

Commonwealth of Kentucky

Date: June 30, 2009

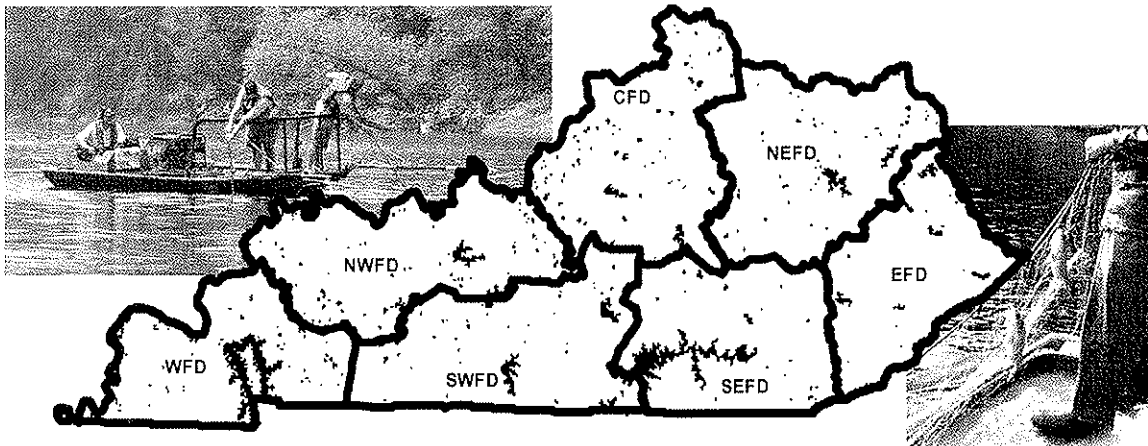
Sport Fish Restoration Grant F-50, Segment 31

Period: 01 April 2008
through
31 March 2009

ANNUAL PERFORMANCE REPORT

District Fisheries Management Part I

Project 1: Lake and Tailwater Fishery Surveys



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STATE: Kentucky

GRANT NO.: F-50-31

GRANT TITLE: District Fisheries Management

PERIOD COVERED: 1 April 2008 - 31 March 2009

GRANT OBJECTIVES: To conduct research and surveys and to manage the fishery resources statewide within each of the following seven fishery districts: Western (WFD), Northwestern (NWFD), Southwestern (SWFD), Central (CFD), Northeastern (NEFD), Southeastern (SEFD), and Eastern (EFD).

RESEARCH AND SURVEY SECTION

Project 1: Lake and Tailwater Fishery Survey

Project Objective: To develop and implement fish management plans for lake and tailwater sport fisheries based on survey data from this project.

A. ACTIVITY

Electrofishing, gill netting, trap netting, fish scale and otolith reading for age and growth determinations, temperature and oxygen profiles, additional water quality and physical data, creel data, and preparation of an annual performance report and lake management plans.

B. TARGET DATES FOR ACHIEVEMENT AND ACCOMPLISHMENT

Planned achievement date: 31 March 2009

Work accomplishment: 31 March 2009

C. SIGNIFICANT DEVIATIONS

None

D. REMARKS

See accompanying report.

E. COST

\$ 1,478,978.34

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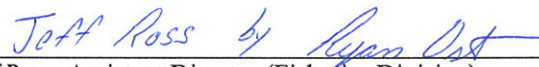
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WESTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Sampling conditions for each sampling event are listed in table 1.

Kentucky Lake

During May, 1,500 black bass were collected by diurnal electrofishing (120 PPS) from standardized sampling locations on Kentucky Lake. Largemouth bass comprised almost 94% (134.76 f/h) of this catch (Table 2). The catch for largemouth bass was up from 93.33 f/h reported from the 2007 sample (Table 3). An objective in the Kentucky Lake Fish Management Plan (KLFMP) for the largemouth bass population is to maintain a catch rate of at least 24.00 f/h that are <8.0 in. Using a regression model with a correlation of 0.64, it is estimated that this is the minimum value needed in order to produce an adequate number of harvestable-size (≥ 15.0 in) largemouth bass in five years. The catch rate of largemouth bass <8.0 in was 51.71 f/h (Table 3). The KLFMP objective for largemouth bass ≥ 15.0 in is to maintain a catch rate of at least 18.00 f/h. The catch rate of harvestable-size largemouth bass was 24.19 f/h during this year's sample.

The surface acres of aquatic vegetation in the lake continued to increase due to low flows and increased water clarity. The increased number of small bass can be attributed to the aquatic vegetation. Table 4 lists the PSD and RSD values for bass collected during the spring of 2008. The PSD value calculated for all largemouth bass was 52, which falls below the targeted range (PSD, 55-75) suggested in the KLFMP. However, this decline can be attributed to the increase in numbers of bass < 8.0 inches. The calculated RSD_{15} was 29, which falls into the range reported in the KLFMP (RSD_{15} , 20-40).

Otoliths were taken from largemouth bass, for age and growth determinations, during fall sampling and dead bass collected following a FLW Bass Tournament. Table 5 lists the back calculated lengths at age using the otoliths collected. All largemouth bass are reaching harvestable size by age 8, but the norm would be by age 5. The catch rate of age-1 largemouth bass was 73.05 f/h (Table 6). The KLFMP objective for age-1 largemouth bass is to maintain a catch rate of at least 36.00 f/h. Table 7 lists the catch rates for all age groups of largemouth bass collected during the past eleven years.

A lake specific assessment for largemouth bass was used to evaluate the bass population in Kentucky Lake (Table 8). The increased catch of age-1 largemouth bass boosted the rating this year. However, the catch rate of largemouth bass greater than 15.0 in dropped slightly to a rating of "good". Overall, the population rates "good" with excellent ratings for growth and recruitment, while annual mortality was almost 44%.

During October, 827 black bass were collected by diurnal electrofishing at two locations that had been previously sampled during the spring. Largemouth bass comprised 91% (150.80 f/h) of this catch (Table 9). Length and weight data were recorded from all bass collected to calculate relative weight values. The relative weight value for harvestable size largemouth bass was 92 (Table 10). Length-weight equations for black bass species at Kentucky Lake are:

Largemouth bass	$\text{Log}_{10}(\text{weight}) = -3.45149 + 3.11703 \times \text{Log}_{10}(\text{length})$
Smallmouth bass	$\text{Log}_{10}(\text{weight}) = -3.39674 + 3.05448 \times \text{Log}_{10}(\text{length})$
Spotted bass	$\text{Log}_{10}(\text{weight}) = -3.52362 + 3.16311 \times \text{Log}_{10}(\text{length})$

The CPUE of age-0 largemouth bass during the fall sample was 33.80 f/h (Table 11). The catch rate for age-0 largemouth bass is down from the 2007 estimate (122.30 f/h). Though the high catch rate in 2007 of age 0 largemouth bass would account for the high catch rate of age 1 in this year's sample.

Trap nets were fished for crappie in Blood River and Jonathan Creek embayments for 80 net-nights (nn) during October. This sampling effort yielded 1,365 crappie (17.06 f/nn), of which 0.71 f/nn (4%) were white crappie and 16.35 f/nn (96%) were black crappie (Table 12). Black crappie have dominated the trap net catch for the past 12 years (Figure 1). Black crappie densities most likely have increased, but not by the magnitude suggested from fall trap netting. This change in catch may also be related to the water quality of Kentucky Lake. It is possible that due to the clearer water conditions, the white crappie are staying deeper, while black crappie are running the shoreline in shallower water. Under this scenario, the black crappie would be more susceptible to capture in the trap nets.

The crappie population at Kentucky Lake continues to produce a quality fishery. The number of crappie ≥ 8.0 in collected in trap nets stayed about the same as the 2007 sample, 13.31 and 13.23 f/nn respectively (Table 13). The number of crappie ≥ 10.0 in was up from the previous year's study, 8.46 and 6.24 f/nn respectively. The KLFMP objective for crappie is to maintain a catch rate of at least 10.00 f/nn for crappie ≥ 8.0 in, and 3.00 f/nn for crappie ≥ 10.0 in. Both of these objectives were met. However, declining numbers of age-0 crappie over the last three years warranted a regulatory reduction in the angler creel from 30 to 20 fish. This regulation took affect 01 March, 2008. PSD and RSD₁₀ values are reported in Table 14. Length-weight equations for white and black crappie are listed below.

White crappie	$\text{Log}_{10}(\text{weight}) = -3.49639 + 3.20698 \times \text{Log}_{10}(\text{length})$
Black crappie	$\text{Log}_{10}(\text{weight}) = -3.41442 + 3.18053 \times \text{Log}_{10}(\text{length})$

Growth determinations were made by extrapolating this years catch data with age data calculated from the 2007 sample of otoliths collected. The growth of crappie continues to be excellent with fish exceeding 10.0 in (minimum length limit size) at age 2 when collected during the fall (Table 13). Tables 15 and 16 list age frequencies for white and black crappie collected. Although age-0 white crappie comprised 49% (0.35 f/nn) of the white crappie sample, white crappie made up a very small part of the overall sample. Age 0 black crappie comprise only 9% (1.43 f/nn) of the black crappie collected. Combined, the catch of age-0 crappie was still considered "poor" in the crappie population assessment (Table 17). A third management objective is to maintain a catch of age-1 crappie of at least 11.00 f/nn. However, this value has been below the management objective for the past few years. The low recruitment will likely lead to a poorer crappie fishery in the next few years. Overall, the crappie population at Kentucky Lake rated "fair". This is mainly due to the adult black crappie population that has rated "good" to "excellent" over the past five years. The white crappie population has consistently rated "fair" over this same period. At Kentucky Lake, it is hypothesized that spring water level fluctuations and timing of critical water temperature greatly affect spawning, leading to variable recruitment. Environmental effects such as clear water and increased density of aquatic vegetation may also help to explain the reduced number of age-0 crappie collected. Figure 2 illustrates a comparison of retention time of water in Kentucky Lake to the CPUE of age-1 crappie. As retention time increased, so did water clarity and aquatic vegetation density, while the catch rate declined. Similar conditions occurred in the late 1980's, when low numbers of smaller crappie were recorded.

Catfish were collected using low pulse (15 PPS) DC electrofishing during June. Areas targeted were main lake and secondary creek channel ledges. A total of 118 catfish were collected at a rate of 33.71 f/h. The individual species catch rate is listed in Table 18. Using this data in contrast with the 2007 trotline sample, the catch was lower using electrofishing, 308 and 118 respectively. The distribution of sizes for blue catfish was about the same, but smaller size channel catfish were caught with electrofishing than trotlines. The trotline sample did not collect any flathead catfish, while 13 were collected using electrofishing.

Relative weight values of both blue and channel catfish indicate excellent condition and are listed in Table 19. The length-weight equations for blue and channel catfish are:

Blue catfish	$\text{Log}_{10}(\text{weight}) = -4.02434 + 3.37581 \times \text{Log}_{10}(\text{length})$
Channel catfish	$\text{Log}_{10}(\text{weight}) = -4.04300 + 3.40108 \times \text{Log}_{10}(\text{length})$

The redear sunfish population was sampled during May using electrofishing for determining length frequency distribution, and age and growth determinations. Table 20 illustrates the length frequency of redear sunfish collected. The majority (86%) of the redear sunfish collected were larger than 8.0 inches (Table 21). An 8.0 inch redear is estimated to be 3 years old (Table 22). The majority of this sample were age 3, with no fish being older than 6 (Table 23). A lake specific assessment of the redear sunfish population suggests an “excellent” fishery (Table 24).

Lake Barkley Creel Survey

A random, non-uniform probability, roving creel survey was conducted at Lake Barkley (45,600a) from 1 March 2008 to 31 October 2008. The lake was divided into 8 creel areas (Appendix A). The survey was conducted 5 days per week, six hours per day. One hour was randomly picked to do an angler count; angler interviews were conducted during the remaining 5 hours. The overall temporal sampling scheme was twenty days per month, consisting of six weekend days and 14 weekdays. Varying time period probabilities were assigned to each month's six-hour time period. Higher geographic probabilities, resulting in more frequent interviews, were assigned to Eddy Creek and Little River during March, April, May, September and October, than were assigned to the other 6 areas. During June, July and August, the first and last daily creel periods received higher probabilities than the other periods of the day. An angler attitude survey concerning fishing in Lake Barkley was conducted by the creel clerk during April, May and June.

During the 2008 creel the typical angler (Table 25) was a male (85%) resident (72%) who was casting (53%) from a boat (81%). The average fishing trip was 4.29 hours. Anglers fished for an estimated total of 625,656 hours during the survey period. It was estimated that 145,774 fishing trips (3.2 trips per acre) were taken. This was midway between the number of trips taken in 2005 and 1999. The fishing pressure was 13.7 hours/acre (h/a), down 23% from 16.8 h/a in 2005, but a slight increase from 12.8 h/a in 1999. Some of the decrease in fishing pressure in 2008 was the result of the high cost of transportation when gasoline rose to \$4 per gallon, and turbid water in spring when crappie fishing pressure is normally highest. In addition, access point surveys were necessary in March, due to creel boat repairs, and may have resulted in missed interviews.

The estimate of 1,032,144 fish caught in 2008 (Table 25) compared well with the number of fish caught during the 2005 creel (1,197,613) and was more than double that of 1999 (505,213). The estimates of fish harvested were 345,581, 426,356, and 239,427 during the 2008, 2005 and 1999 surveys, respectively. Harvest rates for these three creels were 0.5 f/h, 0.6 f/h and 0.4 f/h, respectively.

The length frequency for numbers of each species caught is found in Table 26. Table 27 includes fish harvest statistics for each species. Black bass anglers made an estimated 68,088 trips to Lake Barkley in 2008 and accounted for about 47% of all fishing trips to Lake Barkley in 2008 (43% in 2005 and 45% in 1999). Although the number of trips was an 18% decrease from the number of 2005 trips, more bass were caught in 2008 (392,647) than in either of the previous creel years. More black bass were harvested per acre (0.80) in 2008 than in either 2005 (0.60) or 1999 (0.48) (Table 28). More bass were caught and harvested in June 2008 than in any other month. The harvest rate among bass anglers increased to 0.09 f/h in 2008 versus 0.7 f/h in both 2005 and 1999. Largemouth bass were 96% of all black bass harvested in 2008 (Table 29) and 94% in 2005. Bass anglers harvested 1.94 pounds per acre in 2008, compared to 1.37 lb/a in 2005.

Panfish were the second most sought after group in 2008. Panfish anglers made 22,209 trips. There were almost 407,000 caught, which was a 40% increase from the 2005 catch, and 186,000 harvested (4.08 f/a) which represented nearly 54% of all fish harvested. Bluegill and redear comprised 88% and 4% of all sunfish caught (Table 30). Some bass and crappie anglers resorted to panfishing when confronted with poor water quality and weather conditions early in the spring. More than 50% of all panfish trips occurred in May (Table 31). About 5 panfish were caught per hour by panfish anglers, which gave panfish anglers a better than 50% success rate.

Catfish anglers made 21,856 trips and harvested 67,189 pounds, or 2.10 pounds per acre, which was more than any other anglers who were trying to catch another species in 2008 (Table 27). However catfish harvest was still down about 10,000 fish, and 11,000 pounds from that of 2005 creel survey. Channel and blue catfish comprised 81% and 28% of all catfish harvested, respectively (Table 32). May and June were the best months to catch catfish in 2008 (Table 33). Catfish anglers' harvest rate was 0.68 f/h in 2008 which was a little higher than the 0.58 f/h in 2005.

The numbers of trips for crappie fishing were surprisingly few in 2008, from a high of 41,404 in 2005 to 20,975 in 2008 (Table 27). The daily crappie creel limit was reduced from 30 to 20 crappie in 2008 due to a couple of years of suspected unsuccessful spawns. High, muddy water in Eddy Creek and Little River of Lake Barkley during early spring thwarted the efforts of crappie anglers. The hours fished per acre for crappie dropped to 1.97 from 3.60 h/a in 2005 and 3.97 h/a in 1999. Anglers harvested 33,452 crappie (0.73 f/a) in 2008 compared to 112,450 (2.47 f/a) in 2005 and 89,158 (1.96 f/a) in 1999. The tripling of crappie fishing trips which had occurred from March to April in both 1999 and 2005, failed to occur in 2008. In spite of an additional 4,000 hours of effort for crappie in March 2008, the crappie catch rate was 0.44 f/h that month (Table 34), down from 2.07 f/h in March 2005. By April 2008 the number of crappie fishing trips and hours increased only slightly from those in March, but were much lower than the trips and hours of effort from April 2005 (8,897 trips vs. 21,941 trips in 2005, and 38,184 hours vs. 87,095 hours in 2005). In 2008 the catch and harvest rates for crappie anglers were 0.50 f/h and 0.39 f/h, compared to 1.50 f/h and 0.68 f/h in 2005. White crappie comprised 74% of the crappie harvest in 2008, 86% in 2005 and 96% in 1999. This apparent trend may be the result of increasing water clarity in Lake Barkley. Clear water is believed to favor the growth of black crappie. Twenty percent of the crappie caught in 2008 were of sub-legal (<10.0 inches) length, compared to the 2005 crappie catch of more than 50% sub-legal (Table 35).

Morone anglers took 2,601 trips and fished for 11,162 hours to harvest 8,713 Morones (0.89 f/h) (Table 27). Anglers fishing specifically for Morone species accounted for about half of the Morone harvest. Only panfish and catfish anglers enjoyed a higher success than the 41% of Morone anglers who caught a Morone. Anglers caught 87,000 Morones in 2008, compared to a catch in 2005 of 142,000, and in 1999 of 31,000. In each of the three creels, white and yellow bass were caught in almost equal numbers. The current creel was the first during which anglers harvested more yellow bass than white bass. The best catch rate for Morones occurred in May and June (Table 36). Table 37 breaks down the specific catch of Morone species. White and yellow bass almost equally make up 97% of the Morone catch.

Anglers fishing for “anything” made 10,009 trips or 6.9% of all fishing trips in 2008. They spent almost 43,000 hours fishing.

Lake Barkley Angler Attitude Survey

Angler attitude surveys were distributed during the 2008 Lake Barkley creel survey. See appendix 2 for a summary of the questions and responses from anglers. Some questions were left off the summary due to small sample sizes. Overall, anglers were satisfied with the specific fisheries for the common species of fish. One question of interest sought to identify the ability of anglers to identify yellow bass and white bass. To answer this question, anglers were shown a picture of either a yellow bass or a white bass and asked to identify the fish. When anglers were shown a white bass 41.5% answered correctly (N=272) while 15.4% didn't know, and 43.1% answered incorrectly, guessing striped bass the majority of the time (28.7%). When a picture of a yellow bass was shown, 33.8% of anglers answered correctly, 14.3% didn't know, and 51.9% were incorrect, guessing hybrid striped bass 40.8% of the time. These results suggest that anglers have trouble identifying these species of fish. Semantics explains some of the confusion. Many anglers call any Morone species a “stripe”. Regardless of which picture was shown first, the response was “stripe”. When shown the second picture, many anglers were confused having already used the one name that they knew for these species of fish. Most people recognize that there is a difference between white bass and yellow bass, but do not know their names. The real confusion is between white bass, hybrid striped bass, and striped bass.

Lake Barkley

Black bass were collected by diurnal electrofishing (120 PPS) from 21 April–5 May 2008 at standardized sampling sites on Lake Barkley. A total of 1,296 black bass were collected at a rate of 129.60 f/h (Table 38). Spotted and smallmouth bass accounted for less than 5% of the total black bass sampled, and too few individuals were collected to look at the true population characteristics. Largemouth bass had a catch rate of 123.70 f/h. This catch rate lies below the historical average catch of largemouth bass (132.58 f/h) at Lake Barkley (Table 39). The CPUE of harvestable largemouth bass remains at or above average values while the catch rate of stock size fish remains within acceptable limits. The increased catch rate of small fish should maintain fishing success in the near future.

The catch rate of largemouth bass ≥ 20.0 in was 3.0 f/h, and is the highest recorded value since 1999 verifying the reports of fishing success from many bass anglers.

The PSD value (74) for largemouth bass is lower than in previous years (Table 40). However, this value is well above the twenty year average (61) for Lake Barkley, suggesting a better size distribution than in years past. The RSD_{15} (41) is well above the twenty year average. The PSD value met its objective goals (PSD of 55-75) established in the BLFMP. The RSD_{15} value met the objective goal of 20-40.

Age and growth data collected in 2007 was used with 2008 catch data to construct an age frequency table (Table 41). The catch in 2008 of age-1 fish, made up one fourth of the sample, but the combined catch of age 5-7 fish accounted for nearly 40% of the catch. Catch rates for each age-class of largemouth bass from the last 10 years can be found in Table 42. The annual mortality of largemouth bass older than a year was 29% in 2008 as determined using catch-curve regression (Table 43).

Lake-specific assessment scores from 2004-2008 are presented in Table 43. The score for Lake Barkley has varied between "fair" and "good" over the past five years. The score dropped from "good" to "fair" but only changed by one point. The decline was the result of a marked decrease in the catch rate of 12.0-14.9 in bass coupled with an improvement in the catch rate of bass greater than 20.0 inches. Table 44 lists the assessment parameters and their respective values determined from the past 10 years of sampling on Lake Barkley.

Largemouth bass were sampled in October 2008 to collect length-weight data and determine the strength of the 2008 year-class. Eight hundred fifteen largemouth bass were collected at a catch rate of 163.0 f/h (Table 45). The length-weight equation for largemouth bass at Lake Barkley is:

$$\text{Log}_{10}(\text{weight}) = -3.40917 + 3.08743 \times \text{Log}_{10}(\text{length})$$

Very few smallmouth bass (16) and spotted bass (2) were collected during the fall sample and therefore length-weight equations were not calculated for these samples.

Relative weights for the 2008 data are listed in Table 46 for all size-classes of largemouth bass. These values have decreased slightly for the past three years. This may be an indicator of density dependence in the population. As catch rates of harvestable largemouth bass increase, the overall condition of individual fish may decline slightly. Mean length of the age-0 cohort was higher than most years (6.2 in; Table 47). Since year-class-strength tends to be related to the relative size of age-0 fish during the fall of their first year, the 2008 year-class should contribute to the population in coming years. After a near-record year in 2007, year class strength (55.60 f/h) remains high. CPUE of age-0 largemouth bass ≥ 5.0 in (50.20 f/h) was also very high. Two very strong year-classes have followed two very poor year classes ensuring that a drop in the fishery should not be noticeable in coming years.

Redear sunfish were collected by targeted diurnal electrofishing (120 PPS) in May 2008. Unlike 2007 an effort was made to sample more varied habitats for redeer sunfish. As a result, CPUE's are lower in 2008 and probably are a more realistic estimate of the true number of fish in the lake. We collected 287 redeer sunfish ranging from 3.0-12.0 inches in 3.5 hours of sampling (Table 48). The sample is still dominated by adult fish, but a larger number of young and intermediate size fish were captured in 2008 (Table 49). Otoliths were removed from 118 redeer sunfish ranging from 1-9 years in age (Table 50). Redear sunfish in Lake Barkley exhibit very good growth reaching 8.0 inches in their third year and 10.0 inches in their sixth year. Three-year-olds dominated the catch (Table 51), but larger fish were well represented as nearly 28% of the catch was greater than 10.0 inches. Unlike in 2007 when the population was dominated by older fish, this analysis suggests a relatively small number of trophy size fish which could be the result of increased harvest as angler interest increases for this species. A statewide population assessment indicates how the 2008 redeer sunfish sample ranks in relation to criteria established from reservoirs throughout the state. The 2008 sample earned a perfect score and a ranking of "excellent" (Table 52).

Catfish sampling was conducted during 3.5 hours of low pulse electrofishing (15 PPS) in June. This method is becoming well known as a method for capturing blue catfish and flathead catfish in deeper water. However, it is not effective for channel catfish other than a small number of little fish (Table 53). Blue catfish from 4.0-36.0 inches were captured while flatheads were captured as large as 45.0 inches.

Because this is the first year of sampling, little comparison can be made with CPUE's. Age and growth data from 2004 was used with catch data from 2008 to construct an age frequency table (Table 54). Relative weight values of both blue and channel catfish indicate excellent condition and are listed in Table 55. The length-weight equations of blue and flathead catfish are:

Blue catfish	$\text{Log}_{10}(\text{weight}) = -3.70830 + 3.17948 \times \text{Log}_{10}(\text{length})$
Flathead catfish	$\text{Log}_{10}(\text{weight}) = -3.56962 + 3.17540 \times \text{Log}_{10}(\text{length})$

Trap nets were fished for crappie in Little River and Donaldson Creek embayments for a total of 87 net-nights (nn) from 21-31 October 2008. Six hundred fifty eight crappie were collected at a rate of 7.67 f/nn (Table 56). White crappie accounted for 66% of the total catch, and were collected at a rate of 5.08 f/nn. Black crappie were collected at a rate of 2.59 f/nn. The number of black crappie has increased in the catch of trap nets, but not to the magnitude seen at Kentucky Lake (Figure 3). The CPUE of harvestable-size (≥ 10.0 in) crappie was down slightly from 2007 at 1.60 f/nn (Table 57). In twenty-three years of sampling, this value has ranged from 0.55-3.37 f/nn. The CPUE of quality-size (≥ 8.0 in) crappie was 2.73 f/nn, which is below the management objective (4.0 f/nn) set in the BLFMP. In 2008, the PSD (32) and RSD_{10} (19) of white crappie are dramatically lower than 2007 values (Table 58). The 20-year average PSD and RSD_{10} values of white crappie are 59 and 27, respectively. The PSD (85) and RSD_{10} (18) values of black crappie also decreased from 2007, but PSD exceeded the 20-year average of 55. The length-weight equations of white and black crappie from Lake Barkley are:

White crappie	$\text{Log}_{10}(\text{weight}) = -3.56445 + 3.30192 \times \text{Log}_{10}(\text{length})$
Black crappie	$\text{Log}_{10}(\text{weight}) = -3.54029 + 3.34350 \times \text{Log}_{10}(\text{length})$

Otoliths were removed from 123 crappie to make age and growth determinations. White crappie were captured up to seven years old (Table 59), while black crappie were found to four years of age (Table 60). Age frequencies were estimated using age and growth data and catch data from 2008. The catch of black crappie was dominated by age-0 and age-1 fish (Table 61) while older black crappie were rarer in our catch. The catch of age-0 white crappie (3.99 f/nn) comprised 79% of the total catch (Table 62).

Assessment of the white and black crappie populations yielded a rating of "fair" at Lake Barkley in 2008 (Table 63). The assessment parameters that are lacking continue to be related to catch rates and overall catch of crappie is down in recent years. However, the parameter related to crappie growth remains high.

Lake Pennyrile

Lake Pennyrile was sampled by diurnal electrofishing on 18 April 2008. Largemouth bass were collected at a rate of 117.11 f/h, while bluegill and redear sunfish were collected at a rate of 278.82 f/h and 77.40 f/h, respectively (Table 64). The largemouth bass catch rate was slightly lower than that recorded in 2007 (123.4 f/h), but similar to the catch rates in previous years (Table 65). The CPUE of largemouth bass in all length groups is in line with catch rates from 2007 which are a bit lower than the historical average. This is the fourth year that a 12.0-15.0 in protective slot limit has been in place on Lake Pennyrile. The lower catch rates of largemouth bass < 12.0 in suggest an improvement in the overall population size distribution. PSD and RSD_{15} values are listed in Table 66. These values are below the management objectives set in the LPFMP for PSD (40-50) and RSD_{15} (10), and are reflective of the high density of small fish and low numbers of larger fish in the population. Catch rates for each age class of largemouth bass were calculated using age and growth data from 2003 and catch data from 2008 (Table 67).

The new lake-specific assessment for largemouth bass at Lake Pennyrile is indicative of the management challenges that we've had in recent years. Since 2003 the assessment has ranged from "poor" to "good", but the 2008 assessment is "poor" (Table 68). The growth parameter used in the assessment was estimated in 2003, so we will collect an age and growth sample next year to see if there has been any improvement. With the slot limit in place, we hope to see a decrease in the density of smaller fish in the population and an increase in the catch rates of fish over 15.0 in. While the catch rates were lower this year, they were lower for all sizes of fish, which could be caused by sampling conditions and timing of sampling.

We intend to examine the population over the next couple years to see if the slot limit is working. If the population does not show improvement, we'll consider other management options at that time.

The spring catch rates of bluegill and redear sunfish have been variable over the past seventeen years. CPUE for fish over 8.0 in. has ranged from 1.00-12.30 f/h for bluegill and 9.00-134.70 f/h for redear sunfish (Table 69). The 2008 sample was a drastic improvement over recent years. The lake specific assessment for bluegill has ranged from "poor" to "fair" since 2002 but ranked as "good" in 2008 (Table 70) while redear sunfish have fallen in the same range of scores as in past years (Table 71).

Lake Beshear

Largemouth bass were collected by diurnal electrofishing during May at Lake Beshear. A total of 129 largemouth bass were collected at a rate of 51.60 f/h (Table 72), which is down from 83.00 f/h reported from the 2007 sample. CPUE's of harvestable-size (≥ 12.0 in) and ≥ 15.0 in largemouth bass were 32.00 and 20.80 f/h, respectively (Table 73). One objective in the Lake Beshear Fish Management Plan (LBFMP) is to maintain a catch rate of 40.00 f/h for harvestable-size largemouth bass. This year the catch of harvestable size bass dropped below the objective, however this was probably attributed to an overall poor sample of the fishery. The poor sample was attributed to high muddy water conditions. Other objectives are to maintain a high catch rate of bass ≥ 15.0 and ≥ 20.0 inches. Ideally, these catch rates should be greater than 30.00 and 4.00 f/hr, respectively. The catch rate for the number of largemouth bass ≥ 18.0 in was well below the objective, while the catch rate for the larger (≥ 20.0 in) bass was very close (3.60 f/h).

Age frequency distributions were made using age data collected during the 2006 spring sample and this year's catch data. The age frequency data is presented in Table 74. A lake specific assessment rated the overall bass population as "fair" (Table 75). This is down from several years of "good" ratings. All the parameters dropped this year except growth, which was actually determined from 2006 data. The poor sample likely accounted for these assessment drops.

Largemouth bass were collected by diurnal electrofishing in October. Again a poor sample was collected, though this time the lake level was extremely low. The catch rate (40.40 f/h) was below that of the spring sample (Table 72). Relative weight data suggests that the larger bass (≥ 15.0 in) are healthy with regard to their length-weight ratio. Relative weight values were above 97 for these larger bass and averaged 93 for all bass. The length-weight equation for largemouth bass at Lake Beshear is:

$$\text{Log}_{10}(\text{weight}) = -3.75128 + 3.39220 \times \text{Log}_{10}(\text{length})$$

Otoliths were removed from a sub sample of largemouth bass ≤ 8.0 in to determine the mean fall length of the age-0 cohort. The catch rate for this year class was 12.40 f/h (Table 76). The average length of the age-0 bass was 4.3 in.

