in	
1996	77.3 (9.2)	6.7 (2.0)	18.0 (3.4)	23.3 (2.8)	0.0 (0.0)	125.3 (11.0)
1998	80.0 (11.1)	134.7 (18.6)	7.3 (2.2)	14.0 (3.4)	0.7 (0.7)	236.0 (26.0)
1999	71.0 (10.6)	161.0 (4.4)	27.0 (7.4)	22.0 (5.3)	2.0 (1.2)	281.0 (7.5)
2000	44.7 (5.0)	144.7 (13.4)	104.7 (13.8)	20.7 (2.2)	4.0 (1.5)	314.7 (24.7)
2001	71.3 (10.1)	144.0 (6.4)	97.7 (16.4)	31.3 (3.8)	2.7 (1.3)	346.0 (28.1)
2002	28.7 (3.0)	48.0 (12.5)	43.3 (4.8)	9.3 (1.7)	0.0 (0.0)	129.3 (30.3)
2003	44.7 (8.2)	96.0 (12.4)	56.0 (10.7)	27.3 (3.2)	1.3 (0.8)	224.0 (19.7)
2004	27.3 (4.3)	58.0 (8.9)	23.3 (4.3)	28.0 (3.9)	2.7 (1.3)	136.7 (15.6)
2005	23.3 (6.3)	76.7 (5.9)	46.0 (4.9)	30.0 (6.2)	1.3 (0.8)	176.0 (8.6)
2006	56.0 (5.6)	72.7 (12.1)	37.3 (6.5)	24.0 (2.5)	1.3 (0.8)	190.0 (14.6)
2007	14.7 (1.7)	98.0 (11.9)	46.7 (13.1)	40.0 (8.9)	1.3 (1.3)	199.3 (30.8)
2008	127.3 (6.5)	124.0 (14.6)	58.7 (6.6)	20.7 (4.6)	1.3 (0.8)	330.7 (21.5)
2009	66.7 (12.3)	73.3 (10.9)	28.0 (7.7)	12.0 (3.3)	1.3 (0.8)	180.0 (17.2)
2010	49.3 (2.2)	92.7 (11.5)	14.7 (2.0)	14.0 (3.5)	1.3 (0.8)	170.7 (12.8)
2011	76.0 (14.9)	64.7 (14.5)	27.3 (4.2)	14.7 (2.7)	2.7 (2.0)	182.7 (18.8)
2012	40.8 (7.5)	109.6 (12.9)	31.2 (8.4)	21.6 (6.1)	0.8 (0.8)	203.2 (24.0)
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)
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)
2016	46.0 (12.9)	130.0 (10.4)	44.0 (4.3)	9.0 (3.0)	0.0	229.0 (15.8)
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)

Dataset = cfdpsmcl.d18 – d96



Table 175. PSD and RSD<sub>15</sub> values obtained for largemouth bass from spring electrofishing samples in McNeely Lake in April 2018; confidence intervals are in parentheses.

Species	No. $\geq 8.0$ in	PSD	RSD <sub>15</sub>
Largemouth bass	406	36 ( $\pm 5$ )	9 ( $\pm 3$ )

Dataset = cfdpsmcl.d18

Table 176. Population assessment for largemouth bass collected during spring electrofishing at McNeely Lake from 2000-2018 (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 $\geq 15.0$ in	Spring CPUE $\geq 20.0$ in	Instantaneous mortality (z)	Annual mortality (AM)	Total score	Assessment rating
2018	Value	10.9*	70.0	72.0	25.3	2.7			17	Excellent
	Score	3	4	4	3	3				
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				
2012	Value	10.5	15.2	31.2	21.6	0.8	0.356	30.0	12	Fair
	Score	2	2	3	3	2				
2011	Value	11.4*	72.0	27.3	14.7	2.7			16	Good
	Score	3	4	3	3	3				
2010	Value	11.4*	50.8^	14.7	14.0	1.3			13	Good
	Score	3	3	2	3	2				
2009	Value	11.4*	67.8^	28.0	12.0	1.3			14	Good
	Score	3	4	3	2	2				
2008	Value	11.4	130.0	58.7	20.7	1.3	0.527	40.9	16	Good
	Score	3	4	4	3	2				
2007	Value	11.0*	5.3^	46.7	40.0	1.3			14	Good
	Score	3	1	4	4	2				
2006	Value	11.0*	50.7^	37.3	24.0	1.3			14	Good
	Score	3	3	3	3	2				
2005	Value	11.0*	12.7^	46.0	30.0	1.3			15	Good
	Score	3	2	4	4	2				
2004	Value	11.0	24.7	23.3	28.0	2.7	0.319	27.3	15	Good
	Score	3	3	2	4	3				
2003	Value	9.8*	20.0^	56.0	27.3	1.3			13	Good
	Score	1	2	4	4	2				
2002	Value	9.8*	23.3^	43.3	9.3	0.0			10	Fair
	Score	1	3	3	2	1				
2001	Value	9.8	70.0	99.3	31.3	2.7	0.392	32.4	16	Good
	Score	1	4	4	4	3				
2000	Value	10.4*	40.7^	104.7	20.7	4.0			16	Good
	Score	2	3	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 177. Species composition of fish removed from Big Bone Lick State Park Lake in response to dam failure on 3 July 2018.

Species	Inch class																Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Largemouth bass	21	40	59	19	27	23	12	22	19	22							264
Bluegill	5	2	1	1	3	2											14
Channel catfish															3	2	5

Table 178. Species composition of fish removed from General Butler State Park Lake in response to dam repairs on 14 August 2018.

Species	Size range (in)	Total
Largemouth bass	3.0-19.0	246
Bluegill	4.0-6.0	79
Redear sunfish	4.0-7.0	56
Channel catfish	12.0-16.0	6
White crappie	6.0-8.0	1

Table 179. Species composition, relative abundance, and CPUE (fish/hr) of fish collected in 0.5 hours of electrofishing in 15 acre pond on KY River WMA Boone Tract, August 2018; 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			
Largemouth bass			23	2		2	1	3	12	21	20	3	6	1	94	188.0	
Bluegill	9	22	13	7	4	7	12	1							75	150.0	
Black crappie		1				1	3								5	10.0	

Table 180. Species composition, relative abundance, and CPUE (fish/hr) of fish collected in 0.5 hours of electrofishing in 6 acre pond on KY River WMA Boone Tract, August 2018; numbers in parentheses are standard errors.

Species	Inch class																					Total	CPUE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
Largemouth bass				16		2	10	3	12	17	8	2	2						1	1	1	75	150.0
Bluegill	6	2	6	7	14	12	35	1														83	166.0
Redear sunfish						1																1	2.0
Black crappie								1		2	1											4	8.0

Table 181. Species composition, relative abundance, and CPUE (fish/hr) of fish collected in 0.25 hours of electrofishing in 4 acre pond on KY River WMA Boone Tract, August 2018; numbers in parentheses are standard errors.

Species	Inch class																		Total	CPUE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Largemouth bass				9		1	5	3	2	8	3	4	2		1			1	39	156.0
Bluegill	3	12	26	43	14	5													103	412.0
Redear sunfish			1	2	5	11	4	1											24	96.0
White crappie									2		1								3	12.0

Table 182. Species composition, relative abundance, and CPUE (fish/hr) of fish collected in 2.0 hours of electrofishing in Sympson Lake, April 2018; numbers in parentheses are standard errors.

Species	Inch class																					Total	CPUE
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21						
Largemouth bass	2	4	18	15	9	17	18	34	19	14	23	11	22	14	10	4	2	236	118.0 (17.4)				

Dataset = cfdpsym.d18

Table 183. Species composition, relative abundance, and CPUE (fish/hr) of fish collected in 1.75 hours of electrofishing in Willisburg Lake, May 2018; numbers in parentheses are standard errors.

Species	Inch class																				Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
Largemouth bass	4	8	4	9	36	29	17	20	37	29	18	21	18	11	16	6	8	6	297	169.7 (12.7)		

Dataset= cfdpswlb.d18

## NORTHEASTERN FISHERY DISTRICT

### Project 1: Lake and Tailwaters Fishery Surveys

#### FINDINGS

All sampling conditions can be found in Table 1. This includes dates, temperatures, secchi depths and any other pertinent sampling information during the sampling events.

#### **Cave Run Lake (8,720a)**

##### Muskellunge sampling

On March 19, 20 and 22, the upper, middle and lower sections of Cave Run Lake were sampled for an assessment of the muskellunge fishery. In total, 101 fish were collected; of those, 51 (50%) came from the lower section, 44 (44%) came from the middle section and 6 (6%) came from the upper section (Table 2). Relative weights continue to range from the upper 80% to lower 90% and show very little statistical difference from relative weights obtained prior to the implementation of the 36.0-in minimum size limit (Table 3). Once again, average length and weight of known-age fish was determined from marked members of the population. In Cave Run Lake, the fish tend to reach the minimum size limit of 36.0 in between their fourth and fifth year (Table 4). In 2018, the fishery overall was rated as “Fair” with a score of 9; this drop is very similar to the one experienced in 2016 with an overall decrease in numbers (Table 5). In October of 2016, Cave Run Lake was stocked with 1,080 young-of-year muskellunge.

Year	Marking	Number Stocked	Average Length (in)
2018	No Mark	1,080	12.2
2017	Caudal Wire Tag	2,700	12.0
2016	Right Cheek Wire Tag	2,800	11.8
2015	Dorsal Fin Wire Tag	1,307	13.0
2014	Left Cheek Wire Tag	2,900	13.3
2013	Right Pectoral Fin Clip	2,800	12.6
2012	Left Pelvic Fin Clip	1,923	12.4
2011	Right Pelvic Fin Clip	2,800	12.8
2010	Left Pectoral Fin Clip	2,811	12.5

##### Black bass sampling (Spring/Fall)

On May 7-9, the upper, middle and lower sections of Cave Run Lake were nocturnally electrofished for assessment of the black bass population. In total, 1,512 fish were captured. The majority of these fish were largemouth bass (65%), followed by spotted bass (33%) and smallmouth bass (2%; Table 6). As is normally the case, the percentage of the population represented by spotted and smallmouth bass increases as you head from the upper sections of the lake to the lower sections of the lake. Catch rates were similar to (or slightly higher than) the 1990-2017 average for all length groups of largemouth bass with the exception of the fish under 8.0 in and over 20.0 in, which were less than this average (Table 7). PSD and RSD<sub>15</sub> values for largemouth bass demonstrate that the majority of the fish in the lake are below 12.0 in (Table 8). Overall, the largemouth bass population was rated as “good” (Table 9) and the spotted bass population was rated as “fair” (Table 10). In October, a sample of individuals was collected to determine age and growth characteristics for the largemouth bass population. These samples demonstrate that the growth rates continue to be fair (Table 11). Age characteristics were also determined by section of the lake and showed that growth rates did not vary between the areas of the lake (Table 12).

##### Crappie sampling

Over the last week of October, crappie were sampled in the upper reaches of Cave Run Lake with trap nets. In 40 net-nights, 524 crappie were collected (Table 13). As is usually the case, the majority of the fish collected were white crappie (93%). PSD and RSD<sub>10</sub> showed that far and away the majority of the fish collected are smaller in size

(Table 14). Relative weights were in the upper 80 to lower 90 percent range (Table 15). The overall assessment of the white crappie fishery at Cave Run Lake was “fair” (Table 16).

### **Grayson Lake (1,512a)**

#### Black bass sampling (Spring/Fall)

The black bass population of Grayson Lake was nocturnally electrofished on April 23, 25, and 26. In total, 1,558 fish were collected ranging in size from 3.0 to 20.0 in (Table 17). The majority of these fish (79%) were largemouth and the remainder were spotted bass (21%) and smallmouth bass (>1%). Catch rates by length group were either higher than or not different than the average from 1999-2016 (Table 18). The majority of the population of largemouth bass over 8.0 in is under 12.0 in as demonstrated by PSD values (Table 19). The overall assessment of the largemouth bass fishery at Grayson Lake was “fair” (Table 20).

In September, Grayson Lake was nocturnally electrofished for determination of spawning strength of largemouth bass. Indices of year class strength for largemouth bass continue to be on the high end (Table 21) and the lake was once again not stocked with young of year largemouth bass in 2018.

#### Crappie sampling

On 18 October, crappie were sampled in the upper reaches of Grayson Lake by electrofishing. In total, 302 crappie were collected with the majority of those being white crappie (92%; Table 22). PSD and RSD<sub>10</sub> showed that far and away the majority of the fish collected are smaller in size (Table 23). Relative weights range from the mid-70's to the lower 90's (Table 24). The overall assessment of the white crappie fishery at Grayson Lake was “good” (Table 25).

#### Hybrid striped bass sampling

From 22-26 October, hybrid striped bass in Grayson Lake were sampled by use of 150', 5 panel experimental gill nets. In total, 115 fish were collected ranging in size from 7.0 to 24.0 in (Table 26). Relative weights were very similar to previous years (Table 27). A subsample of individuals was collected for determination of age and growth characteristics and this demonstrated fair growth rates (Table 28) and that the majority of the population was made up of individuals from 1-3 years old that ranged in size from 13.0 to 22.0 in (Table 29). The overall assessment of the hybrid striped bass fishery at Grayson Lake was “good” (Table 30). This population assessment was based off of samples collected specifically on Grayson Lake from 2011 to present.

### **Clear Creek Lake (39a)**

#### Black bass sampling (Spring/Fall)

On 25 April, the largemouth bass population was diurnally electrofished to assess the fishery. A total of 85 fish were collected ranging in size from 4.0 to 20.0 in (Table 31). The total catch rate was down from the 10-year average (Table 32). The PSD is also slightly below the 10-year average; however, RSD<sub>15</sub> is in line with the average (Table 33). The overall assessment for largemouth bass on Clear Creek Lake was “good” (Table 34).

Clear Creek Lake was also diurnally electrofished on 4 October to collect relative weights (Table 36) and assess age class. During that sample, 191 largemouth bass were collected ranging from 2.0 to 19.0 in (Table 35). A sample of the population was kept to determine the back calculated growth. The population was made up of mostly 1-3 year olds with slow growth rates (Table 37).

#### Sunfish sampling (Summer)

On 17 May, sunfish were diurnally electrofished to assess the population. During the sample, 48 bluegill ranging from 3.0 to 8.0 in were collected (Table 38). The overall catch rate of bluegill is lower than it has been in the past 10 years (Table 39). PSD and RSD<sub>8</sub> demonstrate that the majority of the bluegill are stock size with limited amounts breaking into the quality and preferred ranking (Table 40). The bluegill population was not scored this year, but the catch rates of fish over 6.0 in and 8.0 in were poor and fair, respectively (Table 41). Redear sunfish

were also collected during this sample. In total, 15 were collected ranging from 4.0 to 8.0 in (Table 42). Catch rates were extremely low this year; well below the 10-year average (Table 43). The redear sunfish population was not scored this year, but the catch rates of fish over 8.0 in and 10.0 in were good and unscored, respectively (Table 45).

## **Greenbo Lake (181a)**

### Black bass sampling (Spring)

On 2 May, Greenbo Lake was nocturnally electrofished to assess the population. In total, 377 largemouth bass were collected ranging from 2.0 to 23.0 in (Table 46). Catch rate was significantly up across all length groups (Table 47). PSD and RSD<sub>15</sub> mimic the increased catch rates by showing high numbers of both quality and preferred largemouth (Table 48). High numbers of largemouth in the 12.0- to 15.0-in category and greater than 20.0 in category carried the assessment to a “good” rating again this year (Table 49).

### Miscellaneous

Hydrilla continues to be a problem at Greenbo Lake. The fall largemouth bass sample was not attempted due to excessive weed coverage. In an effort to reduce the amount of vegetation, grass carp were stocked for a third straight year. Fifty-seven grass carp averaging fifteen inches were stocked this year.

### Creel Survey

From 01 March to 31 October, a roving creel survey was conducted on Greenbo Lake. In total, there were 5,814 trips on the lake (33 trips per acre), and anglers spent a total of 23,189 hours on the lake (132 hours per acre; Table 50). The majority of the users on Greenbo Lake are male residents who spend time still fishing from a boat. The most fished for species on the lake was “anything” (2,345.5 trips), followed by black bass (1,549.7 trips), panfish (725.6 trips), and trout (657.5 trips; Table 51). The most harvested species were panfish (3,216) followed by trout (1,562) and crappie (1,319). Panfish and trout were also the most caught species (7,345 and 1,814 fish, respectively) but bass took third place for total catch (1,791). Success rates were highest for panfish, trout and crappie (35.5%, 50.4% and 39.7%, respectively). Table 52 shows the number of fish harvested and released by in class. This table shows the very low (5% overall) harvest rate for largemouth bass, but high harvest rates for bluegill, both species of crappie, and trout. On average, 193.7 trips were made a month for largemouth bass, but these ranged from 97.8 trips in October to 319.5 trips in May (Table 53). The most successful month was May with 0.53 fish caught per hour of fishing. Trips made for trout slowly declined from 412.4 in March to 8.5 in July, and the most successful month was March (0.99 fish caught per angler hour; Table 54).

### Angler Attitude Survey

In conjunction with the creel survey, anglers were asked a series of questions pertaining to their attitudes towards fishing on Greenbo Lake (Table 55). Anglers were only surveyed once in the year. Overall, the most fished for species were bass, sunfish and trout. Those that fished for bass were satisfied (48.1%). Those who were not satisfied (12.9%) were disappointed in the number of fish and the inability to catch fish (34.1% and 25.0%, respectively). Similarly, the majority of the anglers who fished for sunfish, catfish and trout were also satisfied (57.0%, 47.7% and 67.5%, respectively). The majority of the anglers were satisfied with the current size and creel limits (97.2%). Finally, ¾ of the anglers were aware of the presence of hydrilla in Greenbo, and the same amount of individuals said it did not hinder their fishing experiences. Slightly more than ½ of the anglers know hydrilla is primarily introduced through boaters and about ½ of anglers took precautions to prevent the spread to other lakes.

## **Lake Reba (76a)**

### Black bass sampling (Spring/Fall)

On 18 April, Lake Reba was diurnally electrofished for assessment of the largemouth bass fishery. In total, 286 fish were collected ranging in size from 3.0 to 18.0 in (Table 56). This catch rate was on par with the average from 1995 – 2017, although the majority of the specific length group categories were at or below average (Table 57). Catch rates showed a higher percentage of smaller size classes of fish, and PSD and RSD<sub>15</sub> values echoed this (Table 58). The overall assessment of the largemouth bass fishery at Lake Reba was “good” (Table 59).

Lake Reba was once again diurnally electrofished in the fall to collect indices related to spawning class strength and based on these values the lake was not stocked in 2018 (Table 60).

### **Smokey Valley (36a)**

#### Black bass sampling (Spring/Fall)

On May 01, Smoky Valley Lake was diurnally electrofished for assessment of the largemouth bass fishery. In total, 256 fish were captured ranging in size from 3.0 to 17.0 in (Table 61). Catch rates were similar to (or slightly higher than) the 1990-2017 average for all length groups of largemouth bass (Table 62). PSD and RSD<sub>15</sub> values for largemouth bass demonstrate that the majority of the fish in the lake are below 12.0 in (Table 63). Overall, the largemouth bass population was rated as “fair” (Table 64).

On 8 October, Smoky Valley was again sampled to determine relative weights and age and growth characteristics for the largemouth bass population. For this sample, 249 fish were caught (Table 65) and the relative weight was in the middle 80’s (Table 66). This sample continued to show slower growth rates overall (Table 67) and that the females tended to grow quicker than the males (Table 68).

### **Lake Wilgreen (131a)**

#### Black bass sampling (Spring/Fall)

On April 19, Lake Wilgreen was diurnally electrofished for assessment of the largemouth bass fishery. In total, 185 fish were captured ranging in size from 2.0 to 22.0 in (Table 69). Catch rates, for the most part, were below the 1990-2017 average with the exception of the larger-sized fish, which continue to be above average (Table 70). PSD and RSD<sub>15</sub> values for largemouth bass demonstrate that the majority of the fish in the lake are above 12.0 in and that a healthy number of the fish are also above 15.0 in (Table 71). Overall, the largemouth bass population was rated as “good” (Table 72).

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

Water body	Species	Date (2018)	Time 24hr	Gear	Weather	Water Temp (°F)	Water level	Secchi (in)	Conditions	Pertinent sampling comments
Cave Run Lake	Muskie	3/19	900	electro	overcast	48	733.28	38	fair	middle section (Beaver Creek); 3h sample
Cave Run Lake	Muskie	3/22	900	electro	overcast	45	731.94	33	fair	upper section (Poppin Rock/Bangor)
Cave Run Lake	Muskie	3/20	900	electro	sunny	47	732.56	30	fair	low er section (Dam/Scott's Creek)
Cave Run Lake	LMB	5/7	2030	electro	nocturnal	71	731.39	48	fair	Upper
Cave Run Lake	LMB	5/8	2030	electro	nocturnal	76	731.85	60	fair	middle
Cave Run Lake	LMB	5/9	2030	electro	nocturnal	70	731.69	66	fair	low er
Cave Run Lake	LMB	10/23	900	electro	sunny/cold	67	731.67	56	good	low er/middle, otolith collection
Cave Run Lake	LMB	10/24	900	electro	sunny	59	730.92	28	good	upper, otolith collection
Cave Run Lake	BC/WC	10/30	800	trap net	-	52	727.40	29	good	
Cave Run Lake	BC/WC	10/31	800	trap net	-	54	727.10	30	good	
Cave Run Lake	BC/WC	11/1	800	trap net	-	56	726.97	38	good	
Cave Run Lake	BC/WC	11/2	800	trap net	-	54	727.01	34	good	
Grayson Lake	LMB	4/23	2000	electro	nocturnal	57	645.24	33	good	upper section (Caney)
Grayson Lake	LMB	4/25	2000	electro	nocturnal	58	645.52	45	good	middle section (Bruin)
Grayson Lake	LMB	4/26	2030	electro	nocturnal	60	645.57	51	good	low er section (Dam/Deer Creek)
Grayson Lake	LMB	9/18	2000	electro	nocturnal	77	646.60	20	good	upper section (Caney)
Grayson Lake	LMB	9/19	2000	electro	nocturnal	83	646.30	60	good	middle section (Bruin)
Grayson Lake	LMB	9/20	2000	electro	nocturnal	84	646.8	50	good	low er section (Dam/Deer Creek)
Grayson Lake	BC/WC	10/18	830	electro	clear, cool	58	645.22	-	good	upper section (Caney)
Grayson Lake	hybrids	10/23	830	gill (125')	sunny	60		48	good	
Grayson Lake	hybrids	10/24	830	gill (125')	sunny	56		-	good	
Grayson Lake	hybrids	10/25	830	gill (125')	sunny	60		40	good	
Clear Creek	LMB	4/25	1230	electro	sunny/w arm	57	normal	33	good	
Clear Creek	LMB	10/4	830	electro	sunny/w arm	73	normal	26	good	
Clear Creek	SUN	5/17	1100	electro	sunny/w arm	78	normal	72	good	
Greenbo Lake	LMB	5/2	2000	electro	clear	65	normal	96	good	
Smoky Valley	LMB	5/1	830	electro	sunny	63	normal	54	good	
Smoky Valley	LMB	10/8	830	electro	sunny	-	normal	32	good	
Lake Reba	LMB	4/18	900	electro	sunny	55	normal	36	good	
Lake Reba	LMB	9/18	900	electro	clear	77	normal	18	good	
Lake Wilgreen	LMB	4/19	8300	electro	sunny	55	normal	36	good	
Slate Creek	"game"	6/7	800	j. electro	clear	70	-	-	good	Site 1 White Oak; dow nstream most
Slate Creek	"game"	6/20	800	j. electro	clear	81	-	-	good	Site 2 Bach Hole; 2nd dow nstream most
Slate Creek	"game"	6/8	800	j. electro	clear	72	-	-	good	Site 3 Lion's Club; 2nd upstream most
Slate Creek	"game"	6/7	800	j. electro	clear	72	-	-	good	Site 4 Shrout Road; upstream most





Table 3. 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 2003-2018. 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	$W_r$	(se)
	N	$W_r$	(se)	N	$W_r$	(se)	N	$W_r$	(se)	N	$W_r$	(se)			
2018	8	79.7	(1.1)	21	88.1	(1.5)	20	92.4	(1.7)	10	87.4	(3.1)	59	88.3	(1.1)
2017	4	87.9	(2.9)	31	91.9	(0.9)	54	87.8	(1.0)	18	87.2	(2.8)	107	88.9	(0.8)
2016	5	80.5	(1.0)	25	88.9	(2.1)	31	88.5	(1.3)	9	99.6	(4.3)	70	89.5	(1.2)
2015*															
2014	30	79.9	(1.0)	24	89.4	(1.1)	57	90.5	(1.1)	29	91.4	(1.6)	140	88.2	(0.7)
2013	11	79.0	(1.8)	4	94.7	(1.9)	41	94.1	(1.5)	17	91.6	(2.8)	73	91.3	(1.3)
2012	14	74.6	(1.0)	28	87.5	(2.1)	58	102.3	(12.2)	20	86.4	(1.4)	120	92.9	(6.0)
2011	23	83.4	(2.4)	29	92.8	(1.5)	40	90.8	(1.4)	27	87.7	(1.6)	119	89.2	(0.9)
2010	19	79.3	(1.0)	64	92.1	(0.9)	52	93.6	(1.9)	18	89.6	(1.3)	153	90.7	(0.9)
2009	12	87.9	(4.4)	11	96.8	(1.5)	36	92.7	(1.0)	23	93.0	(1.3)	82	92.6	(0.9)
2008	27	76.4	(1.3)	40	114.3	(17.4)	48	93.6	(1.3)	11	89.0	(1.5)	126	95.9	(5.6)
2007	35	83.7	(0.9)	9	101.8	(3.8)	18	94.5	(2.5)	14	91.9	(1.5)	76	89.9	(1.1)
2006	17	74.9	(1.1)	13	87.6	(2.2)	26	88.7	(1.4)	13	87.3	(1.2)	69	84.8	(1.0)
2005	26	81.2	(3.8)	23	90.6	(1.1)	38	89.3	(1.0)	22	85.3	(2.4)	109	86.8	(1.2)
2004	10	79.0	(2.3)	10	89.9	(3.2)	32	87.4	(1.2)	15	80.2	(1.1)	67	84.9	(1.0)
2003	22	82.4	(3.0)	16	95.5	(2.6)	33	92.2	(1.6)	9	87.1	(2.1)	80	89.6	(1.3)

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\* = Lake was not sampled due to high water

Table 4. Average length and weight of known-age muskellunge (standard error in parentheses) in comparison to historical averages (collected from known-age muskie from 1989-2003).

	Age class							
	Age 1	Age 2	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8
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)	N= 15 L= 23.4 (0.5) W= 2.8 (0.2)						
2013	N= 74 L= 13.9 (0.1) W= 0.5 (0.0)	N= 2 L= 22.3 (2.8) W= 2.6 (1.4)	N= 7 L= 31.0 (0.4) W= 7.5 (0.5)					
2014	N= 73 L= 14.7 (0.1) W= 0.6 (0.0)	N= 23 L= 23.4 (0.4) W= 2.9 (0.2)	N= 9 L= 31.7 (0.4) W= 8.1 (0.4)	N= 15 L= 34.0 (0.8) W= 10.2 (0.9)				
2015								
2016	N= 40 L= 14.0 (0.1) W= 0.6 (0.1)	N= 18 L= 23.2 (0.2) W= 2.8 (0.1)	N= 15 L= 31.0 (0.4) W= 7.3 (0.3)	N= 13 L= 34.2 (0.5) W= 10.2 (0.6)	N= 1 L= 39.1 (--) W= 16.0 (--)	N= 5 L= 38.5 (1.0) W= 15.0 (2.2)		
2017	N= 59 L= 13.5 (0.1) W= 0.4 (0.0)	N= 17 L= 24.1 (0.7) W= 3.4 (0.5)	N= 23 L= 29.0 (0.9) W= 6.1 (0.4)	N= 17 L= 34.3 (0.4) W= 10.2 (0.4)	N= 9 L= 37.3 (0.5) W= 13.5 (0.9)	N= 5 L= 37.5 (0.5) W= 12.8 (0.7)	N= 4 L= 37.6 (0.4) W= 13.2 (0.8)	
2018	N= 46 L= 13.9 (0.4) W= 0.5 (0.0)	N= 23 L= 21.9 (0.4) W= 2.3 (0.2)	N= 2 L= 32.7 (1.8) W= 9.0 (1.6)	N= 3 L= 32.9 (1.0) W= 10.0 (0.4)	N= 7 L= 35.1 (1.0) W= 11.0 (0.9)	N= 2 L= 36.2 (2.2) W= 12.0 (1.5)	N= 5 L= 38.2 (1.7) W= 14.7 (1.5)	N= 0 L= W=
Average (Present)	L= 14.2 (0.2) W= 0.5 (0.0)	L= 23.0 (0.3) W= 2.8 (0.2)	L= 31.1 (0.6) W= 7.6 (0.5)	L= 33.8 (0.3) W= 10.1 (0.1)	L= 37.2 (1.2) W= 13.5 (1.4)	L= 37.4 (0.7) W= 13.2 (0.9)	L= 37.9 (0.3) W= 13.9 (0.8)	L= W=
Historical Average	L= 15.1 W= 0.7	L= 23.8 W= 3.8	L= 30.5 W= 7.8	L= 35.0 W= 11.3	L= 37.3 W= 15.7	L= 38.3 W= 15.3	L= 42.6 W= 20.7	L= 42.6 W= 20.7

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Table 5. Muskellunge assessment for Cave Run Lake spring electrofishing from 1995-2018.

Year		CPUE age-1	Spring CPUE ≥20.0 in	Spring CPUE ≥30.0 in	Spring CPUE ≥36.0 in	Spring CPUE ≥40.0 in	Total score	Assessment rating																																																																																																																																																																																																																																																																																																																																										
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
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												
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																											
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																																																			
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																																																																		
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																																																																																	
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																																																																																																
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	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																																																																																																															
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	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																																																																																																																														
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	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																																																																																																																																													
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	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																																																																																																																																																												
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	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																																																																																																																																																																											
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	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																																																																																																																																																																																										
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	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																																																																																																																																																																																																									
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	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																																																																																																																																																																																																																																																
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	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																																																																																																																																																																																																																																																															
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																																																																																																																																																																																																																																																																														
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																																																																																																																																																																																																																																																																																													
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																																																																																																																																																																																																																																																																																																												
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	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																																																																																																																																																																																																																																																																																																																											
1995	Value	2.9	4.5	2.8	1.6	0.6	12	Fair																																																																																																																																																																																																																																																																																																																																										
	Score	2	2	2	3	3																																																																																																																																																																																																																																																																																																																																												

nedmuscr.d18-09; nedMS2cr.d08; nedMK1cr.d07; nedmuscr.d06-95

\* = Lake was not sampled due to high water

Table 6. Length frequency and CPUE (fish/hr) of black bass collected in 2.0 hours (6.0 hours total) of 30-minute nocturnal electrofishing runs in each area of Cave Run Lake from 07 - 09 May.

Area	Species	Inch class																			Total	CPUE	Std. error	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				21
Upper	Largemouth bass	2	17	22	8	7	43	29	17	15	11	19	12	16	15	6	1	3	1	1	245	122.5	4.7	
	Spotted bass			3	6	5	7	5	3	1	1										31	15.5	7.1	
	Smallmouth bass																1				1	0.5	0.5	
Middle	Largemouth bass		3	23	27	17	6	38	66	43	42	23	10	11	7	11	2	1			330	165.0	37.7	
	Spotted bass		31	54	28	18	37	38	28	12	8	2		1							257	128.5	8.9	
	Smallmouth bass			6	4	2		1	2	2	2	1						2			22	11.0	2.7	
Lower	Largemouth bass		1	10	33	16	14	60	71	53	33	41	27	14	9	8	7	5	3		405	202.5	35.0	
	Spotted bass	1	14	13	13	26	32	47	34	12	10	2	2	1							207	103.5	27.1	
	Smallmouth bass		1	4		1		5	1	1	1										14	7.0	3.7	
Total	Largemouth bass		6	50	82	41	27	141	166	113	90	75	56	37	32	34	15	7	6	1	1	980	163.3	18.5
	Spotted bass	1	45	70	47	49	76	90	65	25	19	4	2	2							495	82.5	17.1	
	Smallmouth bass		1	10	4	3		6	3	3	3	1						1	2		37	6.2	1.9	

nedpsdcr.d18

Table 7. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Cave Run Lake from 1990-2018.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
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			149.0	8.7
1998	18.7	3.5	17.9	2.9	20.6	2.1	6.9	1.5			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			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

\* = No sample due to high water

nedpsdcr.d90 - d18

Table 8. PSD and RSD values obtained for largemouth and spotted bass species taken in spring electrofishing samples in each area of Cave Run Lake; 95% confidence intervals are in parentheses.

Area	Species	No. $\geq 8.0$ in	PSD ( $\pm 95\%$ )	RSD <sub>a</sub> ( $\pm 95\%$ )
Upper	Largemouth bass	189	45 ( $\pm 7$ )	23 ( $\pm 06$ )
	Spotted bass	17	6 ( $\pm 12$ )	-
Middle	Largemouth bass	254	26 ( $\pm 5$ )	8 ( $\pm 3$ )
	Spotted bass	126	9 ( $\pm 5$ )	1 ( $\pm 2$ )
Lower	Largemouth bass	331	34 ( $\pm 5$ )	10 ( $\pm 3$ )
	Spotted bass	140	11 ( $\pm 5$ )	1 ( $\pm 1$ )
Total	Largemouth bass	774	34 ( $\pm 3$ )	12 ( $\pm 2$ )
	Spotted bass	283	10 ( $\pm 3$ )	1 ( $\pm 1$ )

<sup>a</sup> Largemouth bass = RSD<sub>15</sub>, spotted bass = RSD<sub>14</sub>  
nedpsdcr.d18

Table 9. Population assessment of largemouth bass based on samples collected at Cave Run Lake 2003-2018 (scoring based on statewide assessment).

Year		Mean length age-3	Spring CPUE 12.0-14.9 in	Spring CPUE ≥15.0 in	Spring CPUE ≥20.0 in	Spring CPUE age-1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2018	Value	11.9	35.8	28.0	16.0	0.3	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				
2007	Value	12.4	19.9	7.9	0.3	66.5	12	Fair	0.703	51.0%
	Score	2	2	2	2	4				
2006	Value		14.7	10.2	0.2	49.2	11	Fair	0.799	55.0%
	Score	2	1	2	2	4				
2005	Value		14.7	7.2	0.7	43.0	12	Fair	0.897	59.0%
	Score	2	1	2	3	4				
2004	Value		26.0	14.1	0.3	28.1	13	Good	0.846	57.0%
	Score	2	3	3	2	3				
2003	Value	12.4	24.8	20.3	0.8	39.8	15	Good		
	Score	2	3	4	3	3				

\* = Lake was not sampled due to high water

nedpsdcr.d00 - d18



Table 10. Population assessment of spotted bass based on samples collected at Cave Run Lake 2000-2018 (scoring based on statewide assessment).

Year		Mean Length age-3	Spring CPUE 11.0-13.9	Spring CPUE ≥14.0 in	Spring CPUE age-1	Total score	Assessment rating
2018	Value		4.2	0.3	119.8	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		

\* = Lake was not sampled due to high water  
nedpsdcr.d00 - d18

Table 11. Mean back calculated lengths (in) at each annulus for largemouth bass collected from Cave Run Lake in October 2018, includes 95% confidence interval (CI) for mean length for each age class.

Year	No.	Age						
		1	2	3	4	5	6	7
2018	0							
2017	42	5.5						
2016	35	5.9	9.1					
2015	17	5.8	9.6	11.9				
2014	8	5.4	9.1	11.3	12.9			
2013	7	6.8	10.3	12.6	14.4	16.0		
2012	4	7.2	10.7	12.9	14.4	15.5	16.7	
2011	4	6.6	11.1	13.1	14.8	16.0	17.0	17.5
Mean		5.8	9.5	12.1	13.9	15.9	16.8	17.5
Number		117	75	40	23	15	8	4
Smallest		3.4	6.5	8.4	10.6	14.1	15.6	16.6
Largest		8.6	13.2	16.0	16.8	17.5	17.8	18.1
Std. error		0.1	0.1	0.2	0.3	0.3	0.3	0.4
95% CI (±)		0.3	0.5	0.9	1.1	1.2	1.2	1.5

nedaagcr.d18

Table 12. Back calculated lengths (in) by section of the lake for largemouth bass collected from Cave Run Lake in October 2018, includes 95% confidence interval (CI) for mean length for each age class.

	Year	Age						
		1	2	3	4	5	6	7
Upper Lake	Number	37	24	15	11	6	3	2
	Mean	5.8	9.5	12.0	14.1	16.3	17.4	17.7
	Std. error	0.2	0.3	0.5	0.5	0.5	0.4	0.4
Middle Lake	Number	36	24	12	6	5	2	1
	Mean	5.8	9.6	11.9	14.3	15.8	17.2	18.1
	Std. error	0.1	0.1	0.3	0.3	0.5	0.5	-
Lower Lake	Number	44	27	13	6	4	3	1
	Mean	5.9	9.5	12.4	13.4	15.3	16.0	16.6
	Std. error	0.1	0.2	0.4	0.5	0.6	0.3	-
Total	Number	117	75	40	23	15	8	4
	Mean	5.8	9.5	12.1	13.9	15.9	16.8	17.5
	Std. error	0.1	0.1	0.2	0.3	0.3	0.3	0.4

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Table 13. Length frequency and CPUE (fish/nn) for black and white crappie collected in 40 net-nights of sampling at Cave Run Lake from 30 October to 02 November.

Species	Inch class													Total	CPUE	Std. error
	1	2	3	4	5	6	7	8	9	10	11	12	13			
White crappie	1	3	54	13	100	104	126	42	20	15	8	1	1	488	12.2	2.5
Black crappie			1		6	11	11	4	2		1			36	0.9	0.3

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Table 14. PSD and RSD<sub>10</sub> values obtained for black and white crappie in upper Cave Run Lake; 95% confidence intervals are in parentheses.

Species	No. ≥ 5.0 in	PSD (± 95%)		RSD <sub>10</sub> (± 95%)	
White crappie	417	21	(± 4)	6	(± 2)
Black crappie	35	20	(± 13)	3	(± 6)

nedctncr.d18

Table 15. Number of fish and mean relative weight ( $W_r$ ) values for length groups of black and white crappie collected in Cave Run Lake by trap netting.

Species	Length group									Total		
	5.0 - 7.9 in			8.0 - 9.9 in			≥ 10.0 in			No.	$W_r$	s.e.
	No.	$W_r$	s.e.	No.	$W_r$	s.e.	No.	$W_r$	s.e.			
White crappie	330	97	1	62	85	2	24	88	2	416	95	1
Black crappie	28	103	4	6	97	3	1	79	-	35	102	4

nedctncr.d18

Table 16. Population assessment of white crappie based on samples collected at Cave Run Lake in 2018 compared to previous years (scoring based on statewide assessment).

Year		Overall CPUE excluding age-0	Mean length age-2	Fall CPUE ≥8.0 in	CPUE age-1	CPUE age-0	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2018	Value	10.8		2.2	2.8	1.5	10	Fair		
	Score	2	1	2	2	2				
2017	Value									
	Score									
2016	Value	2.7	7.4	1.1	0.4	0.1	6	Poor		
	Score	2	1	1	1	1				
2015	Value	3.8	7.5	1.2	1.1	0.9	8	Poor	-0.800	55.10%
	Score	2	1	1	2	2				
2014	Value									
	Score									
2013	Value	4.6		2.0	1.4	1.5	9	Fair		
	Score	2	1	2	2	2				
2012	Value	5.8	7.9	0.7	2.2	2.8	9	Fair	-1.179	69.20%
	Score	2	1	1	2	3				
2011	Value	21.4		3.4	11.6	17.3	16	Good		
	Score	4	1	3	4	4				
2010	Value	3.6		1.4	0.9	2.5	8	Poor	-1.220	70.50%
	Score	2	1	1	1	3				
2009	Value	106.4		3.3	59.2	56.0	16	Good	-1.490	77.50%
	Score	4	1	3	4	4				
2008	Value	2.0		0.6	0.6	1.3	6	Poor	0.588	45.50%
	Score	1	1	1	1	2				
2007	Value	2.8	7.7	0.6	0.7	0.6	7	Poor	1.410	75.50%
	Score	2	1	1	1	2				
2006	Value	6.9		0.7	5.1	3.8	11	Fair	0.951	66.30%
	Score	3	1	1	3	3				
2005	Value	2.2		0.9	0.7	1.7	7	Poor	0.572	43.60%
	Score	1	1	1	1	3				
2004	Value	9.3	7.9	3.0	4.2	6.4	13	Good	0.762	53.30%
	Score	3	1	2	3	4				
2003	Value	1.6	7.8	0.7	0.2	0.1	5	Poor	0.391	32.30%
	Score	1	1	1	1	1				

nedctncr.d92-13; nedaagcr.d92-99, d01-04, 07, 12

Table 17. Length frequency and CPUE (fish/hr) of black bass collected in 4.5 hours (1.5 hours in each section) of nocturnal electrofishing (3-30-minute runs) for black bass in Grayson Lake on 23, 25-26 of April.

Area/Species	Inch class																	Total	CPUE	Std. error	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20
Upper																					
Smallmouth bass																			0		
Spotted bass									2										2	1.3	0.7
Largemouth bass		2	1	14	31	20	10	8	12	3	4	1	3	4	2	2		4	121	80.7	13.1
Middle																					
Smallmouth bass																			0		
Spotted bass		4	12	2	5	9	8	8	2										50	33.3	10.7
Largemouth bass		9	116	133	14	85	77	36	23	15	4	4	2	1	1	2	3	1	526	350.7	13.8
Lower																					
Smallmouth bass										1			1						2	1.3	1.3
Spotted bass	2	42	22	18	67	22	27	9	9	5									223	148.7	18.1
Largemouth bass		22	158	78	9	40	92	78	48	33	7	4	2	3	3	1	4		582	388.0	56.9
Total																					
Smallmouth bass										1			1						2	0.4	0.4
Spotted bass	2	46	34	20	72	31	35	17	13	5									275	61.1	23.2
Largemouth bass		33	275	225	54	145	179	122	83	51	15	9	7	8	6	5	7	5	1229	273.1	51.4

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Table 18. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Grayson Lake from 1999-2018.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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

\* = No sample due to high water

nedpsdgl.d18-d12; d09 - d99

Table 19. PSD and RSD values obtained for spotted and largemouth bass species taken in spring electrofishing samples in each area of Grayson Lake; 95% confidence intervals are in parentheses.

Area	Species	No. $\geq 8.0$ in	PSD ( $\pm 95\%$ )	RSD <sub>a</sub> ( $\pm 95\%$ )
Upper	Spotted bass	2	10 ( $\pm 5$ )	-
	Largemouth bass	73	18 ( $\pm 4$ )	4 ( $\pm 2$ )
Middle	Spotted bass	32	6 ( $\pm 9$ )	-
	Largemouth bass	254	13 ( $\pm 4$ )	2 ( $\pm 2$ )
Lower	Spotted bass	139	100 ( $\pm 0$ )	-
	Largemouth bass	315	32 ( $\pm 11$ )	21 ( $\pm 9$ )
Total	Spotted bass	173	10 ( $\pm 6$ )	-
	Largemouth bass	642	18 ( $\pm 3$ )	6 ( $\pm 2$ )

<sup>a</sup> Largemouth bass = RSD<sub>15</sub>, spotted bass = RSD<sub>14</sub>  
nedpsdgl.d18

Table 20. Population assessment of largemouth bass based on samples collected at Grayson Lake from 2000-2018 (scoring based on statewide assessment).

Year		Mean length				Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%	
		age-3 at capture	Spring CPUE 12.0-14.9 in	Spring CPUE ≥15.0 in	Spring CPUE ≥20.0 in					Spring CPUE age-1
2018	Value		16.7	8.4	1.1	126.9	12	Fair		
	Score	1	2	2	3	4				
2017	Value	11.0	19.8	8.9	0.9	85.1	12	Fair		
	Score	1	2	2	3	4				
2016	Value		15.7	11.0	1.7	169.3	12	Fair		
	Score	2	1	2	3	4				
2015	Value		18.9	14.9	3.3	53.8	15	Good		
	Score	2	2	3	4	4				
2014	Value		12.7	13.5	2.2	46.9	14	Good		
	Score	2	1	3	4	4				
2013	Value		13.2	16.3	1.5	73.2	14	Good		
	Score	2	1	3	4	4				
2012	Value		16.8	13.3	0.3	48.5	13	Good		
	Score	2	2	3	2	4				
2011	Value									
	Score									
2010	Value									
	Score									
2009	Value		17.0	12.7	0.8	19.9	11	Fair	-0.361	30.30%
	Score	2	2	2	3	2				
2008	Value	11.6	11.5	3.7	0.3	21.3	8	Poor	-0.445	35.90%
	Score	2	1	1	2	2				
2007	Value		16.0	5.0	0.2	45.9	9	Fair	-0.538	41.60%
	Score	1	1	1	2	4				
2006	Value		23.7	5.3	0.3	17.3	9	Fair	-5.350	41.50%
	Score	1	3	1	2	2				
2005	Value		25.1	2.9	0.2	46.8	11	Fair	-0.731	51.90%
	Score	1	3	1	2	4				
2004	Value		12.9	2.9	0.3	40.4	8	Poor		
	Score	1	1	1	2	3				
2003	Value		6.3	2.2	0.7	125.2	10	Fair		
	Score	1	1	1	3	4				
2002	Value		4.8	3.0	0.8	127.2	10	Fair		
	Score	1	1	1	3	4				

nedpsdgl.d02-d18; nedaaggl.d03,d08,d17



Table 21. Indices of year class strength at age 0 and age 1 and mean lengths (in) of largemouth bass collected in September while nocturnal electrofishing at Grayson Lake.

Year class	Area	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2018	Total	4.9	0.0	164.2	39.3	74.2	19.8		
2017	Total	5.2	0.0	91.1	20.1	63.1	15.3	126.9	28.0
2016	Total	4.7	0.0	116.4	24.1	38.9	9.7	85.1	12.7
2015	Total	4.8	0.0	126.0	16.7	48.7	8.6	169.3	15.1
2014	Total	4.6	0.0	101.8	15.7	31.8	8.3	53.8	14.3
2013	Total	4.3	0.0	81.3	11.2	15.3	3.3	46.9	9.5
2012	Total	4.5	0.0	139.1	23.0	41.8	6.1	65.7	9.1
2011	Total	4.0	0.0	83.6	15.0	11.1	2.6	48.5	12.0
2010	Total	4.8	0.0	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	0.0	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	0.0	87.1	17.9	12.0	2.6	45.9	8.0
2005	Total	4.0	0.0	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	0.0	59.1	6.8	10.4	1.7	158.9	21.7

\* No sample collected due to high water

nedbsigl.d18., d16-d13 nedwrsigl.d17,d12 - d03; nedpsdgl.d18-d12, d09 - d04  
nedaaggl.d03, d08, d17

Table 22. Length frequency and CPUE (fish/hr) of black and white crappie collected in 2.0 hours of diurnal electrofishing (8- 15-minute runs) on Grayson Lake on 18 October.

Species	Inch class												Total	CPUE	Std. error
	3	4	5	6	7	8	9	10	11	12	13	14			
White crappie	2		18	111	113	20	5	3	2	1		1	276	138.5	24.9
Black crappie			1	3	6	11	3		1				25	12.5	4.1

nedcwrgl.d18

Table 23. PSD and RSD<sub>10</sub> values for crappie collected while electrofishing on Grayson Lake; 95% confidence limits are in parentheses.

Species	No. ≥5.0 in	PSD (± 95%)		RSD <sub>10</sub> (± 95%)	
White crappie	274	12	(± 4)	3	(± 2)
Black crappie	25	60	(± 20)	4	(± 8)

nedcwrgl.d18

Table 24. Number of fish and relative weight ( $W_r$ ) for each length group of crappie collected at Grayson Lake in 2018. se = standard error.

Year	Length group									Total		
	5.0-7.9 in			8.0-11.9 in			≥10.0 in			No.	$W_r$	se
	No.	$W_r$	se	No.	$W_r$	se	No.	$W_r$	se	No.	$W_r$	se
White crappie	242	83	1	25	74	3	7	90	6	274	82	1
Black crappie	10	86	3	14	85	2	1	98	-	25	86	2

nedcwrjl.d18

Table 25. Population assessment for white crappie based on samples collected during the fall at Grayson Lake from 2005-2018 (scoring based on lake-specific assessment (lake assessment updated in 2018, all scores reflect that update)).

Year		CPUE age-1 and older	Mean length age-2	CPUE age-0	CPUE age-1	CPUE ≥8.0 in	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2018	Value	137.5		1.0	64.5	16.0	16	Good		
	Score	3	4	3	4	2				
2017	Value									
	Score									
2016	Value	141.3	7.5	0.0	14.1	22.7	12	Good	-0.753	52.90%
	Score	3	4	0	2	3				
2015	Value									
	Score									
2014	Value	54.0	5.2	0.0	0.7	8.7	5	Poor	-0.752	52.80%
	Score	2	1	0	1	1				
2013	Value									
	Score									
2012	Value	125.2		2.0	11.5	27.3	14	Good		
	Score	3	1	4	2	4				
2011	Value									
	Score									
2010	Value	124.0	6.6	0.7	13.5	24.7	14	Good	-0.425	34.60%
	Score	3	4	2	2	3				
2009	Value	69.3	6.4	0.5	16.8	10.3	10	Fair	-0.384	56.60%
	Score	2	3	1	2	2				
2008	Value	104.6	6.4	1.7	27.6	16.0	15	Good	-0.754	53.00%
	Score	3	3	4	3	2				
2007	Value	21.6	5.6	0.3	1.3	6.0	5	Poor	-0.900	59.30%
	Score	1	1	1	1	1				
2006	Value	228.8	5.6	39.6	83.3	42.4	17	Excellent	-1.185	69.40%
	Score	4	1	4	4	4				
2005	Value	41.3	5.1	1.3	9.9	16.7	8	Poor	-0.233	20.80%
	Score	1	1	3	1	2				

nedcwrjl.d18, d16, d14, d12, d10 - d05; nedaaggl.d05, d06, d08, d10, d16

Table 26. Length frequency and CPUE (fish/nn) for hybrid striped bass collected at Grayson Lake while gill netting (11 net-nights) 22-25 October.

Species	Inch class																	Total	CPUE	Std. error
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Hybrid striped bass	2	17					12	19	4	15	19	7	8	5	4	2	1	115	10.3	1.2

nedhybgl.d18

Table 27. Number of fish and relative weight (Wr) for each length group of hybrid striped bass collected at Grayson Lake. se = standard error

Year	Length group									Total		
	8.0-11.9 in			12.0-14.9 in			≥15.0 in			No.	Wr	se
	No.	Wr	se	No.	Wr	se	No.	Wr	se			
2018	17	86	1.6	31	84	0.9	65	83	0.8	113	84	0.6
2016	21	85	1.5	26	79	1.3	27	81	1.1	74	81	0.8
2014	23	79	1.8	10	76	2.2	43	83	1.0	76	81	0.9
2011	4	72	0.6	26	81	1.0	43	85	1.0	71	83	0.9

nedhybgl.d18, d16, d14, d11

Table 28. Mean back calculated lengths (in) at each annulus for hybrid striped bass collected from Grayson Lake in October 2018, includes 95% confidence interval (CI) for mean length for each age class.

Year	No.	Age					
		1	2	3	4	5	6
2018	0						
2017	26	9.2					
2016	32	9.7	15.1				
2015	16	9.4	15.0	17.9			
2014	8	8.9	14.6	17.9	20.1		
2013	2	9.4	13.3	16.2	18.8	20.9	
2012	3	9.5	14.3	17.2	19.9	21.5	22.7
Mean		9.4	14.9	17.7	19.8	21.3	22.7
Number		87	61	29	13	5	3
Smallest		7.4	12.4	15.6	18.0	20.2	21.4
Largest		11.2	17.0	19.4	21.4	22.3	23.3
Std. error		0.1	0.1	0.2	0.3	0.4	0.6
95% CI (±)		0.3	0.4	0.7	1.2	1.6	2.5

nedaaggl.d18

Table 29. Age frequency and CPUE (fish/nn) of hybrid striped bass sampled using gill nets for 11 net-nights at Grayson Lake in October 2018.

Age	Inch class																		Total	%	CPUE	Std. error
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
0	2	17																	19	17	1.7	0.5
1						12	18												30	26	2.7	0.7
2							1		4	15	12	2							34	30	3.1	0.5
3											7	5	3	2	1				18	16	1.7	0.4
4													5	2	2				9	8	0.8	0.2
5															1		1		2	1	0.2	0.1
6																1	1	1	3	2	0.3	0.1
Total	2	17	0	0	0	0	12	19	0	4	15	19	7	8	5	4	2	1	115	100		
%	1	18	0	0	0	0	10	17	0	3	13	17	6	7	4	3	1	0	100			

nedhybgl.d18; nedaaggl.d18

Table 30. Population assessment for hybrid striped bass based on samples collected during the fall at Grayson Lake (scoring based on lake-specific assessment for 125-foot nets).

Year		CPUE		CPUE age-1	CPUE ≥15.0 in	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
		age-1 and older	Mean length age-2						
2018	Value	8.7	15.1	2.7	5.9	12	Good	-0.675	49.1%
	Score	4	1	3	4				
2016	Value	2.6	17.5	1.4	1.4	10	Good	-0.415	34.0%
	Score	3	3	2	2				
2014	Value	3.2	14.4	2.5	0.7	8	Fair	-0.352	29.7%
	Score	3	1	3	1				
2011	Value	3.6	16.5	1.5	2.2	10	Good		
	Score	4	2	2	2				

nedhybgl.d18

Table 31. Length frequency and CPUE (fish/hr) of black bass collected in 0.375 hours (3- 7.5-minute runs) of diurnal electrofishing largemouth bass in Clear Creek Lake on 25 April.

Species	Inch class																	Total	CPUE	Std. error	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
Largemouth bass	13	14	3	2	5	13	15	14	2						1		1	2	85	236.1	40.4

nedpsdcc.d18

Table 32. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Clear Creek Lake.

Year	Length group											
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in		Total	
	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.
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 <sub>a</sub>												
2016 <sub>a</sub>												
2015 <sub>a</sub>												
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 <sub>a</sub>												
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 <sub>a</sub>												
2010 <sub>a</sub>												
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.d08, 09, 12, 14, 18

<sub>a</sub> = Lake not sampled

Table 33. Largemouth bass PSD and RSD<sub>15</sub> values from spring electrofishing at Clear Creek Lake; confidence limits are in parentheses.

Year	No. $\geq$ 8.0 in	PSD ( $\pm$ 95%)		RSD <sub>15</sub> ( $\pm$ 95%)	
2018	53	11	( $\pm$ 9)	8	( $\pm$ 7)
2017 <sub>a</sub>					
2016 <sub>a</sub>					
2013					
2014	56	18	( $\pm$ 10)	13	( $\pm$ 9)
2013 <sub>a</sub>					
2012	98	10	( $\pm$ 6)	6	( $\pm$ 5)
2011 <sub>a</sub>					
2010 <sub>a</sub>					
2009	36	25	( $\pm$ 14)	8	( $\pm$ 9)
2008	92	12	( $\pm$ 7)	5	( $\pm$ 5)

nedpsdgl.d18

<sub>a</sub> = Lake not sampled



Table 34. Population assessment of largemouth bass based on samples collected at Clear Creek Lake in 2018, 2014 and 2012 (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	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
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 <sub>a</sub>										
2016 <sub>a</sub>										
2015 <sub>a</sub>										
2014	Value	9.1	61.5	7.7	18.0	10.3	12	Good		
	Score	1	3	1	3	4				
2013 <sub>a</sub>	Value Score									
2012	Value		65.6	10.7	16.0	8.0	12	Good		
	Score	2	3	1	2	4				

nedpsdcc.d18

<sub>a</sub> = Lake was not sampled

Table 35. Length frequency and CPUE (fish/hr) of black bass collected in 0.5 hours (4 - 7.5-minute runs) of diurnal electrofishing largemouth bass in Clear Creek Lake on 04 October.

Species	Inch class																		Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Largemouth bass	5	59	46	21	1		14	9	15	10	9							1	190	397.9	113.0

nedpsdcc.d18

Table 36. Number of fish and relative weight ( $W_r$ ) for each length group of largemouth bass collected at Clear Creek Lake in 2018; s.e. = standard error.

Species	Length groups									Total		
	8.0 - 11.9 in			12.0 - 14.9 in			≥ 15.0 in			No.	$W_r$	s.e.
	No.	$W_r$	s.e.	No.	$W_r$	s.e.	No.	$W_r$	s.e.			
Largemouth bass	48	84	1	10	78	2	1	77	-	59	83	1

nedcwrcc.d18

Table 37. Mean back calculated lengths (in) at each annulus for largemouth bass collected from Clear Creek Lake in October 2018, includes 95% confidence interval (CI) for mean length for each age class.

Year	No.	Age					
		1	2	3	4	5	6
2018	0						
2017	17	5.5					
2016	13	5.7	8.8				
2015	9	5.7	8.9	10.5			
2014	4	5.4	8.9	10.4	11.7		
2013	4	5.1	7.4	9.0	10.2	11.3	
2012	2	5.8	8.0	9.3	10.3	11.3	12.0
Mean		5.6	8.6	10.0	10.8	11.3	12.0
Number		49	32	19	10	6	2
Smallest		4.8	7.3	8.5	9.7	10.7	11.7
Largest		7.2	9.9	11.1	11.8	11.9	12.3
Std. Error		0.1	0.1	0.2	0.3	0.2	0.3
95% CI (±)		0.3	0.5	0.7	1.0	0.9	1.2

nedaagcc.d18

Table 38. Length frequency and CPUE (fish/hr) for each species of sunfish collected at Clear Creek Lake while electrofishing for 3- 7.5-minute runs on 17 May.

Species	Inch class						Total	CPUE	Std. error
	3	4	5	6	7	8			
Bluegill	22	10	8	4	2	2	48	123.1	29.1

nedsuncc.d18

Table 39. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Clear Creek Lake.

Year	Length group										Total		
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 6.0 in		≥ 8.0 in		Total		Total (excl. < 3.0 in)
	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE
2018			102.6	38.3	15.4	11.8	5.1	2.6	20.5	13.6	123.1	29.1	123.1
2017 <sub>a</sub>													
2016 <sub>a</sub>													
2015 <sub>a</sub>													
2014			308.0	68.7	62.0	34.2	66.0	35.1	4.0	2.3	374.0	64.9	374.0
2013 <sub>a</sub>													
2012			74.0	18.0	54.0	36.9	56.0	38.8	2.0	2.0	130.0	26.4	130.0
2011	494.0	161.8	150.0	36.1	54.0	22.2	54.0	22.2			698.0	151.2	204.0
2010	1132.0	565.8	210.0	42.1	38.0	30.2	38.0	30.2			1380.0	585.1	248.0
2009	121.6	44.6	174.4	43.0	33.6	13.5	33.6	13.5			329.6	54.2	208.0
2008	378.0	162.8	112.0	33.2	72.0	69.4	72.0	69.4			562.0	138.2	184.0

nedsuncc.d08-d18

<sub>a</sub> = Lake was not sampled

Table 40. PSD and RSD<sub>8</sub> values obtained for bluegill taken in spring electrofishing samples in each area of Clear Creek Lake; 95% confidence intervals are in parentheses.