Hematite Lake

Hematite Lake is a 90-acre sub-impoundment of Lake Barkley located within the Land Between the Lakes Recreational Area. The fisheries management objective for this lake is to establish a quality redear fishery, observed in the late 1980s before the lake was drained due to a levee failure. The harvest of redear sunfish is regulated by a creel limit of 10 redear ≥ 10.0 in. In spring 2002, the lake was sampled by electrofishing. During that study quality size (≥ 8.0 in) redear sunfish were collected at a catch rate of 16.00 f/h (Table 77). Since 2005, there has not been any quality size redear sunfish collected. The catch of redear sunfish 3.0 to 6.0 inches dominate the samples, with catch rates ranging from 88.67 to 348.00 f/h. Table 78 shows the length frequency for the 3 species of fish collected. The dense aquatic vegetation in this lake may provide too much cover for small sunfish, limiting the needed predation by bass to keep the sunfish population in balance.

The dense vegetation may also be limiting the ability to collect a good representative sample of the fish population. Suggested management for this fishery would be to reduce the amount of aquatic vegetation in the lake. This object could be accomplished by stocking grass carp at a rate of 6 per acre. Aquatic herbicides could be used annually to treat areas of the lake. A more practical management practice might be to lower the lake's water level during the winter months.

Lowering the water level 3 to 4 feet from November through February exposes weeds to air drying and freezing temperatures. This can be an effective weed control technique, especially if done in successive years, and it has other advantages related to fish population management. By lowering the water level, the fish are pooled together allowing predators to control the smaller fish that have eluded them in the vegetation. This reduces their numbers and prevents overpopulation, while providing more food for the fish that remain. The result is a better balanced and larger individual size fish population.

Lake Blythe

Lake Blythe is an 89 acre watershed lake located just north of Hopkinsville off Highway 41 in Christian County, Kentucky. The fishery in this lake is primarily largemouth bass, bluegill, redear, crappie and catfish. In recent years sampling has revealed a stunted bass population. Table 79 includes spring electrofishing data from 2008, which suggest that 86% of the bass population is less than 12.0 inches in length. The PSD value was 31 and RSD₁₅ value was 9. These values also suggest the bass population is dominated by small bass. As a result, in 2008 a 12.0-15.0 inch protective slot limit was added to this lake. The age frequency for bass collected in the spring is listed in Table 80. During the late summer the lake was partially drained to make repairs to the level, therefore no fall sample was collected. During the fall channel catfish were stocked at a rate of 50 fish per acre (4,450 total fish). This will be an every other year stocking, which began in 2008.

Kentucky Dam Tailwater and Lower Tennessee River

The lower Tennessee River was sampled using electrofishing (120 PPS) to collect all species of fish possible. Low pulse (15 PPS) electrofishing was used occasionally to collect catfish species from deeper pools of water. Sampling was conducted during September. Three entry points to the river were used to sample different sections of the river; tailwater, Haddock Ferry to sample the middle section and Paducah River Front to sample from the mouth up stream.

A total of 1,507 fish were collected that represented 38 species, excluding gizzard and threadfin shad which were extremely numerous. Table 81 shows the size distribution for all species collected. This table is divided into a sportfish and non-sportfish sections. Of the sportfish collected, largemouth bass had the highest catch rate (82.33 f/h). This high catch rate was boosted by one sampling run near a new bridge pier close to eastern shoreline, which yielded a catch rate for largemouth bass of 260.00 f/h. Of the non sportfish, longear sunfish had the highest catch rate at 63.50 f/h.

Mississippi River

Kentucky borders approximately 58 miles of the Mississippi River. Two areas of this portion of the Mississippi River were sampled using electrofishing (120 PPS) to collect all species of fish possible. Low pulse (15 PPS) electrofishing was used occasionally to collect catfish species from deeper pools of water. Sampling was conducted during October.

A total of 272 fish were collected that represented 18 species, excluding gizzard and threadfin shad which were extremely numerous. Table 82 shows the size distribution for all species collected. This table is divided into a sportfish and non-sportfish sections. Catfish species had the highest catch rate, with the majority of these being flathead catfish. Sampling around rock wing dikes yielded most of these fish. This was also true for the Morone species collected. When sampling around the down stream side of the wing dikes, having a second boat to chase fish floating in the swift current would be advised. The catch rate for silver carp is a low estimate due to their ability to elude the sampling field by jumping out of it.

Lower Cumberland River

The Cumberland River below Barkley dam was sampled from 22-25 September with six hours of electrofishing at three different locations. The majority of sampling was high pulse (120 PPS) DC electrofishing while some effort focused on catfish used low pulse (15 PPS) DC. Note that a chase boat was not used, so numbers of blue catfish are underestimated. Sampling areas focused on stretches of river with variable habitat types including changes in substrate, depths, and incoming tributaries, and were limited to areas with access to the river.

We captured 13 species of sportfish and 19 species of non-game fish excluding shad. Largemouth bass and catfish dominated the catch of sportfish while the majority of non-game fish were longear sunfish and freshwater drum (Table 83). Notable sportfish catches included four large striped bass that were captured just inside the mouth of a small tributary, and a number of distinct deep holes that provided habitat for good numbers and sizes of blue catfish. This section of river provides a generally overlooked opportunity for anglers.

Ohio River

The Ohio River was sampled above Smithland Dam at Birdsville and immediately below the dam south to the town of Smithland on 18 and 23 September. Nine sportfish species were collected and 8 non-game species were captured. The majority of the sportfish were collected in the tailwater area of Smithland Dam where catfish and white bass dominated the catch (Table 84). Low pulse electrofishing was a worthwhile method of sampling in the Smithland tailwater. Many of the blue catfish captured came from an area behind the first gate of the dam in fifty feet of water. Other areas that typically hold catfish were not sampled due to the number of fishermen in the area.

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

Water body	Location	Species	Date	Time (24hr)	Gear	Weather	Water temp. F	Water level	Secchi (ft)	Water Conditions	Perfinent sampling comments
Beshear		black bass	4/7/2008	900	shock	sun / calm	57.5	high	18	Falling / calm	The lake was above normal pool level, but had been higher and was falling, muddy water (poor sample).
Beshear		black bass	9/30/2008	900	shock	clear / cold front	73.5	low	68	choppy	Poor fish sample due to low water, and passing cold front.
Blythe		black bass	4/14/2008	900	shock	cold front	54.7	high	15	muddy	High water level, muddy water color and cold
Hemalite		spottail	4/14/2008	900	shock	cloudy, cool	57.2	normal	54	good	Dense vegetation.
Kentucky	Blood River	crappie	10/21-24/2008	900	trapnet	overcast, rainy	65.0	355.1	clear	stable	Good sample
Kentucky	Jonathan	crappie	10/28-31/2008	900	trapnet	cold	55.7	355.4	clear	rough	Good sample
Kentucky	Blood River	black bass	4/29/2008	900	shock	cold front	58.0	358.6	36	Falling / calm	Cold front moved fish out of shallow water, along with falling water level.
Kentucky	Jonathan	black bass	5/6/2008	900	shock	cloudy	65.0	358.5	42	choppy	Stable water, TVA sampled embayment the previous day.
Kentucky	Big Bear	black bass	5/7/2008	900	shock	cloudy	66.4	359.8	42	choppy	Good sample
Kentucky	Sugar Bay	black bass	5/11/2008	900	shock	cloudy	65.0	358.5	42	choppy	Windy condition effected sample.
Kentucky	Blood River	black bass	10/14/2008	900	shock	cloudy	73.0	355.0	33	calm	Good sample
Kentucky	Jonathan	black bass	10/16-17/2008	900	shock	cool / windy	72.0	355.5	33	choppy	Good sample
Kentucky	Patterson	catfish	6/11/2008	900	shock	clear	83.0	359.0	47	calm	First day we got rained out, second day was windy.
Kentucky	Ledbetter	catfish	6/12/2008	900	shock	windy / clear	82.0	359.0	47	calm	Low pulse (15 pps) to collect catfish along creek channels.
Kentucky	Patterson	redeer	5/13/2008	900	shock	calm cloudy	66.9	359.4	46	calm	Low pulse (15 pps) to collect catfish along creek channels.
Kentucky	Fenton	redeer	5/21/2008	900	shock	sunny	70.6	359.7	62	calm	Good sample
Tennessee River	Paducah	everything	9/16/2008	900	shock	sunny	76.7	302.7	clear	calm	Good sample
Tennessee River	Haddock Ferry	everything	9/17/2008	900	shock	sunny	77.1	302.1	clear	calm	Limited areas to sample
Tennessee River	KY Dam Tailwater	everything	9/15/2008	900	shock	overcast	78.6	302.1	clear	calm	Limited areas to sample
Mississippi River	Wickliffe	everything	10/2/2008	900	shock	sunny	71.9	18.0	muddy	swift	best samples around wing dikes, elevation was 18 at Cairo Gauge
Mississippi River	Columbus Belmont	everything	10/3/2008	900	shock	sunny	73.5	18.0	muddy	swift	best samples around wing dikes, elevation was 18 at Cairo Gauge
Barkley	Demumbers	black bass	4/21/2008	900	shock	sunny	62.0	358.3	calm	calm	water dropped from 365.0 to 360 just prior to sampling
Barkley	Donaldson	black bass	4/28/2008	900	shock	sunny	63.9	358.4	calm	calm	Good sample
Barkley	Little River	black bass	4/30/2008	900	shock	sunny	63.0	358.0	28	calm	Good sample
Barkley	Eddy Creek	black bass	5/5/2008	900	shock	sunny	67.3	360.0	6	muddy	2 runs done farther out in bay due to muddy water farther back
Barkley	Eddy Creek	black bass	10/13/2008	900	shock		71.1	355.0		calm	good sample
Barkley	Little River	black bass	10/15/2008	900	shock	sunny	72.5	355.0		calm	good sample
Barkley	Little River	crappie	10/20-24/2008	900	trapnet	cold/rainy	63.0	355.0		choppy	conditions fairly constant thru week
Barkley	Donaldson	crappie	10/27-31/2008	900	trapnet	clear/sunny	57.0	355.0		calm	conditions fairly constant thru week
Barkley	Donaldson	catfish	6/18-19/2008	900	shock	sunny	82.5	359.3		calm	good samples
Barkley	Cravens	redeer	5/12/2008	900	shock	sunny	64.9	359.8	20	calm	mostly males in bushes
Barkley	Devil's Elbow	redeer	5/19/2008	900	shock	sunny	67.8	359.6	32	slight chop	females with eggs and flowing in bushes...4" fish with eggs
Barkley	Donaldson	redeer	5/29/2008	900	shock	sunny	74.3	360+	36	calm	most fish have moved out, only in select areas/ elevation over summer pool
Pennyle		spottail	4/18/2008	900	shock	cloudy	74.0		24	calm	1 first time dipper/otherwise good sample
Ohio River	Birdsville/Smithland	everything	9/18-23/2008	900	shock	sunny	76.8	14.2	18	calm	big mayfly hatch/good sample
Cumberland River	Barkley Tailwater	everything	9/22/2008	900	shock	sunny	74.9	304.0	24	calm	good sample
Cumberland River	Quary	everything	9/24/2008	900	shock	sunny	75.0	304.0		calm	good sample
Cumberland River	Dycusburg	everything	9/25/2008	900	shock	sunny	76.0	304.0		calm	good sample

Table 2. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 10.0 hours (20 x 30-minute runs) of diurnal electrofishing at Kentucky Lake during May 2008.

Area	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					
Blood River																									
Smallmouth bass		1	1	1						2	1			1									7	2.80	2.33
Spotted bass				2	3	2	1	1	1	5	5	2		1									23	9.20	4.50
Largemouth bass	2	2	26	30	43	39	38	16	7	8	22	22	14	12	8	4	4	6	1				304	121.60	31.83
Big Bear																									
Smallmouth bass			1		1			1															3	1.20	0.80
Spotted bass				1						1	3	5	7	6	1								24	9.60	9.11
Largemouth bass	5	7	19	34	52	38	37	25	8	9	19	21	32	22	20	9	4	4	3				368	147.20	24.19
Sugar Bay																									
Smallmouth bass		2	1		1					1			1	1									7	2.80	2.80
Spotted bass		2	1	1			1		2	3	2	1											13	5.20	3.07
Largemouth bass	2	18	44	96	74	59	28	8	6	5	14	19	15	7	12	4	1						412	164.80	12.53
Jonathan																									
Smallmouth bass										1													1	0.33	0.33
Spotted bass		1								2	1	1	1	1									7	2.33	1.96
Largemouth bass	1	1	14	34	39	34	42	21	12	13	15	33	21	19	9	8	9	3	2	1			331	110.33	15.21
TOTAL																									
Smallmouth bass		3	3	1	2			2		3	1		1	2									18	1.71	0.85
Spotted bass		1	2	1	4	3	2	2	3	5	12	13	11	6	2								67	6.38	2.47
Largemouth bass	10	28	103	194	208	170	145	70	33	35	70	95	82	60	49	25	18	13	6	1			1,415	134.76	11.10

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Table 3. Spring diurnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Kentucky Lake during May 1998 - 2008.

Year	Mean length age-3 at capture	Length Group												Total	
		Age-1		<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		
1998	12.7	51.95	3.62	18.00	1.99	9.83	1.80	10.43	1.76	3.91	0.79	1.39	0.29	46.78	4.67
1999	13.9	41.89	3.44	18.70	3.33	11.40	1.53	11.90	1.68	3.10	0.66	0.80	0.30	52.00	4.90
2000	13.9	21.80	2.17	19.43	3.84	19.05	1.83	22.48	3.55	5.14	0.86	1.52	0.41	74.38	6.21
2001	14.4	73.90	4.28	63.70	6.99	12.80	1.55	12.60	1.49	2.80	0.60	0.40	0.18	116.70	9.63
2002	13.7	35.50	2.83	32.40	5.36	21.80	2.26	13.10	1.14	4.00	0.73	0.90	0.34	94.00	5.90
2003	13.7	30.90	2.70	21.81	3.75	43.62	5.20	15.62	1.92	4.38	0.90	0.95	0.26	105.43	11.40
2004	13.7	11.99	1.56	17.70	2.60	22.70	2.14	18.10	1.84	3.70	0.87	1.30	0.41	83.60	5.77
2005	13.8	28.70	3.01	24.50	2.49	46.50	4.36	23.60	2.21	3.70	0.70	0.80	0.37	107.40	7.59
2006	13.8	31.79	7.05	28.30	6.30	23.60	2.44	20.90	2.32	3.30	0.64	0.60	0.21	85.40	5.51
2007	13.8	22.16	3.95	18.00	3.29	28.75	2.80	26.08	1.74	5.42	0.74	1.25	0.40	93.33	7.06
2008	13.8	73.05	8.57	51.71	7.22	19.05	2.26	24.19	3.08	6.00	0.96	1.90	0.42	134.76	11.10
Average	13.7	38.51		28.57		23.55		18.09		4.13		1.07		90.34	

(Kentucky Bass Database.xls)

Data for 1985 - 1997 is listed in previous years report.

Table 4. PSD and RSD values calculated for black bass species collected during diurnal electrofishing at Kentucky Lake during May 2008; 95% confidence limits are in parentheses.

Area	Species	No. Fish ≥ 8.0 in	PSD (+/- 95%)	RSD ^a (+/- 95%)
Blood River	Largemouth bass	201	50 (+/- 7)	24 (+/- 6)
Big Bear Creek	Largemouth bass	251	57 (+/- 6)	37 (+/- 6)
Jonathan Creek	Largemouth bass	242	43 (+/- 7)	22 (+/- 6)
Sugar Bay	Largemouth bass	178	55 (+/- 6)	30 (+/- 6)
TOTAL	Smallmouth bass	11	64 (+/- 30)	27 (+/- 28)
	Spotted bass	59	83 (+/- 10)	32 (+/- 12)
	Largemouth bass	872	52 (+/- 3)	29 (+/- 3)

^aLargemouth bass = RSD₁₅, Spotted and Smallmouth bass = RSD₁₄

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Table 5. Mean back-calculated length (in) at each annulus of largemouth bass including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from largemouth bass collected following a FLW bass tournament in July, and during fall sampling in October 2008.

Year-Class	N	Age																							
		1	2	3	4	5	6	7	8	9	10	11	12	13											
2007	49	7.8																							
2006	11	7.3	11.9																						
2005	36	7.8	11.9	14.1																					
2004	19	7.6	11.5	13.7	15.1																				
2003	24	7.4	10.6	12.8	14.3	15.8																			
2002	28	7.2	10.7	12.8	14.4	15.6	16.7																		
2001	24	7.3	11.0	13.3	14.9	16.0	16.9	17.9																	
2000	22	6.6	9.5	11.9	13.6	15.0	16.3	17.4	18.4																
1999	2	5.2	8.0	10.3	12.1	13.7	15.1	16.3	17.3	18.5															
1998	2	7.1	8.3	10.4	11.8	13.2	14.6	16.2	17.2	18.4	19.0														
1996	1	5.0	8.1	10.2	11.6	12.5	13.3	14.5	15.4	16.4	17.2	18.1	19.1												
1995	1	5.1	7.4	9.0	10.5	12.5	13.8	15.1	16.4	17.7	18.7	19.7	20.7	21.2											
Mean		7.4	10.9	13.1	14.3	15.5	16.5	17.4	18.1	18.0	18.5	18.9	19.9	21.2											
Smallest		4.4	7.1	9.0	10.5	11.2	13.3	14.4	15.4	16.4	17.2	18.1	19.1	21.2											
Largest		11.9	15.1	16.2	17.1	18.4	19.5	20.5	20.1	19.0	19.9	19.7	20.7	21.2											
Std. Error		0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.6	0.8	0.8												
Low 95% CI		7.2	10.6	12.8	14.0	15.2	16.2	17.1	17.6	17.2	17.3	17.4	18.3												
High 95% CI		7.6	11.1	13.3	14.6	15.8	16.8	17.8	18.5	18.7	19.6	20.5	21.5												

* Intercept = 0.
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Table 6. Age frequency and CPUE (fish/hr) of largemouth bass collected during diurnal electrofishing for 10.5 hours (21 x 30-minute runs) at Kentucky Lake during May 2008.

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	21								
1	10	28	103	194	208	170	54																	767	54.2	73.05	8.57
2							91	70	27	14														202	14.3	19.24	1.85
3								6	21	64	29	10												130	9.2	12.38	1.20
4										6	29	21	10											66	4.7	6.29	0.77
5											29	51	40	49	15	5								189	13.3	18.00	2.34
6											10		10			5								25	1.8	2.38	0.29
7																10	9	4						23	1.6	2.19	0.35
8																		4	6					10	0.7	0.95	0.27
9																				4				4	0.3	0.38	0.12
Total	10	28	103	194	208	170	145	70	33	35	70	97	82	60	49	25	19	12	6				1,416			118.00	
%	1	2	7	14	15	12	10	5	2	2	5	7	6	4	3	2	1	1	0								100

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Table 7. Electrofishing CPUE (fish/hr) for each age of largemouth bass collected from Kentucky Lake in spring samples.

Age	Year										
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1	51.95	41.89	21.80	73.90	35.50	30.90	11.99	28.70	31.79	22.16	73.08
2	22.51	26.34	14.54	17.71	29.68	26.94	12.21	12.21	10.65	18.16	18.20
3	14.37	15.76	10.54	7.10	11.18	22.12	6.13	30.14	15.12	18.87	12.32
4	18.99	20.63	15.51	9.04	8.70	18.29	7.62	10.54	7.10	7.99	6.23
5	3.81	4.97	3.96	2.43	2.24	2.35	6.96	20.66	17.00	20.22	17.93
6	2.77	3.33	2.35	1.69	1.66	2.47	0.95	3.12	1.99	2.83	2.29
7	0.33	0.38	0.23	0.21	0.23	0.31	0.10	1.44	1.25	2.13	2.22
8	0.66	0.76	0.45	0.43	0.45	0.62	0.20	0.30	0.30	0.61	0.98
9	0.33	0.38	0.23	0.21	0.23	0.31	0.10	0.20	0.10	0.28	0.41

(Kentucky Bass Database.xls)

Table 8. Population assessment of largemouth bass based on spring sampling at Kentucky Lake from 2003-2007, using the Kentucky Lake specific assessment criteria.

Parameter	2004		2005		2006		2007		2008	
	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score
Growth (Mean length at capture of age-3)	13.7	4	13.8	4	13.8	4	13.8	4	13.8	4
Recruitment (Spring CPUE of age-1)	11.99	1	28.70	2	31.79	2	22.16	1	73.08	4
Size Structure (Spring CPUE of 12.0-14.9 in.)	22.70	2	46.50	3	23.60	2	28.75	2	19.05	2
Size Structure (Spring CPUE of \geq 15.0 in.)	18.10	2	23.60	3	20.90	2	26.08	4	24.19	3
Size Structure (Spring CPUE of \geq 20.0 in.)	1.30	1	0.80	1	0.60	1	1.25	1	1.90	2
Instantaneous Mortality (Z)	0.697		0.639		0.666		0.560		0.575	
Annual Mortality (A)%	50.2		47.2		48.6		32.2		43.7	
Total Score	10		13		11		12		15	
Assessment Rating	F		G		F		G		G	

Rating
 5-7 = Poor (P)
 8-11 = Fair (F)
 12-16 = Good (G)
 17-20 = Excellent (E)

(Kentucky Bass Database.xls)

Table 9. Species composition, relative abundance and CPUE (fish/hr) of black bass collected during 5.0 hours (10 x 30-minute runs) of diurnal electrofishing runs for black bass at Kentucky Lake during October 2008.

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						
Blood River																									
Smallmouth bass		6	4	1		7	10		1	2	2	2			1								36	14.40	3.19
Spotted bass	1		2		1	1	1		1		1	1											9	3.60	1.47
Largemouth bass	6	20	35	36	21	15	43	47	30	16	14	11	7	5	5	1	2	1					315	126.00	7.67
Jonathan																									
Smallmouth bass			3			2	2		2		1		1		1		1						14	5.60	2.04
Spotted bass		1		1	1	3			1	1		2	3	1									14	5.60	4.17
Largemouth bass	3	4	15	25	22	14	75	99	62	25	14	20	21	16	12	2	3	6	1				439	175.60	27.15
TOTAL																									
Smallmouth bass		6	7	1		9	12		3	2	3	2	1		2		1						50	10.00	2.31
Spotted bass	1	1	2	1	2	4	1	1	2		3	4	1										23	4.60	2.11
Largemouth bass	9	24	50	61	43	29	118	146	92	41	28	31	28	21	17	3	5	7	1				754	150.80	15.66

wfdwrky.d08

Table 10. Number of bass and relative weight (Wr) for each length group of black bass collected at Kentucky Lake during October 2008. Standard errors are in parentheses.

Species	Area	Length Group					
		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in	
		No.	Wr	No.	Wr	No.	Wr
Largemouth bass	Blood River	135	91 (0.79)	41	89 (1.52)	21	91 (1.84)
	Jonathan Creek	250	92 (0.58)	59	91 (1.10)	61	92 (1.37)
	Total	385	92 (0.47)	100	90 (0.90)	82	92 (1.12)
Species	Area	Length Group					
		7.0-10.9 in		11.0-13.9 in		≥ 14.0 in	
		No.	Wr	No.	Wr	No.	Wr
Spotted bass	Blood River	3	97 (4.10)	2	76 (8.45)	1	73
	Jonathan Creek	5	102 (3.51)	3	79 (14.58)	4	99 (2.90)
	Total	8	100 (2.64)	5	78 (8.47)	5	94 (5.74)
Smallmouth bass	Blood River	17	93 (3.56)	5	83 (2.73)	3	81 (4.19)
	Jonathan Creek	4	91 (7.13)	3	83 (7.78)	4	86 (5.37)
	Total	21	93 (3.12)	8	83 (3.03)	7	84 (3.41)

wfdwrky.d08

Table 11. 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 ^A		Age 0 ^A		Age 0 ≥5.0 in ^A		Age 1 ^B	
	Mean Length	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err
1998	6.4	0.15	27.66	5.02	21.92	4.51	41.89	6.40
1999	4.3	0.08	43.56	12.16	9.56	2.78	21.80	4.04
2000	6.2	0.11	42.20	3.62	32.40	3.38	73.90	7.96
2001	5.6	0.08	23.20	4.80	18.40	3.66	35.50	5.26
2002	5.7	0.12	36.20	9.62	23.40	4.13	30.90	0.00
2003	4.9	0.08	30.67	5.57	15.67	2.01	11.99	0.00
2004	4.6	0.09	26.00	6.16	9.83	1.66	28.70	5.60
2005	5.0	0.14	17.80	4.07	10.00	1.71	31.79	6.69
2006	4.8	0.13	19.00	3.77	8.80	1.72	22.16	3.95
2007	7.1	0.06	122.20	26.51	106.40	24.60	73.05	8.57
2008	5.8	0.08	33.80	6.94	27.20	4.81		
Average	5.5		38.39		25.78		37.17	

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

^B Data from diurnal electrofishing samples collected the following spring (April/May). Data from 1990 to 1997 is listed in previous years reports.

wfdwrky.dxx, wfdwragk.dxx, wfdpsdky.dxx

Table 12. Species composition, relative abundance, and CPUE (fish/net-night) of crappie collected by trap nets fished during 80 net-nights in two embayments of Kentucky Lake during October 2007.

Area	Species	Inch Class											Total	CPUE	Std Err		
		2	3	4	5	6	7	8	9	10	11	12				13	
Blood River	White Crappie	6	8	1	1			2	6	1		4		29	0.73	0.16	
	Black Crappie	39	15	5	12	16	27	53	47	87	100	49	12	462	11.55	1.44	
Jonathan Cr.	White Crappie	2	7	1	1	1				4	2	7	1	2	28	0.70	0.17
	Black Crappie	14	9	1		19	115	197	79	187	158	64	3	846	21.15	2.90	
TOTAL	White Crappie	8	15	2	2	1		2	10	3	7	5	2	57	0.71	0.12	
	Black Crappie	53	24	6	12	35	142	250	126	274	258	113	15	1,308	16.35	1.70	

wfdtpntk.d07

Table 13. Crappie population parameters used to manage the population at Kentucky Lake, with values determined from fall trap netting.

Year	Total CPUE (f/nn) excluding age-0			CPUE (f/nn) age-0			Mean length (in) age-2 at capture			CPUE (f/nn) for crappie >8.0 in			CPUE (f/nn) for crappie >10.0 in		
	WC	BC	Crappie	WC	BC	Crappie	WC	BC	Crappie	WC	BC	Crappie	WC	BC	Crappie
1998	9.60	31.27	40.87	9.49	8.64	18.13	9.3	9.3	9.3	5.75	11.27	17.02	3.21	17.49	20.70
1999	5.40	21.66	27.06	0.95	1.00	1.95	9.5	8.9	9.1	2.30	12.66	14.96	3.42	6.30	9.72
2000	2.70	18.63	21.33	0.45	1.31	1.76	10.0	8.9	9.4	2.38	10.57	12.95	1.01	7.56	8.57
2001	4.69	22.59	27.28	26.76	24.52	51.28	10.8	9.3	9.8	2.21	12.55	14.76	2.34	9.67	12.01
2002	3.90	15.14	19.04	0.71	3.06	3.77	10.8	9.9	10.4	2.74	8.60	11.34	3.30	9.80	13.10
2003	3.75	20.33	24.08	10.46	5.40	15.86	10.8	9.9	10.4	2.55	6.20	8.75	2.34	15.52	17.86
2004	7.47	32.46	39.93	0.65	0.98	1.63	10.8	9.2	9.7	2.71	11.67	14.38	6.20	18.60	24.80
2005	3.91	22.75	26.66	2.29	1.92	4.21	10.8	9.2	9.7	2.45	13.78	16.23	2.55	10.31	12.86
2006	2.62	16.07	18.69	1.24	1.18	2.42	10.8	9.2	9.7	1.60	11.86	13.46	1.68	6.60	8.28
2007	1.50	13.59	15.09	0.48	1.88	2.36	11.2	10.2	10.7	1.50	11.73	13.23	0.85	7.21	8.06
2008	0.36	14.92	15.28	0.35	1.43	1.78	11.2	10.2	10.7	0.36	12.95	13.31	0.16	6.15	6.31
Average	4.17	20.85	25.03	4.89	4.67	9.56	10.5	9.5	9.9	2.41	11.26	13.67	2.46	10.47	12.93

^A 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 1997 is listed in previous years reports.

Kentucky Lake Crappie Database

Table 14. Proportional stock density (PSD) and relative stock density (RSD₁₀) of white and black crappie collected with trap nets (80 net-nights) at Kentucky Lake during October 2008. 95% confidence interval is in parentheses.

Location	Species	N	PSD	RSD ₁₀
Blood River	White Crappie	14	93 (± 14)	36 (± 26)
	Black Crappie	403	86 (± 3)	62 (± 5)
Jonathan Creek	White Crappie	18	89 (± 15)	67 (± 22)
	Black Crappie	822	83 (± 3)	50 (± 4)
Total	White Crappie	32	90 (± 10)	53 (± 18)
	Black Crappie	1,225	84 (± 2)	54 (± 3)

wfdtpnk.d08

Table 15. Age frequency and CPUE (fish/nn) of white crappie collected in trap nets fished for 80 net-nights in Kentucky Lake during October 2008. Age data was obtained using otoliths.

Age	Inch Class											Total	%	CPUE	Std Err	
	2	3	4	5	6	7	8	9	10	11	12					13
	8	15	2	2	1								28	49.1	0.35	0.08
1							2	10	1				13	22.8	0.16	0.05
2									2	6	1		9	15.8	0.11	0.04
3											1		1	1.8	0.01	
4										1	3	2	6	10.5	0.08	0.03
Total	8	15	2	2	1		2	10	3	7	5	2	57		0.71	
%	14	26	4	4	2		4	18	5	12	9	4		100		

wfdtpntk.d08, wfdtpagk.d07

Table 16. Age frequency and CPUE (fish/nn) of black crappie collected in trap nets fished for 80 net-nights in Kentucky Lake during October 2008. Age data was obtained using otoliths.

Age	Inch Class											Total	%	CPUE	Std Err	
	2	3	4	5	6	7	8	9	10	11	12					13
0	53	24	6	9	11	11							114	8.7	1.43	0.26
1				3	24	131	250	45	39				492	37.6	6.15	0.84
2								72	196	22			290	22.2	3.63	0.45
3									13	56	6		75	5.7	0.94	0.13
4								9	13	168	94	15	299	22.9	3.74	0.50
5									13	12	6		31	2.4	0.39	0.05
9											6		6	0.5	0.08	0.01
Total	53	24	6	12	35	142	250	126	274	258	112	15	1,307		16.34	
%	4	2	0	1	3	11	19	10	21	20	9	1		100		

wfdtpntk.d08, wfdtnagk.d07

Table 17. Population assessment determined from white and black crappie based on fall trap netting at Kentucky Lake from 2004-2008, using the Kentucky Lake crappie specific assessment criteria.

Parameter	2004		2005		2006		2007		2008	
	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score
Population Density (CPUE of age-1 and older crappie)	39.93	4	26.66	3	18.69	2	15.09	2	15.29	2
Recruitment (CPUE of age-1 crappie)	24.80	4	12.86	2	8.28	1	8.06	1	6.31	1
Recruitment (CPUE of age-0 crappie)	1.63	1	4.21	1	2.42	1	2.35	1	1.78	1
Size Structure (CPUE of > 8.0 in)	14.38	4	16.24	4	13.46	4	13.23	3	13.31	4
Growth (Mean age-2 length at capture)	9.7	4	9.7	4	9.7	4	10.7	4	10.7	4
Instantaneous Mortality (Z)	0.649		0.788		0.729		0.872		0.4399	
Annual Mortality (A)%	47.7		54.5		51.7		58.2		35.6	
Total Score:	17		14		12		11		12	
Assessment Rating:	G		G		F		F		F	

Rating

- 5 - 7 = Poor (P)
- 8 - 12 = Fair (F)
- 13 - 17 = Good (G)
- 18 - 20 = Excellent (E)

WFDTPNTK.D08, WFDTPNTK.D07, WFDTPNTK.D06, WFDTPNTK.D05, WFDTPNTK.D04

Table 21. Spring diurnal electrofishing CPUE (fish/hr) of each length group of redear sunfish collected at Kentucky Lake during May in 2008.

Year	Length Group											
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 8.0 in		≥ 10.0 in		Total	
	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err
2008	0.00	0.00	1.45	0.61	21.82	2.31	144.73	17.72	20.73	3.99	168.00	17.73

wfdrek.d08

Table 22. Mean back-calculated length (in) at each annulus of redear sunfish including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Kentucky Lake in the May 2008.

Year-Class	N	Age					
		1	2	3	4	5	6
2007	4	4.7					
2006	14	3.6	6.9				
2005	17	3.4	6.3	8.6			
2004	3	4.5	7.2	9.4	10.5		
2003	1	3.0	6.1	7.8	9.1	10.5	
2002	1	3.2	6.2	7.3	8.3	8.8	9.2
Mean		3.7	6.6	8.7	9.8	9.7	9.2
Smallest		2.2	4.3	7.1	8.3	8.8	9.2
Largest		6.7	8.6	11.3	12.1	10.5	9.2
Std Err		0.1	0.2	0.2	0.6	0.8	
Low 95% CI		3.4	6.3	8.2	8.6	8.0	
High 95% CI		4.0	6.9	9.1	11.0	11.3	

* Intercept = 0.
wfdreagk.d08

Table 23. Age frequency and CPUE (fish/hr) of redear sunfish collected during 2.75 hours (11 runs; 900s each) of electrofishing at Kentucky Lake during late May 2008.

Age	Inch Class										Total	Percent	CPUE	Std Err
	3	4	5	6	7	8	9	10	11					
1	1	2		4							7	2.0	2.64	0.72
2			1	13	31	12					57	12.0	20.59	2.01
3					12	104	169		1		286	62.0	103.96	11.77
4								37			37	8.0	13.58	2.55
5								19			19	4.0	6.79	1.28
6							56				56	12.0	20.45	2.98
Total	1	2	1	17	43	116	225	56	1		462		168.01	
%	0.2	0.4	0.2	3.9	9.3	25.1	48.7	12.1	0.2			100.0		

wfdrek.d08
wfdreagk.d08

Table 24. Lake-specific population assessment of redear sunfish based on spring sampling at Kentucky Lake in May 2008.

Parameter	2008	
	Value	Score
Mean length age-3 at capture	8.8	4
Years to 8.0 inches	3	4
Spring CPUE \geq 8.0 inches	144.73	4
Spring CPUE \geq 10.0 inches	20.73	4
Instantaneous Mortality (z)	0.270	
Annual Mortality (A)%	23.7	
Total Score		16
Assessment Rating		E

Rating

4-6 = Poor (P)
 7-10 = Fair (F)
 11-13 = Good (G)
 14-16 = Excellent (E)

(KREDB) Kentucky Lake Redear Database

Table 25. Fishery statistics derived from a creel survey at Lake Barkley (45,600) from 1 March through 31 October 2008.

<u>Fishing Trips</u>			
	No. of fishing trips (per acre)	145,774	(3.2)
	Average trip length (hours)	4.29	
<u>Fishing Pressure</u>			
	Total angler-hours (S.E.)	625,656	(21,386)
	Angler-hours/acre	13.7	
<u>Catch / Harvest</u>			
	No. of fish caught (S.E.)	1,032,144	(106,870)
	No. of fish harvested (S.E.)	345,581	(46,368)
	Pounds of fish harvested	269,374	
<u>Harvest Rates</u>			
	Fish/hour	0.46	
	Fish/acre	7.58	
	Pounds/acre	5.91	
<u>Catch Rates</u>			
	Fish/hour	1.55	
	Fish/acre	22.63	
<u>Miscellaneous Characteristics (%)</u>			
	Male	85.21	
	Female	14.79	
	Resident	71.65	
	Non-resident	28.35	
<u>Method (%)</u>			
	Still fishing	34.53	
	Casting	52.59	
	Trotting	0.60	
	Fly Rod	0.07	
	Spider Rig	0.53	
	Crappie Casting	4.22	
	Crappie Still fishing	7.46	
<u>Mode (%)</u>			
	Boat	81.30	
	Bank	14.42	
	Dock	4.28	

Table 26. Length distribution for each species of fish harvested or released (lengths of released fish are estimated) at Lake Barkley (45,600 a) from the 1 March to 31 October 2008 creel survey.

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																										
Black crappie																										
Largemouth bass																										
Smallmouth bass																										
Spotted bass																										
Breagill																										
Redear sunfish																										
Longear sunfish																										
Warmouth																										
Green sunfish																										
Chumpe catfish																										
Blue catfish																										
Fishhead catfish																										
Bullhead																										
White bass																										
Striped bass																										
Hybrid striped bass																										
Yellow bass																										
Sauger																										
Sucker																										
Drum																										
Striped herring																										
Gar																										
Rainbow trout																										
Codden shiner																										
Blacknose Crappie																										
Illegal Black bass																										
Illegal Striper or Hybrid																										
Illegal Bl. Crappie																										
Illegal Wh. Crappie																										
Illegal other																										

Table 26 (cont'd). Length distribution for each species of fish harvested or released (lengths of released fish are estimated) at Lake Barkley (45,600 a) from the 1 March to 31 October 2008 creel survey.

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	
White crappie	H																						24,905
	R																						6,788
Black crappie	H																						8,483
	R																						2,891
Largemouth bass	H																						34,909
	R																						343,971
Smallmouth bass	H																						1,281
	R																						9,487
Spotted bass	H																						298
	R																						2,800
Bluegill	H																						170,377
	R																						189,327
Redear sunfish	H																						12,304
	R																						2,876
Longear sunfish	H																						3,089
	R																						26,937
Warmouth	H																						179
	R																						948
Green sunfish	H																						698
Channel catfish	H	107	52																				54,585
	R																						9,794
Blue catfish	H	37	72																				12,253
	R																						3,701
Fathead catfish	H																						168
	R																						222
Bullhead	H																						199
	R																						48
White bass	H																						7,825
	R																						34,887
Striped bass	H																						133
	R																						2,027
Hybrid striped bass	H																						95
	R																						96
Yellow bass	H																						10,311
	R																						31,433
Sauger	H																						36
	R																						54
Sucker	H																						54
	R																						964
Drum	H																						127
	R																						12,702
Striped herring	H																						1,969
	R																						3,489
Gar	H																						147
	R																						36
Rainbow trout	H																						75
Golden shiner	H																						69
	R																						979
Blacknose Crappie	H																						54
	R																						649
Illegal B. bass	H																						107
Illegal Striper or Hybrid	H																						236
Illegal B. Crappie	H																						204
Illegal Wh. Crappie	H																						718
Illegal other	H																						718

Table 27. Fish harvest statistics derived from a creel survey at Lake Barkley (45,600 a) from 1 March - 31 October 2008.

	Black bass group	Largemouth bass	Smallmouth bass	Spotted bass	Crappie group	White crappie	Black crappie	Catfish group	Channel catfish	Flathead catfish	Blue catfish	Bullhead	Panfish group	Bluegill	Redear sunfish	Longear sunfish	Warmouth	Green sunfish	Sauger	
No. caught (per acre)	392,647 (8.61)	378,760 (8.31)	10,769 (0.24)	3,098 (0.07)	43,132 (0.95)	31,693 (0.70)	11,384 (0.25)	80,897 (1.77)	64,363 (1.41)	333 (0.01)	15,954 (0.35)	247 (0.01)	406,829 (8.92)	359,698 (7.89)	15,280 (0.34)	30,025 (0.66)	1,129 (0.02)	698 (0.02)	88 (0.00)	
No. harvested (per acre)	36,389 (0.80)	34,809 (0.76)	1,281 (0.03)	296 (0.01)	33,452 (0.73)	24,305 (0.55)	8,493 (0.19)	67,189 (1.47)	54,569 (1.20)	168 (0.00)	12,253 (0.27)	199 (0.00)	185,943 (4.08)	170,371 (3.74)	12,304 (0.27)	3,089 (0.07)	179 (0.00)	290 (0.01)	34 (0.00)	
% of total no. harvested	10.53	10.07	0.37	0.09	9.68	7.21	2.46	19.44	15.79	0.01	3.55	0.06	53.81	49.30	3.56	0.89	0.05	0.01	0.01	
Lb. harvested (per acre)	88,336 (1.94)	84,851 (1.86)	3,190 (0.07)	295 (0.01)	26,632 (0.58)	19,563 (0.43)	7,000 (0.15)	95,684 (2.10)	77,965 (1.71)	228 (0.00)	17,383 (0.38)	109 (0.00)	47,394 (1.04)	39,837 (0.87)	7,122 (0.16)	377 (0.01)	58 (0.00)	62 (0.00)	62 (0.00)	
% of total lb. harvested	32.79	31.50	1.18	0.11	9.89	7.26	2.60	35.52	28.94	0.08	6.45	0.04	17.59	14.79	2.64	0.14	0.02	0.02	0.02	
Mean length (in)	16.7	17.2	12.8	12.8	11.3	11.6	11.6	16.5	16.5	14.8	18.0	11.1	17.1	7.1	9.1	5.7	7.5	18.0	18.0	
Mean weight (lb)	2.42	2.42	2.42	0.92	0.69	0.69	0.86	1.43	1.43	1.40	2.23	0.58	0.22	0.22	0.52	0.11	0.29	1.83	1.83	
No. of fishing trips for that species	68,088				20,975			21,856												
% of all trips	46.7				14.4			15.0												
Hours fished for that species (per acre)	292,232 (6.41)				90,026 (1.97)			93,803 (2.06)												
No. harvested fishing for that species	35,207				32,096			55,098												
Lb. harvested fishing for that species	85,678				25,640			81,577												
No./hour harvested fishing for that species	0.09				0.39			0.68												
% success fishing for that species	19.6				39.7			51.3												

t = < 0.005

Table 27 (continued). Fish harvest statistics derived from a creel survey at Lake Barkley (45,600 a) from 1 March-31 October 2008.

	Moore Group	White bass	Striped bass	Yellow bass	Hybrid Striped bass	Drum	Skipjack	Shiner	Gar	Golden Shiner	Sucker	Blacknose	Crapie	Illegal Wh. Crapie	Illegal Bl. Crapie	Illegal Wh. Crapie	Illegal Other	Illegal Striped or Hybrid	Rainbow Trout	Anything
No. caught (per acre)	86,591 (1.90)	42,533 (0.93)	2,161 (0.05)	41,744 (0.92)	153 (0.00)	13,666 (0.30)	5,057 (0.11)	1,048 (0.02)	147 (0.00)	1,048 (0.02)	54 (0.00)	54 (0.00)	54 (0.00)	204 (0.00)	236 (0.01)	204 (0.00)	718 (0.02)	107 (0.00)	73 (0.00)	
No. harvested (per acre)	18,185 (0.40)	7,646 (0.17)	133 (0.00)	10,311 (0.23)	95 (0.00)	837 (0.02)	1,569 (0.03)	69 (0.00)	0 (0.00)	69 (0.00)	0 (0.00)	54 (0.00)	54 (0.00)	204 (0.00)	236 (0.01)	204 (0.00)	718 (0.02)	107 (0.00)	0 (0.00)	
% of total no. harvested	5.26	2.21	0.04	2.98	0.03	0.24	0.45	0.02	0.00	0.02	0.00	0.02	0.02	0.06	0.07	0.06	0.21	0.03	0.00	
Lb. harvested (per acre)	8,728 (0.19)	5,460 (0.12)	338 (0.01)	2,660 (0.06)	249 (0.01)	649 (0.01)	908 (0.02)	8 (0.00)	0 (0.00)	8 (0.00)	0 (0.00)	69 (0.00)	721 (0.02)	76 (0.00)	75 (0.00)	76 (0.00)	718 (0.02)	100 (0.00)	100 (0.00)	
% of total lb. harvested	3.24	2.03	0.13	0.99	0.09	0.24	0.34	0.00	0.00	0.00	0.00	0.03	0.27	0.03	0.03	0.03	7.0	0.04	12.5	
Mean length (in)		12.9	17.5	8.5	17.3	12.3	11.4	7.0		7.0		13.0	13.1	9.0	9.0	9.0	7.0			
Mean weight (lb)		0.90	2.19	0.24	2.61	0.89	0.42	0.12		0.12		1.26	1.13	0.32	0.32	0.37				
No. of fishing trips for that species	2,601						35													10,009
% of all trips	1.8						0.0													6.9
Hours fished for that species (per acre)	11,162 (0.24)						151 (0.0)													42960 (0.94)
No. harvested fishing for that species	8,713						176													
Lb. harvested fishing for that species	5,232						58													
No./hour harvested fishing for that species	0.89						4.00													
% success fishing for that species	41.1																			18.6

t = < 0.005

Table 28. Monthly black bass angling success at Lake Barkley during the 2008 creel survey.

Month	Total no. of bass caught	No. of black bass fishing		Hours fished by bass anglers		Bass caught by bass anglers		Bass harvested by bass anglers		Bass harvested/angler	
		trips	trips	by bass anglers	by bass anglers	hour by bass anglers	hour by bass anglers	hour by bass anglers	hour by bass anglers	hour by bass anglers	hour by bass anglers
Mar	17,832	9,318	17,294	39,994	17,294	0.34	5,385	0.11	5,385	0.11	
Apr	36,947	6,884	33,477	29,547	33,477	0.92	4,569	0.13	4,569	0.13	
May	54,779	10,924	46,933	46,887	46,933	0.81	5,885	0.10	5,885	0.10	
Jun	110,182	12,948	107,296	55,572	107,296	1.53	10,349	0.15	10,349	0.15	
Jul	41,720	8,095	40,093	34,744	40,093	1.05	2,237	0.06	2,237	0.06	
Aug	22,617	5,117	21,713	21,962	21,713	0.84	1,806	0.07	1,806	0.07	
Sept	45,652	6,283	44,491	26,965	44,491	1.43	2,495	0.08	2,495	0.08	
Oct	62,917	8,518	61,057	36,560	61,057	1.39	2,481	0.06	2,481	0.06	
Total	392,647	68,088	372,354	292,232	372,354	1.11	35,207	0.09	35,207	0.09	
Mean											

Table 29. Black bass catch and harvest statistics derived from the 1 March to 31 October 2008 creel survey at Lake Barkley (45,600 a).

	Largemouth bass			Smallmouth bass			Spotted bass		
	Harvest >15.0 in	Catch & release 12.0-14.9 in	Total >15.0 in	Harvest >15.0 in	Catch & release 12.0-14.9 in	Total >15.0 in	Harvest 12.0-14.9 in	Catch & release >15.0 in	Total >15.0 in
Total no. of bass	34,809	202,494	378,780	1,281	4,074	1,910	298	1,783	3,098
% of bass harvested by	95.7			3.5			0.8		
Total weight of bass (lb)	84,851	169,409	454,381	3,190	2,611	4,007	295	1,354	2,424
% of bass harvested by weight	96.1			3.6			0.3		
Mean length (in)	16.7			17.2			12.8		
Mean weight (lb)	2.42			2.42			0.92		
Rate (f/hr)	0.053			0.002			0.000		

Table 31. Monthly panfish angling success at Lake Barkley during the 2008 creel survey.

Month	Total no. of panfish caught	Total no. of panfish harvested	No. of panfish fishing trips	Hours fished by panfish anglers	Panfish caught by anglers		Panfish harvested by anglers		Panfish harvested/hour by panfish anglers
					4,847	2,855	4,847	2,872	
Mar	6,881	4,249	688	2,954	4,847	2,855	4,847	2,872	1.69
Apr	28,029	9,841	1,624	6,970	6,679	1.39	6,679	3,120	0.65
May	267,503	135,641	11,356	48,738	251,884	5.23	251,884	130,047	2.70
Jun	44,443	11,329	3,921	16,830	32,514	3.61	32,514	7,570	0.84
Jul	15,963	5,626	1,718	7,373	7,761	1.51	7,761	3,965	0.77
Aug	10,874	5,489	816	3,503	4,239	2.74	4,239	3,023	1.96
Sept	16,983	9,021	1,084	4,653	12,747	4.16	12,747	7,347	2.40
Oct	16,153	4,748	1,002	4,301	12,550	3.57	12,550	4,199	1.19
Total	406,829	185,943	22,209	95,322	333,221	3.96	333,221	162,143	1.89
Mean									

Table 32. Catfish catch and harvest statistics derived from the 1 March to 31 October 2008 creel survey at Lake Barkley (45,600 a).

	Bullhead			Blue Catfish			Channel Catfish			Flathead Catfish		
	Harvest	Catch & release	Total	Harvest	Catch & release	Total	Harvest	Catch & release	Total	Harvest	Catch & release	Total
Total no. of catfish	189	0	247	12,253	498	15,954	54,569	2,683	64,363	168	0	333
% of catfish harvested by number	0.3			18.2			81.2			0.2		
Total weight of catfish (lb)	135	0	135	17,383	261	19,320	77,965	1,425	83,171	228	0	479
% of catfish harvested by weight	0.1			18.2			81.5			0.2		
Mean length (in)	11.1			18.0			16.5			14.8		
Mean weight (lb)	0.58			2.23			1.43			1.40		
Rate (f/hr)	0.000			0.024			0.073			0.000		

Table 33. Monthly catfish angling success at Lake Barkley during the 2008 creel survey.

Month	Total no. of catfish caught	Total no. of catfish harvested	No. of catfish fishing trips	Hours fished by catfish anglers	Catfish caught by anglers	Catfish caught/ hour by anglers	Catfish harvested by anglers	Catfish harvested/ hour by anglers
Mar	1,975	1,735	688	2,954	957	0.54	957	0.54
Apr	2,680	2,197	1,200	5,152	967	0.41	791	0.34
May	23,829	22,231	5,654	24,266	15,620	0.72	14,893	0.69
Jun	26,198	21,731	6,400	27,468	23,311	1.02	20,642	0.90
Jul	9,795	7,422	2,636	11,312	8,948	0.80	7,117	0.63
Aug	7,886	5,281	200	8,614	7,296	0.97	5,038	0.67
Sept	6,458	5,160	1,897	8,142	5,570	0.68	4,681	0.57
Oct	2,076	1,432	133	5,894	1,313	0.48	979	0.36
Total	80,897	67,189	21,856	93,803	63,982		55,098	
Mean						0.81		0.68

Table 34. Monthly crappie angling success at Lake Barkley during the 2008 creel survey.

Month	Total no. of crappie caught	Total no. of crappie harvested	No. of crappie fishing trips	Hours fished by crappie anglers	Crappie caught by anglers	Crappie caught/ hour by anglers	Crappie harvested by anglers	Crappie harvested/ hour by anglers
Mar	8,976	8,018	6,248	26,814	8,797	0.44	8,019	0.40
Apr	20,341	16,431	8,897	38,184	19,419	0.50	15,860	0.40
May	8,500	6,030	3,114	13,367	7,555	0.65	5,303	0.45
Jun	1,579	1,198	518	2,223	1,523	1.23	1,197	0.96
Jul	237	169	188	808	170	0.30	170	0.30
Aug	0	0	88	379	0	0.00	0	0.00
Sept	444	103	345	1,480	68	0.07	68	0.07
Oct	3,054	1,503	1,577	6,770	2,982	0.53	1,479	0.26
Total	43,132	33,452	20,975	90,026	40,514		32,096	
Mean						0.50		0.39

Table 35. Crappie catch and harvest statistics derived from the 1 March to 31 October 2008 creel survey at Lake Barkley (45,600 a).

Inches	White Crappie				Black Crappie				Blacknose Crappie			
	Harvest	Catch & release		Total	Harvest	Catch & release		Total	Harvest	Catch & release		Total
	> 10.0 in	≤ 10.0 in	> 10.0 in		> 10.0 in	≤ 10.0 in	> 10.0 in		> 10.0 in	≤ 10.0 in	> 10.0 in	
Total no. of crappie	24,905	6,283	505	31,693	8,493	2,293	598	11,384	54	0	0	54
% of crappie harvested by number	74.4				25.4				0.2			
Total weight of crappie (lb)	19,563	1,460	383	21,406	7,000	653	483	8,136	69	0	0	69
% of crappie harvested by weight	73.5				26.3				0.3			
Mean length (in)	11.3				11.6				13.0			
Mean weight (lb)	0.69				0.86				1.26			
Rate (f/hr)	0.03				0.01				0.00			

Table 36. Monthly Morones angling success at Lake Barkley during the 2008 creel survey.

Month	Total no. of Morones		No. of fishing trips	Hours fished by Morones anglers		Morones caught by Morones anglers		Morones caught/ hour by Morones anglers		Morones harvested/ hour by Morones anglers	
	caught	harvested		Morones	anglers	Morones	anglers	Morones	anglers	Morones	anglers
Mar	5,565	3,171									
Apr	11,027	2,328	35	152	44	3.33	44	3.33	44	3.33	
May	28,843	3,487	383	1,645	16,710	11.50	2,180	1.50	2,180	1.50	
Jun	23,365	4,521	814	3,493	20,969	9.02	3,377	1.45	3,377	1.45	
Jul	4,914	847	329	1,414	2,406	1.93	407	0.33	407	0.33	
Aug	2,189	139	243	1,041	1,251	1.88	139	0.21	139	0.21	
Sept	5,057	1,401	443	1,903	3,383	2.65	1,230	0.96	1,230	0.96	
Oct	5,631	2,291	353	1,513	1,837	1.10	1,336	0.80	1,336	0.80	
Total	86,591	18,185	2601	11,162	46,600	3.97	8,713	0.89	8,713	0.89	
Mean											

Table 37. Morones catch and harvest statistics derived from the 1 March to 31 October 2008 creel survey at Lake Barkley (45,600 a).

	White bass			Yellow bass		
	Harvest	Catch & release	Total	Harvest	Catch & release	Total
		12.0-14.9 in	>15.0 in		12.0-14.9 in	>15.0 in
Inches		15,106	1,369	404	0	41,744
Total no. of Morones	7,646		42,533	10,311		
% of Morones harvested by number	42.0			56.7		
Total weight of Morones (lb)	5,480	9,516	27,456	2,660	79	8,827
% of Morones harvested by weight	62.8			30.5		
Mean length (in)	12.9			8.5		
Mean weight (lb)	0.90			0.24		
Rate (f/hr)	0.011			0.017		
	Striped bass			Hybrid Striped bass		
	Harvest	Catch & release	Total	Harvest	Catch & release	Total
		12.0-14.9 in	>15.0 in		12.0-14.9 in	>15.0 in
Inches		350	376	29	29	153
Total no. of Morones	133		2,161	95		
% of Morones harvested by number	0.7			0.5		
Total weight of Morones (lb)	338	116	1,483	249	39	328
% of Morones harvested by weight	3.9			2.9		
Mean length (in)	17.5			17.3		
Mean weight (lb)	2.19			2.61		
Rate (f/hr)	0.000			0.000		

Table 38. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 10 hours (20 runs; each 0.50 hours) of diurnal electrofishing at Lake Barkley from 21 April to 5 May 2008.

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	22				
Lower Donaldson Cr.	Smallmouth bass																					3	3.00	3.00	
	Spotted bass																						143	143.00	1.00
	Largemouth bass	2	3	7	4	6	4	2	8	1													3	3.00	3.00
Ford's Bay	Smallmouth bass																					32	64.00	0.00	
	Spotted bass	1	1	1	1	1	1	2	1	4	4	5	4	5	1							64	128.00	0.00	
	Largemouth bass	2	2	2	2	5	5	2	1	3	4	6	7	10	11	3	1					1	1.00	1.00	
Parsons Bay	Smallmouth bass																					109	109.00	11.00	
	Spotted bass	2	7	4	8	5	2	4	1	1	2	11	11	19	14	6	6	2	1	2		351	140.40	15.89	
Middle Little River	Smallmouth bass																					319	127.60	10.46	
	Spotted bass	3	10	33	24	12	10	7	6	9	23	30	51	35	24	12	16	8	4	2		14	5.60	2.64	
	Largemouth bass	1	2	2	2	2	1	3	1		1	3	1									1	0.40	0.40	
Eddy Cr.	Smallmouth bass	3	6	15	35	39	18	11	22	44	57	37	28	14	10	4	5	2	1			351	140.40	15.89	
	Spotted bass																					2	4.00	4.00	
Upper Willow Cr.	Smallmouth bass																					32	64.00	0.67	
	Spotted bass																					3	2.00	2.00	
	Largemouth bass	1	1	1	4	4	4	2	1	2	5	1	3	3	1							1	0.67	0.67	
Demumbers Bay	Smallmouth bass																					161	107.33	9.82	
	Spotted bass	2	8	22	19	18	21	22	13	1	2	7	4	5	3	2	5	2	2	4		20	2.00	0.85	
Total	Largemouth bass	1	1	2	1	1	2	2	4	4	5	4	5	4	5	1	1					39	3.90	3.18	
	Spotted bass	7	27	67	67	57	83	85	46	32	58	109	153	123	101	58	54	24	16	8	3	1,237	123.70	6.32	
	Largemouth bass																								

(wfpdb.d08)

Table 39. Spring diurnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Lake Barkley during late April/early May since 1998.

Year	Length Group											
	< 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
1998	22.20	4.7	26.2	4.2	28.60	3.0	29.80	3.5	7.05	1.0	106.80	5.90
1999	16.30	1.9	21.0	2.2	22.70	2.5	34.00	2.6	4.67	0.7	93.90	6.00
2000	32.80	4.2	28.6	2.3	24.70	2.3	27.90	2.4	2.74	0.7	114.10	6.00
2001	70.40	8.3	61.2	5.1	31.10	2.5	19.00	1.5	1.60	0.7	181.70	10.80
2002	26.40	3.6	49.7	5.9	40.60	4.1	16.30	1.8	1.33	0.4	133.00	8.50
2003	41.10	5.2	38.5	3.9	75.30	5.3	26.90	2.3	1.68	0.4	181.80	10.40
2004	11.30	1.3	40.9	2.9	29.30	1.6	24.70	2.2	1.80	0.4	106.20	5.10
2005	36.60	4.9	19.3	1.9	59.40	4.8	37.50	3.3	2.00	0.6	152.70	10.30
2006	15.60	2.2	26.7	2.2	51.80	3.9	30.80	2.4	2.10	0.6	124.20	7.40
2007	4.80	0.9	21.36	2.6	66.50	4.7	47.60	4.5	1.80	0.5	140.27	9.73
2008	24.10	3.5	25.8	3.9	32.60	3.9	41.20	4.5	3.00	0.5	123.70	6.30
Average	27.42		32.7		42.05		30.52		2.71		132.58	

(Barkley_LMB_Database.xls)

Data is available since 1985 in previous annual reports

Table 40. PSD and RSD values calculated for each black bass species collected during 10.0 hours (20 runs; each 0.50 hours) of spring diurnal electrofishing at each area of Lake Barkley from 21 April to 5 May 2008. 95% confidence intervals are in parentheses

Area	Species	No. fish ≥ 8.0 in	PSD (+ 95% CI)	RSD ^A (+ 95% CI)
Donaldson	Largemouth bass	127	84 (6)	56 (9)
Ford's	Largemouth bass	58	78 (11)	55 (13)
	Spotted bass	29	86 (13)	55 (18)
Parson's	Largemouth bass	83	90 (6)	60 (10)
Little River	Largemouth bass	237	86 (4)	43 (7)
Eddy Creek	Largemouth bass	327	69 (6)	31 (5)
	Smallmouth bass	11	45 (30)	9 (18)
Willow	Largemouth bass	30	53 (18)	30 (17)
Demumbers	Largemouth bass	105	39 (10)	25 (9)
	Spotted bass	15		
Total	Largemouth bass	996	74 (3)	41 (3)
	Smallmouth bass	16	63 (25)	38 (25)
	Spotted bass	34	85 (12)	47 (17)

(wfdpsdb.d08)

^A Largemouth bass=RSD₁₅, spotted and smallmouth bass=RSD₁₄

Table 41. Age frequency and CPUE (fish/hr) of largemouth bass collected during diurnal electrofishing at Lake Barkley in April and May 2008.

Age	Inch Class																Total	%	CPUE	Std Err
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
1	72	72	57	87													288	24.3	28.80	3.00
2					83	42	23	11									159	13.4	15.85	2.30
3					8	5	10	49	81	26							179	15.1	17.90	2.02
4										26							26	2.2	2.58	0.36
5										20	78	53	35	24	12		222	18.7	22.18	2.39
6										10	26	53	35				124	10.4	12.41	1.44
7												26	35	24	12	13	110	9.3	11.02	1.37
8															23		23	1.9	2.32	0.34
9														12	13		25	2.1	2.47	0.40
10															12		12	1.0	1.16	0.17
12																19	19	1.6	1.90	0.40
Total	72	72	57	87	91	47	33	60	111	156	132	105	60	59	26	19	1,187			
%	6.1	6.1	4.8	7.3	7.7	4.0	2.8	5.1	9.4	13.1	11.1	8.8	5.1	5.0	2.2	1.6	100			

wfdpsdb.d08, wfdlbagb.d07

Table 42. Electrofishing CPUE (fish/hr) for each age of largemouth bass collected from Lake Barkley spring samples from 1998-2008.

Age	Year										
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1	23.03	17.33	23.40	76.86	25.10	59.04	29.00	42.50	18.43	6.69	28.8
2	15.16	18.01	21.50	70.04	72.40	13.11	17.80	9.10	27.78	17.90	15.85
3	23.81	11.71	15.20	8.88	10.70	65.91	25.50	50.90	28.63	41.34	17.9
4	8.14	15.33	14.90	11.04	10.80	33.67	23.30	35.70	23.30	3.92	2.58
5	16.09	4.98	4.90	0.48	0.70	5.72	5.50	8.30	14.06	31.42	22.18
6		10.86	10.60	5.29	4.70	0.00	2.10	2.70	7.68	17.97	12.41
7			1.32	0.48	0.40	1.64	1.20	1.70	1.48	12.92	11.02
8				1.48	0.10	0.00	0.20	0.30	0.74	1.85	2.32
9				0.48	0.70	1.00	0.70	0.90		2.70	2.47
10						0.21				0.93	1.16
11						0.55					
12										1.18	1.90

(Barkley_LMB_Database.xls)

Table 43. Lake specific population assessment of largemouth bass based on spring sampling at Lake Barkley from 2004-2008.

Parameter	2004		2005		2006		2007		2008	
	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score
Growth (Mean length at capture of age-3)	12.9	3	12.9	3	13.6	4	12.6	2	12.6	2
Recruitment (Spring CPUE of age-1)	29.20	2	42.50	3	18.40	1	6.69	1	28.80	2
Size Structure (Spring CPUE of 12.0-14.9 in.)	29.30	2	59.40	4	51.80	3	66.50	4	32.60	2
Size Structure (Spring CPUE of ≥ 15.0 in.)	24.70	2	37.50	3	30.80	3	47.60	4	41.20	3
Size Structure (Spring CPUE of ≥ 20.0 in.)	1.80	1	2.00	1	2.00	1	1.80	1	3.00	2
Instantaneous Mortality (Z)	0.632		0.674		0.431		0.317		0.339	
Annual Mortality (A)%	47		49		40		27		29	
Total Score	10		14		12		12		11	
Assessment Rating	F		G		G		G		F	

Rating

- 5-7 = Poor (P)
- 8-11 = Fair (F)
- 12-16 = Good (G)
- 17-20 = Excellent (E)

(Barkley_LMB_Database.xls)

Table 44. Spring diurnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Lake Barkley during May from 1998 - 2008. This table also includes the other parameters that are included in the BLFMP and used in calculating the black bass assessment.