Year	No. ≥ 3.0 in	PSD (± 95%)		RSD <sub>8</sub> (± 95%)	
2018	48	16	(± 11)	4	(± 6)
2017 <sub>a</sub>					
2016 <sub>a</sub>					
2015 <sub>a</sub>					
2014	187	18	(± 6)	1	(± 1)
2013 <sub>a</sub>					
2012	65	43	(± 12)	2	(± 2)
2011	102	26	(± 9)		

nedpsdcc.d18

<sub>a</sub> = Lake not sampled

Table 41. Population assessment of bluegill based on samples collected at Clear Creek Lake from 2009-2018 (scoring based on statewide assessment).

Year		Mean length		CPUE ≥ 6.0 in	CPUE ≥ 8.0 in	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
		age-2 at capture	Years to 6.0 in						
2018	Value			20.5	5.1				
	Score	4	3	1	2				
2017 <sub>a</sub>	Value								
	Score								
2016 <sub>a</sub>	Value								
	Score								
2015 <sub>a</sub>	Value								
	Score								
2014	Value	6.4	3-3+	66.0	4.0	12	Good	-1.377	74.80%
	Score	4	3	3	2				
2013 <sub>a</sub>	Value								
	Score								
2012	Value			56.0	2.0				
	Score			3	1				
2011	Value			54.0	0.0				
	Score			3	0				
2010	Value			38.0	0.0				
	Score			2	0				
2009	Value	3.4	4-4+	33.6	0.0	5	Poor	-0.786	54.40%
	Score	1	2	2	0				

nedsuncc.d09-18; nedaagcc.d09, d14, d18

<sub>a</sub> = Lake not sampled

Table 42. Length frequency and CPUE (fish/hr) for each species of sunfish collected at Clear Creek Lake while electrofishing for 3- 7.5-minute runs on 17 May.

Species	Inch class					Total	CPUE	Std. error
	4	5	6	7	8			
Redear	4	6	0	1	4	15	38.5	19.4

nedsuncc.d18

Table 43. Spring electrofishing CPUE (fish/hr) for each length group of redear sunfish collected at Clear Creek Lake.

Year	Length group												Total		
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 6.0 in		≥ 8.0 in		≥ 10.0 in		Total		Total
	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	(excl. < 3.0 in) CPUE
2018			25.6	12.8	2.6	2.6	10.3	5.1	12.8	6.8	0.0		38.5	19.4	38.5
2017 <sub>a</sub>															
2016 <sub>a</sub>															
2015 <sub>a</sub>															
2014			186.0	13.2	188.0	30.0	220.0	33.1	32.0	33.1	0.0		406.0	46.1	406.0
2013 <sub>a</sub>															
2012			22.0	6.8	122.0	38.6	124.0	38.9	2.0	2.0	0.0		146.0	36.6	146.0
2011	16.0	9.8	76.0	19.7	330.0	78.5	368.0	103.5	38.0	32.7	0.0		460.0	124.3	444.0
2010	12.0	5.2	260.0	62.4	358.0	86.9	364.0	90.4	6.0	3.8	0.0		636.0	146.4	624.0
2009	4.8	2.0	238.4	37.8	129.6	68.4	131.2	70.0	1.6	1.6	0.0		374.4	98.8	369.6
2008	58.0	29.6	170.0	26.8	22.0	9.5	26.0	10.5	4.0	2.3	0.0		254.0	43.7	196.0

nedsuncc.d08-d18

<sub>a</sub> = Lake was not sampled

Table 44. PSD and RSD<sub>10</sub> values obtained for redear sunfish taken in spring electrofishing samples in each area of Clear Creek Lake; 95% confidence intervals are in parentheses.

Year	No. $\geq$ 4.0 in	PSD ( $\pm$ 95%)		RSD <sub>10</sub> ( $\pm$ 95%)	
2018	15	9	( $\pm$ 25)		
2017 <sub>a</sub>					
2016 <sub>a</sub>					
2015 <sub>a</sub>					
2014	172	33	( $\pm$ 7)		
2013 <sub>a</sub>					
2012	69	45	( $\pm$ 12)		
2011	215	46	( $\pm$ 7)	1	( $\pm$ 1)
2010	292	15	( $\pm$ 4)		
2009	202	7	( $\pm$ 7)		
2008	59	7	( $\pm$ 6)	2	( $\pm$ 3)

nedpsdcc.d18

<sub>a</sub> = Lake not sampled

Table 45. Population assessment of redear sunfish based on samples collected at Clear Creek Lake from 2009 - 2018 (scoring based on statewide assessment).

Year		Mean length		Spring CPUE ≥ 8.0 in	Spring CPUE ≥ 10.0 in	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
		age-3 at capture	Years to 8.0 in						
2018	Value			10.3	0.0				
	Score	4	2	3	0				
2017 <sub>a</sub>	Value								
	Score								
2016 <sub>a</sub>	Value								
	Score								
2015 <sub>a</sub>	Value								
	Score								
2014	Value	7.3	5-5+	32.0	0.0	7	Fair	-0.313	0.268
	Score	4	2	1	0				
2013 <sub>a</sub>	Value								
	Score								
2012	Value			2.0	0.0				
	Score			1	0				
2011	Value			38.0	0.0				
	Score			4	0				
2010	Value			6.0	0.0				
	Score			2	0				
2009	Value	6.1	5-5+	1.6	0.0	6	Poor	-1.495	77.60%
	Score	3	2	1	0				

nedsuncc.d09-18; nedaagcc.d09, nedaagcc.d14, nedaadcc.d18

<sub>a</sub> = Lake not sampled

Table 46. Length frequency and CPUE (fish/hr) of black bass collected in 1.5 hours of nocturnal electrofishing (6- 15-minute runs) at Greenbo Lake (Greenup Co.) on 2 May.

Species	Inch class																							Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Largemouth bass	2	12	10	8	21	42	20	12	29	48	70	52	21	7	5	5		2	4	4	1	2	377	251.3	22.8	

nedpsdgb.d18

Table 47. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Greenbo Lake.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		>20.0 in			
	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.	CPUE	s.e.
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
2008	24.0	7.2	27.3	5.8	19.3	2.8	9.3	3.0	2.7	1.3	80.0	15.2

nedpsdgb.d08 - d18



Table 48. Largemouth bass PSD and RSD<sub>15</sub> values from spring electrofishing at Greenbo Lake; confidence limits are in parentheses.

Year	No. ≥8.0 in	PSD (± 95% CI)	RSD <sub>15</sub> (± 95% CI)
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)
2008	84	51 (± 11)	17 (± 8)

nedpsdgb.d08 - d18

Malfunctioning electrofishing boat in 2008

Table 49. Population assessment of largemouth bass based on samples collected at Greenbo Lake from 2008-2018 (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	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
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	0.688
	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	Fair	-	-
	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				
2009	Value	10.7	3.2	50.0	18.0	2.7	13	Good	-0.415	34.00%
	Score	2	1	4	3	3				
2008	Value	10.7	1.0	19.3	9.3	2.7	10	Fair	-0.642	47.40%
	Score	2	1	2	2	3				

nedpsdgb.d08-d18

Table 50. Fishery statistics derived from a daytime creel survey at Greenbo Lake from March through October 2018 as compared to findings from 1990 and 2010.

	<b>2018</b>	<b>2010</b>	<b>1990</b>
<b>Fishing trips</b>			
No. of fishing trips (per acre)	5,814 (33)	7,575 (43)	27,344 (151)
<b>Fishing pressure</b>			
Total man-hours (S.E.)	23,189 (632.3)	25,532 (1,044.1)	123,491 (20,165)
Man hours/acre	(132)	(145)	(682)
<b>Catch/harvest</b>			
No. of fish caught (S.E.)	13,103 (1,504.0)	16,373 (2,678.9)	49,758 (8,797)
No. of fish harvested (S.E.)	6,530 (1,023.3)	11,302 (2,392.7)	21,829 (5,330)
Lbs. of fish harvested	2,381	3,998	11,886
<b>Harvest rate</b>			
Fish/hour	0.3	0.3	0.2
Fish/acre	37.1	64.2	120.6
Lbs/acre	13.5	22.7	65.7
<b>Catch rates</b>			
Fish/hour	0.6	0.6	0.4
Fish/acre	74.5	93.0	247.9
<b>Misc. characteristics (%)</b>			
Male	81.4	85.1	85.0
Female	18.7	14.9	15.0
Resident	85.1	88.7	81.0
Non-resident	14.9	11.3	19.0
<b>Method (%)</b>			
Still fishing	59.8	75.7	no data
Casting	36.2	20.5	no data
Trotline/jugging	1.2	0.6	no data
Trolling	1.2	3.2	no data
<b>Mode (%)</b>			
Boat	68.1	41.0	91.0
Bank	8.2	44.6	9.0
Dock	23.7	14.4	0.0

(S.E.) = Standard error  
t < 0.5%

Table 51. Fish harvest statistics derived from the 2018 creel survey at Greenbo Lake.

	Largemouth bass	Spotted bass	Black bass group	Bluegill	Redear sunfish	Warmouth	Panfish group	Rainbow trout	Black crappie	White crappie	Crappie group	Channel catfish	Flathead catfish	Catfish group	Anything
Number caught (per acre)	1778 10.1	14 0.1	1791 10.2	6306 35.8	1005 5.7	26 0.2	7345 417	1814 10.3	1533 8.7	90 0.5	1622 9.2	523 3.0	7 0.0	529 3.0	
Number harvested (per acre)	95 0.5	14 0.1	109 0.6	2617 14.9	591 3.4	0	3216 18.3	1562 8.9	1277 7.3	41 0.2	1319 7.5	324 1.8	0	324 1.8	
% of total number harvested	15	0.2	17	40.1	9.1		49.3	23.9	19.6	0.6	20.2	5.0		5.0	
Pounds harvested (per acre)	112.7 0.6	9.2 0.1	1219 0.7	605.1 3.4	217.0 12		822.5 4.7	489.9 2.8	0.0 3.4	6.0 603.9	609.9 3.5	336.7 19		336.7 19	
% of total pounds harvested	4.7	0.4	5.1	25.4	9.1		34.6	20.6	25.4	0.3	25.6	14.1		14.1	
Mean length (in)	12.80	11.50		5.20	7.30			12.00	10.00	7.20		16.70			
Mean weight (lb)	1.10	0.70		0.10	0.29			0.80	0.50	0.01		1.60			
Number fishing trips for that species			1549.7				725.6	657.5			330.4			204.9	2345.5
% of all trips			26.7				12.5	11.3			5.7			3.5	40.3
Hours fished for that species (per acre)			61817 (35.1)				2894.3 (16.5)	2622.6 (14.9)			1317.8 (7.5)			817.1 (4.6)	9355.6 (53.2)
Number harvested fishing for that species			49				2,303	1528			1179			19	
Pounds harvested fishing for that species			49.9				598.9	457.5			552.2			152.9	
Number harvested per hour fishing for that species			0.0				0.8	0.7			0.9			0.1	
% success fishing for that species			11				35.5	50.4			39.7			16.3	5.2

Table 52. 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 2018.

Species		Inch class																													Total	Overall Total
		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	30		
Bluegill	H	35	173	228	145	207	566	677	407	152	27																		2,617	6,306		
	R	283	910	910	553	459	277	162	101	20	7	7																			3,689	
Rainbow trout	H					43	29	365	373	373	150	143	43	14	21	7															1,561	1,812
	R					6	19	31	69	69	13	31		13															251			
Largemouth bass	H											34	41	7		7		5													94	1,776
	R							67	47	67	188	389	335	255	188	74	13	20	13	7	7	7	5						1,682			
Crappie group	H				35	59	262	334	380	105	85	26	26	6															1,318	1,621		
	R		7		20	75	40	54	60	47																		303				
Redear sunfish	H		7		39	53	6	164	158	79	25																		531	944		
	R	7	61	68	61	95	75	27	14	5																		413				
Channel catfish	H					14	22			14	7	28	65	29	50	36	29	7	14	7											322	520
	R					56	25	56	6	6	12	6		25				6											198			
Warmouth	H																														0	26
	R		7		7	7		5																							26	
Spotted bass	H										7	6																			13	13
	R																														0	
Longear sunfish	H		8																												8	8
	R																														0	
Flathead catfish	H																														0	6
	R																												6	6		

Table 53. Monthly black bass angling success at Greenbo Lake during the 2018 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	79	0	169.8	677.4	79	0.08	0	0.00
Apr	198	5	293.6	1171.0	150	0.09	0	0.00
May	912	97	319.5	1274.4	809	0.53	42	0.03
Jun	196	7	187.8	749.0	177	0.25	7	0.01
Jul	193	0	234.5	935.6	185	0.11	0	0.00
Aug	89	0	142.4	568.0	89	0.11	0	0.00
Sep	23	0	104.4	416.4	23	0.06	0	0.00
Oct	101	0	97.8	390.0	101	0.22	0	0.00
Total	1,791	109	1549.8	6181.8	1,613		49	
Mean						0.19		0.01

Table 54. Monthly trout angling success at Greenbo Lake during the 2018 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	1,302	1,183	412.4	1645.0	1,278	0.99	1,175	0.91
Apr	428	300	188.1	750.1	348	0.61	294	0.52
May	0	0	24.6	98.0	0	0.00	0	0.00
Jun	59	59	18.8	74.9	59	0.86	59	0.86
Jul	8	8	8.5	34.0	0	0.00	0	0.00
Aug	17	13	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	1,814	1,562	652.3	2602.1	1,685		1,528	
Mean						0.78		0.70

Table 55. Angler attitude survey conducted during 2018 creel survey on Greenbo Lake.

2. Which species do you fish for at Greenbo Lake (check all that apply; N=601)?

**Bass**=48.1%; **Sunfish**=34.9%; **Trout**=21.1%; **Catfish**=12.0%; **Anything**=10.6%;  
**Crappie**=6.0%

3. Which species do you fish for most at Greenbo Lake (check only one; N=576)?

**Bass**=39.1%; **Sunfish**=23.6%; **Trout**=14.8%; **Anything**=10.9%; **Catfish**=8.2%;  
**Crappie**=3.5%

4. On average how many times do you fish Greenbo Lake in a year (N=576)?

<b>First Time</b>	22.2%	<b>5 - 10</b>	15.6%
<b>1 - 4</b>	27.1%	<b>More than 10</b>	35.1%

**Bass Anglers**

5. What level of satisfaction do you have with bass fishing at Greenbo Lake (N=364)?

<b>Very Satisfied</b>	9.1%	<b>Somewhat Satisfied</b>	39.0%	<b>Total</b>	48.1%
<b>Very Dissatisfied</b>	4.4%	<b>Somewhat Dissatisfied</b>	8.5%	<b>Total</b>	12.9%
<b>Neutral</b>	39.0%				

5a. If you responded with somewhat or very dissatisfied in question 5 - what is the single most reason for your dissatisfaction?

\*Note: These numbers are percentages **ONLY** of those who were dissatisfied (12.9%)

<b>Number of fish</b>	34.1%
<b>Can't catch fish</b>	25.0%
<b>Water too clear</b>	20.5%
<b>Too many weeds</b>	6.8%
<b>Hard lake to fish</b>	6.8%
<b>Size of fish</b>	4.5%
<b>Illegal harvest</b>	2.3%

**Sunfish Anglers**

6. What level of satisfaction do you have with sunfish fishing at Greenbo Lake (N=267)?

<b>Very Satisfied</b>	27.0%	<b>Somewhat Satisfied</b>	30.0%	<b>Total</b>	57.0%
<b>Very Dissatisfied</b>	0.7%	<b>Somewhat Dissatisfied</b>	2.2%	<b>Total</b>	2.9%
<b>Neutral</b>	40.1%				

6a. If you responded with somewhat or very dissatisfied in question 6 - what is the single most reason for your dissatisfaction?

\*Note: These numbers are percentages **ONLY** of those who were dissatisfied (2.9%)

<b>Number of fish</b>	80.0%
<b>Size of fish</b>	20.0%

**Catfish Anglers**

7. What level of satisfaction do you have with catfish fishing at Greenbo Lake (N=132)?

<b>Very Satisfied</b>	18.2%	<b>Somewhat Satisfied</b>	29.5%	<b>Total</b>	47.7%
<b>Very Dissatisfied</b>	2.3%	<b>Somewhat Dissatisfied</b>	3.0%	<b>Total</b>	5.3%
<b>Neutral</b>	47.0%				

7a. If you responded with somewhat or very dissatisfied in question 7 - what is the single most reason for your dissatisfaction?

\*Note: These numbers are percentages **ONLY** of those who were dissatisfied (5.3%)

<b>No fish</b>	60.0%
<b>Number of fish</b>	20.0%
<b>Size of fish</b>	20.0%

**Trout Anglers**

8. What level of satisfaction do you have with trout fishing at Greenbo Lake (N=194)?

<b>Very Satisfied</b>	38.1%	<b>Somewhat Satisfied</b>	29.4%	<b>Total</b>	67.5%
<b>Very Dissatisfied</b>	0.0%	<b>Somewhat Dissatisfied</b>	2.6%	<b>Total</b>	2.6%
<b>Neutral</b>	29.9%				

Table 55 cont.

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8a. If you responded with somewhat or very dissatisfied in question 8 - what is the single most reason for your dissatisfaction?

\*Note: These numbers are percentages **ONLY** of those who were dissatisfied (2.6%)

**Number of fish** 100.0%

**All Anglers**

9. Are you satisfied with the current size and creel limits on Greenbo Lake (N=597)?

**Yes** 97.2%

**No** 2.8%

9a. If you responded No in question 9- what size and creel limit changes would you like to see?

\*Note: These numbers are percentages **ONLY** of those who responded no (2.8%)

**15" MSL on LMB** 33.3% **Remove 15 fish creel on Sunfish** 4.8%

**"Trophy Bass" Lake** 19.0% **Crappie 10" MSL** 4.8%

**C&R only on LMB** 9.5% **16" MSL on Catfish** 4.8%

**8" or 9" MSL on Sunfish** 9.5% **"Other" Responses** 14.3%

10. Are you aware the invasive plant hydrilla is present in Greenbo Lake (N=454)?

**Yes** 77.5%

**No** 22.5%

11. Has the recent introduction of hydrilla hindered your fishing experience in Greenbo Lake (N=597)?

**Yes** 28.6%

**No** 71.4%

12. Are you aware the primary means of introduction of invasive plant is through boaters (N=597)?

**Yes** 60.6%

**No** 39.4%

13. Do you take precautions after fishing Greenbo Lake to prevent the spread of hydrilla (N=573)?

**Yes** 56.0%

**No** 44.0%

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Table 56. Length frequency and CPUE (fish/hr) of black bass collected in 1 hour (4- 15-minute runs) of diurnal electrofishing for largemouth bass in Lake Reba on 18 April.

Species	Inch class																Total	CPUE	Std. error
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
Largemouth bass	6	56	88	34	9	1	16	28	11	17	8	4	2	3	1	2	286	286.0	28.3

nedpsdlr.d18

Table 57. Spring electrofishing CPUE (fish/hr) for various length groups of largemouth bass collected at Lake Reba from 1995-2018.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	S.E.	CPUE	S.E.	CPUE	S.E.	CPUE	S.E.	CPUE	S.E.	CPUE	S.E.
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.d95 - Present

Table 58. Largemouth bass PSD and RSD<sub>15</sub> values from spring electrofishing at Lake Reba; confidence limits are in parentheses.

Year	No. $\geq 8.0$ in	PSD ( $\pm 95\%$ CI)	RSD <sub>15</sub> ( $\pm 95\%$ CI)
2018	93	40 ( $\pm 10$ )	9 ( $\pm 6$ )
2017	364	40 ( $\pm 5$ )	7 ( $\pm 3$ )
2016	156	35 ( $\pm 7$ )	8 ( $\pm 4$ )
2015	268	61 ( $\pm 6$ )	16 ( $\pm 4$ )
2014	314	54 ( $\pm 6$ )	24 ( $\pm 5$ )
2013	243	47 ( $\pm 6$ )	14 ( $\pm 4$ )
2012	263	48 ( $\pm 6$ )	10 ( $\pm 4$ )
2011	360	55 ( $\pm 5$ )	11 ( $\pm 3$ )
2010	270	35 ( $\pm 6$ )	4 ( $\pm 2$ )
2009	536	33 ( $\pm 4$ )	7 ( $\pm 2$ )
2008	382	18 ( $\pm 4$ )	5 ( $\pm 2$ )
2007	444	27 ( $\pm 4$ )	6 ( $\pm 2$ )
2006	154	31 ( $\pm 7$ )	6 ( $\pm 4$ )
2005	174	51 ( $\pm 7$ )	11 ( $\pm 5$ )
2004	275	32 ( $\pm 6$ )	4 ( $\pm 2$ )
2003	279	32 ( $\pm 5$ )	4 ( $\pm 2$ )
2002	176	20 ( $\pm 6$ )	3 ( $\pm 2$ )
2001	33	30 ( $\pm 16$ )	9 ( $\pm 10$ )
2000	43	28 ( $\pm 14$ )	19 ( $\pm 12$ )
1999	98	72 ( $\pm 12$ )	50 ( $\pm 13$ )
1998	26	81 ( $\pm 10$ )	39 ( $\pm 13$ )
1997			
1996	54	96 ( $\pm 8$ )	62 ( $\pm 19$ )
1995	54	79 ( $\pm 8$ )	3 ( $\pm 3$ )

nedpsdlr.d18 - d98, d96 - d95

Table 59. Population assessment of largemouth bass based on samples collected at Lake Reba from 2003-2018 (scoring based on statewide assessment).

Year	Mean length age-3 at capture	Spring CPUE 12.0-14.9 in	Spring CPUE ≥15.0 in	Spring CPUE ≥20.0 in	Spring CPUE age-1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%	
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 4	4.8 3	321.6 4	18	Excellent			
2016	Value Score	41.0 3	13.0 3	2.0 2	101.0 4	15	Good			
2015	Value Score	11.0 3	96.8 4	33.6 4	72.8 4	19	Excellent	-0.464	37.10%	
2014	Value Score		95.0 4	75.0 4	7.0 4	50.0 3	18	Excellent		
2013	Value Score		63.3 4	27.1 4	0.0 1	28.4 3	15	Good		
2012	Value Score		68.0 4	16.7 3	1.3 2	76.0 4	16	Good		
2011	Value Score		106.0 4	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 4	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 4	18.7 3	0.7 2	183.7 4	16	Good	-1.040	65.00%
2006	Value Score	11.2 3	26.0 3	6.0 2	0.0 1	192.0 4	13	Good	-0.790	55.00%
2005	Value Score		45.3 4	13.3 3	0.7 2	41.2 3	13	Good	-0.250	22.00%
2004	Value Score		51.3 4	6.7 2	0.0 1	23.2 3	11	Fair	-0.290	25.00%
2003	Value Score		52.0 4	8.0 2	0.7 2	52.1 3	12	Fair	-0.500	39.00%

nedpsdlr.d17

Table 60. Indices of year class strength at age 0 and age 1 and mean lengths (in) of largemouth bass while diurnal electrofishing at Lake Reba.

Year class	Area	Age 0		Age 0		Age 0 ≥5.0 in		Age 1	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2018	Total	4.8	0.0	318.0	43.0	126.0	27.4		
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	0.0	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	0.0	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

nedbsilr.d18-d16, nedwrslr.d15, nedbsilr.d14 - d12, nedwrslr.d11 - d03, nedpsdlr.d18-d02

Table 61. Length frequency and CPUE (fish/hr) for largemouth bass collected in 0.75 hours of nocturnal electrofishing (3-15-minute runs) at Smoky Valley Lake (Carter Co.) on 01 May.

Species	Inch class															Total	CPUE	Std. error
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			
Largemouth bass	8	18	18	6	42	48	22	26	38	19	7	1	1	1	1	256	341.3	59.3

nedpsdsv.d18

Table 62. Spring electrofishing CPUE (fish/hr) for various length groups of largemouth bass collected at Smoky Valley Lake from 1990-2018.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	S.E.	CPUE	S.E.	CPUE	S.E.	CPUE	S.E.	CPUE	S.E.	CPUE	S.E.
2018	127.7	30.1	178.7	28.2	36.0	9.2	4.0	2.3			341.3	59.3
2017 <sup>a</sup>												
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 <sup>a</sup>												
2003 <sup>a</sup>												
2002 <sup>a</sup>												
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 <sup>a</sup>												
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.d18

<sup>a</sup> = Sample not collected

Table 63. Largemouth bass PSD and RSD<sub>15</sub> values from spring electrofishing at Smoky Valley Lake; confidence limits are in parentheses.

Year	No. ≥8.0 in	PSD (± 95% CI)		RSD <sub>15</sub> (± 95% CI)	
2018	164	18	(± 6)	2	(± 2)
2017 <sup>a</sup>					
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 <sup>a</sup>					
2003 <sup>a</sup>					
2002 <sup>a</sup>					
2001	172	22	(± 6)	1	(± 2)
2000	288	24	(± 5)	0	(± 1)
1999 <sup>a</sup>					
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.d18

<sup>a</sup> = Sample not collected

Table 64. Population assessment of largemouth bass based on samples collected at Smoky Valley lake from 2003-2018 (scoring based on statewide assessment).

Year		Mean length age-3 at capture	Spring CPUE 12.0-14.9 in	Spring CPUE ≥15.0 in	Spring CPUE ≥20.0 in	Spring CPUE age-1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%
2018	Value	10.6	36.0	4.0	0.0	61.3	11	Fair	-0.780	53.7%
	Score	2	3	1	1	4				
2017 <sup>a</sup>	Value									
	Score									
2016	Value	9.8	18.1	2.0	0.0	47.3	8	Poor	-0.273	23.9%
	Score	1	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	60.8%
	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	54.5%
	Score	1	1	1	1	3				
2009	Value		14.0	1.0	0.0	9.0	7	Poor	-0.223	20.0%
	Score	1	2	1	1	2				
2008	Value		46.0	0.0	0.0	56.0	10	Fair	-0.550	22.5%
	Score	1	4	0	1	4				
2007	Value	9.6	37.0	2.0	0.0	7.0	7	Poor	-0.513	40.1%
	Score	1	3	1	1	1				
2006	Value		62.0	4.0	0.0	70.1	13	Good	-0.579	43.9%
	Score	3	4	1	1	4				
2005	Value	11.0	36.2	8.0	0.0	19.1	11	Fair	-0.353	29.8%
	Score	3	3	2	1	2				
2004 <sup>a</sup>	Value									
	Score									
2003 <sup>a</sup>	Value									
	Score									

nedpsdsv.d18

<sup>a</sup> = Sample not collected

Table 65. Length frequency and CPUE (fish/hr) for largemouth bass collected in 0.75 hours of nocturnal electrofishing (3- 15-minute runs) at Smoky Valley Lake (Carter Co.) on 08 October.

Species	Inch class																		Total	CPUE	Std. error	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20
Largemouth bass	1	8	24	44	16	3	11	28	37	47	14	6	4	2		1	1	1	1	249	332.0	16.0

nedwrssv.d18



Table 66. Number of fish and relative weights ( $W_r$ ) for each length group of largemouth bass captured at Smoky Valley Lake.

Year	Length group								
	8.0-11.9 in			12.0-14.9 in			≥15.0 in		
	No.	$W_r$	se	No.	$W_r$	se	No.	$W_r$	se
2018	123	84	0.6	24	84	1.2	6	87	2.9
2017 <sup>a</sup>									
2016	79	79	0.8	24	73	2.4	1	79	-
2015 <sup>a</sup>									
2014 <sup>a</sup>									
2013 <sup>a</sup>									
2012 <sup>a</sup>									
2011	117	87	0.6	23	78	3.1	1	81	-
2010	90	81	0.8	12	82	1.6			
2009	80	83	0.7	9	86	2.5	1	89	-
2008	104	83	0.7	20	81	1.3			
2007	99	85	0.7	10	87	3.5			
2006 <sup>a</sup>									
2005 <sup>a</sup>									
2004	108	85	0.7	43	84	1.1			
2003									
2002	111	83	0.5	25	83	1.5			
2001	129	83	0.5	27	84	1.1			
2000	70	82	0.6	32	83	1.7	1	88	-
1999 <sup>a</sup>									
1998	92	91	1.0	37	87	1.2	1	85	-
1997 <sup>a</sup>									
1996	93	87	0.6	34	81	1.0	5	79	5.1
1995 <sup>a</sup>									
1994	57	86	0.9	40	82	0.9	4	84	7.3
1993	81	91	1.9	67	86	0.7	5	93	0.9
1992	83	87	0.8	54	81	1.0	3	72	8.3
1991	85	86	0.9	58	81	0.9	5	76	3.3
1990	150	89	0.5	33	85	1.1	11	92	2.3

nedwrssv.d18

<sup>a</sup> = Sample not collected

Table 67. Mean back calculated lengths (in) at each annulus for largemouth bass collected from Smoky Valley Lake in October 2018, includes 95% confidence interval (CI) for mean length for each age class.

Year	No.	Age						
		1	2	3	4	5	6	7
2018	0							
2017	30	5.0						
2016	19	5.5	8.8					
2015	5	5.0	8.6	10.6				
2014	7	5.4	8.4	10.2	11.8			
2013	6	5.5	8.6	10.5	11.5	12.5		
2012	1	4.5	6.8	9.2	10.6	11.3	11.8	
2011	1	4.8	8.6	10.1	11.3	12.2	13.3	13.9
Mean		5.2	8.6	10.4	11.6	12.3	12.6	13.9
Number		69	39	20	15	8	2	1
Smallest		4.1	6.8	9.2	10.6	11.3	11.8	-
Largest		6.8	9.8	11.0	12.9	13.2	13.3	-
Std. error		0.1	0.1	0.1	0.2	0.2	0.7	-
95% CI (±)		0.3	0.4	0.5	0.6	1.0	2.9	-

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Table 68. Mean back calculated lengths (in) at each annulus for largemouth bass collected from Smoky Valley Lake in October 2016, by sex.

	Year	Age						
		1	2	3	4	5	6	7
Females	Number	19	19	9	8	4	1	1
	Mean	5.5	8.8	10.3	11.6	12.5	13.3	13.9
	Std. error	0.1	0.1	0.1	0.1	0.2	-	-
Males	Number	20	20	11	7	4	1	0
	Mean	5.1	8.1	10.4	11.6	12.1	11.8	
	Std. error	0.3	0.4	0.2	0.3	0.4	-	

nedaagsv.d18

Table 69. Length frequency and CPUE (fish/hr) of black bass collected in 1.5 hours (6- 15-minute runs) of diurnal electrofishing for largemouth bass in Lake Wilgreen on 19 April.

Species	Inch class																		Total	CPUE	Std. error			
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				20	21	22
Largemouth bass	3	3	4	1	3	16	18	14	13	15	10	8	14	15	18	8	11	7	3		1	185	123.3	10.3

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Table 70. Spring electrofishing CPUE (fish/hr) for various length groups of largemouth bass collected at Lake Wilgreen from 1990-2018.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	S.E.
2018	20.0	4.5	40.0	8.8	21.3	4.1	42.0	5.0	2.7	1.3	123.3	10.3
2017 <sub>a</sub>												
2016	68.7	12.9	91.3	10.2	80.0	7.0	164.0	12.8	6.7	1.7	404.0	26.8
2015 <sub>a</sub>												
2014	18.7	2.5	71.3	7.1	49.3	9.7	117.3	12.0	8.7	1.9	256.7	21.0
2013 <sub>a</sub>												
2012	58.0	13.1	118.0	11.0	46.7	10.2	78.7	8.2	10.7	2.2	301.3	25.1
2011	84.0	18.0	66.0	12.9	25.3	4.1	42.0	4.7	3.3	2.2	217.3	31.2
2010	42.7	5.7	79.3	14.4	53.3	6.5	51.3	4.1	1.3	0.8	226.7	21.7
2009	19.3	5.6	76.0	14.2	52.0	12.0	50.0	9.5	1.3	0.8	197.3	26.5
2008	8.7	1.9	24.7	5.9	18.7	3.8	10.7	3.7	0.7	0.7	62.7	9.0
2007	238.7	25.9	194.7	16.1	115.3	15.0	18.7	2.2	2.7	1.3	567.3	30.6
2006	56.7	9.9	195.3	8.6	148.0	15.8	22.0	5.8	2.7	0.8	422.0	29.1
2005	86.7	17.9	12.0	12.8	108.7	23.0	6.0	2.7			371.3	45.3
2004 <sub>a</sub>												
2003	89.2	11.1	376.8	41.0	48.0	6.3	12.8	2.5	0.4	0.4	526.8	50.2
2002 <sub>a</sub>												
2001 <sub>a</sub>												
2000	361.0	51.0	274.0	10.6	58.0	12.3	6.0	1.2			699.0	57.0
1999	152.0	6.3	235.0	29.6	43.0	11.8	8.0	2.3	2.0	1.2	438.0	42.9
1998 <sub>a</sub>												
1997 <sub>a</sub>												
1996	149.0	47.8	247.0	24.8	90.0	19.8	15.0	6.2	5.0	1.0	601.0	73.0
1995	77.0	22.7	382.0	45.3	42.0	9.3	10.0	2.6	1.0	1.0	511.0	71.6
1994	298.0	79.5	427.0	50.1	46.0	7.4	24.0	4.9	2.0	1.2	795.0	122.0
1993 <sub>a</sub>												
1992	244.0	42.4	100.0	22.3	70.7	14.1	12.0	4.0	1.3	1.3	426.7	64.1
1991	72.0	6.1	206.7	16.7	58.7	5.8	5.3	1.3	1.3	1.3	342.7	18.7
1990												

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<sub>a</sub> = Lake was not sampled

Table 71. Largemouth bass PSD and RSD<sub>15</sub> values from spring electrofishing at Lake Wilgreen; confidence limits are in parentheses.

Year	No. ≥8.0 in	PSD (± 95% CI)		RSD <sub>15</sub> (± 95% CI)	
2018	155	61	(± 8)	41	(± 8)
2017 <sub>a</sub>					
2016	503	73	(± 4)	49	(± 4)
2015 <sub>a</sub>					
2014	357	70	(± 5)	49	(± 5)
2013 <sub>a</sub>					
2012	365	52	(± 5)	32	(± 5)
2011	200	51	(± 7)	32	(± 6)
2010	276	57	(± 6)	28	(± 5)
2009	267	57	(± 6)	28	(± 5)
2008	81	54	(± 11)	20	(± 9)
2007	493	41	(± 4)	6	(± 2)
2006	548	47	(± 4)	6	(± 2)
2005	427	40	(± 5)	2	(± 1)
2004 <sub>a</sub>					
2003	1094	14	(± 2)	3	(± 1)
2002 <sub>a</sub>					
2001 <sub>a</sub>					
2000	338	19	(± 4)	2	(± 1)
1999	286	18	(± 4)	3	(± 2)
1998 <sub>a</sub>					
1997 <sub>a</sub>					
1996	352	30	(± 5)	4	(± 2)
1995	434	12	(± 3)	2	(± 1)
1994	497	14	(± 3)	5	(± 2)
1993 <sub>a</sub>					
1992	137	45	(± 8)	7	(± 4)
1991	203	24	(± 6)	2	(± 2)
1990					

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<sub>a</sub> = Lake was not sampled

Table 72. Population assessment of largemouth bass based on samples collected at Lake Wilgreen from 2003-2018 (scoring based on statewide assessment).

Year	Mean length age-3 at capture	Spring CPUE 12.0-14.9 in	Spring CPUE ≥15.0 in	Spring CPUE ≥20.0 in	Spring CPUE age-1	Total score	Assessment rating	Instantaneous mortality (z)	Annual mortality (A)%	
2018	Value	21.3	42.0	2.7	10.7	12	Fair			
	Score	1	2	4	3					
2017 <sub>a</sub>	Value									
	Score									
2016	Value	9.9	80.0	164.0	6.7	48.7	16	Good	-0.056	5.40%
	Score	1	4	4	4	3				
2015 <sub>a</sub>	Value									
	Score									
2014	Value	49.3	117.3	8.7	9.3	18	Excellent			
	Score	4	4	4	4					2
2013 <sub>a</sub>	Value									
	Score									
2012	Value	46.7	78.7	10.7	30.7	19	Excellent			
	Score	4	4	4	4					3
2011	Value	25.3	42.0	3.3	55.3	17	Excellent			
	Score	4	2	4	3					4
2010	Value	53.3	51.3	1.3	6.0	15	Good	-0.331	28.10%	
	Score	4	4	4	2					1
2009	Value	52.0	50.0	1.3	6.0	15	Good	-0.162	15.00%	
	Score	4	4	4	2					1
2008	Value	12.6	18.7	10.7	0.7	5.3	11	Fair	-0.633	46.90%
	Score	4	2	2	2	1				
2007	Value	115.3	18.7	2.7	230.0	18	Excellent	-0.580	32.50%	
	Score	4	4	3	3					4
2006	Value	148.0	22.0	2.7	58.1	18	Excellent	-0.069	6.60%	
	Score	4	4	3	3					4
2005	Value	108.7	6.0	0.0	81.2	15	Good	-0.127	11.90%	
	Score	4	4	2	1					4
2004 <sub>a</sub>	Value									
	Score									
2003	Value	10.2	48.0	12.8	0.4	91.5	14	Good		
	Score	2	4	2	2	4				

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<sub>a</sub> = Lake w was not sampled

## SOUTHEASTERN FISHERY DISTRICT

### Project 1: Lake and Tailwater Fishery Surveys

#### FINDINGS

Conditions encountered during sampling at southeastern district lakes are listed in Table 1.

#### **Lake Cumberland (50,250 acres)**

Lake levels in Lake Cumberland rose to 705 msl in 2013 and 723 msl in 2014 with the completion of repairs to Wolf Creek Dam. Sampling completed after 2013 was conducted in areas that were sampled prior to 2007. Samples from 2007-2012 were conducted in areas farther downstream in the embayments due to reduced water levels during repairs; therefore, any comparisons of the 2007-2012 data should be interpreted accordingly.

#### Black Bass Sampling (Spring)

Diurnal electrofishing studies were conducted at Wolf Creek dam, and in the Faubush Creek, Fishing Creek, and Lily Creek embayments of Lake Cumberland during May 2018 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 catch rates decreased in 2018 but remain slightly higher than average. Catch rates of smallmouth and spotted bass in 2018 were higher than rates observed in 2017. The increased catch of spotted bass marks the third straight year of increasing catch rates. Table 7 compares the catch-per-hour by length group of black bass in Lake Cumberland to other SEFD lakes sampled in 2018.

Largemouth bass catch rates met three of the four CPUE management objectives (Table 8), and spotted bass greatly exceeded two of the three management objectives (Table 9). The smallmouth bass population met one of the CPUE management objectives (Tables 10).

Largemouth bass populations exhibited excellent size structure, with a PSD value of 85 and an  $RSD_{15}$  value of 55 (Table 11). It would be good to see a few more fish in the 8.0- to 11.9-in length group, though. Smallmouth bass and spotted bass populations were also very good, with a PSD value of 61 and an  $RSD_{14}$  value of 41 for smallmouth bass and a PSD value of 61 and an  $RSD_{14}$  value of 23 for spotted bass (Table 11). Table 12 compares the size structure of black bass populations in Lake Cumberland to other SEFD lakes sampled in 2018.

#### Black Bass Sampling (Fall)

Diurnal electrofishing was conducted in the Fishing Creek embayment during October to index the largemouth bass year class strength (Tables 13 and 14). Catch rates of age-0 largemouth bass improved in 2018 in relation to the catch rate observed in 2017 (Table 14). Table 15 compares the CPUE of age-0 largemouth bass in Lake Cumberland to other SEFD lakes sampled in fall 2018. Relative weight ( $W_r$ ) values for largemouth bass and spotted bass collected during October sampling are shown in Table 16. Table 17 compares  $W_r$  values for black bass in Lake Cumberland to other SEFD lakes sampled in fall 2018.

#### Walleye and White Bass Sampling

Gill nets were used in November 2018 to evaluate the walleye and white bass populations in the Jamestown/Bugwood, Conley Bottom, and Waitsboro/Burnside areas of Lake Cumberland. A total of 415 walleye were captured in 30 net-nights (nn) for a catch rate of 13.8 fish/nn. Length frequency and CPUE of walleye is shown in Table 18. Walleye ranged from 9.0-23.0 in with the mode being the 16.0-in class (84 fish). All of the catch rate management objectives for walleye were met or exceeded (Table 19). Mean length of age-2+ walleye at capture (18.7 in) met the growth objective of 18.0 in (Table 19). Age-growth data for male and female walleye are shown in Tables 20 and 21, respectively. The age-growth for both sexes combined is shown in Table 22. Eight year-classes were represented in the catch, with the 2017 year class (age-1; 59%) being most abundant (Table 23). The walleye assessment score was 15 (rating=excellent; Table 24). Relative weight ( $W_r$ ) values for walleye are shown in Table 25.

A total of 11 white bass were captured in 30 net-nights for a catch rate of 0.4 fish/nn. Length frequency and CPUE of white bass is shown in Table 18. White bass ranged from 9.0-16.0 in with the mode being the 10.0-in class (7 fish). The age-growth data for white bass collected during 2018 is shown in Table 26. Three year-classes were represented in the catch, with the 2018 year class (age-0; 82%) being the most abundant (Table 27). Relative weight (Wr) values for white bass are in Table 25.

Striped bass were also recorded during walleye gill netting. Thirty net-nights captured 123 striped bass for a catch rate of 4.1 fish/nn. Length-frequency and CPUE of striped bass are shown in Table 18. Striped bass ranged from 7.0 to 31.0 in with the mode being the 18.0-in class (31 fish). The age-growth data for striped bass collected during 2018 is shown in Table 28. Eight year-classes were represented in the catch, with the 2017 (age-1) year class being the most abundant (59%) year class collected (Table 29). Relative weight (Wr) values were good for striped bass <20.0 in, but condition values decreased as fish grew larger (Table 25).

## **Cumberland Tailwater**

### Trout Sampling (Fall)

Nocturnal electrofishing sampling was conducted October 28 and 29 2018 to assess the trout population in the Lake Cumberland tailwater. Electrofishing was completed in seven different areas of the tailwater. Table 30 has the length-frequency and CPUE for the two trout species collected in each area. Brook trout were not observed during the sample. Catch rates of rainbow trout 18.0-19.9 in and greater than 20.0 in improved slightly in 2018, but still remain relatively low (Table 31). Brown trout catch rates continue to decline and remain at or below the 24-year average for the tailwater (Table 32). Relative weight (Wr) values for each trout species is shown in Table 33.

## **Laurel River Lake (6,060 acres)**

### Black Bass Sampling (Spring)

Electrofishing sampling was conducted during April and May 2018 to assess the black bass population in Laurel River Lake. Electrofishing was conducted in four areas of the lake: 1) dam, 2) Spruce Creek, 3) Laurel River arm, and 4) upper Craigs Creek. Length-frequency and CPUE of the three black bass species collected in each area is shown in Table 34. The catch-per-hour (by area and length group) of the three black bass species are shown in Tables 35-38. Catch rates for largemouth bass were lower in 2018 than in previous years of sampling. Catch rates of  $\geq 15.0$ -in largemouth bass decreased in 2018 to 19.8 fish/hr; however, this catch rate is still above average for the lake. Catch rates of spotted bass increased slightly in 2018, which marks the third straight year of increasing catch rates for spotted bass. Smallmouth bass catch rates were higher in 2018, which was due to an increase in the number of bass less than 8.0 in. Table 7 compares the catch-per-hour by length group of black bass in Laurel River Lake to other SEFD lakes sampled in 2018.

The largemouth bass population met three of the four catch rate objectives (Table 39). Spotted bass met one of the three catch rate management objectives (Table 40). The smallmouth bass population did not meet any of the catch rate management objectives (Table 41).

Largemouth bass exhibited an excellent size structure, having a PSD value of 73 and an RSD<sub>15</sub> value of 35 (Table 42). Smallmouth and spotted bass had a good size structure, with smallmouth bass having a PSD value of 60 and an RSD<sub>14</sub> value of 50 and the spotted bass population having a PSD of 42 and an RSD<sub>14</sub> of 15 (Table 42). Table 12 compares the size structure values of black bass populations in Laurel River Lake to other SEFD lakes sampled in 2018.

### Black Bass Sampling (Fall)

Diurnal electrofishing was conducted in the Laurel River arm on 4 October 2018 to index largemouth bass year class strength (Tables 43 and 44). Age-0 catch rates in 2018 were higher than average, and no additional largemouth bass were stocked (Table 44). Relative weight (Wr) values for largemouth and spotted bass collected during October sampling are shown in Table 45. Age-growth data from largemouth bass collected in 2018 from Laurel River Lake is shown in Table 46. Growth rates for largemouth bass in Laurel River Lake remain strong, with bass reaching 13.4 in by age-3.



### 2018 Daytime Creel Survey

A roving daytime creel survey was conducted on Laurel River Lake (6,060 acres) from March 16-October 31 2018. The lake was stratified into two survey areas (upper and lower) and the survey was run 16 days per month.

Results of the daytime creel survey are shown in tables 47-53. Anglers took an estimated 19,620 fishing trips during the 2018 creel survey. Based on data collected during past creel surveys, fishing pressure on Laurel River Lake had been on the decline since 1993; however, anglers fished a total of 96,525 man-hours in 2018, which was more than double the number of hours that was observed during the last creel survey in 2010 (41,358 man-hours). According to the 2018 creel results, bass anglers accounted for 73% of all trips taken, followed by anglers who were fishing for anything (17%) and walleye (4%). During the creel survey, bass anglers caught 30,964 bass, which resulted in a catch rate of 0.47 fish/hr.

### **Angler Attitude Survey**

An angler attitude survey was conducted in conjunction with the creel survey to gather angler opinions about the various fisheries at Laurel River Lake (Figure 1). A total of 157 anglers were interviewed. Ninety-eight percent of the anglers interviewed fished for bass, followed by 27% of anglers who fished for walleye, and 13% who fished for crappie. No anglers indicated that they fished for trout in Laurel River Lake.

Seventy-seven percent of the largemouth bass anglers were satisfied with the largemouth bass fishery at the lake, with the number of fish being the only reason for their dissatisfaction. Only 50% of the smallmouth bass anglers were satisfied with the smallmouth bass fishery at Laurel River Lake, which is a drastic decline from the 2010 survey when smallmouth bass angler satisfaction was 93%. Spotted bass anglers also had a marked decline in their satisfaction, with only 37% satisfaction compared to 64% in 2010. Although smallmouth and spotted bass anglers listed the number of fish as the main reason for their dissatisfaction, they also listed too many tournaments and anglers, as well as not enough enforcement, for reasons for angler dissatisfaction.

Fifty percent of the crappie anglers were satisfied with the crappie fishery. Of the crappie anglers dissatisfied with the fishery, the number of fish was the only reason for their dissatisfaction.

Seventy-six percent of the walleye anglers were satisfied with the walleye fishery at Laurel River Lake. Of the walleye anglers that were dissatisfied with the fishery, the number on fish was the only reason listed for their dissatisfaction.

Almost 80% of the anglers support the current regulations on Laurel River Lake. Anglers who did not support the current regulations wanted more restrictive size regulations on black bass and crappie species.

Additional questions were asked to gather angler input about the smallmouth bass fishery in Laurel River Lake. These questions revealed that 27% of anglers felt fishing for smallmouth bass had improved in the last three years, but 46% of anglers felt the smallmouth bass fishing had declined. Anglers would support closures of areas on the lake to create spawning sanctuaries for smallmouth bass. In addition, 96% of the anglers were supportive of a catch and release only season during the month of April to protect smallmouth bass during spawning. Anglers were also supportive of a 16 to 21-in protective slot limit where one fish over 21 inches and one fish under 16 inches may be kept daily for smallmouth bass on Laurel River Lake.

### **Cedar Creek Lake (784 acres; Lincoln Co.)**

#### Black Bass Sampling (Spring)

Diurnal electrofishing was conducted on 15 May 2018 to assess the largemouth bass population in Cedar Creek Lake. The length-frequency and CPUE of largemouth bass is shown in Table 54. Size structure of largemouth bass was good (PSD=62, RSD<sub>15</sub>=50; Table 55). The catch-per-hour (by length group) of largemouth bass for 2003-2018 is shown in Table 56. Catch rates of largemouth bass in Cedar Creek Lake continue to decline, with marked reductions in fish greater than 12.0 in. Low recruitment from 2011-2014, along with a slight reduction in growth rates, may explain the reduction in fish over 12.0 in. Two of the four CPUE management objectives for the largemouth bass population were met or exceeded (Table 57).

#### Black Bass Sampling (Fall)

Diurnal electrofishing was conducted on 20 September 2018 to index the largemouth bass year-class strength (Tables 58 and 59). Catch rates of age-0 bass in 2018 were lower than 2017 catch rates but were still higher than average (Table 59). Relative weight (Wr) values for largemouth bass are found in Table 60.

#### Bluegill/Redear Sunfish Sampling

Diurnal electrofishing was conducted on 23 May 2018 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 61. The catch-per-hour (by length group) of bluegill and redear sunfish is shown in Table 62. PSD and RSD values for bluegill and redear sunfish are shown in Table 63.

### **Beulah Lake (87 acres; Jackson Co.)**

#### Largemouth Bass Sampling (Spring)

Diurnal electrofishing was conducted on 3 May 2018 at Beulah Lake to assess the black bass population. Length frequency and CPUE for black bass is shown in Table 64. Catch-per-hour (by length group) for largemouth and smallmouth bass is shown in Table 65. The largemouth bass population remains consistent in the lake. The largemouth bass size structure was poor, with a PSD value of 17 (RSD<sub>15</sub>=3; Table 66).

#### Bluegill/Redear Sunfish Sampling

Diurnal electrofishing was conducted on 24 May 2018 at Beulah Lake to assess the bluegill and redear sunfish population. Length-frequency and CPUE for bluegill and redear sunfish is shown in Table 67. Catch-per-hour (by length group) for bluegill is in Table 68. The bluegill population exhibited a fair size structure (PSD=22, RSD<sub>8</sub>=10; Table 69). The bluegill population assessment score was 10 (rating=good; Table 70). Age-growth for bluegill collected during fall 2018 is shown in Table 71. Relative weight values for bluegill are in Table 72.

### **Cannon Creek Lake (243 acres; Bell Co.)**

#### Black Bass Sampling (Spring)

Diurnal electrofishing was conducted on 4 May 2018 at Cannon Creek Lake to assess the black bass population. Length frequency and CPUE for bass are shown in Table 73. The catch-per-hour (by length group) for the three bass species is shown in Table 74. Black bass populations in Cannon Creek Lake had increased catch rates in 2018, but the population still consists of small-sized individuals. Table 75 lists the PSD and RSD values for the black bass species in the lake.

### **Dale Hollow Lake (6,746 acres; Kentucky portion)**

#### Black Bass Sampling (Spring)

Diurnal electrofishing was conducted on 7 May 2018 in the Illwill Creek and Little Sulphur Creek embayments of Dale Hollow Lake to assess the black bass population. Length frequency and CPUE for the three black bass species are shown in Table 76. The catch-per-hour by length group of the three black bass species are shown in Tables 77-79. Catch rates for largemouth bass in 2018 were lower than rates observed in 2014 but still remained much higher than average. Catch rates for spotted and smallmouth bass were lower in 2018 than in 2014. Largemouth and smallmouth bass exhibited excellent size structure, with largemouth bass having a PSD value of 93 (RSD<sub>15</sub>=48) and smallmouth bass having a PSD value of 67 (RSD<sub>14</sub>=22; Table 80). Lack of smaller largemouth bass in the sample was most likely due to poor sampling habitat for that size of fish, which inflated the PSD value. The size structure of spotted bass was poor, having a PSD value of 32 (RSD<sub>14</sub>=0; Table 80).

#### Largemouth Bass Sampling (Fall)

Diurnal electrofishing was conducted on 8 October 2018 at Dale Hollow Lake to collect largemouth bass to determine age-growth. Age-growth data from largemouth bass collected in 2018 is shown in Table 81. Growth

rates for largemouth bass in Dale Hollow Lake are excellent, with bass reaching 14.1 in by age-3. Relative weight values for largemouth bass are in Table 82.

### **Wood Creek Lake (625 acres; Laurel Co.)**

#### Black Bass Sampling (Spring)

Diurnal electrofishing was conducted on 1 May 2018 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 83. The size structure for largemouth and spotted bass was poor, with largemouth bass having a PSD value of 33 ( $RSD_{15}=12$ ) and spotted bass having a PSD of 41 ( $RSD_{14}=6$ ; Table 84). Catch-per-hour (by length group) for largemouth and spotted bass are shown in Tables 85 and 86, respectively. The largemouth bass catch rates remain higher than average, due in large part to increasing numbers of bass less than 12.0 in. A largemouth bass population assessment is shown in Table 87. Three of the four catch rate management objectives were met for the largemouth bass population (Table 87).

#### Black Bass Sampling (Fall)

Diurnal electrofishing was conducted on 19 September 2018 in the Pump Station and Dock areas of Wood Creek Lake to index largemouth bass year class strength (Tables 88 and 89). Catch rates of age-0 largemouth bass in 2018 were above average (Table 89); thus, no additional age-0 bass were stocked in the lake during the fall. Relative weight values for largemouth and spotted bass are shown in Table 90.

#### Temperature and Dissolved Oxygen

Temperature and dissolved oxygen profiles were taken at three locations in Wood Creek Lake on 7 July 2018 to address concerns about lack of available habitat for trout in the lake. The results indicated that suitable habitat is available in the mid and lower portions of the lake (Table 91).

Table 1. Summary of sampling conditions by waterbody, species sampled, and date for the Southeastern Fisheries District in 2018.

Water body	Location	Species	Date	Time (24hr)	Gear	Weather	Water temp. F	Water level	Secchi (in)	Conditions	Pertinent sampling comments
Lake Cumberland											
	Dam	Black bass	5/8/2018	830	shock	Sunny, fog early, mid 50s	63	724	120	fair	water in trees and floating debris
	Faubush Creek	Black bass	5/18/2018	745	shock	Clouds, upper 60s	77	722	30-36	fair	
	Fishing Creek	Black bass	5/18/2018	1100	shock	Increasing clouds, 70s, light breeze	78	722	24	fair	water slightly murky
	Lily Creek	Black bass	5/8/2018	1145	shock	Sunny, w arm 70s	69	724	72	fair	water in trees and floating debris
	Fishing Creek	Black bass	10/3/2018	845	shock	Fog early, then clear, 60s	76	716	30	good	
	Jamestown	Walleye	11/13-11/15		gill net	cold, 30s, w indy, rainy, snow y	60	711	96	good	water was higher than usual
	Conley Bottom	Walleye	11/13-11/15		gill net	cloudy, rainy 30s	59	710	72	good	
	Burnside	Walleye	11/19-11/21		gill net	50s, mostly cloudy	54	713	-	good	
Cumberland Tailwater											
	Above Helms	Trout	10/28/2018	1900	shock	Clear, w indy, 60s	-	5180 cfs			
	Below Helms	Trout	10/28/2018	1900	shock	Clear w ith west winds at 14 mph, 58°F	57.7	5180 cfs			
	Rainbow Run	Trout	10/28/2018	1900	shock	Clear and w indy	59.4	5180 cfs			
	Big Willis	Trout	10/28/2018	1915	shock	Clear, cool, breezy	58	5180 cfs			
	Crocus Creek	Trout	10/28/2018	1915	shock	Clear, 50s	58	5180 cfs			Electrofishing settings on 15 pps vs 60 pps
	Hwy 61 Traces	Trout	10/29/2018	1830	shock	Clear, nice, 60s	57	5320 cfs			flow was increasing during sampling
	Cloyds	Trout	10/29/2018	1830	shock	Clear, 50s	58	5320 cfs			
Laurel River Lake											
	Dam	Black bass	4/30/2018	955	shock	Sunny, mid 40s	58	1015	96	good	Water green in color and murkier than usual
	Spruce Creek	Black bass	5/16/2018	815	shock	Sun and clouds, 60s	76	1012	36	good	
	Craig's Creek	Black bass	4/30/2018	1215	shock	Sunny, nice	60	1015	72	good	
	312 Bridge	Black bass	5/16/2018	1045	shock	Mostly sunny	77	1012	24	good	water a little stained
	312 Bridge	Black bass	10/4/2018	820	shock	some clouds, then clear, 60s	75	1011	60	good	
Cedar Creek Lake											
		LMB	5/15/2018	835	shock	Sunny, 70s and w arming quick	76	full	36	fair	water stained brown, algae thick
		LMB	9/20/2018	830	shock	Sunny and clear, 70s at start	79	full	36	fair	vegetation thick (Chara, coontail)
		BLG/redear	5/23/2018	800	shock	Overcast, clearing late, low 70s	78	full	48	fair	thick filamentous algae
Beulah Lake											
		LMB	5/3/2018	1100	shock	Sunny, 70s, breezy, nice		full	66	good	
		BLG/redear	5/24/2018	800	shock	Sunny, clear, 70s	75	full	78	good	
		BLG	10/11/2018	1045	shock	Cloudy w ith rain later in the day, 60s	74	full	30	good	fish collected for age-growth and condition
Cannon Creek Lake											
		LMB	5/4/2018	920	shock	Mostly sunny, calm, 60s	66	full	96	good	
Dale Hollow Lake											
	Illwill	Black bass	5/7/2018	900	shock	Some fog early, mid 50s	68	651	42	good	
	Little Sulphur	Black bass	5/7/2018	1130	shock	Sunny, nice	69	651	48	good	
		LMB	10/8/2018	830	shock		78	646	48	good	fish collected for age-growth and condition; 1 dipper
Wood Creek Lake											
		Black bass	5/1/2018	1200	shock	Sunny, breezy, 70s	64	full	42	good	vegetation not as thick as previous years in midlake area
		Black bass	9/19/2018	930	shock	sunny, clear, 70s	78	a little low	72	fair	vegetation thick but not as bad as in previous years

Table 2. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours of 15-minute diurnal electrofishing runs for black bass in Lake Cumberland during May 2018; standard error is in parentheses.

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
Dam	Largemouth bass					3	3	5		1	3	1	1	2	12	15	9	1	1	1	58	38.7 (8.4)	
	Spotted bass	1	5	1	3	10	13	5	11	6	8	27	41	20	10	9	2				172	114.7 (26.1)	
	Smallmouth bass		2			3	2											3			10	6.7 (2.2)	
Faubush Creek	Largemouth bass			1	1	3	3	2	1	1	6	8	5	11	13	16	6	1	2		80	53.3 (8.7)	
	Spotted bass		2	1		4	8	1	4	1		2	2	5							30	20.0 (3.1)	
	Smallmouth bass			1			2			2				1			1				7	4.7 (1.9)	
Fishing Creek	Largemouth bass			2	1	4	1	2	1	2	5	9	8	11	9	4	1	1	3	1	65	43.3 (3.2)	
	Spotted bass			2			2	1	7	2	2		1	2							19	12.7 (6.6)	
	Smallmouth bass																	1			1	0.7 (0.7)	
Lily Creek	Largemouth bass					1	3	2			1	3	1	4	4	6	8		1		34	22.7 (5.2)	
	Spotted bass		2	1		8	14	18	20	17	20	10	16	20	6	3					155	103.3 (7.4)	
	Smallmouth bass		1	2		2	2	3	2	4	4	1	4	3	3	1	3		2		37	24.7 (5.0)	
Total	Largemouth bass			3	2	11	10	11	2	4	15	21	15	28	38	41	24	3	7	1	1	237	39.5 (3.9)
	Spotted bass	1	9	5	3	22	37	25	42	26	30	39	60	47	16	12	2				376	62.7 (11.7)	
	Smallmouth bass		3	3		5	6	3	2	6	4	1	4	4	3	1	4	4	2		55	9.2 (2.4)	

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Table 3. Comparison of catch-per-hour of black bass (by area) captured during spring electrofishing on Lake Cumberland during the period of 2014-2018.

Species/Area	Stock					Quality					Preferred				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
Largemouth bass															
Dam	18.7	12.0	46.7	54.7	34.7	17.3	11.3	28.0	45.3	28.7	10.0	8.0	23.3	31.3	26.0
Faubush Creek	-	-	14.7	63.3	48.0	-	-	14.0	59.3	41.3	-	-	8.0	38.7	25.3
Fishing Creek	25.3	61.3	41.3	30.0	38.0	19.3	41.3	25.3	26.0	31.3	6.7	11.3	8.7	10.7	12.7
Lily Creek	72.0	44.0	25.3	28.7	20.0	28.7	32.0	23.3	28.0	18.0	14.0	10.0	11.3	20.7	12.7
Mean	30.7	31.5	32.0	44.2	35.2	17.8	22.2	22.7	39.7	29.8	8.2	8.0	12.8	25.3	19.2
Spotted bass															
Dam	44.7	26.0	41.3	48.7	101.3	24.7	16.7	26.7	43.3	78.0	6.7	6.0	10.0	16.0	27.3
Faubush Creek	-	-	22.0	13.3	15.3	-	-	12.0	5.3	6.0	-	-	1.3	0.0	3.3
Fishing Creek	5.3	12.7	8.0	9.3	11.3	1.3	6.0	1.3	8.0	3.3	0.0	0.7	0.0	0.0	1.3
Lily Creek	44.7	42.0	19.3	40.7	96.0	13.3	31.3	12.7	21.3	50.0	2.7	6.7	2.7	6.0	19.3
Mean	25.0	22.0	22.7	28.0	56.0	10.0	13.8	13.2	19.5	34.3	2.3	3.5	3.5	5.5	12.8
Smallmouth bass															
Dam	21.3	2.7	8.0	8.7	3.3	10.7	2.0	3.3	6.7	2.0	6.0	2.0	2.0	4.7	2.0
Faubush Creek	-	-	8.7	0.7	4.0	-	-	6.0	0.7	1.3	-	-	4.0	0.7	1.3
Fishing Creek	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.7
Lily Creek	1.3	18.0	4.7	3.3	21.3	0.0	16.0	4.7	2.0	14.0	0.0	12.7	4.0	1.3	8.0
Mean	7.5	7.8	5.3	3.2	7.3	3.7	6.8	3.5	2.3	4.5	2.0	5.2	2.5	1.7	3.0

Largemouth bass -  $\geq 8.0$  in = stock,  $\geq 12.0$  in = quality,  $\geq 15.0$  in = preferred.

Smallmouth bass and spotted bass -  $\geq 7.0$  in = stock,  $\geq 11.0$  in = quality,  $\geq 14.0$  in = preferred.

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Table 4. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Lake Cumberland May 2018.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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
2012	15.3	3.8	21.0	3.7	21.7	4.9	11.7	2.4	0.2	0.2	69.7	13.0
2011	5.7	2.7	6.5	2.2	5.2	1.7	3.7	1.1	0.2	0.2	21.0	6.3
2010	12.3	3.0	23.3	5.3	13.7	3.3	10.7	2.0	0.5	0.3	60.0	11.7
2009	20.3	6.5	9.7	3.5	8.5	2.8	8.2	2.3	0.5	0.3	46.7	12.5
2008	7.3	2.3	11.0	2.8	20.2	5.7	18.0	4.0	0.2	0.2	56.5	13.2
2007	8.4	3.2	14.1	4.5	20.9	7.1	15.3	4.1	0.5	0.3	58.6	18.1
2006	0.8	0.4	6.2	2.2	8.8	3.1	10.2	2.6	0.5	0.3	26.0	7.6
2005	0.8	0.5	1.6	0.7	9.9	3.6	5.5	1.3	0.0	0.0	17.7	5.2
2004	0.8	0.3	5.2	1.5	6.9	1.4	6.5	1.6	0.0	0.0	19.5	4.0
2003	2.0	0.8	5.7	1.4	6.1	1.9	8.3	1.9	0.1	0.1	22.1	4.3
2002	0.4	0.2	1.9	0.6	7.7	2.5	6.3	1.0	0.1	0.1	16.3	3.3

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Table 5. Spring electrofishing CPUE (fish/hr) for each length group of spotted bass collected at Lake Cumberland during May 2018.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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
2012	27.3	4.7	20.5	3.9	8.8	2.6	0.7	0.5	0.0	0.0	57.3	10.1
2011	8.7	1.7	12.2	2.1	5.7	2.4	0.3	0.2	0.0	0.0	26.8	4.6
2010	28.3	4.0	26.7	5.5	12.2	2.6	0.8	0.4	0.0	0.0	68.0	9.2
2009	22.7	4.3	20.5	5.1	10.0	2.1	1.0	0.4	0.0	0.0	54.2	10.3
2008	34.7	4.5	26.7	3.7	15.3	4.0	5.0	2.1	0.0	0.0	81.7	11.1
2007	27.1	6.8	27.5	5.0	13.6	3.6	7.0	2.7	0.4	0.2	75.1	13.5
2006	12.0	2.5	16.5	2.3	13.8	3.0	8.0	2.1	0.2	0.2	50.3	7.1
2005	16.3	3.6	9.5	1.4	11.2	2.0	3.1	1.2	0.0	0.0	40.0	6.3
2004	15.6	2.7	25.5	3.9	10.5	2.1	1.9	0.7	0.0	0.0	53.5	7.8
2003	32.6	5.5	31.6	3.8	9.1	1.5	2.9	0.8	0.0	0.0	76.1	8.6
2002	8.1	1.8	10.3	1.7	5.2	1.1	1.5	0.5	0.0	0.0	25.1	3.7

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Table 6. Spring electrofishing CPUE (fish/hr) for each length group of smallmouth bass collected at Lake Cumberland during May 2018.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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
2012	4.3	1.4	2.3	0.7	0.3	0.2	1.7	0.7	0.5	0.3	8.7	2.1
2011	0.5	0.4	0.3	0.2	0.7	0.3	0.2	0.2	0.2	0.2	1.7	0.5
2010	2.8	0.7	2.5	0.8	1.2	0.4	3.7	1.2	2.3	1.0	10.2	1.9
2009	3.5	1.3	1.5	0.6	0.2	0.2	0.7	0.3	0.2	0.2	5.8	1.5
2008	5.2	1.8	2.0	0.8	1.2	0.5	2.7	1.0	0.8	0.4	11.0	2.8
2007	6.8	2.6	7.1	2.4	3.8	1.3	1.4	0.6	0.5	0.4	19.1	5.4
2006	2.5	0.9	1.2	0.4	0.3	0.3	0.3	0.2	0.2	0.2	4.3	1.2
2005	2.3	0.9	0.8	0.6	1.3	0.5	3.9	1.5	1.3	0.7	8.3	2.3
2004	2.9	1.8	1.9	0.9	1.2	0.5	1.3	0.7	0.0	0.0	7.3	3.1
2003	2.1	1.0	3.9	1.1	1.6	0.6	3.4	1.1	1.0	0.4	11.0	2.7
2002	2.9	1.1	3.5	1.3	2.4	0.8	0.9	0.5	0.1	0.1	9.7	2.9

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Table 7. Catch-per-hour of black bass captured during spring electrofishing on lakes in the Southeastern Fishery District during 2018.

Species/Lake	Stock*	Quality*	Preferred*
<b>Largemouth bass</b>			
Lake Cumberland	35.2	29.8	19.2
Laurel River Lake	56.2	40.8	19.8
Cedar Creek Lake	65.3	40.7	32.7
Beulah Lake	176.7	30.0	4.7
Cannon Creek Lake	60.7	10.0	0.7
Dale Hollow Lake	73.7	68.3	35.7
Wood Creek Lake	148.7	49.3	17.3
<b>Spotted bass</b>			
Lake Cumberland	56.0	34.3	12.8
Laurel River Lake	19.5	8.2	3.0
Beulah Lake	2.0	0.0	0.0
Cannon Creek Lake	48.0	6.7	0.0
Dale Hollow Lake	13.7	4.3	0.0
Wood Creek Lake	11.3	4.7	0.7
<b>Smallmouth bass</b>			
Lake Cumberland	7.3	4.5	3.0
Laurel River Lake	1.7	1.0	0.8
Beulah Lake	6.7	5.3	2.0
Cannon Creek Lake	3.3	2.7	0.0
Dale Hollow Lake	6.0	4.0	1.3

\*Largemouth bass -  $\geq 8.0$  in = stock,  $\geq 12.0$  in = quality,  $\geq 15.0$  in = preferred

\*Smallmouth and spotted bass -  $\geq 7.0$  in = stock,  $\geq 11.0$  in = quality,  $\geq 14.0$  in = preferred

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Table 8. Population assessment for largemouth bass based on spring electrofishing at Lake Cumberland from 2000-2018 (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	Total score	Assessment rating
Management objective		≥13.0 in	≥5.0 fish/hr	≥10.0 fish/hr	≥8.0 fish/hr	≥0.5 fish/hr		
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
2012	Value	14.0	21.0	21.7	11.7	0.2		
	Score	4	2	2	2	2	12	F
2011	Value		6.8	5.2	3.7	0.2		
	Score	4	1	1	1	2	9	F
2010	Value		11.5	13.7	10.7	0.5		
	Score	4	1	1	2	3	11	F
2009	Value		25.7	8.5	8.2	0.5		
	Score	4	3	1	2	3	13	G
2008	Value		10.0	20.2	18.0	0.2		
	Score	4	1	2	3	2	12	F
2007	Value	13.4	10.3	20.9	15.3	0.5		
	Score	4	1	2	3	3	13	G
2006	Value		1.2	8.8	10.2	0.5		
	Score	4	1	1	2	3	11	F
2005	Value		1.2	9.9	5.5	0.0		
	Score	4	1	1	1	1	8	P
2004	Value		1.1	7.0	6.5	1.0		
	Score	4	1	1	2	3	11	F
2003	Value		3.0	6.1	8.3	0.1		
	Score	4	1	1	2	1	9	F
2002	Value	13.6	0.4	7.6	6.4	0.1		
	Score	4	1	1	2	1	9	F
2001	Value		2.9	7.7	5.2	0.3		
	Score	4	1	1	1	2	9	F
2000	Value		2.8	9.5	5.2	0.3		
	Score	4	1	1	1	2	9	F

Table 9. Population assessment for spotted bass based on spring electrofishing at Lake Cumberland from 2000-2018 (scoring based on statewide assessment).

Year	Mean length age-3 at capture	CPUE age-1	CPUE 11.0-13.9 in	CPUE $\geq 14.0$ in	Total score	Assessment rating	
Management objective	$\geq 9.6$ in	$\geq 4.0$ fish/hr	$\geq 7.0$ fish/hr	$\geq 2.0$ fish/hr			
2018	Value	2.5	21.5	12.8			
	Score	3	3	4	14	E	
2017	Value	0.6	14.0	5.5			
	Score	3	1	4	12	G	
2016	Value	1.2	9.7	3.5			
	Score	3	2	3	12	G	
2015	Value	1.7	10.3	3.5			
	Score	3	2	4	13	G	
2014	Value	1.2	7.7	2.3			
	Score	3	2	2	10	G	
2013	Value	11.1	0.0	9.8	1.5		
	Score	3	1	3	3	10	G
2012	Value		14.0	8.8	0.7		
	Score	3	4	3	2	12	G
2011	Value		3.9	5.7	0.3		
	Score	3	3	2	1	9	F
2010	Value		9.7	12.2	0.8		
	Score	3	4	4	2	13	G
2009	Value		6.8	10.0	1.0		
	Score	3	4	3	2	12	G
2008	Value	11.0	8.8	15.3	5.0		
	Score	3	4	4	4	15	E
2007	Value		1.3	13.6	7.0		
	Score	4	2	4	4	14	E
2006	Value		1.8	13.8	8.0		
	Score	4	2	4	4	14	E
2005	Value		5.1	11.2	3.1		
	Score	4	4	4	4	16	E
2004	Value		6.0	10.5	1.9		
	Score	4	4	4	3	15	E
2003	Value	11.4	16.7	9.1	2.9		
	Score	4	4	3	4	15	E
2002	Value		5.1	5.2	1.5		
	Score	4	4	1	3	12	G
2001	Value		2.1	4.7	1.6		
	Score	4	3	1	3	11	G
2000	Value		1.9	5.6	1.2		
	Score	4	2	2	2	10	G

Table 10. Population assessment for smallmouth bass based on spring electrofishing at Lake Cumberland from 1990-2018 (scoring based on statewide assessment).

Year	Mean length age-3 at capture	CPUE age-1	CPUE 11.0-13.9 in	CPUE $\geq 14.0$ in	Total score	Assessment rating
Management objective	$\geq 11.0$ in	$\geq 2.0$ fish/hr	$\geq 3.0$ fish/hr	$\geq 2.0$ fish/hr		
2018	Value Score	1.0 2	1.5 3	3.0 4	10	G
2017	Value Score	0.0 1	0.7 2	1.7 3	7	F
2016	Value Score	2.8 3	1.0 3	2.5 4	11	G
2015	Value Score	0.3 1	1.7 3	5.2 4	9	F
2014	Value Score	0.2 1	1.7 3	2.0 4	9	F
2013	Value Score	0.3 1	0.3 2	1.7 3	7	F
2012	Value Score	2.5 1	0.3 2	1.7 3	9	F
2011	Value Score	0.0 1	0.7 2	0.2 1	5	P
2010	Value Score	11.3 1	0.7 2	1.2 3	3.7 4	10 G
2009	Value Score	1.8 2	0.2 3	0.7 1	2 2	8 F
2008	Value Score	2.5 2	1.2 3	2.7 3	4 4	12 G
2007	Value Score	2.6 2	3.8 3	1.4 4	3 3	12 G
2006	Value Score	0.0 2	0.3 1	0.3 2	2 2	7 F
2005	Value Score	12.2 2	0.8 2	1.3 3	3.9 4	11 G
2004	Value Score	1.9 1	1.2 3	1.3 3	3 3	10 G
2003	Value Score	1.3 1	1.6 2	3.4 3	4 4	10 G
2002	Value Score	1.7 1	2.4 3	0.9 4	3 3	11 G
2001	Value Score	0.5 1	0.4 2	0.9 2	3 3	8 F
2000	Value Score	0.0 1	1.4 1	1.1 3	3 3	8 F

Table 11. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples at Lake Cumberland during May 2018; 95% confidence limits are in parentheses.

Year	Area	Largemouth bass			Spotted bass			Smallmouth bass		
		No. $\geq$ stock size	PSD (+/- 95%)	RSD <sub>15</sub> (+/- 95%)	No. $\geq$ stock size	PSD (+/- 95%)	RSD <sub>14</sub> (+/- 95%)	No. $\geq$ stock size	PSD (+/- 95%)	RSD <sub>14</sub> (+/- 95%)
2018	Dam	52	83 (± 10)	75 (± 12)	152	77 (± 7)	27 (± 7)	5	60 (± 48)	60 (± 48)
	Faubush Creek	72	86 (± 8)	53 (± 12)	23	39 (± 20)	22 (± 17)	6	33 (± 41)	33 (± 41)
	Fishing Creek	57	82 (± 10)	33 (± 12)	17	29 (± 22)	12 (± 16)	1	100 (± 0)	100 (± 0)
	Lily Creek	30	90 (± 11)	63 (± 18)	144	52 (± 8)	20 (± 7)	32	66 (± 17)	38 (± 17)
	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)
2012	Total	326	61 (± 5)	21 (± 4)	224	25 (± 6)	2 (± 2)	33	36 (± 17)	30 (± 16)
2011	Total	92	58 (± 10)	24 (± 9)	124	29 (± 8)	2 (± 2)	8	63 (± 36)	13 (± 25)
2010	Total	286	51 (± 6)	22 (± 5)	293	27 (± 5)	2 (± 1)	51	57 (± 14)	43 (± 14)
2009	Total	158	63 (± 8)	31 (± 7)	230	29 (± 6)	3 (± 2)	17	29 (± 22)	24 (± 21)
2008	Total	295	78 (± 5)	37 (± 6)	349	35 (± 5)	9 (± 3)	42	55 (± 15)	38 (± 15)
2007	Total	289	72 (± 5)	30 (± 5)	310	38 (± 5)	13 (± 4)	81	37 (± 11)	10 (± 7)
2006	Total	151	75 (± 7)	40 (± 8)	259	51 (± 6)	19 (± 5)	13	31 (± 26)	15 (± 20)
2005	Total	127	91 (± 5)	32 (± 8)	216	50 (± 7)	11 (± 4)	49	80 (± 11)	59 (± 14)
2004	Total	140	88 (± 6)	39 (± 9)	325	42 (± 13)	12 (± 8)	42	36 (± 8)	8 (± 5)

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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, Beulah Lake, Cannon Creek Lake, Dale Hollow Lake, and Wood Creek Lake during 2018; 95% confidence limits are in parentheses.

Lake	Largemouth bass		Smallmouth bass		Spotted bass	
	PSD	RSD <sub>15</sub>	PSD	RSD <sub>14</sub>	PSD	RSD <sub>14</sub>
Lake Cumberland	85 (±5)	55 (±7)	61 (±15)	41 (±15)	61 (±5)	23 (±5)
Laurel River Lake	73 (±5)	35 (±5)	60 (±32)	50 (±33)	42 (±9)	15 (±7)
Cedar Creek Lake	62 (±10)	50 (±10)				
Beulah Lake	17 (±5)	3 (±2)	80 (±26)	30 (±30)		
Cannon Creek Lake	16 (±8)	1 (±2)	80 (±39)	0 (±0)	14 (±8)	0 (±0)
Dale Hollow Lake	93 (±3)	48 (±7)	67 (±22)	22 (±20)	32 (±14)	0 (±0)
Wood Creek Lake	33 (±6)	12 (±4)			41 (±24)	6 (±12)

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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 for black bass in Fishing Creek of Lake Cumberland on 3 October 2018; standard error is in parentheses.

Species	Inch class															Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	17	19		
Largemouth bass	2	1	4	13	5	1					3	3	1	1		34	22.7 (2.7)
Spotted bass	4	1	2		5	5	4	5	6	3	3	3				41	27.3 (5.6)
Smallmouth bass											1				1	2	1.3 (0.8)

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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 <sup>a</sup>	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
<b>Lake Cumberland</b>									
2018	Fishing Creek	6.2	0.2	17.3	2.9	15.3	2.2		
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
2013	Fishing Creek	6.1	0.1	80.0	23.8	61.3	15.9	26.0	13.6
2012	Fishing Creek	6.1	0.1	96.7	24.6	80.0	19.6	21.8	6.2
2011	Fishing Creek	6.1	0.1	114.7	25.1	102.0	23.2	46.5	7.0
2010	Fishing Creek	5.8	0.1	85.3	9.4	67.3	8.4	16.7	11.5
2009	Fishing Creek	4.8	0.2	42.0	9.5	22.7	6.4	21.3	6.6
2008	Fishing Creek	5.0	0.1	166.0	40.1	80.7	31.3	81.3	13.5
2007	Fishing Creek	5.0	0.3	4.7	3.2	2.7	1.3	24.9	5.5
2006	Fishing Creek	6.3	0.2	22.0	3.1	20.7	2.4	32.0	8.2
2005	Fishing Creek	6.2	0.2	14.0	4.5	13.3	4.1	3.3	1.2
2004	Fishing Creek	6.2	0.1	50.7	8.2	41.3	7.4	4.0	2.1
2003	Fishing Creek	5.8	0.4	6.0	2.7	4.0	2.5	1.3	0.8
2002	Fishing Creek	6.0	0.1	192.7	36.7	160.7	36.3	4.0	1.5

<sup>a</sup> 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 September and October 2018 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	Std. error	CPUE	Std. error	CPUE	Std. error
Lake Cumberland	Fishing Creek	6.2	0.2	17.3	2.9	15.3	2.2
Laurel River Lake	Laurel River Arm	4.2	0.3	21.3	7.6	6.7	3.7
Cedar Creek Lake		4.2	0.1	52.7	10.6	9.3	2.0
Wood Creek Lake		4.3	0.1	37.3	14.9	8.0	3.7

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sedyoywc.d18



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 3 October 2018. 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	1	86 (-)	6	86 (4)	2	87 (3)
	7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	No.	Wr	No.	Wr	No.	Wr
Spotted bass	19	93 (3)	12	91 (2)	3	93 (11)

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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, Dale Hollow Lake, and Wood Creek Lake during September and October 2018. Standard error is in parentheses.

Species	Location	Length group					
		8.0-11.9 in		12.0-14.9 in		≥15.0 in	
		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)	1	86 (-)	6	86 (4)	2	87 (3)
	Laurel River Lake (Laurel River Arm)	27	98 (2)	14	100 (3)	7	106 (2)
	Cedar Creek Lake	30	83 (2)	8	91 (2)	13	89 (2)
	Dale Hollow Lake	4	92 (3)	3	87 (2)	11	84 (3)
	Wood Creek Lake	66	84 (1)	8	80 (3)	0	0 (0)
Spotted bass		7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	Lake Cumberland (Fishing Creek)	19	93 (3)	12	91 (2)	3	93 (11)
	Laurel River Lake (Laurel River Arm)	6	106 (3)	2	112 (15)	0	0 (0)
	Wood Creek Lake	3	91 (3)	0	0 (0)	0	0 (0)

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Table 18. Length frequency and CPUE (fish/nn) of walleye, white bass, sauger, and striped bass collected from the Jamestown/Bugwood (10 net-nights), Conley Bottom (10 net-nights), and Burnside/Waitsboro (10 net-nights) areas of Lake Cumberland in November 2018.

Area	Species	Inch class															Total	CPUE	Std. error											
		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	
Jamestown/Bugwood																														
	Walleye							1	2	11	38	33	17	24	17	7	4	1									155	15.5	3.7	
	White bass																										0	0.0	0.0	
	Sauger																										0	0.0	0.0	
	Striped bass									1		6	9	2	2	3	1	3			2	1		1	2	1	34	3.4	0.8	
Conley Bottom																														
	Walleye			2	5	1		1	13	28	18	11	12	18	9	1											119	11.9	1.8	
	White bass			1	1						1																3	0.3	0.2	
	Sauger																										0	0.0	0.0	
	Striped bass	1	2		1					5	15	19	4	4	4	4		1		2							62	6.2	1.4	
Burnside/Waitsboro																														
	Walleye			1	15	17	1	1	13	35	28	10	7	6	5	2												141	14.1	2.5
	White bass			1	6					1																	8	0.8	0.4	
	Sauger										1																1	0.1	0.1	
	Striped bass	1	8	2						1	8	3	1				1		1			1					27	2.7	0.9	
Total																														
	Walleye			3	20	18	1	3	28	74	84	54	36	48	31	10	4	1									415	13.8	1.6	
	White bass			2	7					1	1																11	0.4	0.2	
	Sauger										1																1	0.0	0.0	
	Striped bass	2	10	2	1					1	6	29	31	7	6	7	5	4	1	1	4	1	1	1	1	2	1	123	4.1	0.7

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Table 19. Population assessment for walleye based on fall gill netting at Lake Cumberland from 1991-2018.

Year		Parameters				Total score	Assessment rating
		Mean length		CPUE $\geq 20.0$ in	CPUE age 1+		
		CPUE $\geq$ age 1+	age 2+ at capture				
Management objective		$\geq 6.0$ fish/nn	$\geq 18.0$ in	$\geq 1.5$ fish/nn	$\geq 3.0$ fish/nn		
2018	Value	12.5	18.7	1.5	8.2		
	Score	4	3	4	4	15	E
2016	Value	8.4	19.4	1.1	4.9		
	Score	4	4	4	4	16	E
2014	Value	9.3	18.3	0.8	3.6		
	Score	4	2	3	4	13	G
2012	Value	6.3	18.2	0.2	3.1		
	Score	3	2	2	3	10	G
2010	Value	3.3	17.6	0.1	1.9		
	Score	2	2	1	3	8	F
2008	Value	5.9	18.5	0.9	2.5		
	Score	3	3	3	3	12	G
2006	Value	14.8	19.1	3.9	3.1		
	Score	4	4	4	3	15	E
2004	Value	8.9	18.8	1.8	4.6		
	Score	4	3	4	4	15	E
2002	Value	12.1	19.1	2.5	6.4		
	Score	4	4	4	4	16	E
2000	Value	4.3	18.6	1.5	1.6		
	Score	3	3	4	2	12	G
1998	Value	7.9	18.5	2.4	1.9		
	Score	4	3	4	3	14	E
1996	Value	5.3	18.5	0.9	3.6		
	Score	3	3	3	4	13	G
1994	Value	3.5	18.5	0.9	0.7		
	Score	2	3	3	1	9	F
1991	Value	5.1	18.5*	0.2	2.7		
	Score	3	3	2	3	11	G

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\* Data from 1994 used for age-growth

Table 20. Mean back calculated lengths (in) at each annulus for male walleye collected from Lake Cumberland during 2018, including the 95% confidence interval (CI) for each mean length per age group.

Year	No.	Age						
		1	2	3	4	5	6	7
2017	36	10.8						
2016	11	11.5	16.5					
2015	15	11.5	16.8	18.9				
2014	4	11.0	15.6	17.9	19.1			
2013	8	11.4	15.8	18.3	19.6	20.4		
2011	1	10.9	15.8	17.8	19.0	19.8	20.2	20.6
Mean		11.1	16.4	18.5	19.4	20.3	20.2	20.6
Number		75	39	28	13	9	1	1
Smallest		7.2	13.4	16.2	17.9	18.9	20.2	20.6
Largest		13.5	17.7	19.9	20.4	21.2	20.2	20.6
Std error		0.2	0.2	0.2	0.2	0.2		
95% CI ±		0.3	0.4	0.3	0.4	0.5		

Otoliths were used for age-growth determinations; Intercept = 0  
sedagcwm.d18

Table 21. Mean back calculated lengths (in) at each annulus for female walleye collected from Lake Cumberland during 2018, including the 95% confidence interval (CI) for each mean length per age group.

Year	No.	Age					
		1	2	3	4	5	6
2017	3	12.7					
2016	1	11.3	16.6				
2015	1	11.7	17.2	18.7			
2014	1	12.2	18.9	21.7	22.1		
2013	3	11.6	16.4	19.2	20.5	21.2	
2012	2	12.4	16.9	18.4	19.9	21.2	21.8
Mean		12.1	17.0	19.2	20.6	21.2	21.8
Number		11	8	7	6	5	2
Smallest		9.7	15.4	17.8	19.1	20.4	20.8
Largest		14.3	18.9	21.7	22.1	22.0	22.8
Std error		0.4	0.4	0.5	0.4	0.3	1.0
95% CI ±		0.8	0.8	0.9	0.8	0.6	2.0

Otoliths were used for age-growth determinations; Intercept = 0  
sedagcwf.d18

Table 22. Mean back calculated lengths (in) at each annulus for walleye (both sexes) collected from Lake Cumberland during 2018, including the 95% confidence interval (CI) for each mean length per age group.

Year	No.	Age						
		1	2	3	4	5	6	7
2017	53	10.7						
2016	12	11.5	16.5					
2015	16	11.5	16.8	18.8				
2014	5	11.2	16.3	18.6	19.7			
2013	11	11.4	15.9	18.6	19.8	20.6		
2012	2	12.4	16.9	18.4	19.9	21.2	21.8	
2011	1	10.9	15.8	17.8	19.0	19.8	20.2	20.6
Mean		11.0	16.5	18.7	19.7	20.7	21.3	20.6
Number		100	47	35	19	14	3	1
Smallest		7.2	13.4	16.2	17.9	18.9	20.2	20.6
Largest		14.3	18.9	21.7	22.1	22.0	22.8	20.6
Std error		0.2	0.1	0.2	0.2	0.2	0.8	
95% CI $\pm$		0.3	0.3	0.4	0.5	0.5	1.6	

Otoliths were used for age-growth determinations; Intercept = 0  
sedagcbw.d18

Table 23. Age-frequency and CPUE (fish/nn) of walleye collected at Lake Cumberland in 30 net-nights during November 2018.

Age	Inch class													Total	%	CPUE	Std error		
	9	10	11	12	13	14	15	16	17	18	19	20	21					22	23
0	3	20	18	1												42	10.1	1.4	0.6
1					3	28	74	84	50	7						246	59.1	8.2	1.0
2									5	20	18					43	10.3	1.4	0.2
3										10	18	22	1			51	12.3	1.7	0.3
4											7	6		1		14	3.4	0.5	0.1
5											4	3	7	3		17	4.1	0.6	0.1
6													1		1	2	0.5	0.1	0.0
7													1			1	0.2	0.0	0.0
Total	3	20	18	1	3	28	74	84	55	37	47	31	10	4	1	416	100.0	13.9	
%	0.7	4.8	4.3	0.2	0.7	6.7	17.8	20.2	13.2	8.9	11.3	7.5	2.4	1.0	0.2				

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Table 24. Walleye population assessment for walleye gill netted at Lake Cumberland in November 2018.

Parameter	Actual value	Assessment score
Population density (CPUE age 1 and older)	12.5	4
Growth rate (Mean length age 2+ at capture)	18.7	3
Size structure (CPUE $\geq 20.0$ in)	1.5	4
Recruitment (CPUE age 1)	8.2	4
Instantaneous mortality (Z)	0.850	
Annual mortality (A)	57.3	
Total score		15
Assessment rating		E

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Table 25. Number of fish and mean relative weight (Wr) for each length group of walleye, white bass, and striped bass collected in Lake Cumberland during November 2018. Standard error is in parentheses.

Species	Length group					
	10.0-14.9 in		15.0-19.9 in		$\geq 20.0$ in	
	No.	Wr	No.	Wr	No.	Wr
Walleye	67	93 (1)	279	89 (0)	45	88 (1)
	6.0-8.9 in		9.0-11.9 in		$\geq 12.0$ in	
	No.	Wr	No.	Wr	No.	Wr
White bass	0	0 (0)	7	101 (2)	2	84 (1)
	12.0-19.9 in		20.0-29.9 in		$\geq 30.0$ in	
	No.	Wr	No.	Wr	No.	Wr
Striped bass	69	89 (1)	29	80 (2)	3	79 (2)

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Table 26. Mean back calculated lengths (in) at each annulus for white bass collected from Lake Cumberland during 2018, including the 95% confidence interval (CI) for each mean length per age group.

Year	No.	Age			
		1	2	3	4
2015	1	11.7	13.8	14.9	
2014	1	10.0	13.0	14.2	16.0
Mean		10.8	13.4	14.5	16.0
Number		2	2	2	1
Smallest		10.0	13.0	14.2	16.0
Largest		11.7	13.8	14.9	16.0
Std error		0.9	0.4	0.3	
95% CI $\pm$		1.7	0.8	0.7	

Otoliths were used for age-growth determinations;  
 Intercept = 0  
 sedagcwb.d18

Table 27. Age-frequency and CPUE (fish/nn) of white bass collected at Lake Cumberland in 30 net-nights of walleye gill netting during November 2018.

Age	Inch class				Total	%	CPUE	Std error
	9	10	15	16				
0	2	7			9	81.8	0.3	0.2
3			1		1	9.1	0.0	0.0
4				1	1	9.1	0.0	0.0
Total	2	7	1	1	11	100.0	0.4	
%	18.2	63.6	9.1	9.1				

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 sedagcwb.d18



Table 28. Mean back calculated lengths (in) at each annulus for striped bass collected from Lake Cumberland during 2018, including the 95% confidence interval (CI) for each mean length per age group.

Year	No.	Age								
		1	2	3	4	5	6	7	8	9
2017	29	12.4								
2016	16	11.4	18.4							
2015	2	12.2	19.9	23.0						
2014	2	11.0	19.7	24.5	27.5					
2013	4	13.7	19.9	22.9	25.8	27.5				
2012	1	12.1	19.0	21.2	23.6	25.1	26.3			
2009	1	13.1	18.4	20.3	23.0	24.6	26.2	27.9	29.2	29.8
Mean		12.2	18.9	22.8	25.6	26.6	26.3	27.9	29.2	29.8
Number		55	26	10	8	6	2	1	1	1
Smallest		7.9	16.7	20.2	23.0	24.6	26.2	27.9	29.2	29.8
Largest		14.3	21.6	25.7	29.1	30.6	26.3	27.9	29.2	29.8
Std error		0.2	0.3	0.6	0.9	1.0	0.0			
95% CI $\pm$		0.5	0.5	1.2	1.7	2.0	0.1			

Otoliths were used for age-growth determinations; Intercept = 0  
sedagcbs.d18

Table 29. Age-frequency and CPUE (fish/nn) of striped bass collected at Lake Cumberland in 30 net-nights of walleye gill netting during November 2018.

Age	Inch class																		Total	%	CPUE	Std error	
	7	8	9	15	16	17	18	19	20	21	22	23	25	26	27	29	30	31					
0	2	10	2																	14	11.6	0.5	0.2
1				1	6	29	31	4												71	58.7	2.4	0.4
2								4	6	7	5	3								25	20.7	0.8	0.3
3												1	1							2	1.7	0.1	0.0
4															1		1			2	1.7	0.1	0.0
5														3		1			1	5	4.1	0.2	0.1
6														1						1	0.8	0.0	0.0
9																		1		1	0.8	0.0	0.0
Total	2	10	2	1	6	29	31	8	6	7	5	4	1	4	1	1	2	1		121	100.0	4.0	
%	1.7	8.3	1.7	0.8	5.0	24.0	25.6	6.6	5.0	5.8	4.1	3.3	0.8	3.3	0.8	0.8	1.7	0.8					

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Table 30. Species composition, relative abundance, and CPUE (fish/hr) of trout collected during 8.75 hours of 15-minute nocturnal electrofishing runs for trout in Cumberland tailwater during October 2018; standard error is in parentheses.

Area	Species	Inch class																Total	CPUE						
		7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			23	24	25	26	27	
Above Helms	Rainbow trout	1	8	57	129	85	24	6	2	6	17	9	4	3										351	280.8 (52.3)
	Brown trout		5	36	37	8	3	1	1						2		1		1	1				96	76.8 (15.3)
Below Helms	Rainbow trout		4	18	46	19	13	3	3	4	7	6	2											125	100.0 (17.9)
	Brown trout			28	25	6	4	2									1				1			67	53.6 (12.4)
Rainbow Run	Rainbow trout			1	3	5	5	1	1	3	2	2		2										25	20.0 (6.1)
	Brown trout			2	5	4	1	2		1	1	2		1					1	1				21	16.8 (3.2)
Big Willis	Rainbow trout			4	9	6	5		4	4	12	2	1											47	37.6 (6.8)
	Brown trout				7	4				1				1				1	1					15	12.0 (3.6)
Crocus Creek	Rainbow trout			1	4	2			3	3	4	1			1									19	15.2 (3.4)
	Brown trout				1		1				1			1			2					1		7	5.6 (3.5)
Hwy 61 Bridge	Rainbow trout			4	14	6	2	3	3	6	3	4	2	1										48	38.4 (12.2)
	Brown trout			5	3	3	1	1			1	4		5	2	1		1	1			1	1	30	24.0 (6.8)
Cloyd's Landing	Rainbow trout		1				2		2	4			1	1	2	1		1						15	12.0 (6.1)
	Brown trout			1	1	2																		4	3.2 (1.5)
Total	Rainbow trout	1	13	85	205	123	51	13	18	30	45	24	10	7	3	1		1						630	72.0 (17.1)
	Brown trout		5	72	79	27	10	6	1	2	3	6		8	4	1	5	3	3	2	2	1		240	27.4 (5.2)

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Table 31. Fall electrofishing mean CPUE (fish/hr) of 15.0-17.9 in, 18.0-19.9 in, and  $\geq 20.0$  in rainbow trout in the Lake Cumberland tailwater from 1995 to 2018. Data collected from sample sites 1-5 each year. \*2011 sampling was conducted in February.

Year	Length group					
	15.0-17.9 in		18.0-19.9 in		$\geq 20.0$ in	
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2018	13.1	2.2	1.9	0.6	0.2	0.2
2017	21.8	2.4	1.4	0.5	0.0	
2016	6.2	1.3	1.0	0.4	0.5	0.3
2015	9.0	1.9	1.3	0.6	0.2	0.2
2014	8.6	1.1	3.0	0.7	0.2	0.2
2013	23.2	3.6	0.5	0.3	0.0	
2012	0.5	0.3	0.2	0.2	0.0	
2011	1.1	0.6	0.0		0.2	0.2
2010	1.3	0.5	0.3	0.2	0.0	
2009	5.4	1.6	0.5	0.3	0.0	
2008	18.1	4.3	1.4	0.5	0.0	
2007	25.0	3.5	6.4	1.3	0.6	0.3
2006	29.3	3.0	4.3	1.2	0.3	0.2
2005	9.3	2.4	2.1	0.8	0.0	
2004	2.2	0.8	0.6	0.4	0.0	
2003	2.1	0.7	1.0	0.4	0.2	0.2
2002	10.7	2.4	1.4	0.7	1.0	0.6
2001	21.0	3.7	5.5	1.3	0.7	0.4
2000	9.4	1.3	1.4	0.7	0.5	0.4
1999	1.9	0.5	0.3	0.2	0.3	0.2
1998	0.3	0.2	0.2	0.2	0.2	0.2
1997	1.4	0.5	1.0	0.5	0.3	0.2
1996	1.8	0.6	0.6	0.3	0.5	0.5
1995	0.7	0.5	0.5	0.4	0.5	0.5

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Table 32. Fall electrofishing mean CPUE (fish/hr) of 15.0-17.9 in, 18.0-19.9 in, and  $\geq 20.0$  in brown trout in the Lake Cumberland tailwater from 1995 to 2018. Data collected from sample sites 1-5 each year. \*2011 sampling was conducted in February.

Year	Length group					
	15.0-17.9 in		18.0-19.9 in		$\geq 20.0$ in	
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2018	1.0	0.5	0.5	0.3	2.2	0.6
2017	1.4	0.5	1.4	0.5	2.6	0.7
2016	4.5	1.1	3.0	0.8	2.2	0.8
2015	5.6	1.8	1.9	0.7	1.9	0.7
2014	7.2	2.1	1.4	0.6	1.6	0.8
2013	2.4	0.8	1.1	0.6	4.6	1.5
2012	2.6	0.8	3.2	1.2	2.7	0.9
2011	6.6	1.2	3.4	0.9	4.0	1.2
2010	3.7	0.9	1.3	0.5	0.6	0.4
2009	9.1	2.0	5.3	1.7	2.7	1.1
2008	14.1	2.9	6.4	1.0	2.6	0.7
2007	29.0	6.2	5.8	1.3	3.4	0.7
2006	30.2	10.1	5.6	1.5	5.0	1.5
2005	14.9	3.1	7.0	1.7	9.3	2.4
2004	11.8	3.3	7.7	2.0	3.2	0.9
2003	20.2	5.0	3.8	1.4	1.9	0.7
2002	31.2	6.6	5.6	1.1	2.9	0.9
2001	30.2	8.7	5.8	1.5	5.2	1.3
2000	18.9	4.7	6.6	1.6	9.0	2.5
1999	6.1	1.1	5.1	1.8	2.6	0.7
1998	6.4	1.2	1.1	0.5	1.8	0.7
1997	2.2	0.7	1.8	0.9	3.2	1.4
1996	6.8	2.5	1.0	0.6	2.0	0.9
1995	0.7	0.4	0.4	0.3		

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Table 33. Number of fish and mean relative weight (Wr) for each species of trout collected in the Cumberland tailwater during October 2018. Standard error is in parentheses.

Location	Species			
	Rainbow trout		Brown trout	
	No.	Wr	No.	Wr
Above Helms	159	83 (1)	96	86 (1)
Below Helms	124	84 (1)	67	86 (1)
Rainbow Run	25	83 (2)	21	97 (5)
Big Willis	47	87 (1)	15	91 (3)
Crocus Creek	19	88 (2)	7	115 (8)
Hwy 61	48	89 (1)	30	98 (3)
Cloyds	14	86 (2)	4	96 (4)
Total	436	85 (0)	240	90 (1)

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Table 34. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours of 15-minute electrofishing runs for black bass in Laurel River Lake during April and May 2018; standard error is in parentheses.

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
Dam	Largemouth bass			1		3	2	3	5	2	6	9	13	9	14	5	1	1	1	1	77	51.3 (3.8)	
	Spotted bass						1	1					1								3	2.0 (1.4)	
	Smallmouth bass		1						1												2	1.3 (0.8)	
Spruce Creek	Largemouth bass						3	4	4	6	3	11	13	8	5	11	8	2	1		79	52.7 (8.0)	
	Spotted bass	1	3		1	1	8	9	5	4	3	2	4	6	4						51	34.0 (4.5)	
	Smallmouth bass		5	1	1		2							2		1	1				13	8.7 (2.4)	
Laurel River Arm	Largemouth bass	1			1	1	1	12	5	8	12	7	6	13	13	20	10	4	2	1	117	78.0 (10.1)	
	Spotted bass						3	4	5	6			3		2						23	15.3 (4.7)	
	Smallmouth bass					1	1														2	1.3 (0.8)	
Upper Craigs Creek	Largemouth bass		1			1	4	6	4	1	11	10	12	15	9	6	1	2			83	55.3 (12.7)	
	Spotted bass				2		5	7	3	7	3	9	6	4	1	1					48	32.0 (3.6)	
	Smallmouth bass										1					1					2	1.3 (0.8)	
Total	Largemouth bass	1	1	1	1	5	10	25	18	17	32	37	44	45	41	42	20	9	4	2	1	356	59.3 (4.9)
	Spotted bass	1	3		3	1	17	21	13	17	6	11	14	10	7	1						125	20.8 (3.2)
	Smallmouth bass		6	1	1	1	3		1			1		2		2	1					19	3.2 (0.9)

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Table 35. Comparison of catch-per-hour of black bass (by area) captured during spring electrofishing on Laurel River Lake during the period of 2014-2018.

Species/Area	Stock					Quality					Preferred				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
<b>Largemouth bass</b>															
Dam	26.7	59.3	74.0	54.7	47.3	21.3	45.3	53.3	39.3	36.7	13.3	21.3	21.3	17.3	16.0
Spruce Creek	43.3	54.0	48.7	72.7	50.7	33.3	42.0	45.3	38.0	39.3	17.3	27.3	22.0	29.3	18.0
Laurel River Arm	102.7	87.3	109.3	85.3	75.3	47.3	54.7	70.0	56.7	50.7	24.0	16.0	34.0	21.3	33.3
Craigs Cr. headwaters	60.7	44.0	24.0	69.3	51.3	51.3	36.7	14.7	50.0	36.7	31.3	22.0	5.3	28.0	12.0
Mean	58.3	61.2	64.0	70.5	56.2	38.3	44.7	45.8	46.0	40.8	21.5	21.7	20.7	24.0	19.8
<b>Spotted bass</b>															
Dam	5.3	8.7	9.3	4.0	2.0	2.0	7.3	4.7	4.0	0.7	0.7	2.7	2.7	0.7	0.0
Spruce Creek	14.7	10.7	8.7	24.0	30.0	9.3	7.3	6.0	12.0	12.7	4.7	6.0	4.0	5.3	6.7
Laurel River Arm	18.0	7.3	24.0	18.7	15.3	4.0	4.0	11.3	8.7	3.3	0.0	0.7	1.3	1.3	1.3
Craigs Cr. headwaters	42.0	20.0	17.3	19.3	30.7	25.3	14.0	5.3	12.7	16.0	10.0	4.0	1.3	4.7	4.0
Mean	20.0	11.7	14.8	16.5	19.5	10.2	8.2	6.8	9.3	8.2	3.8	3.3	2.3	3.0	3.0
<b>Smallmouth bass</b>															
Dam	1.3	0.0	7.3	2.0	0.7	1.3	0.0	4.0	1.3	0.0	1.3	0.0	4.0	1.3	0.0
Spruce Creek	4.7	2.0	1.3	2.0	4.0	2.0	2.0	1.3	2.0	2.7	2.0	2.0	1.3	2.0	2.7
Laurel River Arm	0.7	0.0	0.0	2.7	0.7	0.7	0.0	0.0	2.7	0.0	0.7	0.0	0.0	0.0	0.0
Craigs Cr. headwaters	8.0	6.7	6.0	0.0	1.3	7.3	4.0	4.7	0.0	1.3	5.3	3.3	2.7	0.0	0.7
Mean	3.7	2.2	3.7	1.7	1.7	2.8	1.5	2.5	1.5	1.0	2.3	1.3	2.0	0.8	0.8

Largemouth bass -  $\geq 8.0$  in = stock,  $\geq 12.0$  in = quality,  $\geq 15.0$  in = preferred.

Smallmouth bass and spotted bass -  $\geq 7.0$  in = stock,  $\geq 11.0$  in = quality,  $\geq 14.0$  in = preferred.

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Table 36. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Laurel River Lake during April and May 2018.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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
2013	5.0	1.2	13.3	2.1	26.3	3.0	21.2	2.1	1.2	0.4	65.8	4.6
2012	6.0	1.2	23.3	3.6	18.8	2.9	18.3	2.0	0.2	0.2	66.5	7.6
2011	11.5	3.7	19.8	4.1	26.7	4.7	20.0	2.9	0.8	0.3	78.0	11.6
2010	15.8	3.0	31.0	4.4	20.7	3.1	21.2	2.4	0.8	0.4	88.7	8.4
2009	13.2	2.4	12.2	2.7	16.8	2.6	20.8	3.2	0.8	0.5	63.0	8.5
2008	37.5	11.5	15.0	2.0	7.8	1.5	17.7	2.7	0.7	0.5	78.0	13.8
2007	2.3	0.8	7.8	1.9	14.5	1.9	21.8	2.6	0.5	0.3	46.5	4.0
2006	20.8	5.7	13.9	2.7	17.1	2.9	19.5	2.8	0.6	0.3	71.4	11.4
2005	6.2	1.2	15.0	2.9	18.5	2.7	22.5	2.9	0.2	0.2	62.2	7.5
2004	3.8	1.5	11.0	1.4	18.5	3.0	14.2	1.9	0.0	0.0	47.5	4.8
2003	9.8	2.9	37.0	5.8	29.3	4.1	13.8	2.0	0.0	0.0	90.0	12.3
2002	21.7	5.0	24.0	3.8	23.3	3.3	8.3	1.4	0.0	0.0	77.3	9.7

Table 37. Spring electrofishing CPUE (fish/hr) for each length group of spotted bass collected at Laurel River Lake during April and May 2018.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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
2013	3.3	0.8	4.8	1.4	10.8	2.9	2.2	0.7	0.0	0.0	21.2	3.9
2012	6.3	1.6	8.3	1.8	6.8	1.6	1.7	0.5	0.0	0.0	23.2	3.3
2011	7.3	1.4	9.2	1.3	7.5	1.7	2.0	0.5	0.0	0.0	26.0	3.5
2010	25.2	4.2	13.0	2.3	9.0	2.0	4.8	1.2	0.0	0.0	52.0	6.1
2009	6.5	1.5	12.5	2.4	6.8	1.5	2.7	0.8	0.2	0.2	28.5	4.6
2008	20.2	4.2	12.7	2.6	8.5	1.4	2.3	0.6	0.0	0.0	43.7	7.0
2007	12.2	2.3	13.5	2.2	10.7	1.7	2.0	0.6	0.0	0.0	38.3	4.0
2006	15.0	2.4	13.4	1.7	9.1	1.7	2.6	0.7	0.0	0.0	40.2	4.6
2005	4.8	0.8	3.3	0.8	7.7	1.6	3.7	1.1	0.0	0.0	19.5	2.7
2004	3.2	1.0	12.5	2.9	9.8	2.3	2.2	0.7	0.0	0.0	27.7	5.6
2003	23.3	5.3	17.8	3.1	10.2	2.0	0.8	0.5	0.0	0.0	52.2	8.9
2002	13.7	3.2	13.3	1.8	5.5	1.4	0.3	0.2	0.0	0.0	32.8	5.6

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Table 38. Spring electrofishing CPUE (fish/hr) for each length group of smallmouth bass collected at Laurel River Lake during April and May 2018.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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
2013	0.3	0.2	0.2	0.2	1.0	0.6	0.8	0.4	0.0	0.0	2.3	0.8
2012	0.3	0.2	0.2	0.2	0.3	0.2	1.0	0.4	0.5	0.3	1.8	0.6
2011	1.0	0.4	1.7	0.5	0.5	0.3	0.8	0.4	0.7	0.3	4.0	1.1
2010	10.2	2.2	1.2	0.5	0.7	0.4	2.8	0.7	1.2	0.4	14.8	3.0
2009	1.7	1.2	1.0	0.4	0.7	0.4	3.5	1.5	1.8	0.8	6.8	2.4
2008	1.7	0.7	1.8	0.7	1.3	0.5	3.2	1.2	1.8	0.6	8.0	2.3
2007	2.8	0.8	1.7	0.7	0.3	0.2	1.2	0.5	0.8	0.4	6.0	1.4
2006	0.5	0.3	0.5	0.4	0.2	0.2	1.0	0.6	0.3	0.2	2.1	1.0
2005	0.2	0.2	0.8	0.4	1.5	0.6	5.5	1.5	2.8	1.1	8.0	1.8
2004	2.0	0.6	1.2	0.4	0.7	0.4	1.2	0.5	0.0	0.0	5.0	1.1
2003	8.3	2.2	7.5	1.8	1.8	0.8	2.2	0.8	0.2	0.2	19.8	4.3
2002	8.2	2.5	4.5	1.5	2.2	0.6	0.7	0.3	0.2	0.2	15.5	3.8

Table 39. Population assessment for largemouth bass based on spring electrofishing at Laurel River Lake from 2000-2018 (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	Total score	Assessment rating
Management objective		≥13.0 in	≥10.0 fish/hr	≥20.0 fish/hr	≥10.0 fish/hr	≥0.5 fish/hr		
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
2013	Value	13.1	1.2	26.3	21.2	1.2		
	Score	3	1	3	4	3	14	G
2012	Value		3.3	18.8	18.3	0.2		
	Score	3	1	2	3	2	11	F
2011	Value		9.2	26.7	20.0	0.8		
	Score	3	1	3	4	3	14	G
2010	Value		6.5	20.7	21.2	0.8		
	Score	3	1	2	4	3	13	G
2009	Value		12.2	16.8	20.8	0.8		
	Score	3	2	2	4	3	14	G
2008	Value	13.3	36.3	7.8	17.7	0.7		
	Score	3	3	1	3	3	13	G
2007	Value		2.1	14.5	21.8	0.5		
	Score	4	1	1	4	3	13	G
2006	Value		18.4	17.1	19.5	0.6		
	Score	4	2	2	3	3	14	G
2005	Value		4.6	18.5	22.5	0.2		
	Score	4	1	2	4	2	13	G
2004	Value		2.6	18.5	14.2	0.0		
	Score	4	1	2	3	1	11	F
2003	Value	13.7	7.8	29.3	13.8	0.0		
	Score	4	1	3	3	1	12	F
2002	Value		18.2	23.3	8.8	0.0		
	Score	4	2	3	2	1	12	F
2001	Value		17.8	22.1	2.5	0.3		
	Score	4	2	2	1	2	11	F
2000	Value		2.3	16.3	2.1	0.1		
	Score	4	1	2	1	1	9	F

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Table 40. Population assessment for spotted bass based on spring electrofishing at Laurel River Lake from 2000-2018 (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	≥3.0 fish/hr	≥7.0 fish/hr	≥1.0 fish/hr		
2018	Value		0.7	5.2	3.0		
	Score	1	1	1	4	7	F
2017	Value		1.3	6.3	3.0		
	Score	1	2	2	4	9	F
2016	Value		1.0	4.5	2.3		
	Score	1	2	1	3	7	F
2015	Value		0.3	4.8	3.3		
	Score	1	1	1	4	7	F
2014	Value		0.5	6.3	3.8		
	Score	1	1	2	4	8	F
2013	Value		0.3	10.8	2.2		
	Score	1	1	4	3	9	F
2012	Value	10.0	0.5	6.8	1.7		
	Score	1	1	2	3	7	F
2011	Value		0.8	7.5	2.0		
	Score	2	1	2	3	8	F
2010	Value		2.5	9.0	4.8		
	Score	2	3	3	4	12	G
2009	Value		0.3	6.8	2.7		
	Score	2	1	2	4	9	F
2008	Value		4.0	8.5	2.3		
	Score	2	3	3	3	11	G
2007	Value	10.4	0.8	10.7	2.0		
	Score	2	1	4	3	10	G
2006	Value		4.3	9.1	2.6		
	Score	4	3	3	4	14	E
2005	Value		1.5	7.7	3.7		
	Score	4	2	2	4	12	G
2004	Value		0.0	9.8	2.2		
	Score	4	1	3	3	11	G
2003	Value		2.3	10.2	0.8		
	Score	4	3	3	2	12	G
2002	Value	11.5	2.2	5.5	0.3		
	Score	4	3	2	1	10	G
2001	Value		6.0	8.3	0.1		
	Score	4	4	3	1	12	G
2000	Value		2.6	2.3	0.1		
	Score	4	3	1	1	9	F

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Table 41. Population assessment for smallmouth bass based on spring electrofishing at Laurel River Lake from 1990-2018 (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	≥13.0 in	≥3.0 fish/hr	≥1.5 fish/hr	≥1.0 fish/hr			
2018	Value Score	1.3 2	0.2 1	0.8 2	8	F	
2017	Value Score	0.3 1	0.7 2	0.8 2	8	F	
2016	Value Score	0.2 1	0.5 2	2.0 4	10	G	
2015	Value Score	0.0 1	0.2 1	1.3 3	8	F	
2014	Value Score	0.0 1	0.5 2	2.3 4	10	G	
2013	Value Score	13.2 3	0.0 1	1.0 3	0.8 2	9	F
2012	Value Score		0.0 1	0.3 2	1.0 3	10	G
2011	Value Score		0.3 1	0.5 2	0.8 2	9	F
2010	Value Score		3.8 4	0.7 2	2.8 4	14	E
2009	Value Score		0.3 1	0.7 2	3.5 4	11	G
2008	Value Score	13.6 4	0.8 2	1.3 3	3.2 4	13	G
2007	Value Score		1.2 2	0.3 2	1.2 3	11	G
2006	Value Score		0.4 2	0.2 1	1.0 3	10	G
2005	Value Score		0.1 1	1.5 3	5.5 4	12	G
2004	Value Score		0.4 2	0.7 2	1.2 3	11	G
2003	Value Score	13.6 4	4.0 4	1.8 3	2.2 4	15	E
2002	Value Score		6.0 4	2.2 4	0.7 2	14	E
2001	Value Score		3.4 3	2.8 4	1.1 3	14	E
2000	Value Score		0.9 2	1.3 3	0.6 2	11	G

Table 42. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples at Laurel River Lake during April and May 2018; 95% confidence limits are in parentheses.

Year	Area	Largemouth bass			Spotted bass			Smallmouth bass		
		No. $\geq$ stock size	PSD (+/- 95%)	RSD <sub>15</sub> (+/- 95%)	No. $\geq$ stock size	PSD (+/- 95%)	RSD <sub>14</sub> (+/- 95%)	No. $\geq$ stock size	PSD (+/- 95%)	RSD <sub>14</sub> (+/- 95%)
2018	Dam	71	77 ( $\pm$ 10)	34 ( $\pm$ 11)	3	33 ( $\pm$ 65)	0 ( $\pm$ 0)	1	0 ( $\pm$ 0)	0 ( $\pm$ 0)
	Spruce Creek	76	78 ( $\pm$ 9)	36 ( $\pm$ 11)	45	42 ( $\pm$ 15)	22 ( $\pm$ 12)	6	67 ( $\pm$ 41)	67 ( $\pm$ 41)
	Laurel River Arm	113	67 ( $\pm$ 9)	44 ( $\pm$ 9)	23	22 ( $\pm$ 17)	9 ( $\pm$ 12)	1	0 ( $\pm$ 0)	0 ( $\pm$ 0)
	Upper Craigs Creek	77	71 ( $\pm$ 10)	23 ( $\pm$ 10)	46	52 ( $\pm$ 15)	13 ( $\pm$ 10)	2	100 ( $\pm$ 0)	50 ( $\pm$ 98)
	Total	337	73 ( $\pm$ 5)	35 ( $\pm$ 5)	117	42 ( $\pm$ 9)	15 ( $\pm$ 7)	10	60 ( $\pm$ 32)	50 ( $\pm$ 33)
2017	Total	423	65 ( $\pm$ 5)	34 ( $\pm$ 5)	99	57 ( $\pm$ 10)	18 ( $\pm$ 8)	10	90 ( $\pm$ 20)	50 ( $\pm$ 33)
2016	Total	384	72 ( $\pm$ 5)	32 ( $\pm$ 5)	89	46 ( $\pm$ 10)	16 ( $\pm$ 8)	22	68 ( $\pm$ 20)	55 ( $\pm$ 21)
2015	Total	367	73 ( $\pm$ 5)	35 ( $\pm$ 5)	70	70 ( $\pm$ 11)	29 ( $\pm$ 11)	13	69 ( $\pm$ 26)	62 ( $\pm$ 28)
2014	Total	350	66 ( $\pm$ 5)	37 ( $\pm$ 5)	120	51 ( $\pm$ 9)	19 ( $\pm$ 7)	22	77 ( $\pm$ 18)	64 ( $\pm$ 21)
2013	Total	365	78 ( $\pm$ 4)	35 ( $\pm$ 5)	114	68 ( $\pm$ 9)	11 ( $\pm$ 6)	13	85 ( $\pm$ 20)	38 ( $\pm$ 28)
2012	Total	363	61 ( $\pm$ 5)	30 ( $\pm$ 5)	124	41 ( $\pm$ 9)	8 ( $\pm$ 5)	9	89 ( $\pm$ 22)	67 ( $\pm$ 33)
2011	Total	399	70 ( $\pm$ 4)	30 ( $\pm$ 5)	132	43 ( $\pm$ 8)	9 ( $\pm$ 5)	21	38 ( $\pm$ 21)	24 ( $\pm$ 19)
2010	Total	437	57 ( $\pm$ 5)	29 ( $\pm$ 4)	211	39 ( $\pm$ 7)	14 ( $\pm$ 5)	41	51 ( $\pm$ 15)	41 ( $\pm$ 15)
2009	Total	299	76 ( $\pm$ 5)	42 ( $\pm$ 6)	145	39 ( $\pm$ 8)	11 ( $\pm$ 5)	36	69 ( $\pm$ 15)	58 ( $\pm$ 16)
2008	Total	243	63 ( $\pm$ 6)	44 ( $\pm$ 6)	193	34 ( $\pm$ 7)	7 ( $\pm$ 4)	38	71 ( $\pm$ 15)	50 ( $\pm$ 16)
2007	Total	265	82 ( $\pm$ 5)	49 ( $\pm$ 6)	192	40 ( $\pm$ 7)	6 ( $\pm$ 3)	27	33 ( $\pm$ 18)	26 ( $\pm$ 17)
2006	Total	316	72 ( $\pm$ 5)	39 ( $\pm$ 5)	193	38 ( $\pm$ 7)	8 ( $\pm$ 4)	10	70 ( $\pm$ 30)	60 ( $\pm$ 32)
2005	Total	336	73 ( $\pm$ 5)	40 ( $\pm$ 5)	98	69 ( $\pm$ 9)	22 ( $\pm$ 8)	47	89 ( $\pm$ 9)	70 ( $\pm$ 13)
2004	Total	262	75 ( $\pm$ 5)	32 ( $\pm$ 6)	158	41 ( $\pm$ 19)	26 ( $\pm$ 17)	27	46 ( $\pm$ 8)	8 ( $\pm$ 4)

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Table 43. 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 Laurel River Lake on 4 October 2018; standard error is in parentheses.