Year	Mean length age-3 at capture	Age-1		Length Group						Total	
		CPUE	Std Err	12.0 - 14.9 in		>15.0 in		>20.0 in		CPUE	Std Err
				CPUE	Std Err	CPUE	Std Err	CPUE	Std Err		
1998	12.0	23.00	4.77	28.60	3.00	29.80	3.50	7.00	1.02	106.80	5.90
1999	12.6	17.30	1.34	22.70	2.50	34.00	2.60	4.70	0.73	93.90	6.00
2000	12.6 ^A	37.30	2.93	24.70	2.30	27.90	2.40	2.70	0.67	114.10	6.00
2001	14.7	81.00	8.59	31.10	2.50	19.00	1.50	1.60	0.67	181.70	10.80
2002	14.7 ^A	28.90	3.21	40.60	4.10	16.30	1.80	1.30	0.37	133.00	8.50
2003	12.9	59.20	6.36	75.30	5.30	26.90	2.30	1.70	0.35	181.80	10.40
2004	12.9 ^A	29.20	2.42	29.30	1.60	24.70	2.20	1.80	0.43	106.20	5.09
2005	12.9 ^A	42.50	5.44	59.40	4.80	37.50	3.30	2.00	0.55	152.70	10.30
2006	13.4	18.40	2.35	51.80	3.87	30.80	2.40	2.00	0.57	124.20	7.36
2007	12.6	6.70	0.68	66.50	4.70	47.60	4.50	1.80	0.50	140.27	9.73
2008	12.6 ^A	28.80	3.00	32.60	3.88	41.20	4.51	3.00	0.53	123.70	6.32
Average	13.0	33.85		42.05		30.52		2.66		132.58	

Data from 1985 to 1997 is listed in previous years reports.

(Barkley LMB Database.xls)

* Data not available

^A Previous years data used

Table 45. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 5.0 hours of diurnal electrofishing (10 runs; each 0.50 hours) for black bass in each area of Lake Barkley on 13 and 15 October 2008.

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				
Middle																								
Eddy Creek																								
Largemouth bass		1	11	30	74	50	21	41	52	46	21	20	29	18	9	8	5	2	1	1	440	176.00	28.15	
Spotted bass																					0	0.40	0.40	
Smallmouth bass				2	1			3	1			1	2	1							11	4.40	2.40	
Lower																								
Little River																								
Largemouth bass	1	3	11	32	54	62	19	23	22	40	19	27	25	15	9	5	5	3			375	150.00	9.98	
Spotted bass						1	1														2	0.80	0.80	
Smallmouth bass							1				1	1	1		1						5	2.00	1.26	
Total																								
Largemouth bass	1	4	22	62	128	112	40	64	74	86	40	47	54	33	18	13	10	5	1	1	815	163.00	14.73	
Spotted bass						1	1														2	0.40	0.40	
Smallmouth bass				2	1		1	3	1		1	2	3	1	1						16	3.20	1.34	

(wfdwrb.d08)

Table 46. Number of fish and the relative weight (Wr) values for each length group of largemouth, spotted, and smallmouth bass collected at Lake Barkley during 5.0 hours (10 runs; each 0.50 hours) of diurnal electrofishing on 13 and 15 October 2008.

Species	Area	Length Group									Total		
		8.0 - 11.9 in			12.0 - 14.9 in			≥15.0 in			N	Wr	Std Err
		N	Wr	Std Err	N	Wr	Std Err	N	Wr	Std Err			
Largemouth bass													
	Eddy Creek	160	94.2	0.7	70	94.0	0.9	44	98.2	1.5	274	94.8	0.6
	Little River	104	93.2	1.0	71	91.4	2.2	37	99.0	1.7	212	93.6	0.9
	Total	264	93.8	0.6	141	92.7	1.2	81	98.5	1.1	486	94.3	0.5
Spotted bass													
	Eddy Creek												
	Little River	2	104.5	6.5							2	104.5	6.5
	Total	2	104.5	6.5							2	104.5	6.5
Smallmouth bass													
	Eddy Creek	3	85.9	4.0	1	75.0		4	92.0	4.1	8	87.6	3.1
	Little River	1	78.1		1	85.9		3	75.7	0.7	5	78.2	2.0
	Total	4	83.9	3.5	2	80.4	5.4	7	85.0	4.0	13	84.0	2.4

(wfdwrb.d08)

Table 47. 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 ^A		Age-0 ^A		Age-0 ≥ 5.0 in ^A		Age-1 ^B	
	Mean Length	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err
2001	5.4		21.20	4.00	16.00		32.60	3.40
2002	5.3		26.70	2.40	10.10		59.00	6.40
2003	5.1		35.20	4.40	20.90		29.20	2.40
2004	5.4	0.8	39.80	5.75	30.40	4.27	42.50	5.40
2005	5.4	0.14	5.40	1.20	4.80	1.20	18.43	2.35
2006	4.8	0.15	9.33	1.73	4.00	1.29	6.69	0.68
2007	6.8	0.09	68.68	11.78	59.40	10.70	28.80	3.00
2008	6.2	0.05	55.60	6.74	50.20	6.31	*	

^A Data collected by fall (October) diurnal electrofishing. Mean lengths were determined by analysis of otoliths, removed from a subsample of LMB < 8.0 in.

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

* Data will be collected during the spring, diurnal electrofishing sample of 2008.
wfdwrb.dxx, wfdpsdb.dxx

Table 48. Species composition, relative abundance, and CPUE (fish/hr) of redear sunfish collected during 3.75 hours (15 runs; each 900s) of diurnal electrofishing at Lake Barkley (Devil's Elbow, Donaldson, and Craven's Bay) in May 2008.

Species	Inch Class											Total	CPUE	Std Err
	3	4	5	6	7	8	9	10	11	12				
Redear sunfish	4	11	5	28	27	46	86	59	20	1	287	71.75	14.71	

wfdpsdr.d08

Table 49. Spring diurnal electrofishing CPUE (fish/hr) of each length group of redear sunfish collected at Lake Barkley during late April/early May from 2005-2008.

Year	Length Group											
	< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		≥ 8.0 in		≥ 10.0 in		Total	
	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err
2005			0.40	0.40	8.40	3.66	33.60	14.50	23.60	14.66	42.40	11.82
2007			1.33	0.84	10.00	4.10	88.00	25.17	28.67	9.40	99.33	27.89
2008			5.00	1.57	13.75	4.62	53.00	11.78	20.00	6.04	71.75	14.71
Average			0.87		9.20		60.80		26.14		70.87	

wfdpsdr.dxx

Table 50. Mean back-calculated length (in) at each annulus of redear sunfish including the range in length at each age and the 95% confidence interval of each age group. Otoliths were collected from Lake Barkley in the spring 2008.

Year-Class	N	Age										
		1	2	3	4	5	6	7	8	9		
2007	16	4.4										
2006	32	3.8	6.8									
2005	40	4.3	7.5	9.2								
2004	17	4.1	7.0	9.0	10.3							
2003	4	3.3	6.1	8.0	9.2	10.3						
2002	5	4.3	6.5	8.4	9.4	10.2	10.7					
2001	3	4.7	7.2	8.0	8.9	9.4	9.9	10.2				
1999	1	3.5	5.3	6.0	7.0	7.3	7.6	8.2	8.5	8.9		
Mean		4.1	7.1	8.9	9.7	9.8	10.1	9.7	8.5	8.9		
Smallest		2.0	4.3	6.0	7.0	7.3	7.6	8.2				
Largest		7.0	10.0	11.3	12.1	11.9	11.8	12.1				
Std Err		0.1	0.1	0.2	0.2	0.4	0.6	0.8				
Low 95% CI		4.0	6.8	8.6	9.2	9.0	9.0	8.1				
High 95% CI		4.3	7.3	9.2	10.2	10.6	11.2	11.3				

* Intercept = 0.

wfdreagb.d08

Table 51. Age frequency and CPUE (fish/hr) of redear sunfish collected during 3.75 hours (15 runs; 900s each) of electrofishing at Lake Barkley during May 2008.

Age	Inch Class										Total	Percent	CPUE	Std Err	
	3	4	5	6	7	8	9	10	11	12					
1	4	11	1	2								18	6.0	4.39	1.50
2			4	23	17	6						50	18.0	12.64	3.85
3				3	10	26	46	40	3			128	45.0	32.02	6.90
4						9	17	12	10	1		49	17.0	12.19	2.79
5								11	3	2		16	6.0	4.06	1.00
6							3		3	5		11	4.0	2.75	0.65
7								11			1	12	4.0	2.99	0.82
9							3					3	1.0	0.72	0.22
Total	4	11	5	28	27	46	86	59	20	1		287		71.75	
%	1	4.0	2.0	10.0	9.0	16.0	30.0	21.0	7.0	0.0			100.0		

wfdpsdr.d08

wfdreagb.d08

Table 52. Statewide population assessment of redear sunfish based on spring sampling at Lake Barkley from 2005-2008.

Parameter	2005		2007		2008	
	Value	Score	Value	Score	Value	Score
Mean Length age-3 at capture	8.3	4	8.3	4	9.2	4
Years to 8.0 inches	3	4	3	4	3	4
Spring CPUE \geq 8.0 inches	33.60	4	88.00	4	53.00	4
Spring CPUE \geq 10.0 inches	23.60	4	28.67	4	20.00	4
Instantaneous Mortality (z)	0.727					
Annual Mortality (A)%	52					
Total Score	16		16		16	
Assessment Rating	E		E		E	

Rating
 4-6 = Poor (P)
 7-10 = Fair (F)
 11-13 = Good (G)
 14-16 = Excellent (E)

Barkley_Redeare_Sunfish_Database.xls

Table 53. Length frequency and CPUE (fish/hr) of blue, flathead, and channel catfish collected with low pulse electrofishing at Lake Barkley from 18-19 June 2008. A total of 3.5 hours (7 runs; 0.5 hours each) of electrofishing was conducted.

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	23	24	25	26	27	28	30	32	33	34	36	38	39
Blue catfish	1	5	8	9	14	54	99	46	47	71	29	11	9	9	7	10	9	7	3	3	2	1	1	1	1	1	1	1	1	1	1	1	461	115.25	24.06
Flathead catfish																1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	14	18.50	6.33	
Channel catfish	6	21	13	4	3	14	8	2	3																							74	3.50	1.59	

(wfdcatb.d08)

Table 54. Age frequency and CPUE (fish/hr) of blue catfish collected during low pulse electrofishing at Lake Barkley from 18-19 May 2008.

Age	Inch Class														Total	Percent	CPUE	Std Err					
	8	11	12	13	14	15	16	17	18	19	20	21	22	23					24	25	27	28	33
2	14																			14	5.0	3.50	1.30
3		46	47																	93	33.0	23.25	4.61
4				71	29	6		2												108	38.0	26.75	7.09
5						6	9	5	5			1	2	2						30	10.0	7.10	1.69
6								3	2	10	7	2	1	2	1	1				29	10.0	7.08	2.45
7											2	2	1					1		8	3.0	2.08	0.87
8												1					1			2	1.0	0.48	0.30
9																1				2	1.0	0.50	0.33
Total	14	46	47	71	29	12	9	10	7	10	9	6	4	4	3	2	1	1	1	286			
%	6	19	19	29	12	5	4	4	3	4	4	2	2	2	1	1	0	0	0				

(wfdcatb.d08) (wfdbcagb.d04)

Table 55. Relative weight (Wr) of each length group of blue, flathead, and channel catfish collected at Lake Barkley from 18-19 June 2008. Fish were collected during 3.5 hours (7 runs; 0.5 hours each) of low pulse 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	193	99.4	3.3	29	99.7	1.9	3	109.0	6.5	225	99.6	2.9
Flathead Catfish	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
	1	107.2		8	131.6	5.83	5	113.9	5	14	123.5	4.5
Channel Catfish	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
	5	97.1	1.9							5	97.1	1.9

(wfdcatb.d08)

Table 56. Length frequency and CPUE (fish/net-night) of each inch-class of white and black crappie collected by trap-net (87 net-nights) at Lake Barkley from 21 October-31 October 2008.

Location	Species	Inch Class												Total	CPUE	Std Err	
		2	3	4	5	6	7	8	9	10	11	12	13				14
Little River	White Crappie	20	75	25	27	45	52	4	30	16	5	16	5	1	321	7.00	1.00
	Black Crappie	19	23	3	2				6	6	4	5	1		69	1.50	0.26
Donaldson Creek	White Crappie	9	8	6	27	24	24	3		2	6	5			114	2.88	0.49
	Black Crappie	1	7	2	4	7	13	66	33	3	10	7	1		154	3.85	0.70
Total	White Crappie	29	83	31	54	69	76	7	30	18	11	21	5	1	435	5.08	0.62
	Black Crappie	20	30	5	6	7	13	72	39	7	15	8	1		223	2.59	0.37

(wfdtpntb.d08)

Table 57. CPUE (fish/net-night) for length-groups of crappie collected from multiple years of trap netting on Barkley Lake. Includes mean lengths at capture for age 2 crappie and % of trap netting catch that is age-4 or older (catch excludes age-0 fish).

Year	CPUE > 8.0 in			CPUE > 10.0 in			Mean Length @ age 2		% Age 4 and Older		
	WC	BC	WC & BC	WC	BC	WC & BC	WC	BC	WC	BC	WC & BC
1998	4.50	1.51	6.01	1.25	0.21	1.46	9.5	8.2	5.11	0.63	2.99
1999	1.92	1.00	2.92	1.35	0.09	1.44	10.3	9.2	1.03	1.65	1.27
2000	2.03	1.86	3.89	0.79	0.60	1.39	11.4	10.5	9.19	0.95	3.99
2001	1.08	1.55	2.63	0.94	1.03	1.96	11.3	10.2	2.17	7.78	5.79
2002	2.56	2.74	5.30	1.10	0.64	1.74	10.4	10.0	2.71	6.80	4.88
2003	2.26	1.63	3.89	1.09	1.13	2.21	11.1	10.3	4.20	4.27	4.24
2004	5.47	1.82	7.29	1.04	0.74	1.78	11.1*	10.3*	1.83	3.43	2.30
2005	3.8	1.4	5.20	2.75	0.62	3.37	11.3	10.8	0.58	0.29	1.14
2006	2.68	0.96	3.64	0.96	0.38	1.34	10.7	10.5	0.66	0.93	0.51
2007	1.82	1.44	3.26	1.38	0.49	1.82	10.7*	10.5*	0.30	0.00	0.90
2008	1.65	1.08	2.73	0.65	0.36	1.01	11.3	11.3	3.70	8.70	0.67
Average	2.7	1.5	4.3	1.2	0.6	1.8	10.8	10.0	3.1	3.0	3.0

(Barkley_Crappie_Database.xls)

* Age and growth not collected; value from previous year used

Data since 1985 are available in previous annual reports

Table 58. Proportional stock density (PSD) and relative stock density (RSD) of white and black crappie collected by trap-nets (87 net-nights) at Lake Barkley from 21 October-31 October 2008. Numbers in parentheses represent 95% confidence intervals.

Location	Species	N	PSD	RSD ₁₀
Little River	White Crappie	201	38 (7)	21 (5)
	Black Crappie	24	92 (12)	42 (20)
Donaldson	White Crappie	91	18 (8)	14 (7)
	Black Crappie	144	83 (6)	15 (6)
Total	White Crappie	292	32 (6)	19 (4)
	Black Crappie	168	85 (6)	18 (5)

(wfdtpntb.08)

Table 59. 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 in the fall 2008.

Year-Class	N	Age						
		1	2	3	4	5	6	7
2007	20	6.0						
2006	10	3.9	7.5					
2005	13	4.3	8.5	11.3				
2004	2	3.4	6.8	9.5	11.7			
2003	3	4.4	8.7	10.3	12.0	12.9		
2001	1	5.9	10.1	11.6	12.5	13.1	13.5	13.8
Mean		4.9	8.1	11.0	12.0	13.0	13.5	13.8
Smallest		2.7	5.3	8.0	10.7	11.6	13.5	13.8
Largest		9.4	10.1	12.1	12.8	13.9	13.5	13.8
Std Err		0.2	0.2	0.2	0.4	0.5		
Low 95% CI		4.5	7.7	10.6	11.3	12.0		
High 95% CI		5.3	8.5	11.4	12.7	13.9		

* Intercept = 0.

wfdtnagb.d08

Table 60. 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 in the fall 2008.

Year-Class	N	Age			
		1	2	3	4
2007	46	4.7			
2006	15	4.6	9.3		
2005	12	4.2	7.4	10.2	
2004	1	4.5	7.4	9.8	12.1
Mean		4.6	8.4	10.1	12.1
Smallest		3.6	6.7	8.2	12.1
Largest		9.8	10.1	11.6	12.1
Std Err		0.1	0.2	0.2	
Low 95% CI		4.4	8.0	9.7	
High 95% CI		4.8	8.8	10.6	

* Intercept = 0.

wfdtnagb.d08

Table 61. Age frequency and CPUE (fish/net-night) of black crappie collected during 87 net-nights at Lake Barkley from 21 October-31 October 2008.

Age	Inch Class												Total	Percent	CPUE	Std. Err.	
	2	3	4	5	6	7	8	9	10	11	12	13					
0	20	30	5	6	7	1	5							74	33.00	0.86	0.14
1						12	62	39	2		2			117	52.00	1.36	0.28
2									3	11				14	6.00	0.17	0.04
3							5		2	4	6			17	7.00	0.19	0.04
4												1		1	0.00	0.01	0.01
Total	20	30	5	6	7	13	72	39	7	15	8	1		223			
%	9	13	2	3	3	6	32	17	3	7	4						

(wfdtpntb.d08) (wfdtnagb.d08)

Table 62. Age frequencies and CPUE (fish/net-night) of white crappie collected during 87 net-nights at Lake Barkley during 21 October-31 October 2008.

Age	Inch Class														Total	Percent	CPUE	Std Err
	2	3	4	5	6	7	8	9	10	11	12	13	14					
0	29	83	31	54	69	70	7								343	79.0	3.99	0.53
1						6		30	14	3	2				55	12.0	0.63	0.13
2									4	7	2				13	3.0	0.15	0.03
3										1	15	2			18	4.0	0.21	0.05
4											2	1			3	1.0	0.03	0.01
5											2	1	1		4	1.0	0.04	0.01
7													1		1	0.0	0.01	0.01
Total	29	83	31	54	69	76	7	30	18	11	21	5	1		437			
%	7	19	7	12	16	17	2	7	4	3	5	1	0					

(wfdtpntb.d08) (wfdtnagb.d08)

Table 63. Lake-specific population assessment for crappie from Lake Barkley trap-net data collected in November 2004-2008.

Parameter	2004		2005		2006		2007		2008		
	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	
Population Density (CPUE of age-1 and older crappie)	9.18	2	6.50	1	7.60	2	3.78	1	2.80	1	
Recruitment (CPUE of age-1 crappie)	6.32	2	3.10	1	6.00	2	1.80	1	1.99	1	
Recruitment (CPUE of age-0 crappie)	3.23	1	8.60	1	0.20	1	2.00	1	4.85	1	
Size Structure (CPUE of > 8.0 in)	7.29	4	5.20	3	3.60	2	3.20	2	2.73	1	
Growth (Mean age-2 length at capture)	10.7	4	10.7	4	10.6	3	10.6	3	11.3	4	
Instantaneous Mortality (Z)			1.51		1.42		1.49		0.91		0.865
Annual Mortality (A)%			77.8		75.8		77.5		59.9		58.0
Total Score:		13		10		10		8		8	
Assessment Rating:		G		F		F		F		F	

(Barkley_Crappie_Database.xls)

Table 64. Species composition, relative abundance, and CPUE (fish/hr) of largemouth bass, bluegill and redear sunfish collected during 1.25 hours (6 runs; each 600s) of diurnal electrofishing at Lake Pennyryle on 18 April, 2008

Species	Inch Class																Total	CPUE	Std Err
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
Largemouth bass				1	21	14	5	9	16	17	23	11	1	2	1	1	122	117.11	14.48
Bluegill	8	31	38	62	40	33	64	10	1								287	278.82	85.42
Redear Sunfish			3	2	11	9	6	7	28	12	2						80	77.40	40.35

wfdpsdp.d08

Table 65. Spring, diurnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Pennyrile Lake from 1998-2008.

Year	Length Group								Total	
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		CPUE	Std Err
1998	12.00	8.00	70.00	1.00	7.00	1.00	2.00	2.00	91.00	21.00
1999 ^A	26.00	8.00	102.00	8.00	3.00	1.00	2.00	2.00	133.00	1.00
2000 ^A	46.00	4.00	87.00	5.00	11.00	7.00	3.00	3.00	147.00	1.00
2001 ^A	54.00	0.00	138.00	10.00	12.00	4.00	5.00	1.00	209.00	15.00
2002	132.30	24.20	116.20	14.70	30.80	5.40	5.40	3.30	284.00	36.90
2003	96.60	17.60	118.80	9.40	24.80	4.80	0.90	0.90	241.00	27.30
2004	27.50	7.10	63.70	10.70	26.40	4.70	2.20	1.40	119.80	14.40
2005	101.10	11.60	127.50	21.00	25.30	5.80	6.60	2.60	260.40	22.90
2006	81.00	21.60	105.00	11.80	26.00	5.03	6.00	2.58	218.00	30.31
2007	41.33	2.46	66.00	3.97	14.00	2.25	2.67	1.33	124.00	5.20
2008	38.87	5.09	62.99	11.96	13.28	2.82	1.96	1.24	117.11	14.48
Mean	59.70		96.11		17.60		3.43		176.76	

^A Data collected by spring, nocturnal electrofishing.

wfdpsdp.dxx

Date from 1990 to 1997 is listed in previous year reports.

Table 66. PSD and RSD values obtained for largemouth bass, bluegill and redear sunfish collected during 1.25 hours of diurnal electrofishing (6 runs; each 600s) at Lake Pennyrile on 18 April 2008.

Species	N	PSD (+/- 95% CI)	RSD* (+/- 95% CI)
Largemouth bass	81	20 (9)	2 (3)
Bluegill	249	44 (6)	5 (3)
Redear sunfish	75	65 (11)	19 (9)

* Bluegill = RSD₈, Redear sunfish = RSD₉.

wfdpsdp.d08

Table 67. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Lake Pennyriple spring samples.

Age	Year										
	1998	1999 ^{AB}	2000 ^{AB}	2001 ^A	2002 ^C	2003	2004 ^D	2005 ^D	2006 ^D	2007 ^D	2008 ^D
1	5.00	22.69	41.06	26.00	111.51	59.39	13.05	85.65	68.27	33.11	27.92
2	9.30	22.34	37.53	103.76	49.89	83.41	38.09	55.89	39.09	28.72	28.78
3	28.30	40.07	25.23	39.13	34.77	23.39	12.83	28.37	25.68	12.97	13.62
4	26.60	20.26	14.88	6.25	28.38	33.92	26.06	35.10	34.38	21.40	17.98
5	7.70	15.18	15.11	21.57	31.52	25.75	17.50	29.18	25.91	17.21	18.01
6	3.00	6.21	3.76	4.14	9.99	7.26	5.39	7.82	8.38	3.45	4.25
7	5.00	2.62	2.31	3.00	8.02	3.42	1.95	3.54	3.11	2.74	2.47
8	4.00	2.58	1.63	0.00	2.54	3.63	2.70	3.91	4.19	1.73	2.12
9		0.00	0.00	0.00	0.00		0.00				
		0.06	0.50	1.14	1.10		2.21				

^A Spring electrofishing samples were collected nocturnally.

^B Age and growth data was not collected. Age and growth data collected during 1998 and 2001 was used as surrogate data.

^C Age and growth data was not collected. Age and growth data collected during 2001 and 2003 was used as surrogate data.

^D Age and growth data was not collected. Age and growth data collected during 2003 was used as surrogate data.

Pennyriple_LMB_Database.xls

Table 68. Lake specific population assessment of the largemouth bass population based on spring diurnal electrofishing at Lake Pennyriple from 2004-2008.

Parameter ^A	2004 ^B		2005 ^B		2006 ^B		2007 ^B		2008 ^B	
	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score
Growth (Mean length at capture of age-3)	9.7	1	9.7	1	9.7	1	9.7	1	9.7	1
Recruitment (Spring CPUE of age-1)	13.10	1	85.70	4	68.30	3	33.10	2	27.92	1
Size Structure (Spring CPUE of 12.0-14.9 in.)	26.40	2	25.30	2	26.00	2	14.00	1	13.28	2
Size Structure (Spring CPUE of ≥ 15.0 in.)	2.20	1	6.60	2	6.00	2	2.70	1	1.96	2
Size Structure (Spring CPUE of > 20.0 in.)	0.00	1	3.30	3	0.00	0	0.67	1	0.00	0
Total Score	6		12		8		6		6	
Assessment Rating	Poor		Good		Fair		Poor		Poor	

^A Population assessment scores are obtained for lakes < 1000 acres.

^B Age and growth data was not collected. Age and growth data collected during 2003 was used as surrogate data.

Rating

5-7 = Poor (P)
 8-11 = Fair (F)
 12-16 = Good (G)
 17-20 = Excellent (E)

Pennyriple_LMB_Database.xls

Table 69. Spring electrofishing CPUE (fish/hr) for each length group of bluegill and redear sunfish collected at Lake Pennyrile during May from 1998-2008.

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	2008	38.09	19.9	136.2	43.0	93.2	42.7	11.3	4.7	278.82	85.42
	2007	4.00	1.79	35.33	8.60	23.33	7.55	1.33	0.84	64.00	15.87
	2005	51.70	20.00	262.60	64.00	45.10	13.40	1.10	1.10	360.40	72.30
	2004	3.10	3.10	38.50	10.60	23.10	11.90	6.20	4.50	70.80	21.70
	2003	27.70	5.20	80.00	14.50	18.50	5.20	12.30	5.20	138.50	8.80
	2002	77.60	22.90	98.40	32.00	29.60	7.30	1.60	1.10	207.20	52.10
	2001	0.0	0.0	21.00	3.00	65.90	53.90	3.00	3.00	89.80	53.90
	2000	80.80	9.00	95.80	18.00	65.90	12.00	9.00	3.00	251.50	35.90
	1999	6.00	0.0	61.00	15.00	72.00	2.00	4.00	0.0	143.00	17.00
	1998	16.00	4.00	40.00	2.00	16.00	6.00	1.00	1.00	73.00	11.00
	Mean		33.36		81.40		39.94		4.39		155.36
Redear sunfish	2008	2.65	1.76	20.98	9.19	12.75	6.34	41.03	25.14	77.40	40.35
	2007	2.00	1.37	21.33	7.91	16.67	8.09	10.67	1.69	50.67	16.35
	2005	1.10	1.10	37.40	12.80	27.50	10.70	23.10	5.30	89.00	28.70
	2004	0.0	0.0	20.00	12.80	40.00	17.10	9.20	2.90	69.20	31.10
	2003	0.0	0.0	55.40	12.70	26.20	3.10	21.50	2.90	103.10	13.00
	2002	0.0	0.0	59.20	11.40	49.20	9.90	53.80	20.90	162.30	27.30
	2001	0.0	0.0	21.00	15.00	12.00	6.00	9.00	3.00	44.90	21.00
	2000	3.00	3.00	41.90	18.00	24.00	0.0	134.70	68.90	206.60	50.90
	1999	0.0	0.0	11.00	3.00	40.00	4.00	65.00	11.00	119.00	11.00
	1998	0.0	0.0	6.00	2.00	16.00	8.00	9.00	1.00	32.00	12.00
	Mean		2.19		29.42		26.43		37.70		95.42

wfdpsdp.dxx

Table 70. Lake-specific population assessment of the bluegill sunfish population at Lake Pennyrile from 2003-2008.

Parameter	2003 ^A		2004 ^A		2005 ^A		2007 ^A		2008 ^A	
	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score
Growth (Mean length at capture of age-2)	2.9	1	2.9	1	2.9	1	2.9	1	2.9	1
Growth (Years to reach 6.0 in)	4	2	4	2	4	2	4	2	4	2
Size Structure (CPUE ≥ 6.0 in)	30.80	2	29.23	2	46.20	3	24.70	2	104.51	4
Size Structure (CPUE ≥ 8.0 in)	12.30	4	6.15	2	1.10	1	1.30	1	11.32	4
Total Score:		9		7		7		6		11
Assessment Rating:		F		F		F		P		G

^A Age and growth data was not collected. Age and growth data from 2002 was used as surrogate data.

(Pennyrile_BLG_Database)

2006 data was not collected on Bluegill

Rating

4-6 = Poor (P)
 7-10 = Fair (F)
 11-13 = Good (G)
 14-16 = Excellent (E)

Table 71. Lake-specific population assessment of the redear sunfish population at Lake Pennyrile from 2003-2008.

Parameter	2003		2004		2005		2007		2008	
	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score
Growth (Mean length at capture of age-3)	5.4 ^B	1	5.4 ^B	1	5.4 ^B	1	5.4	1	5.4	1
Growth (Years to reach 8.0 in)	5 ^B	2	5 ^B	2	5 ^B	2	5	2	5	2
Size Structure (CPUE ≥ 8.0 in)	21.5	1	9.2	1	23.1	1	10.7	1	41.0	2
Size Structure (CPUE ≥ 10.0 in)	0.0	0	0.0	0	0.0	0	0.0	0	2.0	3
Total Score:		8		6		8		7		8
Assessment Rating:		F		P		F		F		F

^B Age and growth data was not collected. Age and growth data collected during 2002 was used as surrogate data.

(Pennyrile_RDR_Database)

No population data was collected in 2006

Rating

4-6 = Poor (P)
 7-10 = Fair (F)
 11-13 = Good (G)
 14-16 = Excellent (E)

Table 72. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during diurnal electrofishing at Lake Beshear during 2008.

Season	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			
Spring	Largemouth bass		1	5	9	3	3	4	4	12	8	7	13	8	7	10	10	10	6	5	4	129	51.60	6.82
Fall	Largemouth bass		1	7	18	6	1	2	4	8	9	2	2	1	8	12	5	7	5	2	1	101	40.40	2.32

wfdpsdlb.d08 and wfdwrlb.d08

Table 73. Spring diurnal electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Lake Beshear.