Area	Species	Inch class														Total	CPUE
		2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Laurel River Arm	Largemouth bass	6	14	2	1	8	2	5	5	5	4	3	3	1	2	61	40.7 (12.0)
	Spotted bass	1	11	1	1	1	2	3		1		2				23	15.3 (3.0)
	Smallmouth bass								1							1	0.7 (0.7)

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Table 44. 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 <sup>a</sup>	
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2018	Laurel River Arm	4.2	0.3	21.3	7.6	6.7	3.7		
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
2013	Laurel River Arm	4.0	0.1	21.3	6.6	2.7	1.3	6.7	2.2
2012	Laurel River Arm	4.6	0.1	11.3	3.6	3.3	1.9	4.0	2.1
2011 <sup>b</sup>	Laurel River Arm	4.1	0.3	10.7	5.6	3.3	1.9	6.0 <sup>c</sup>	0.9
2010 <sup>b</sup>	Laurel River Arm	5.4	0.4	2.7	0.8	2.0	0.9	31.5 <sup>d</sup>	7.5
2009	Laurel River Arm	3.8	0.3	6.0	3.2	0.7	0.7	19.3	7.0
2008 <sup>b</sup>	Laurel River Arm	3.2	0.3	1.3	0.8	0.0	0.0	14.0 <sup>e</sup>	4.6
2007 <sup>b</sup>	Laurel River Arm	3.5	0.1	5.3	4.6	0.0	0.0	118.9 <sup>f</sup>	12.4
2006 <sup>b</sup>	Laurel River Arm	3.7	0.1	12.7	4.9	0.7	0.7	5.4 <sup>g</sup>	2.1
2005 <sup>b</sup>	Laurel River Arm	4.4	0.2	14.0	3.5	3.3	1.6	58.3 <sup>h</sup>	9.2
2004	Laurel River Arm	4.9	0.2	14.0	5.8	8.0	3.4	8.3	2.4
2003	Laurel River Arm	3.4	0.1	36.7	14.0	0.7	0.7	2.6	1.0
2002	Laurel River Arm	4.5	0.1	30.7	5.8	8.7	3.5	10.3	4.1

<sup>a</sup> Age-1 largemouth bass CPUE based only on Laurel River Arm location

<sup>b</sup> Age-0 largemouth bass stocked in the fall

<sup>c</sup> Includes bass stocked in fall 2011; CPUE of fin-clipped bass=0.0 fish/hr

<sup>d</sup> Includes bass stocked in fall 2010; CPUE of fin-clipped bass=8.0 fish/hr

<sup>e</sup> Includes bass stocked in fall 2008; CPUE of fin-clipped bass=8.0 fish/hr

<sup>f</sup> Includes bass stocked in fall 2007; CPUE of fin-clipped bass=108.0 fish/hr

<sup>g</sup> Includes bass stocked in fall 2006; CPUE of fin-clipped bass=2.0 fish/hr

<sup>h</sup> Includes bass stocked in fall 2005; CPUE of fin-clipped bass=36.0 fish/hr

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Table 45. Number of fish and mean relative weight (Wr) for each length group of black bass collected at 312 Bridge in Laurel River Lake on 4 October 2018. 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 *	27	98 (2)	14	100 (3)	7	106 (2)
	7.0-10.9 in		11.0-13.9 in		≥14.0 in	
	No.	Wr	No.	Wr	No.	Wr
Spotted bass	6	106 (3)	2	112 (15)	0	0 (0)

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\* Includes fish collected during standardized sample and additional fish collected for age and growth

Table 46. Mean back calculated lengths (in) at each annulus for largemouth bass collected from Laurel River Lake during fall 2018, including the 95% confidence interval (CI) for each mean length per age group.

Year	No.	Age								
		1	2	3	4	5	6	7	8	9
2017	22	5.2								
2016	15	5.5	9.3							
2015	8	6.0	10.7	13.4						
2014	2	5.5	9.2	11.8	13.7					
2012	1	5.8	10.7	13.7	15.3	16.2	16.8			
2009	1	4.3	10.2	14.5	16.1	17.1	17.8	18.4	18.7	19.1
Mean		5.4	9.8	13.3	14.7	16.6	17.3	18.4	18.7	19.1
Number		49	27	12	4	2	2	1	1	1
Smallest		3.2	7.4	11.5	12.9	16.2	16.8	18.4	18.7	19.1
Largest		9.2	12.0	14.7	16.1	17.1	17.8	18.4	18.7	19.1
Std error		0.2	0.3	0.3	0.7	0.5	0.5			
95% CI ±		0.4	0.5	0.6	1.4	0.9	1.0			

Otoliths were used for age-growth determinations; Intercept = 0  
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Table 47. Fishery statistics derived from a daytime creel survey on Laurel River Lake (6,060 acres) from 16 March - 31 October 2018, 8 March-31 October 2010, and 16 March - 31 October 2006.

	Year		
	2018	2010	2006
<b>Fishing trips</b>			
Number of fishing trips (per acre)	19,620 (3.24)	10,817 (1.78)	15,110 (2.49)
Average trip length (hours)	4.92	3.82	3.77
<b>Fishing pressure</b>			
Total man-hours (S.E.) <sup>a</sup>	96,525 (2,459)	41,358 (1,094)	57,033 (1,581)
Man hours/acre	15.9	6.8	9.4
<b>Catch/harvest</b>			
Number of fish caught (S.E.)	61,484 (4,890)	32,699 (3,558)	50,541 (4,588)
Number of fish harvested (S.E.)	12,615 (1,496)	15,309 (2,383)	17,192 (1,803)
Pounds of fish harvested	13,087	11,315	17,097
<b>Harvest rates</b>			
Fish/hour	0.14	0.34	0.29
Fish/acre	2.08	2.53	2.84
Pounds/acre	2.16	1.87	2.82
<b>Catch rates</b>			
Fish/hour	0.66	0.78	0.90
Fish/acre	10.15	5.40	8.34
<b>Miscellaneous characteristics (%)</b>			
Male	91	92	89
Female	9	8	11
Resident	98	91	93
Non-resident	2	9	7
<b>Method (%)</b>			
Still fishing	20	14	19
Casting	76	65	62
Trolling	4	21	19
Spider rig	<1	-	-
Fly	<1	<1	-
<b>Mode (%)</b>			
Boat	93	95	98
Bank	6	5	2
Dock	1	<1	-

<sup>a</sup> S.E. = standard error

Table 48. Fish harvest statistics derived from a daytime creel survey at Laurel River Lake (6,060 acres) from 16 March - 31 October 2018.

	Black bass group	Largemouth bass	Spotted bass	Smallmouth bass	Crappie group	White crappie	Black crappie	Blacknose crappie	Trout group	Rainbow trout	Walleye	Catfish group	Channel catfish	Flathead catfish
No. caught (per acre)	34,052 5.62	20,805 3.43	8,153 1.35	5,094 0.84	2,688 0.44	398 0.07	2,253 0.37	37 0.01	525 0.09	525 0.09	935 0.15	1,772 0.29	1,724 0.28	48 0.01
No. harvested (per acre)	3,827 0.63	2,273 0.38	1,021 0.17	533 0.09	1,997 0.33	147 0.02	1,813 0.30	37 0.01	36 0.01	36 0.01	500 0.08	963 0.16	932 0.15	31 0.01
% of total no. harvested	30.3	18.0	8.1	4.2	15.8	1.2	14.4	t	t	t	4.0	7.6	7.4	t
Lbs. harvested	8,829	6,201	917	1,711	1,656	108	1,501	47	39	39	1,003	1,191	1,125	66
Lbs. harvested (per acre)	1.46	1.02	0.15	0.28	0.27	0.02	0.25	0.01	0.01	0.01	0.17	0.20	0.19	0.01
% of total lbs harvested	67.5	47.4	7.0	13.1	12.7	0.8	11.5	t	t	t	7.7	9.1	8.6	0.5
Mean length (in)		17.1	12.7	19.0		12.9	11.8	13.0		13.0	19.0		14.9	17.5
Mean weight (lb)		2.63	0.89	3.23		1.21	0.91	1.26		1.03	2.37		1.11	2.12
Number of fishing trips for that species	14,290				592				-		768	344		
Percent of all trips	72.9				3.0				-		3.9	1.8		
Hours fished for that species	70,305				2,913				-		3,777	1,694		
Hours fished for that species (per acre)	11.60				0.48				-		0.62	0.28		
Number harvested fishing for that species	3,371				1,598				-		422	325		
Lb harvested fishing for that species	8,246				1,298				-		791	606		
No./hr harvested fishing for that species	0.05				0.51				-		0.14	0.11		
Percent success fishing for that species	8.4				46.4				0.0		20.5	23.7		

t < 0.005 fish/hr or < 0.5%

Table 48 cont.

	Panfish group	Bluegill	Rock bass	Warmouth	Freshwater drum	Common carp	Anything	Illegal bass	Illegal smallmouth
No. caught (per acre)	21,316 3.52	21,244 3.51	34 0.01	38 0.01	36 0.01	48 0.01		79 0.01	32 0.01
No. harvested (per acre)	5,179 0.85	5,179 0.85	- -	- -	- -	- -		79 0.01	32 0.01
% of total no. harvested	41.1	41.1	-	-	-	-		0.6	t
Lbs. harvested	322	322	-	-	-	-		47	-
Lbs. harvested (per acre)	0.05	0.05	-	-	-	-		0.01	-
% of total lbs harvested	2.5	2.5	-	-	-	-		t	-
Mean length (in)		4.8	-	-	-	-		10.4	13.0
Mean weight (lb)		0.08	-	-	-	-		0.55	-
Number of fishing trips for that species	231						3,378		
Percent of all trips	1.2						17.2		
Hours fished for that species	1,138						16,620		
Hours fished for that species (per acre)	0.19						2.74		
Number harvested fishing for that species	622								
Lb harvested fishing for that species	36								
No./hr harvested fishing for that species	1.00								
Percent success fishing for that species	30.8						25.5		

t &lt; 0.005 fish/hr or &lt; 0.5%



Table 50. Black bass catch and harvest statistics derived from a daytime creel survey at Laurel River Lake (6,060 acres) for each species of black bass caught and released by all anglers from 16 March - 31 October 2018.

	Largemouth bass				Spotted bass				Smallmouth bass			
	Harvest	C&R		Total	Harvest	C&R		Total	Harvest	C&R		Total
		12.0-14.9	>15.0			12.0-14.9	>15.0			12.0-14.9	>15.0	
Total number of bass	2,273	7,777	7,634	20,805	1,021	2,936	173	8,153	533	1,458	2,468	5,094
% of black bass harvested by number	59.4				26.7				13.9			
Total weight of fish (lb)	6,201	10,769	10,571	31,863	917	1,690	99	5,023	1,711	2,255	3,816	8,766
% of black bass harvested by weight	70.2				10.4				19.4			
Mean length (in)	17.1				12.7				19.0			
Mean weight (lb)	2.63				0.89				3.23			
Rate (fish/hour)	0.024				0.011				0.005			

Table 51. Monthly black bass angling success at Laurel River Lake (6,060 acres) during the 2018 daytime creel survey period; data does not include black bass < 8.0 in.

Month	Total no. of bass caught	Total no. of bass harvested	Number of 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/hour by bass anglers
Mar	6,233	1,074	3,776	18,576	6,112	0.33	983	0.05
Apr	7,368	895	3,387	16,662	7,064	0.42	783	0.05
May	7,756	1,259	1,906	9,375	6,902	0.81	1,228	0.14
Jun	3,224	202	1,279	6,293	2,838	0.49	141	0.02
Jul	2,044	68	1,128	5,547	1,874	0.35	51	0.01
Aug	2,178	84	846	4,163	1,759	0.43	34	0.01
Sep	2,270	96	705	3,467	1,923	0.55	57	0.02
Oct	2,979	150	1,265	6,222	2,492	0.38	94	0.01
Total	34,052	3,828	14,292	70,305	30,964		3,371	
Mean						0.47		0.05



Table 52. Monthly crappie angling success at Laurel River Lake (6,060 acres) during the 2018 daytime creel survey period.

Month	Total no. of crappie caught	Total no. of crappie harvested	Number of crappie fishing trips	Hours fished by crappie anglers	Crappie caught by crappie anglers	Crappie caught/hour by crappie anglers	Crappie harvested by crappie anglers	Crappie harvested/hour by crappie anglers
Mar	149	30	81	397	149	0.26	30	0.05
Apr	1,007	927	178	874	847	1.02	799	0.96
May	528	451	172	848	419	0.45	357	0.38
Jun	47	47	-	-	-	-	-	-
July	17	-	-	-	-	-	-	-
Sep	115	-	-	-	-	-	-	-
Oct	824	543	116	570	693	0.81	412	0.48
Total Mean	2,687	1,998	547	2,689	2,108	0.65	1,598	0.51

Table 53. Monthly walleye angling success at Laurel River Lake (6,060 acres) during the 2018 daytime creel survey period.

Month	Total no. of walleye caught	Total no. of walleye harvested	Number of walleye fishing trips	Hours fished by walleye anglers	Walleye caught by walleye anglers	Walleye caught/hour by walleye anglers	Walleye harvested by walleye anglers	Walleye harvested/hour by walleye anglers
Apr	64	32	-	-	-	-	-	-
May	31	31	91	446	-	-	-	-
Jun	465	186	182	893	419	0.52	171	0.21
Jul	187	102	58	286	136	0.43	102	0.32
Aug	34	34	149	732	34	0.06	34	0.06
Sep	154	115	170	835	134	0.19	115	0.17
Oct	-	-	97	475	-	-	-	-
Total	935	500	747	3,667	723		422	
Mean						0.24		0.14

Table 54. 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 15 May 2018.

Area	Species	Inch class																Total	CPUE	Std. error	
		3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19				20
Lower	Largemouth bass	5	20	16	11	2	8	6	7	2	2	4	5	2	5	3		1	99	132.0	46.0
Upper	Largemouth bass		1	5	11	2	3	6	2	3	1	5	3	9	12	6	2	1	72	96.0	17.4
Total	Largemouth bass	5	21	21	22	4	11	12	9	5	3	9	8	11	17	9	2	2	171	114.0	23.4

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Table 55. PSD and RSD<sub>15</sub> values obtained for largemouth bass taken in spring electrofishing samples in each area of Cedar Creek Lake on 15 May 2018; 95% confidence levels are in parentheses.

Year	Lower Lake			Upper Lake			Total		
	No. $\geq$ 8.0 in	PSD (+/- 95%)	RSD <sub>15</sub> (+/- 95%)	No. $\geq$ 8.0 in	PSD (+/- 95%)	RSD <sub>15</sub> (+/- 95%)	No. $\geq$ 8.0 in	PSD (+/- 95%)	RSD <sub>15</sub> (+/- 95%)
2018	45	49 ( $\pm$ 15)	36 ( $\pm$ 14)	53	74 ( $\pm$ 12)	62 ( $\pm$ 13)	98	62 ( $\pm$ 10)	50 ( $\pm$ 10)
2017	37	54 ( $\pm$ 16)	30 ( $\pm$ 15)	81	72 ( $\pm$ 10)	52 ( $\pm$ 11)	118	66 ( $\pm$ 9)	45 ( $\pm$ 9)
2016 <sup>a</sup>	73	67 ( $\pm$ 11)	47 ( $\pm$ 12)	104	75 ( $\pm$ 8)	52 ( $\pm$ 10)	177	72 ( $\pm$ 7)	50 ( $\pm$ 7)
2015 <sup>b</sup>	95	79 ( $\pm$ 8)	52 ( $\pm$ 10)	107	81 ( $\pm$ 7)	53 ( $\pm$ 9)	202	80 ( $\pm$ 6)	52 ( $\pm$ 7)
2014	237	82 ( $\pm$ 5)	48 ( $\pm$ 6)	345	81 ( $\pm$ 4)	47 ( $\pm$ 5)	582	82 ( $\pm$ 3)	47 ( $\pm$ 4)
2013	448	69 ( $\pm$ 4)	33 ( $\pm$ 4)	299	66 ( $\pm$ 5)	36 ( $\pm$ 5)	747	68 ( $\pm$ 3)	34 ( $\pm$ 3)
2012	406	56 ( $\pm$ 5)	27 ( $\pm$ 4)	409	60 ( $\pm$ 5)	30 ( $\pm$ 4)	815	58 ( $\pm$ 3)	29 ( $\pm$ 3)
2011	283	55 ( $\pm$ 6)	22 ( $\pm$ 5)	172	62 ( $\pm$ 7)	31 ( $\pm$ 7)	455	57 ( $\pm$ 5)	25 ( $\pm$ 4)
2010	386	43 ( $\pm$ 5)	22 ( $\pm$ 4)	310	48 ( $\pm$ 6)	23 ( $\pm$ 5)	696	45 ( $\pm$ 4)	22 ( $\pm$ 3)
2009	260	55 ( $\pm$ 6)	27 ( $\pm$ 5)	208	50 ( $\pm$ 7)	27 ( $\pm$ 6)	468	53 ( $\pm$ 5)	27 ( $\pm$ 4)
2008	249	39 ( $\pm$ 6)	27 ( $\pm$ 6)	177	45 ( $\pm$ 7)	26 ( $\pm$ 6)	426	42 ( $\pm$ 5)	27 ( $\pm$ 4)
2007	322	36 ( $\pm$ 5)	22 ( $\pm$ 5)	145	49 ( $\pm$ 8)	36 ( $\pm$ 8)	467	40 ( $\pm$ 4)	26 ( $\pm$ 4)
2006	238	36 ( $\pm$ 6)	31 ( $\pm$ 6)	99	55 ( $\pm$ 10)	43 ( $\pm$ 10)	337	42 ( $\pm$ 5)	35 ( $\pm$ 5)
2005	228	83 ( $\pm$ 5)	50 ( $\pm$ 7)	95	93 ( $\pm$ 6)	63 ( $\pm$ 10)	323	86 ( $\pm$ 4)	54 ( $\pm$ 6)
2004	277	66 ( $\pm$ 6)	6 ( $\pm$ 3)	178	76 ( $\pm$ 7)	5 ( $\pm$ 3)	455	70 ( $\pm$ 5)	6 ( $\pm$ 3)

<sup>a</sup> diurnal sampling beginning in 2016

<sup>b</sup> sampling effort was reduced to 1.5 hours beginning in 2015  
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Table 56. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected from Cedar Creek Lake from 2003-2018.

Year	Area	Length group										Total	Std. err.
		<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in			
		CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.		
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
2013	Total	6.3	2.1	69.1	3.7	72.0	8.1	72.3	5.0	10.3	2.3	219.7	12.1
2012	Total	21.4	7.4	98.6	8.5	67.7	7.1	66.6	7.8	7.4	1.6	254.3	17.4
2011	Total	69.4	13.1	55.4	7.2	41.7	4.4	32.9	5.8	4.3	1.1	199.4	18.6
2010	Total	36.1	8.1	105.3	10.0	45.0	5.8	42.8	6.5	4.1	1.3	229.2	15.8
2009	Total	91.1	26.7	63.4	7.7	34.0	4.3	36.3	6.1	5.1	1.0	224.9	25.3
2008	Total	70.9	13.7	70.9	9.1	18.3	2.5	32.6	5.1	4.3	1.8	192.6	20.6
2007	Total	30.3	8.5	79.7	19.0	18.9	4.2	34.9	2.1	3.4	0.6	163.7	28.2
2006	Total	24.0	6.9	56.3	15.6	6.6	1.5	33.4	3.7	0.3	0.3	120.3	24.5
2005	Total	79.7	21.1	12.9	4.8	30.0	5.1	49.4	7.9	0.0	0.0	172.0	33.4
2004	Total	27.9	6.6	34.5	4.6	74.7	10.2	6.3	2.0	0.0	0.0	143.3	16.1
2003	Total	165.8	23.3	12.5	4.1	17.3	2.4	0.5	0.3	0.0	0.0	196.0	24.7

Table 57. Population assessment for largemouth bass based on spring electrofishing at Cedar Creek Lake from 2003-2018 (scoring based on statewide assessment).

Year		Mean length					Total score	Assesment rating
		age-3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE $\geq 15.0$ in	CPUE $\geq 20.0$ in		
Management objective		$\geq 11.5$ in	$\geq 16.0$ fish/hr	$\geq 20.0$ fish/hr	$\geq 30.0$ fish/hr	$\geq 4.0$ fish/hr		
2018	Value		51.3	8.0	32.7	1.3		
	Score	4	3	1	4	2	14	G
2017	Value		44.7	16.7	35.3	2.0		
	Score	4	3	2	4	3	16	G
2016	Value		16.0	26.0	58.7	5.3		
	Score	4	2	3	4	4	17	E
2015	Value	12.0	8.0	37.3	70.7	5.3		
	Score	4	2	3	4	4	17	E
2014	Value		3.7	57.7	78.3	5.7		
	Score	4	1	4	4	4	17	E
2013	Value		4.9	72.0	72.3	10.3		
	Score	4	1	4	4	4	17	E
2012	Value		16.3	67.7	66.6	7.4		
	Score	4	2	4	4	4	18	E
2011	Value		68.6	41.7	32.9	4.3		
	Score	4	4	3	4	4	19	E
2010	Value	13.5	35.5	45.0	42.8	4.1		
	Score	4	3	4	4	4	19	E
2009	Value		92.6	34.0	36.3	5.1		
	Score	4	4	3	4	4	19	E
2008	Value		72.6	18.3	32.6	4.3		
	Score	4	4	2	4	4	18	E
2007	Value	12.0	26.6	18.9	34.9	3.4		
	Score	4	3	2	4	3	16	G
2006	Value		23.1	6.6	33.4	0.3		
	Score	4	3	1	4	2	14	G
2005	Value	14.0	1.7	30.0	49.4	0.0		
	Score	4	1	3	4	1	13	G
2004	Value		5.4	74.7	6.3	0.0		
	Score	4	1	4	2	1	12	F
2003	Value		6.0	17.3	0.5	0.0		
	Score	4	1	2	1	1	9	F

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Table 58. Length-frequency and CPUE (fish/hr) of largemouth bass collected during 1.5 hours of nocturnal electrofishing (0.75 hours in lower end; 0.75 hours in upper end; 15-minute runs) at Cedar Creek Lake on 20 September 2018; standard error is in parentheses.

Area	Inch class																	Total	CPUE	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			20
Lower	1	6	14	7	1	4	7	1	1	3		1	1	2			2		51	68.0 (6.9)
Upper	4	17	23	7	3	1	5	3	6	4	1	2	3	1	5	2		1	88	117.3 (21.5)
Total	5	23	37	14	4	5	12	4	7	7	1	3	4	3	5	2	2	1	139	92.7 (15.0)

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Table 59. 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 Cedar Creek Lake.

Year class	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
	Mean length	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2018	4.2	0.1	52.7	10.6	9.3	2.0		
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
2013	3.5	0.2	9.4	3.9	0.3	0.3	3.7	1.2
2012	4.0	0.2	18.3	7.6	7.1	1.8	4.9	2.1
2011	4.2	0.1	27.1	4.0	6.0	1.1	16.3	6.5
2010	5.0	0.1	59.5	15.8	33.4	6.1	68.6	12.9
2009	4.1	0.1	17.4	4.3	3.7	1.8	35.5	7.9
2008	4.7	0.1	55.7	8.6	24.9	5.4	92.6	26.9
2007	5.4	0.0	32.9	7.8	28.6	6.6	72.6	13.5
2006	4.7	0.1	43.7	11.3	17.7	5.3	26.6	7.4
2005	4.8	0.1	55.7	9.5	28.0	7.7	23.1	6.7
2004	4.8	0.0	17.4	3.1	12.9		1.7	0.9

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Table 60. Number of fish and mean relative weight (Wr) for each length group of largemouth bass collected in Cedar Creek Lake on 20 September 2018. Standard error is in parentheses.

Species	Area	Length group					
		8.0-11.9 in		12.0-14.9 in		$\geq$ 15.0 in	
		No.	Wr	No.	Wr	No.	Wr
Largemouth bass	Lower	12	83 (3)	2	86 (1)	4	94 (4)
	Upper	18	82 (2)	6	93 (3)	9	86 (3)
	Total	30	83 (2)	8	91 (2)	13	89 (2)

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Table 61. 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 23 May 2018.

Species	Inch class								Total	CPUE	Std. error
	1	2	3	4	5	6	7	8			
Bluegill	197	418	174	108	53	5	6	1	962	769.6	150.6
Redear sunfish		18	18	22	25	19	14	2	118	94.4	12.8

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Table 62. Spring electrofishing CPUE (fish/hr) for each length group of bluegill and redear sunfish collected at Cedar Creek from 2007-2018.

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	Std. err.
		CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.		
Bluegill													
	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
	2011	301.0	45.9	411.0	56.7	21.0	4.8	0.0	0.0			733.0	81.1
	2010	411.7	106.5	426.1	48.6	20.3	3.9	0.0	0.0			858.1	145.7
	2009	579.6	92.4	217.2	22.8	20.4	7.8	0.0	0.0			817.2	95.6
	2008	408.8	78.7	370.0	35.6	23.6	5.1	0.0	0.0			802.4	91.7
	2007	234.8	57.1	289.6	25.2	25.6	6.1	0.0	0.0			550.0	63.4
Redear sunfish													
	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
	2011	3.0	1.4	56.5	10.7	21.0	3.9	0.5	0.5	0.0	0.0	81.0	14.3
	2010	12.8	4.7	56.0	9.6	26.1	7.0	3.7	1.7	0.0	0.0	98.7	15.2
	2009	27.2	6.5	51.6	7.8	36.4	5.8	2.4	1.7	0.0	0.0	117.6	13.4
	2008	10.4	3.0	66.0	12.1	102.0	25.1	8.0	4.0	0.0	0.0	186.4	32.7
	2007	13.2	3.7	46.0	8.2	159.6	48.8	16.4	6.2	0.0	0.0	235.2	52.0

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Table 63. PSD and RSD values obtained for bluegill and redear sunfish taken in spring electrofishing samples in Cedar Creek Lake on 23 May 2018; 95% confidence levels are in parentheses.

Species	Year	No. $\geq$ stock size	PSD	RSD <sup>a</sup>
Bluegill				
	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)
	2011	864	5 ( $\pm$ 1)	0 ( $\pm$ 0)
	2010	837	5 ( $\pm$ 1)	0 ( $\pm$ 0)
Redear sunfish				
	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)
	2011	140	6 ( $\pm$ 4)	0 ( $\pm$ 0)
	2010	135	28 ( $\pm$ 8)	0 ( $\pm$ 0)

<sup>a</sup> Bluegill = RSD<sub>8</sub>, redear sunfish = RSD<sub>9</sub>

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Table 64. Length frequency and CPUE (fish/hr) of black bass collected at Beulah Lake in 1.5 hours (15.0-min runs) of diurnal electrofishing on 3 May 2018.

Species	Inch class																	Total	CPUE	Std. error		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20				21	24
Largemouth bass	6	11	9	7	31	73	36	47	64	31	5	2	1	1	1			3	1	329	219.3	20.9
Spotted bass				1	1	1	1													4	2.7	1.3
Smallmouth bass	1	2						2	2	2	1					2	1			13	8.7	3.5

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Table 65. Spring electrofishing CPUE (fish/hr) for each length group of largemouth and smallmouth bass collected at Beulah Lake on 3 May 2018.

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	Std. Err.
		CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.		
Largemouth bass													
	2018	42.7	8.5	146.7	16.2	25.3	3.7	4.7	2.2	2.7	1.7	219.3	20.9
	2015	90.0	16.1	124.0	5.2	12.0	4.0	4.0	1.8	2.7	0.8	230.0	18.3
	2012	54.0	11.0	155.3	19.9	22.0	4.1	10.0	3.7	6.0	3.2	241.3	29.7
	2009	82.0	12.8	168.7	23.3	51.3	6.9	6.7	1.7	4.0	1.5	308.7	20.5
	2006	87.3	18.2	185.3	13.3	4.7	1.9	4.7	1.9	2.0	0.9	282.0	23.9
Smallmouth bass													
		<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in		Total	
		CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.
	2018	2.0	1.4	1.3	0.8	3.3	2.2	2.0	2.0	2.0	2.0	8.7	3.5
	2015	15.3	1.6	1.3	0.8	0.7	0.7	0.0	0.0	0.0	0.0	17.3	2.0
	2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Table 66. PSD and RSD<sub>15</sub> values obtained for largemouth bass taken in spring electrofishing samples in Beulah Lake on 3 May 2018; 95% confidence levels are in parentheses.

Year	No. $\geq$ 8.0 in	PSD (+/- 95%)	RSD <sub>15</sub> (+/- 95%)
2018	265	17 ( $\pm$ 5)	3 ( $\pm$ 2)
2015	210	11 ( $\pm$ 4)	3 ( $\pm$ 2)
2012	281	17 ( $\pm$ 4)	5 ( $\pm$ 3)
2009	340	26 ( $\pm$ 5)	3 ( $\pm$ 2)
2006	292	5 ( $\pm$ 2)	2 ( $\pm$ 2)

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Table 67. Length frequency and CPUE (fish/hr) of bluegill and redear sunfish collected at Beulah Lake in 1.25 hours (7.5-min runs) of diurnal electrofishing on 24 May 2018.

Species	Inch class											Total	CPUE	Std. error
	0	1	2	3	4	5	6	7	8	9	11			
Bluegill	54	190	171	77	72	17	14	11	21	1		628	502.4	137.5
Redear sunfish						2	2	4	3	1	1	13	10.4	4.3

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Table 68. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Beulah Lake on 24 May 2018.

Year	Length group								Total	
	<3.0 in		3.0-5.9 in		6.0-7.9 in		≥8.0 in		CPUE	Std. Err.
	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.		
2018	332.0	114.0	132.8	38.8	20.0	4.0	17.6	4.9	502.4	137.5
2012	64.0	29.7	80.0	26.3	13.6	2.1	4.8	3.2	162.4	50.6
2006	474.6	123.9	36.2	10.5	20.8	8.3	0.8	0.8	532.3	130.8

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Table 69. PSD and RSD<sub>8</sub> values obtained for bluegill taken in spring electrofishing samples in Beulah Lake on 24 May 2018; 95% confidence levels are in parentheses.

Species	Year	No. ≥ stock size	PSD	RSD <sub>8</sub>
Bluegill	2018	213	22 (± 6)	10 (± 4)
	2012	123	19 (± 7)	5 (± 4)
	2006	75	37 (± 11)	1 (± 3)

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Table 70. Population assessment for bluegill collected from Beulah Lake in May 2018.

Parameter	Actual value	Assessment score
Mean length age-2 at capture	3.8	1
Years to 6.0 inches	3-3+	3
Spring CPUE of $\geq$ 6.0-in fish	37.6	2
Spring CPUE of $\geq$ 8.0-in fish	17.6	4
Total score		10
Assessment rating		G

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Table 71. Mean back calculated lengths (in) at each annulus for bluegill collected from Beulah Lake during fall 2018, including the 95% confidence interval (CI) for each mean length per age group.

Year	No.	Age			
		1	2	3	4
2017	26	1.9			
2016	14	2.0	3.8		
2014	2	2.7	5.1	6.8	7.7
Mean		2.0	3.9	6.8	7.7
Number		42	16	2	2
Smallest		1.0	2.9	6.5	7.5
Largest		3.5	6.0	7.2	7.9
Std error		0.1	0.2	0.4	0.2
95% CI $\pm$		0.2	0.4	0.7	0.4

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

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Table 72. Number of fish and mean relative weight (Wr) for each length group of bluegill collected at Beulah Lake on 11 October 2018. Standard error is in parentheses.

Species	Length group					
	3.0-5.9 in		6.0-7.9 in		≥8.0 in	
	No.	Wr	No.	Wr	No.	Wr
Bluegill	32	82 (2)	6	79 (2)	1	78 (-)

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Table 73. Length frequency and CPUE (fish/hr) of black bass collected at Cannon Creek Lake in 1.5 hours (15.0-min runs) of nocturnal electrofishing on 4 May 2018.

Species	Inch class											Total	CPUE	Std. Err.	
	3	4	5	6	7	8	9	10	11	12	13				16
Largemouth bass	1				1	5	12	30	29	12	2	1	93	62.0	11.0
Spotted bass		1		1	5	4	21	32	10				74	49.3	7.1
Smallmouth bass		5	1			1			4				11	7.3	2.6

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Table 74. Spring electrofishing CPUE (fish/hr) for each length group of black bass collected at Cannon Creek Lake on 4 May 2018.

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	Std. Err.
		CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.		
Largemouth bass													
	2018	1.3	0.8	50.7	9.2	9.3	2.0	0.7	0.7	0.0	0.0	62.0	11.0
	2015	3.3	1.6	10.0	2.0	9.3	3.2	0.7	0.7	0.7	0.7	23.3	4.3
	2012	2.5	1.5	23.0	3.8	5.0	1.5	1.5	0.7	0.5	0.5	32.0	5.1
	2009	12.5	1.9	13.0	3.0	10.0	1.7	0.0	0.0	0.0	0.0	35.5	4.8
	2006	2.4	1.1	15.2	2.1	2.8	0.9	2.4	0.9	0.4	0.4	22.8	2.6
		<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in		Total	
		CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.
Spotted bass													
	2018	4.7	1.9	38.0	4.7	6.7	1.7	0.0	0.0	0.0	0.0	49.3	7.1
	2015	18.7	8.3	14.7	2.9	4.7	1.9	0.0	0.0	0.0	0.0	38.0	8.1
	2012	10.0	3.1	24.5	4.6	4.5	1.8	0.0	0.0	0.0	0.0	39.0	8.5
	2009	31.5	7.2	24.0	3.6	10.5	3.1	0.0	0.0	0.0	0.0	66.0	9.4
	2006	3.2	1.4	15.2	3.3	2.8	1.0	0.4	0.4	0.0	0.0	21.6	4.9



Table 74 cont.

	Length group												
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in		Total		
	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	CPUE	Std. Err.	
Smallmouth bass													
2018	4.0	2.1	0.7	0.7	2.7	2.0	0.0	0.0	0.0	0.0	7.3	2.6	
2015	2.0	1.4	0.0	0.0	2.7	1.3	0.0	0.0	0.0	0.0	4.7	1.9	
2012	0.5	0.5	3.0	1.0	4.0	1.5	0.0	0.0	0.0	0.0	7.5	1.9	
2009	12.5	1.9	1.5	0.7	9.5	1.3	0.0	0.0	0.0	0.0	23.5	2.4	
2006	1.2	0.9	4.4	1.3	2.8	1.2	0.0	0.0	0.0	0.0	8.4	2.2	

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Table 75. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples at Cannon Creek Lake on 4 May 2018; 95% confidence limits are in parentheses.

Year	Largemouth bass			Spotted bass			Smallmouth bass		
	No. ≥ stock size	PSD (+/- 95%)	RSD <sub>15</sub> (+/- 95%)	No. ≥ stock size	PSD (+/- 95%)	RSD <sub>14</sub> (+/- 95%)	No. ≥ stock size	PSD (+/- 95%)	RSD <sub>14</sub> (+/- 95%)
2018	91	16 (± 8)	1 (± 2)	72	14 (± 8)	0 (± 0)	5	80 (± 39)	0 (± 0)
2015	30	50 (± 18)	3 (± 7)	32	22 (± 15)	0 (± 0)	4	100 (± 0)	0 (± 0)
2012	59	22 (± 11)	5 (± 6)	70	13 (± 8)	0 (± 0)	14	57 (± 27)	0 (± 0)
2009	46	43 (± 14)	0 (± 0)	85	25 (± 9)	0 (± 0)	22	86 (± 15)	0 (± 0)
2006	51	25 (± 12)	12 (± 9)	47	17 (± 11)	2 (± 4)	18	39 (± 23)	0 (± 0)

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Table 76. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 3.0 hours of 15-minute diurnal electrofishing runs for black bass in Dale Hollow Lake on 7 May 2018; standard error is in parentheses.

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		
Illw ill Creek	Largemouth bass				1	1	1	1		1	2	7	15	16	10	10	13	8	4	3	93	62.0 (6.6)
	Spotted bass	1	1		1	1	1			3	1	2									11	7.3 (3.0)
	Smallmouth bass								1	1	1	1	1	1						1	7	4.7 (1.6)
Little Sulphur Creek	Largemouth bass				1	2		2	2	3	5	5	26	29	18	9	15	10	5	2	134	89.3 (8.7)
	Spotted bass			1	2	2	5	12	3	4	7	1	2								39	26.0 (5.0)
	Smallmouth bass			1		1	1	1	1		3	2		1	2						13	8.7 (3.5)
Total	Largemouth bass				2	3	1	3	2	4	7	12	41	45	28	19	28	18	9	5	227	75.7 (6.6)
	Spotted bass	1	1	1	3	3	6	12	3	7	8	3	2								50	16.7 (4.0)
	Smallmouth bass			1		1	1	2	2	1	4	3	1	1	2					1	20	6.7 (1.9)

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Table 77. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Dale Hollow Lake during May 2018.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		≥15.0 in		≥20.0 in		CPUE	Std. err.
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2018	2.0	0.9	5.3	1.6	32.7	3.3	35.7	3.7	1.7	0.8	75.7	6.6
2014	2.0	1.0	13.7	3.1	22.0	3.3	56.0	7.1	0.7	0.5	93.7	8.9
2011	2.3	1.3	10.3	3.3	4.0	1.6	2.3	0.9	0.0	0.0	19.0	5.2
2008	1.0	0.5	3.3	1.1	6.0	1.9	16.7	4.2	0.0	0.0	27.0	5.7
2005	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.5	0.0	0.0	2.0	1.4

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Table 78. Spring electrofishing CPUE (fish/hr) for each length group of spotted bass collected at Dale Hollow Lake during May 2018.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in		CPUE	Std. err.
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.		
2018	5.0	1.1	7.3	2.4	4.3	1.9	0.0	0.0	0.0	0.0	16.7	4.0
2014	1.7	0.6	10.0	2.3	10.0	3.4	2.0	0.8	0.0	0.0	23.7	5.6
2011	22.3	4.1	13.7	1.8	5.7	1.7	1.3	0.8	0.0	0.0	43.0	5.0
2008	8.3	2.6	12.0	3.2	11.0	1.8	3.3	2.0	0.0	0.0	34.7	5.4
2005	6.7	3.6	9.7	4.4	6.0	2.2	3.3	1.4	0.0	0.0	25.7	9.2

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Table 79. Spring electrofishing CPUE (fish/hr) for each length group of smallmouth bass collected at Dale Hollow Lake during May 2018.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in		CPUE	Std. err.
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.		
2018	1.0	0.7	1.7	0.9	2.7	0.9	1.3	0.6	0.3	0.3	6.7	1.9
2014	1.0	0.5	2.3	0.9	3.7	1.2	5.0	1.6	2.0	0.8	12.0	2.4
2011	4.0	0.9	2.3	0.8	1.7	0.8	3.0	1.0	0.3	0.3	11.0	2.0
2008	4.3	1.5	2.7	1.0	5.7	1.4	4.7	1.3	1.7	0.9	17.3	3.5
2005	3.0	1.4	3.0	1.0	1.7	0.6	3.3	1.1	2.3	1.2	11.0	1.8

sedpsddh.d18

Table 80. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples at Dale Hollow Lake on 7 May 2018; 95% confidence limits are in parentheses.

Year	Area	Largemouth bass			Spotted bass			Smallmouth bass		
		No. $\geq$ stock size	PSD ( $\pm$ 95%)	RSD <sub>15</sub> ( $\pm$ 95%)	No. $\geq$ stock size	PSD ( $\pm$ 95%)	RSD <sub>14</sub> ( $\pm$ 95%)	No. $\geq$ stock size	PSD ( $\pm$ 95%)	RSD <sub>14</sub> ( $\pm$ 95%)
2018	Illwill Creek	90	96 ( $\pm$ 4)	53 ( $\pm$ 10)	7	43 ( $\pm$ 40)	0 ( $\pm$ 0)	7	57 ( $\pm$ 40)	14 ( $\pm$ 28)
	Little Sulphur Creek	131	91 ( $\pm$ 5)	45 ( $\pm$ 9)	34	29 ( $\pm$ 16)	0 ( $\pm$ 0)	11	73 ( $\pm$ 28)	27 ( $\pm$ 28)
	Total	221	93 ( $\pm$ 3)	48 ( $\pm$ 7)	41	32 ( $\pm$ 14)	0 ( $\pm$ 0)	18	67 ( $\pm$ 22)	22 ( $\pm$ 20)
2014	Total	275	85 ( $\pm$ 4)	61 ( $\pm$ 6)	69	52 ( $\pm$ 12)	9 ( $\pm$ 7)	35	74 ( $\pm$ 15)	43 ( $\pm$ 17)
2011	Total	50	38 ( $\pm$ 14)	14 ( $\pm$ 10)	91	23 ( $\pm$ 9)	4 ( $\pm$ 4)	21	67 ( $\pm$ 21)	43 ( $\pm$ 22)
2008	Total	78	87 ( $\pm$ 7)	64 ( $\pm$ 11)	90	48 ( $\pm$ 10)	11 ( $\pm$ 7)	45	69 ( $\pm$ 14)	31 ( $\pm$ 14)
2005	Total	6	100 ( $\pm$ 0)	50 ( $\pm$ 44)	66	42 ( $\pm$ 12)	15 ( $\pm$ 9)	27	56 ( $\pm$ 19)	37 ( $\pm$ 19)

sedpsddh.d18

Table 81. Mean back calculated lengths (in) at each annulus for largemouth bass collected from Dale Hollow Lake during fall 2018, including the 95% confidence interval (CI) for each mean length per age group.

Year	No.	Age										
		1	2	3	4	5	6	7	8	9	10	
2017	5	4.6										
2015	11	4.8	10.9	14.1								
2012	1	5.8	11.6	13.1	14.5	16.0	16.8					
2010	1	5.2	11.5	13.8	14.4	14.7	14.9	15.2	15.5			
2008	1	9.5	14.3	16.3	16.6	16.9	17.3	17.6	17.9	18.2	18.6	
Mean		5.1	11.3	14.1	15.2	15.8	16.3	16.4	16.7	18.2	18.6	
Number		19	14	14	3	3	3	2	2	1	1	
Smallest		3.4	9.4	12.9	14.4	14.7	14.9	15.2	15.5	18.2	18.6	
Largest		9.5	14.3	16.3	16.6	16.9	17.3	17.6	17.9	18.2	18.6	
Std error		0.4	0.4	0.2	0.7	0.7	0.7	1.2	1.2			
95% CI $\pm$		0.8	0.7	0.5	1.5	1.4	1.4	2.3	2.4			

Otoliths were used for age-growth determinations; Intercept = 0  
sedagdhb.d18

Table 82. Number of fish and mean relative weight (Wr) for each length group of largemouth bass collected at Dale Hollow Lake on 8 October 2018. 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	4	92 (3)	3	87 (2)	11	84 (3)

sedwrhd.d18

Table 83. 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 1 May 2018; standard error is in parentheses.

Area	Species	Inch class																		Total	CPUE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Pump Station	Largemouth bass	1	5	2	5	4	8	12	11	18	9	6	3	3		3	1	2	1	94	125.3 (15.0)
	Spotted bass		2			1	3		6	3	1	1		1						18	24.0 (4.6)
Dock	Largemouth bass	4	33	11	6	14	38	22	18	22	15	11	4	6	3	4	1	1	1	214	285.3 (12.7)
	Spotted bass										1									1	1.3 (1.3)
Total	Largemouth bass	5	38	13	11	18	46	34	29	40	24	17	7	9	3	7	2	3	2	308	205.3 (36.8)
	Spotted bass		2			1	3		6	3	2	1		1						19	12.7 (5.5)

sedpsdwc.d18

Table 84. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples at Wood Creek Lake on 1 May 2018; 95% confidence limits are in parentheses.

Year	Area	Largemouth bass			Spotted bass		
		No. $\geq$ stock size	PSD (+/- 95%)	RSD <sub>15</sub> (+/- 95%)	No. $\geq$ stock size	PSD (+/- 95%)	RSD <sub>14</sub> (+/- 95%)
2018*	Pump Station	77	36 ( $\pm$ 11)	13 ( $\pm$ 8)	16	38 ( $\pm$ 25)	6 ( $\pm$ 12)
	Dock	146	32 ( $\pm$ 8)	11 ( $\pm$ 5)	1	100 ( $\pm$ 0)	0 ( $\pm$ 0)
	Total	223	33 ( $\pm$ 6)	12 ( $\pm$ 4)	17	41 ( $\pm$ 24)	6 ( $\pm$ 12)
2017*	Total	181	25 ( $\pm$ 6)	4 ( $\pm$ 3)	32	34 ( $\pm$ 17)	3 ( $\pm$ 6)
2016*	Total	110	42 ( $\pm$ 9)	8 ( $\pm$ 5)	23	26 ( $\pm$ 18)	0 ( $\pm$ 0)
2015	Total	259	41 ( $\pm$ 6)	10 ( $\pm$ 4)	37	30 ( $\pm$ 15)	0 ( $\pm$ 0)
2014	Total	334	34 ( $\pm$ 5)	10 ( $\pm$ 3)	61	21 ( $\pm$ 10)	0 ( $\pm$ 0)
2013	Total	256	23 ( $\pm$ 5)	9 ( $\pm$ 4)	79	14 ( $\pm$ 8)	1 ( $\pm$ 2)
2012	Total	215	20 ( $\pm$ 5)	5 ( $\pm$ 3)	60	17 ( $\pm$ 10)	0 ( $\pm$ 0)
2011	Total	185	39 ( $\pm$ 7)	16 ( $\pm$ 5)	47	17 ( $\pm$ 11)	0 ( $\pm$ 0)
2010	Total	181	52 ( $\pm$ 7)	15 ( $\pm$ 5)	55	20 ( $\pm$ 11)	0 ( $\pm$ 0)
2009	Total	241	55 ( $\pm$ 6)	17 ( $\pm$ 5)	69	16 ( $\pm$ 9)	1 ( $\pm$ 3)
2008	Total	223	40 ( $\pm$ 6)	19 ( $\pm$ 5)	66	12 ( $\pm$ 8)	2 ( $\pm$ 3)
2007	Total	223	32 ( $\pm$ 6)	24 ( $\pm$ 6)	109	23 ( $\pm$ 8)	5 ( $\pm$ 4)
2006	Total	165	56 ( $\pm$ 8)	38 ( $\pm$ 7)	93	44 ( $\pm$ 10)	11 ( $\pm$ 6)
2005	Total	138	74 ( $\pm$ 7)	23 ( $\pm$ 7)	86	57 ( $\pm$ 11)	13 ( $\pm$ 7)

\* Lower lake area was not sampled  
sedpsdwc.d18

Table 85. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Wood Creek Lake during May 2018.

Year	Length group										Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		≥20.0 in			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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
2013	16.7	5.4	65.3	12.1	12.0	1.8	8.0	1.6	1.0	0.5	102.0	17.7
2012	13.7	4.6	57.0	15.2	11.0	2.5	3.7	0.9	0.3	0.3	85.3	19.4
2011	28.3	5.8	37.7	5.9	14.3	3.3	9.7	2.7	1.0	0.5	90.0	12.9
2010	27.5	9.2	43.0	11.3	33.5	5.2	14.0	2.8	2.5	1.1	118.0	26.6
2009	6.7	3.1	36.0	7.5	31.0	2.5	13.3	3.6	2.7	0.9	87.0	14.1
2008	6.7	3.6	44.7	6.8	15.3	2.7	14.3	2.4	2.0	0.8	81.0	12.3
2007	6.7	2.3	50.3	8.5	6.0	1.2	18.0	3.3	1.3	0.6	81.0	12.5
2006	30.3	7.0	24.3	6.2	10.0	2.1	20.7	5.0	2.0	1.0	85.3	17.5
2005	4.0	2.0	14.4	3.6	28.0	4.4	12.8	2.3	3.2	1.7	59.2	9.3

\* Lower lake area was not sampled  
sedpsdwc.d18



Table 86. Spring electrofishing CPUE (fish/hr) for each length group of spotted bass collected at Wood Creek Lake during May 2018.

Year	Length group										Total	
	<8.0 in		8.0-10.9 in		11.0-13.9 in		≥14.0 in		≥17.0 in			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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
2013	6.0	2.0	19.7	5.4	3.3	1.7	0.3	0.3	0.0	0.0	29.3	7.0
2012	17.7	4.4	11.0	2.3	3.3	1.2	0.0	0.0	0.0	0.0	32.0	7.1
2011	16.3	4.2	9.0	2.8	2.7	1.2	0.0	0.0	0.0	0.0	28.0	7.3
2010	13.5	5.5	19.0	2.9	5.5	1.3	0.0	0.0	0.0	0.0	38.0	8.0
2009	16.7	4.9	15.7	3.4	3.3	1.0	0.3	0.3	0.0	0.0	36.0	6.5
2008	11.7	3.3	16.7	2.9	2.3	1.2	0.3	0.3	0.0	0.0	31.0	5.4
2007	14.7	3.9	20.7	3.8	6.7	1.6	1.7	1.0	0.0	0.0	43.7	7.5
2006	13.7	2.7	14.0	2.8	10.3	2.2	3.3	1.0	0.0	0.0	41.3	6.0
2005	8.8	2.9	13.6	5.5	15.2	2.8	4.4	1.3	0.0	0.0	42.0	10.2

\* Lower lake area was not sampled  
sedpsdwc.d18

Table 87. Population assessment for largemouth bass based on spring electrofishing at Wood Creek Lake from 2005-2018 (scoring based on statewide assessment).

Year		Mean length					Total score	Assesment rating
		age-3 at capture	CPUE age 1	CPUE 12.0-14.9 in	CPUE ≥15.0 in	CPUE ≥20.0 in		
Management objectives		≥11.5 in	≥8.0 fish/hr	≥20.0 fish/hr	≥17.0 fish/hr	≥2.0 fish/hr		
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
2013	Value		14.0	12.0	8.0	1.0		
	Score	3	2	1	2	2	10	F
2012	Value		4.3	11.0	3.7	0.3		
	Score	3	1	1	1	2	8	P
2011	Value		24.8	14.3	9.7	1.0		
	Score	3	3	2	2	2	12	F
2010	Value	11.4	15.1	33.5	14.0	2.5		
	Score	3	2	3	3	3	14	G
2009	Value		5.3	31.0	13.3	2.7		
	Score	4	1	3	3	3	14	G
2008	Value		5.7	15.3	14.3	2.0		
	Score	4	1	2	3	3	13	G
2007	Value		5.3	6.0	18.0	1.3		
	Score	4	1	1	3	2	11	F
2006	Value		11.8	10.0	20.7	2.0		
	Score	4	2	1	3	3	13	G
2005	Value	12.3	2.4	28.0	12.8	3.2		
	Score	4	1	3	2	3	13	G

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Table 88. 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 19 September 2018; standard error is in parentheses.

Area	Species	Inch class												Total	CPUE
		3	4	5	6	7	8	9	10	11	12	13	14		
Pump station	Largemouth bass	1	3			2	3	3	6	3	2	1		24	32.0 (6.9)
	Spotted bass			1	1		2	1						5	6.7 (3.5)
Dock	Largemouth bass	17	23	12	1	18	19	14	11	7	4		1	127	169.3 (9.3)
	Spotted bass													0	0.0 (0.0)
Total	Largemouth bass	18	26	12	1	20	22	17	17	10	6	1	1	151	100.7 (31.2)
	Spotted bass			1	1		2	1						5	3.3 (2.2)

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Table 89. 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	Std. error	CPUE	Std. error	CPUE	Std. error	CPUE	Std. error
2018	4.3	0.1	37.3	14.9	8.0	3.7		
2017 <sup>a</sup>	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 <sup>a</sup>	3.7	0.2	2.7	0.9	0.0	0.0	5.0	1.0
2013 <sup>a</sup>	3.4	0.2	11.3	3.0	1.0	0.5	6.0	1.7
2012	4.3	0.1	34.7	10.1	8.3	4.2	14.0	4.9
2011 <sup>a</sup>	4.0	0.1	12.3	4.1	0.7	0.7	4.3 <sup>b</sup>	1.6
2010	5.0	0.1	36.7	14.9	18.0	6.6	24.8	6.0
2009 <sup>a</sup>	3.7	0.4	2.7	1.7	0.7	0.5	15.1 <sup>c</sup>	7.4
2008	3.8	0.1	13.3	3.2	1.0	0.7	5.3	2.7
2007	4.2	0.1	13.3	7.6	2.7	1.2	5.7	3.2
2006 <sup>a</sup>	4.4	0.3	3.7	1.7	0.7	0.5	5.3 <sup>d</sup>	2.4
2005	4.0	0.1	23.7	11.9	3.3	1.4	11.8	4.4
2004	4.2	0.1	17.9	4.8	4.3	1.5	2.4	1.2

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<sup>a</sup> Age-0 largemouth bass stocked in the fall

<sup>b</sup> Includes fish stocked in fall 2011; CPUE stocked fish=1.0 fish/hr

<sup>c</sup> Includes fish stocked in fall 2009; CPUE stocked fish=10.0 fish/hr

<sup>d</sup> Includes fish stocked in fall 2006; CPUE stocked fish=0.3 fish/hr

Table 90. Number of fish and mean relative weight (Wr) for each length group of black bass collected at Wood Creek Lake during 19 September 2018. 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	66	84 (1)	8	80 (3)	0	-
	7.0-10.9 in		11.0-13.9 in		$\geq$ 14.0 in	
	No.	Wr	No.	Wr	No.	Wr
Spotted bass	3	91 (3)	0	-	0	-

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Table 91. Temperature and dissolved oxygen profiles collected at three locations at Wood Creek Lake on 7 July 2018.

Depth	Dam		Pump House		Ramp	
	Temp (°F)	DO (mg/L)	Temp (°F)	DO (mg/L)	Temp (°F)	DO (mg/L)
Surface	83.5	7.04	84.4	7.29	84.7	7.98
5	83.7	6.74	84.0	7.10	84.4	7.76
10	80.1	8.36	80.0	6.00	79.9	6.39
15	73.0	8.84	73.8	3.44	73.2	0.79
20	59.9	9.49	59.5	1.48	59.7	0.05
25	51.3	8.52	51.8	1.87	51.6	0.03
30	46.8	6.74	47.3	0.07	47.3	0.04
35	44.1	6.15	44.8	0.04	44.8	0.02
40	42.6	5.39	43.3	1.14		
45	41.7	4.92	42.3	3.17		
50	41.4	5.16	41.7	3.86		
55	41.0	4.99	41.2	4.93		
60	40.8	4.21	41.0	4.59		
65	40.6	4.54	41.0	3.02		
70	40.5	4.62				
75	40.5	4.40				
80	40.5	1.67				

Figure 1. Results of the Laurel Rive Lake angler attitude survey conducted from March 16-October 31, 2018.

**LAUREL RIVER LAKE ANGLER ATTITUDE SURVEY 2018**

1. Have you been surveyed this year? Yes - stop survey No – continue
2. Name \_\_\_\_\_ Zip code \_\_\_\_\_
3. Have you ever fished at Laurel River Lake before? (N=157) 99% Yes 1% No  
If **NO**, go to question 15.
4. How many times do you fish Laurel River Lake a year? (N=149)  
2% 1 to 4 13% 5 to 10 85% More than 10
5. Which species of fish do you fish for at Laurel River Lake (**check all that apply**)? (N=224)  
98% Bass 13% Crappie 0% Trout 27% Walleye 1% Bluegill 3% Catfish
6. Which one species do you fish for most at Laurel River Lake (**check only one**)? (N=156)  
93% Bass 3% Crappie 0% Trout 4% Walleye 0% Bluegill 1% Catfish

**-Answer the following questions for each species you fish for – (see question 5)**

**Largemouth Bass Anglers**

7. In general, what level of satisfaction do you have with largemouth bass fishing at Laurel River Lake? (N=152)  
22% Very satisfied 55% Somewhat satisfied 13% Neutral 10% Somewhat dissatisfied 0% Very dissatisfied 0% No opinion
- 7a. If you responded with somewhat or very dissatisfied in question (7) – what is the single most important reason for your dissatisfaction? (N=15)  
100% Number of fish 0% Size of fish 0% Not happy with regulations 0% Too many anglers/boaters

**Smallmouth Bass Anglers**

8. In general, what level of satisfaction do you have with smallmouth bass fishing at Laurel River Lake? (N=153)  
20% Very satisfied 30% Somewhat satisfied 13% Neutral 24% Somewhat dissatisfied 12% Very dissatisfied 1% No opinion
- 8a. If you responded with somewhat or very dissatisfied in question (8) – what is the single most important reason for your dissatisfaction? (N=57)  
93% Number of fish 0% Size of fish 0% Not happy with regulations 2% Too many anglers/boaters  
2% Not enough enforcement 4% Too many tournaments

**Spotted Bass Anglers**

9. In general, what level of satisfaction do you have with spotted bass fishing at Laurel River Lake? (N=141)  
4% Very satisfied 33% Somewhat satisfied 34% Neutral 24% Somewhat dissatisfied 2% Very dissatisfied 2% No opinion
- 9a. If you responded with somewhat or very dissatisfied in question (9) – what is the single most important reason for your dissatisfaction? (N=36)  
97% Number of fish 0% Size of fish 0% Not happy with regulations 0% Too many anglers/boaters  
3% Too many tournaments

### Crappie Anglers

10. In general, what level of satisfaction do you have with crappie fishing at Laurel River Lake? (N=20)

5% Very satisfied 45% Somewhat satisfied 20% Neutral 30% Somewhat dissatisfied 0% Very dissatisfied 0%  
No opinion

10a. If you responded with somewhat or very dissatisfied in question (10) – what is the single most important reason for your dissatisfaction? (N=6)

100% Number of fish 0% Size of fish 0% Not happy with regulations 0% Too many anglers/boaters

### Trout Anglers

11. How many times do you fish for trout at Laurel River Lake a year? (N=0)

0% 1 to 4 0% 5 to 10 0% More than 10

12. In general, what level of satisfaction do you have with trout fishing Laurel River Lake? (N=0)

0% Very satisfied 0% Somewhat satisfied 0% Neutral 0% Somewhat dissatisfied 0% Very dissatisfied 0% No opinion

12a. If you responded with somewhat or very dissatisfied in question (12) – what is the single most important reason for your dissatisfaction? (N=0)

0% Number of fish 0% Size of fish 0% Not happy with regulations 0% Too many anglers/boaters

### Walleye Anglers

13. In general, what level of satisfaction do you have with walleye fishing Laurel River Lake? (N=37)

16% Very satisfied 60% Somewhat satisfied 3% Neutral 22% Somewhat dissatisfied 0% Very dissatisfied 0%  
No opinion

13a. If you responded with somewhat or very dissatisfied in question (13) – what is the single most important reason for your dissatisfaction? (N=8)

100% Number of fish 0% Size of fish 0% Not happy with regulations 0% Too many anglers/boaters

### Bluegill Anglers

14. In general, what level of satisfaction do you have with bluegill fishing at Laurel River Lake? (N=0)

0% Very satisfied 0% Somewhat satisfied 0% Neutral 0% Somewhat dissatisfied 0% Very dissatisfied 0% No opinion

14a. If you responded with somewhat or very dissatisfied in question (14) – what is the single most important reason for your dissatisfaction? (N=0)

0% Number of fish 0% Size of fish 0% Not happy with regulations 0% Too many anglers/boaters

### All Anglers

15. Are you satisfied with the current size and creel limits on all sport fish at Laurel River Lake? (N=157) 78% Yes 22% No

If **NO**:

15a. If not, which species are you dissatisfied with and what size and creel limits would you prefer?