Year	Mean length age-3 at capture	Age-1		Length Group												Total	
		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
				CPUE	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err		
1998		0.00		5.00	1.3	70.00	8.7	17.00	4.4	53.00	5.3	22.00	2.2	8.50	1.7	88.00	8.3
1999		3.50		4.00	1.8	39.50	6.7	14.00	2.9	25.50	4.9	8.00	2.7	1.00	1.0	55.00	8.8
2000		3.20		11.20	3.7	36.00	8.7	4.00	2.1	32.00	7.6	16.40	3.1	2.80	0.5	65.20	10.9
2001	14.1	1.00	2.0	5.00	2.4	26.00	6.1	10.50	2.5	15.50	3.8	5.50	1.3	1.50	1.0	73.00	6.7
2002		3.50		11.50	1.7	64.50	10.7	28.00	4.2	36.50	8.6	11.50	2.9	3.50	1.3	100.00	16.4
2003	14.0	0.80	3.8	5.20	2.9	33.60	7.8	8.00	1.9	25.60	7.2	3.60	0.7	2.00	1.1	45.20	9.5
2004		6.40		4.40	1.6	52.00	9.3	9.60	2.6	42.40	8.5	16.00	3.7	2.80	1.4	68.40	11.7
2005		38.80		30.80	4.9	51.60	6.2	7.20	2.1	44.40	5.9	19.60	2.4	3.60	1.2	94.80	8.5
2006	12.7	24.80	7.8	27.60	8.2	41.20	5.6	7.20	2.9	34.00	3.0	18.00	1.9	4.80	1.5	84.00	13.3
2007		13.00	2.4	15.00	3.3	50.33	8.6	15.00	4.2	35.33	5.2	16.00	2.6	4.67	1.0	83.00	12.8
2008		10.15	1.4	8.40	3.9	32.00	4.6	11.20	3.8	20.80	3.4	10.00	2.7	3.60	1.7	51.60	6.8
Average	13.6	9.56		11.65		45.16		11.97		33.18		13.33		3.52		73.47	

wfdpsdlb.dxx

Data from 1986 to 1997 is listed in previous year reports.

Table 74. Age frequency and CPUE (fish/hr) of largemouth bass collected from Lake Beshear in May 2008 during 2.5 hours of diurnal sampling. Used WFDLBAGB.d06 data set to determine age frequencies.

Age	Inch Class															Total	%	CPUE	Std Err	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18					19
1	5	9	3	3	4	1											25	20.8	10.00	3.7
2						3	12	7	3								25	20.8	10.15	1.4
3							1	3	4	6	1						15	12.5	5.91	1.7
4								1	9	2	2						14	11.7	5.39	1.1
5											4	3	10	4		21	17.5	8.33	1.2	
6												1	7		6	14	11.7	5.42	1.2	
7														4		4	3.3	1.60	0.5	
8															2	2	1.7	0.80	0.3	
Total	5	9	3	3	4	4	12	8	7	13	8	8	10	10	10	6	120		47.60	
%	4	8	3	3	3	3	10	7	6	11	7	7	8	8	8	5		100		

wfdpsdlb.D07, wfdlbbag.D06

Table 75. Population assessment determined from largemouth bass based on spring sampling at Lake Beshear from 2004-2008 using the Lake Beshear specific assessment.

Parameter	2004		2005		2006		2007		2008	
	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score
Growth (Mean length at capture of age-3)	14.0	4	14.0	4	12.7	3	12.7	3	12.7	3
Recruitment (Spring CPUE of age-1)	6.40	1	38.80	4	24.80	3	13.00	2	10.15	1
Size Structure (Spring CPUE of 12.0-14.9 in.)	9.60	1	7.20	1	7.20	1	15.00	2	11.20	2
Size Structure (Spring CPUE of \geq 15.0 in.)	42.40	4	44.40	4	34.00	3	35.33	3	20.80	2
Size Structure (Spring CPUE of \geq 20.0 in.)	2.80	2	3.60	2	4.80	3	4.67	3	3.60	2
Instantaneous Mortality (Z)	0.547		0.430		0.262		0.344		0.316	
Annual Mortality (A)%	54.7		34.9		23.0		29.1		27.1	
Total Score	12		15		13		13		10	
Assessment Rating	G		G		G		G		F	

Rating

5-7 = Poor (P)
 8-11 = Fair (F)
 12-16 = Good (G)
 17-20 = Excellent (E)

Lake Beshear Bass Data Base

Table 76. 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 ^A		Age 0 ^A		Age 0 \geq 5.0 in ^A		Age 1 ^B	
	Mean Length	Std Err	CPUE	Std Err	CPUE	Std Err	CPUE	Std Err
2001	4.5	0.2	4.40	1.60	0.80	0.49	15.00	2.94
2002	4.2	0.2	5.00	1.29	0.00		13.50	1.33
2003	3.3	0.1	24.00	4.76	0.50	0.5	4.32	1.94
2004	3.8	0.1	17.60	4.12	0.00		38.80	1.80
2005	4.4	0.1	21.00	7.68	0.00		37.04	9.50
2006	4.2	0.1	23.00	7.51	3.00	1.91	25.00	4.24
2007	4.8	0.1	21.60	3.49	9.60	2.32	10.15	1.42
2008	4.3	0.1	12.40	1.17	2.00	0.89		

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

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

WFDWRLB.Dxx, WFDWRAGB.Dxx, WFDPSDLB.Dxx

Table 77. Spring electrofishing CPUE (fish/hr) for each length group of redear sunfish collected at Hematite Lake.

Species	Year	Length Group								Total	
		< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		> 8.0 in		CPUE	Std Err
Redear	2008	2.00	1.37	88.67	61.52	2.67	1.98			140.00	77.80
	2007	1.50	1.18	348.00	115.76	6.00	2.20			355.50	118.32
	2006	12.00	3.20	132.00	16.00	2.00	2.00			146.00	14.00
	2005	3.99	4.00	147.70	34.80	35.93	19.00			187.62	49.00
	2004	8.40	3.60	216.00	26.10	27.50	3.60	1.20	1.20	253.90	25.80
	2002	1.00	1.00	73.00	17.50	69.00	10.00	16.00	4.00	159.00	22.90
	Mean	4.82		167.56		23.85		3.44		207.00	

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Table 78. Relative species abundance, size distribution, and CPUE (fish/hr) of fish collected during diurnal electrofishing at Hematite Lake in April 2008. Three sample runs, each 900 seconds were made.

Species	Inch Class																		Total	CPUE	Std Err
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
Largemouth bass		1	5	2	3	2			1	1		1	1	5		1	2	1	26	34.67	2.67
Redear sunfish			3	34	88	11	4												140	186.67	110.98
Bluegill	1	2	28	55	15	4													105	140.00	77.60

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Table 79. Species composition, relative abundance, and CPUE (fish/hr) of largemouth bass, crappie, and redear sunfish collected during 1.25 hours (5 runs; each 900s) of diurnal electrofishing at Lake Blythe in April, 2008.

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						
Largemouth bass	3	4	1		1	5	16	18	9	4			1			2	1	1	66	52.80	6.30			

wfdblyth.d08

Table 80. Age frequency and CPUE (fish/hr) of largemouth bass collected from electrofishing at Lake Blythe in April 2008. Age data was obtained using otoliths collected in 2007.

Age	Inch Class										Total	%	CPUE	Std Err
	4	5	6	7	8	9	10	11	12	13				
1	3	4	1		1	2					11	17.7	8.80	1.44
2					1	3	16	15			35	56.5	28.00	5.04
3									7		7	11.3	5.60	1.75
4								3	2		5	8.1	4.00	0.95
5										4	4	6.5	3.20	0.80
Total	3	4	1	0	2	5	16	18	9	4	62		49.60	
%	5	6	2	0	3	8	26	29	15	6		100		

wfdblyth.d08 wfdblyag.d07

Table 81. Relative species abundance and size distribution of spottfish species collected during diurnal 6 hours of electrofishing on the lower Tennessee River (tailwaters, Haddock Ferry, and Paducah Riverfront) on 15-17 September 2008.

Species	Inch Class																								Total	CPUE	StdErr
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
Largemouth bass	5	11	36	74	90	49	22	17	55	63	35	9	7	6	4	6	4	1							494	82.33	19.55
Smallmouth bass			4	6	3	2	2	4	8	4	7	2	2	1	1	2	1								49	8.17	3.2
Spotted bass			4	6				2	1	1	1	1													15	2.50	0.82
Sauger			2	1	1	1	1	1	8	2	1	3	1	1											22	3.67	1.53
White bass			1	1	1	1	2	2	5	2	2	4	1												22	3.67	1.15
Striped bass			2	1																					3	0.50	0.36
Hybrid striped bass								1																	1	0.17	0.17
Yellow bass			5	18	33	22	8	1	1																88	14.67	11.2
Black crappie							4	1	1	1	1														8	1.33	0.45
White crappie			1				1	4	3	3	1														13	2.17	1.7
Redear sunfish							3	2	2																7	1.17	0.46
Bluegill sunfish	4	24	27	40	23	8	10	1																	137	22.83	3.71
Flathead catfish							1	2	1	1	3	2	1			1									14	2.33	0.73
Channel catfish									3	4	3	2	1		1	2	1	2	2	2	1	1	2		27	4.50	1.69
Blue catfish																									2	0.33	0.33

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Table 81 continued. Relative species abundance and size distribution of non-sportfish species collected during diurnal 6 hours of electrofishing on the lower Tennessee River (tailwaters, Haddox Ferry, and Paducah Riverfront) on 15-17 September 2008.

Species	Inch Class																																	Total	CPUE	StdErr				
	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	31	32	33	34	35				36	37	43	
Spotted gar																																					7	1.17	0.46	
Longnose gar																																						5	0.83	0.52
Shortnose gar																																						12	2.00	0.6
Bowfin																																						10	1.67	0.92
American eel																																						1	0.17	0.17
Redhorse																																						14	2.33	1.18
Spotted sucker																																						5	0.83	0.52
Common carp																																						13	2.17	0.72
Grass carp																																						6	1.00	0.52
River carpsucker																																						26	4.33	2.16
Silver carp																																						30	5.00	3.13
Smallmouth buffalo																																						7	1.17	0.46
Black buffalo																																						25	4.17	1.73
Bigmouth buffalo																																						2	0.33	0.33
Warmouth																																						2	0.33	0.22
Green sunfish																																						13	2.17	1.06
Logcar																																						381	63.50	12.69
Log perch																																						1	0.17	0.17
Yellow perch																																						1	0.17	0.17
Freshwater drum																																						24	4.00	2.42
Emerald shiner																																						13	2.17	0.87
Golden shiner																																						5	0.83	0.46
Striped mullet																																						2	0.33	0.22

Table 83. Relative species abundance and size distribution of spottfish species collected during diurnal 6 hours of electrofishing on the lower Cumberland River on 22-25 September 2008.

Species	Inch Class																																											Total	CPUE	StdErr
	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	32	33	34	35	36	37	43									
Blue Catfish	1				5	4	1	1	4		3	3	4	5	3	1	2				2	2						1												48						
Channel Catfish		1			2	3	7	7	1	5	2	1	2	1	5	6	1	2	2	1		1				1															51					
Flathead Catfish					3	1	4	2	8	3	7	3	2	1	1	1	1	1	1	1																					41					
White Bass				1	5	3	13	8	1	1	6	1	1	1																											41					
Striped Bass																																									4					
Bluegill	2	1	3	18	20	3	9																																		56					
Redear Sunfish							2	1																																	3					
Smallmouth Bass				4	12	4	2	10	15	7	2	2	2	1	1	1																									63					
Spotted Bass			1	10	3		5	9	3	4	1	2																													38					
Largemouth Bass				7	28	43	20	4	8	7	10	10	8	6	1	10	1	1																							164					
Black Crappie											2	1																													2					
Sauger										2	1																														3					
Hybrid Striped Bass																																									1					

Table 83 continued. Relative species abundance and size distribution of non-spottfish species collected during diurnal 3 hours of electrofishing on the lower Cumberland River on 22-25 September 2008.

Species	Inch Class																																								Total	CPUE	StdErr					
	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	30	31	32	33	34	35	36	37	40											
Spotted gar																																												12				
Longnose gar																																													13			
Shortnose gar																																													8			
Bowfin																																													2			
Grass Carp																																													1			
Common Carp																																													1			
Silver Carp																																													1			
River Carpsucker																																													10			
Quillback																																													3			
White Sucker																																														1		
Smallmouth buffalo																																														8		
Bigmouth buffalo																																														5		
Black buffalo																																														2		
Yellow bass																																														4		
Green Sunfish																																															1	
Warmouth																																															1	
Longear				8	49	97	48	3	1																																					206		
Log perch																																															1	
Freshwater drum																																																40

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Table 84. Relative species abundance and size distribution of sportfish species collected during diurnal 6 hours of electrofishing on the Ohio River on 18-and 23 October 2008.

Species	Inch Class																										Total	CPUE	StdErr
	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				
Blue Catfish	1	2	1			2	5	3	1	2	1	2	4	1	4	5	2	2			1						13.00	6.26	
Channel Catfish	1	5	1			1	1	2	1	1	2	1	3	3	6	2	1	1	2								11.33	4.70	
Flathead Catfish							1	3	1	1	1	2	2	1	1				1	4					1	6.00	3.35		
White Bass				2	1	2	2		1	1	1	1	1													4.00	2.58		
Bluegill	1	14	16	13	2																					15.33	14.14		
Redear Sunfish					1			1	1																	1.00	1.00		
Spotted Bass			1						2	1	3	1														2.67	0.67		
Largemouth Bass				5	2	1	1	2	1		1	1	1	2												5.33	2.51		
Hybrid Striped Bass													1	1												0.67	0.42		

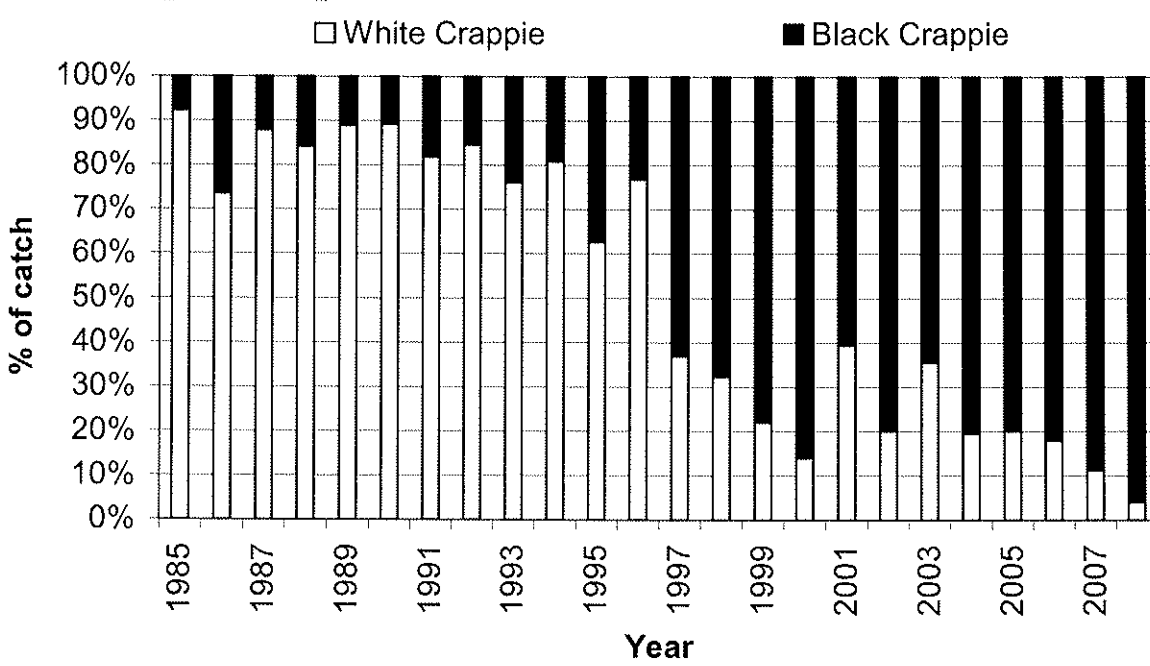
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Table 84 continued. Relative species abundance and size distribution of non-sportfish species collected during diurnal 6 hours of electrofishing on the Ohio River on 18-and 23 October 2008.

Species	Inch Class																										Total	CPUE	StdErr
	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				
Spotted Gar																	1										2	1.33	1.33
Longnose Gar																2											2	1.33	0.84
River Carpsucker			1											1													2	1.33	0.84
Blue Sucker																		1									1	0.67	0.67
Bigmouth Buffalo																	1										1	0.67	0.67
Yellow Bass			2																								2	1.33	1.33
Freshwater Drum											1			1	1	3	4			2	2	1	1				16	10.67	4.7
Striped Mullet																	2	4	4	2							12	8.00	7.23

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Figure 1. Relative species composition of white and black crappie collected during annual fall trap-netting from 1985-2008 at Kentucky Lake.



(Kentucky_Crappie_Database.xls)

Figure 2. Plot of retention time (days) for water in Kentucky Lake and CPUE (f/nn) for age-1 crappie at Kentucky Lake.

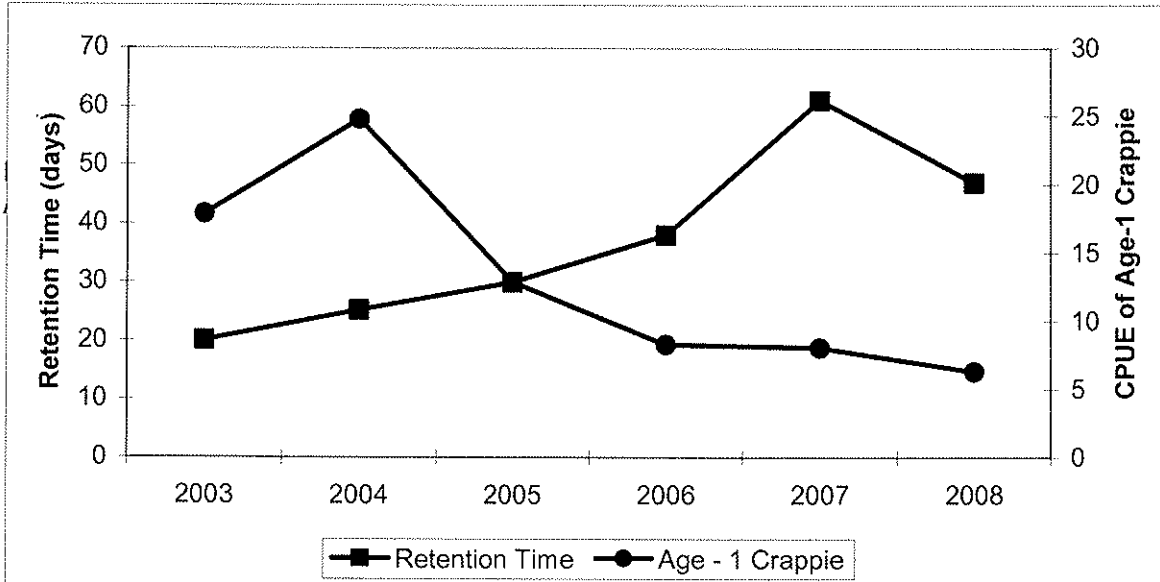
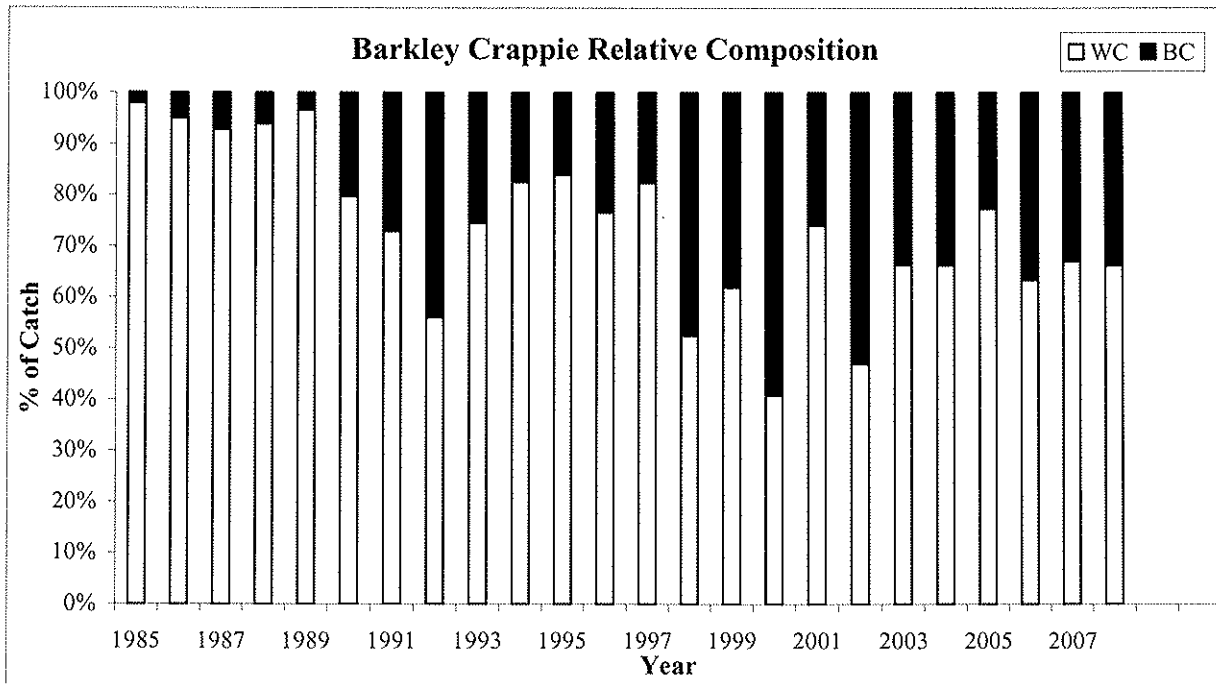
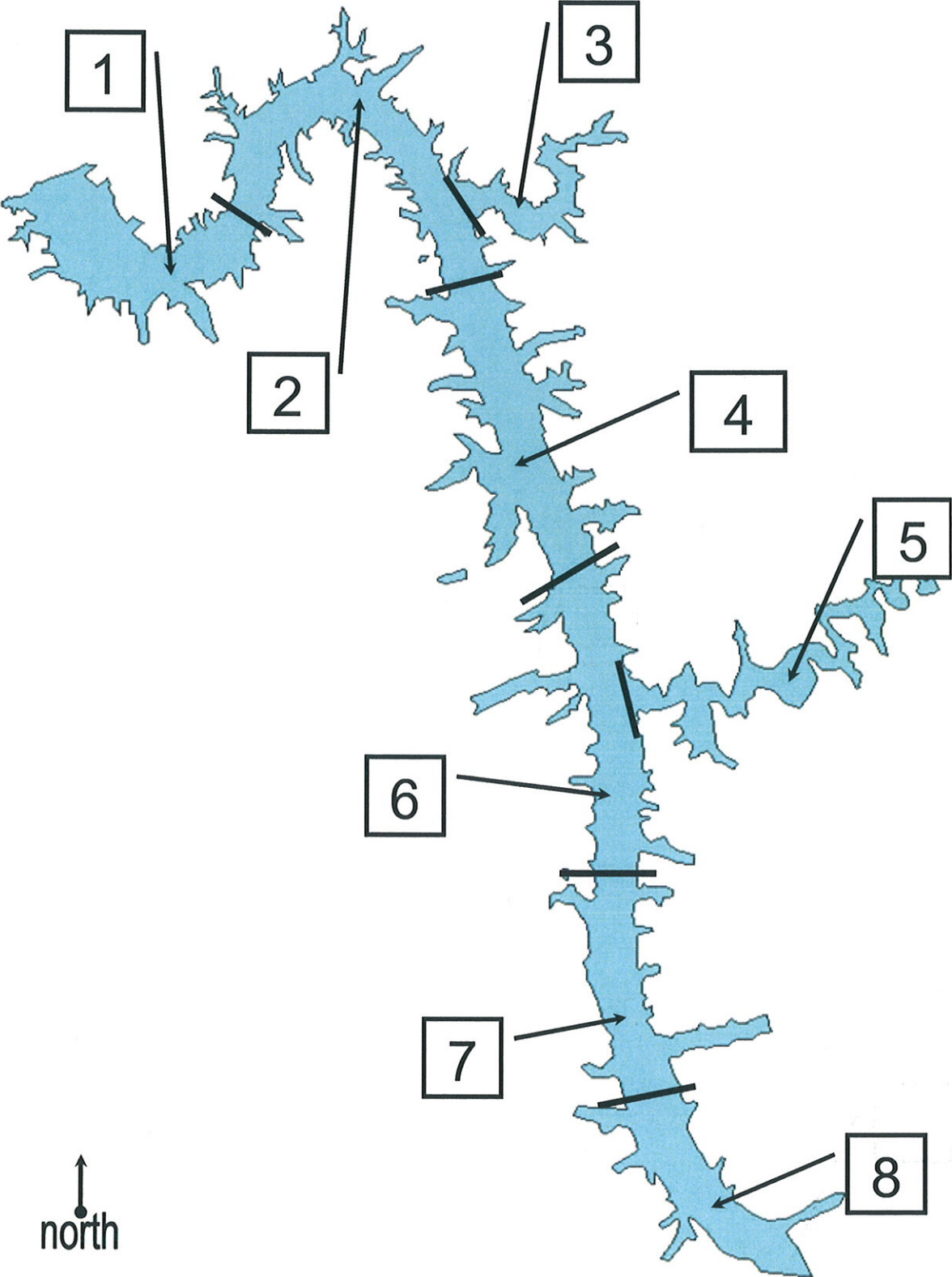


Figure 3. Relative species composition of white and black crappie collected during annual fall trap-netting from 1985-2008 at Lake Barkley.



(Barkley_Crappie_Database.xls)

Appendix A. Lake Barkley creel survey areas, 2008.



Appendix B. Barkley Lake creel survey questionnaire.

BARKLEY LAKE ANGLER ATTITUDE SURVEY 2008

Lake creel survey questionnaire.

1. Have you been surveyed this year? Yes, stop survey No, continue to answer questions
2. Zip Code _____ Name (optional) _____
AR - 2%, FL - 3%, IL - 45%, IN - 8%, OH - 6%, TN - 10%
3. What species do you fish for at Lake Barkley (check all that apply)? (N = 515)
**Redear - 23.4%, Black Bass - 70.3%, Crappie - 46.2%, Catfish - 28.3%, White Bass - 10.8%
Other - 1.0%**
4. Which species do you fish for most at Lake Barkley (check only one)? (N = 286)
**Redear - 3.5%, Black Bass - 64%, Crappie - 15%, Catfish - 13.6%, White Bass - 2.1%,
Other - 1.7%**
5. What level of satisfaction do you have with the redear fishery at Lake Barkley? (N = 286)
**5.2% very satisfied 8.0% somewhat satisfied 5.6% neutral
2.8% somewhat dissatisfied 1% very dissatisfied 77.3% no opinion**
6. Would you support or oppose a size limit on redear sunfish? (307)
9.4% support 2.4% oppose 88.1% no opinion
7. What level of satisfaction do you have with the crappie fishery at Lake Barkley? (286)
**11.9% very satisfied 19.9% somewhat satisfied 6.6% neutral
5.9% somewhat dissatisfied 0.3% very dissatisfied 55.2% no opinion**
8. What level of satisfaction do you have with the black bass fishery at Lake Barkley? (286)
**35.3% very satisfied 32.2% somewhat satisfied 5.9% neutral
4.2% somewhat dissatisfied 0.3% very dissatisfied 22.0% no opinion**
9. What level of satisfaction do you have with the catfish fishery at Lake Barkley? (286)
**14.0% very satisfied 7.7% somewhat satisfied 2.4% neutral
0.7% somewhat dissatisfied 0.3% very dissatisfied 74.8% no opinion**
10. Are you satisfied with the current size and creel limits on all sport fish at Lake Barkley? (284)
95.4% Yes 4.6% No
11. When you fish at Lake Barkley, have you fished around KDFWR fish attractors? (286)
62.2% Yes 37.8 % No
- 11a. If yes, which attractors do you use? (178)
42.1% Stake Beds 5.6% Brush Piles 52.2% Both
- 11b. If no, choose the answer that best describes why you do not use the fish attractors? (107)
**52.3% I catch more fish in other locations 12.1% They are not placed in the right locations
10.3% I don't know where to find attractors 5.6% I don't know how to fish or what baits to use around them
19.6% Other**
- 11c. How would you rate your fishing success around each type of fish attractor? (169)
**Stake Beds: 14.2% Excellent 39.1% Good 36.1% Fair 10.7% Poor
Brush Piles: 9.2% Excellent 41.3% Good 38.5% Fair 11.0% Fair**
12. Would you support or oppose a regulation where anglers could continue to keep the same number of catfish under 34 inches as in the past, but could keep only 1 catfish greater than 34" per day? (286)
26.2% Support 10.8% Oppose 62.9% No Opinion

NORTHWESTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Table 1 presents a summary of conditions encountered while sampling at state-owned lakes and ACOE reservoirs during the 2008 field season.

Nolin River Lake

Black Bass Sampling

Electrofishing to monitor the black bass population at Nolin Lake was performed during April 2008 (Tables 2-7). Catch rates for largemouth bass in 2008 increased for all size ranges. The CPUE of < 8.0 in largemouth in 2008 was similar to the 2007 catch rate and much higher than previous years. Many of the fish in the < 8.0 in size range in 2007 moved to the 8.0-11.9 in size range in 2008 leading to a dramatic increase in the catch rate of 8.0-11.9 in fish. The catch rate of 3.56 fish/hr for largemouth bass ≥ 20.0 in is the highest ever recorded. The strong 2005 and 2006 year classes should grow into the larger size ranges and continue to increase catch rates of larger fish.

Fall electrofishing to determine CPUE and mean length of age 0 largemouth bass (Tables 8-9) was conducted in October. The catch rate of age 0 fish increased dramatically in 2008 while the average size of age 0 fish declined. The catch rate for age 0 fish ≥ 5.0 in increased slightly from 2007, but was well below the CPUE observed in 2005 and 2006 that has resulted in the increased catch rates of ≤ 8.0 and 8.0-11.9 in fish. The Nolin Lake Strategic Management Plan (SMP) objectives for largemouth bass state: a mean length at age 3 of ≥ 12.5 in, a CPUE of ≥ 30.00 f/h for age 1 fish, a CPUE of ≥ 25.50 f/h for 12.0-14.9 in fish, a CPUE of ≥ 12.50 f/h for ≥ 15.0 in fish, and a CPUE of ≥ 1.00 f/h for ≥ 20.0 in fish. All management objectives were met in 2008.

Crappie Sampling

Trap netting was conducted during October to assess Nolin Lakes' crappie population (Tables 10-13). A total of 685 crappie were collected during 76 net-nights of effort for a total CPUE of 9.01 fish/net-night. Of the 685 crappie collected, 637 (92%) were white and 48 (8%) were black. Catch rates in 2008 were similar to catch rates collected during 2006 and 2007. The catch rate for crappie began declining in 2005 from the numbers collected during 2001-2004 surveys. Growth rate continues to be excellent so numbers should rebound given a strong year class. The length-weight equation is $\log W = -3.66 + 3.41 (\log L)$. Nolin Lake SMP objectives for white crappie management state: a CPUE (excluding age 0 fish) of ≥ 10.0 f/nn, a CPUE for age 1 fish of ≥ 6.00 f/nn, a CPUE of age 0 fish of ≥ 3.00 f/nn, a CPUE of ≥ 8.0 in fish of ≥ 7.00 f/nn, and a mean length of age 2+ fish at capture of ≥ 9.6 in. The only management objective met in 2008 was mean length at capture (10.4 in).

Creel Survey

A random, stratified, roving, 5-day per week creel survey was conducted at Nolin River Lake April 01 – October 31, 2008 to estimate angler pressure and angler catch/harvest statistics (Tables 14-20). For survey purposes the lake was divided into an upper and lower section with one section being surveyed per day (5-hour time period) in either a morning or afternoon time period. Each section was further divided into 3 equal subsections which were randomly and progressively counted and interviewed spending an equal amount of time (100 min.) in each.

Anglers expended an estimated 122,543 hours fishing at Nolin Lake in 2008. This is a decline of 24,253 hours from the estimated 146,796 angler hours estimated in 2004 when Nolin was last surveyed. A portion of this decline is probably due to the shorter survey period in 2008 (April 01 – October 31) versus 2004 (March 01 – October 31).

High lake levels during much of April and an unusually late severe cold period may have also negatively impacted estimates. When ranked by preference, anglers expended an estimated 57,714 man-hours pursuing black bass, 30,287 hours for crappie, 13,392 hours for panfish, 10,916 hours for "anything", 5,389 for walleye, 3,373 for white bass, and 1,468 hours for catfish. When compared with 2004 estimates, significant changes occurred in the black bass and anything angler groups. Anything group man-hours decreased from 43,462 hours in 2004 to 10,916 hours in 2008 and black bass angler hours increased from 46,945 hours in 2004 to 57,714 hours in 2008. Minor differences were observed in crappie and catfish angler hours which decreased in 2008 and walleye, white bass, and panfish angler hours which increased in 2008.

In 2008 anglers caught an estimated 125,754 fish and harvested an estimated 29,048 fish. This is a substantial decline from the 2004 estimate of 245,073 fish caught and 103,253 fish harvested. Of the 119,313 fewer fish caught in 2008, the majority can be attributed to the decline in the number of crappie (94,223 in 2004 vs. 32,852 in 2008) and panfish (87,521 in 2004 vs. 37,145 in 2008) caught. Since panfish are the primary creel of the "anything" angler, the substantial decline in the number of anything group angler-hours probably accounts for the majority of the decrease in panfish catch and harvest. A shorter survey period, abnormally high lake level in the spring, and a decline in the crappie population when compared to 2004 could all negatively impact the number of crappie caught and harvested. Although white bass angler-hours increased in 2008 (2,499 hrs. in 2004 vs. 3,374 hrs. in 2008) white bass catch/harvest decreased (13,505/6,201 in 2004 vs. 3,065/303 in 2008). The decline in white bass numbers can also be attributed to abnormally high spring water levels. Most white bass at Nolin are harvested in the upper reaches of the lake during the spawning run, and high water levels made these areas of the lake inaccessible to anglers and white bass moved further upstream above the bounds of the survey area. An angler attitude survey was also conducted during the creel survey to determine angler opinions regarding regulations and their satisfaction with angling at Nolin Lake. Results of this survey are presented in Figure 1.

Rough River Lake

Black Bass Sampling

Spring electrofishing to assess the black bass population could not be conducted in 2008 due to high water level throughout the sampling time frame.

Black bass were electrofished in October to document CPUE and mean length of age 0 largemouth bass (Tables 21-22). Mean length of age 0 largemouth bass, CPUE of age 0 largemouth, and CPUE of largemouth bass > 5.0 in were all similar to values determined for these parameters during previous surveys.

Crappie Sampling

Trap netting to assess Rough River Lake's crappie population was conducted during October (Tables 23-26). Catch rates for crappie since 2005 have been low compared to catch rates collected during 2002-2004. With the exception of the age 0 catch rate the trend continued in 2008. The catch rate of age 0 crappie in 2008 is higher than has been collected in the past 15 years. Although sampling anomalies could be a factor, Rough River Lake remained 10-15 feet above summer pool and stable throughout the spawning period which probably accounts for a significant portion of this increase. Crappie growth rates continue to be excellent, and with good survival of the strong 2008 year class, the number of older and larger crappie in the population should increase for the next 2-3 years. The log 10 length weight equation is $\log W = -3.46 + 3.16(\log L)$. Rough River Lake SMP objectives for white crappie management state: a CPUE of ≥ 10.00 fish/nn (excluding age 0 fish), a CPUE of 7.00 fish/nn for age 1 fish, a CPUE of ≥ 3.00 fish/nn for age 0 fish, a CPUE of ≥ 6.00 fish/nn for white crappie ≥ 8.0 in, and a mean length of ≥ 9.8 in for age 2+ fish at capture. Only the CPUE of age 0 fish and the mean length of age 2+ fish at capture objectives were met.

Hybrid Striped Bass Sampling

Gill netting to sample the hybrid striped bass population was conducted the first week of November (Tables 27-31). Catch rate and size distribution are similar to values collected during previous surveys. Population assessment values have fluctuated little since 1999. This is a very stable population with good growth rates. The log 10 length weight equation is $\log W = -3.41 + 3.04 (\log L)$. Rough River Lake SMP management objectives state: a mean length at capture of ≥ 16.5 in for age 2+ fish, a CPUE (excluding age 0 fish) of ≥ 25.00 fish/nn, a CPUE of ≥ 15.00 fish/nn for ≥ 15.0 in fish, and a CPUE of ≥ 8.00 fish/nn for age 1 fish. All objectives were met with the exception of the CPUE of age 1 fish.

Channel Catfish Sampling

Channel catfish were sampled in conjunction with hybrid striped bass in November to document catch rates, length distribution, and condition. Length-frequency and CPUE data is presented in Table 32 and relative weight data in Table 33.

Lake Malone

Largemouth Bass Sampling

Electrofishing for the largemouth bass population assessment was conducted during April (Tables 34-38). A trend the last several years has been an increase in the catch rate of 8.0-11.9 in bass and a decrease in the catch rate of 12.0-14.9 in bass. A simultaneous decrease in growth rate has also been documented. This trend appears to have stabilized, and possibly started to reverse in 2008. The catch rate of 8.0-11.9 in bass has now stabilized for the last 3 years and the catch rate of 12.0-14.9 in bass more than doubled in 2008. Increases were also observed in the catch rates of ≥ 15.0 in and ≥ 20 in fish. Lake Malone was again electrofished in October for relative weight and mean length and CPUE of age 0 fish (Tables 39-41). Relative weights are good and similar to those collected in previous years. The mean length of age 0 bass is similar to previous years, but the CPUE of age 0 bass is much lower. If not just a sampling anomaly this should lead to a decrease in the catch rate of 8.0-11.9 in bass in the next couple of years. Lake Malone SMP objectives for management of largemouth bass state: a mean length of ≥ 12.0 in at age 3 at capture, a CPUE of ≥ 20.00 f/h for age 1 fish, a CPUE of ≥ 35.00 f/h for 12.0-14.9 in fish, a CPUE of ≥ 40.00 f/h for ≥ 15.0 in fish, and a CPUE of ≥ 6.00 f/h for ≥ 20.0 in fish. The only objectives not met in 2008 were the mean length of age 3 fish and spring CPUE of age 1 fish.

Bluegill/Redear Sunfish Sampling

Electrofishing to assess the bluegill and redear sunfish populations at Lake Malone was conducted during May (Tables 42-45). The trend of increasing catch rates for 3.0-5.9 and 6.0-7.9 in bluegill continued in 2008. This has been the case since 2000 and is most likely the result of a long-term decrease in the number of 8.0-11.9 in largemouth bass following the implementation of a 12.0-14.9 in protective slot limit in 1996. Although the catch rate for 8.0-11.9 in bass has been increasing the last 5-6 years, their numbers are still much lower than in the early 1990's. The Lake Malone SMP objectives for bluegill management state: a mean length of 4.5 in for age 2 fish at capture, 3-3+ years to reach 6.0 in, a CPUE of ≥ 50.00 f/h for ≥ 6.0 in fish, and a CPUE of at least 1.00 f/h for ≥ 8.0 in fish. With the exception of the CPUE of > 8.0 in fish, all objectives were met.

There was a slight decrease in the catch rate of redear sunfish compared to 2007, but it is still much higher than any collected since the mid 1990's when redear numbers began to decline. The estimated number of redear sunfish caught and harvested declined significantly between creel surveys conducted in 1998 and 2006.

Mauzy Lake

Mauzy Lake was drawn down during October 2008 to facilitate repair work on the leaking water control structure. The lake will be drawn down 13 feet for repairs, but has remained 8-10 feet below normal all winter with repair work scheduled for sometime during 2009. Spring sampling will probably not be possible in 2009. Future sampling will determine how this drawdown subsequently affects the structure of the lakes fish populations.

Largemouth Bass

Electrofishing to assess the largemouth bass population at Mauzy Lakewas performed during April (Tables 36, 46-49). The total catch rate for largemouth bass at Mauzy in 2008 increased substantially from 2007. The increase was mainly the result of an increased CPUE of < 8.0 in and 8.0-11.9 in bass. Following a drawdown and renovation in 2003 there was an initial increase then subsequent decrease in catch rates as a strong year class of fish progressed through the size ranges. This was presumably due to an increase in available forage and poor recruitment during the drawdown. Continued poor recruitment during 2005-2007 had been a concern, but these numbers increased substantially in 2008. Age-growth data collected in 2007 were much improved since last collected in 2004. Mauzy was electrofished again in October (Tables 40, 50-51) to document relative weight and mean length and catch rate of age 0 bass. Relative weights for bass collected at Mauzy Lake are good. The mean length and CPUE of age 0 fish are similar to that collected during 2007, the first year these numbers were documented.

Bluegill/Redear Sunfish Sampling

Electrofishing to assess the bluegill and redear sunfish populations could not be conducted in 2008 due to thick milfoil beds along the shoreline. A leaking water control structure allowed the lake to remain lower than normal resulting in an increased abundance of shoreline vegetation.

Following the 2003 renovation, and subsequent low recruitment of largemouth bass, the number of 3.0-5.9 in bluegill increased tremendously. Without adequate predation these smaller bluegill began to stunt and few were entering the 6.0-7.9 in size range. The increase in largemouth bass recruitment observed in 2008 should begin to reduce the abundance of 3.0-5.9 in bluegill and allow this population to re-structure.

Redear sunfish were stocked in Lake Mauzy in 2004 and 2005 following renovation in 2003. Less than 10 redear sunfish were collected in electrofishing surveys prior to 2007, during which 49 were collected. Hopefully numbers will continue to increase and this will become a viable fishery.

Carpenter Lake

Largemouth Bass

Largemouth bass were electrofished at Carpenter Lake during April for population assessment (Tables 36, 52-55). The total catch rate of largemouth bass at Carpenter Lake nearly doubled from 2007 to 2008 due to an increase in the catch rate of largemouth bass < 12.0 in. Catch rates at Carpenter Lake can be erratic, but a trend for the last several years has been an increase in the catch rate of < 12.0 in bass and a slow, but steady decrease in the catch rate of bass \geq 12.0 in. In addition, gizzard shad were first discovered in Carpenter Lake in April 2006. Future monitoring will document impacts from the gizzard shad population, changes in growth rate or size structure and determine management decisions. Carpenter Lake SMP objectives for largemouth bass management state: a mean length of \geq 11.5 in at age 3 at capture, a CPUE of \geq 46.00 fish/h for age 1 fish, a CPUE of \geq 35.00 fish/h for 12.0-14.9 in fish, a CPUE of \geq 20.00 fish/h for \geq 15.0 in fish and a CPUE of \geq 1.00 fish/h for \geq 20.0 in fish. The CPUE of age 1 fish and CPUE of > 20.0 in fish were the only objectives met in 2008. Largemouth bass were electrofished again in October to build an index of mean length and CPUE data for age 0 fish (Tables 56-57). Mean length of age 0 fish in 2008 equaled the mean length determined in 2007 while the CPUE of age 0 fish in doubled in 2008.

Bluegill Redear Sunfish Sampling

Electrofishing for bluegill/redear sunfish population assessments was conducted in May (Tables 58-62). Bluegill catch rates at Carpenter Lake have been highly erratic, due in part to sampling variability and efficiency, but a general trend the last several years has been an increase in the catch rates for 3.0-5.9 in bluegill and 6.0-7.9 in bluegill and a decrease in the catch rate of bluegill > 8.0 in. The increase in the number of < 12.0 in bass over the last few years should have negatively impacted the number of small bluegill, but this has not been the case. More than likely the addition of gizzard shad to the population in 2006 has negated any effect the small bass might have on the number of small bluegill. Future sampling will determine how the gizzard shad and the increase in sublegal bass impact the bluegill population. Carpenter Lake SMP bluegill management objectives state: a mean length of ≥ 5.0 in at age 2 at capture, 2-2+ years to reach 6.0 in, a CPUE of at least 50.00 f/h for bluegill ≥ 6.0 in, and a CPUE of at least 15.00 f/h for bluegill ≥ 8.0 in. The only objective met in 2008 was the CPUE objective for bluegill ≥ 6.0 in.

New Kingfisher Lake

Largemouth Bass

Electrofishing to assess the largemouth bass population at New Kingfisher Lake was performed in April (Tables 36, 63-66). For the last several years, New Kingfisher Lake's largemouth bass population has been dominated by an abundance of slow-growing 8.0-11.0 in fish. Sub-legal bass have been removed for several years by electrofishing in an effort to reduce competition and increase growth. Although the number of < 8.0 in bass increased significantly, a decrease in the number of 8.0-11.9 in bass and an increase in the number of 12.0-14.9 in bass in 2008 indicate this trend may have been reversing. However, both Old and New Kingfisher Lakes suffered major fish kills the first week of September and many of the > 12.0 in bass were lost. Both Old and New Kingfisher Lakes have become shallow, are highly eutrophic, and have periodic oxygen depletions leading to shad die offs in late summer. Renovation (draining and dredging) would enhance the long term viability of these lakes tremendously. Kingfisher Lake was again electrofished in October (Tables 67-68) to build an index of mean length and CPUE of age 0 fish.

Bluegill Sampling

The bluegill population was electrofished during May to determine population statistics (Tables 69-73). Bluegill catch rates at Kingfisher Lake are erratic, but the general trend has been a decreasing number of > 6.0 inch bluegill and an increasing number of < 6.0 in bluegill. This trend continued in 2008 with a dramatic increase in the CPUE of 3.0-5.9 in bluegill. This is probably a response to the decrease in the 8.0-11.9 in largemouth bass.

Old Kingfisher Lake

Largemouth Bass

Old Kingfisher Lake was electrofished during April (Table 36, 74) and October (Table 75) to document size structure and CPUE for largemouth bass. Old Kingfisher Lake has not been sampled for many years. Historically Old and New Kingfisher Lakes were connected by a large drainage tile and fish populations were similar. The last several years the tile has become occluded and their fish populations vastly different. The catch rate for largemouth at Old Kingfisher Lake is much lower than at New Kingfisher, but size distribution is much better. Recruitment does however appear limited at Old Kingfisher, most likely due to the abundance of small bluegill and crappie.

Bluegill

Electrofishing to document bluegill population parameters at Old Kingfisher Lake was conducted during May (Table 76). The bluegill population is dominated by an overabundance of 5.0 in fish. Largemouth bass numbers are too low to provide adequate predation to keep this population in balance.

In addition to the stunted bluegill population there is an abundance of gizzard shad and 3.0-5.0 in crappie. As noted, both Kingfisher Lakes would benefit tremendously from total renovation.

Washburn Lake

Largemouth Bass

Electrofishing to assess largemouth bass population parameters at Washburn Lake was conducted during April (Tables 36, 77-80). Washburn's largemouth population has never stabilized following renovation in 2000. Surveys conducted from 2002-2004 revealed an abundance of slow growing 8.0-11.9 in bass. A fertilizer program was initiated in the spring of 2004 and growth rates increased substantially from 2004 to 2007. The catch rate of 8.0-11.9 in bass has continually declined since 2003 as this initial group of fish progressively moved out of this length group. Low numbers of < 8.0 in bass collected during 2003-2005 indicate recruitment problems during those years with few fish available to move into the 8.0-11.9 in range. The catch rate of < 8.0 in bass increased substantially during 2008 and should improve catch rates for larger fish in the future.

A phytoplankton bloom could not be achieved following fertilizer applications during the spring of 2008. The lake became increasingly clear and a subsequent alkalinity test revealed an alkalinity of 40 ppm. Approximately 50 tons of lime was applied in July 2008. When re-tested in December, the alkalinity had increased to 60 ppm. The increase in alkalinity should again allow the production of a phytoplankton bloom in 2009. Washburn was electrofished in October to determine relative weights and begin building an index of CPUE and mean length of age 0 bass (Tables 40, 81-82).

Bluegill Sampling

Sampling to assess Washburn Lake's bluegill population was conducted in May (Tables 83-87). Poor sampling conditions due to extremely clear water probably influenced catch rates of smaller fish. The catch rate for 3.0-5.9 in bluegill decreased substantially while the catch rate for 6.0-7.9 in bluegill increased substantially. The increased catch rate of 6.0-7.9 in bluegill is likely due an abundant 2005 year class as well as these larger fish being on shallow spawning beds during sampling.

Peabody WMA

SCUBA transects were conducted during June to assess fish populations at Goose (Table 88) and Bottom (Table 89) Lakes on Peabody WMA. Musky Lake could not be surveyed due to low visibility following high water conditions. The SCUBA transects were initiated in 2005 to survey the fish population of selected Peabody WMA lakes where clear water and high conductivity made electrofishing ineffective.

Observations at Goose Lake since 2005 indicate a stable largemouth bass population with good size distribution. The bluegill and redear sunfish populations also appear stable and contain good numbers of large fish. Surveys at Bottom Lake suggest a relatively balanced largemouth bass and bluegill population and an excellent redear sunfish population. Largemouth bass numbers are relatively low. Slow growth rate is probably also an issue due to abundant vegetation. At Bottom Lake, like many of the strip-mine lakes, the clear water and abundant vegetation promote excellent bluegill and redear sunfish populations, but limit largemouth bass growth.

Merlin Lake

Merlin Lake, located in Muhlenberg Co. on the Vogue Unit of Peabody WMA, was electrofished in April to document catch rate and size structure for the largemouth bass, bluegill, and redear sunfish populations (Table 90). This is the first year Merlin Lake has been sampled. The lower visibility and conductivity of this lake allow for effective electrofishing. A fertilization program was also initiated in 2008. Merlin Lake has a well balanced fish population with good catch rates and size distribution for largemouth bass, bluegill, and redear sunfish. Electrofishing to monitor the fish populations will continue as will fertilization.

Table 1. Annual summary of sampling conditions by waterbody, species sampled and date for NWFD lakes during 2008.

Water body	Species	Date	Time (24hr)	Gear	Weather ^a	Water temp F	Water level	Seotch (in)	Conditions	Pertinent sampling comments ^c
Nolin River Lake	LMB	4/25/2008	1000	shock	Sunny, windy	67	51.5	28	Fair	Windy (15-20 mph). Windward banks muddy.
Nolin River Lake	LMB	4/28/08	930	shock	Cloudy, windy, cool	66	51.5	30	Fair/poor	Cloudy, windy and cool, lake choppy, larger fish holding away from bank
Nolin River Lake	Fathead	6/10/08	2100	shock	calm, clear	78	51.5		Good	
Nolin River Lake	Fathead	7/16/08	2100	shock	Clear, full moon	82	51.5		Good	
Nolin River Lake	Crappie	10/20-24/08		trap net	55-65	62-65	511-508		Good	
Nolin River Lake	WE/WB			Gill net					Not sampled	
Nolin River Lake	LMB	10/7/08	1000	shock	Sunny, windy	72	51.3	30	Good/fair	Fish deep, not on bank except yoy
Nolin River Lake	LMB	10/9/08	1000	shock	Bright, windy	72	51.3	36	Good/fair	Fish deep hard to dip, cold front previous night
Rough River Lake	LMB	10/6/08	1000	shock	Sunny, warm	73	49.3	20	Good	Could not sample lower lake sites- water black and turning over
Rough River Lake	LMB	10/14/08	1000	shock	Partly cloudy	74	49.2	32	Fair/good	Water clear, small fish did not shock well
Rough River Lake	Crappie	10/27-31/08		trap net	38-58 degress	58	49.2-49.0	18-20	Good	
Rough River Lake	HSB	11/5-7/08		Gill net	Sunny 55-70 deg	61	48.6	26	Good	
Lake Malone	LMB	4/23/08	900	shock	Partly cloudy	68	1.0 high	36	Good/fair	Water a little clear, fish holding deeper.
Lake Malone	BG/RE	5/29/08	900	shock	Sunny	68	pool	28	Good	
Lake Malone	LMB	10/13/08	900	shock	Mostly cloudy	72	1.0 ft low	24	Good	
Mauzy Lake	LMB	4/22/08	900	shock	Mostly sunny, calm	67	pool	20	Good	
Mauzy Lake	BG/RE		900						Too much vegetation to sample	
Mauzy Lake	LMB	10/8/08	900	shock	Cloudy	70	1.5 low	18	Good	
Carpenter Lake	LMB	4/21/08	900	shock	Sunny, calm	67	pool	28	Good	
Carpenter Lake	BG/RE	5/28/08	900	shock	Sunny, cool, windy	68	pool	36	Fair	Cold front previous night. Bright, sunny, cool and windy
Carpenter Lake	LMB	10/2/08	900	shock	Partly cloudy, breezy	74	0.5 low	?	Good	
New Kingfisher Lake	LMB	4/21/08	1100	shock	Sunny, calm	67	pool	28	Good	
New Kingfisher Lake	BG/RE	5/28/08	1130	shock	Sunny, breezy	71	pool	36	Good/fair	Cold front previous night. Bright, sunny, cool and windy
New Kingfisher Lake	LMB	10/2/2008	1100	shock	Partly cloudy, breezy	73	0.5 low	24	Good	Major fish kill first week in September.
Old Kingfisher Lake	LMB	4/21/08	1230	shock	Sunny, calm	70	pool	18	Good	
Old Kingfisher Lake	BG/RE	5/28/08	100	shock	Sunny, cool, breezy	71	pool	28	Good	Not sampled. Major fish kill first week of September
Old Kingfisher Lake	LMB								Water slightly muddy	
Washburn	LMB	4/22/2008	900	shock	Sunny, breezy	63	pool	20	Good	
Washburn	BG/RE	5/27/2008	900	shock	Cloudy, humid	73	pool	60+	poor	Water very clear, lots of filamentous algae. Fish very tight to bank, running ahead of boat.
Washburn	LMB	10/3/2008	900	shock	Sunny, cool	?	1.0 ft low	?	poor	Heavy algal bloom, fish hard to see/dip. Abundant mid bees.

Table 2. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 4.5 hours of 30-minute diurnal electrofishing runs at Nolin River Lake in April 2008.

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	21	22			
Upper	Largemouth bass	8	38	32	27	18	11	22	32	61	56	40	12	5	5	6	2	3	4		382	152.80	19.53	
	Spotted bass	5	12	4	5	3	4	4	6	6	3										52	20.80	5.08	
Lower	Largemouth bass	10	46	37	8	3	10	25	25	20	21	17	8	4	3	2	4	1	7	4	1	256	128.00	2.94
	Spotted bass	9	18	2	14	7	1		5	3	1	1									62	31.00	3.70	
Total	Largemouth bass	18	84	69	35	21	21	47	57	81	77	57	20	9	8	6	4	11	4	1	638	141.78	11.24	
	Spotted bass	14	30	6	19	10	5	4	11	9	4	1									114	25.33	3.56	

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Table 3. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples in each area of Nolin River Lake during April 2008; 95% confidence intervals are in parentheses.

Area	Species	No. fish ≥ 8.0 in	PSD (\pm 95%)	RSD ^a (\pm 95%)
Upper	Largemouth bass	259	51 (6)	10 (3)
	Spotted bass	26	35 (19)	
Lower	Largemouth bass	162	47 (8)	17 (6)
	Spotted bass	18	28 (21)	6 (10)
Total	Largemouth bass	411	50 (5)	12 (4)
	Spotted bass	44	32 (13)	2 (4)

^a Largemouth bass = RSD₁₅, spotted bass = RSD₁₄.

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Table 4. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Nolin River Lake during spring electrofishing 1999-2008.

Year	Length Group												Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		>20.0 in		Total			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2008	50.44	7.87	45.78	5.42	34.22	4.33	11.33	1.56	3.56	1.04	141.78	11.24	141.78	11.24
2007	53.33	9.95	17.33	2.24	27.56	4.86	8.22	1.31	0.67	0.47	106.44	14.21	106.44	14.21
2006	17.78	2.82	15.78	1.54	23.56	2.68	7.56	1.48	0.44	0.44	64.67	5.68	64.67	5.68
2005	27.11	4.98	27.11	4.14	25.33	3.86	14.22	2.32	0.44	0.29	93.78	10.08	93.78	10.08
2004	23.74	1.61	16.44	3.65	16.22	2.41	8.89	2.58	0.44	0.29	65.33	6.76	65.33	6.76
2003	12.89	3.73	10.22	2.3	8.89	2.21	7.56	1.99	0.00	0.00	39.56	9.16	39.56	9.16
2002	4.00	1.33	9.78	2.59	8.00	3.13	8.00	1.63	0.00	0.00	29.78	5.44	29.78	5.44
2001	5.50	1.68	27.00	7.44	18.00	3.30	9.00	2.80	0.00	0.00	59.50	11.72	59.50	11.72
2000	9.50	3.11	35.00	6.27	41.50	5.12	14.00	4.34	0.50	0.50	100.00	13.07	100.00	13.07
1999	n/d		61.33	16.84	56.89	9.18	8.00	1.76	0.44	0.44	126.22	26.01	126.22	26.01

Table 5. Age-frequency and CPUE (fish/hr) per inch class of Largemouth Bass electrofished at Nolin River Lake in April 2008. Numbers in parentheses are standard errors.

Age	Inch Class																				No.	CPUE (Std. Error)	Age (%)	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
1	18	84	69	35	18																224	49.67	7.78	35
2					4	21	47	57	52	8											188	41.72	4.55	30
3								22	54	29	3									107	23.86	3.51	17	
4								15	29	14	6	4	3	3						71	15.74	1.86	11	
5								7		3	3									16	3.53	0.64	3	
6																	4			4	0.89	0.35	1	
7													4	3	6					13	2.81	0.70	2	
8																		11		11	2.44	0.73	2	
Total	18	84	69	35	22	21	47	57	81	77	58	20	9	8	9	6	4	11		633				
(%)	3	13	11	6	3	3	7	9	13	12	9	3	1	1	1	1	1	2						

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Table 6. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Nolin River Lake during April 2008.

Age	Year							
	2002	2003	2004	2005	2006	2007	2008	2008
1	3.78	11.33	22.89	26.22	17.04	51.63	49.67	49.67
2	8.33	9.64	14.82	23.38	15.39	18.16	41.72	41.72
3	8.90	9.08	16.35	27.24	12.81	15.26	23.86	23.86
4	1.59	1.57	1.86	3.57	13.12	14.67	15.74	15.74
5	0.73	0.82	0.97	1.60	2.53	3.02	3.53	3.53
6	1.78	2.44	2.44	3.11	0.67	0.67	0.89	0.89
7					2.67	2.37	2.81	2.81
8					0.44	0.44	2.44	2.44

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Table 7. Population assessment for largemouth bass based on spring electrofishing at Nolin River Lake from 1999-2008.

Parameter	Year															
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2008	2008	2008	2008		
Length at age 3 at capture	13.09	4	13.09	4	13.09	4	13.09	4	13.09	4	12.64	4	12.64	4	12.64	4
Spring CPUE age 1 fish	n/d		5.00	1	3.78	1	22.89	2	26.22	2	17.04	1	51.63	4	49.67	4
Spring CPUE 12.0-14.9 in fish	56.89	4	18.00	2	8.00	1	16.22	2	25.33	3	23.56	2	27.56	3	34.22	3
Spring CPUE ≥ 15.0 in fish	8.00	2	9.00	2	8.00	2	8.89	2	14.22	3	7.56	2	8.22	2	11.33	3
Spring CPUE ≥ 20.0 in fish	0.44	2	0.00	0	0.00	0	0.22	2	0.44	2	0.44	2	0.67	2	3.56	4
Instantaneous Mortality (z)					0.534	0.684	0.617	0.447	0.609	0.553						
Annual Mortality (A)%					41.4	49.5	46.0	36.0	45.0	42.5						
Total score		14	9	8	8	12	14	11	15	18						
Assessment rating		G	F	F	F	G	G	F	G	E						

Table 8. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 4.5 hours of 30-minute diurnal electrofishing runs at Nolin River Lake in October 2008.

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				
Upper	Largemouth bass	199	244	63	28	17	11	11	24	27	16	18	13	8	1	1	1	1	2	1	684	273.60	62.28	
	Spotted bass	79	130	23		6	9	8	8	3	4										270	108.00	43.81	
Lower	Largemouth bass	12	21	13	12	5	1	9	12	5	5	6	12	4	2	3	1				123	61.50	3.40	
	Spotted bass	1	29	13	8	20	15	14	12	8	13	6	3	1							143	71.50	13.87	
Total	Largemouth bass	211	265	76	40	22	12	20	36	32	21	24	25	12	2	3	2	1	2	1	807	179.33	49.68	
	Spotted bass	80	159	36	8	26	24	22	20	11	17	6	3	1							413	91.78	24.62	

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Table 9. Indices of year class strength at age 0 and age 1 and mean lengths (in) of largemouth bass collected in fall electrofishing samples at Nolin River Lake.

Year Class	Area	Age 0			Age 0 ≥ 5.0 in			Age 1		
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. Error	CPUE	Std. Error	
2001	Total	3.0		76.00	29.20	7.30	0.90	3.78	1.10	
2002	Total	4.5		28.60	11.80	14.40	1.40	11.33	3.11	
2003	Total	4.4		28.40	4.90	14.20	2.60	22.89	1.57	
2004	Total	4.1	0.07	41.30	11.20	9.60	1.60	26.22	4.70	
2005	Total	5.0	0.08	92.00	34.94	41.78	15.36	17.04	2.67	
2006	Total	4.9	0.07	84.00	22.97	40.22	7.47	51.63	9.65	
2007	Total	4.1	0.07	66.44	14.34	12.89	2.81	49.67	7.78	
2008	Total	3.6	0.04	139.33	45.55	16.67	4.08			

Table 10. Length frequency and CPUE (fish/hr) for each species of crappie collected in 76 net-nights of sampling at Nolin River Lake during October 2008.

Species	Inch Class													Total	CPUE	Std. Error
	2	3	4	5	6	7	8	9	10	11	12	13				
White crappie	1	29	149	30	7	57	124	142	70	21	6	1	637	8.38	0.91	
Black crappie		9	3		7	10	9	3	5	1	1		48	0.63	0.10	

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Table 11. PSD and RSD values calculated for crappie collected in trap nets from Nolin River Lake during October 2008; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD ₁₀
White Crappie	458	79 (3)	21 (4)
Black Crappie	36	53 (16)	19 (13)

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Table 12. Age-frequency and CPUE (fish/m) per inch class of white crappie trap netted for 76 net-nights at Nolin River Lake in October 2008. Numbers in parentheses are standard errors.

Age	Inch Class													No.	CPUE (Std. Error)	Age (%)
	3	4	5	6	7	8	9	10	11	12	13					
0	30	149												179	2.35	28.0
1			30	7	57	124	41	4						262	3.45	41.1
2							91	66	15					173	2.27	27.1
3							10		4	2				16	0.21	2.5
4										1				1	0.01	0.1
5										2				4	0.05	0.6
6										1				1	0.01	0.1
7											1			1	0.01	0.1
8											1			1	0.01	0.1
Total	30	149	30	7	57	124	142	70	19	7	7	1	638			
(%)	4.7	23.3	4.7	1.1	8.9	19.4	22.2	11.0	3.0	1.1	1.1	0.1				

nwdhltm.d08, nwdhlcag.d07

Table 13. Population assessment for white crappie based on fall trapnetting at Nolin River Lake from 1999-2008.