Largemouth bass size limit (N=13)

8% 13 in

46% 16 in

46% 18 in

Largemouth bass creel limit (N=1)

100% 3

Smallmouth bass size limit (N=12)

8% 12 in  
8% 15 in  
8% 16-21 in slot  
25% 20 in  
42% 21 in  
8% 22 in

Smallmouth bass creel limit (N=3)

33% 1  
33% 2  
33% 3

Spotted bass size limit (N=10)

50% 12 in  
30% 14 in  
20% 15 in

Spotted bass creel limit (N=1)

100% 10

Crappie size limit (N=6)

50% 10 in  
50% 11 in

Crappie creel limit (N=4)

75% 10  
25% 30

Walleye creel limit (N=1)

100% 2

16. During the past three years, do you believe the smallmouth bass fishing in Laurel River Lake has? (N=158)  
10% Greatly improved   17% Slightly improved   20% Stayed the same   20% Slightly declined   26% Greatly declined  
7% No opinion
17. Would you support or oppose closing areas of the lake to fishing at Laurel River Lake to create smallmouth bass spawning sanctuaries? (N=158)  
79% Support   16% Oppose   5% No opinion
18. Would you support or oppose a catch and release only season during the month of April for smallmouth bass on Laurel River Lake? (N=158)  
96% Support   3% Oppose   2% No opinion
19. Would you support or oppose a 16 to 21-inch protective slot limit where one fish over 21 inches and one fish under 16 inches may be kept daily on smallmouth bass on Laurel River Lake? (N=86)  
85% Support   12% Oppose   4% No opinion



## 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 2018.

##### **Buckhorn Lake**

Muskellunge were sampled via boat electrofishing during mid-April (Tables 2-4). This was later than the normal sampling time of January – February. Several high water events contributed to the late sample date. Due to the late sample time and low observed numbers, it is presumed that fish had already dispersed into upper lake stream areas. The largest fish collected were in the 36.0-in class (Table 2). These two fish were females with respective lengths and weights of 36.2 in, 13.13 pounds and 36.8 in, 14.68 pounds. Possibly two fish larger  $\geq 36.0$  in fish were observed and not caught. Fish were sampled from 11.3-36.8 in (Table 2). Relative weights by length group are listed in Table 3 and the  $\log_{10}$  length-weight equation for muskellunge during 2018 sampling was  $-4.34 + 3.50(\log_{10} \text{length})$ . An assessment rating of “Poor” was observed for the fishery (Table 4). The assessment ratings of the last two years have both rated “Poor” (Table 4), but the 2017 and 2018 sample events were conducted during poor conditions. The 2018 hatchery production of muskellunge was low, therefore the stocking rate was reduced from a planned rate of 0.33 fish/acre to 0.12 fish/acre. Total number stocked in October was 150 with an average size of 12.2 in. Stocking sites included the marina and Trace Fork boat ramps. These fish were marked with a left pectoral fin clip.

Spring and fall electrofishing was used to sample black bass (Tables 5-10). Largemouth bass were only sampled to 17.0 inches in the spring (Table 5). This influenced assessment values of larger fish resulting in a population assessment of “Fair” (Table 8). Prior assessments from 2015 and 2017 were “Good”. Additionally, the fall sample was collected early to acquire age-0 data for determination of stocking needs and did not collect larger fish either. Recruitment has been good in recent years and during fall sampling, another above average CPUE was observed for age-0 fish (Table 10). No supplemental stocking of largemouth bass was necessary.

During 2019, white crappie will be sampled in the fall with trap nets for updated population statistics.

Approximately 5,000 rainbow trout (8.0-12.0 in) were stocked in the tailwater during the months of April-June and October-November.

##### **Carr Creek Lake**

Black bass were sampled with electrofishing in the spring and fall (Tables 11-16). There was a good size distribution in both sample efforts. The spring largemouth bass population assessment was “Good”, which it has been five of the last 6 years (Table 14). Some of the spring age-1 CPUE’s for largemouth bass have been high in recent years due to supplemental stocking in the spring instead of the fall (Table 16). Total age-0 largemouth bass numbers in the fall were considered average; however, a decision was made to stock supplemental fingerling bass in the spring of 2019. No smallmouth bass were collected in either the spring or the fall samples. However, they continue to make up part of the black bass fishery as observed in early spring walleye sampling. During March 2018, a total of 7,104 largemouth bass fingerlings (6.2 in) were stocked to supplement the 2017 age-0 class.

Walleye were sampled in the early spring with electrofishing (Tables 17-19). Additionally, during this sampling effort, broodfish were collected for Minor Clark Fish Hatchery. The size distribution of 14.0-26.0 in and the total CPUE was comparable to the last several years (Table 17). Relative weight values were just under 100 for fish  $\geq 20.0$  in (Table 19). This value is influenced by the high number of males collected. The  $\log_{10}$  length-weight equation for walleye during 2018 sampling was  $-3.31 + 2.92(\log_{10} \text{length})$ . A total of 35,052 walleye (1.5 in) were stocked in May.

During June, 100 grass carp were stocked for control of hydrilla in the lake. Tailwater stockings included 1000 rainbow trout/month during the months of April, May, June, October and November.

Tentative scheduling will include early spring electrofishing in 2019 to collect black and white crappie population data.

### **Cranks Creek Lake**

Tables 20-25 contain black bass data from spring and fall boat electrofishing at Cranks Creek Lake. Largemouth bass are the dominant black bass species and produce some trophy-size fish at this lake. Length distribution of largemouth bass ranged from 3.0-23.0 in (Table 20). CPUE of largemouth bass  $\geq 20.0$  in has predominantly been greater than 5.0 fish/hr since 2010 (Table 21). The population assessment of largemouth bass in the spring was “Fair” (Table 23). Fall total CPUE of age-0 and age-0 > 5.0 in was above average (Table 25) and supplemental stocking of largemouth bass fingerlings was not required.

Rainbow trout (1,250 fish/mo) were stocked in the tailwater in January, April, May, and October. Approximately 2,640 channel catfish were stocked in the lake. No herbicides were applied in 2018 for aquatic vegetation control in the upper end of the lake. Grass carp and some early muddy water conditions were sufficient controls for nuisance vegetation during the year.

### **Dewey Lake**

Black bass sampling was completed during the spring and fall (Tables 26-32). Largemouth bass numbers greater than 15.0 in continue to be very good (Table 27) and have resulted in attracting a good number of tournaments to the lake. PSD values are near or above 60 for lower and upper lake fish (Table 28), showing a population with a greater proportion of larger fish. The population assessment for largemouth bass remained “Good” (Table 29), as it has been for the last 6 years (Table 29). The total CPUE of age-0 and age-0  $\geq 5.0$  in fish was above average (Table 32) and no supplemental age-0 fingerling bass were stocked.

Trap netting was conducted in the fall to sample black and white crappie (Tables 33-40). Total CPUE was 27.6 and 32.7 fish/nn for white and black crappie, respectively (Table 33). Age-3 white crappie (Table 37) and age-4 black crappie (Table 38) were the most numerous age classes for each species. The population assessment was “Good” for white crappie (Table 39) and “Fair” for black crappie (Table 40). Mean total length of age-2 fish at capture was 8.1 in for white crappie (Table 39) and 6.6 in for black crappie (Table 40). Mean total length at age-2 for either species failed to reach the 9.0 or 10.0 in size desired for currently-used minimum size limits.

A total of 11,000 blue catfish (5.0-9.0 in) were stocked in April. Approximately 140 muskellunge (12.6 in) were stocked in late summer. Rainbow trout (1,000 fish/mo; 8.0-12.0 in) were stocked in the Dewey Lake tailwater in April, May, October, and November.

A daytime creel survey was conducted at Dewey Lake from 1 March-31 October 2018 (Tables 41-48). The creel survey was a random roving creel design (date, time, and angler count) and the lake was treated as one area. Surveys consisted of 2- 6-hour periods (morning and afternoon). Approximate start times were 0600 morning and 1300 afternoon.

Results of the 2018 creel survey found some differences and similarities with surveys of 2010 and 2007. The number of fishing trips during the 2018 creel survey (N=7,004; Table 41) was approximately double of what was observed in previous creel surveys of 2010 (N=3,862) and 2007 (N=3,827). However, total angler hours (27,218) in 2018 (Table 41) was similar to the 26,491 hours in 2010 and with both of these surveys having increased effort versus 2007 with 17,907 hours.

Catfish and crappie are popular fisheries at the lake and success rates continued to be good in the 2018 creel survey. The percent fishing success was 46.3 for catfish and 45.5 for crappie (Table 42). This compares well to surveys in 2010 and 2007. During 2010, the percent fishing success was 20.5 for catfish and 46.5 for crappie. The survey in

2007 observed percent success of 26.5 for catfish and 37.2 for crappie. Prior to 2009, the catfish fishery was composed of channel and flathead catfish. During 2009, a stocking program was initiated for blue catfish, which has continued annually through 2018. This added fishery may account for the increased success rate for catfish in 2018 versus previous creel surveys.

Several catch, harvest, and size statistics were greater in 2018 than other years, which bodes well for increased angler opportunity at the lake. The most numerous fish caught (N=14,596) and harvested (N=4,404) was white crappie (Table 42). Total weight of harvested fish was greatest and about equal for channel catfish at 1319.1 lbs and white crappie at 1331.6 lbs (Table 42). Greatest total length of fish caught was 38.0 in for muskellunge (Table 43). However, blue, channel, and flathead catfish were all caught in excess of 30.0 in as well (Table 43).

An angler attitude survey was conducted at the lake to obtain further opinion data. Anglers were asked to answer a series of questions regarding the fishery at Dewey Lake (Appendix A). Anglers were surveyed throughout the creel during 2018 with anglers only being asked the questions once. A total of 48 surveys were completed during the lake creel. Catfish at 72.9% (N=35) were the most popular species fished for on the lake followed by crappie 66.7% (N=32), largemouth bass 60.4% (N=29), bluegill/redear sunfish 50.5% (N=24), and muskellunge 16.7% (N=8). Level of fishing satisfaction was asked for several fish groups (bass, crappie, bluegill/redear, catfish). Angler satisfaction (somewhat to very satisfied) was 48.3% for bass, 45.1% for crappie, 52.0% for bluegill/redear, and 74.3% for catfish. Approximately 10.6% of anglers use the KDFWR tournament website to plan activities at a particular boat ramp. A total of 79.2% of anglers were aware of the presence of hydrilla in the lake. Fish habitat questions found 78.3% of anglers feeling that KDFWR-placed attractors/structures improved their fishing results.

### **Fishtrap Lake**

Spring flooding and debris issues prevented boat traffic until early June, whereby only fall electrofishing was completed for black bass population data. The previous spring assessment in 2017 was “Fair”. This lake experienced an extreme drawdown of approximately 42 ft during the winter of 2016-2017 for hydraulic gate repairs in the dam. Fall length frequencies and CPUE for smallmouth, spotted, and largemouth bass are presented in Table 49. The total largemouth bass CPUE of 227.0 fish/hr is high (Table 49), but consistent for the lake. Age-0 largemouth bass numbers were good (Table 50); however, due to the 2017 draining of the lake, 6,729 (6.2-in) fingerlings were stocked. This was approximately half the normal stocking rate.

Hybrid striped bass and white bass were sampled with gill nets in the fall. A length distribution of 8.0-26.0 in was observed for hybrid striped bass and 6.0-17.0 in for white bass (Table 51). Age and growth data is presented in Tables 52-53 for hybrid striped bass and white bass. Both species are attaining good sizes. Hybrid striped bass ages ranged from age-0 to age-5 with age-1 fish being most numerous (Table 54). White bass ages ranged from age-0 to age-7 with age-1 fish being most numerous (Table 55). Population assessments were “Excellent” for both hybrid striped bass (Table 56) and white bass (Table 57). Relative weights ( $W_r$ ) are listed in Table 58 and are all slightly below a value of 100 for each length group. This may have been influenced by the length of time that fish were entangled in nets before their removal. The  $\log_{10}$  length-weight equation for hybrid striped bass was  $-3.41 + 3.07(\log_{10} \text{ length})$  and for white bass was  $-3.40 + 3.06(\log_{10} \text{ length})$ .

Several fish stockings occurred during the year at Fishtrap Lake. A total of 11,200 blue catfish (6.0-9.0 in) were stocked in the lake during April. During June, 3,000 native strain walleye (2.5 in) were stocked in the Levisa Fork River upstream of Fishtrap Lake. A total of 23,338 hybrid striped bass (1.5 in) were stocked in June. Rainbow trout (2000 fish/mo) were stocked in the tailwater in April, May, June, October and November.

### **Martins Fork Lake**

Electrofishing was completed in the spring and fall for black bass and native strain walleye (Tables 59-64). During spring, all four black bass species and native strain walleye were collected (Table 59). However, large fish of any species were not collected. The spring assessment of largemouth bass was “Fair” (Table 62). Large fish were also not collected in the fall electrofishing sample (Table 63); however, the sample was collected early in the fall, with emphasis on collecting age-0 fish and resulting water temperature was warm. Largemouth bass age-0 density in the

fall was above average (Table 64), but a decision was made to stock age-1 fingerlings in the spring of 2019 due to impacts of flooding. There were no walleye collected in the fall sample. Some walleye sampling was done during March for preliminary investigation into potential locations to collect walleye broodfish in early 2019. The native strain walleye have been stocked annually since 2013. During 2019, in addition to spring and fall CPUE and length frequency data collection for black bass and walleye, there will be additional early spring electrofishing for walleye broodfish acquisition.

A total of 3,779 native strain walleye (3.2 in) were stocked in June. Rainbow trout (750 fish/mo) were stocked at the tailwater in April, May, June, October and November.

### **Pan Bowl Lake**

Largemouth bass were sampled in the spring with electrofishing (Tables 65-68). Fish were sampled from the 4.0- to 23.0-in class (Table 65). CPUE of the smaller length groups was high, resulting in elevated total CPUE (Table 66). Additionally, the PSD value of 7 (Table 67) is very low and relates to high numbers of small fish. During the 1990's to early 2000's, it was common to observe largemouth bass PSD values of 60-70. A population assessment of "Fair" was observed in 2018 (Table 68). This lake was added to the trout stocking program in 2013 and this may assist with increasing the PSD and assessment values for largemouth bass.

### **Paintsville Lake**

Tables 69-75 provide spring and fall electrofishing data for black bass. The largemouth bass assessment rated "Fair" which is similar to most previous years (Table 72). Spring CPUE of age-1 fish has been the only value in the assessment that routinely scores high (Table 72). This is influenced by the lake having minimal winter pool drawdown and most shoreline or shallow water areas having dense aquatic plant habitat. During the fall sampling, age and growth information was collected for largemouth bass (Table 74). Mean length of age-3 fish at capture was 11.9 in, slightly better than the 11.2 in observed in 2012. Age-0 largemouth bass CPUE was average (Table 75) and no supplemental stocking of fingerlings took place. The 12.0- to 15.0-in slot length limit for largemouth bass will be 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).

Spring electrofishing was not completed for walleye and crappie. Walleye broodfish collection was conducted in March. A total of 17 walleye (13 male and 4 female) were sampled from 14.3-30.2 in. The largest fish, a 30.2-in female weighed 11.43 pounds. Relative weights were not calculated as there were insufficient numbers collected.

The lake received a stocking of 4,500 rainbow trout (8.0-12.0 in) during February. The tailwater trout fishery received 20,000 rainbow trout from April to November and 300 brown trout in April.

### **Yatesville Lake**

Electrofishing was utilized to sample black bass during the spring and fall (Tables 76-81). Largemouth bass were collected from 2.8-20.9 inches in the spring (Table 76). The spring assessment was "Good" for largemouth bass (Table 79). This fishery has a large number of tournaments and receives heavy pressure from spring into fall, but assessments for largemouth bass have primarily held at "Good" since 2007 (Table 79). Fall sample data observed above average numbers of age-0 largemouth bass (Table 81) and no supplemental stocking took place.

White crappie were sampled with trap nets in November. A total of 564 fish were collected from 3.3-12.9 in for a CPUE of 56.4 fish/nn (Table 82). Data for PSD/RSD, age and growth, and age frequency can be found in Tables 83-85. Age-3 fish accounted for the greatest numbers of any year class (Table 85). The assessment rating was "Excellent" (Table 86). Additionally, mean length of age-2 fish at capture increased from 5.4 inches in 2016 to 6.3 inches in 2018 (Table 86). The fishery should provide good numbers of keeper-size fish in 2019.

Rainbow trout (750 fish/mo) were stocked in the tailwater of Yatesville Lake in April, May and November.

Table 1: Summary of 2018 sampling conditions by waterbody, species sampled and date.

Water body	Species	Date	Time (24hr)	Gear	Weather	Water	Water	Secchi (in)	Pertinent sampling comments <sup>a,b</sup>
						Temp (°F)	level (elev ft)		
Buckhorn Lake	Musky	4/19	1100	shock	windy	58.5	773.50	30	outflow : 192CFS; bp: 30.04; cond: 395; 2 boats (w /Habitat Branch); w hole lake
Buckhorn Lake	LMB	5/8	1100	shock	clear	72.0	782.30	77	outflow : 541CFS; cond: 321; 2 boats; w hole lake; w ater clear
Buckhorn Lake	LMB	9/20	1100	shock	clear	81.0	782.00	134	outflow : 400CFS; bp: 30.09; cond: 480; 2 boats; w hole lake
Carr Creek Lake	w alleye	3/1	1000	shock	cloudy/rain	56.0	1021.50		broodfish collection; outflow : 291CFS; bp: 29.72; cond: 245; 1 boat; upper lake
Carr Creek Lake	w alleye	3/6	1000	shock	rain	54.0	1018.70	15	broodfish collection; outflow : 76CFS; bp: 29.84; cond: 286; 2 boats; w hole lake
Carr Creek Lake	w alleye	3/15	1000	shock	pt. sunny	47.0	1017.30	18	broodfish collection; outflow : 30CFS; bp: 29.90; 1 boat; low er lake
Carr Creek Lake	w alleye	3/19	1000	shock	cloudy	47.0	1017.80		broodfish collection; outflow : 5CFS; bp: 29.83; 1 boat; upper lake
Carr Creek Lake	LMB	5/7	1000	shock	pt. cloudy	72.0	1028.30	77	outflow : 93CFS; bp: 30.09; cond: 426; 2 boats; w hole lake
Carr Creek Lake	LMB	9/24	1000	shock	cloudy/rain	78.8	1028.20	88	outflow : 12CFS; bp: 30.14; cond: 682; 2 boats; w hole lake
Cranks Creek Lake	LMB	5/10	1100	shock	cloudy	70.0	normal	80	bp: 29.96; 1 boat; w hole lake
Cranks Creek Lake	LMB	9/25	1100	shock	cloudy	76.0	normal		bp: 30.13; 1 boat; w hole lake
Dew ey Lake	LMB	5/2	1000	shock	cloudy	69.0	650.50	48	outflow : 161.2CFS; bp: 30.16; cond: 413; 2 boats; w hole lake
Dew ey Lake	LMB	9/21	2000	shock	clear	81.7	650.50	72	outflow : 69CFS; bp: 30.11; cond: 627; 2 boats; w hole lake; LMB age and grow th
Dew ey Lake	crappie	11/13	1000	trap net	rain/snow	50.0	648.96		outflow : variable 563-681CFS; bp: 30.19; upper (middle) lake
Fishtrap Lake	LMB	9/27	1000	shock	cloudy/rain	76.6	757.50	91	outflow : 332.7CFS; bp: 30.05; cond: 695; 2 boats; w hole lake
Fishtrap Lake	HSB	12/5	1000	gill net	rain/snow	50.0	736.46		outflow : 1650CFS; bp: 30.20; Low er lake; 250' experimental nets
Martins Fk Lake	LMB	5/10	1100	shock	cloudy/rain	73.5	1308.30	62	bp: 29.96; cond: 153; 1 boat; w hole lake
Martins Fk Lake	LMB	9/25	1100	shock	cloudy	77.7	1310.01	102	bp: 30.13; cond: 157; 1 boat; w hole lake
Paintsville Lake	w alleye	3/7	1000	shock	cloudy/snow	51.0	709.50	33	broodfish collection; outflow : 251.3CFS; bp: 29.91; cond: 87; 1 boat; low er lake;
Paintsville Lake	LMB	5/16	1000	shock	cloudy/rain	78.0	709.80	96	outflow : 375.7CFS; bp: 29.94; cond: 80; 1 boat; w hole lake
Paintsville Lake	LMB	10/25	1000	shock	cloudy	62.0	709.80	80	outflow : 23.2CFS; bp: 30.22; cond: 135; 1 boat; w hole lake; age and grow th
Panbow l Lake	LMB	5/4	1100	shock	cloudy	71.0	normal	84	bp: 30.07; cond: 167; 1 boat; w hole lake
Yatesville Lake	LMB	5/14	1000	shock	cloudy	79.0	630.3	66	outflow : 138.7CFS; bp: 30.04; cond: 150; 2 boats; w hole lake
Yatesville Lake	LMB	9/26	1000	shock	cloudy	76.6	632.5	50	outflow : 626.8CFS; cond: 155; 2 boats; w hole lake
Yatesville Lake	crappie	11/19	1000	trap net	rain/w ind	48.0	628.2		outflow : variable 1382-1356CFS; bp: 30.09; upper (middle) lake

<sup>a</sup> cond = conductivity in µS/cm

<sup>b</sup> 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 1998-2018; numbers in parentheses are standard errors. Results from 2002 are from fall electrofishing.

Year	Inch class																																															Total	CPUE
	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											
1998	1	1	2	7	4	1	1				1	4	3	1	1	1						1		1	1			1	1																	33	6.6 (2.9)		
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)	
2000		1	3	2	3	1								4				1	2			7	1		1	1			2	1					1												31	8.2 (0.5)	
2001				4	1	1				1			1											1		1	1		1																	1	13	3.2 (0.7)	
2002						1							2	1								3	1		1			2				1															12	6.0 (0.8)	
2003	1		5	2	1	1									2	1	1		1	1	2	1	1					1																		1	22	7.1 (1.9)	
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)			
2005				4	5	2					1		2	2								1			1				2	1	1	3			1										1	27	6.3 (1.7)		
2006			1	8	10	6								1	2	3						1	1		1	3	2	1	1	1	1	1	1	1													45	14.2 (2.2)	
2007				1	1	2	1					2	3	6	2			1			1		2		1	2		1	2		1	1									1		1	1	32	13.7 (4.5)			
2008				2	6	10	6	1					1	1	3						1		1	5	2			1			1											1				43	8.3 (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)		
2010			1	4	13	18			1	1	1	1		6	6	10	6	1			2	3	2	1	3	2	1	2	1	4	3	1	1												1	96	12.9 (1.6)		
2011			4	5	17	14	3					2		3	3	1					1		3	1	3		3	2	1	1		1															69	12.6 (2.7)	
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)	
2013			3	6	3							1												1	1			1																				16	4.3 (0.9)
2014		1	2	1	6	2						1	2	1	4									1		1				1		1																26	7.4 (1.9)
2015	no sample																																																
2016				2	2	4						2	1	2			1							1	1		1	1		1	1																	21	7.0 (3.3)
2017		3	7	1						1				1	1							2	2	1	1					2																		22	6.8 (1.1)
2018		1	1			3				1				1	1								2		1		1	2																				14	3.1 (0.9)

EFDBLMSS.D98-D10, D12, D14, D16-D18

LFRBHLSP.D11, D13

Table 3. Number of fish and relative weight (Wr) for each length group of muskellunge collected at Buckhorn Lake (710 acres) on 19 April 2018. Numbers in parentheses are standard errors.

Length group									
≤19.9 in		20.0-29.9 in		30.0-37.9 in		>38.0 in		Total	
No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
4	83.4 (3.6)	2	90.7 (3.9)	6	94.5 (2.6)	0		12	90.2 (2.6)

EFDBLMSS.D18

Table 4. Population assessment for muskellunge from Buckhorn Lake (1,230 acres) captured during spring electrofishing from 2003-2018. Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year														
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2016	2017	2018
CPUE age 1	2 (3.3)	3 (5.9)	2 (2.5)	4 (7.9)	1 (1.7)	3 (4.8)	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)
CPUE ≥20.0 in	2 (3.9)	4 (11.1)	2 (3.7)	3 (6.3)	4 (12.0)	2 (3.8)	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)
CPUE ≥30.0 in	1 (2.0)	4 (6.3)	2 (2.6)	4 (4.4)	4 (5.3)	2 (2.2)	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)
CPUE ≥36.0 in	1 (0.7)	4 (2.8)	4 (2.1)	4 (2.5)	4 (2.5)	1 (0.6)	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)
CPUE ≥40.0 in	2 (0.3)	2 (0.3)	4 (1.1)	4 (1.0)	4 (1.6)	3 (0.5)	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)
Total score	8	17	14	19	17	11	19	16	13	15	6	11	11	6	5
Assessment	Poor	Excellent	Good	Excellent	Excellent	Fair	Excellent	Good	Good	Good	Poor	Fair	Fair	Poor	Poor

EFDBLMSS.D03-D10, D12, D14, D16-D18

LFRBHLSP.D11, D13

Table 5. Species composition, relative abundance and CPUE (fish/hr) of black bass collected in approximately 2.5 hours of 15-minute electrofishing samples at Buckhorn Lake (1,230 acres) on 8 May 2018; numbers in parentheses are standard errors.

Area	Species	Inch class															Total	CPUE	
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			(SE)
Lower	Largemouth bass		2	14	24	6		18	28	14	20	11	6	2			145	116.0	(7.4)
Upper	Largemouth bass	1	10	29	21	9	6	30	34	18	26	6	2	2	2	1	197	157.6	(17.6)
Total	Largemouth bass	1	12	43	45	15	6	48	62	32	46	17	8	4	2	1	342	136.8	(11.3)

EFDBLLSS.D18

Table 6. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Buckhorn Lake (1,230 acres). SE=standard error.

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
2003	22.7	3.5	18.7	2.3	28.3	3.8	6.3	1.2	0.0		76.0	6.9
2004	38.0	6.2	51.7	6.5	29.3	4.2	4.3	1.2	0.0		123.3	11.6
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
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
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
2008	14.8	5.5	27.0	7.2	21.4	3.3	13.8	1.8	0.0		77.0	12.0
2009	41.2	3.5	32.0	7.7	17.2	4.8	14.5	3.0	0.0		104.8	13.2
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
2011							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
2013							no sample					
2014	9.3	3.4	25.3	6.3	6.0	1.7	2.7	1.3	0.0		43.3	9.9
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
2016							no sample					
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
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

EFDBLLSS.D03-D18



Table 7. PSD and RSD<sub>15</sub> values for largemouth bass in each area of Buckhorn Lake (1,230 acres) on 8 May 2018. Number of fish (No.) is the number of stock-size or larger fish collected and numbers in parentheses are 95% confidence intervals.

Area	Largemouth bass		
	No.	PSD <sub>8</sub>	RSD <sub>15</sub>
Lower	99	39 (30-49)	2 (0-5)
Upper	127	31 (23-39)	4 (1-7)
Total	226	35 (28-41)	3 (1-5)

EFDBLLSS.D18

Table 8. Population assessment for largemouth bass collected during spring at Buckhorn Lake (1,230 acres). Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year										
	2005	2006	2007	2008	2009	2010	2012	2014	2015	2017	2018
Mean length age 3 at capture	3 (12.6)	3 (12.6)	3 (12.6)	3 (12.6)	3 (13.3)	3 (13.3)	3 (13.3)	2 (12.1)	2 (12.1)	2 (12.1)	2 (12.1)
Spring CPUE age 1	2 (16.3)	1 (11.2)	2 (13.0)	1 (11.19)	4 (43.8)	3 (26.1)	3 (36.1)	1 (8.7)	4 (56.0)	4 (90.7)	4 (48.4)
Spring CPUE 12.0-14.9 in	4 (38.3)	4 (40.5)	2 (20.5)	2 (21.4)	2 (17.2)	2 (18.3)	1 (7.5)	1 (6.0)	3 (27.1)	4 (34.7)	3 (28.4)
Spring CPUE $\geq$ 15.0 in	2 (8.3)	3 (15.2)	3 (14.0)	3 (13.8)	3 (14.5)	2 (10.7)	1 (3.5)	1 (2.7)	1 (3.6)	2 (8.7)	1 (2.8)
Spring CPUE $\geq$ 20.0 in	2 (0.3)	2 (0.3)	3 (0.5)	1 (0.0)	1 (0.0)	2 (0.4)	2 (0.5)	1 (0.0)	3 (0.9)	3 (0.7)	2 (0.4)
Total score	13	13	13	10	13	12	10	6	13	15	12
Assessment rating	Good	Good	Good	Fair	Good	Fair	Fair	Poor	Good	Good	Fair
Instantaneous mortality (z)	0.67	0.48	0.45	0.42	0.64	0.73	0.77				
Annual mortality (A)	48.70	38.00	36.40	34.20	47.40	51.80	54.90				

EFDBLLSS.D05-D10, D12, D14-D18

EFDBLLAS.D04, D09

EFDBLLAF.D14

Table 9. Species composition, relative abundance and CPUE (fish/hr) of black bass collected in approximately 2.0 hours of 15-minute electrofishing samples at Buckhorn Lake (1,230 acres) on 20 September 2018; numbers in parentheses are standard errors.

Area	Species	Inch class											Total	CPUE	
		2	3	4	5	6	7	8	9	10	11	12			13
Lower	Largemouth bass	3	33	40	32	15		9	14	5	6	4	2	163	163.0 (53.6)
Upper	Largemouth bass	1	26	37	30	12	3	6	11	10	7	1	2	146	146.0 (14.3)
Total	Largemouth bass	4	59	77	62	27	3	15	25	15	13	5	4	309	154.5 (25.9)

EFDBLLSF.D18

Table 10. Indices of year class strength at age-0 and age-1 and mean lengths (in) of age-0 largemouth bass at Buckhorn Lake (1,230 acres) from electrofishing. CPUE=fish/hr, SE=standard error.

Year class	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2002	4.5	0.1	99.3	7.4	38.7	2.6	19.2	3.3
2003	4.7	0.5	106.0	13.8	39.7	4.6	35.5	5.4
2004	3.6	0.0	176.7	34.0	9.3	4.6	16.3	3.5
2005	4.0	0.2	44.7	6.6	10.0	3.5	11.2	2.1
2006	4.2	0.2	17.6	4.1	5.3	1.9	13.0	3.7
2007	4.5	0.2	18.8	6.4	9.6	3.4	11.2	3.8
2008	4.9	0.1	21.4	3.7	9.9	2.3	43.8	3.5
2009			no fall sample				26.1	5.2
2010	4.3	0.1	67.0	5.0	22.5	5.8	no spring sample	
2011	4.5	0.1	126.7	26.7	42.0	10.0	36.1	6.5
2012	5.0	0.2	39.0	9.6	21.0	7.2	no spring sample	
2013	4.1	0.1	68.8	10.8	16.8	4.3	8.7	3.5
2014	4.4	0.1	86.5	24.9	26.5	8.6	56.0	6.0
2015	4.2	0.1	80.0	15.9	17.6	2.0	no spring sample	
2016	5.0	0.0	169.7	44.0	85.7	23.9	90.7	20.0
2017	4.6	0.1	161.6	20.1	49.6	9.4	48.4	7.9
2018	4.7	0.1	114.5	29.8	44.5	9.1		

EFDBLLSF.D02-D08, D10-D18

EFDBLLAS.D04, D09

EFDBLLAF.D14

EFDBLLSS.D03-D18

Table 11. Species composition, relative abundance and CPUE (fish/hr) of black bass collected in approximately 2.0 hours of 15-minute electrofishing samples at Carr Creek Lake (710 acres) on 7 May 2018; numbers in parentheses are standard errors.

Area	Species	Inch class																Total	CPUE	
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			20
Lower	Smallmouth bass																		0	0.0
	Spotted bass			1	2	3	6	3	1		1				1				18	18.0 (10.9)
	Largemouth bass	9	36	67	2	9	9	4	6	4		3	1	3	2	1	1		157	157.0 (37.6)
Upper	Smallmouth bass																		0	0.0
	Spotted bass	1	1	2		3	1	1			1								10	10.0 (4.2)
	Largemouth bass	16	32	35	17	24	15	11	4	3	7	5	8	6	6	5	4	1	199	199.0 (12.9)
Total	Smallmouth bass																		0	0.0
	Spotted bass	1	1	3	2	6	7	4	1		2				1				28	14.0 (5.6)
	Largemouth bass	25	68	102	19	33	24	15	10	7	7	8	9	9	8	6	5	1	356	178.0 (20.0)

EFDCLSS.D18

Table 12. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Carr Creek Lake (710 acres). SE=standard error.

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
2002	116.3	14.2	16.9	1.7	12.3	1.6	7.1	1.2	0.0		152.7	13.3
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
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
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
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
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
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
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
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
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
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
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
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
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
2016	30.0	7.6	40.0	11.9	10.7	3.0	15.3	3.6	0.0		96.0	16.8
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
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

BBRPSCFL.D02-D05

EFDCLLSS.D06-D18

Table 13. PSD and RSD values for each species of black bass collected in each area of Carr Creek Lake (710 acres) on 7 May 2018. Number of fish (No.) is the number of stock-size or larger fish collected and numbers in parentheses are 95% confidence intervals.

Area	Smallmouth bass			Spotted bass			Largemouth bass		
	No.	PSD	RSD <sub>15</sub>	No.	PSD	RSD <sub>14</sub>	No.	PSD	RSD <sub>14</sub>
Lower	0			17	18 (0-36)	6 (0-17)	43	35 (20-49)	19 (7-30)
Upper	0			6	17 (0-49)		99	45 (36-55)	30 (21-39)
Total	0			23	17 (2-33)	4 (0-13)	142	42 (34-50)	27 (19-34)

EFDCLSS.D18

Table 14. Population assessment for largemouth bass collected from Carr Creek Lake (710 acres). Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mean length age-3 at capture	4 (13.2)	4 (12.6)	4 (12.6)	4 (12.6)	4 (12.6)	4 (12.6)	4 (13.5)	4 (13.5)	4 (13.5)	4 (13.5)	4 (13.5)	4 (13.5)
Spring CPUE age-1	2 (7.6)	1 (2.4)	1 (3.1)	2 (10.0)	2 (9.0)	2 (13.9)	4 (114.7)	4 (116.0)	4 (71.0)	3 (35.3)	3 (31.0)	4 (111.5)
Spring CPUE 12.0-14.9 in	2 (18.6)	2 (24.7)	2 (17.1)	1 (10.8)	1 (5.5)	1 (9.0)	2 (16.0)	2 (25.0)	2 (15.5)	1 (10.7)	1 (12.5)	1 (11.0)
Spring CPUE $\geq$ 15.0 in	3 (15.7)	3 (23.7)	3 (16.0)	2 (12.6)	3 (16.0)	3 (13.5)	3 (16.7)	3 (18.5)	3 (18.5)	3 (15.3)	3 (17.0)	3 (19.0)
Spring CPUE $\geq$ 20.0 in	2 (0.5)	2 (0.5)	2 (0.6)	2 (0.9)	2 (1.0)	2 (1.5)	3 (2.7)	2 (1.0)	2 (1.0)	1 (0.0)	2 (0.5)	2 (0.5)
Total score	13	12	12	11	12	12	16	15	15	12	13	14
Assessment rating	Good	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good	Good
Instantaneous mortality (z)	0.37	0.41	0.74	0.34	0.27	0.44						
Annual mortality (A)	30.90	33.50	52.30	29.10	23.80	35.80						
BBRSCFL.D05												
EFDCLLSS.D06-D18												
EFDCLLAS.D08												
EFDCLLAF.D13												

Table 15. Length frequency and electrofishing CPUE (fish/hr) of black bass collected in approximately 1.5 hours of 15-minute nocturnal electrofishing samples at Carr Creek Lake (710 acres) on 24 September 2018; numbers in parentheses are standard errors.

Area	Species	Inch class																			Total	CPUE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
Lower	Smallmouth bass					1															1	1.3 (1.3)
	Spotted bass	3	1		1			1	1												7	9.3 (1.3)
	Largemouth bass	1	1	3	1	4	1	2		7	1			3		1		2			27	36.0 (18.3)
Upper	Smallmouth bass																				0	0.0
	Spotted bass							2						1							3	4.0 (4.0)
	Largemouth bass		7	10	5	9	13	2	6	3		1									56	74.7 (8.7)
Total	Smallmouth bass					1															1	0.7 (.7)
	Spotted bass	3	1		1			3	1					1							10	6.7 (-2.2)
	Largemouth bass	1	8	13	6	13	14	4	6	10	1	1		3		1		2			83	55.3 (12.5)

EFDCLLSF.D18



Table 16. Indices of year class strength at age-0 and age-1 and mean lengths (in) of largemouth bass collected by electrofishing at Carr Creek Lake (710 acres). CPUE=fish/hr, SE=standard error.

Year class	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2003	4.4	0.1	14.0	5.4	5.8	2.3	133.8*	17.5
2004	5.2	0.0	132.0	17.3	88.2	12.7	18.8	2.6
2005	4.7	0.1	15.8	6.7	5.6	1.7	21.3	6.7
2006	4.2	0.2	11.0	4.1	3.0	1.0	7.6	2.0
2007	3.7	0.5	5.0	2.2	1.0	0.7	2.4	1.2
2008	4.3	0.2	15.2	6.6	3.8	1.7	3.1	0.8
2009	3.6	0.3	12.5	2.8	3.5	1.6	10.0	2.5
2010	4.6	0.2	13.5	4.4	5.0	1.7	9.0	3.1
2011	4.6	0.1	17.6	5.7	7.2	3.0	13.2	2.6
2012	4.3	0.2	34.5	10.9	11.5	4.0	114.7*	51.8
2013	4.4	0.2	14.0	4.6	4.8	1.8	116.0*	23.8
2014	4.4	0.3	13.3	4.2	5.3	1.7	71.0*	23.2
2015	4.7	0.2	45.3	9.6	16.0	6.1	35.3	8.0
2016	4.6	0.1	32.0	7.9	10.4	3.0	31.0	6.4
2017	3.9	0.2	19.3	5.8	4.7	1.9	111.5*	13.9
2018	5.4	0.1	18.7	5.4	12.7	4.2		

\* Includes supplemental spring stocked fish

BBRWRCFL.D03-D05

BBRSCCFL.D03

EFDCLLSF.D06-D18

EFDCLLAS.D08

EFDCLLSS.D06-D18

EFDCLLAF.D13

Table 17. Length frequency and CPUE (fish/hr) of walleye collected at Carr Creek Lake (710 acres) during daytime spring electrofishing.

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	
2000							5	28	10	6	8	2	3	3	1		1	6	4	1			78	20.8	4.6	
2001							2	4	3	14	8	6	2	2	1				2				44	20.4	4.7	
2002																										
2003		2	1			1	1	2			3	7		4	2		1	1	1	1	1		28	26.7	8.5	
2004											1	3	13	10	13	13	4	3	1				61	27.1	7.4	
2005									1	1	2	10	2	10	6	5	4	3	1	1			46	28.2	5.0	
2006											1	4	6	7	9	9	8	3	4	2	2		55	31.3	5.4	
2007								1		1	2	4	3	11	15	8	4	4	5	2			60	32.9	7.4	
2008									1	2	5	12	16	19	21	19	15	14	7	3	1	1	136	12.8	1.2	
2009									1	4	3	9	18	21	17	15	13	10	11	2			124	21.3	1.3	
2010									6	8	7	7	10	15	16	14	16	13	8	8	9		138	12.7	3.3	
2011	1	1				1			2	6	8	8	5	15	7	11	5	5	2	3	1		81	15.4	5.2	
2012									1	1	2	1	13	19	22	14	4	4	5	1			87	20.8	2.5	
2013											3	2	8	11	13	16	21	9	2	2	1		88	10.7	1.4	
2014											1		2	14	9	12	10	6	1		1		56	11.8	2.9	
2015											2	3	7	9	13	14	11	12	7	3	1		82	21.6	17.4	
2016												3	3	7	16	21	26	18	13	1	4	1	113	20.6	2.3	
2017											1		6	7	18	13	13	9	2		1	1	71	21.9	3.1	
2018											6	3	6	8	5	25	30	12	22	9	1		128	14.7	2.0	

EFDCLWSS.D00-D18

Table 18. Spring electrofishing catch rate (fish/hr) for each age of walleye collected from Carr Creek Lake (710 acres) from 2009-2018.

Age	Year									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1										
2	2.0	2.1	1.3	1.6	1.0	0.9	3.2	1.8	1.5	1.7
3	7.2	3.2	5.0	7.8	4.2	4.5	9.1	8.1	9.0	5.2
4	5.5	2.6	3.6	5.1	2.6	3.6	5.2	5.2	5.7	3.7
5	2.4	1.4	1.6	2.9	1.2	1.3	1.6	2.4	2.4	1.6
6	0.8	0.3	0.4	0.9	0.5	0.4	0.6	0.8	0.8	0.3
7	0.8	0.4	0.4	0.5	0.1	0.1	0.2	0.2	0.2	0.4
8	1.0	0.9	0.7	0.8	0.5	0.5	0.6	0.8	0.9	0.5
9	1.4	0.8	1.0	1.2	0.5	0.5	0.7	1.0	0.9	1.0
10	0.3	0.2	0.3	0.1	0.1	0.2	0.2	0.3	0.4	0.3

EFDCLWSS.D09-D18

EFDCLWAS.D09

Table 19. Number of fish and relative weight (Wr) for each length group of walleye collected at Carr Creek Lake (710 acres) on 1-19 March. Numbers in parentheses are standard errors.

Length group									
≤ 9.9 in		10.0-14.9 in		15.0-19.9 in		≥20.0 in		Total	
No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
		1	120.0	7	100.2	6	97.9	14	100.6
					(2.9)		(2.9)		(2.4)

EFDCLWSS.D18

Table 20. Length frequency and CPUE (fish/hr) of black bass collected in 1.25 hours of 15-min electrofishing runs at Cranks Creek Lake (219 acres) on 10 May 2018; numbers in parentheses are standard errors.

Species	Inch class																			Total	CPUE			
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			22	23	
SB	1	1	1	5		5	2	1							1								17	13.6 (8.9)
LMB	1	22	20	10	23	34	29	16	10	3	4	3		2		1	3	2	2	3	1	189	151.2 (6.5)	

SB = spotted bass

LMB = largemouth bass

EFDCCCLSS.D18

Table 21. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Cranks Creek Lake (219 acres). SE=standard error.

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
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
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
2002	no sample											
2003	no sample											
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
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
2006	no sample											
2007	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
2009	no sample											
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
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
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
2013	no sample											
2014	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
2016	no sample											
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
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

EFDCCLSS.D00-D18

Table 22. PSD and RSD values for each species of black bass in each area of Cranks Creek Lake (219 acres) on 10 May 2018. Number of fish (No.) is the number of stock-size or larger fish collected and numbers in parentheses are 95% confidence intervals.

	Largemouth bass			Spotted bass		
	No.	PSD	RSD <sub>15</sub>	No.	PSD	RSD <sub>14</sub>
Total	113	21 (14-29)	12 (6-18)	9	11 (0-33)	11 (0-33)

EFDCCLSS.D18

Table 23. Population assessment for largemouth bass collected from Cranks Creek Lake (219 acres). Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year						
	2008	2010	2011	2012	2015	2017	2018
Mean length age 3 at capture	3 (11.2)	3 (11.2)	3 (11.2)	3 (11.2)	1 (10.0)	1 (10.0)	1 (10.0)
Spring CPUE age 1	3 (23.0)	4 (68.8)	3 (45.6)	3 (28.0)	2 (19.2)	4 (72.8)	3 (42.4)
Spring CPUE 12.0-14.9 in	3 (27.0)	1 (9.6)	1 (9.6)	1 (5.6)	2 (15.2)	2 (18.4)	1 (8.0)
Spring CPUE $\geq$ 15.0 in	2 (8.0)	3 (14.4)	2 (11.2)	2 (8.8)	3 (13.6)	3 (15.2)	2 (11.2)
Spring CPUE $\geq$ 20.0 in	3 (3.0)	4 (4.8)	4 (5.6)	3 (2.4)	4 (6.4)	4 (8.8)	4 (6.4)
Total score	13	15	13	12	12	14	11
Assessment rating	Good	Good	Good	Fair	Fair	Good	Fair
Instantaneous mortality (z)	0.52	0.49	0.56	0.53			
Annual mortality (A)	40.60	38.90	43.10	40.90			

EFDCCLAS.D08  
 EFDCCLAF.D13  
 EFDCCLSS.D08-D18

Table 24. Length frequency and CPUE (fish/hr) of black bass collected in 1.00 hour of 15-min nocturnal electrofishing runs at Cranks Creek Lake (219 acres) on 25 September 2018; numbers in parentheses are standard errors.

Species	Inch class																		Total	CPUE		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
SB	1			1	1				1											4	4.0 (2.3)	
LMB	22	17	15	4	6	12	10	15		2	2	1	1							1	108	108.0 (26.7)

SB = spotted bass  
LMB = largemouth bass  
EFDCCLSF.D18

Table 25. Indices of year class strength at age-0 and age-1 and mean lengths (in) of age-0 largemouth bass at Cranks Creek Lake (219 acres) from electrofishing. CPUE=fish/hr, SE=standard error.

Year class	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
1999							44.3	10.4
2000							14.3	4.8
2001	5.0	0.1	27.3	5.2	13.3	3.0		
2002	5.1	0.1	34.4	10.6	20.8	7.7		
2003							15.0	4.3
2004							50.4	15.3
2005								
2006								
2007	4.3	0.1	32.0	8.7	7.2	2.9	23.0	7.3
2008								
2009	3.9	0.1	64.0	29.8	7.2	4.8	68.8	26.1
2010	4.3	0.1	93.3	28.5	16.0	6.1	45.6	6.0
2011	5.3	0.1	51.2	5.4	34.4	5.3	28.0	10.7
2012	4.1	0.1	66.4	27.4	10.4	5.3		
2013	3.9	0.2	11.2	5.4	0.8	0.8		
2014	4.0	0.1	104.8	24.5	20.8	5.1	19.2	5.3
2015	4.3	0.2	37.0	14.6	9.0	3.0		
2016	4.1	0.1	70.4	29.7	2.4	1.0	72.8	12.6
2017	4.2	0.1	77.3	11.6	13.3	3.5	42.4	6.7
2018	4.4	0.1	58.0	6.6	19.0	10.3		

EFDCCLSF.D01-D02, D07, D09-D18

EFDCCLAS.D08

EFDCCLSS.D00-D01, D04-D05, D08, D10-D12, D15, D17-D18

EFDCCLAF.D13

Table 26. Species composition, relative abundance and CPUE (fish/hr) of black bass collected in approximately 1.5 hours of 15-minute nocturnal electrofishing samples by area at Dewey Lake (1,100 acres) on 2 May 2018. Standard errors are in parentheses.

Area	Species	Inch class																			Total	CPUE
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
Lower	Spotted bass	1	12	3	7	4	7	4	3		2	5	1								49	39.2 (17.2)
	Largemouth bass	2	17	17	16	2	8	11	17	10	14	20	5	8	7	2	3	1		1	161	128.8 (11.1)
Upper	Spotted bass						1														1	0.8 (0.8)
	Largemouth bass	1	3	6	8	3	8	9	7	10	7	12	12	9	10	4	8	2	3		122	97.6 (9.35)
Total	Spotted bass	1	12	3	7	4	8	4	3		2	5	1								50	20.0 (10.4)
	Largemouth bass	3	20	23	24	5	16	20	24	20	21	32	17	17	17	6	11	3	3	1	283	113.2 (8.6)

EFDDLSS.D18



Table 27. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Dewey Lake (1,100 acres). SE=standard error.

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
1987	44.6		38.3		12.0		0.6		0.0		95.4	
1988	84.0		40.7		26.7		2.0		0.0		154.7	
1989	75.0		27.5		10.8		7.0		0.0		120.7	
1990	58.8		68.0		32.0		11.4		0.6		171.4	
1991	73.8		50.6		18.4		3.5		0.2		146.4	
1992	57.4		64.1		17.2		7.4		0.2		146.1	
1993	43.7		71.8		15.6		8.8		0.8		140.0	
1994							no sample					
1995	46.6		59.6		28.5		3.6		0.0		138.3	16.9
1996							no sample					
1997	15.3		53.3		32.3		11.0		1.0		112.0	12.2
1998	20.1		51.4		43.2		7.2		0.6		122.0	8.5
1999	78.9		34.6		39.5		12.8		0.5		165.8	12.7
2000	62.2	4.7	44.0	4.4	23.6	3.5	10.3	1.3	0.1		140.1	9.5
2001	150.1	17.2	57.8	5.7	26.9	2.7	17.8	1.6	0.6		252.6	22.8
2002							no sample					
2003	71.1	10.1	55.6	4.4	23.1	1.8	22.0	2.1	0.7		171.8	14.6
2004	96.2	11.9	34.7	3.8	20.0	3.2	17.5	2.6	1.0		168.3	13.9
2005	39.3	5.0	59.2	6.3	31.0	3.2	24.5	1.9	0.3		153.9	12.8
2006	32.3	5.7	66.4	8.6	24.2	3.6	24.9	3.6	0.7		147.8	10.0
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
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
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
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
2011							no sample					
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
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
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
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
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
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
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

EFDDLSS.D87-D18

BBRPSDEW.D03-D05

Table 28. PSD and RSD values for each species of black bass collected in each area of Dewey Lake (1,100 acres) during spring 2018. Numbers in parentheses are 95% confidence intervals.

Area	Largemouth bass			Spotted bass		
	No.	PSD	RSD <sub>15</sub>	No.	PSD	RSD <sub>14</sub>
Lower	107	57 (48-66)	21 (13-28)	26	31 (13-49)	4 (0-11)
Upper	101	66 (57-76)	36 (26-45)	1	0	0
Total	208	62 (55-68)	28 (22-34)	27	30 (12-47)	4 (0-11)

EFDDLSS.D18

Table 29. Population assessment for largemouth bass collected from Dewey Lake (1,100 acres). Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year										
	2008	2009	2010	2012	2013	2014	2015	2016	2017	2018	
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 (11.3)	2 (11.3)	2 (11.3)	2 (11.8)
Spring CPUE age-1	4 (49.5)	4 (55.6)	2 (16.4)	2 (19.5)	2 (20.8)	1 (10.8)	2 (17.2)	2 (20.5)	2 (21.3)	2 (21.3)	3 (29.2)
Spring CPUE 12.0-14.9 in	2 (21.6)	2 (18.8)	1 (12.3)	4 (34.9)	4 (54.0)	4 (31.2)	4 (43.2)	4 (47.0)	2 (20.0)	2 (20.0)	3 (28.0)
Spring CPUE $\geq$ 15.0 in	3 (16.3)	3 (14.4)	2 (8.3)	2 (10.7)	3 (17.2)	4 (20.0)	4 (24.0)	4 (24.0)	4 (23.3)	4 (23.3)	4 (23.2)
Spring CPUE $\geq$ 20.0 in	3 (0.8)	3 (0.5)	1 (0.0)	2 (0.4)	3 (1.2)	3 (1.2)	3 (0.8)	3 (1.0)	4 (1.3)	4 (1.3)	4 (1.6)
Total score	14	14	8	12	14	14	15	15	14	14	16
Assessment rating	Good	Good	Poor	Fair	Good	Good	Good	Good	Good	Good	Good
Instantaneous mortality (z)	0.56	0.48	0.77	0.64							
Annual mortality (A)	42.80	38.40	53.90	35.80							
EFDDLSS.D08-D10, D13-D18											
EFDDLAS.D08											
EFDDLAF.D13, D18											

Table 30. Length-frequency distribution of each black bass species captured during 2.25 hours of 15-minute nocturnal electrofishing runs at Dewey Lake (1,100 acres) on 21 September 2018. Standard errors are in parentheses.

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		
Lower	Spotted bass		2	3	1	3	2	1	3	3											18	18.0 (12.3)
	Largemouth bass		12	19	17	7	2	11	5	2	1	5	2	2	2		2				89	89.0 (10.3)
Upper	Spotted bass				1				1												2	1.6 (1.6)
	Largemouth bass	1	7	9	23	3	5	17	13	21	8	2	1	9	5	3	6	5		2	2	142
Total	Spotted bass		2	3	2	3	2	1	4	3											20	8.9 (5.8)
	Largemouth bass	1	19	28	40	10	7	28	18	23	9	7	3	11	7	3	8	5	0	2	2	231

EFDDLFSF.D18

Table 31. Mean back-calculated length (in) at each annulus for largemouth bass collected from Dewey Lake (1,100 acres) on 21 September 2018, including 95% confidence intervals.

Year class	No.	Age					
		1	2	3	4	5	6
2017	21	5.7					
2016	13	6.5	9.4				
2015	11	5.2	9.5	11.8			
2014	4	5.7	9.1	11.5	13.8		
2013	2	5.7	10.4	12.9	14.8	16.4	
2012	2	6.5	9.4	11.1	13.3	15.0	16.6
Mean		5.8	9.5	11.8	13.9	15.7	16.6
Smallest		3.9	7.6	9.7	13.1	14.8	16.3
Largest		7.7	10.9	13.7	15.5	16.8	16.8
STD error		0.1	0.1	0.3	0.3	0.5	0.2
95% CI LO		5.6	9.2	11.3	13.4	14.8	16.1
95% CI HI		6.1	9.8	12.3	14.5	16.6	17.0

Intercept = 0

EFDDLAF.D18

Table 32. Indices of year class strength at age-0 and age-1 and mean lengths (in) of age-0 largemouth bass at Dewey Lake (1,100 acres) from electrofishing. CPUE=fish/hr, SE=standard error.

Year class	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2002	5.0	0.0	75.6	14.2	37.6	9.4	61.2	9.4
2003	4.9	0.1	38.9	10.6	15.1	3.8	79.7	10.5
2004	5.2	0.1	45.2	7.1	25.4	4.6	24.8	4.1
2005	4.4	0.1	58.7	16.1	16.9	6.6	27.9	5.5
2006	5.1	0.1	39.0	9.9	21.3	5.8	49.0	9.2
2007	4.8	0.1	54.3	12.8	21.2	4.2	49.5	10.0
2008	5.0	0.1	54.9	14.3	30.0	7.4	55.6	12.1
2009	5.3	0.1	45.7	8.8	28.8	5.2	16.4	3.3
2010	5.0	0.1	67.6	14.2	38.4	8.5	no sample	
2011	4.6	0.1	37.2	9.3	14.8	3.6	19.5	4.4
2012	4.4	0.1	26.0	5.3	7.2	1.7	20.8	3.9
2013	3.4	0.2	25.2	6.3	3.2	0.8	10.8	2.8
2014	3.9	0.1	36.8	8.3	10.0	4.3	17.2	3.5
2015	3.7	0.2	38.7	9.9	7.3	3.0	20.5	3.2
2016	4.9	0.1	33.5	5.1	17.0	3.5	21.3	5.8
2017	4.6	0.1	50.0	9.4	16.5	3.6	29.2	9.0
2018	4.9	0.1	43.6	7.8	22.2	3.1		

BBRPSDEW.D03-D05  
 BBRDLSF.D02  
 BBRWRDEW.D03-D04  
 BBRSCDEW.D03  
 EFDDLFSF.D05-D16  
 EFDDLSS.D06-D10, D12-D18  
 EFDDLAS.D08  
 EFDDLAF.D13, D18

Table 33. Length frequency and CPUE (fish/nn) for white crappie collected at Dewey Lake (1,100 acres) in 10 net-nights from 13-14 November 2018. Standard errors are in parentheses.

Species	Inch class										Total	CPUE	SE
	3	4	5	6	7	8	9	10	11	12			
WC	3	2	17	44	54	71	41	22	17	5	276	27.6	(6.9)
BC			1	53	237	34	2				327	32.7	(11.7)

WC=white crappie  
 BC=black crappie  
 EFDDLCTF.D18

Table 34. PSD and RSD<sub>10</sub> values calculated for crappie collected in trap nets at Dewey Lake (1,100 acres) during November 2018; 95% confidence intervals are in parentheses.

Species	No. fish $\geq$ 5.0 in	PSD	RSD <sub>10</sub>
WC	271	58 (52-63)	16 (12-21)
BC	327	11 (8-14)	

WC = white crappie  
 BC = black crappie  
 EFDDLCTF.D18

Table 35. Mean back-calculated length (in) at each annulus for white crappie collected from Dewey Lake (1,100 acres) in November 2018, including 95% confidence intervals.

Year class	No.	Age					
		1	2	3	4	5	6
2017	31	4.1					
2016	9	4.6	6.8				
2015	43	4.7	6.7	8.2			
2014	23	4.7	6.9	8.2	9.6		
2012	1	4.4	6.6	8.1	9.2	10.1	11.2
Mean		4.5	6.8	8.2	9.6	10.1	11.2
Smallest		3.4	5.3	6.2	7.5	10.1	11.2
Largest		5.7	8.5	10.8	11.7	10.1	11.2
STD error		0.1	0.1	0.1	0.2		
95% CI LO		4.4	6.7	8.0	9.1		
95% CI HI		4.6	6.9	8.4	10.0		

Intercept = 0  
 EFDDLCAF.D18

Table 36. Mean back-calculated length (in) at each annulus for black crappie collected from Dewey Lake (1,100 acres) in November 2018, including 95% confidence intervals.

Year class	No.	Age						
		1	2	3	4	5	6	7
2017	1	3.5						
2016	3	3.6	5.3					
2015	12	3.4	5.1	6.2				
2014	9	3.4	5.2	6.2	6.9			
2013	14	3.6	5.6	6.6	7.2	7.7		
2012	7	3.7	5.7	6.8	7.3	7.6	7.9	
2011	2	3.6	5.7	7.1	7.8	8.3	8.7	8.9
Mean		3.6	5.4	6.5	7.2	7.7	8.1	8.9
Smallest		3.0	4.7	5.6	6.2	6.7	7.6	8.8
Largest		4.1	6.2	7.3	7.9	8.4	8.8	9.0
STD error		0.0	0.1	0.1	0.1	0.1	0.1	0.1
95% CI LO		3.5	5.3	6.3	7.0	7.6	7.8	8.7
95% CI HI		3.6	5.5	6.6	7.3	7.9	8.4	9.1

Intercept = 0

EFDDLCAF.D18

Table 37. Age frequency and CPUE (fish/nn) of white crappie collected by trap netting for 10 net-nights at Dewey Lake (1,100 acres) in November 2018; numbers in parentheses are standard errors.

Age	Inch class										Total	Age%	CPUE		
	3	4	5	6	7	8	9	10	11	12					
0	3	2										5	2	0.5	(0.3)
1			17	36	22							75	27	7.4	(2.4)
2				6	11	13	5					35	12	3.3	(0.9)
3				3	22	50	25	13	8	1		122	44	12.1	(2.8)
4						8	11	9	9	3		40	15	4.1	(0.8)
5												0			
6										1		1	0	0.1	(0.0)
Total	3	2	17	45	55	71	41	22	17	5		278			
%	1	1	6	16	20	26	15	8	6	2					

CPUE of  $\geq 8.0$  in (quality size) = 15.6 fish/nn

CPUE of  $\geq 10.0$  in (preferred size) = 4.4 fish/nn

EFDDLCAF.D18

EFDDLCTF.D18

Table 38. Age frequency and CPUE (fish/nn) of black crappie collected by trap netting for 10 net-nights at Dewey Lake (1,100 acres) in November 2018; numbers in parentheses are standard errors.

Age	Inch class					Total	Age%	CPUE	
	5	6	7	8	9				
0						0			
1	1					1	0	0.1	(0.1)
2		12				12	4	1.2	(0.6)
3		41	28			69	21	6.9	(2.8)
4			125			125	38	12.6	(4.5)
5			70	20		90	28	9.0	(3.0)
6			14	14		28	8	2.8	(0.9)
7					2	2	1	0.2	(0.1)
Total	1	53	237	34	2	327			
%	0	16	72	10	1				

CPUE of  $\geq 8.0$  in (quality size) = 3.6 fish/nn

CPUE of  $\geq 10.0$  in (preferred size) = 0.0 fish/nn

EFDBLCAF.D18

EFDBLCTF.D18

Table 39. Population assessment scores for white crappie collected from Dewey Lake (1,100 acres). Actual assessment values are in parentheses. Scoring based on statewide assessment.

Parameter	Year						
	2002	2008	2010	2012	2014	2016	2018
CPUE (excluding age 0)	4 (48.2)	4 (43.9)	4 (15.6)	4 (26.0)	4 (27.5)	4 (64.4)	4 (27.1)
CPUE age 1	4 (14.4)	3 (6.62)	4 (7.8)	4 (15.2)	3 (4.8)	4 (24.9)	3 (7.4)
CPUE age 0	4 (27.5)	3 (2.6)	4 (4.8)	4 (5.1)	3 (2.2)	4 (11.0)	2 (0.5)
CPUE $\geq 8.0$ in	3 (4.8)	4 (15.5)	4 (8.7)	4 (10.1)	4 (11.3)	4 (14.1)	4 (15.6)
Mean length age 2 at capture	1 (6.3)	1 (7.0)	2 (9.1)	3 (9.6)	1 (8.1)	2 (8.2)	1 (8.1)
Instantaneous mortality (z)	1.27	0.49	0.50	0.65	1.40	1.11	0.85
Annual mortality (A)	72.00	38.80	39.50	47.60	75.40	67.00	57.30
Total score	16	15	18	19	15	18	14
Assessment rating	Good	Good	Excellent	Excellent	Good	Excellent	Good
EFDDLCTF.D02-D18							
EFDDLCAF.D02-D18							



Table 40. Population assessment scores for black crappie collected from Dewey Lake (1,100 acres). Actual assessment values are in parentheses. Scoring based on statewide assessment.

Parameter	Year						
	2002	2008	2010	2012	2014	2016	2018
CPUE (excluding age 0)	3 (6.1)	4 (17.4)	2 (2.0)	4 (16.0)	4 (20.5)	4 (19.9)	4 (32.7)
CPUE age 1	2 (1.3)	3 (2.9)	1 (0.1)	2 (0.7)	1 (0.5)	3 (2.6)	1 (0.1)
CPUE age 0	3 (1.6)	4 (2.4)	3 (1.0)	2 (0.3)	1 (0.2)	2 (0.8)	1 (0.0)
CPUE $\geq$ 8.0 in	1 (0.1)	3 (1.8)	2 (0.7)	4 (5.8)	3 (3.0)	1 (0.6)	4 (3.6)
Mean length age 2 at capture	1 (5.0)	1 (6.5)	1 (6.7)	1 (6.8)	1 (6.6)	1 (5.8)	1 (6.6)
Instantaneous mortality (z)	1.25	0.35	0.06	0.33	0.45	0.33	0.86
Annual mortality (A)	71.40	29.60	6.20	28.10	36.10	38.40	57.6
Total score	10	15	9	13	10	11	11
Assessment rating	Fair	Good	Fair	Good	Fair	Fair	Fair
EFDDLCTF.D02-D18							
EFDDLCAF.D02-D18							

Table 41. Fish harvest statistics derived from a daytime creel survey at Dewey Lake (1,100 acres) from 1 March through 31 October 2018. Standard errors are in parentheses.

<u>Fishing trips</u>	
No. of fishing trips	7,004
No. of fishing trips per acre	6.37
<u>Fishing pressure</u>	
Total angler hours	27,218 (1,286.23)
Man-hours/acre	24.74
<u>Catch/harvest</u>	
No. of fish caught	32,136 (4,679.10)
No. of fish harvested	7,124 (1,446.97)
Lb of fish harvested	3,889
<u>Harvest rates</u>	
Fish/hour	0.26
Fish/acre	6.48
Lb/acre	3.54
<u>Catch rate</u>	
Fish/hour	1.16
Fish/acre	29.21
<u>Miscellaneous characteristics (%)</u>	
Male	87.65
Female	12.35
Resident	99.02
Non-resident	0.98
<u>Method (%)</u>	
Still fishing	42.85
Casting	51.04
Trolling	1.41
Jugging/Trotline	4.10
Hand Grabbing	0.61
<u>Mode (%)</u>	
Boat	80.20
Bank	19.50
Dock	0.31

Table 42. Fish harvest statistics derived from a creel survey at Dewey Lake (1,100 acres) from 1 March through 31 October 2018.

	Common carp	Blue catfish	Channel catfish	Flathead catfish	White bass	Rock bass	Warmouth	Green sunfish	Bluegill	Muskel- lunge	Redear sunfish	Spotted bass	Largemouth bass	White crappie	Black crappie
No. caught	43	386	1513	32	260	172	224	430	5,371	112	45	139	7,227	14,596	1581
(per acre)	(0.039)	(0.351)	(1.375)	(0.029)	(0.236)	(0.157)	(0.204)	(0.391)	(4.882)	(0.102)	(0.041)	(0.126)	(6.570)	(13.270)	(1.440)
No. harvested	9	265	700	17	8		15	120	1,046		5	21	40	4,404	469
(per acre)	(0.008)	(0.241)	(0.636)	(0.015)	(0.007)		(0.014)	(0.109)	(0.951)		(0.005)	(0.019)	(0.036)	(4.004)	(0.427)
% of total no. harvested	0.12	3.72	9.82	0.24	0.11		0.21	1.69	14.68		0.07	0.30	0.56	61.82	6.59
Lb harvested	24.1	644.2	1319.1	202.3	5.9		1.9	6.0	112.7		1.2	9.3	90.1	1331.6	133.4
(per acre)	(0.022)	(0.586)	(1.199)	(0.184)	(1.211)		(0.002)	(0.005)	(0.102)		(0.001)	(0.008)	(0.082)	(0.121)	(0.121)
% of total lb harvested	0.62	16.57	33.92	5.20	0.15		0.05	0.15	2.90		0.03	0.24	2.32	34.24	3.43
Mean length (in)	18.0	18.2	17.3	31.5	12.0		5.7	4.5	5.5		7.0	10.3	16.4	8.8	8.5
Mean weight (lb)	2.75	2.18	1.71	12.61	0.73		0.13	0.07	0.11		0.24	0.49	2.31	0.30	0.31
			Carp group	Catfish group	Morone group	Panfish group	Black bass group	Crappie group	Anything						
No. of fishing trips for that species			622	4	43	3,471	1,315	1,525							
% of all trips			8.91	0.06	0.61	49.73	18.84	21.85							
Hours fished for that species			2,415.42	17.36	166.69	13,488.46	5,109.84	5,926.53							
(per acre)			(2.20)	(0.02)	(0.15)	(12.26)	(4.65)	(5.39)							
No. harvested fishing for that species			923		269	40	4,670.00								
Lb harvested fishing for that species			2022.90		42.10	81.00	1388.40								
No./hour harvested fishing for that species			0.269		1.500	0.003	0.830								
% success fishing for that species			46.30	0.00	33.33	0.65	45.45	6.50							

Table 43. Species composition and length distribution of each species of fish harvested (H) and released (R) from a creel survey on Dewey Lake (1,100 acres) from 1 March to 31 October 2018.

Species		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	30	31	32	33	34	35	38		
Common carp	H																	8																				
	R										7		7		7								7	6														
Blue catfish	H										18		18	12	18	18	60		42	12	36		6	6		6		6	6									
	R								14			21	7	14	29	21	7	8																				
Channel catfish	H						6			6	31	19	50	62	81	87	130	37		43	43	56	31			6		6							6			
	R	6				18	12	30	42	84	84	187	108	48	36	72	18	18	6	6							12	12	6		7							
Flathead catfish	H																																		11		5	
	R												5														5		5									
White bass	H											8																										
	R					6	19			19	32	39	32	52	39	6	7																					
Rock bass	H																																					
	R			36	50	43	36	7																														
Warmouth	H			5		5	4																															
	R			86	102	21																																
Green sunfish	H		44	49	11	16																																
	R	6	40	218	46																																	
Bluegill	H		38	217	268	242	268	12																														
	R	18	203	1347	1,704	714	252	86																														
Muskellunge	H																																					
	R											7	15	15						15		7		22	7	7	7										10	
Redear sunfish	H						4																															
	R				16		24																															
Spotted bass	H									7	7	7																										
	R					13	7	26	13	33	25																											
Largemouth bass	H														7	13	19																					
	R							644	388	1357	1052	1336	831	478	395	256	242	90	62	42		13																
Black crappie	H				16	97	202	97	24	33																												
	R			79	292	520	220																															
White crappie	H				7	148	497	1,194	1,157	801	430	96	67		7																							
	R			157	1,525	4,539	3,081	494	112	157	97	7		7		7	9																					

Table 44. Monthly catfish (flathead, channel, and blue) angling success at Dewey Lake (1,100 acres) during the 2018 creel survey period.

	Total no. of catfish caught	Total no. of catfish harvested	No. of 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
Mar	69	59	16.5	64.13	69	1.40	59	1.20
Apr	210	114	41.87	162.71	202	1.05	114	0.59
May	306	153	115.19	447.60	258	0.46	129	0.23
Jun	547	333	134.84	53.97	493	0.66	329	0.44
Jul	250	83	71.61	278.26	218	0.36	73	0.12
Aug	169	90	112.30	436.38	147	0.29	90	0.18
Sep	327	123	102.72	399.17	293	0.45	109	0.17
Oct	52	26	26.56	103.21	41	0.51	20	0.25
Total	1,931	981	621.59	2,415.42	1,721	0.50	923	0.27
Mean						0.65		0.40

Table 45. Monthly black and white crappie angling success at Dewey Lake (1,100 acres) during the 2018 creel survey period.

	Total no. of crappie caught	Total no. of crappie harvested	No. of crappie fishing trips	Hours fished by crappie anglers	Crappie caught by crappie anglers	Crappie caught/hour by crappie anglers	Crappie harvested by crappie anglers	Crappie harvested/hour by crappie anglers
Mar	2,842	1,076	173.28	673.33	2,813	4.20	1,076	1.61
Apr	3,645	780	382.83	1,487.64	3,488	2.27	780	0.51
May	5,443	1524	370.60	1,440.10	5,104	3.75	1419	1.04
Jun	1,313	298	104.50	406.08	1,254	2.69	289	0.62
Jul	364	151	30.30	117.72	312	2.36	130	0.98
Aug	248	90	13.37	51.59	231	3.13	90	1.22
Sep	1,084	532	120.59	468.59	1,036	1.63	525	0.83
Oct	1,237	423	119.52	464.43	1,113	1.98	361	0.64
Total	16,176	4874	1,314.99	5,109.48	15,351		4670	
Mean						2.75		0.93

Table 46. Monthly black bass angling success at Dewey Lake (1,100 acres) during the 2018 creel survey period.

	Total no. of black bass caught	Total no. of black bass harvested	No. of black bass fishing trips	Hours fished by bass anglers	Black bass caught by bass anglers	Black bass caught/hour by bass anglers	Black bass harvested by bass anglers	Black bass harvested/hour by bass anglers
Mar	385	0	280.54	1090.16	385	0.32	0	0.00
Apr	1,569	0	1094.66	4253.73	1,437	0.32	0	0.00
May	2,266	40	831.34	3230.50	2,072	0.59	24	0.01
Jun	990	10	259.57	1008.65	851	0.75	10	0.01
Jul	364	0	256.13	995.31	260	0.28	0	0.00
Aug	580	6	328.88	1277.98	484	0.40	6	0.01
Sep	839	0	317.10	1232.21	784	0.82	0	0.00
Oct	356	5	102.92	399.92	263	0.65	0	0.00
Total	7,365	61	3471.14	13,488.46	6,536		40	
Mean						0.51		0.00

Table 47. Monthly white bass (morone) angling success at Dewey Lake (1,100 acres) during the 2018 creel survey period.

	Total no. of morone caught	Total no. of morone harvested	No. of morone fishing trips	Hours fished by morone anglers	Morone caught by morone anglers	Morone caught/hour by morone anglers	Morone harvested by morone anglers	Morone harvested/hour by morone anglers
Mar	10							
Apr	61							
May	48	8.06						
Jun	80							
Jul	21							
Aug	6							
Sep	30		4.47	17.36	27	4.00		
Oct								
Total	256	8.06	4.47	17.36	27	4.00		
Mean						4.00		

Table 48. Catch and harvest statistics derived from a creel survey at Dewey Lake (1,100 acres) for largemouth bass, white and black crappie, and blue, channel and flathead catfish caught and released by all anglers from 1 March to 31 October 2018.

	Largemouth bass				White crappie				Black crappie			
	Harvest	Catch and release		Total	Harvest	Catch and release		Total	Harvest	Catch and release		Total
		12-14.9 in	≥15.0 in			≤8.9 in	≥9.0 in			≤8.9 in	≥9.0 in	
Total number	39.8	2645.0	1100.9	7226.6	4404.2	9796.0	396.2	14596.5	469.4	1111.2	0.0	1580.6
% harvested by number	65.1				90.4				9.6			
Total weight (lb)	90.1	2330.0	969.7	6421.8	1331.6	957.0	40.2	2328.8	133.4	97.2	0.0	230.6
% harvested by weight	90.6				90.9				9.1			
Mean length (in)	16.4				8.8				8.5			
Mean weight (lb)	2.31				0.30				0.31			
Rate (fish/hour)	0.002				0.150				0.010			

	Blue catfish				Channel catfish				Flathead catfish			
	Harvest	Catch and release		Total	Harvest	Catch and release		Total	Harvest	Catch and release		Total
		8.0-11.9 in	≥12.0 in			8.0-11.9 in	≥12.0 in			8.0-11.9 in	≥12.0 in	
Total number	264.7	14.0	107.2	385.9	700.0	240.0	536.5	1512.5	16.8	0.0	15.4	32.2
% harvested by number	27.0				71.3				1.7			
Total weight (lb)	644.2	13.0	99.0	756.2	1319.1	169.0	375.0	1888.1	202.3	0.0	78.5	280.8
% harvested by weight	29.7				60.9				9.3			
Mean length (in)	18.2				17.3				31.5			
Mean weight (lb)	2.20				1.70				12.60			
Rate (fish/hour)	0.011				0.028				0.001			

Table 49. Species composition, relative abundance and CPUE (fish/hr) of black bass collected in approximately 2.00 hours of 15-minute electrofishing samples at Fishtrap Lake (1,143 acres) on 27 September 2018; numbers in parentheses are standard errors.

Area	Species	Inch class																Total	CPUE	
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			18
Lower	Smallmouth bass			2		1					1							1	5	4.0 (2.2)
	Spotted bass	1	1	21	2			1	1	1	1	1	3						33	26.4 (9.3)
	Largemouth bass		23	115	97	29	4	9	8	5	13	6	6	5	5			2	327	261.6 (27.8)
Upper	Smallmouth bass																		0	1.0 (1.5)
	Spotted bass																		0	2.0 (1.6)
	Largemouth bass		9	46	34	16	5	4	3		3	2	2	1	1	1			127	169.3 (31.2)
Total	Smallmouth bass			2		1					1							1	5	2.5 (1.5)
	Spotted bass	1	1	21	2			1	1	1	1	1	3						33	16.5 (7.4)
	Largemouth bass		32	161	131	45	9	13	11	5	16	8	8	6	6	1	2		454	227.0 (25.8)

EFDLFSF.D18



Table 50. Indices of year class strength at age-0 and age-1 and mean lengths (in) of largemouth bass collected 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
2003	5.1	0.0	106.2	32.9	59.6	15.9	35.4	6.0
2004	5.0	0.0	256.0	51.1	122.7	23.9	61.5	10.2
2005	4.5	0.1	108.0	41.3	24.0	11.1	52.5	8.8
2006	5.0	0.1	72.7	14.1	36.5	8.0	28.3	4.5
2007	5.1	0.1	114.2	23.7	63.5	11.0	38.5	12.1
2008	4.6	0.1	75.3	25.9	26.3	9.5	44.2	10.7
2009	4.8	0.1	83.3	15.1	39.3	5.4	51.6	3.2
2010	5.2	0.1	111.6	16.4	61.6	8.4	no sample	
2011	5.1	0.1	119.4	26.9	69.1	13.3	50.8	8.2
2012	5.1	0.1	72.7	24.3	38.0	12.0	no sample	
2013	4.6	0.1	63.5	16.4	19.5	5.2	24.2	6.2
2014	4.8	0.1	54.0	8.8	21.2	3.6	22.1	3.1
2015	4.9	0.1	139.0	25.2	62.0	16.7	no sample	
2016	4.7	0.0	105.2	25.1	32.0	6.3	61.33*	17.9
2017	5.4	0.1	105.8	20.5	76.9	15.9	no sample	
2018	5.0	0.0	184.5	24.5	88.0	14.0		

\* Includes supplemental spring stocked fish

EFDLFSF.D03-D16  
 EFDLSS.D04-D18  
 EFDLLAS.D04, D10  
 EFDLLAF.D17

Table 51. Length frequency and gillnetting CPUE (fish/net-night) of hybrid striped bass collected in 3 net-nights at Fishtrap Lake (1,143 acres) on 4-5 December 2018; 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			
WB	1		1		4	19	2	13	13	7	3											63	21.0	(12.2)
HB			2	2	3				9	16	2		4	4	10	5	5	3	1	2		68	22.7	(5.8)

EFDLHGF.D18

HB=hybrid striped bass

WB=white bass

Table 52. Mean back-calculated length (in) at each annulus for hybrid striped bass collected from Fishtrap Lake (1,143 acres) in 2018, 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
2017	21	10.5				
2016	10	10.8	16.6			
2015	17	10.2	16.3	19.5		
2014	4	10.2	15.9	20.3	22.8	
2013	2	10.7	16.7	19.2	21.0	22.5
Mean		10.4	16.3	19.6	22.2	22.5
Smallest		7.5	13.5	17.2	20.8	22.4
Largest		13.4	22.5	25.6	23.8	22.6
Std error		0.2	0.3	0.3	0.4	0.1
95% CI LO		10.1	15.8	19.0	21.3	22.3
95% CI HI		10.8	16.8	20.3	23.1	22.7

intercept=0

EFDLHAF.D18

Table 53. Mean back-calculated length (in) at each annulus for white bass collected from Fishtrap Lake (1,143 acres) in 2018, 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	6	7
2017	19	7.4						
2016	6	8.6	12.7					
2015	12	7.7	12.2	13.7				
2014	4	7.0	10.9	12.7	14.3			
2013	4	6.6	10.6	12.2	13.1	13.9		
2012	1	8.0	12.3	14.1	15.2	16.3	16.5	
2011	1	7.5	11.0	12.5	13.3	14.0	14.5	14.8
Mean		7.5	11.8	13.2	13.8	14.3	15.5	14.8
Smallest		4.8	8.9	11.0	12.0	13.0	14.5	14.8
Largest		10.6	13.7	14.8	15.2	16.3	16.5	14.8
Std error		0.1	0.2	0.2	0.3	0.4	1.0	
95% CI LO		7.3	11.5	12.8	13.2	13.4	13.6	
95% CI HI		7.8	12.2	13.6	14.4	15.2	17.5	

intercept=0

EFDLHAF.D18

Table 54. Age frequency and CPUE (fish/net-night) of hybrid striped bass collected at Fishtrap Lake (1,143 acres) in December 2018; numbers in parentheses are standard error.

Age	Inch class															Total	Age%	CPUE			
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	24	25
0	2	2	2																6	9	2.0 (0.5)
1			1				9	16	2										28	41	9.3 (2.5)
2										4	3	2							9	14	3.1 (1.0)
3											1	8	5	5					19	27	6.2 (2.1)
4															1	1	2		4	6	1.3 (0.8)
5															2				2	3	0.7 (0.4)
6																					
Total	2	2	3				9	16	2	4	4	10	5	5	3	1	2		68		
%	3	3	4				13	24	3	6	6	15	7	7	4	1	3				

EFDLHAF.D18

EFDLHGF.D18

Table 55. Age frequency and CPUE (fish/net-night) of white bass collected at Fishtrap Lake (1,143 acres) in December 2018; numbers in parentheses are standard error.

Age	Inch class										Total	Age%	CPUE	
	6	7	8	9	10	11	12	13	14	15				16
0	1											1	2	0.3 (0.3)
1				4	19	2						25	40	8.3 (2.9)
2							4	2	2			8	13	2.6 (2.1)
3							7	4	4			15	25	5.3 (4.2)
4								3		2		5	8	1.6 (1.2)
5							2	3				5	8	1.7 (1.4)
6										2		2	2	0.5 (0.3)
7									1			1	2	0.3 (0.3)
Total	1			4	19	2	13	12	7	4		62		
%	2			6	31	3	21	21	11	5				

EFDLHAF.D18

EFDLHGF.D18

Table 56. Hybrid striped bass population assessment for fish gill netted at Fishtrap Lake (1,143 acres) from 2004 - 2018, CPUE = fish/net-night. Actual values are in parentheses. Scoring based on statewide assessment.

Parameters	Year						
	2004	2005	2007	2009	2011	2014	2018
CPUE (excluding age 0)	3 (15.0)	4 (29.1)	4 (26.8)	4 (77.7)	4 (67.3)	4 (53.3)	3 (20.7)
Mean length age 2+ at capture	1 (13.7)	3 (17.3)	3 (17.6)	3 (17.4)	2 (16.9)	4 (18.5)	4 (19.4)
CPUE $\geq$ 15.0 in	3 (5.0)	4 (14.9)	4 (17.8)	4 (58.0)	4 (48.3)	4 (26.3)	4 (17.3)
CPUE age-1	2 (4.6)	3 (9.4)	3 (9.3)	4 (20.3)	4 (16.9)	4 (27.7)	4 (9.3)
Total Score	9	14	14	15	14	16	15
Assessment rating	Fair	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Instantaneous mortality	0.45	0.62	0.44	1.01	0.62	0.40	0.61
Annual mortality	36.00	46.40	35.60	63.40	46.10	33.20	45.60

EFDLHAF.D04-D18

EFDLHGF.D04-D18

Table 57. White bass population assessment for fish gill netted at Fishtrap Lake (1,143 acres) during 2018. CPUE = fish/net-night. Actual values are in parentheses. Scoring based on statewide assessment.

Parameters	
CPUE (excluding age 0)	4 (19.7)
Mean length age 2+ at capture	4 (14.5)
CPUE $\geq$ 12.0 in	4 (12.7)
CPUE age-1	4 (8.33)
Total Score	16
Assessment rating	Excellent
Instantaneous mortality	0.49
Annual mortality	38.50

EFDLHAF.D18

EFDLHGF.D18

Table 58. Number of fish and relative weight (Wr) for each length category of morones collected at Fishtrap Lake (1,143 acres) on 5 December 2018. Numbers in parentheses are standard errors.

<7.9 in	8.0-11.9 in		Hybrid striped bass				Total	
	No.	Wr	12.0-14.9 in		≥15.0 in		No.	Wr
			No.	Wr	No.	Wr		
	7	90.33 (2.09)	8	90.04 (2.79)	42	90.53 (1.14)	57	90.44 (0.94)

≤5.9 in	6.0-8.9 in	White bass				Total	
		9.0-11.9 in		≥12.0 in		No.	Wr
		No.	Wr	No.	Wr		
		19	95.59 (1.49)	23	93.22 (1.08)	43	94.14 (0.89)

EFDLHGF.D18

Table 59. Length frequency and CPUE (fish/hr) of black bass and walleye collected in 1.25 hours of 15-min electrofishing runs in Martins Fork Lake (330 acres) on 10 May 2018; numbers in parentheses are standard errors.

Species	Inch class													Total	CPUE	
	3	4	5	6	7	8	9	10	11	12	13	14	15			
LMB	1	5	9	6	3	25	17	3	3	2	6	11	8	99	79.2	(8.7)
SB		6	3		7	12	6	3	2		1			40	32.0	(7.7)
SMB									1					1	0.8	(0.8)
Coosa			1											1	0.8	(0.8)
Walleye								2	2		3	1		8	6.4	(2.7)

LMB = largemouth bass

SB = spotted bass

SMB = smallmouth bass

EFDMLLSS.D18

Table 60. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Martins Fork Lake (330 acres). S.E. = standard error.

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
2003	14.0	3.7	22.0	3.8	3.3	1.2	5.3	2.0	0.0		68.0	15.7
2004	2.7	2.7	89.3	19.2	4.0	2.3	5.3	3.5	0.0		101.3	26.8
2005	4.8	2.3	23.2	6.0	17.6	4.8	4.8	2.0	0.0		50.4	10.8
2006	9.3	2.0	19.9	6.0	13.3	3.0	9.3	2.7	0.7		51.7	10.7
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
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
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
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
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
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
2013							no sample					
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
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
2016							no sample					
2017							no sample					
2018	19.2	7.7	38.4	3.7	15.2	3.9	6.4	1.6	0.0		79.2	8.7

EFDMLLSS.D03-D18

Table 61. PSD and RSD values obtained for each black bass species taken in spring nocturnal electrofishing samples in Martins Fork Lake (330 acres) in May 2018; 95% confidence intervals are in parentheses.

Largemouth bass			Spotted bass			Smallmouth bass		
No.	PSD	RSD <sub>15</sub>	No.	PSD	RSD <sub>14</sub>	No.	PSD	RSD <sub>14</sub>
75	36	11	31	9	0	1	100	0
	(25-47)	(4-18)		(0-20)				

EFDMLLSS.D18

Table 62. Spring electrofishing population assessment for largemouth bass collected from Martins Fork Lake (330 acres). Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	2006	2007	2008	2009	2010	2011	2012	2014	2015	2018
Mean length age-3 at capture	4 (14.3)	4 (14.3)	4 (14.3)	4 (11.8)	4 (11.8)	4 (11.8)	4 (11.8)	3 (10.9)	3 (10.9)	3 (10.9)
Spring CPUE age 1	2 (10.0)	2 (10.1)	2 (10.0)	1 (7.2)	1 (4.8)	2 (11.2)	2 (8.8)	3 (22.0)	3 (22.4)	2 (17.6)
Spring CPUE 12.0-14.9 in	1 (13.3)	2 (15.7)	2 (20.2)	1 (9.6)	1 (8.0)	2 (16.8)	1 (5.6)	1 (11.0)	3 (40.8)	2 (15.2)
Spring CPUE $\geq$ 15.0 in	2 (9.3)	3 (21.1)	3 (19.4)	2 (11.2)	3 (19.2)	3 (16.0)	2 (10.4)	2 (11.0)	3 (20.8)	2 (6.4)
Spring CPUE >20.0 in	2 (0.7)	3 (1.6)	2 (0.8)	3 (1.6)	2 (0.8)	2 (0.8)	2 (0.8)	2 (1.0)	3 (1.6)	1 (0.0)
Total score	11	14	13	11	11	13	11	11	15	10
Assessment rating	Fair	Good	Good	Fair	Fair	Good	Fair	Fair	Good	Fair
Instantaneous mortality (z)	0.81	0.80	0.48	0.54	0.37	0.33	0.54			
Annual mortality (A)	55.70	55.10	38.40	41.60	31.30	28.40	41.60			

EFDMLLSS.D03-D12, D14-D15, D18

EFDMLLAS.D03, D09

EFDMLLAF.D14



Table 63. Length frequency and CPUE (fish/hr) of black bass and walleye collected at Martins Fork Lake (330 acres) during 1.0 hour of 15-minute nocturnal electrofishing samples on 25 September 2018; numbers in parentheses are standard errors.

Species	Inch class										Total	CPUE
	4	5	6	7	8	9	10	11	12			
SMB		1						1			2	2.0 (1.2)
SB	2	1	1	8	10	4	2				28	28.0 (13.0)
LMB	23	27	28	1	5	7	5	5	1		102	102.0 (10.7)
Coosa											0	0.0
Walleye											0	0.0

SMB = smallmouth bass

SB = spotted bass

LMB = largemouth bass

EFDMLLSF.D18

Table 64. Electrofishing indices of year class strength at age-0 and age-1 and mean lengths (in) of largemouth bass collected at Martins Fork Lake (330 acres); CPUE = fish/hr, SE = standard error.

Year class	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2002	5.5	0.1	34.4	8.6	25.6	7.9	15.3	3.6
2003	no fall sample						77.5	18.5
2004	no fall sample						24.6	5.9
2005	4.4	0.2	32.0	4.3	10.0	2.6	10.0	2.3
2006	4.5	0.1	38.4	14.5	11.2	3.2	10.1	3.4
2007	4.6	0.2	28.7	8.7	10.4	3.0	10.0	5.1
2008	4.4	0.2	31.9	14.3	10.3	2.7	7.2	2.9
2009	4.3	0.2	23.2	8.3	7.2	2.3	4.8	2.0
2010	5.2	0.2	40.0	11.6	26.7	9.3	11.2	3.4
2011	4.7	0.1	20.0	6.8	7.2	1.5	8.8	2.7
2012	4.8	0.2	28.8	4.6	13.6	3.9	no sample	
2013	4.0	0.2	21.0	6.6	6.0	1.2	22.0	5.3
2014	4.9	0.1	39.2	11.8	21.6	8.2	22.4	4.1
2015	4.6	0.1	59.0	24.4	18.0	7.4	no sample	
2016	4.5	0.1	67.0	26.5	15.0	9.0	no sample	
2017	4.5	0.1	95.0	24.6	25.0	4.4	17.6	7.4
2018	5.4	0.1	67.0	11.1	44.0	8.2		

EFDMLLSF.D02-D18

EFDMLLSS.D03-D15

EFDMLLAS.D03, D09

EFDMLLAF.D14

Table 65. Length frequency and electrofishing CPUE (fish/hr) of largemouth bass collected at Pan Bowl Lake (98 acres) during 1.25 hours of 15 minute daytime runs on 4 May 2018. SE=standard error.

Inch class														Total	CPUE	SE					
4	5	6	7	8	9	10	11	12	13	14	15	16	17								
40	49	26	2	21	54	95	40	6	2				2	1	1		1	2	342	273.6	31.7

EFDPBLSS.D18

Table 66. Spring daytime electrofishing catch-per-unit-effort (CPUE) for each length group of largemouth bass collected at Pan Bowl Lake (98 acres). Nocturnal electrofishing was used 1992-2000. CPUE = fish/hour, SE = standard error.

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
1992	19.4		22.3		14.3		25.7		1.1		81.7	
1993	no data											
1994	no data											
1995	no data											
1996	20.0		56.0		9.0		14.0		2.0		99.0	27.4
1997	12.1		39.5		8.1		15.3		0.8		75.0	19.9
1998	26.0		20.0		5.0		10.0		3.0		61.0	20.6
1999	17.3		24.7		30.0		15.3		4.0		87.3	22.7
2000	34.0		52.0		18.0		34.7		8.7		138.7	21.8
2001	no data											
2002	no data											
2003	28.8	10.2	47.2	9.6	12.0	1.3	25.6	4.1	3.2		113.6	20.5
2004	no data											
2005	12.8	4.1	65.8	13.3	9.4	3.6	18.0	4.3	1.8		106.0	18.9
2006	no data											
2007	90.3	26.6	149.7	20.2	12.6	3.9	22.9	4.4	6.9	2.7	275.4	39.2
2008	28.0	10.0	91.0	15.6	21.5	6.4	18.0	4.7	7.0	1.8	158.5	26.9
2009	50.4	8.4	120.0	17.8	11.2	3.2	8.4	2.2	2.9	1.4	190.0	22.6
2010	72.0	22.5	105.0	19.4	7.0	2.8	10.0	2.9	2.0	1.3	194.0	32.1
2011	102.0	10.9	108.0	11.9	11.0	3.0	4.0	3.0	1.0	1.0	225.0	20.0
2012	37.0	10.7	81.0	13.9	3.0	2.1	2.0	2.0	1.0	1.0	123.0	21.9
2013	no data											
2014	81.3	16.2	86.7	15.7	0.0		1.3	1.3	0.0		169.3	24.6
2015	no data											
2016	75.4	9.1	148.6	23.4	16.0	3.9	9.1	2.7	4.6	1.6	249.1	23.9
2017	no data											
2018	93.6	18.0	168.0	21.1	6.4	2.4	5.6	3.0	2.4	1.6	273.6	31.7

EFDPLSS.D03-D18

Table 67. PSD and RSD<sub>15</sub> values for largemouth bass taken in spring electrofishing samples in Pan Bowl Lake (98 acres) on 4 May 2018; 95% confidence intervals are in parentheses.

No.	PSD	RSD <sub>15</sub>
225	7 (3-10)	3 (1-5)

EFDPLSS.D18

Table 68. Population assessment for largemouth bass collected during spring at Pan Bowl Lake (98 acres). Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	2005	2007	2008	2009	2010	2011	2012	2014	2016	2018
Mean length age 3 at capture	2 (10.5)	2 (10.5)	2 (10.5)	2 (10.5)	2 (10.5)	2 (10.5)	2 (10.5)	2 (10.5)	2 (10.5)	2 (10.5)
Spring CPUE age 1	1 (3.4)	4 (72.0)	2 (17.0)	3 (43.9)	3 (51.0)	4 (95.0)	2 (16.0)	4 (76.0)	4 (58.3)	4 (92.0)
Spring CPUE 12-14.9 in	1 (9.4)	1 (12.6)	2 (21.5)	1 (11.2)	1 (7.0)	1 (11.0)	1 (3.0)	1 (0.0)	2 (16.0)	1 (6.4)
Spring CPUE ≥ 15.0 in	3 (18.0)	3 (22.9)	3 (18.0)	2 (8.4)	2 (10.0)	1 (4.0)	1 (2.0)	1 (1.3)	2 (9.1)	1 (5.6)
Spring CPUE ≥ 20.0 in	3 (1.8)	4 (6.9)	4 (7.0)	3 (2.9)	3 (2.0)	2 (1.0)	2 (1.0)	1 (0.0)	4 (4.6)	3 (2.4)
Total score	10	14	13	11	11	10	8	9	14	11
Assessment rating	Fair	Good	Good	Fair	Fair	Fair	Poor	Fair	Good	Fair
Instantaneous mortality (z)	0.37	0.43	0.42	0.62	0.65	0.54	0.58	0.99	0.69	0.77
Annual mortality (A)	31.20	35.20	34.10	46.10	47.60	41.90	44.30	63.20	49.80	53.50

EFDPLSS.D04-D18

EFDPLAS.D07

Table 69. Length frequency and CPUE (fish/hr) of black bass collected in approximately 1.75 hours of 15-minute nocturnal electrofishing samples in Paintsville Lake (1,150 acres) on 16 May 2018; numbers in parentheses are standard errors.

Species/Area	Inch class																	Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Lower																			
SMB																		0	0.0
SB			1	1				1										3	3.0 (3.0)
LMB	1	25	24	26	18	3	12	17	7	10	5			2			1	151	151.0 (15.0)
Upper																			
SMB																		0	0.0
SB		1		1														2	2.7 (2.7)
LMB		5	9	3	3	12	14	9	3	6	2	1	2			2		71	94.7 (17.5)
Total																			
SMB																		0	0.0
SB		1	1	2				1										5	2.9 (1.9)
LMB	1	30	33	29	21	15	26	26	10	16	7	1	2	2		2	1	222	126.9 (15.4)

SMB = smallmouth bass

SB = spotted bass

LMB = largemouth bass

EFDPLLSS.D18

Table 70. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Paintsville Lake (1,150 acres). SE = standard error.

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
1988	6.8		10.6		1.6		0.3		0.0		19.3	
1989	15.4		16.0		3.4		0.9		0.0		36.3	
1990	34.0		31.3		2.7		2.0		0.0		70.0	
1991	26.6		33.1		12.0		0.4		0.4		72.0	
1992	16.4		44.0		21.3		0.7		0.0		82.4	
1993	16.4		26.3		22.5		2.8		0.6		68.0	
1994	34.0		47.4		26.6		3.6		0.3		111.6	15.6
1995							no sample					
1996							no sample					
1997	29.0		40.0		26.3		1.0		0.3		96.3	11.5
1998	25.7		87.7		26.3		0.0		0.0		139.7	17.9
1999	36.3		65.7		36.7		2.3		0.0		141.0	12.1
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
2018	64.6	17.1	43.4	7.3	13.1	2.1	4.0	1.6	0.0		126.9	15.4

EFDPLLSS.D88-D18

Table 71. 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 16 May 2018; 95% confidence intervals are in parentheses.

Area	Largemouth bass			Spotted bass		
	No.	PSD	RSD <sub>15</sub>	No.	PSD	RSD <sub>14</sub>
Lower	57	32 (19-48)	5 (0-11)	1	0	0
Upper	51	25 (13-38)	8 (0-15)			
Total	108	29 (20-37)	6 (2-11)	1	0	0

EFDPLLSS.D18

Table 72. Spring nocturnal electrofishing population assessment for largemouth bass collected in Paintsville Lake (1,150 acres). Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mean length age-3 at capture	2 (11.7)	2 (11.7)	2 (11.7)	2 (11.7)	1 (10.6)	2 (11.2)	2 (11.2)	2 (11.2)	2 (11.2)	2 (11.2)	2 (11.2)	2 (11.9)
Spring CPUE age-1	4 (44.0)	4 (51.5)	3 (35.6)	4 (58.1)	3 (35.6)	4 (68.8)	4 (64.9)	4 (63.7)	4 (90.7)	4 (71.2)	3 (39.2)	4 (56.6)
Spring CPUE 12.0-14.9 in	1 (11.1)	1 (9.8)	1 (6.2)	1 (13.3)	1 (9.4)	1 (9.9)	1 (4.6)	3 (24.8)	2 (17.8)	1 (9.2)	1 (6.4)	1 (13.1)
Spring CPUE $\geq$ 15.0 in	2 (6.5)	1 (4.0)	1 (2.3)	1 (5.6)	1 (3.7)	1 (2.1)	1 (4.0)	1 (4.3)	2 (10.7)	2 (10.4)	2 (6.4)	1 (4.0)
Spring CPUE $\geq$ 20.0 in	1 (0.0)	2 (0.4)	1 (0.0)	4 (1.9)	3 (1.1)	4 (1.3)	2 (0.3)	3 (0.8)	4 (2.7)	3 (1.2)	3 (0.8)	1 (0.0)
Total score	10	10	8	12	9	10	10	13	14	12	11	9
Assessment rating	Fair	Fair	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair
Instantaneous mortality (z)	1.16	1.17	1.12	1.18	0.57							
Annual mortality (A)	68.60	69.10	67.40	69.40	83.70							

EFDPLLSS.D07-D18  
EFDPLLAS.D06, D11  
EFDPLLAF.D12, D18



Table 73. Length frequency and CPUE (fish/hr) of black bass collected in 1.75 hours of 15-minute nocturnal electrofishing samples in Paintsville Lake (1,150 acres) on 25 October 2018; numbers in parentheses are standard errors.

Area/ Species	Inch class																		Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Lower																				
SMB																			0	0.0
SB																			1	1.0 (1.0)
LMB	1	8	8	19	20	9	18	16	8	4	5	2	2			1		1	122	122.0 (25.1)
Upper																				
SMB																			0	0.0
SB																			1	1.3 (1.3)
LMB	11	12	9	5	3	3	14	8	5	2	1	1			2		1	77	102.7 (25.5)	
Total																				
SMB																			0	0.0
SB																			2	1.1 (0.7)
LMB	12	20	17	24	23	12	32	24	13	6	6	3	2		2	1	1	1	199	113.7 (17.0)

SMB = smallmouth bass

SB= spotted bass

LMB = largemouth bass

EFDPLLSF.D18

Table 74. Mean back-calculated length (in) at each annulus for largemouth bass collected from Paintsville Lake (1,150 acres) on 25 October 2018, including 95% confidence intervals.

Year class	No.	Age						
		1	2	3	4	5	6	7
2017	24	5.4						
2016	16	5.6	8.8					
2015	9	5.8	9.3	11.9				
2014	3	5.0	8.3	10.2	11.5			
2013	1	5.7	10.0	12.6	14.9	16.9		
2012	3	5.5	9.4	11.2	12.9	14.4	15.3	
2011	1	6.2	9.1	11.2	13.5	15.6	17.0	18.2
Mean		5.5	9	11.5	12.7	15.1	15.7	18.2
Smallest		3.6	7.1	8.4	9.7	10.5	11.2	18.2
Largest		7.2	10.9	13.9	14.9	16.9	17.6	18.2
STD error		0.1	0.2	0.3	0.7	1.2	1.5	
95% CI LO		5.3	8.7	10.8	11.4	12.8	12.7	
95% CI HI		5.7	9.3	12.1	14.0	17.4	18.7	

Intercept = 0

EFDPLLAF.D18

Table 75. Nocturnal electrofishing indices of year class strength at age-0 and age-1 and mean lengths (in) of largemouth bass collected at Paintsville Lake (1,150 acres); CPUE = fish/hr.

Year class	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2002							95.2	20.1
2003	4.8	0.1	31.3	6.1	14.0	2.2	61.4	10.7
2004	5.1	0.1	65.7	10.8	37.3	8.6	75.6	29.2
2005	4.5	0.1	46.0	9.6	10.7	2.7	43.5	5.9
2006	4.9	0.1	72.4	12.0	33.6	5.1	44.0	8.4
2007	5.1	0.1	52.4	24.0	30.2	15.6	51.5	7.3
2008	4.6	0.1	24.8	8.8	8.1	5.2	35.6	9.7
2009	4.6	0.1	64.6	13.3	23.1	10.7	58.1	17.6
2010	4.6	0.1	86.4	19.5	31.5	6.9	35.6	6.7
2011	5.1	0.1	36.3	7.2	19.7	4.3	68.8	11.1
2012	5.0	0.1	58.1	10.6	32.3	7.3	64.9	5.0
2013	4.9	0.0	111.7	13.8	53.1	5.0	63.7	8.3
2014	4.8	0.1	60.0	11.0	27.0	7.3	90.7	7.4
2015	4.9	0.1	95.1	17.7	42.2	6.7	71.2	5.6
2016	5.0	0.1	70.0	6.3	34.0	8.6	39.2	6.1
2017	5.0	0.1	125.2	20.2	62.4	12.9	56.6	14.6
2018	4.6	0.1	50.9	9.8	22.9	7.8		

EFDPLLSF.D03-D18

EFDPLLSS.D02-D18

EFDPLLAS.D03, D06, D11

EFDPLLAF.D12, D18

Table 76. Species composition, relative abundance and CPUE (fish/hr) of black bass collected in approximately 3.0 hours of 15-minute electrofishing samples at Yatesville Lake (2,280 acres) on 14 May 2018; numbers in parentheses are standard errors.

Area	Species	Inch class																		Total	CPUE
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Lower	SB			1		1	2	1	1	1	1			1						9	6.0 (4.5)
	LMB	1	1	19	42	33	9	35	25	20	9	8	9	5	5	2	2	1			226
Upper	SB						1			1										2	0.0
	LMB			12	27	12	10	41	27	25	11	10	19	18	12	12	5	1	1	1	244
Total	SB			1		1	3	1	1	2	1			1						11	3.7 (2.3)
	LMB	1	1	31	69	45	19	76	52	45	20	18	28	23	17	14	7	2	1	1	470

SB = spotted bass  
LMB = largemouth bass  
EFDYLLSS.D18

Table 77. Spring nocturnal electrofishing CPUE (fish/hr) for each length group of largemouth bass at Yatesville Lake (2,280 acres). SE = standard error.

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
1993	153.7		82.9		20.1		7.4		0.0		264.0	
1994						no sample						
1995						no sample						
1996	21.5		65.5		7.8		1.5		0.0		96.3	11.5
1997	50.7		23.7		16.7		2.0		0.0		93.0	10.5
1998	10.7		25.7		16.3		5.7		0.0		58.3	7.2
1999	42.7		29.0		16.3		13.7		0.3		101.7	12.2
2000	63.3	8.0	55.7	7.9	9.3	1.1	7.0	1.6	0.0		135.5	13.7
2001	35.0	7.0	58.3	7.5	19.3	3.2	9.7	2.1	0.3		122.3	7.8
2002	54.3	7.8	50.0	4.4	19.3	2.9	16.7	3.2	0.0		140.3	7.4
2003						no sample						
2004	12.7	2.8	40.3	10.5	23.7	5.1	9.0	2.2	0.0		85.7	19.4
2005	43.7	7.8	61.3	6.6	42.0	4.7	21.7	2.1	0.3		168.7	15.4
2006	47.3	7.4	68.0	10.3	20.3	2.2	16.0	4.0	0.7		151.7	17.5
2007	47.7	5.9	62.3	5.7	31.3	4.2	15.8	2.7	0.0		157.1	10.7
2008	47.0	8.4	38.3	3.8	20.4	3.7	16.6	4.9	0.0		122.3	10.3
2009	28.6	5.4	68.3	7.5	30.6	2.8	16.6	3.2	0.0		144.1	9.7
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
2011						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
2013						no sample						
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
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
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
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
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

EFDYLLSS.D93-D18

Table 78. PSD and RSD values for black bass species taken in spring electrofishing samples in each area of Yatesville Lake (2,280 acres) on 14 May 2018; 95% confidence intervals are in parentheses.

Area	Largemouth bass			Spotted bass		
	No.	PSD	RSD <sub>15</sub>	No.	PSD	RSD <sub>14</sub>
Lower	121	26 (19-34)	8 (3-13)	7	29 (0-65)	14 (0-42)
Upper	183	43 (36-50)	17 (12-23)	2	0	
Total	304	37 (31-42)	14 (10-18)	9	22 (0-51)	11 (0-33)

EFDYLLSS.D18

Table 79. Spring nocturnal electrofishing population assessment for largemouth bass collected at Yatesville Lake (2,280 acres). Actual values are in parentheses. Scoring based on statewide assessment.

Parameter	Year									
	2007	2008	2009	2010	2012	2014	2015	2016	2017	2018
Mean length age-3 at capture	4 (13.5)	4 (13.5)	4 (13.5)	4 (13.5)	2 (12.4)	2 (12.4)	1 (11.1)	1 (11.1)	1 (11.1)	1 (11.1)
Spring CPUE age-1	4 (47.0)	4 (45.0)	3 (28.2)	4 (42.6)	2 (19.4)	3 (37.0)	4 (54.3)	4 (56.7)	4 (73.3)	4 (51.3)
Spring CPUE 12.0-14.9 in	4 (31.3)	2 (20.4)	3 (30.6)	2 (19.3)	2 (21.6)	3 (23.3)	3 (23.0)	1 (16.0)	4 (37.3)	3 (23.0)
Spring CPUE $\geq$ 15.0 in	3 (15.8)	3 (16.6)	3 (16.6)	2 (11.0)	2 (8.4)	3 (16.7)	4 (23.3)	3 (16.7)	4 (21.0)	3 (14.0)
Spring CPUE $\geq$ 20.0 in	1 (0.0)	1 (0.0)	1 (0.0)	3 (0.7)	3 (0.8)	2 (0.3)	3 (0.7)	3 (0.7)	3 (0.7)	2 (0.3)
Total score	16	14	14	15	11	13	15	12	16	13
Assessment rating	Good	Good	Good	Good	Fair	Good	Good	Fair	Good	Good
Instantaneous mortality (z)	0.80	0.70	0.91	1.22	0.79	0.77				
Annual mortality (A)	55.20	50.20	59.80	70.40	54.60	53.70				
EFDYLLSS.D02-D10, D12, D14-D18										
EFDYLLAS.D06, D12										
EFDYLLAF.D15										



Table 81. Fall electrofishing indices of year class strength at age-0 and age-1 and mean lengths (in) of largemouth bass collected during 2003-2018 at Yatesville Lake (2,280 acres); CPUE = fish/hr, SE = standard error.

Year class	Age-0		Age-0		Age-0 $\geq$ 5.0 in		Age-1	
	Mean length	SE	CPUE	SE	CPUE	SE	CPUE	SE
2003	5.3	0.1	46.0	6.3	29.3	4.4	12.7	2.8
2004	4.8	0.1	69.5	13.5	32.5	10.8	42.3	7.1
2005	4.7	0.1	47.0	12.3	20.0	7.1	45.9	7.2
2006	4.9	0.1	29.5	7.8	13.8	3.8	47.0	6.0
2007	5.3	0.1	37.4	10.6	23.2	6.1	45.0	8.1
2008	5.1	0.1	45.9	7.8	28.4	6.0	28.2	5.3
2009	4.9	0.1	32.7	6.5	16.3	4.0	42.6	6.4
2010	5.1	0.1	78.6	11.5	45.1	8.7	no sample	
2011	4.9	0.1	55.3	9.6	28.7	4.9	19.4	2.5
2012	5.0	0.1	82.9	20.0	45.1	10.1	no sample	
2013	5.2	0.1	39.6	5.8	25.6	5.0	37.0	2.9
2014	4.7	0.1	79.3	14.8	29.3	7.8	54.3	7.7
2015	5.0	0.1	92.0	11.3	48.7	9.9	56.7	9.9
2016	5.8	0.1	67.3	7.1	61.3	7.2	73.3	10.9
2017	5.1	0.1	84.4	8.7	46.4	7.1	51.3	7.1
2018	5.3	0.1	79.6	17.8	49.2	14.4		

EFDYLLSS.D03-D18  
 EFDYLLSF.D03-D18  
 EFDYLLAS.D05, D06, D12  
 EFDYLLAF.D15

Table 82. Length frequency and CPUE (fish/nn) for white crappie collected at Yatesville Lake (2,280 acres) in 10 net-nights from 19 - 20 November 2018. Standard errors are in parentheses.

Inch class										Total	CPUE	SE
3	4	5	6	7	8	9	10	11	12			
111	75	106	102	71	50	32	7	7	3	564	56.4	(9.38)

EFDYLCTF.D18

Table 83. PSD and RSD<sub>10</sub> values calculated for white crappie collected in trap nets at Yatesville Lake (2,280 acres) during November 2018; 95% confidence intervals are in parentheses.

No. $\geq$ 5.0 in	PSD	RSD <sub>10</sub>
378	26 (22-31)	4 (2-7)

WC = white crappie  
 EFDYLCTF.D18



Table 84. Mean back-calculated length (in) at each annulus for white crappie collected from Yatesville Lake (2,280 acres) in November 2018, including 95% confidence intervals.

Year class	No.	Age				
		1	2	3	4	5
2017	3	3.3				
2016	16	3.9	5.1			
2015	36	4.1	5.2	6.3		
2014	30	4.3	5.6	6.8	7.9	
2013	9	4.2	5.5	6.6	7.5	8.2
Mean		4.1	5.3	6.5	7.8	8.2
Smallest		2.9	4.0	4.8	5.9	7.0
Largest		5.3	6.5	8.5	9.9	9.4
STD error		0.0	0.1	0.1	0.2	0.2
95% CI LO		4.0	5.2	6.3	7.5	7.7
95% CI HI		4.2	5.5	6.7	8.1	8.7

Intercept = 0

EFDYLCAF.D18

Table 85. Age frequency and CPUE (fish/nn) of white crappie collected by trap netting for 10 net-nights at Yatesville Lake (2,280 acres) in November 2018; numbers in parentheses are standard errors.

Age	Inch class										Total	Age%	CPUE	
	3	4	5	6	7	8	9	10	11	12				
0	111											111	20	11.1 (3.6)
1		75	7									82	15	8.2 (2.7)
2			49	23	27							99	18	9.9 (2.4)
3			49	57	33	25	7	2				173	31	17.2 (3.9)
4				23	5	19	18	4	6	3		78	14	7.8 (1.2)
5					5	6	7	2	1			21	4	2.1 (0.4)
6												0		
Total	111	75	105	103	70	50	32	8	7	3		564		
%	20	13	19	18	13	9	6	1	1	1				

CPUE of  $\geq 8$  in (quality size) = 9.90

CPUE of  $\geq 10$  in (preferred size) = 1.70

EFDYLCAF.D18

EFDYLCTF.D18

Table 86. Population assessment score for white crappie collected from Yatesville Lake (2,280 acres). Actual assessment values are in parentheses. Scoring based on statewide assessment.

Parameter	Year							
	2002	2004	2006	2009	2012	2014	2016	2018
CPUE (excluding age 0)	4 (19.5)	4 (28.2)	4 (58.6)	4 (26.4)	4 (39.4)	4 (67.5)	4 (91.2)	4 (45.3)
CPUE age 1	3 (3.9)	3 (3.7)	4 (8.9)	3 (7.5)	3 (4.4)	4 (8.2)	4 (41.1)	4 (8.2)
CPUE age 0	2 (1.5)	4 (23.9)	3 (3.6)	4 (6.0)	4 (4.8)	3 (2.2)	4 (44.7)	4 (11.1)
CPUE $\geq$ 8.0 in	2 (3.0)	3 (4.8)	4 (13.6)	2 (2.2)	4 (6.9)	4 (19.9)	2 (2.7)	4 (9.9)
Mean length age 2 at capture	1 (6.1)	1 (5.6)	1 (6.0)	1 (5.5)	1 (6.8)	1 (6.6)	1 (5.4)	1 (6.3)
Instantaneous mortality (z)	1.08	0.59	0.98	1.01	0.43	0.72	0.73	0.23
Annual Mortality (A)	66.0	45.0	62.4	63.6	34.9	51.4	51.7	20.3
Total score	12	15	16	14	16	16	15	17
Assessment rating	Fair	Good	Good	Good	Good	Good	Good	Excellent

EFDYLCTF.D02-D18

EFDYLCAF.D02-D18

Appendix A. Dewey Lake Angler Attitude Survey 2018  
 Frequency Table (N=48)

**Q3. On average, how many times do you fish Dewey Lake in a year?**

	Frequency	Percent
1 to 4	9	20.5%
5 to 10	13	29.5%
More than 10	22	50.0%
Total	44	
No Response	4	

**Q4. Which species of fish do you fish for at Dewey Lake?**

	Frequency	Percent
Bass	29	60.4%
Crappie	32	66.7%
Bluegill/Redear	24	50.0%
Catfish	35	72.9%
Muskie	8	16.7%

**Q5. Which one species do you fish for most at Dewey Lake?**

	Frequency	Percent
Bass	15	34.9%
Crappie	9	20.9%
Bluegill/Redear	2	4.7%
Catfish	17	39.5%
Total	43	
No Response	5	

**Q6. In general, what level of satisfaction do you have with bass fishing at Dewey Lake?**

	Frequency	Percent
Very Satisfied	2	6.9%
Somewhat Satisfied	12	41.4%
Neutral	11	37.9%
Somewhat Dissatisfied	3	10.3%
Very Dissatisfied	1	3.4%
No Opinion	0	0.0%
Total	29	
No Response	19	

**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	8	57.1%
Size of fish	4	28.6%
Size limit	1	7.1%
Creel limit	0	0.0%
Low angler pressure	1	7.1%
Total	14	
No Response	34	

**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	1	20.0%
Size of fish	2	40.0%
Size limit	0	0.0%
Creel limit	0	0.0%
Too many anglers	1	20.0%
Too many tournaments	1	20.0%
Total	5	
No Response	43	

**Q7. In general, what level of satisfaction do you have with crappie fishing at Dewey Lake?**

	Frequency	Percent
Very Satisfied	1	3.2%
Somewhat Satisfied	13	41.9%
Neutral	10	32.3%
Somewhat Dissatisfied	6	19.4%
Very Dissatisfied	1	3.2%
No Opinion	0	0.0%
Total	31	
No Response	17	

**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	11	78.6%
Size of fish	2	14.3%
Size limit	0	0.0%
Creel limit	1	7.1%
Low angler pressure	0	0.0%
Total	14	
No Response	34	

**Q7b. If you responded with somewhat or very Dissatisfied in Question (7) - What is the single most important reason for your Dissatisfaction?**

	Frequency	Percent
Number of fish		
Size of fish	5	71.4%
Size limit	1	14.3%
Creel limit	1	14.3%
Too many anglers	0	0.0%
Total	7	
No Response	41	

**Q8. In general, what level of satisfaction do you have with bluegill/redear fishing at Dewey Lake?**

	Frequency	Percent
Very Satisfied	7	28.0%
Somewhat Satisfied	6	24.0%
Neutral	4	16.0%
Somewhat Dissatisfied	7	28.0%
Very Dissatisfied	1	4.0%
No Opinion	0	0.0%
Total	25	
No Response	23	

**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	8	50.0%
Size of fish	5	31.3%
Size limit	0	0.0%
Creel limit	2	12.5%
Low angler pressure	1	6.3%
Total	16	
No Response	32	

**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	1	20.0%
Size of fish	4	80.0%
Size limit	0	0.0%
Creel limit	0	0.0%
Too many anglers	0	0.0%
Total	5	
No Response	43	

**Q9. In general, what level of satisfaction do you have with catfish fishing at Dewey Lake?**

	Frequency	Percent
Very Satisfied	9	25.7%
Somewhat Satisfied	17	48.6%
Neutral	5	14.3%
Somewhat Dissatisfied	4	11.4%
Very Dissatisfied	0	0.0%
No Opinion	0	0.0%
Total	35	
No Response	13	

**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	16	61.5%
Size of fish	6	23.1%
Size limit	0	0.0%
Creel limit	4	15.4%
Low angler pressure	0	0.0%
Total	26	
No Response	22	

**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	0	0.0%
Size of fish	1	25.0%
Size limit	1	25.0%
Creel limit	0	0.0%
Too many anglers	1	25.0%
size limit of only 1 bluecat over 25" needs increased	1	25.0%
Total	4	
No Response	44	

**Q10. Are you satisfied with the current size and creel limits at Dewey Lake?**

	Frequency	Percent
Yes	36	75.0%
No	12	25.0%
Total	48	
No Response	0	

**Q10a. If you responded No to Question 10, which species are you dissatisfied with and what size and creel limits would you prefer?**

	Frequency	Percent
14" catfish minimum size	1	10.0%
15" minimum size on catfish	2	20.0%
bass, I would like to see the size brought down to 12 inches	1	10.0%
blue and channel catfish combined 15 fish creel with no more than 3 greater than 25"	1	10.0%
crappie 10", 15 fish creel	2	20.0%
crappie 10", 15 fish creel	1	10.0%
musky 40"	1	10.0%
needs to be size limit on flathead catfish	1	10.0%
Total	10	
No Response	38	

**Q11. Do you fish any tournaments?**

	Frequency	Percent
Yes	10	20.8%
No	38	79.2%
Total	48	
No Response	0	

**Q12. Do you use the KDFWR tournament registration website to register tournaments?**

	Frequency	Percent
Yes	1	2.1%
No	47	97.9%
Total	48	
No Response	0	

**Q13. Do you use the KDFWR tournament registration website to plan your activity at a particular boat ramp access?**

	Frequency	Percent
Yes	5	10.6%
No	42	89.4%
Total	47	
No Response	1	

**Q14. Are you aware that the invasive plant Hydrilla is present in Dewey Lake?**

	Frequency	Percent
Yes	38	79.2%
No	10	20.8%
Total	48	
No Response	0	

**Q15. Are you aware that the primary means of introduction of invasive plants is through boaters?**

	Frequency	Percent
Yes	42	87.5%
No	6	12.5%
Total	48	
No Response	0	

**Q16. Do you take precautions after fishing Dewey Lake to prevent the spread of invasive plants to other lakes?**

	Frequency	Percent
Yes	33	68.8%
No	15	31.3%
Total	48	

**Q17. How would you rate the existing fish habitat at Dewey Lake (both natural and manmade)?**

	Frequency	Percent
Very Good	7	14.6%
Good	30	62.5%
Fair	10	20.8%
Poor	1	2.1%
Very Poor	0	0.0%
No Opinion	0	0.0%
Total	48	
No Response	0	

**Q18. Were you aware KDFWR places fish habitat (e.g. fish attractors/structures at Dewey Lake?**

	Frequency	Percent
Yes	46	95.8%
No	2	4.2%
Total	48	
No Response	0	

**Q19. Do you regularly fish Dept. placed attractors/structures at Dewey Lake?**

	Frequency	Percent
Yes	36	78.3%
No	10	21.7%
Total	46	
No Response	2	

**Q20. How did you find these attractors/structures?**

	Frequency	Percent
On my own	27	60.0%
Friend/word of mouth	16	35.6%
help put in lake	1	2.2%
kdfwr - office	1	2.2%
Total	45	
No Response	4	

**Q21. Do you feel the addition of Dept. placed attractors/structures has improved your fishing results?**

	Frequency	Percent
Yes	36	78.3%
No	5	10.9%
No Opinion	5	10.9%
Total	46	
No Response	2	

**Q22. Are you aware that the locations of KDFWR placed attractors/structures are available on the KDFWR website?**

	Frequency	Percent
Yes	21	45.7%
No	25	54.3%
Total	46	
No Response	2	

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WESTERN FISHERY DISTRICT

Project 3: Technical Guidance

FINDINGS

Table 1. Technical guidance given to pond owners in the Western Fishery District during the 2018 project year (April 1, 2018 - March 31, 2019). Approximately 71 telephone calls to the office regarding technical guidance and stocking were also handled. Additionally, numerous emails were replied to requesting farmpond technical guidance information.