Parameter	Year																	
	1999	2001	2002	2003	2004	2005	2006	2007	2008	Value	Score	Value	Score					
CPUE (excluding age 0)	8.72	2	10.2	2	11.99	2	13.2	3	8.56	2	8.76	2	5.91	2	7.43	2	6.03	2
CPUE of age 1	4.85	2	4.82	2	10.02	3	8.00	3	4.15	2	3.64	2	3.20	2	3.71	2	3.45	2
CPUE of age 0	0.18	1	2.62	1	4.26	2	2.04	1	5.09	2	1.42	1	2.02	1	0.38	1	2.35	1
CPUE of crappie \geq 8.0 in	5.55	3	3.87	2	8.78	3	8.65	3	6.93	3	7.41	3	4.37	2	6.14	3	4.79	2
Mean length age 2 + at capture	9.8	4	9.1	3	9.5	3	9.8	4	9.7	4	9.7	4	9.7	4	10.4	4	10.4	4
Instantaneous Mortality (z)	1.040		0.910		1.571		1.107		0.630		0.749		0.876		0.882		0.976	
Annual Mortality (A)%	64.7		59.7		79.2		66.9		46.7		52.7		58.3		58.6		62.3	
Total score	12		10		13		14		13		12		11		12		11	
Assessment rating	F		F		G		G		G		F		F		F		F	

Table 14. Fishery statistics derived from a creel survey at Nolin River Lake (5,800 acres) from 01 April through October 30 2008.

<u>Fishing trips</u>		
No. of fishing trips (per acre)	26,686	(4.61)
<u>Fishing pressure</u>		
Total man-hours (S.E.) ^a	122,543	(2,706.55)
Man-hours/acre	21.16	
<u>Catch/harvest</u>		
No. of fish caught (S.E.)	125,754	(9,324.31)
No. of fish harvested (S.E.)	29,048	(3,276.22)
Lb of fish harvested	14,771	
<u>Harvest rates</u>		
Fish/hour	0.25	
Fish/acre	5.02	
Lb/acre	2.55	
<u>Catch rates</u>		
Fish/hour	1.03	
Fish/acre	21.72	
<u>Miscellaneous characteristics (%)</u>		
Male	88.7%	
Female	11.3%	
Resident	96.2%	
Non-resident	3.8%	
<u>Method (%)</u>		
Still fishing	35.5%	
Casting	59.6%	
Fly fishing	0.5%	
Trolling	4.5%	
<u>Mode (%)</u>		
Boat	93.0	
Bank	5.3	
Dock	1.7	

t < 0.5%

^aS.E. = standard error

Table 15. Fish harvest statistics derived from a creel survey at Nolin River Lake (5,800 acres) during 01 April through 30 October 2008.

	Black bass		Largemouth bass		Spotted Bass		Crappie		White crappie		Black crappie		Pumpkinseed		Longear sunfish		Catsup group		Charmer catfish		Flathead catfish	
	group	49,198	43,470	5,715	32,852	23,453	9,399	37,145	36,413	350	26	356	1,256	1,196	60	0.01						
No. caught (per acre)	8.49	7.51	0.99	5.67	4.05	1.62	6.42	6.29	0.06	0.00	0.06	0.22	0.21									
No. harvested (per acre)	1,290	1,065	226	24,465	17,839	6,626	2,243	2,243				148	149									
% of total no. harvested	0.22	0.18	0.39	4.23	3.08	1.14	0.39	0.39				0.03	0.03									
Lb harvested (per acre)	4.44	3.67	0.78	84.22	61.41	22.81	7.72	7.72				0.51	0.51									
% of total lb harvested	2,038	1,917	121	10,937	7,727	3,211	464	464				199	199									
Mean length (in)	0.35	0.33	0.02	1.89	1.33	0.55	0.08	0.08				0.03	0.03									
Mean weight (lb)	13.80	12.98	0.82	74.04	52.31	21.74	3.14	3.14				1.35	1.35									
No. of fishing trips for that species	12,568	2.24	0.52	6,596	0.42	0.51	2,917	2.93				320	320									
% of all trips	47.10			24.72			10.93	10.93				1.20	1.20									
Hours fished for that species (per acre)	57,714			30,288			13,393	13,393				1,469	1,469									
No. harvested fishing for that species	809			23,592			1,685	1,685				62	62									
Lb harvested fishing for that species	1,386			10,569			330	330				81	81									
% success fishing for that species	0.02			0.70			0.14	0.14				0.05	0.05									
% success fishing for that species	4.48			46.33			5.88	5.88				4.55	4.55									

Table 15 cont. Continued.

	Walleye	WhiteBass	Anyting group	Gar	Carp	Drum
No. caught (per acre)	2132 0.37	3065 0.53		30 0.01	46 0.01	30 0.01
No. harvested (per acre)	597 0.10	303 0.05				
% of total no. harvested	2.06	1.04				
Lb harvested (per acre)	906 0.16	228 0.04				
% of total lb harvested	6.13	1.54				
Mean length (in)	16.40	12.19				
Mean weight (lb)	1.41	0.77				
No. of fishing trips for that species	1174	735	2377			
% of all trips	4.40	2.75	8.91			
Hours fished for that species (per acre)	5390 0.93	3374 0.58	10916 1.89			
No. harvested fishing for that species	528	250				
Lb harvested fishing for that species	832	191				
No. hour harvested fishing for that species	0.09	0.09				
% success fishing for that species	15.49	4.44	6.29			

Table 16. Length distribution for each species of fish harvested or released at Nolin River Lake (5,800 a) during 01 April - 30 October 2008.

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		
Largemouth bass																									
Harvested											221	201	281	80	20	60	20	40							
Released										121			2,429	840	270	360	150	180	89						
Sublegal																									
Spotted Bass																									
Harvested						19		94	38	56	19														
Sublegal						387	129	850	258	1,572	670	1314	180	103	26										
White crappie																									
Released										189	142	47	24	23											
Harvested										6,978	7,765	1,758	1,285	53											
Sublegal						28	421	1,599	3,142																
Black Crappie																									
Released										120	40	40	241												
Harvested										3,137	2,705	568	162	54											
Sublegal						111	56	361	389	1,414															
White Bass																									
Harvested										101	25	51	76	50											
Sublegal						32	96	128	642	225	706	578	257	64	33										
Walleye																									
Harvested															199	66	199	33	33	33	34				
Released																									
Sublegal										31		461	276	736											
Channel catfish																									
Harvested																									
Sublegal										25				49		49									
Flathead Catfish																									
Harvested										35	105	175	70	105	175	35	105	70	35	35	35	35	33		
Sublegal																									
Bluegill																									
Harvested																									
Sublegal										8,390	11,366	7,028	3621	72	36										
Longear sunfish																									
Harvested																									
Sublegal																									
Rock Bass																									
Harvested																									
Sublegal										81															

Table 16 continued.

Species	Inch Class																								
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	30	
Warmouth																									
Harvested																									
Sublegal			26																						
Gar																									
Harvest																									
Sublegal																								30	
Drum																									
Harvested																									
Sublegal																								30	
Carp																									
Harvested																									
Sublegal																									46

Table 17. Monthly black bass angling success at Nolin River Lake (5,800 a) from 01 April - 30 Oct. 2008 creel survey period; data does not include bass < 8.0 inches 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/hour by bass anglers		Bass harvested/hour by bass anglers	
					by bass anglers	5,626	0.68	401	0.05	
Apr	7,082	521	1,611	7,399	5,626	0.68	401	0.05		
May	9,966	179	2,742	12,591	8,892	0.65	60	0.00		
Jun	4,451	46	1,520	6,982	4,037	0.53	46	0.01		
Jul	5,016		2,300	10,562	4,366	0.43	0	0.00		
Aug	6,895	134	1,218	5,595	6,224	0.86	54	0.01		
Sep	8,876	279	1,955	8,978	8,440	0.91	248	0.03		
Oct	6,912	131	1,221	5,607	5,943	1.01	0	0.00		
Total	49,198	1,290	12,568	57,714	43,528	0.72	809	0.02		
Mean						0.72		0.02		

Table 18. Black bass catch and harvest statistics derived from a creel survey at Nolin River Lake (5,800 a) from 01 April - October 30, 2008.

	Largemouth bass					Spotted Bass				
	Harvest		Catch and Release			Harvest		Catch and Release		
	8.0-11.9 in	12.0-14.9 in	>15.0 in	>20.0 in	Total	8.0-11.9 in	12.0-14.9 in	≥15.0 in	Total	
Total no. of bass	0	543	461	60	1,064	15,755	22,332	1,620	268	42,404
% of black bass harvested by no.					82.51					17.49
Total weight of fish (lb)					1,916.70					120.9
% of bass harvested by weight					94.07					5.93
Mean length					15.91					10.48
Mean weight					2.24					0.52
Rate (f/hr)					0.01					0.003

Table 19. Monthly walleye angling success at Nolin River Lake (5,800 a) from 01 April - 30 Oct. 2008 creel survey period.

Month	Total no. of walleye caught	Total no. of Walleye harvested	No. 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
April	147	40	56	256	67	0.37	27	0.15
May	477	149	421	1,931	298	0.13	119	0.05
June	276	92	426	1,958	276	0.15	92	0.05
July	650	232	59	273	650	1.92	232	0.69
Aug	349	27	135	622	295	0.82	27	0.07
Sept	155	31	49	224	31	0.11	31	0.11
Oct	78	26	27	125	0	0.00	0	0.00
Total	2,132	597	1,174	5,390	1,617		528	
Mean						0.50		0.16

Table 20. Monthly white bass angling success at Nolin River Lake (5,800 a) from 01 April - 30 Oct. 2008 creel survey period.

Month	Total no. of white bass caught	Total no. of white bass harvested	No. of white bass fishing trips	Hours fished by white bass anglers	white Bass caught by white bass anglers	white Bass caught/hour by white bass anglers	white Bass harvested by white bass anglers	White Bass harvested/hour by White bass anglers
April	294	53						
May	149							
June			37	170				
July	1,672	93	416	1,912	1,672	0.75	93	0.04
Aug	161		162	746	134	0.27		
Sept	186		33	150	31	0.14		
Oct	602	157	54	249	183	1.27	157	1.09
Total	3,065	303	735	3,374	2,020		250	
Mean						0.49		0.23

Table 21. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 4.5 hours of 30-minute diurnal electrofishing runs at Rough River Lake in October 2008.

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	16	66	16	16	39	36	11	38	26	22	27	13	9	2	2	3	4	2	2	1	351	140.40	15.22
	Spotted bass					1	11	9	6	4		2	1									34	13.60	5.11
Lower	Largemouth bass	11	10	8	13	3	7	27	29	18	20	20	11	3	4	1	1	1	1	1	1	188	94.00	16.57
	Spotted bass	1	2	2	2	24	26	10	6	4	1											76	38.00	5.48
Total	Largemouth bass	27	76	24	29	42	43	38	67	44	42	47	24	12	6	3	4	5	3	2	1	539	234.40	31.80
	Spotted bass	1	2	2	2	25	37	19	12	8	1	2	1									110	51.60	10.59

nwdrlmb.d08

Table 22. Indices of year class strength at age 0 and age 1 and mean lengths (in) of largemouth bass collected in fall electrofishing samples at Rough River Lake.

Year Class	Area	Age 0			Age 0 > 5.0 in			Age 1		
		Mean length	Std. error	CPUE	Mean length	Std. error	CPUE	Mean length	Std. error	CPUE
2001	Total	4.0		38.60	3.90	29.30	0.90	7.93	1.70	
2002	Total	5.0		60.50	18.30	34.30	2.60	44.30	5.61	
2003	Total	4.8		34.90	3.20	20.00	2.90	32.82	3.85	
2004	Total	4.0	0.06	100.40	18.57	24.22	5.94	28.04	5.91	
2005	Total	4.3	0.08	72.40	10.40	22.40	4.40	21.98	2.82	
2006	Total	4.9	0.09	64.00	18.70	30.20	7.40	27.06	3.33	
2007	Total	4.2	0.07	37.11	7.33	9.11	2.43	n/d		
2008	Total	5.1	0.11	56.90	13.49	28.70	7.85			

Table 23. Length frequency and CPUE (fish/hr) for each species of crappie collected in 80 net-nights of sampling at Rough River Lake during October 2008.

Species	Inch Class												Total	CPUE	Std. Error
	2	3	4	5	6	7	8	9	10	11	12	13			
White crappie	8	763	757	71	3	23	90	132	77	33	12	1	1970	24.63	5.02
Black crappie		19			9	14	29	12	1	1			85	1.06	0.27

nwdrrtn.d08

Table 24. PSD and RSD values calculated for crappie collected in trap nets from Rough River Lake during October 2008; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD ₁₀
White Crappie	442	78 (4)	28 (4)
Black Crappie	66	65 (11)	3 (4)

nwdrrtn.d08

Table 25. Age-frequency and CPUE (fish/nn) per inch class of white crappie trap netted for 80 net nights at Rough River Lake in October 2008. Numbers in parentheses are standard errors.

Age	Inch Class												No.	CPUE	Std. Error	Age (%)
	2	3	4	5	6	7	8	9	10	11	12	13				
0	8	763	757	71									1599			81.2
1					3	23	90	132					248	3.10	0.58	12.6
2									77	11	6		94	1.18	0.18	4.8
3										17	3		20	0.24	0.04	1.0
4										6	3	1	10	0.12	0.02	0.5
Total	8	763	757	71	3	23	90	132	77	34	12	1	1,970			100
(%)	0.4	38.7	38.4	3.6	0.1	1.2	4.6	6.7	3.9	1.7	0.6	< 0.1				

nwdrrtn.d08, nwdrcag.d06

Table 26. Population assessment for white crappie based on fall trapnetting at Rough River Lake from 1998-2008.

Parameter	Year															
	1998	2000	2002	2003	2004	2005	2006	2008	Value	Score	Value	Score				
CPUE (excluding age 0)	12.11	2	4.03	1	11.99	2	13.10	3	8.22	2	4.64	2	8.16	2	4.64	2
CPUE of age 1	7.50	3	1.36	1	10.02	3	10.77	3	5.50	2	3.46	2	7.52	3	3.10	2
CPUE of age 0	1.87	1	2.12	1	4.26	2	18.85	4	1.80	1	4.61	2	2.33	1	20.00	4
CPUE of crappie \geq 8.0 in	5.46	3	3.07	2	8.78	3	9.92	3	7.10	3	3.25	2	3.89	2	4.31	2
Mean length age 2 at capture	9.5	3	9.2	3	9.5	3	10.6	4	10.4	4	10.4	4	10.7	4	10.70	4
Instantaneous Mortality (z)	1.231		1.160		0.871		1.066		0.734		0.869		2.180		1.030	
Annual Mortality (A)%	70.8		68.7		58.5		65.5		52.0		58.1		88.7		64.3	
Total score	12		8		13		17		12		12		12		14	
Assessment rating	F		F		G		G		F		F		F		F	

Table 27. Length frequency and CPUE (fish/mn) for hybrid striped bass collected in 12 net-nights of sampling at Rough River Lake during November 2008.

Species	Inch Class																							
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total	CPUE	Std. Error	
Hybrid striped bass	17	54	19	3	26	51	14	30	68	52	66	36	21	9	4	4	1	1	1	1	473	31.53	6.82	

Table 28. Mean back calculated lengths (in) at each annulus for hybrid striped bass collected at Rough River Lake in November 2008.

Year	class	No.	Age																	
			1	2	3	4	5	6	7	8	9	10								
2007		46	9.9																	
2006		40	9.5	14.4																
2005		27	10.9	14.7	17															
2004		37	10.8	16.0	17.7	18.9														
2003		15	9.5	15.2	17.4	18.4	19.1													
2002		5	8.7	14.0	16.6	18.1	18.8	19.6												
2001		1	9.0	14.6	16.9	17.9	18.8	19.2	19.6											
2000		2	8.9	14.4	16.8	17.9	18.9	19.5	20.1	20.6										
1999		2	9.5	14.2	16.5	17.8	18.6	19.5	20.1	20.5	21.0									
1998		1	10.4	15.1	17.9	19.4	20.1	20.7	21.3	21.6	22.3	22.6								
Mean			10.1	15.0	17.3	18.6	19	19.6	20.2	20.8	21.4	22.6								
No.		176	130	90	63	26	11	6	5	3	1									
Smallest		7.2	12.2	15.4	16.5	17.7	18	19.4	19.7	20.2	22.6									
Largest		13.4	17.8	19.4	20.9	20.2	21.2	21.3	21.6	22.3	22.6									
Std error		0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.5	0.6									
95% CI (+)		0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.7	0.8	1.2									

nwdrhbag.d08

Table 29. Age-frequency and CPUE (fish/mn) per inch class of hybrid striped bass gill netted for 15 net-nights at Rough River Lake during November 2008. Numbers in parentheses are standard errors.

Age	Inch Class															No	CPUE	Std. Error	Age (%)		
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21					22	
0	17	54	19	3													93	6.20		19.7	
1					26	51	11	8									95	6.33	1.34	20.1	
2							4	23	62	14	3						104	6.94	1.54	22.0	
3									6	33	24	5	1				69	4.59	1.24	14.6	
4										5	29	16	12	5				67	4.47	1.12	14.7
5											8	10	6	1				25	1.65	0.39	5.3
6											3	3	2					8	0.54	0.15	1.7
7												2						2	0.11	0.03	0.4
8													1	1				2	0.15	0.04	0.4
9														1				3	0.21	0.07	0.6
10																		2	0.13	0.06	0.4
Total	17	54	19	3	0	26	51	15	31	68	52	67	36	21	9	4	473				
(%)	3.6	11.4	4.0	0.6		5.6	10.8	3.2	6.5	14.4	11.0	14.2	7.6	4.4	1.9	0.8					

nwdrrhsb.d08, nwdrrhbag.d08

Table 30. Population assessment for hybrid striped bass based on fall gill netting at Rough River Lake from 1999-2008.

Parameter	Year									
	1999		2001		2003		2006		2008	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
CPUE excluding age 0	26.38	4	29.88	4	33.87	4	23.67	4	25.10	4
Mean length age 2+ at capture	16.5	2	15.9	1	16.5	2	16.9	2	16.3	2
CPUE fish \geq 15.0 in	18.50	4	16.75	4	30.87	4	14.50	4	19.27	4
CPUE of age 1 fish	8.13	3	13.08	4	3.13	2	8.92	3	6.33	3
Instantaneous Mortality (z)					0.680		0.447		0.544	
Annual Mortality (A)%					49.8		36.1		42.0	
Total score		13		13		12		13		13
Assessment rating		G		G		G		G		G

Table 31. Number of fish and the relative weight (Wr) for each length group of hybrid striped bass collected at Rough River Lake during November 2008. Standard errors are in parentheses.

Length Group					
8.0-11.9 in		12.0-14.9 in		$>$ 15.0 in	
No.	Wr	No.	Wr	No.	Wr
38	91.10	51	78.08	149	84.91
	(1.29)		(0.65)		(3.92)

nwdrrhsb.d08

Table 32. Length frequency and CPUE (fish/nn) for channel catfish collected in 12 net-nights of sampling at Rough River Lake during November 2008.

Species	Inch Class																									Total	CPUE	Std. Error
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25										
Channel Catfish	4	4	6	3	2	1	4	6	3	4	6	3	3	4	6	4	1	1	1	64	4.07	0.61						

nwdrrhsb.d08

Table 33. Number of fish and the relative weight (Wr) for each length group of channel catfish collected at Rough River Lake during November 2008. Standard errors are in Parentheses.

Length Group		
No.	Wr	Wr
15	83.0	87.0
	(1.2)	(1.7)
		94.0
		(6.0)

nwdrrhsb.d08

Table 34. Relative abundance, and CPUE (fish/hr) of largemouth bass collected during 2.5 hours of 30-minute diurnal electrofishing runs at Lake Malone in April 2008.

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	21	22								
Largemouth bass	6	16	15	6	4	11	39	69	78	68	83	42	24	18	17	21	13	9	3	4	546	218.40	12.35					

nwdimpsd.d08

Table 35. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Lake Malone 1999-2008.

Year	Length Group											
	<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.
2008	18.80	6.47	78.80	6.59	77.20	4.96	43.60	8.06	6.40	1.47	218.40	12.35
2007	29.20	3.98	80.40	10.40	30.80	1.96	37.60	10.34	3.60	1.33	178.00	17.80
2006	31.60	3.71	81.60	14.33	22.40	2.14	28.00	5.87	5.20	1.62	163.60	19.82
2005	32.40	4.83	69.20	14.31	32.00	8.74	53.60	5.71	8.40	1.17	187.20	30.12
2004	28.40	3.87	53.60	5.74	26.40	4.17	53.20	3.93	6.00	1.55	161.60	12.75
2003	57.00	3.32	76.50	6.75	35.00	5.00	57.50	4.86	9.50	2.75	226.00	12.08
2002	8.57	3.32	43.43	4.97	43.43	8.48	41.71	7.55	8.00	3.02	137.14	17.45
2001	18.00	8.05	66.00	12.03	50.00	7.98	31.33	6.32	0.67	0.67	165.33	15.55
2000	13.33	3.37	46.00	4.23	51.33	7.83	24.00	4.00	2.00	0.89	134.67	14.52
1999	n/d		48.67	9.82	61.33	6.98	23.33	4.89	2.67	1.33	133.33	12.72

Table 36. PSD and RSD values obtained for largemouth bass taken in spring electrofishing samples at Lake Malone, Carpenter Lake, Kingfisher, Mauzy Lake, and Washburn Lake during April 2008; 95% confidence intervals are in parentheses.

Lake	No. fish \geq 8.0 in	PSD (+/- 95%)	RSD ₁₅ (+/- 95%)
Malone	499	61 (4)	22 (4)
Carpenter	249	8 (3)	4 (3)
New Kingfisher	111	19 (7)	0
Old Kingfisher	49	41 (13)	18 (11)
Mauzy	251	41 (6)	33 (6)
Washburn	34	32 (16)	15 (11)

Table 37. Population assessment for largemouth bass based on spring electrofishing at Lake Malone from 1999-2008.

Parameter	Year															
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008						
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score				
Length at age 3 at capture	12.9	4	12.9	4	11.5	4	11.5	4	11.5	4	11.5	4	10.3	2	10.3	2
Spring CPUE age 1 fish	n/d		2.44	1	14.00	1	6.00	1	35.00	2	19.00	2	19.00	2	29.20	2
Spring CPUE 12.0-14.9 in fish	61.33	4	51.33	4	50.00	4	43.43	4	35.00	3	26.40	3	22.40	2	30.80	2
Spring CPUE ≥ 15.0 in fish	23.33	3	24.00	3	31.33	4	41.71	4	48.00	4	53.20	4	28.00	3	37.60	4
Spring CPUE ≥ 20.0 in fish	2.67	3	2.00	3	0.67	1	8.00	4	8.50	4	6.00	4	5.20	4	3.60	3
Instantaneous Mortality (z)					0.416				0.387		0.365		0.526		0.330	
Annual Mortality (A)%					34.1				32.0		31.1		40.9		28.1	
Total score	14+	15	14	17	17	17	17	17	17	17	17	17	15	13	16	16
Assessment rating		G	G	E	E	E	E	E	E	E	E	E	G	G	G	G

Table 38. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Lake Malone during spring samples 2002-2008.

Age	Year									
	2002*	2003	2004	2005	2006	2007	2008			
1	6.00	35.00	19.00	19.00	20.20	29.20	16.40			
2	28.3	69.16	37.54	49.74	59.13	43.00	26.38			
3	28.85	34.51	29.81	37.52	36.43	9.62	11.06			
4	31.09	30.13	23.43	27.49	20.01	23.74	48.92			
5	15.78	16.03	13.93	13.87	8.65	21.14	40.20			
6	6.84	9.31	8.74	8.34	4.45	25.04	40.20			
7	7.37	12.39	12.24	11.85	5.42	12.25	12.77			
8	2.86	7.03	6.77	7.89	3.17	0.00	0.00			
9	5.71	9.53	7.57	9.49	4.37	0.00	0.00			
10	1.49	1.90	1.36	1.60	0.96	6.00	5.20			

*nocturnal sample
nwdlimlag.d07

Table 39. Relative abundance, and CPUE (fish/hr) of largemouth bass collected during 2.5 hours of 30-minute diurnal electrofishing runs at Lake Malone in October 2008.

Area	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				
Total	14	61	20	13	8	37	29	18	19	25	32	37	23	12	7	2	1	1	3	1	363	145.20	25.71	

nwdlimb.d08

Table 40. Number of fish and relative weight (Wr) for length groups of largemouth bass collected in NWFD lakes during October 2008. Standard errors are in parentheses.

Location	8.0-11.9 in			12.0-14.9 in			≥ 15.0 in		
	No.	Wr	(SE)	No.	Wr	(SE)	No.	Wr	(SE)
Malone	90	89	(1.17)	91	89	(0.90)	26	92	(1.67)
Mauzy	126	89	(0.91)	31	87	(2.87)	22	98	(2.17)
Washburn	55	88	(0.96)	0			0		

Table 41. Indices of year class strength at age 0 and age 1 and mean lengths (in) of largemouth bass collected in fall electrofishing samples at Lake Malone.

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
2002	Total	4.3		39.20		14.40		35.00	5.12
2003	Total	3.1		103.20		2.40		19.00	2.88
2004	Total	4.1	0.07	49.20	10.73	8.40	1.72	19.00	3.48
2005	Total	4.9	0.09	50.00	10.00	25.50	5.00	20.20	2.08
2006	Total	5.2	0.07	65.60	5.15	42.40	3.71	29.20	3.98
2007	Total	4.5	0.17	30.40	7.36	11.20	2.58	16.40	7.14
2008	Total	4.6	0.12	14.80	4.76	6.00	2.37		

nwdlmlmb.d07

Table 42. Length frequency and CPUE (fish/hr) for bluegill and redear sunfish collected in 1.25 hours of electrofishing at Lake Malone in May 2008.

Species	Inch Class										Total	CPUE	Std. Error
	1	2	3	4	5	6	7	8	9	10			
Bluegill	2	86	241	122	66	85	40	1			643	514.40	44.49
Redear sunfish					4	1	8	8	5	9	35	28.00	8.11

nwdlmbg.d08

Table 43. Spring electrofishing CPUE (fish/hr) for each length group of bluegill and redear sunfish collected at Lake Malone.

Bluegill	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.
Year	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2008	70.40	17.15	343.20	34.39	100.00	19.71	0.80	0.80	0.00		514.40	44.49
2007	75.20	17.12	324.00	28.85	90.40	9.77	0.00		0.00		489.60	39.89
2006	48.00	18.51	320.00	36.19	92.80	13.76	0.80	0.80			461.60	57.01
2005	27.69	8.21	376.92	44.63	46.15	10.76	0.00				450.77	54.06
2004	16.15	9.62	300.77	49.90	73.08	15.44	0.00				390.00	56.47
2003	25.38	6.49	173.08	24.06	22.31	6.22	0.00				220.77	25.54
2002	16.67	6.21	331.67	40.59	59.17	10.50	0.00				407.50	50.54
2001	7.33	2.17	222.00	30.51	46.67	8.98	0.67	0.67			276.67	34.54
2000	21.33	5.23	130.67	21.95	50.67	15.79	2.00	0.89			204.67	30.51
1999	53.33	14.30	20.67	4.31	0.67	0.67	0.00				74.67	18.03

Redear	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.
Year	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2008	0.00		3.20	1.77	7.20	3.86	17.60	4.89	7.20	2.78	28.00	8.11
2007	0.00		4.80	3.99	9.60	4.74	16.80	4.84	12.00	4.50	31.20	9.35
2006	0.00		4.80	2.13	1.60	1.60	5.60	3.38	2.40	2.40	12.00	6.56
2005	0.00		0.77	0.77	3.08	1.26	9.23	3.59	4.62	2.61	13.08	3.98
2004	0.00		1.54	1.03	0.77	0.77	2.31	1.64	0.77	0.77	4.62	2.05
2003	0.00		0.00		0.77	0.77	4.62	1.7	1.54	1.03	5.38	2.00

Table 44. PSD and RSD values calculated for bluegill and redear sunfish collected by electrofishing from Lake Malone during May 2008; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD _g
Bluegill	555	23 (3)	0.2 (0.2)
Redear sunfish	35	86 (11)	40 (26)

nwdlmbg.d08

Table 45. Population assessment for bluegill based on spring electrofishing at Lake Malone from 1999-2008.

Parameter	Year															
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2008	2008				
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age 2+ at capture	3.9	2	3.9	2	3.9	2	3.9	2	3.9	2	3.9	2	4.4	2	4.4	2
Years to 6.0 in	3-3+	3	3-3+	3	3-3+	3	3-3+	3	3-3+	3	3-3+	3	3-3+	3	3-3+	3
CPUE of ≥ 6.0 in fish	21.33	1	52.67	3	47.33	2	56.80	3	7.75	1	73.08	3	48.00	2	93.60	4
CPUE of ≥ 8.0 in fish	0.67	2	2.00	2	0.67	2	0.00	1	0.00	1	0.00	1	0.00	1	0.80	2
Instantaneous Mortality (z)					1.028								0.452		0.573	0.599
Annual Mortality (A)%					64.2								36.4		43.6	45.0
Total score	8	10	9	9	7	9	8	11	10	11	10	11	10	11	10	11
Assessment rating	F	F	F	F	P	F	F	G	F	G	F	G	F	G	F	G

Table 46. Length-frequency and CPUE (fish/hr) of largemouth bass collected during 1.00 hours of diurnal electrofishing runs at Mauzy Lake in April 2008.

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	12	44	43	5	19	47	58	23	8	4	9	9	16	15	19	17	7	355	355.00	48.23

nwdmzpsd.d08

Table 47. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Mauzy Lake during spring 1999-2008.

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.
2008	104.00	31.37	147.00	16.28	21.00	5.00	83.00	9.29	7.00	1.91	355.00	48.23
2007	46.00	5.29	49.00	12.26	40.00	2.83	64.00	17.51	0.00		199.00	31.0
2006	68.00	14.05	40.00	4.00	24.00	4.00	60.00	4.62	0.00		192.00	21.17
2005	52.00	8.64	25.00	6.61	147.00	11.47	21.00	7.90	4.00	1.63	245.00	22.29
2004	20.00	9.24	132.00	2.31	5.33	1.33	6.67	1.33	0.00		164.00	10.58
2003*	98.61	18.69	163.19	31.92	73.61	6.05	20.83	6.36	2.78	2.78	356.25	58.72
2002	36.00	14.05	169.33	40.55	9.33	1.33	6.67	2.67	1.33	1.33	221.33	45.39
2001	12.00	2.31	246.67	53.53	26.67	10.67	4.00	2.31	0.00		289.33	64.18
2000	37.33	5.81	224.00	20.53	2.67	1.33	5.33	3.53	0.00		269.33	25.33
1999	n/d		165.33	8.74	17.33	5.35	4.00	2.31	1.33	1.33	186.67	14.11

* Mauzy renovated summer 2003

Table 48. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Mauzy Lake during spring samples 2004 - 2008.