<u>County</u> Pond Owner	Date of Inspection	Findings	Management Recommendations
<b><u>Calloway</u></b>			
Steve Simmons	14-Sep	flow through watershed lake, crappie, stunted bass	remove crappie, harvest small bass and large bluegill, place cover for fish
Scott Akin	14-Sep	low alkalinity, stunted bass	lime, control trees on levee, stock bluegill in fall and bass in spring, harvest small bass
Judy Outland	17-Sep	stunted bass, lack of catfish, thermocline	harvest small bass, stock catfish, aerate, lime
<b><u>Lyon</u></b>			
Clarence Adams	10-Apr	low alkalinity, nothing but stunted bass observed	lime, fertilize, stock bluegill and minnows

## 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. The requested information was relayed via phone, e-mail, office visit, and referencing the Pond Management section of the web site. Four on-site visits were conducted in 2018. Three were conducted on May 24, 2018 at the request of the Fort Knox Military Base environmental division staff. One additional visit was conducted in October per request from the Union County Fiscal Court. Information concerning these visits can be found in Table 1.

Table 1. On-site technical guidance provided to pond owners in the Northwestern Fishery District in 2018.

County	Pond/Lake Owner	Date	Findings	Recommendations
Meade	Upper Douglas	5/24/18	Healthy, stable fish populations, clear water	Change fertilization program to include powder 10-52-4 for 2019
	Lower Douglas	5/24/18	Healthy, stable fish populations	Continue current management
	Sanders Springs	5/24/18	Healthy, stable fish populations	Continue current management, encourage sunfish harvest
Union	Union County Fiscal Court	10/16/18	Healthy, stable fish populations	Continue current management

SOUTHWESTERN FISHERY DISTRICT

Project 3: Technical Guidance

FINDINGS

Details of the technical guidance provided during 2018 are shown in Table 1. Technical guidance was provided through nine on-site visits. Additional technical guidance requests were handled over the telephone, walk-in visits, or by written correspondence. Topics encountered and responded to included: fish population balance, water quality problems, fish stocking, and aquatic vegetation problems.

Several other requests for information about area fisheries and miscellaneous information about fish management in lakes and ponds were handled over the telephone, email, and walk-in visits.

Table 1. Onsite technical guidance visits during 2018.

County	Date	Landowner	Problem/Situation	Recommendations
Butler	8/29	Bobby McKey	Low fish numbers & brittle naiad	Lime & Fertilize
Edmonson	8/29	Robert Lindsey	Low alkalinity, river fish present	Kill options & lime
	9/28	Ronald Pruitt	Low alkalinity, low fish numbers	Lime & add bass
Todd	7/19	Ronald Castile	Aquatic veg coverage approaching 50%; good fish pop.	Veg. treatment options, harve fish.
	7/19	J. Francis	Brittle naiad; good fish pop.	Veg. treatment options & har
	7/19	Tammy Robertson	Low alkalinity, brittle naiad	Lime & restock channel cats
	7/19	Allen Frogue	Low BG numbers/low bass condition	Add BG & catfish if desired
	7/19	Robert Smith	Occasional turnover issues	Add bass
Warren	8/29	Howard Hunter Jr.	Persistently muddy, shallow pond	Clean out, lime & restock

## CENTRAL FISHERY DISTRICT

### Project 2: Stream Fishery Surveys – Warmwater Streams

#### FINDINGS

Stream sampling conditions for 2019 are summarized in Table 1.

Diurnal electrofishing for black bass and rock bass was conducted during May 2018 at various locations on Elkhorn Creek. These studies were conducted to assess the black bass, especially smallmouth bass and rock bass populations, but data for all sportfish were collected. Length distribution and CPUE data of sportfish, including black bass and rock bass from Elkhorn Creek are presented in Table 2. Smallmouth bass comprised 62% of the black bass sampled in the North Fork Elkhorn Creek, whereas, smallmouth bass comprised 99% of the black bass sampled on the main stem Elkhorn Creek. No spotted bass were collected in North Fork Elkhorn Creek and represented 0.002% of the black bass population in the main stem Elkhorn Creek. Largemouth bass comprised 38% of the black bass sampled in the North Fork Elkhorn Creek and 0.01% of the black bass sampled in the main stem Elkhorn Creek. The current catch rate of smallmouth bass (85.0 fish/hr) is slightly lower than the historical average of 94.7 fish/hr (Table 3). The current catch rate of rock bass (20.6 fish/hr) was lower than the historical catch rate (31.0 fish/hr; Table 4). The smallmouth bass population assessment score for the North Fork Elkhorn Creek was 19 (Table 5), which results in an “Excellent” rating. The rock bass population assessment score for North Fork Elkhorn Creek was 15 (Table 6), which results in an “Excellent” rating. The largemouth bass population assessment score for North Fork Elkhorn Creek was 16 (Table 7), which results in an “Excellent” rating. Fish populations on the North Fork Elkhorn Creek are affected by two dams in the vicinity of the Great Crossing areas. For the main stem Elkhorn Creek, the smallmouth bass population assessment score was 18 (Table 8), which results in an “Excellent” rating. The rock bass population assessment score was 5 (Table 9), which results in a “Fair” rating. Finally, the largemouth bass population assessment score was 2 (Table 10), which results in a “Poor” rating.

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 <sup>c</sup>
Elkhorn Creek (Hatchery)	Black Bass/Rock Bass	5/14	0900	shock	Fair	74	3.20 ft Peaks Mill gauge	clear	good	good sample
Elkhorn Creek (Peaks Mill)	Black Bass/Rock Bass	5/14	1100	shock	Fair	76	3.20 ft Peaks Mill gauge	clear	good	good sample
Elkhorn Creek (Jackson Hole)	Black Bass/Rock Bass	5/15	1300	shock	Partly sunny	75	3.09 ft Peaks Mill gauge	clear	good	good sample
North Fork Elkhorn Creek (Great Crossings)	Black Bass/Rock Bass	5/15	1030	shock	Partly sunny	74	3.09 ft Peaks Mill gauge		good	good sample

Table 2. Length-frequency and CPUE (fish/hr) of selected fish species collected in 5.25 hours of 15-minute electrofishing runs at four sites on Elkhorn Creek in May 2018; numbers in parentheses are standard errors.

Species	Inch class																				Total	CPUE				
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			23	24	41	
Below dam at																										
Great Crossings																										
Rock bass	4	3	13	23	12	8																			63	50.4 (13.3)
Smallmouth bass	4		8	21	19	10	10	6	4	5	10	4	1	2											104	83.2 (23.5)
Largemouth bass		1		2	5	4	6	8	15	7	7	2	4	2											63	50.4 (11.7)
Jackson Hole																										
Channel catfish								3	3	5	4	2	2	3	6	8	10	5	7	4	2	2	1		67	44.7 (11.0)
Flathead catfish											1		2		1										6	4.0 (2.1)
Rock bass		3	4	12	4	1																			24	16.0 (5.4)
Bluegill	1	3	1	1																					6	4.0 (2.7)
Redear sunfish					1																				1	0.7 (0.7)
Smallmouth bass	4	15	6	8	28	36	17	15	7	6	4	3		2	1	1									153	102.0 (19.6)
Spotted bass					1																				1	0.7 (0.7)
Largemouth bass								1																	1	0.7 (0.7)
Black crappie		2			2																				4	2.7 (1.3)
Sauger																	2	1							3	2.0 (2.0)
Peaks Mill																										
Channel catfish								1	3	7	2	4	2	10	17	14	18	7	3	2	2	1			93	93.0 (18.6)
Flathead catfish								1																	1	1.0 (1.0)
Rock bass		1	1	5	2																				9	9.0 (5.7)
Smallmouth bass		3	4	2	12	10	9	8	4	2	1	1	2												58	58.0 (8.4)
Largemouth bass								1																	1	1.0 (1.0)
Black crappie					1	1	1		2																5	5.0 (2.5)
Sauger														1											1	1.0 (1.0)
Hatchery																										
Channel catfish					2	2	7	9	8	14	5	21	28	16	15	10	7	4	5	3		1			157	104.7 (33.7)
Flathead catfish						3	3	1	1		1	2				1							1		13	8.7 (2.4)
Rock bass		2	2	6	2																				12	8.0 (3.4)
Bluegill		1	1	1	1																				4	2.7 (1.3)
Redear sunfish				1	1																				1	0.7 (0.7)
Smallmouth bass	2	16	8	15	16	12	19	10	7	10	5	5	1		4	1									131	87.3 (20.0)
Largemouth bass												1													1	0.7 (0.7)
Black crappie					1		1	2		1															5	3.3 (2.6)
Sauger											1	1					1								3	2.0 (1.4)
Total																										
Channel catfish					2	2	11	15	20	20	11	25	41	39	37	38	19	14	11	7	3	2			317	60.4 (13.6)
Flathead catfish						3	4	1	2		1	3	2		1	1		1					1		20	3.8 (1.2)
Rock bass	4	9	20	46	20	9																			108	20.6 (5.2)
Bluegill	1	4	2	2	1																				10	1.9 (0.9)
Redear sunfish				1	1																				2	0.4 (0.3)
Smallmouth bass	10	34	26	46	75	68	55	39	22	23	20	13	4	4	5	2									446	85.0 (9.8)
Spotted bass					1																				1	0.2 (0.2)
Largemouth bass		1		2	5	4	8	8	15	7	7	3	4	2											66	12.6 (5.4)
Black crappie		2			4	1	2	2	2	1															14	2.7 (1.0)
Sauger											1	1		1		1	2	1							7	1.3 (0.7)

Dataset = cfdpsehc.d18

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 1984-2018; numbers in parentheses are standard errors. Number of samples and locations varies between years.

Year	Length group					Total
	<4.0 in	4.0-8.9 in	>9.0 in	>12.0 in	>14.0 in	
1982	0.0 (0.0)	34.9 (10.6)	24.7 (4.9)	4.7 (1.4)	1.6 (1.1)	59.6 (13.7)
1983	No Sample					
1984	No Sample					
1985	No Sample					
1986	No Sample					
1987	No Sample					
1988	1.9 (1.0)	42.8 (13.4)	40.8 (12.4)	2.0 (0.7)	0.0 (0.0)	85.5 (26.1)
1989	1.6 (0.6)	22.4 (5.9)	41.0 (8.8)	9.2 (2.1)	2.0 (0.6)	64.9 (14.1)
1990	0.2 (0.1)	41.0 (9.3)	62.1 (7.7)	18.2 (2.7)	2.7 (0.3)	103.2 (12.1)
1991	4.4 (1.0)	59.3 (6.5)	65.2 (5.5)	14.6 (1.5)	2.4 (0.4)	128.9 (10.9)
1992	1.0 (0.4)	81.4 (9.0)	56.6 (6.9)	6.9 (1.5)	0.7 (0.3)	138.9 (12.8)
1993	0.8 (0.3)	46.6 (10.2)	80.2 (7.2)	23.0 (3.2)	3.6 (0.9)	127.6 (12.5)
1994	4.4 (1.1)	51.2 (9.0)	81.1 (8.8)	42.2 (6.0)	8.7 (2.2)	136.8 (13.1)
1995	10.3 (3.5)	51.5 (10.0)	75.2 (8.6)	43.8 (6.0)	15.8 (2.7)	137.0 (14.0)
1996	3.7 (1.0)	40.7 (8.4)	57.8 (6.3)	36.7 (5.0)	15.1 (2.5)	102.2 (9.0)
1997	4.0 (1.1)	62.6 (10.1)	43.1 (4.7)	20.6 (2.5)	9.3 (1.4)	109.7 (13.2)
1998	9.6 (1.9)	48.9 (6.0)	46.3 (3.0)	18.3 (1.9)	7.5 (1.1)	104.7 (8.4)
1999	1.0 (0.3)	42.1 (7.6)	41.7 (3.1)	12.9 (2.1)	4.8 (0.9)	84.8 (8.2)
2000	11.3 (2.0)	48.1 (6.2)	67.0 (5.1)	29.5 (3.0)	10.3 (1.4)	126.4 (8.8)
2001	8.0 (1.7)	29.9 (4.0)	48.5 (3.1)	26.9 (2.1)	10.3 (1.1)	86.4 (7.0)
2002	2.5 (1.2)	56.1 (6.3)	49.9 (4.2)	24.2 (2.6)	12.0 (1.5)	108.5 (8.4)
2003	5.5 (1.5)	27.4 (3.1)	44.4 (4.0)	15.5 (1.5)	6.7 (1.0)	77.3 (6.5)
2004	4.9 (2.2)	29.0 (2.8)	52.6 (4.8)	16.8 (1.9)	6.9 (0.9)	86.5 (6.4)
2005	1.5 (0.4)	37.3 (6.2)	47.0 (4.1)	21.8 (2.2)	7.0 (0.9)	85.8 (8.5)
2006	11.4 (4.6)	18.2 (4.1)	77.4 (8.6)	42.6 (6.3)	16.1 (2.4)	107.0 (11.1)
2007	No Sample					
2008	0.7 (0.3)	20.3 (4.8)	22.3 (3.9)	11.8 (3.2)	5.7 (2.1)	43.3 (7.1)
2009	2.8 (0.8)	29.0 (9.3)	35.0 (6.6)	13.3 (3.6)	8.3 (2.3)	66.8 (13.2)
2010	0.2 (0.2)	31.7 (8.7)	36.7 (5.2)	13.0 (3.1)	5.5 (1.7)	68.5 (12.7)
2011	1.7 (0.7)	20.7 (4.6)	36.8 (3.6)	10.7 (1.9)	4.5 (1.6)	59.2 (6.2)
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)
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)
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)
2015	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)
2017	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)

Dataset = cfdpsehc.d18 – .d08 and bbrpselk.d82, .d88 – .d06



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 1984-2018; numbers in parentheses are standard errors. Number of samples and location varies between years.

Year	Length group				Total
	<4.0 in	4.0-5.9 in	>6.0 in	>8.0 in	
1982	0.1 (0.1)	1.2 (0.6)	10.5 (3.1)	1.9 (1.2)	11.8 (3.5)
1983			No Sample		
1984			No Sample		
1985			No Sample		
1986			No Sample		
1987			No Sample		
1988	0.7 (0.56)	7.1 (2.2)	22.4 (6.5)	1.3 (0.9)	30.2 (8.7)
1989	0.0 (0.0)	4.1 (0.9)	19.6 (4.2)	4.7 (1.3)	23.6 (4.9)
1990	0.6 (0.2)	5.9 (1.5)	17.9 (2.6)	3.3 (0.8)	24.4 (3.9)
1991	1.4 (0.5)	16.2 (2.7)	32.8 (3.3)	4.1 (0.6)	50.4 (5.6)
1992	0.7 (0.2)	9.8 (3.0)	37.1 (4.9)	2.2 (0.4)	47.5 (7.3)
1993	0.1 (0.1)	5.7 (1.8)	34.4 (4.8)	8.8 (1.4)	40.2 (6.1)
1994	0.0 (0.0)	3.6 (1.0)	28.8 (3.8)	11.2 (1.4)	32.3 (4.5)
1995	2.0 (0.7)	6.3 (1.2)	22.9 (3.2)	10.6 (1.6)	31.3 (4.6)
1996	3.0 (0.9)	6.7 (2.1)	16.3 (2.2)	6.2 (1.1)	25.9 (4.2)
1997	0.9 (0.4)	12.0 (2.4)	19.4 (3.0)	4.0 (0.8)	32.3 (4.9)
1998	1.5 (0.5)	8.0 (1.7)	28.2 (3.7)	3.5 (0.7)	37.7 (5.5)
1999	4.0 (1.1)	9.1 (1.5)	27.3 (2.9)	3.7 (0.7)	40.4 (4.8)
2000			No Sample		
2001			No Sample		
2002			No Sample		
2003			No Sample		
2004			No Sample		
2005	0.8 (0.4)	1.7 (0.6)	18.6 (3.6)	5.8 (0.8)	21.0 (4.3)
2006			No Sample		
2007			No Sample		
2008	0.3 (0.2)	4.3 (1.1)	22.0 (5.4)	4.2 (1.0)	26.7 (6.5)
2009	0.0 (0.0)	4.8 (1.2)	13.5 (3.2)	3.8 (1.1)	18.3 (4.1)
2010	0.8 (0.6)	10.2 (2.1)	23.7 (3.1)	4.5 (0.9)	34.7 (3.8)
2011	0.2 (0.2)	7.8 (2.3)	19.5 (4.8)	3.0 (0.7)	27.5 (6.8)
2012	2.9 (0.7)	4.4 (0.9)	18.5 (4.1)	1.6 (0.6)	25.8 (5.0)
2013	0.2 (0.2)	4.7 (1.4)	17.6 (4.7)	4.6 (1.1)	22.6 (5.3)
2014	0.0 (0.0)	8.3 (2.6)	31.0 (4.3)	5.5 (1.1)	39.3 (6.5)
2015			No Sample		
2016	0.7 (0.4)	7.0 (1.4)	41.2 (4.6)	14.0 (2.1)	48.8 (5.5)
2017			No Sample		
2018	0.8 (0.6)	5.5 (1.6)	14.3 (3.6)	1.7 (0.7)	20.6 (5.2)

Dataset = cfdpseh.c.d18 - .d08 and bbrpsehk.d82, .d88 - d.99, .d05

Table 5. Population assessment for smallmouth bass collected by boat electrofishing gear in the North Fork Elkhorn Creek from 2008-2018 (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
2018	Value	3.2	46.4	33.6	17.6	5.6	19	Excellent
	Score	3	4	4	4	4		
2017	Value	No Sample						
	Score							
2016	Value	0.5	26.5	34.0	10.0	1.5	15	Good
	Score	1	4	4	4	2		
2015	Value	No Sample						
	Score							
2014	Value	0.0	4.0	11.0	4.0	1.5	9	Fair
	Score	0	2	3	2	2		
2013	Value	0.5	10.5	16.5	9.0	1.5	14	Good
	Score	1	3	4	4	2		
2012	Value	2.0	22.5	15.5	5.5	1.5	16	Excellent
	Score	3	4	4	3	2		
2011	Value	1.0	16.0	11.0	3.0	2.5	14	Good
	Score	2	4	3	2	3		
2010	Value	0.0	15.5	14.5	5.0	1.5	12	Good
	Score	0	4	3	3	2		
2009	Value	1.0	22.8	20.3	5.0	1.8	15	Good
	Score	2	4	4	3	2		
2008	Value	0.0	1.0	10.0	5.5	1.5	9	Fair
	Score	0	1	3	3	2		

Table 6. Population assessment for rock bass collected by boat electrofishing gear in the North Fork Elkhorn Creek from 2008-2018 (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	
2018	Value	3.2	12.8	34.4	6.4	15	Excellent	
	Score	4	4	4	3			
2017	Value	No Sample						
	Score							
2016	Value	5.0	6.5	12.5	2.0	12	Good	
	Score	4	3	3	2			
2015	Value	No Sample						
	Score							
2014	Value	0.5	4.0	2.5	0.5	5	Fair	
	Score	1	2	1	1			
2013	Value	0.5	2.5	3.0	1.0	5	Fair	
	Score	1	2	1	1			
2012	Value	2.0	1.0	1.0	0.0	5	Fair	
	Score	3	1	1	0			
2011	Value	0.0	6.0	5.5	0.0	5	Fair	
	Score	0	3	2	0			
2010	Value	0.5	3.5	7.5	0.0	5	Fair	
	Score	1	2	2	0			
2009	Value	2.8	9.3	20.3	2.5	12	Good	
	Score	4	3	3	2			
2008	Value	0.5	2.0	0.5	0.0	3	Poor	
	Score	1	1	1	0			

Table 7. Population assessment for largemouth bass collected by boat electrofishing gear in the North Fork Elkhorn Creek from 2008-2018 (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
2018	Value	0.0	9.6	40.8	17.6	4.8	16	Excellent
	Score	0	4	4	4	4		
2017	Value	No Sample						
	Score							
2016	Value	0.0	12.5	29.5	15.5	7.5	16	Excellent
	Score	0	4	4	4	4		
2015	Value	No Sample						
	Score							
2014	Value	0.0	7.0	16.0	13.0	5.0	16	Excellent
	Score	0	4	4	4	4		
2013	Value	1.5	12.5	21.5	11.0	2.5	19	Excellent
	Score	3	4	4	4	4		
2012	Value	0.0	14.5	19.0	10.5	5.0	16	Excellent
	Score	0	4	4	4	4		
2011	Value	0.0	4.5	26.5	13.5	4.5	15	Good
	Score	0	3	4	4	4		
2010	Value	0.0	15.0	39.5	18.5	4.5	16	Excellent
	Score	0	4	4	4	4		
2009	Value	0.3	6.3	41.8	23.8	6.3	17	Excellent
	Score	1	4	4	4	4		
2008	Value	0.0	3.5	16.5	9.0	3.5	15	Good
	Score	0	3	4	4	4		

Table 8. Population assessment for smallmouth bass collected by boat electrofishing gear in the main stem Elkhorn Creek from 2000-2018 (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
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
2013	Value Score	1.6 2	18.9 4	37.5 4	20.9 4	10.2 4	18	Excellent
2012	Value Score	9.4 4	27.6 4	18.0 4	5.9 3	2.1 3	18	Excellent
2011	Value Score	1.7 3	20.7 4	36.8 4	10.7 4	4.5 4	19	Excellent
2010	Value Score	0.2 1	31.7 4	36.7 4	13.0 4	5.5 4	17	Excellent
2009	Value Score	2.8 3	29.0 4	35.0 4	13.3 4	8.3 4	19	Excellent
2008	Value Score	0.7 1	20.3 4	22.3 4	11.8 4	5.7 4	17	Excellent
2007	Value Score				No Sample			
2006	Value Score	11.4 4	18.2 4	77.4 4	42.6 4	16.1 4	20	Excellent
2005	Value Score	1.5 2	37.3 4	47.0 4	21.8 4	7.0 4	18	Excellent
2004	Value Score	4.9 4	29.0 4	52.6 4	16.8 4	6.9 4	20	Excellent
2003	Value Score	5.5 4	27.4 4	44.4 4	15.5 4	6.7 4	20	Excellent
2002	Value Score	2.5 3	56.1 4	49.9 4	24.2 4	11.9 4	19	Excellent
2001	Value Score	8.0 4	29.9 4	48.5 4	26.9 4	10.3 4	20	Excellent
2000	Value Score	11.3 4	48.1 4	67.0 4	29.5 4	10.3 4	20	Excellent

Table 9. Population assessment for rock bass collected by boat electrofishing gear in the main stem Elkhorn Creek from 2008-2018 (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
2018	Value	0.0	3.3	8.0	0.3	5	Fair
	Score	0	2	2	1		
2017	Value Score	No Sample					
2016	Value	0.7	7.0	41.2	14.0	12	Good
	Score	1	3	4	4		
2015	Value Score	No Sample					
2014	Value	0.0	8.3	31.0	5.5	10	Good
	Score	0	3	4	3		
2013	Value	0.2	4.7	17.6	4.6	10	Good
	Score	1	3	3	3		
2012	Value	2.9	4.4	18.5	1.6	12	Good
	Score	4	3	3	2		
2011	Value	0.2	7.8	19.5	3.0	9	Good
	Score	1	3	3	2		
2010	Value	0.8	10.2	23.7	4.5	12	Good
	Score	2	4	3	3		
2009	Value	0.0	4.8	13.5	3.8	8	Fair
	Score	0	3	3	2		
2008	Value	0.3	4.3	22.0	4.2	10	Good
	Score	1	3	3	3		

Table 10. Population assessment for largemouth bass collected by boat electrofishing gear in the main stem Elkhorn Creek from 2008-2018 (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
2018	Value	0.0	0.0	0.8	0.3	0.0	2	Poor
	Score	0	0	1	1	0		
2017	Value Score	No Sample						
2016	Value	0.2	5.2	6.3	2.2	0.3	11	Good
	Score	1	3	3	3	1		
2015	Value Score	No Sample						
2014	Value	0.0	2.3	5.8	2.5	1.2	10	Fair
	Score	0	2	3	3	2		
2013	Value	0.0	2.0	8.9	4.2	1.3	13	Good
	Score	0	3	4	4	2		
2012	Value	0.0	6.5	3.5	1.0	0.7	8	Fair
	Score	0	4	2	1	1		
2011	Value	0.0	2.5	4.7	1.3	0.7	7	Fair
	Score	0	2	3	1	1		
2010	Value	0.2	3.0	3.2	2.8	0.8	11	Good
	Score	1	3	2	3	2		
2009	Value	0.0	1.0	5.3	3.0	1.0	9	Fair
	Score	0	1	3	3	2		
2008	Value	0.0	3.3	5.7	2.8	0.5	10	Fair
	Score	0	3	3	3	1		

## CENTRAL FISHERY DISTRICT

### Project 2: Stream Fishery Surveys – Trout Stream Fishery Surveys

#### 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 15 April to 15 November 2018. The results showed that water temperatures in the upper trout section of Big Bone Creek averaged 64.2°F (min = 36.6°F and max = 82.0°F) and temperatures exceeded 72°F on 96 different days between 3 May and 11 October (Figure 1). Water temperatures for the lower trout section of Big Bone Creek averaged 67.9°F (min = 37.8°F and max = 87.0°F) and temperatures exceeded 72°F on 109 different days between 3 May and 11 October (Figure 2). There was a dip in the temperature profile during the end of June and first of July on the upper Big Bone Creek temperature profile. This was due to a water release from the draining of Big Bone Lick State Park Lake due to a dam issue. There was a slug of cool water released during the lake draining.

A time-lapse camera was installed at the Big Bone State Park upstream of the bridge where trout are stocked into Big Bone Creek in 2018. The camera was installed in April in an effort to capture angling pressure following each of the stocking events, which occurred in April, May, and November 2018. The time-lapse camera recorded a picture of the stocking site every 10-minutes during daylight hours. Unfortunately, a camera malfunction occurred in November 2018 and no data was collected from the November stocking. The camera was removed in March 2019. Images were analyzed by recording pressure counts at the top of each hour during daylight hours.

A total of 1,200 (400 fish/stocking) rainbow trout were stocked into Big Bone Creek during 2018. During the two stocking months with data, an average of 39.5 anglers/month was recorded compared to an average of 20.2 anglers/month during non-stocking months (June-October). During the first week following a stocking event, an average of 12.5 anglers (41.7%) were recorded, dropping to an average of 9.5 (31.7%) anglers during the second week and averaged 8.0 (26.6%) anglers during the third week post stocking. It does appear that anglers are utilizing the rainbow trout that are stocked into Big Bone Creek.

Gunpowder Creek at Sperti Park was monitored for suitability for trout management. Water temperatures were monitored hourly on Gunpowder Creek (2 sites) by Hobo TidbiT MX temperature loggers (MX2203) from 15 April to 15 November 2018. The results showed that water temperatures in the upper trout section of Gunpowder Creek averaged 69.9°F (min = 36.7 °F and max = 92.4°F) and temperatures exceeded 72°F on 150 different days between 1 May and 11 October (Figure 3). Water temperatures for the lower trout section of Gunpowder Creek averaged 68.2°F (min = 23.5°F and max = 99.8°F) and temperatures exceeded 72°F on 149 different days between 2 May and 11 October (Figure 4). It is recommended that Gunpowder Creek within Sperti Park be stocked as a put-and-take delayed harvest rainbow trout fishery with stockings in March, April and October (Table 1).

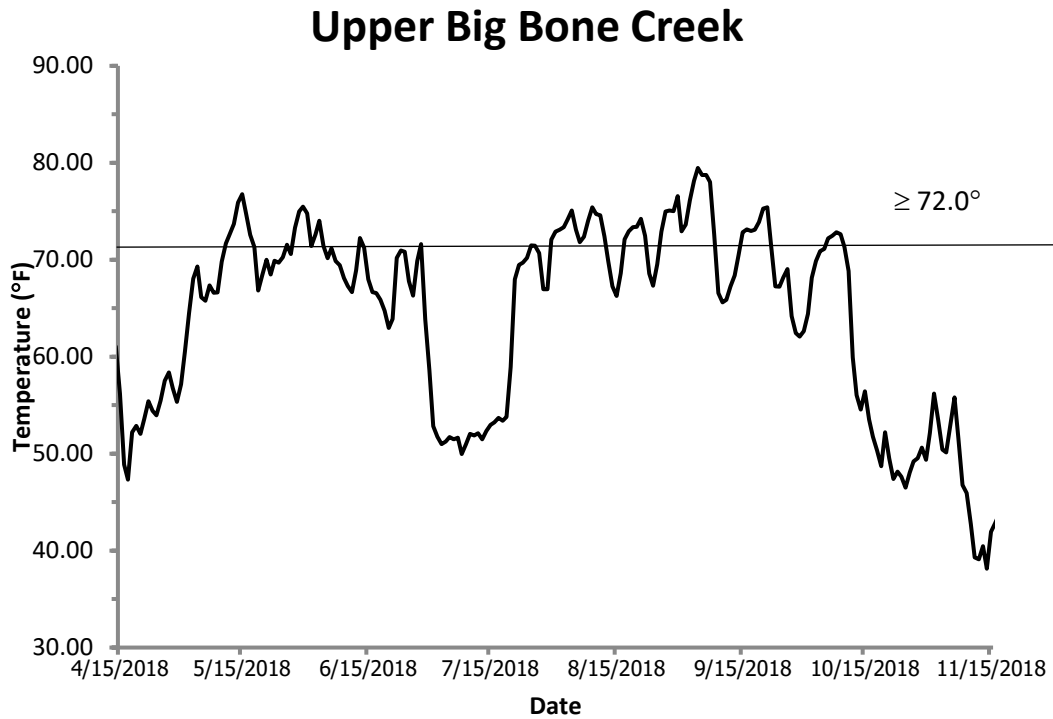


Figure 1. Daily water temperatures observed in the upper reach of the trout section at Big Bone Creek (Boone Co.) from 15 April to 15 November 2018.

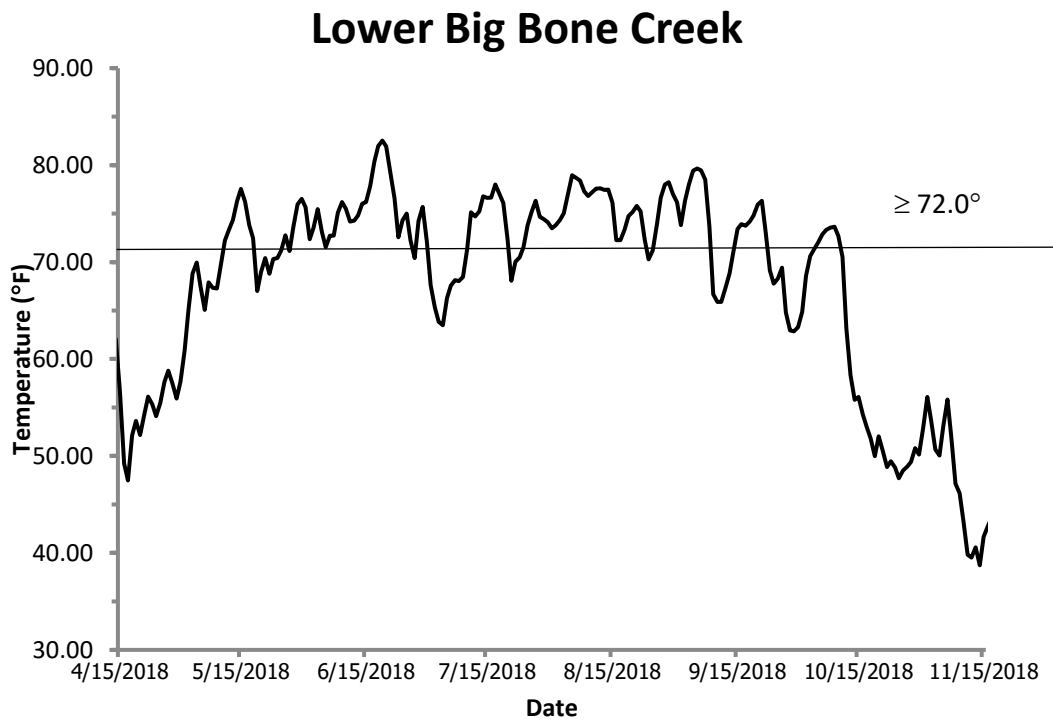


Figure 2. Daily water temperatures observed in the lower reach of the trout section at Big Bone Creek (Boone Co.) from 15 April to 15 November 2018.

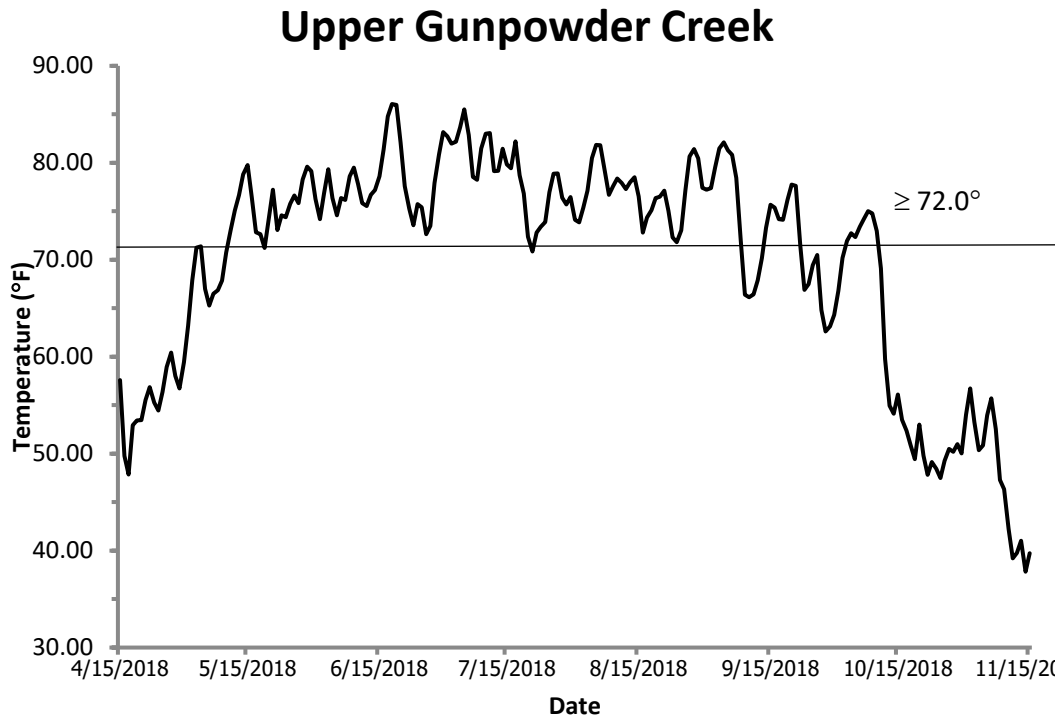


Figure 3. Daily water temperatures observed in the upper reach of the proposed trout section at Gunpowder Creek (Boone Co.) from 15 April to 15 November 2018.

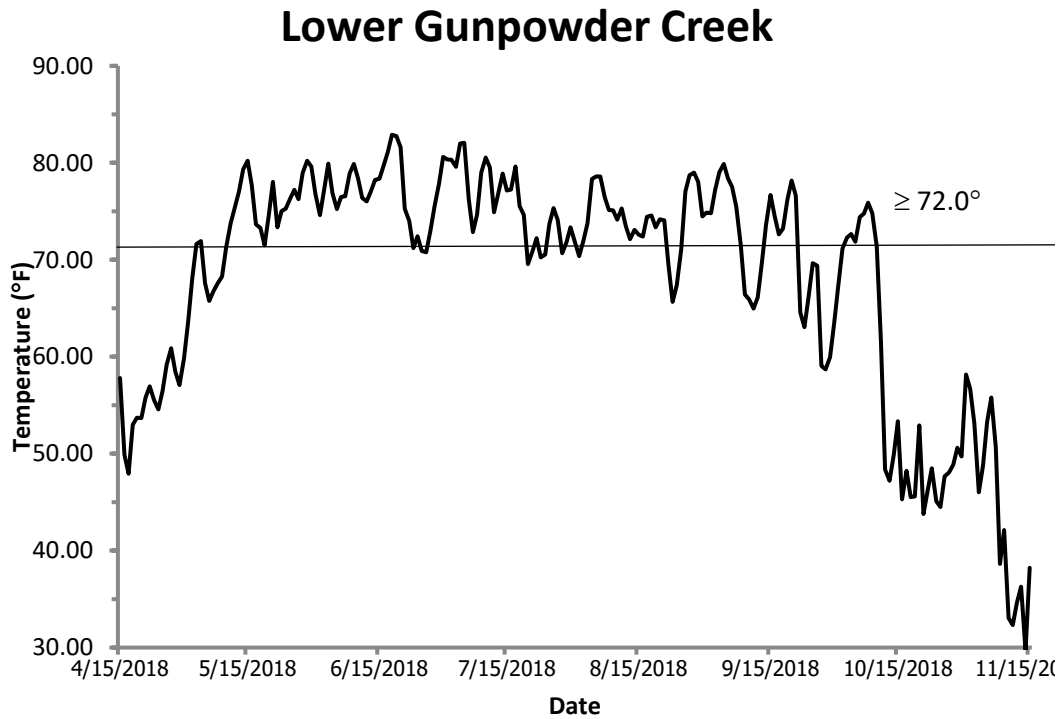


Figure 4. Daily water temperatures observed in the lower reach of the proposed trout section at Gunpowder Creek (Boone Co.) from 15 April to 15 November 2018.



Table 1. Gunpowder Creek at Sperti Park (Boone County Parks and Recreation) trout management plan.

Trout species stocked	Total miles	Trout fishing water		Management Plan
		Lower limit	Upper limit	
Rainbow trout	1.5	Lower Park Boundary	Upper Park Boundary	Stock Mar-Apr & Oct for delay harvest

## CENTRAL FISHERY DISTRICT

### Project 3: Technical Guidance

#### FINDINGS

A total of 34 pond owners and 41 ponds were visited in 2018. Most common problems were unbalanced fish populations, excessive aquatic plant growth, lack of fish cover, and the presence of undesirable fish species (Table 1). During our 2018 technical guidance sampling, seven landowners requested a Fisheries Special Management Permit (FMP) for their ponds. Finally, a total of 291 phone calls, 206 e-mails, and 8 walk-in office visits concerning farm pond problems were handled this year.

Table 1. Technical guidance in the Central Fishery District in 2018.

<b>County</b>	<b>Name of lake / pond owner</b>	<b>Date sampled</b>	<b>Findings</b>	<b>Recommendations</b>
Boone (2)	Sundance Estates	7/10/18	Good fish populations	Stock CCF; add cover; harvest some fish
	Jeremy Waits	7/10/18	Pond 1) No BG observed Pond 2) No BG observed	Stock BG; add over Stock BG; add cover
Campbell (1)	Bob White Conservation Club	7/19/18	4 ponds;	Add cover; stock CCF;
Carroll (1)	Tom Hirsch	8/17/18	Good balanced fish populations	Stock CCF; lime and fertilize; harvest fish;
Franklin (1)	Jesse Redmon	6/28/18	Unbalance fish populations; No LMB	Stock LMB and CCF; Remove trees from dam
Henry (3)	Henry County Parks Department	5/31/18	Excessive vegetation	Herbicides for vegetation control
	Joe Kime	7/2/18	Unbalanced fish populations; No BG;	Stock BG; add cover;
	HW Wildlife, LLC	7/2/18	Good fish populations	Add cover; harvest fish; remove trees from dam
Jefferson (3)	Jeff Sims	6/26/18	Unbalanced fish populations	Stock BG; remove flathead catfish when caught
	Chris Clayborn	6/26/18	Unbalanced fish populations; Few LMB	Stock LMB and CCF
	Chris Toadvine	8/1/18	Good fish populations	Add cover; harvest fish; stock CCF
Jessamine (1)	Lexington Christian Fellowship	7/5/18	Unbalanced fish populations; No LMB	Stock LMB
Nelson (1)	Thomas Sims	8/7/18	Crowded LMB	Harvest LMB and stock BG
Oldham (2)	Edward Voelker	7/30/18	Crowded LMB; shallow pond	Harvest LMB and stock BG
	Chris Keables	7/30/18	Unbalanced fish populations	Stock LMB
Owen (4)	Paul Pungratz	7/9/18	Crowded LMB population	Harvest LMB; add cover: FMP
	Karen Stanhope	7/9/18	Not accessible due to leak	Referred to NRCS for help with leak.
	Timberwood Lake Shores HOA	8/24/18	Large Lake: crowded bass Middle Lake: good fish populations Upper Lake; good fish populations	Large Lake: harvest bass; stock CCF; add cover Middle Lake: stock CCF; add cover Upper Lake: No recommendations
	George Callaghan, Jr.	8/27/18	Good fish populations	Stock CCF; add cover
Pendleton (1)	Charles Cooper	8/22/18	Unbalanced fish populations	Stock LMB and CCF; add cover; remove trees from dam
Scott (3)	Ronnie Stidham	6/27/18	Good fish populations	Harvest and add cover
	Randy Gaebler	6/27/18	Good fish populations	Add cover, maintain dam

<b>County</b>	<b>Name of lake / pond owner</b>	<b>Date sampled</b>	<b>Findings</b>	<b>Recommendations</b>
Scott (3)	Tom Cheek	6/29/18	Bass crowded	Lime and Fertilize; add cover
Shelby (6)	Brian Flora	6/25/18	Bass crowded	Stock CCF; add cover
	Michael Holly	7/6/18	Shallow Pond; Limited fish populations	Renovate; add cover
	Avish Farm, LLC	7/11/18	Unbalanced fish populations	Stock LMB; harvest CCF
	David Breen	7/11/18	Balanced fish populations	Add cover
	Bill Decker	7/13/18	Balanced fish populations	Stock CCF; add cover; maintain dam
	Chad Weaver	8/10/18	2 ponds; 1) unbalanced fish populations 2) unbalanced fish populations	1) Protect LMB, harvest CCF and crappie 2) protect LMB, add cover.
Spencer (1)	Dale Yates	8/7/18	Good fish populations	Add cover, maintain dam
Trimble (1)	Homestead Wildlife LLC	8/29/18	Inaccessible	Stock LMB and CCF
Washington (2)	Bonnie Bartley	8/8/18	Crowded fish populations	Harvest LMB; add cover; FMP
	C. Ray Hinton	8/8/18	Unbalanced fish population;	Stock BG
Woodford (1)	Woodford Fishing Lake, Inc	6/28/18	Good fish populations	None

## NORTHEASTERN FISHERY DISTRICT

### Project 2: Stream Fishery Surveys

#### FINDINGS

##### **Slate Creek Sampling**

On 7, 8, and 20 June, four sections of Slate Creek (Bath County) were sampled for an assessment of the game fish, sunfish and catfish populations (specific site locations and sampling times can be found in the table below). On 7 June, the downstream (Site 1, White Oak, sampled for 0.5 hours (2- 15-minute runs)) and the upstream most site (Site 4, Shroud Road, sampled for 0.75 hours (3-15 minute runs)) were sampled. On 8 June, the second-most upstream site (Site 3, Lion’s Club, sampled for 1.0 hours (4-15 minute runs)) was sampled. On 20 June, the second-most downstream site (Site 2, Bach Hole, sampled for 0.5 hours (2-15 minute runs)) was sampled. In total, 11 different species were collected with the dominant species being rock bass (46% of all individuals) followed by smallmouth bass (30% of all individuals; Table 1). Catch rates of rock bass are presented in Table 2 and the overall rock bass fishery was rated as “good” (Table 3). Catch rates of smallmouth bass are presented in Table 4 and the overall smallmouth bass fishery was rated as “good” (Table 5). Finally, the largemouth bass catch rates are presented in Table 6 and this fishery was rated as “fair” overall (Table 7).

Sample Date	Sample Time	Gear	Weather	Temperature	Specific Location
06/07	0800	j. electro	Clear	70°F	Site 1, White Oak, Downstream Most
06/20	0800	j. electro	Clear	81°F	Site 2, Bach Hole, 2 <sup>nd</sup> Downstream Most
06/08	0800	j. electro	Clear	72°F	Site 3, Lion’s Club, 2 <sup>nd</sup> Upstream Most
06/07	1200	j. electro	Clear	72°F	Site 4, Shroud Road, Upstream Most

##### **Licking River Sampling**

On 4–6 and 20 June, the Licking River was sampled for an assessment of game fish, sunfish and catfish populations. Nine different locations were sampled from the Cave Run Lake dam to the Falmouth area in Pendleton County; specific site locations and sampling times can be found in the table below. Overall sampling showed the abundance of different species that you would expect in such a long stretch of the river and for that reason, tables were broken up by species types. All three species of black bass were collected with smallmouth being the most prevalent (65% of all individuals; Table 8). Catch rates of smallmouth bass are presented in Table 9 and the overall smallmouth bass fishery was rated as “good” (Table 10). The largemouth bass catch rates are presented in Table 11 and this fishery was rated as “fair” overall (Table 12). Both flathead and channel catfish were collected along the length of the river with channel catfish being the most prevalent (87%; Table 13). The majority (87%) of all channel catfish collected came in the Cave Run Tailwater areas. Length frequency for all other species of fish collected is shown in Table 14. The most prevalent species was crappie (white then black) followed by rock bass. Additionally, eight muskellunge were collected, giving an overall catch rate of 0.9 fish per hour of electrofishing. Catch rates of rock bass are presented in Table 15 and the overall rock bass fishery was rated as “fair” (Table 16).

Sample Date	Sample Time	Gear	Weather	Temperature	Specific Location
06/04	1130	electro	Clear	72°F	Site 1, Falmouth Ramp (CFD Sample)
06/05	0800	j. electro	Clear	70°F	Site 2, Claysville
06/06	0800	electro	Clear	-	Site 3, Bluelicks
06/06	1200	electro	Clear	-	Site 4, Clay WMA
06/05	0900	electro	Clear	65°F	Site 5, Sherburn
06/05	1230	electro	Clear	-	Site 6, Mouth of Fox Creek
06/06	0800	j. electro	Clear	61°F	Site 7, Johnson Ford (downstream)
06/06	1230	j. electro	Clear	60°F	Site 8, Johnson Ford (upstream)
06/20	1030	electro	Clear	70°F	Site 10, Cave Run Tailwaters

### **Kentucky River Sampling**

On 28 November, the tailwaters of Lock and Dam 10 and 12 of the Kentucky River were sampled nocturnally for assessment of the *Sander* species (1.0 hour in each location; 4- 15-minute runs). Between both sections, 39 sauger were collected with the majority coming from the tailwaters of Lock and Dam 10 (Table 17)

### **Trout Stream Temperature Assessments**

Temperature loggers were installed in all NEFD trout designated waters. Data collection spanned from May through November. Parched Corn, Chimney Top, and Dog Fork represent the coldest streams in the district. All three are at the upper temperature threshold for trout over-summering habitat (Table 18). At the time of writing, some loggers were unable to be harvested due to excessively high water.

### **Trout Stream Usage (Camera Monitoring)**

Trail cameras were placed on streams to assess the number of anglers using the trout-stocked waters. Cameras were installed early May and maintained throughout the year. Big Caney, Triplett, and Swift Camp were all streams that received heavy usage throughout the year (Table 19).

### **Trout Stream Sampling**

Three trout streams, with the greatest possibility of having holdover habitat, were sampled throughout the month of July. Trout were found in all three streams. Also during sampling, wild spawned fish were found in Parched Corn Creek (Table 20).

Table 1. Length frequency and CPUE (fish/hour) of selected sport fish collected during 2.75 hours of electrofishing (15-minute sampling runs) at 4 sites in Slate Creek during the spring of 2018.

Site	Species	Inch class																	Total	CPUE	Std Err.
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
1 (0.50 hours)	Brown bullhead																	1	1	2.0	2.0
	Channel catfish							2			1	1							4	8.0	0.0
	Flathead catfish								1										1	2.8	2.0
	Rock bass				7	3	13	8	2	1									34	64.0	8.0
	Bluegill			1															1	2.0	2.0
	Redear sunfish							1											1	2.0	2.0
	Smallmouth bass				5	2	6	7	10	14	8	2	4	3	2	1		1	65	130.0	34.0
	Spotted bass			1															1	2.0	2.0
	Largemouth bass			1				1						1					3	6.0	6.0
	Sauger										1					1		1	3	6.0	2.0
2 (0.50 hours)	Rock bass	1			3	12	20	16	3	1								56	112.0	44.0	
	Bluegill			1														1	2.0	2.0	
	Smallmouth bass				3			1	2	6	2	2	1					17	34.0	2.0	
3 (1.00 hours)	Flathead catfish							1				1				1		3	3.0	1.9	
	Rock bass				2	13	15	5	4									39	39.0	8.7	
	Bluegill			2	1	1	3											7	7.0	4.1	
	Smallmouth bass									3	2	1						6	6.0	4.7	
	Spotted bass			1	2		1	2										6	6.0	3.5	
	Largemouth bass				1	1		2	3	2	3			1			2	15	15.0	5.5	
	White crappie							1	1									2	2.0	2.0	
4 (0.75 hours)	Flathead catfish									1								1	1.3	1.3	
	Rock bass			1		2	5	1										9	12.0	2.3	
	Bluegill			2	1		1											4	5.3	1.3	
	Redear sunfish				1													1	1.3	1.3	
	Smallmouth bass										2							2	2.7	1.3	
	Spotted bass			1		1	5	2	1	1		1						12	16.0	6.1	
	Largemouth bass			2			1		3			1						7	9.2	3.5	
	White crappie								1									1	1.3	1.3	
Total (2.75 hours)	Brown bullhead																1	1	0.4	0.4	
	Channel catfish						2				1	1						4	1.5	1.0	
	Flathead catfish				1		2				1					1		5	1.8	0.8	
	Rock bass	1	1	12	30	53	30	9	2									138	50.2	12.8	
	Bluegill			5	3	1	4											13	4.7	1.6	
	Redear sunfish				1			1										2	0.7	0.5	
	Smallmouth bass				8	2	6	8	12	25	12	5	5	3	2	1	1	90	32.7	15.7	
	Spotted bass			2	3	1	6	4	1	1		1						19	6.9	2.7	
	Largemouth bass			2	2	1	1	3	6	2	3	1		2			2	25	9.1	2.8	
	White crappie							1	2									3	1.1	0.8	
	Sauger										1					1	1	3	1.1	0.8	

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Table 2. Rock bass electrofishing CPUE (fish/hour) from each length group collected during spring sampling on Slate Creek.

Year	Inch class				Total	Std. error
	< 4.0 in	4.0-5.9 in	6.0-7.9 in	≥ 8.0 in		
2018	0.7	15.3	30.2	4.0	50.2	12.8

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Table 3. Population assessment of rock bass collected from Slate Creek.

Year		CPUE	CPUE	CPUE	CPUE	Total score	Assessment rating
		< 4.0 in	4.0 - 5.9 in	≥ 6.0 in	≥ 8.0 in		
2018	Value	0.7	15.3	34.2	4.0	11	Good
	Score	1	4	4	2		

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Table 4. Smallmouth bass electrofishing CPUE (fish/hour) from each length group collected during spring sampling on Slate Creek.

Year	Inch class					Total	Std. error
	< 4.0 in	4.0-8.9 in	9.0-11.9 in	12.0-13.9 in	≥ 14.0 in		
2018	0.0	13.1	15.3	2.9	1.5	32.7	15.7

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Table 5. Population assessment of smallmouth bass collected from Slate Creek.

Year		CPUE	CPUE	CPUE	CPUE	CPUE	Total score	Assessment rating
		< 4.0 in	4.0 - 8.9 in	≥ 9.0 in	≥ 12.0 in	≥ 14.0 in		
2018	Value	0.0	13.1	19.6	4.4	1.5	12	Good
	Score	0	3	4	3	2		

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Table 6. Largemouth bass electrofishing CPUE (fish/hour) from each length group collected during spring sampling on Slate Creek.

Year	Inch class					Total	Std. error
	< 4.0 in	4.0-8.9 in	9.0-11.9 in	12.0-14.9 in	≥ 15.0 in		
2018	7.0	4.7	2.2	0.7	0.7	9.1	2.8

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Table 7. Population assessment of largemouth bass collected from Slate Creek.

Year		CPUE	CPUE	CPUE	CPUE	CPUE	Total score	Assessment rating
		< 4.0 in	4.0 - 8.9 in	≥ 9.0 in	≥ 12.0 in	≥ 15.0 in		
2018	Value	0.7	4.7	2.9	0.7	0.7	8	Fair
	Score	1	3	2	1	1		

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Table 8. Length frequency and CPUE (fish/hour) of black bass collected during 8.5 hours of electrofishing (15-minute sampling runs) at 9 sites on the Licking River during the spring of 2018.

Section	Species	Inch class																		Total	CPUE	Std. Error	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				19
1	Smallmouth bass			8	2		3	1													15	10.0	3.4
	Spotted bass					1	1				1										3	2.0	1.4
	Largemouth bass												1								1	0.7	0.7
2	Smallmouth bass				4	1	1	3		1	1										11	14.7	7.1
	Spotted bass							3													3	4.0	4.0
	Largemouth bass																				0		
3	Smallmouth bass		1						1	1				2	1						6	6.0	2.0
	Spotted bass			1			1						1		1						4	4.0	0.0
	Largemouth bass				1																1	1.0	1.0
4	Smallmouth bass		1	5			2			1											9	12.0	6.1
	Spotted bass					2	4			1											7	9.3	5.8
	Largemouth bass																				0		
5	Smallmouth bass				2		1		2	1	4		1	2	1	1					15	15.0	7.6
	Spotted bass			1		2	1	1			1										6	6.0	1.2
	Largemouth bass																				0		
6	Smallmouth bass			3			3		1	2	3	3	1	1							17	17.0	6.6
	Spotted bass					1				1					1	1					4	4.0	2.8
	Largemouth bass																				0		
7	Smallmouth bass		2		2		2	3	3	10	7	3	2	2		1				1	38	38.0	2.6
	Spotted bass			1	2							1									4	4.0	1.6
	Largemouth bass																				0		
8	Smallmouth bass			1		3		1	2	3	1	5	5	1					1	1	24	24.0	7.8
	Spotted bass				2	6		3	1	1		1	1								15	15.0	3.4
	Largemouth bass						1														1	1.0	1.0
10	Smallmouth bass										1										1	2.0	2.0
	Spotted bass							1			2										3	6.0	2.0
	Largemouth bass				1		1	1		1		3	3	4		2	1		2	2	21	42.0	22.0
Total	Smallmouth bass		4	17	10	4	12	8	9	19	17	12	9	8	2	2			1	2	136	16.0	2.4
	Spotted bass			3	4	12	10	5	1	3	4	3	1	2	1						49	5.8	1.0
	Largemouth bass				2		2	1	1	1		3	3	4		2	1		2	2	24	2.8	2.0

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Table 9. Smallmouth bass electrofishing CPUE (fish/hour) from each length group collected during spring sampling on Licking River.

	Inch class					Total	Std. error
	< 4.0 in	4.0-8.9 in	9.0-11.9 in	12.0-13.9 in	≥ 14.0 in		
2018	2.5	5.1	5.6	2.0	0.8	16.0	2.4

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Table 10. Population assessment of smallmouth bass collected from Licking River.

Year		CPUE	CPUE	CPUE	CPUE	CPUE	Total score	Assessment rating
		< 4.0 in	4.0 - 8.9 in	≥ 9.0 in	≥ 12.0 in	≥ 14.0 in		
2018	Value	2.5	5.1	8.5	2.8	0.8	11	Good
	Score	3	2	3	2	1		

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Table 11. Largemouth bass electrofishing CPUE (fish/hour) from each length group collected during spring sampling on Licking River.

Year	Inch class					Total	Std. error
	< 4.0 in	4.0-8.9 in	9.0-11.9 in	12.0-14.9 in	≥ 15.0 in		
2018	0.0	0.7	0.5	0.8	0.8	2.8	2.0

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Table 12. Population assessment of largemouth bass collected from Licking River.

Year		CPUE	CPUE	CPUE	CPUE	CPUE	Total score	Assessment rating
		< 4.0 in	4.0 - 8.9 in	≥ 9.0 in	≥ 12.0 in	≥ 15.0 in		
2018	Value	0.0	0.7	2.1	1.6	0.8	7	Fair
	Score	0	1	2	2	2		

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Table 13. Length frequency and CPUE (fish/hour) of catfish species collected during 8.5 hours of electrofishing (15-minute sampling runs) at 9 sites on the Licking River during the spring of 2018.

Section	Species	Inch class																											Total	CPUE	Std. error
		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					
1	Channel catfish			1										1	2	1	1	1										7	4.7	1.9	
	Flathead catfish		1	2				1			2																	6	4.0	1.8	
2	Channel catfish							1								1												2	2.7	1.3	
	Flathead catfish																														
3	Channel catfish			1											1						1							3	3.0	1.9	
	Flathead catfish		1			1		1		1		1		1								1				1		6	6.0	3.8	
4	Channel catfish																														
	Flathead catfish	1								1	1	1										1						5	6.7	4.8	
5	Channel catfish															1												1	1.0	1.0	
	Flathead catfish																														
6	Channel catfish																				1							1	1.0	1.0	
	Flathead catfish																									1		1	1.0	1.0	
7	Channel catfish																		1	1	2		1					5	5.0	2.5	
	Flathead catfish																														
8	Channel catfish				1																								3	3.0	1.0
	Flathead catfish													1															1	1.0	1.0
10	Channel catfish			3	6	15	17	24	20	18	12	7	7	4	1	3	1	2	1										141	282.0	234.0
	Flathead catfish									1	1	1	1													1			5	10.0	10.0
Total	Channel catfish			5	7	15	17	25	20	18	12	7	7	5	4	5	3	6	2	3	1		1					163	19.2	15.1	
	Flathead catfish	1	1	3			1	1	2	1	2	5	2		1						1		1	1		1		24	2.8	0.9	

Table 14. Length frequency and CPUE (fish/hour) of "game" species collected during 8.5 hours of electrofishing (15 minute sampling runs) at 9 sites on the Licking River during the spring of 2018.

Section	Species	Inch class																																					Total	CPUE	Std. error
		1	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	30	31	32	33	34	35	36	37			
1	White bass								1																													1	0.7	0.7	
	Rock bass		1			1																																2	13	0.8	
	Bluegill				4	1																																5	3.3	1.6	
2	Bluegill				1																																	1	13	1.3	
3	Sauger												1						1																		2	2.0	1.2		
4	Rock bass		1	1																																	2	2.7	1.3		
5	Muskellunge																																	1			1	10	1.0		
6	Muskellunge																																			1	2	2.0	1.2		
	Rock bass						1																														1	10	1.0		
	Bluegill		1																																			1	10	1.0	
7	Sauger																2	1																			3	3.0	1.9		
	Muskellunge																										1		1								2	2.0	2.0		
	Rock bass			1			4	3	8	1																	1		1								17	17.0	3.4		
	Redbreast sunfish					1																															1	10	1.0		
	Bluegill		1				2	1																													4	4.0	2.3		
	Black crappie						1																														1	10	1.0		
	Sauger									1			1																									2	2.0	2.0	
8	Walleye																																				1	1	2.0	2.0	
10	Rock bass			1		1	1	10	2	2																											17	17.0	5.0		
	Redbreast sunfish							1	3																												4	4.0	2.8		
	Bluegill		1			2	2	1																													6	6.0	2.6		
	Sauger																	1																			1	10	1.0		
	Walleye																																				2	2.0	1.2		
	Muskellunge																																			1	3	6.0	6.0		
	White bass													1	1																						2	4.0	4.0		
	Rock bass						1	7	12	11	1																											32	64.0	8.0	
	Redbreast sunfish		1						1	1																												3	6.0	2.0	
	Bluegill			4	7	14	9	1																														35	70.0	10.0	
Redear sunfish								1																													1	2.0	2.0		
White crappie				3		10	78	70	23																												184	368.0	188.0		
Black crappie				2		7	40	26	11	3	1																										90	180.0	12.0		
Sauger													1					1																		2	4.0	0.0			
Walleye																																					2	4.0	4.0		
Total	Muskellunge																																			2	8	0.9	0.5		
	White bass								1				1	1																							3	0.4	0.3		
	Rock bass			2	3		3	13	25	21	4																											71	8.4	2.8	
	Redbreast sunfish			1				1	1	4	1																											8	0.9	0.5	
	Bluegill		1	2	4	14	17	12	2																													52	6.1	2.9	
	Redear sunfish									1																												1	0.1	0.1	
	White crappie				3		10	78	70	23																												184	21.7	17.0	
	Black crappie				2		7	41	26	11	3	1																										91	10.7	7.4	
	Sauger										1			1	2	1	1	2	2																			10	12	0.4	
	Walleye																																					6	0.7	0.4	

Table 15. Rock bass electrofishing CPUE (fish/hour) from each length group collected during spring sampling on the Licking River.

Year	Inch Class				Total	Std. error
	< 4.0 in	4.0-5.9 in	6.0-7.9 in	≥ 8.0 in		
2018	0.6	0.4	4.5	2.9	8.4	2.8

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Table 16. Population assessment of rock bass collected from the Licking River.

Year		CPUE	CPUE	CPUE	CPUE	Total score	Assessment rating
		< 4.0 in	4.0 - 5.9 in	≥ 6.0 in	≥ 8.0 in		
2018	Value	0.6	0.4	7.4	2.9	6	Fair
	Score	1	1	2	2		

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Table 17. Length frequency and CPUE (fish/hr) of *Sander* species 2.0 hours of electrofishing (15-minute sampling runs) at 2 tailwaters of the upper Kentucky River during the fall of 2018.

Pool	Species	Inch class									Total	CPUE	Std Error
		6	7	8	9	10	11	12	13	14			
9	Sauger	1	16	1			4	1	5	3	31	31.0	4.4
11	Sauger		1	1			1		2	3	8	8.0	2.8
Total	Sauger	1	17	2			5	1	7	6	39	19.5	5.0

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Table 18. Monthly breakdown of minimum, average, and maximum temperatures on designated trout streams.

Stream Name		Months																				
		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
Parched Corn	Upper	59.7	62.3	64.7	57.7	64.3	68.7	62.6	66.6	70.9	59.6	66.7	69.4	58.6	66.0	70.2	44.2	55.7	66.6	34.7	44.6	54.8
Parched Corn	Lower	59.9	62.5	65.1	58.0	64.4	69.1	63.0	66.7	71.2	60.0	66.8	70.1	58.7	66.0	70.2	44.1	55.6	66.6	36.5	45.2	54.6
Chimney Top	Upper	55.9	60.9	65.5	57.3	63.6	69.1	62.1	65.9	71.2	59.7	65.9	69.6	59.4	65.5	70.8	46.7	56.6	67.1	38.2	46.3	55.2
Chimney Top	Lower	56.1	61.9	67.1	57.7	64.6	71.3	62.4	66.7	72.6	59.6	66.7	71.4	59.3	65.9	71.6	45.8	56.5	67.7	37.4	46.1	55.7
MF Red	Upper	59.5	69.8	76.1	63.9	72.1	79.3	68.6	74.1	81.8	65.5	73.4	79.3	61.7	70.7	78.4	48.4	59.6	74.6	37.3	46.7	57.1
MF Red	Lower	60.7	71.8	80.0	66.5	74.6	83.9	70.0	76.5	85.8	67.6	75.2	82.0	61.8	71.2	81.8	49.1	59.9	75.0	36.8	46.6	56.8
EF Indian	Upper	54.1	63.9	70.1	59.8	66.7	76.3	64.5	69.1	76.5	61.4	68.5	74.9	59.3	66.8	74.3	46.1	56.7	67.7	36.4	46.2	56.4
EF Indian	Lower*																					
Swift Camp	Upper*																					
Swift Camp	Lower	62.1	68.0	71.7	63.4	70.2	77.4	67.4	71.9	79.2	64.3	71.6	75.7	61.3	69.0	75.4	44.9	57.0	69.6	33.9	44.6	55.2
NF Triplett	Upper	55.7	69.2	75.7	67.8	72.7	78.8	67.9	75.5	82.9	67.3	73.9	79.1	61.8	70.8	79.3	48.0	59.3	72.1	37.6	47.6	58.6
NF Triplett	Lower	56.9	68.8	75.8	67.6	72.8	81.1	68.3	76.3	85.1	68.4	74.5	85.1	62.6	71.1	80.2	48.5	59.4	72.4	37.5	47.5	58.5
Craney	Upper*																					
Craney	Lower*																					
Big Caney	-	54.7	61.4	66.0	58.2	63.4	69.3	62.3	66.0	71.1	60.8	65.7	70.7	59.2	65.6	71.1	47.1	56.4	65.7	39.0	46.7	54.9
Laurel Creek	-	54.4	62.3	66.3	58.5	64.7	72.0	62.9	67.2	73.2	59.9	66.9	72.3	58.8	66.0	73.0	44.9	55.9	66.2	38.3	46.2	55.3
Raven Creek	-	65.1	73.8	80.9	67.7	75.2	84.7	66.4	75.7	84.8	68.5	74.5	80.4	62.1	71.5	81.5	47.2	59.7	76.2	35.6	46.0	59.5
EF Little Sandy	-	65.9	71.7	77.2	65.3	73.7	81.6	70.3	76.0	85.4	67.0	74.2	80.1	63.2	72.0	82.4	47.6	59.4	73.0	36.6	46.7	57.2
Sturgeon Creek	-	62.1	69.3	72.5	61.9	69.7	76.9	66.3	73.8	79.2	70.8	75.3	79.0	61.9	70.3	80.4	50.7	60.1	72.1	39.3	49.1	57.0
Station Creek	-	62.5	73.5	75.9	66.3	71.8	78.5	69.7	75.5	81.8	68.7	74.8	80.7	63.8	72.7	80.7	36.1	47.1	57.7	35.1	45.2	57.7

\* Temperature loggers were not recovered in time for publication due to high water.

Table 19. Cumulative angler counts on trout streams based on trail camera data.

Stream type	Stream	Location	Year sampled	Months												Total
				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Put, Take																
	Big Caney	Total	2018-2019				*	47*	14	9	3	6	31*	13	0	123
	Laurel	Total	2018-2019				*	20*	10	5	0	2	*			37
	Triplett	Total	2018-2019			*	*	65*	13	12	21	10	1	0	2	124
	Craney	Total	2017-2018	0	2	4	9	8	23	3	16	3	1*	9	3	81
	Swift Camp	Total	2017-2018	3	0	17	28*	17	23	23	7	3	24*	20	7	172
Put, Grow, Take																
	Dog Fork	Total	2018-2019					1	0	0	0	1	1	0	0	3
	Chimney Top	Upper	2018-2019					0	0	0	1	0	4	3	3	11
	Chimney Top	Lower	2018-2019					0	0	2	0	2	0	3	1	8
	Parched Corn	Total	2018-2019					0	0	1	0	1	6	3	2	13

\* Stocked Month (P/T Streams)

Table 20. Length frequency of trout species sampled on trout streams in July. Parched Corn and East Fork Indian were sampled for 4 - 150-yard sections and Chimney Top was sampled for 3- 150-yard sections.

Streams	Trout species	Inch class										Total	CPUE*			
		2	3	4	5	6	7	8	9	10	11			12		
Parched Corn	Brook	2	1		3	4									10	2.5
Chimney Top	Brown			1		1	2								4	1.3
EF Indian	Rainbow								1		1				2	0.5
	Brown								1						1	0.25

\*CPUE is number of fish per 150 yards

## NORTHEASTERN FISHERY DISTRICT

### Project 3: Technical Guidance

#### FINDINGS

Table 1 provides a list of ponds visited (12) in 2018 and our findings and recommendations. In addition to on-site inspections, consultations were rendered via telephone (75-100) and/or written correspondence (~5). 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. Technical guidance was provided to individuals from all counties in the NEFD. 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.



Table 1. On-site technical guidance provided by the Northeastern Fishery District during 2018.

County	Name	Date	Findings	Recommendations
Bourbon	K. Bell	11-Jul	Vegetation problem	Apply SONAR or Clipper
Fleming	S. Donovan	11-Jul	Unbalanced fish, vegetation issues	Stock (500 BG, 15 GC), apply Reward
	D. Hester	30-Aug	Undesirable fish species	Remove underirables and stock 200 BG
Lewis	George	16-Jul	Unbalanced fish, too much AquaShade	Harvest CCF, stock 100 BG, stop AquaShade
	T. Scarlett	16-Jul	Vegetation problem; low BG	Apply Rodeo, stock 50 BG
Montgomery	R. Elliott	22-Jun	Vegetation problem	Apply SONAR or stock GC
	B. McCoy	25-Jun	Unbalanced, low fertility	Soil sample and fertilize, special fisheries permit
	A Walker	25-Jun	P1: Unbalanced, low fertility P2: Unbalanced, low fertility	P1: Stock 350 BG, soil test and fertilize P2: Stock 350 BG, soil test and fertilize
Robertson	M. Provence	11-Jul	P1: Balanced, minor vegetation issues P2: No BG, many small LMB	P1: Stock 10 GC, harvest any undesirables. P2: Stock 200, 4-6" BG
Rowan	B. Brook	22-Jun	Creek floods pond, undesirable species	Fertilize, stock 50 adult BG and remove undeseriables when caught

## SOUTHEASTERN FISHERY DISTRICT

### Project 2: Stream Fishery Surveys – Trout Stream Fishery Surveys

#### FINDINGS

Three streams in the Southeastern Fishery District were monitored to evaluate the habitat suitability for trout management based on water temperature. Temperature data was collected at two locations within each of the three streams from early-May through mid-December. Water temperature (°F) was recorded once every hour. Bark Camp Creek did not record any water temperatures over 75°F during the summer months from June-September, and average monthly temperatures did not exceed 71°F (Table 1). In Cane Creek, maximum water temperatures were just over 75°F in July, and average monthly temperatures did not exceed 71°F (Table 2). Maximum water temperature in Clear Creek exceeded 77°F in July, and the average monthly temperature was greater than 72°F in July (Table 3). The three streams were classified based on four criteria: 1) the number of days that the average daily water temperature exceeded 72°F during the year, 2) the maximum water temperature from June-September, 3) the number of days the average daily water temperature exceeded 73°F in June, and 4) the maximum water temperature in June. Based on the criteria, Bark Camp Creek and Cane Creek were Class II streams, and Clear Creek was a Class III stream (Table 4). All trout streams assessed should continue under current management regimes.

Table 1. Temperature data from Bark Camp Creek, Whitley County, Kentucky, in 2018.

Month	Upstream		Downstream	
	Average Temperature (Range) °F	# of Days Average Temperature $\geq$ 72 °F	Average Temperature (Range) °F	# of Days Average Temperature $\geq$ 72 °F
May	64.3 (58.9-68.3)	0	64.6 (58.9-69.1)	0
June	66.7 (61.2-72.2)	0	67.0 (61.4-72.9)	0
July	69.0 (65.0-73.3)	0	70.6 (65.9-74.9)	8
August	68.2 (61.4-71.9)	0	69.0 (62.5-73.6)	0
September	68.4 (61.3-71.9)	0	69.0 (61.3-73.3)	2
October	57.1 (46.0-67.7)	0	56.9 (45.5-67.7)	0
November	46.9 (36.5-56.6)	0	46.9 (36.6-56.5)	0
December	44.2 (38.6-51.8)	0	44.2 (38.9-51.4)	0

Table 2. Temperature data from Cane Creek, Laurel County, Kentucky, in 2018.

Month	Upstream		Downstream	
	Average Temperature (Range) °F	# of Days Average Temperature $\geq$ 72 °F	Average Temperature (Range) °F	# of Days Average Temperature $\geq$ 72 °F
May	66.3 (59.1-70.5)	0	65.4 (57.7-69.5)	0
June	68.2 (61.2-73.7)	0	67.9 (60.8-74.5)	0
July	70.3 (65.6-75.2)	8	69.9 (64.8-75.3)	4
August	69.3 (62.7-73.2)	1	69.0 (61.9-73.3)	0
September	68.9 (60.6-73.1)	2	68.7 (60.6-73.2)	1
October	57.1 (45.4-68.7)	0	56.8 (44.9-68.5)	0
November	46.6 (35.3-56.5)	0	46.5 (35.2-56.6)	0
December	43.3 (36.6-50.6)	0	43.3 (36.5-50.8)	0

Table 3. Temperature data from Clear Creek, Bell County, Kentucky, in 2018.

Month	Upstream		Downstream	
	Average Temperature (Range) °F	# of Days Average Temperature $\geq$ 72 °F	Average Temperature (Range) °F	# of Days Average Temperature $\geq$ 72 °F
May	65.8 (60.5-69.8)	0	66.4 (60.3-72.4)	0
June	69.4 (65.0-74.0)	3	69.7 (64.3-75.4)	8
July	72.3 (69.5-75.6)	18	72.6 (68.6-77.2)	19
August	70.7 (67.2-73.5)	2	71.0 (66.7-74.3)	3
September	70.9 (66.2-73.6)	7	71.1 (65.8-74.4)	11
October	61.4 (52.8-69.9)	0	61.1 (52.0-70.1)	0
November	50.9 (44.0-56.5)	0	51.7 (46.0-56.1)	0
December	46.7 (44.4-49.9)	0	47.8 (46.0-50.4)	0

Table 4. Southeastern Fishery District stream assessment for trout management in 2018.

Stream	# of Days Average Temperature $\geq$ 72 °F in the Year	Maximum Temperature from June-September (°F)	# of Days Average Temperature $\geq$ 73 °F in June	Maximum Temperature in June (°F)	Stream Classification Rating
Bark Camp Creek	10	74.9	0	72.9	Class II
Cane Creek	11	75.3	0	74.5	Class II
Clear Creek	41	77.2	3	75.4	Class III

## SOUTHEASTERN FISHERY DISTRICT

### Project 3: Technical Guidance

#### FINDINGS

Details of the technical guidance provided during 2018 are shown in Table 1. Technical guidance was provided through nine on-site visits. Additional technical guidance requests were handled over the telephone, or by written correspondence. Topics encountered and responded to included: fish population balance, water quality problems, fish disease, fish stocking, and aquatic vegetation problems.

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.

Table 1. Technical guidance provided in the Southeastern Fishery District during 2018.

County	Name of pond or pond owner	Date	Findings	Recommendations
Laurel	Dylan Brock	6/25	Bass slightly overcrowded	Remove skinny bass; add lime; add cover
	Jerry Ledford	8/9	Bass overcrowded; American pondweed and filamentous algae present	Remove skinny bass; don't harvest bluegill; treat pondweed
Owsley	Adam Stall-Carpenter's Village	7/17	Low numbers of fish; muddy water	Stock bluegill and bass; add lime; add hay bales around bank to limit sediment input; add cover
Pulaski	David Gilbert	7/9	Bass slightly overcrowded; filamentous algae, naiads, duckweed, and cattails present	Remove skinny bass; recommended herbicides and grass carp for vegetation control
Rockcastle	Dennis Clark	7/18	Pond 1: Low numbers of bass	Pond 1: Stock bass; add cover; remove crappie if caught
			Pond 2: Bass overcrowded	Pond 2: Remove skinny bass; add lime; add cover
Wayne	Pam Reynolds	7/19	No bass observed; green sunfish present; excessive vegetation	Stock largemouth bass; stock channel catfish; remove green sunfish; add cover; stock grass carp
Whitley	Buck Begley	7/5	Bass slightly overcrowded; Chara present	Remove skinny bass; add cover; add lime; add grass carp to control vegetation
	Willis Barnett	7/5	Bass slightly overcrowded	Remove skinny bass; add cover
	Ray Lanham	7/5	Bass slightly overcrowded	Remove skinny bass; don't harvest bluegill; add lime; add cover

## EASTERN FISHERY DISTRICT

### Project 2: Stream Fishery Surveys

#### FINDINGS

##### Trout Stream Assessments

Two streams in the trout stocking program were evaluated. Paint Creek in Johnson County and Russell Fork in Pike County were monitored with in-stream devices that recorded water temperature (°F) once every hour from April – October. Two sites were monitored in Paint Creek, one site in Russell Fork, and one site in Elkhorn Creek near its confluence with Russell Fork. The Elkhorn Creek in Pike County site was monitored as it is utilized as a stocking site for trout in Russell Fork.

All stream sites had supporting temperatures for trout during spring and fall time periods. Recorded minimum and maximum temperature ranges are displayed in Tables 1-2. The trout management plans are different for each stream.

Paint Creek is managed both as a put-take fishery (Paintsville Lake tailwater) and a put-grow-take fishery (special regulation downstream area). Rainbow trout are stocked at a rate of 2,500 fish/mo from April – November and 300 brown trout are stocked in April. Paint Creek immediately below Paintsville Lake does receive trout stockings through the summer. Although maximum summer temperatures at this location are approximately 70F, a trout fishery is still supported during this time. This portion of Paint Creek or Paintsville Lake tailwater is under statewide regulation for trout and managed as a put-take fishery. Downstream of this area, begins a special fishing regulation for trout in Paint Creek and is considered the put-grow-take fishery. The special regulation area is defined with limits specified as “From the KY 40 bridge downstream to the first U.S. 460 bridge, 16-inch minimum size limit and 1 fish daily creel limit on trout and only artificial baits shall be used”. The upper and lower sites of temperature monitoring during 2018 occurred at the halfway and end points of this special regulation area. Observed temperature did exceed 72F during most months at the upstream and downstream locations (Table 1). However, the upstream location during most months did remain fairly close to 72F for maximum temperature and when exceeding 72F, it was for a short duration each day/24 hr time period. Since the 2006 changes in Paintsville Lake outflows, the special regulation area has had approximately half of its year-round trout habitat altered or eliminated. Where the special regulation was in effect prior to 2006 and this reach of stream had cooler temperatures at that time, the current data in Table 1 could be used for changes or modifications. The special regulation area could be shortened and redefined, eliminated, or remain as is until further social inputs are determined.

Russell Fork is managed as a put-take fishery. Rainbow trout are stocked at a rate of 750 fish/mo in April, May, and October. Based on the data collected (Table 2), this stream should continue with current management strategies. If any changes in production plans or reallocation of fish occur, November would be an acceptable month for an additional stocking.

##### Warmwater Stream Assessments

One stream was sampled to examine species composition and length distribution of sportfish. Lotts Creek in Knott County was sampled on 11 June 2018 in one location via backpack electrofishing and seine hauls. Specific conductivity was 1,273 umhos/cm and prevented effective electrofishing. Total electrofishing time was 0.09 hours. Species composition is listed in Table 3 and sportfish length frequency distribution is in Table 4. The stream area sampled exhibited low fish species diversity, but good numbers of crayfish and hellgrammites and the possibility to offer anglers a small stream fishery for sportfish.

Table 1. Temperature data from Paint Creek in Johnson County, Kentucky (April 27 – October 29, 2011).

Month	Temperature range (°F)	
	Downstream @ RT 460 bridge crossing	Upstream @ bridge to entrance of Cross Creek II subdivision
April	53.8-62.2	53.3-61.1
May	54.7-73.3	53.8-72.9
June	65.6-78.3	64.6-77.0
July	67.8-76.0	66.1-73.4
August	66.3-76.0	66.4-73.5
September	60.6-75.9	60.9-75.3
October	50.2-71.4	52.3-69.9

Table 2. Temperature data from Russell Fork in Pike County, Kentucky (April 26 – October 30, 2018). Data marked with “\*” due to temperature logger being exposed from water for some period of time.

Month	Temperature range (°F)	
	Downstream @ bridge on Elkhorn Creek behind old Elkhorn City HS	Upstream @ old water plant
April	52.2-60.2	51.9-56.3
May	53.6-76.4	52.9-72.4
June	64.3-82.7	54.4-83.1*
July	68.4-85.4	65.0-82.4
August	67.3-81.2	65.2-79.7
September	66.2-73.8	58.5-82.9*
October	60.1-67.1	43.7-74.7*

Table 3. Species composition in Lotts Creek, Knott County near Cordia School gymnasium.

Common Name	Species	Number
Striped shiner	<i>Luxilus chrysocephalus</i>	59
Creek chub	<i>Semotilus atromaculatus</i>	38
Central stoneroller	<i>Camptostoma anomalum</i>	31
Northern hog sucker	<i>Hypentelium nigricans</i>	13
Longear sunfish	<i>Lepomis megalotis</i>	1
Green sunfish	<i>Lepomis cyanellus</i>	3
Hybrid sunfish	<i>Lepomis sp.</i>	1
Smallmouth bass	<i>Micropterus dolomieu</i>	2
Rainbow darter	<i>Etheostoma caeruleum</i>	11
Total Number of Individuals		159

Table 4. Sportfish length distribution and frequency, Lotts Creek, Knott County.

	Inch class													Total
	2	3	4	5	6	7	8	9	10	11	12	13	14	
Longear sunfish			1											1
Green sunfish	1	1		1										3
Lepomis hybrid		1												1
Smallmouth bass				1									1	2



## EASTERN FISHERY DISTRICT

### Project 3: Technical Guidance

#### FINDINGS

Details of the technical guidance provided during 2018 are shown in Table 1. Technical guidance was provided through three on-site visits. Additional technical guidance requests were handled over the telephone, walk-in visits, or by written correspondence. Topics encountered and responded to included: fish population balance, water quality problems, fish stocking, and aquatic vegetation problems.

Several other requests for information about area fisheries and miscellaneous information about fish management in lakes and ponds were handled over the telephone, email, and walk-in visits.

**Table 1. Pond technical guidance in the Eastern Fishery District during 2018.**

Date	County	Owner	Problem	Recommendations
1/18	Harlan	Tony Eldridge	w eeds, fish stocking	grass carp ,catfish stocking
2/21	Johnson	WildCat Pay Lake	filamentous algae	copper sulfate
3/26	Floyd	Greg May	pond stocking, new const.	stocking rates, pond book, stocking list
*4/20	Harlan	HighSplint F&G club	vegetation, stocking, habitat	fertilize
4/4	Law recce	Kevin Osborne	fish supplier info	supplier list, TG application
3/5	Johnson	Kevin Jervis	stocking info	fish supplier list, web site links
4/16	Harlan	Roger Williams	stocking rates, algae control	pond book, suppliers list, herb recommendations
4/25	Law rence	Kurt Fitzpatrick	fish stocking, w eeds	grass carp ,granular cutrine
4/30	Knott	Nick Slone	bait fish	habitat, pallets
4/30	Leslie	Lona Napier	pond balance	fish pond & call back w ith results
5/1	Johnson	Linda Hamilton	algae, pondw eed	CitrinePlus, Rew ard
4/27	Martin	Wibur Kirk	grass carp	private dealer list
5/18	Floyd	Dean Harless	filamentous algae	copper sulfate
2/22		Faryey Joseph	filamentous algae, cattails	copper sulfate, Rodeo
*7/20	Law rence	Joe Tomblin	pond balance, vegetation	stock catfish, private dealer list, grass carp
8/6	Magoffin	Trinity Shepherd	stocking	private dealer list & possibly stocking himself
9/11	Perry	Jesse Hager	dead fish from recent stocking	handling stress from hot w eather
10/18	Bell	How ard Willson	pond program w ants fish	sent info to SEFD
*11/15	Law rence	Law rence	pond balance, stocking	harvest fish, feed catfish
12/18	Knott	James Bow ling	new pond stocking	pond book, suppliers list

Project 4: Fish Habitat Improvement - Public Lakes Fertilization

Lake	County	Size (acres)
<u>Northwestern Fishery District</u>	Subtotal	<u>18</u>
Washburn Lake	Ohio	18
<u>Southwestern Fishery District</u>	Subtotal	<u>204</u>
Marion County Lake	Marion	25
Spurlington Lake	Taylor	25
Briggs Lake	Logan	18
Shanty Hollow Lake	Warren	136
<u>Central Fishery District</u>	Subtotal	<u>172</u>
Corinth Lake	Grant	84
Benjy Kinman Lake	Henry	88
<u>Northeastern Fishery District</u>	Subtotal	<u>8270</u>
Cave Run Lake (4 access sites)	Rowan, Morgan, Menniffee, Bath	8270
<u>Eastern Fishery District</u>	Subtotal	<u>39.7</u>
Fishpond Lake	Knott	30.3
High Splint Lake	Harlan	6.9
Kingdom Come Lake	Harlan	2.5

Project 4: Fish Habitat Improvement - Fish Attractors

District / Lake	Fish Attractor Sites
<u>Western Fishery District</u>	
Barkley Lake	341 hardwood units (1 tree = 1 unit) were used to create new shallow water bass spawning bench sites; 82 Christmas tree units (1 pallet and approximately 5 trees = 1 unit) were used to create new shallow water habitat sites; 45 plastic units (1 plastic porcupine-like attractor = 1 unit) were used to create new shallow water fish attractor sites; Dozens of test plots of rye grass and triticale were planted
Kentucky Lake	31 hardwood units (1 tree = 1 unit) were used to create new shallow water bass spawning bench sites; Refurbished 304 hardwood shallow water stake beds and made 45 new sites (new site=50 stakes, refurbished site=30 stakes); 51 hardwood units (1 tree = 1 unit) were used to refurbish existing deepwater sites; 3 hardwood units (1 tree = 1 unit) were used to refurbish existing shallow water sites; 40 Christmas tree units (1 pallet and approximately 5 trees = 1 unit) were used to create new shallow fish habitat sites; 73 plastic units (1 plastic simulated tree attractor = 1 unit) were used to refurbish existing deepwater fish attractors; dozens of test plots of rye grass and triticale were planted
<u>Northwestern Fishery District</u>	
Nolin River Lake	
Moutardier area	7 mature cedar tree sites
Rough River Lake	
Large project preparation	An additional 1,100 gas pipe structures were constructed and 500 cut to length in preparation for a large project at Rough River Lake that was postponed due to high water levels during winter.
Kingfisher lakes	
New Kingfisher	2 hardwood brush sites
Old Kingfisher	9 "large fountain" gas pipe structures
<u>Southwestern Fishery District</u>	
Barren River Lake	3 refurbished brush sites, 1 new plastics site
Green River Lake	12 new brush sites, 2 refurbished brush site, 3 new pallet trees sites
Spurlington Lake	2 new cedar stakebeds
Metcalfe County Lake	1 new cedar stakebed

Project 4: Fish Habitat Improvement - Fish Attractors cont.

District / Lake	Fish Attractor Sites
<u>Central Fishery District</u>	
Beaver Lake	1 brush pile (59 trees)
Benjy Kinman Lake	61 tons of shot rock; 17 tons of #2 rock for spawning habitat; 44 tons of #4 rock for spawning habitat; 1,334 Christmas trees = spawning sites (150 trees), 3 shoreline transect (150 trees), pallet structures (60 trees), and brush piles (974 trees); 30 pallet structures (3 pallets per unit + 2 trees per pallet (60 trees); 10 hinge cut – fallen trees
Boltz Lake	11 brush piles (48 trees)
Taylorville Lake	1 brush pile (115 Christmas trees); 2 brush piles (9 large cedar trees)
<u>Northeastern Fishery District</u>	
Cave Run Lake	<p>Tree sites (~400 smaller cedar trees and ~100 larger cedar trees)</p> <ul style="list-style-type: none"> <li>- Refreshed 5 sites in the Stoney Cove Reef area (~300 cedar trees).</li> <li>- Created 2 new sites across from the Twin Knobs Beach (~100 cedar trees).</li> <li>- Created 2 new large cedar tree piles (~100 trees) in the Stoney Cove Area.</li> </ul> <p>Plastic sites (~10 FisHiding structures and 25 Gas Line structures)</p> <ul style="list-style-type: none"> <li>- Added to the FisHiding location with product purchased by the USFS.</li> <li>- Created 2 new plastic sites (one in Stoney Cove area, one across from the Win Knobs beach).</li> </ul>
Grayson Lake	4 refurbished brush sites (Christmas tree sites – 150+ trees)
<u>Southeastern Fishery District</u>	
Laurel River Lake	4 new brush sites (70 Christmas trees per site)
<u>Eastern Fishery District</u>	
Buckhorn Lake	500 lbs of winter wheat sowed
Carr Creek Lake	150 pallet structures; 60 mossback structures; 60 plastic trees; 5 shallow and 8 deep water brushpiles with 1300 trees; 2 new rock piles w/ 18 ton rock; 2 new stake beds; 8 mega-pallet stakebed
Dewey Lake	2 new shallow water brushpiles (45 christmas trees & hardwood); 2 refurbished shallow water brushpiles (10 christmas trees); 2 new deep water brushpiles (45 christmas trees & hardwood); 1 refurbished deep water brushpile (3 big cedar trees); 2 refurbished stake beds (with 25 christmas trees); 3 hinge-cut trees; 200 lbs wheat and 50 lbs rye seed sowed
Fishtrap Lake	3 refurbished deep waterbrushpiles (25 christmas trees); 3 shallow water brushpiles (10 christmas trees)
Yatesville Lake	3 refurbished shallow reefs (30 cedar trees); 3 hinged cut hardwood trees

**Minor Clark Fish Hatchery 2018 Sport Fish Production**

Species	Planned		Location/Use	Actual			Notes
	Number	Size (in)		Number	Size (in)	Pounds	
Muskellunge	100,000		Ohio DNR	156,000			Eggs
	0		West Virginia	115,400			Fry
	0		Licking River	791,637			Fry
Total Fry/Eggs				1,063,037			
	705		9 Barren River	0			
	180		9 Green River Pool 5	0			
	350		9 South Fork Kentucky River	0			
	375		9 North Fork Kentucky River	0			
	400		9 Licking River	0			
	200		9 Little Sandy River	0			
	110		9 Tygarts Creek	0			
	145		9 Drakes Creek	0			
	720		9 Green River Pool 6	0			
	250		9 Green River Pool 4	0			
	195		9 Tug Fork	0			
	500		9 Levisa Fork	0			
	50		9 Kinniconick Creek	0			
	85		9 Red River	0			
	30		9 West Fork Drakes Creek	0			
	15		9 Sexton Creek	0			
	30		9 Goose Creek Lake	0			
	40		9 Redbird River	0			
	15		9 Station Camp Creek	0			
	10		9 Sturgeon Creek	0			
	30		9 Triplett Creek	0			
	20		9 North Fork Triplett Creek	0			
	100		9 Kentucky River Pool 2*	0			
	200		9 Kentucky River Pool 3*	0			
Total	4,755		9	0			

\*Right Pectoral Fin Clip

Species	Planned			Actual			Notes
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	
Muskellunge	2,700	13	Cave Run Lake*	1,080	12.2	347.4	3.2
	2,700	13	Green River Lake*	1,121	12.2	350.3	3.2
	400	13	Buckhorn Lake*	150	12.2	46.9	3.2
	375	13	Dewey Lake*	140	12.2	45.2	3.1
	100	13	Kentucky River Pool 2	0			
	200	13	Kentucky River Pool 3	0			
			13 Hatchery Oxbow	0			
	0	0	Tennessee DNR	0			
Total	6,475	13		2,491	12.2	789.8	3.2
Grand Total	11,230			1,065,528			

\*Left Pectoral Fin Clip Right Caudal Wire Tag

Hybrid Striped Bass	200,000	1.5	Barren River Lake**	409,841	1.5	450.8	909
	2,600	1.5	Sympson Lake	2,676	1.5	3.4	787
	15,000	1.5	Grayson Lake	15,110	1.5	19.2	787
	51,000	1.5	Rough River Lake*	51,279	1.6	68.4	750
	51,000	1.5	Rough River Lake	51,105	1.6	65.1	785
	30,000	1.5	Taylorsville Lake*	30,306	1.6	33.9	894
	30,000	1.5	Taylorsville Lake	30,099	1.6	41.4	727
	25,000	1.5	Herrington Lake*	25,212	1.6	28.2	894
	25,000	1.5	Herrington Lake	25,880	1.6	35.4	731
	23,000	1.5	Fishtrap Lake	23,338	1.5	29.0	805
	7,200	1.5	Lake Linville	7,240	1.5	9.2	787
	19,000	1.5	Guist Creek Lake	19,046	1.5	24.2	787
	3,333	1.5	KY River Pool 4**	3,375	1.3	2.7	1,250
	3,333	1.5	KY River Pool 5**	3,375	1.3	2.7	1,250
	3,333	1.5	KY River Pool 6**	3,375	1.3	2.7	1,250
	3,333	1.5	KY River Pool 7**	3,375	1.3	2.7	1,250
	3,334	1.5	KY River Pool 8*	3,375	1.3	2.7	1,250
	3,334	1.5	KY River Pool 9**	3,375	1.3	2.7	1,250
			Ohio River				
	54,500	1.5	Markland Pool**	54,684	1.2	28.0	1,953
	41,500	1.5	McAlpine Pool**	41,990	1.2	21.5	1,953

Species	Planned			Actual				Notes
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	No./lb.	
Hybrid Striped Bass	50,000		1.5 Cannelton Pool**	51,364	1.2	26.3	1,953	
	36,000		1.5 Newburg Pool**	36,124	1.3	27.1	1,333	
	43,700		1.5 Uniontown Pool**	43,773	1.3	32.5	1,347	
	60,500		1.5 Smithland Pool**	60,626	1.3	47.8	1,268	
	0		Kentucky Lake Tailwater	100,881	1.2	66.1	1,347	
	0		Barkley Lake Tailwater	100,103	1.2	61.3	1,633	
Total Recips	679,000			685,363	1.5	703.3		
Total Originals	106,000		*OTC Marked Originals	515,564		431.6		
Grand Total	785,000		** Mixed Originals/Recips	1,200,927		1134.9		
Walleye (Erie)	0		0 Licking River	579,720				Fry
	0		0 West Virginia	1,240,163				Fry
Total				1,819,883				
	350,000		1.5 Lake Cumberland	350,840	1.4	212.8	1,649	
	40,000		1.5 Dale Hollow Lake (KY)	40,062	1.4	27.3	1,468	
	260,000		1.5 Laurel River Lake	291,450	1.4	154.8	1,883	
	35,000		1.5 Carr Creek Lake	35,052	1.5	27.6	1,270	
	57,000		1.5 Paintsville Lake	57,150	1.5	45.0	1,270	
	200,000		1.5 Nolin River Lake	200,828	1.5	158.2	1,269	
	200,000		1.5 Green River Lake	265,483	1.5	256.0	1,037	
	15,000		1.5 Russell Fork	15,150	1.5	11.9	1,270	
Total				1,256,015	1.5	893.6	1,406	
Grand Total				3,075,898				
<b>Walleye (Native)</b>								
	20,000		2.5 Upper KY River	7,250	3.2	50.7	143	
	3,000		2.5 Upper Levisa Fork	0				
	6,400		2.5 Rockcastle River	2,331	3.2	16.3	143	
	19,800		2.5 Wood Creek Lake	0				
	16,000		2.5 Lower Barren	5,817	3.2	40.4	143	
	10,000		2.5 Martins Fork Lake	3,779	3.2	26.8	141	
	27,200		2.5 Upper Cumberland River	9,870	3.2	70	141	
Total	102,400			29,047	3.2	204.2	142	
Grand Total				29,047				

Species	Planned			Actual			Notes
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	
Sauger			Kentucky River				
	5,000	1.5	Pool 2 Monterey	0			
	10,000	1.5	Pool 3 Steele Branch	10,150	1.7	9.7	1,050
	10,000	1.5	Pool 4 Benson Creek Ramp	10,150	1.7	9.7	1,050
	10,000	1.5	Pool 5 Tyrone Ramp	10,150	1.7	9.7	1,050
	10,000	1.5	Pool 6 Oregon Ramp	10,150	1.7	9.7	1,050
	15,000	1.5	Pool 8 Hunters Ferry	10,150	1.7	9.7	1,050
	10,000	1.5	Pool 9 Boonesborough Ramp	10,150	1.7	9.7	1,050
	10,000	1.5	Pool 10 College Hill Ramp	0			
	10,000	1.5	Pool 11 Irvine Ramp	0			
	10,000	1.5	Pool 12 Ravenna Ramp	0			
	100,000	1.5		60,900	1.7	58	1,050
	200,000		Eggs				
Striped Bass	350,000	1.5	Lake Cumberland	350,419	1.6	504.9	694
	50,000	1.5	Kentucky Lake tailwater	46,821	1.5	57.7	812
	50,000	1.5	Barkley Lake tailwater	46,768	1.6	76.6	611
			Ohio River				
	49,000	1.5	Markland Pool	0			
	38,000	1.5	McAlpine Pool	38,061	1.3	31.3	1,071
	46,000	1.5	Cannelton Pool	46,113	1.5	47.5	737
	33,000	1.5	Newburg Pool	33,000	1.3	31.1	1,062
	40,000	1.5	Uniontown Pool	40,010	1.4	42.7	936
	55,000	1.5	Smithland Pool	55,049	1.5	72.8	756
	711,000	1.5		656,241	1.5	864.6	759



Species	Planned		Location/Use	Actual			Notes
	Number	Size (in)		Number	Size (in)	Pounds	
Largemouth Bass	0.0	0.0	Hatchery Oxbow	417,060			Fry
	Total			417,060			
		Ohio River					
			Cannelton Pool				
	270	2.0	Yellowbank Creek	300	1.8	0.7	429
	660	2.0	Town Creek	686	1.8	1.6	429
	17,000	2.0	Tar Fork/Clover Creek	17,037	1.8	39.7	429
			McAlpine Pool				
	7,050	2.0	Harrod's Creek	7,079	1.8	16.8	421
			Markland Pool				
	38,200	2.0	Craig's Creek	38,232	1.7	70.8	540
	2,474	2.0	Big Sugar Creek	2,491	1.8	5.7	437
	2,535	2.0	Little Sugar Creek	2,578	1.8	5.9	437
	16,064	2.0	Big Bone Creek	16,098	1.7	32.1	502
	10,309	2.0	Gunpowder Creek	10,358	1.8	23.7	437
	3,580	2.0	Woolper Creek	3,583	1.8	8.2	438
			Meldahl Pool				
	3,853	2.0	Big Snag Creek	3,880	1.9	9.7	400
	8,416	2.0	Big Locust Creek	8,760	1.9	21.6	400
	2,705	2.0	Big Turtle Creek	2,720	1.9	6.8	400
	7,943	2.0	Bracken Creek	7,960	1.9	19.9	400
	2,265	2.0	Lawrence Creek	2,280	1.9	5.7	400
			Greenup Pool				
	15,100	2.0	Little Sandy (Greenup Rp)	15,111	2.1	46.8	323
	15,100	2.0	Little Sandy (Raccoon Rp)	15,113	2.2	67.5	224
	0		N.F. Elkhorn Creek	5,672	2.3	29.0	196
	0		Hatchery Oxbow	679	2.9	6.4	104
	0		Licking River	4,258	2.3	21.6	196
Total	153,524			164,875	2.2	440.2	303

Species	Planned			Actual				Notes
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	No./lb.	
Largemouth Bass	7,500	5.0	Carr Creek	7,104	6.2	790.0	9.0	
	7,500	5.0	Fishtrap	6,729	6.2	735.5	9.0	
	100,000	5.0	Priority 1 lakes at 15/acre					
			Herrington Lake	24,172	4.3	887.9	27.2	
			Taylorsville Lake	30,503	4.3	920.5	33.1	
			Guist Creek Lake	3,171	5.0	145.8	21.7	
		Overwinter For Spring	17,287	4.3	556.7	31.1		
Total	115,000			88,966		4,036.4		
Grand Total	268,524			670,901		4,476.6		
Grass Carp	0	0	Clear Creek Lake	16	14.0	12.8	0.8	
Total				16		12.8		
Saugeye	0	0	Pfeiffer to grow out	717,500				Eggs
Total				717,500				

Peter W. Pfeiffer Fish Hatchery 2018 Sport Fish Production

Species	Planned			Actual				Notes
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	No./lb.	
Channel Catfish								
	0		WV DNR	203,363	Fry	45	4,519.2	Surplus Fry
	0		KY River Pool 3	55,028	4-8	4,058	13.6	Spring Surplus Fingerlings, surplus from #38
	0		KY River Pool 4	12,280	4-8	929	13.2	Spring Surplus Fingerlings
				270,671		5,032		
	300		Clarks River Refuge	300	10-15	250	1.2	Event
	800	15	Minor Clark Fish Hatchery	500	10-15	420	1.2	Event
			FINS Lakes, KY River	1,517	20-25	7,245	0.2	Retired CCF Broodstock
	77,005	8-10	Public Fishing Lakes(Stockers)	77,003	7-10	10,588	7.3	
	121,800	15	FINS Program	37,742	12-24	52,784	0.7	HCF were used to fill remainder of FINS List
	199,905			117,062		71,287		
Blue Catfish								
	0		KY River Pool 3	35,800	Fry	15	2,386.7	Surplus Fry
	0		WV DNR	50,370	Fry	22	2,289.5	Surplus Fry
	0		OH DNR	120,900	Fry	49	2,467.3	Surplus Fry
				207,070		86		
	80,000	5-7	Barren River Lake	97,260	4-8	9,993	9.7	Hatched and stocked 2018
	8,800	5-7	Dewey Lake	11,000	4-8	1,222	9.0	Hatched and stocked 2018
	9,000	5-7	Fishtrap Lake	11,430	4-8	1,270	9.0	Hatched and stocked 2018
	23,500	5-7	Taylorsville Lake	23,500	4-8	2,426	9.7	Hatched and stocked 2018
	121,300			143,190		14,911		
Hybrid Catfish								
	121,800	15	FINS Program	84,510	10-24	91,139	0.9	CCF were used to fill remainder of FINS List
				84,510		91,139		
Hybrid Sunfish								
	31,350	6-8	FINS Program	31,350	5-10	7,295	4.3	
	31,350			31,350		7,295		

Species	Planned			Actual				Notes
	Number	Size (in)	Location/Use	Number	Size (in)	Pounds	No./lb.	
Sauger								
	5,000	1.5	Kentucky River Pool 2	5,000	0.8	1	5,000.0	
	10,000	1.5	Kentucky River Pool 3	10,000	0.8	2.0	5,000.0	
	10,000	1.5	Kentucky River Pool 4	10,525	1.1	5.0	2,105.0	
	10,000	1.5	Kentucky River Pool 5	10,525	1.1	5.0	2,105.0	
	10,000	1.5	Kentucky River Pool 6	10,525	1.1	5.0	2,105.0	
	15,000	1.5	Kentucky River Pool 8	15,000	1.15	7.6	1,973.7	
	10,000	1.5	Kentucky River Pool 9	10,100	1.1	4.8	2,104.2	
	10,000	1.5	Kentucky River Pool 10	10,000	1.1	3.9	2,564.1	
	10,000	1.5	Kentucky River Pool 11	10,000	1.1	3.9	2,564.1	
	10,000	1.5	Kentucky River Pool 12	12,665	1.1	4.9	2,584.7	
			Elkhorn Creek	3,515	1.0	1.0	3,700.0	
	95,000			107,855		44.1		
Saugeye								
	15,850	1.5	Guist Creek Lake	28,810	1.1	14.5	1,986.9	
	6,700	1.5	Bullock Pen Lake	10,145	1.1	5.6	1,811.6	
	8,450	1.5	Wilgreen Lake	12,985	1.1	7.2	1,803.5	
	18,050	1.5	Lake Linville	44,440	1.1	20.0	2,222.0	
	5,600	1.5	Lake Carnico	8,140	1.1	4.5	1,808.9	
	8,750	1.5	A.J. Jolly Lake	13,100	1.1	7.2	1,819.4	
	61,000	1.5	Taylorsville Lake	61,000	1.1	25.4	2,401.6	
	124,400			178,620		84.4		

Species	Planned		Location/Use	Actual				Notes
	Number	Size (in)		Number	Size (in)	Pounds	No./lb.	
Redear Sunfish	33,300		FINS Lakes	33,910	3-5	1,177	28.8	1st year of Phase II growout
	33,300			33,910		1,177		
			Benjy Kinman Lake	26,400	1-2	34.1	774	2018 Spawn surplus
			Cave Run Lake	14,720	1-2	17.4	846	2018 Spawn surplus
			Fish Trap Lake	5,715	1-2	6.7	853	2018 Spawn surplus
			Car Creek Lake	3,550	1-2	4.2	845	2018 Spawn surplus
			Rockcastle River WMA #4	1,000	1-2	1.2	833	2018 Spawn surplus
			Rockcastle River WMA #8	540	1-2	0.7	771	2018 Spawn surplus
			Shanty Hollow Lake	13,500	1-2	15.9	849	2018 Spawn surplus
			Mill Creek Lake	10,900	1-2	12.8	852	2018 Spawn surplus
			Bert T. Combs Lake	7,200	1-2	8.5	847	2018 Spawn surplus
			Peabody WMA	20,000	1-2	25.8	775	2018 Spawn surplus
	7,200	1.5	Smoky Valley Lake	9,200	1-2	11.9	773	2018 Spawn
	22,400	1.5	Lake Carnico	22,400	1-2	28.9	775	2018 Spawn
	29,800	1.5	Elmer Davis Lake	39,600	1-2	51.1	775	2018 Spawn
	31,600	1.5	Beaver Lake	47,400	1-2	61.2	775	2018 Spawn
			Boltz Lake	27,600	1-2	35.6	775	2018 Spawn surplus
	91,000			249,725		316.0		
Alligator Gar	8,000							
	8,000			0		0		
Lake Sturgeon	6,000	8	Upper Cumberland River	8,465	6.5	298	28.4	
	6,000			8,465		298		
Bluegill	22,400	1.5	Lake Carnico	10,900	1-3	26.2	416.0	
	7,200	1.5	Smoky Valley Lake	5,240	1-3	12.6	415.9	
	29,600			16,140		38.8		

<b>Species</b>	<b>Waterbody</b>	<b>Actual Number</b>	<b>Length (in)</b>
Brook Trout	Lake Cumberland Tailwater	1,325	9-11
Brook Trout	Parched Corn Creek	300	9-11
		Total: 1,625	
Brown Trout	Bark Camp Creek	500	6-12
Brown Trout	Big Caney Creek	250	6-12
Brown Trout	Cannon Creek Lake	3,000	6-12
Brown Trout	Chimney Top Creek	700	6-12
Brown Trout	Fagan Branch Lake	1,000	6-12
Brown Trout	Fort Campbell	3,250	6-12
Brown Trout	Indian Creek - East Fork	400	6-12
Brown Trout	Jennings Creek	500	6-12
Brown Trout	Lake Cumberland Tailwater	74,500	6-12
Brown Trout	Laurel Creek	250	6-12
Brown Trout	Laurel River Lake Tailwater	250	6-12
Brown Trout	Looney Creek	700	6-12
Brown Trout	Nolin River Lake Tailwater	250	6-12
Brown Trout	Otter Creek	500	6-12
Brown Trout	Paint Creek	300	6-12
Brown Trout	Roundstone Creek	200	6-12
Brown Trout	Sulphur Springs Creek	200	6-12
Brown Trout	Trammel Creek	600	6-12
		Total: 87,350	

<b>Species</b>	<b>Waterbody</b>	<b>Actual Number</b>	<b>Length (in)</b>
Rainbow Trout	Alexandria Community Park Lake	4,500	9-15
Rainbow Trout	Anderson County Community Park Lake	1,500	9-15
Rainbow Trout	Bark Camp Creek	3,750	9-15
Rainbow Trout	Beaver Creek	1,400	9-15
Rainbow Trout	Beaver Creek - Left Fork	1,200	9-15
Rainbow Trout	Beaver Creek - Right Fork	1,200	9-15
Rainbow Trout	Bert T. Combs Lake	1,000	9-15
Rainbow Trout	Beulah Lake	4,000	9-15
Rainbow Trout	Big Bone Lick State Park	1,200	9-15
Rainbow Trout	Big Caney Creek	2,500	9-15
Rainbow Trout	Bloomfield Park Lake	1,500	9-15
Rainbow Trout	Bob Noble Park Lake	2,700	9-15
Rainbow Trout	Boone Tract 6 Acre Lake	2,000	9-15
Rainbow Trout	Boulder Lake	850	9-15
Rainbow Trout	Brickyard Pond	2,700	9-15
Rainbow Trout	Buckhorn Lake Tailwater	4,000	9-15
Rainbow Trout	Buffalo Creek	500	9-15
Rainbow Trout	Camp Ernst Lake	4,500	9-15
Rainbow Trout	Cane Creek	4,250	9-15
Rainbow Trout	Cannon Creek Lake	6,000	9-15
Rainbow Trout	Carr Creek Lake Tailwater	5,950	9-15
Rainbow Trout	Casey Creek	8,000	9-15
Rainbow Trout	Cave Run Lake Tailwater	7,200	9-15
Rainbow Trout	Cherokee Park Lake	2,500	9-15
Rainbow Trout	Clear Creek	1,200	9-15
Rainbow Trout	Clinton Rotary Park Lake	1,525	9-15
Rainbow Trout	Craney Creek	1,000	9-15
Rainbow Trout	Cranks Creek Lake	5,000	9-15
Rainbow Trout	Dewey Lake Tailwater	4,000	9-15
Rainbow Trout	Eagle Lake (Morehead State)	2,000	9-15
Rainbow Trout	Easy Walker Park Pond	1,500	9-15
Rainbow Trout	Elk Spring Creek	1,600	9-15
Rainbow Trout	Fagan Branch Lake	1,000	9-15
Rainbow Trout	Fisherman's Park Lakes	3,000	9-15
Rainbow Trout	Fishpond Lake	5,000	9-15
Rainbow Trout	Fishtrap Lake Tailwater	9,995	9-15
Rainbow Trout	Flemingsburg City Reservoir (Old)	2,700	9-15
Rainbow Trout	Floyds Fork Creek	3,600	9-15
Rainbow Trout	Fort Campbell	2,400	9-15
Rainbow Trout	Goose Creek	1,000	9-15
Rainbow Trout	Grants Branch Lake	4,000	9-15

<b>Species</b>	<b>Waterbody</b>	<b>Actual Number</b>	<b>Length (in)</b>
Rainbow Trout	Grayson Lake Tailwater	5,000	9-15
Rainbow Trout	Greasy Creek	400	9-15
Rainbow Trout	Greenbo Lake	11,000	9-15
Rainbow Trout	Hatchery Creek	29,600	9-15
Rainbow Trout	Herrington Lake Tailwater	4,500	9-15
Rainbow Trout	Higginson & Henry WMA	500	9-15
Rainbow Trout	Highsplint Lake	2,750	9-15
Rainbow Trout	Indian Creek - East Fork	4,950	9-15
Rainbow Trout	Jacobson Park Lake	9,000	9-15
Rainbow Trout	James Beville Park Lake	1,500	9-15
Rainbow Trout	Jennings Creek	7,600	9-15
Rainbow Trout	Kentucky Horse Park Lake	2,700	9-15
Rainbow Trout	Kess Creek Park Lake	1,500	9-15
Rainbow Trout	Kingdom Come State Park Lake	2,500	9-15
Rainbow Trout	Lake Cumberland Tailwater	135,900	9-15
Rainbow Trout	Lake Mingo	1,500	9-15
Rainbow Trout	Lake Montgomery	1,800	9-15
Rainbow Trout	Lake Pollywog	2,500	9-15
Rainbow Trout	Laurel Creek	2,750	9-15
Rainbow Trout	Laurel River Lake	45,000	9-15
Rainbow Trout	Laurel River Lake Tailwater	500	9-15
Rainbow Trout	Leary Lake	4,500	9-15
Rainbow Trout	Little Sandy River - East Fork	400	9-15
Rainbow Trout	Logan Hubble Park	4,500	9-15
Rainbow Trout	Looney Creek	1,525	9-15
Rainbow Trout	Lower Sportsman's Lake	1,500	9-15
Rainbow Trout	Lusby Lake	1,500	9-15
Rainbow Trout	Lynn Camp Creek	2,500	9-15
Rainbow Trout	Madisonville Park	4,500	9-15
Rainbow Trout	Martin County Lake	3,774	9-15
Rainbow Trout	Martins Fork Lake Tailwater	3,750	9-15
Rainbow Trout	Mason County Recreational Lake	2,700	9-15
Rainbow Trout	Metcalfe County Park Lake	500	9-15
Rainbow Trout	Middlesboro Canal	400	9-15
Rainbow Trout	Middleton Mills Park Lake	3,000	9-15
Rainbow Trout	Mike Miller Park Lake	2,500	9-15
Rainbow Trout	Miles Park Lakes	4,025	9-15
Rainbow Trout	Mill Creek Lake (Wolfe & Powell Co.)	6,000	9-15
Rainbow Trout	Millenium Park Pond	1,500	9-15
Rainbow Trout	Nolin River Lake Tailwater	6,500	9-15
Rainbow Trout	Otter Creek	15,050	9-15



<b>Species</b>	<b>Waterbody</b>	<b>Actual Number</b>	<b>Length (in)</b>
Rainbow Trout	Paintsville Lake	4,500	9-15
Rainbow Trout	Paintsville Lake Tailwater	20,000	9-15
Rainbow Trout	Panbowl Lake	6,000	9-15
Rainbow Trout	Panther Creek Park Lake	2,500	9-15
Rainbow Trout	Peabody WMA	5,250	9-15
Rainbow Trout	Pikeville City Lake	2,500	9-15
Rainbow Trout	Prisoners Lake	2,500	9-15
Rainbow Trout	Raven Creek	400	9-15
Rainbow Trout	Red River - Middle Fork	2,800	9-15
Rainbow Trout	Rock Creek	15,125	9-15
Rainbow Trout	Roundstone Creek	3,400	9-15
Rainbow Trout	Royal Springs	1,200	9-15
Rainbow Trout	Russell Fork Creek	2,250	9-15
Rainbow Trout	Sandy Watkins Park Lake	1,000	9-15
Rainbow Trout	Scott County Park Lake	1,500	9-15
Rainbow Trout	Sinking Creek	1,200	9-15
Rainbow Trout	Southgate Lake	1,500	9-15
Rainbow Trout	Southland Church Lake	1,500	9-15
Rainbow Trout	Station Camp Creek	800	9-15
Rainbow Trout	Sturgeon Creek	400	9-15
Rainbow Trout	Sulphur Springs Creek	3,600	9-15
Rainbow Trout	Swift Camp Creek	1,000	9-15
Rainbow Trout	Taylorsville Lake Tailwater	3,000	9-15
Rainbow Trout	Three Springs Lake	4,500	9-15
Rainbow Trout	Tom Wallace Park Lake	4,500	9-15
Rainbow Trout	Trammel Creek	9,950	9-15
Rainbow Trout	Triplett Creek	800	9-15
Rainbow Trout	Triplett Creek - North Fork	1,050	9-15
Rainbow Trout	Upper Sportsman's Lake	4,500	9-15
Rainbow Trout	War Fork Creek	2,300	9-15
Rainbow Trout	Waverly Park Lake	4,500	9-15
Rainbow Trout	Waymond Morris Park	4,500	9-15
Rainbow Trout	West Hickman Creek	1,000	9-15
Rainbow Trout	Whitehall Park Lake	4,500	9-15
Rainbow Trout	Wood Creek Lake	8,000	9-15
Rainbow Trout	Yatesville Lake Tailwater	2,250	9-15
Rainbow Trout	Yellow Creek Park Lake	1,500	9-15
		Total: 607,269	
<b>Triploid Rainbow Trout</b>	<b>Lake Cumberland Tailwater</b>	<b>3,800</b>	<b>9-10</b>
		Total: 3,800	