Age	Year				
	2004	2005	2006	2007	2008
1	2.67	34.00	24.00	21.00	99.00
2	80.80	34.40	34.40	50.58	36.64
3	52.27	5.60	15.47	64.20	137.36
4	8.13	6.17	5.87	6.72	3.50
5	9.87	10.33	8.53	33.50	39.00
6	2.27	0.50	1.07	19.00	15.50

nwdmzlag.d07, nwdmzpsd.d05,
nwdmzpsd.d06, nwdmzpsd.d08

Table 49. Population assessment for largemouth bass based on spring electrofishing at Mauzy Lake from 2000-2008.

Parameter	Year																	
	2000		2001		2002		2003*		2004		2005		2006		2007		2008	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Length at age 3 at capture	10.3	2	10.3	2	10.3	2	10.3	2	10.3	2	10.3	2	10.3	2	12.2	4	12.2	4
Spring CPUE age 1 fish	25.33	2	5.33	1	25.33	2	86.81	4	2.67	1	34.00	2	24.00	2	21.00	2	99.00	4
Spring CPUE 12.0-14.9 in fish	2.67	1	26.67	2	9.33	1	73.61	4	5.33	1	147.00	4	24.00	2	40.00	3	21.00	2
Spring CPUE ≥ 15.0 in fish	5.33	2	4.00	2	6.67	2	20.83	3	6.67	2	21.00	3	60.00	4	64.00	4	83.00	4
Spring CPUE ≥ 20.0 in fish	0.00	0	0.00	0	1.33	2	2.78	3	0.00	0	4.00	4	0.00	0	0.00	0	7.00	4
Instantaneous Mortality (z)									0.884				0.755		0.3737		0.466	
Annual Mortality (A)%									58.7				53.0		31.2		37.3	

Table 50. Length-frequency and CPUE (fish/hr) of largemouth bass collected during 1.00 hour of diurnal electrofishing runs at Mauzy Lake in October 2008.

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	21					
Largemouth bass	1	27	27	0	23	63	31	11	21	18	10	3	1	4	4	5	3	5	1	258	258.00	12.91		

nwdmzimb.d08

*Mauzy renovated summer 2003

Table 51. Indices of year class strength at age 0 and age 1 and mean lengths (in) of largemouth bass collected in fall electrofishing samples at Mauzy Lake during October 2008.

Year Class	Area	Age 0			Age 0 ≥ 5.0 in			Age 1		
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. Error	CPUE	Std. Error	CPUE
2007	Total	5.3	0.08	71.00	11.24	51.00	9.98	99.00	30.74	
2008	Total	5.3	0.06	64.00	17.36	52.00	13.86			

nwdflmb.d08

Table 52. Length frequency and CPUE (fish/hr) of largemouth bass collected during 1.00 hours of 15-minute diurnal electrofishing runs at Carpenter Lake in April 2008.

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						
Largemouth bass	11	67	47	11	17	86	101	25	7	1	1	5	1	1	0	3	0	1	385	385.00	50.32			

nwdcapsd.d08

Table 53. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Carpenter Lake during April 2008.

Year	Length Group											Total	
	<8.0 in			8.0-11.9 in			12.0-14.9 in			≥15.0 in		CPUE	Std. err.
2008	136.00	17.66	7.42	229.00	28.82	9.00	2.52	11.00	4.12	385.00	50.32		
2007	45.33	7.42	12.00	128.00	24.33	12.00	2.31	10.67	3.53	196.00	31.75		
2006	97.33	12.00	134.67	8.74	24.00	24.00	1.33	9.33	2.31	265.33	55.44		
2005	157.33	3.53	165.33	48.57	30.67	30.67	3.53	2.67	1.33	356.00	54.60		
2004	80.00	16.65	128.00	28.00	22.67	22.67	3.53	21.33	8.74	252.00	47.72		
2003	181.33	49.33	49.33	11.39	18.67	18.67	4.81	36.00	12.22	333.33	63.43		
2002	12.00	4.62	52.00	4.62	12.00	12.00	0.00	21.33	3.53	97.33	4.81		
2001	14.67	8.74	29.33	5.33	90.67	90.67	9.33	66.67	2.67	201.33	17.64		
2000	2.67	1.33	45.33	7.06	48.00	48.00	2.31	0.00		96.00	8.33		
1999	1.33	1.33	142.67	18.52	29.33	29.33	13.53	1.33	1.33	174.67	31.01		

Table 54. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Carpenter Lake during spring samples 2002- 2008.

Age	Year							
	2002	2003	2004	2005	2006	2007	2008	
1	12.00	162.67	56.00	132.00	78.67	39.87	120.30	
2	36.93	57.60	90.13	88.93	101.60	64.27	58.50	
3	25.73	55.73	56.53	107.07	55.73	61.20	150.87	
4	1.33	2.67	4.00	0.00	1.33	17.33	39.17	
5	0.00	0.00	0.00	0.00	5.33	1.33	4.17	
6	10.67	14.67	8.00	0.00	0.00	0.00	0.00	

nwdclag.d07, nwdcapsd.d08

Table 55. Population assessment for largemouth bass based on spring electrofishing at Carpenter Lake from 1999-2008.

Parameter	Year																				
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008											
Length at age 3 at capture	11.6	4	11.6	4	11.6	4	11.6	4	11.6	4	11.6	4	10.3	2	10.3	2					
Spring CPUE age 1 fish	n/d		2.67	1	8.00	1	12.00	1	162.67	4	56.00	4	132.00	4	39.87	2	120.30	4			
Spring CPUE 12.0-14.9 in fish	29.33	2	48.00	3	90.67	4	12.00	1	54.67	4	22.67	2	30.67	2	24.00	2	12.00	1	9.00	1	
Spring CPUE ≥ 15.0 in fish	1.33	1	0.00	1	66.67	4	21.33	4	36.00	4	21.33	3	2.67	1	9.33	2	10.67	2	11.00	2	
Spring CPUE ≥ 20.0 in fish	0.00	0	0.00	0	1.33	2	0.00	0	1.33	2	2.67	3	0.00	0	0.00	1	1.33	2	1.00	2	
Instantaneous Mortality (z)					0.943						1.155				1.160		0.560		0.561		
Annual Mortality (A)%					61.1				68.5						68.67		42.86		42.94		
Total score	7+		9		15		16		18		16		11		13		9		11		11
Assessment rating	F		F		G		G		E		G		G		G		F		F		G

nwdclag.d07 nwdcapsd.d08

Table 56. Length frequency and CPUE (fish/hr) of largemouth bass collected during 1.00 hours of 15-minute diurnal electrofishing runs at Carpenter Lake in October 2008.

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						
Largemouth bass	11	25	10	4	55	51	56	17	6	3	4	3	1	0	0	1	1	1	1	1	249	249.00	11.70	

nwdcalmb.d08

Table 57. Indices of year class strength at age 0 and age 1 and mean lengths (in) of largemouth bass collected in fall electrofishing samples at Carpenter Lake during October 2008.

Year Class	Area	Age 0			Age 0 > 5.0 in			Age 1		
		Mean length	Std. error	CPUE	Mean length	Std. error	CPUE	Mean length	Std. error	CPUE
2007	Total	5.7	0.12	52.00	20.72	41.00	15.00	120.30	18.04	
2008	Total	5.7	0.05	113.00	15.78	102.00	13.22			

nwdcalmb.d08

Table 58. Length frequency and CPUE (fish/hr) for bluegill and redear sunfish collected during 0.50 hours of electrofishing at Carpenter Lake in May 2008.

Species	Inch Class								Total	CPUE	Std. Error
	3	4	5	6	7	8	9	10			
Bluegill	9	18	17	47	28				119	238.00	68.54
Redear sunfish	1	2	1	5	1	10	20.00	5.16			

nwdcabg.d08

Table 59. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Carpenter Lake during spring 1999-2008.

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.
2008	0.00		88.00	18.76	150.00	50.74	0.00		0.00		238.00	68.54
2007	2.67	2.67	61.33	17.73	168.00	38.53	1.33	1.33	0.00		233.33	9.10
2006	1.33	1.33	57.33	10.00	102.67	12.12	0.00		0.00		161.33	21.31
2005	12.09	9.77	190.11	17.09	98.90	6.80	18.68	9.02	0.00		319.78	23.07
2004	12.31	4.62	26.15	7.13	46.15	11.41	1.54	1.54	0.00		86.15	20.41
2003	7.69	2.81	102.56	22.96	47.44	13.24	3.85	1.72	0.00		161.54	34.11
2002	2.30		8.05		17.24		1.15		0.00		28.74	0.00
2001			198.67	74.7	152.00	22.74	41.33	12.72	0.00		392.00	108.89
2000			4.00	2.31	10.67	4.81	12.00	6.11	0.00		26.67	9.61
1999			10.67	2.57	82.67	10.91	12.00	8.00	0.00		105.33	17.99

Table 60. PSD and RSD values calculated for bluegill and redear sunfish collected by electrofishing from Carpenter Lake during May 2008; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD ₈
Bluegill	119	63 (9)	0
	No.	PSD	RSD ₁₀
Redear sunfish	10	60 (32)	0

nwdcabg.d08

Table 61. Electrofishing catch rate (fish/hr) for each age of bluegill collected from Carpenter Lake during spring samples 2002- 2008.

Age	Year						
	2002	2003	2004	2005	2006	2007	2008
1	2.30	7.69	12.31	10.99	4.39	15.11	120.30
2	14.71	98.80	25.23	180.24	121.69	27.42	58.50
3	9.43	27.26	33.23	66.76	32.09	108.67	150.87
4	2.3	7.26	6.15	26.62	2.22	80.80	39.17
5	0.00	0.00	0.00	0.00	0.00	1.33	4.17

nwdcabg.d08, nwdcbgag.d07

Table 64. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at New Kingfisher Lake during April 1999-2008.

Year	Length Group											
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		Total			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2008	282.67	37.33	240.00	33.31	56.00	9.24	0.00	0.00	578.67	71.75		
2007	98.67	27.84	392.00	92.72	21.33	2.67	2.67	2.67	514.67	112.79	2.67	
2006	189.33	14.11	333.33	46.26	10.67	2.67	0.00	0.00	533.33	62.88		
2005	287.18	97.44	428.21	53.54	41.03	6.78	12.82	5.13	769.23	141.21		
2004	161.54	45.07	243.59	45.58	12.82	6.78	2.56	2.56	420.51	92.45		
2003	105.56	28.19	425.00	55.49	8.33	4.81	0.00	0.00	538.89	59.77		
2002	116.28		258.14		4.65		0.00	0.00	379.07			
2001	89.74		364.10		20.51		2.56		476.91			
2000	137.78		493.33		24.44		6.67		662.22			
1999	n/d		315.56		17.78		2.22		335.56			

Table 65. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from New Kingfisher Lake during April 2008.

Age	Year							
	2002	2003	2004	2005	2006	2007	2008	2008
1	116.28	57.69	94.87	248.72	149.33	96.00	250.67	250.67
2	193.45	16.67	169.00	215.62	246.79	226.33	74.33	74.33
3	60.51	3.42	66.90	175.66	74.55	67.67	68.00	68.00
4	5.74	6.84	16.24	65.98	20.00	60.67	55.67	55.67
5	0.00	5.13	1.71	11.97	2.67	39.00	51.67	51.67
6	0.00	0.00	0.00	0.00	0.00	6.67	14.67	14.67
7	0.00	0.00	0.00	0.00	0.00	7.67	5.00	5.00

nwdkflag.d07, nwdkfpsd.d08

Table 66. Population assessment for largemouth bass based on spring electrofishing at New Kingfisher Lake from 1999-2008.

Parameter	Year																					
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008												
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score										
Length at age 3 at capture	11.0	3	11.0	3	11.0	3	11.0	3	11.0	3	10.5	1	10.5	1								
Spring CPUE age 1 fish	n/d		89.74	4	116.28	4	100.00	4	94.87	4	248.72	4	149.33	4	96.00	4	250.67	4				
Spring CPUE 12.0-14.9 in fish	17.78	1	24.44	2	20.51	2	4.65	1	8.33	1	12.82	1	10.67	1	21.33	2	56.00	4				
Spring CPUE ≥ 15.0 in fish	2.22	1	6.67	2	2.56	1	0.00	0	0.00	0	2.56	1	0.00	0	12.82	2	0.00	0	2.67	1	0.00	0
Spring CPUE ≥ 20.0 in fish	0.00	0	4.44	4	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Instantaneous Mortality (z)													1.330	1.230	1.335	0.608	0.562					
Annual Mortality (A)%													73.6	70.8	73.7	39.2	43.0					

Total score	5+	15	10	8	8	9	12	8	8	9	12	8	8	8	8	8	9
Assessment rating		G	F	F	F	F	G	F	F	F	G	F	F	F	F	F	F

Table 67. Length frequency, and CPUE (fish/hr) of largemouth bass collected during 0.37 hours of 7.5-minute diurnal electrofishing runs at New Kingfisher Lake in October 2008*.

Species	Inch Class														Total	CPUE	Std. Error
	3	4	5	6	7	8	9	10	11	12	13	14					
Largemouth bass	11	12	2	8	14	3	1	5	4	3	1	2	66	176.00	20.13		

nwdnkmb.d08

*Major fish kill 9/5/08

Table 68. Indices of year class strength at age 0 and age 1 and mean lengths (in) of largemouth bass collected in fall electrofishing samples at New Kingfisher Lake during October 2008.

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
2007	Total	4.0	0.10	122.67	50.67	13.33	2.67	250.67	29.69
2008	Total	4.3	0.17	74.67	30.75	13.33	2.67		

nwdnkmb.d08

Major fish kill 9/5/08

Table 69. Length frequency and CPUE (fish/hr) for bluegill collected in 0.37 hours of electrofishing at New Kingfisher Lake in May 2008.

Species	Inch Class								Total	CPUE	Std. Error
	2	3	4	5	6	7	8	9			
Bluegill	16	43	40	8	9	6			121	322.67	85.21
Redear								2	2	5.33	2.67

nwdnkgb.d08

Table 70. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at New Kingfisher Lake during spring 1999 - 2008.

Year	Length Group											
	< 3.0 in		3.0-5.9 in		6.0-7.9 in		≥ 8.0 in		≥10.0 in		Total	
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2008	42.67	5.33	242.67	65.54	37.33	14.85	0.00		0.00		322.67	85.21
2007	5.33	2.67	69.33	26.26	45.33	5.33	0.00		0.00		120.00	33.31
2006	16.00	13.47	104.00	33.78	14.00	2.00	0.00		0.00		134.00	43.98
2005	0.00		53.85	7.69	12.82	6.78	10.26	6.78	0.00		76.92	8.88
2004	0.00		15.38	8.88	23.08	11.75			0.00		38.46	4.44
2003	12.82	6.78	56.41	2.56	15.38	7.69	5.13	2.56	0.00		89.74	5.13
2002			9.30		62.79		6.98		0.00		79.07	0.00
2001			61.54		66.67		7.69		0.00		135.90	0.00
2000			31.11		66.67		11.11		0.00		108.99	0.00
1999			6.67		20.00		4.44		0.00		31.11	0.00

Table 71. PSD and RSD values calculated for bluegill collected by electrofishing from New Kingfisher Lake during May 2008; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD ₈
Bluegill	105	13 (7)	0

nwdnkgb.d08

Table 72. Electrofishing catch rate (fish/hr) for each age of bluegill collected from New Kingfisher Lake during spring samples 2002- 2008.

Age	Year							
	2002	2003	2004	2005	2006	2007	2008	
1	7.56	57.69	13.46	32.69	115.00	5.33	42.67	
2	22.67	16.67	4.49	21.15	7.00	74.22	246.67	
3	13.95	3.42	6.84	4.27	3.33	35.56	29.33	
4	27.91	6.84	13.68	8.55	6.67	4.89	4.00	
5	6.98	5.13	0.00	10.26	0.00	0.00	0.00	

nwdhknbg.d08, nwdkfgbag.d07

Table 73. Population assessment for bluegill based on spring electrofishing at New Kingfisher Lake from 1999-2008.

Parameter	Year																							
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008				
Mean length age 2 at capture	5.7	4	5.7	4	5.7	4	5.7	4	5.7	4	5.7	4	5.7	4	5.7	4	5.7	4	5.7	4	4.3	2	4.3	2
Years to 6.0 in	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	3-3+	3	3-3+	3
CPUE of \geq 6.0 in fish	24.44	1	77.78	4	64.44	3	69.77	3	21.62	1	23.08	1	23.08	1	23.08	1	23.08	1	14.00	1	45.33	2	37.33	2
CPUE of \geq 8.0 in fish	4.44	2	11.11	3	6.67	2	6.98	2	5.40	2	0.00	0	10.26	3	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Instantaneous Mortality (z)					0.865													1.587		0.5735		2.14		
Annual Mortality (A)%					57.9													79.5		42.6		88.2		
Total score	11	15	13	13	11	9	12	9	12	9	12	9	12	9	12	9	12	9	12	9	7	7	7	7
Assessment rating	G	E	G	G	G	F	G	F	G	F	G	F	G	F	G	F	G	F	G	F	F	F	F	F

*2003 and 2007 age data

Table 74. Length frequency, and CPUE (fish/hr) of largemouth bass collected during 0.25 hours of 7.5-minute diurnal electrofishing runs at Old Kingfisher Lake in April 2008.

	Inch Class													Total	CPUE	Std. Error	
	4	5	6	7	8	9	10	11	12	13	14	15	16				17
Largemouth bass	2	4	2		1	5	5	18	7	2	2	3	3	3	57.00	228.00	20.00

nwdokpsd.d08

Table 75. Length frequency, and CPUE (fish/hr) of largemouth bass collected during 0.125 hours of 7.5-minute diurnal electrofishing runs at Old Kingfisher Lake in October 2008*.

Species	Inch Class													Total	CPUE	Std. Error	
	4	5	6	7	8	9	10	11	12	13	14	15	16				17
Largemouth bass	1	3	0	3	2		2	2			1	1		1	16	128.00	0.00

nwdoklmb.d08

*Major fish kill 9/5/08

Table 76. Length frequency and CPUE (fish/hr) for bluegill collected in 0.37 hours of electrofishing at Old Kingfisher Lake in May 2008.

Species	Inch Class					Total	CPUE	Std. Error
	2	3	4	5	6			
Bluegill	8	23	78	170	64	343	1372.00	262.00

nwdnkgb.d08

Table 77. Relative abundance, and CPUE (fish/hr) of largemouth bass collected during 0.37 hours of 7.5-minute diurnal electrofishing runs at Washburn Lake in April 2008.

Species	Inch Class																		
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total	CPUE	Std. Error	
Largemouth bass	25	30	9	7	7	7	2	3	3	3	2	2	2	2	1	98	261.33	59.57	

nwdwlpd.d08

Table 78. Spring electrofishing CPUE (fish/hr) for each length group of largemouth bass collected at Washburn Lake* during April 2001-2008.

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.
2008	170.67	42.92	61.33	21.83	16.00	0.00	13.33	9.61	0.00	0.00	261.33	59.57	261.33	59.57
2007	133.33	35.28	80.00	4.62	16.00	4.62	21.33	9.61	0.00	0.00	250.67	30.75	250.67	30.75
2006	96.00	9.24	98.67	39.28	64.00	0.00	18.67	5.33	2.67	2.67	277.33	25.44	277.33	25.44
2005	43.59	11.18	146.15	16.01	28.21	5.13	2.56	2.56	2.56	2.56	220.51	25.25	220.51	25.25
2004	46.15	4.44	353.85	49.45	0.00	0.00	0.00	0.00	0.00	0.00	400.00	51.22	400.00	51.22
2003	123.08	33.53	438.46	49.45	0.00	0.00	0.00	0.00	0.00	0.00	561.54	52.36	561.54	52.36
2002	50.00		321.43		0.00		0.00		0.00		371.43	0.00	371.43	0.00
2001	260.00		8.00		0.00		0.00		0.00		268.00	0.00	268.00	0.00

*Washburn Lake renovated summer 1999 and restocked spring 2000

Table 79. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Washburn Lake during spring samples 2003- 2008.

Age	Year							
	2003	2004	2005	2006	2007	2008	2007	2008
1	131.62	48.29	41.03	94.67	131.20	165.87	131.20	165.87
2	380.96	218.38	53.38	36.73	81.98	67.73	81.98	67.73
3	8.16	27.56	27.21	17.88	19.09	9.33	19.09	9.33
4	40.79	105.77	65.56	42.73	8.00	5.33	8.00	5.33
5	0.00	0.00	0.00	0.00	2.40	5.07	2.40	5.07

nwdwlpd.d08 nwdwllag.d07

Table 80. Population assessment for largemouth bass based on spring electrofishing at Washburn Lake from 2003-2008*.

Parameter	Year											
	2003		2004		2005		2006		2007		2008	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Length at age 3 at capture	11.2	3	11.2	3	11.2	3	11.2	3	13.1	4	13.1	4
Spring CPUE age 1 fish	131.62	4	48.29	3	41.03	3	94.67	4	131.20	4	165.87	4
Spring CPUE 12.0-14.9 in fish	0.00	0	0.00	0	28.21	2	64.00	4	16.00	1	16.00	1
Spring CPUE \geq 15.0 in fish	0.00	0	0.00	0	2.56	1	18.67	3	21.33	3	13.33	2
Spring CPUE \geq 20.0 in fish	0.00	0	0.00	0	2.56	3	2.67	3	0.00	0	0.00	0
Instantaneous Mortality (z)							0.669		0.944		1.117	
Annual Mortality (A)%							48.8		61.1		67.3	
Total score	7		6		12		17		12		11	
Assessment rating	P		P		G		E		G		F	

*Washburn Lake renovated and restocked spring 2000

Table 81. Length frequency, and CPUE (fish/hr) of largemouth bass collected during 0.37 hours of 7.5-minute diurnal electrofishing runs at Washburn Lake in October 2008.

Species	Inch Class								Total	CPUE	Std. Error
	4	5	6	7	8	9	10	11			
Largemouth bass	6	38	27	2	15	31	5	4	128	341.33	35.88

nwdwllmb.d08

Table 82. Indices of year class strength at age 0 and age 1 and mean lengths (in) of largemouth bass collected in fall electrofishing samples at Kingfisher Lake during October 2008.

Year	Class	Area	Age 0		Age 0 \geq 5.0 in		Age 1			
			Mean length	Std. error	CPUE	Std. error	CPUE	Std. Error		
2007	Total		5.9	0.06	472.00	60.40	424.00	56.19	165.87	42.07
2008	Total		6.2	0.08	170.67	42.92	170.67	42.92		

nwdwllmb.d08

Table 83. Length frequency and CPUE (fish/hr) for bluegill collected in 0.37 hours of electrofishing at Washburn Lake in May 2008.

Species	Inch Class							Total	CPUE	Std. Error
	2	3	4	5	6	7				
Bluegill	1	1	37	19	41	22	121	322.67	69.49	

nwdwabg.d08

Table 84. PSD and RSD values calculated for bluegill collected by electrofishing from Washburn Lake during May 2008; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD ₈
Bluegill	120	52 (9)	0

nwdwabg.d08

Table 85. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Washburn Lake during May 2008.

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.
2008	2.67	2.67	152.00	37.81	168.00	48.66	0.00		0.00		322.67	69.49
2007	58.67	14.11	245.33	37.05	40.00	12.22	0.00		0.00		344.00	54.45
2006	58.67	50.67	138.67	39.28	32.00	16.00	0.00		0.00		229.33	81.63
2005	161.54	31.87	155.77	18.94	9.62	3.68	0.00		0.00		326.92	39.29
2004	80.77	7.36	48.08	3.68	11.54	4.97	21.15	10.59	0.00		161.54	12.95
2003	7.69	3.14	71.15	12.71	113.46	39.89					192.31	39.85
2002			46.51		102.33						148.84	0.00
2001			28.00		64.00		4.00				96.00	0.00

*Washburn Lake renovated summer 1999 and restocked spring 2000

Table 86. Electrofishing catch rate (fish/hr) for each age of bluegill collected from Washburn Lake during spring samples 2003- 2008.

Age	Year					
	2003	2004	2005	2006	2007	2008
1	0.00	0.00	0.00	141.87	163.20	25.07
2	100.34	16.35	71.57	71.47	176.80	253.6
3	72.73	8.65	5.36	16.00	4.00	14.42

nwdwabg.d08, nwdwbgag.d06

Table 87. Population assessment for bluegill based on spring electrofishing at Washburn Lake 2003-2008.

Parameter	Year											
	2003		2004		2005		2006		2007		2008	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age 2+ at capture	5.4	4	5.4	4	5.4	4	5.3	4	5.3	4	5.3	4
Years to 6.0 in	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4
CPUE of ≥ 6.0 in fish	118.00	4	32.69	2	9.62	1	32.00	2	40.00	2	168.00	4
CPUE of ≥ 8.0 in fish	0.00	0	22.00	4	0.00	0	0.00	0	0.00	0	0.00	0
Instantaneous Mortality (z)									1.050		2.046	
Annual Mortality (A)%									64.99		87.08	
Total score		12		14		5		10		10		12
Assessment rating		G		E		P		G		G		G

Table 88. Length frequency, composition, and number per hour of fish observed during 1.50 hours of 30-minute scuba transects swam at Goose Lake (Peabody WMA) in June 2005-2008.

Species	Year	Length Group				Total	No./hr	Std. Error
		5.0-8.0 in	8.0-12.0 in	12.0-15.0 in	>15.0 in			
Largemouth bass	2005	14	29	15	9	67	44.67	8.17
	2006	18	28	8	2	56	37.33	8.21
	2007	7	14	8	3	32	21.33	1.45
	2008	24	23	12	1	60	40.00	3.21

Species	Year	Length Group				Total	No./hr	Std Error
		3.0-5.0 in	5.0-8.0 in	8.0-10.0 in	> 10.0 in			
Bluegill	2005	141	62	12		215	143.33	42.10
	2006	181	106	1		288	192.00	23.06
	2007	135	106	11	2	254	169.33	23.79
	2008	114	72	4		190	126.67	9.49

Species	Year	Length Group				Total	No./hr	Std. Error
		3.0-5.0 in	5.0-8.0 in	8.0-10.0 in	> 10.0 in			
Redear sunfish	2005	0	0	8		8	5.33	2.67
	2006	5	23	3		32	20.67	1.45
	2007	6	19	17	1	43	28.67	3.18
	2008	21	35	8		64	42.67	6.96

Table 89. Length frequency, composition, and number per hour of fish observed during 1.00 hours of 20-minute scuba transects swam at Bottom Lake (Peabody WMA) in July 2006-2008.

Species	Year	Length Group				Total	No./hr	Std. Error
		5.0-8.0 in	8.0-12.0 in	12.0-15.0 in	>15.0 in			
Largemouth bass	2006	23	7	1	2	33	33.00	2.00
	2007	15	25	4	1	45	45.00	2.08
	2008	10	10		2	22	22.00	2.40

Species	Year	Length Group				Total	No./hr	Std Error
		3.0-5.0 in	5.0-8.0 in	8.0-10.0 in	> 10.0 in			
Bluegill	2006	40	59	7	1	107	107.00	3.76
	2007	128	18	19	1	166	166.00	3.93
	2008	132	117	5		254	254.00	9.53

Species	Year	Length Group				Total	No./hr	Std. Error
		3.0-5.0 in	5.0-8.0 in	8.0-10.0 in	> 10.0 in			
Redear sunfish	2006	1	11	16		28	28.00	2.40
	2007	19	45	28	1	93	93.00	6.66
	2008	20	42	12	3	77	77.00	13.13

Table 90. Length frequency, and CPUE (fish/hr) of largemouth bass collected during 0.75 hours of 15-minute diurnal electrofishing runs at Merlin Lake (Peabody WMA) in 2008.

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			
Largemouth bass		1	3	12	12	2	14	34	39	27	11	1	0	0	0	2	2	0	1	1	162	216.00	32.58
Bluegill	3	7	11	19	10	23	10	3													86	114.67	12.72
Redear Sunfish	1	0	0	2	1	2	4	1	1												12	16.00	10.58

Figure 1. Results of Nolin River Lake angler attitude survey conducted April 01-October 31, 2008.

**NOLIN RIVER LAKE ANGLER ATTITUDE SURVEY 2008
(N = 565)**

1. Have you been surveyed this year? Yes - stop survey No – continue
2. Name _____ and Phone number _____ (Optional)
3. Which species of fish do you fish for at Nolin River Lake (check all that apply)?
Bass 71.5% Crappie 44.7% Walleye 10.6% White Bass 9.0% Channel Catfish 10.0% Flathead Catfish 3.2%
Bluegill 9.9% Anything 1.2%
4. Which one species do you fish for most at Nolin River Lake (check only one)? N = 491
Bass 66.0% Crappie 28.9% Walleye 1.0% White Bass 0.8% Channel Catfish 1.8% Flathead Catfish 0%
Bluegill 0.4% Anything 1.0%

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

Bass Anglers

5. What level of satisfaction do you have with bass fishing at Nolin River Lake? N = 383
Very satisfied 53.3% Somewhat satisfied 35.0% Neutral 5.0% Somewhat dissatisfied 6.5% Very dissatisfied 0.3%
No opinion 0%
- 5a. If you responded with somewhat or very dissatisfied in question (5) – what is the single most important reason for your dissatisfaction? N = 26
Number of fish 65.4% Size of fish 30.8% Too many anglers 3.8%

Channel Catfish Anglers

6. What level of satisfaction do you have with the channel catfish fishing at Nolin River Lake? N = 67
Very satisfied 44.8% Somewhat satisfied 29.9% Neutral 14.9% Somewhat dissatisfied 3.0% Very dissatisfied 0.0% No opinion 7.5%
- 6a. If you responded with somewhat or very dissatisfied in question (6) – what is the single most important reason for your dissatisfaction? N = 1
Size of fish 100.0 %

Flathead Catfish Anglers

7. What level of satisfaction do you have with the flathead catfish fishing at Nolin River Lake? N = 38
Very satisfied 36.8% Somewhat satisfied 28.9% Neutral 18.4% Somewhat dissatisfied 0% Very dissatisfied 2.6% No opinion 13.2%
- 7a. If you responded with somewhat or very dissatisfied in question (7) – what is the single most important reason for your dissatisfaction? N = 3
Number of fish 33.3% Size of fish 66.7%
8. Do you noodle or hand grab for flathead catfish at Nolin River Lake? N = 35 Yes 2.9% No 97.1%
- 8a. If yes, how many days per year? N = 2 20 days 50% 200 days 50%
9. Do you support or oppose the use of this method (hand grabbing) of fishing for flathead catfish at Nolin River Lake? N = 40
Support 35% Oppose 25% No opinion 40%
- 9a. If you oppose this method of fishing for catfish, what level of impact do you feel it is having on the flathead catfish population at Nolin River Lake?
N = 0
Very negative Somewhat negative None/Neutral No opinion

Crappie Anglers

10. What level of satisfaction do you have with the crappie fishing at Nolin River Lake? N = 193
Very satisfied 49.2% Somewhat satisfied 35.8% Neutral 7.8% Somewhat dissatisfied 4.7% Very dissatisfied 1.6% No opinion 1.0%
- 10a. If you responded with somewhat or very dissatisfied in question (10) – what is the single most important reason for your dissatisfaction? N = 10
Number of fish 70.0% Size of fish 10.0% Excessive water fluctuation 30.0%

Walleye Anglers

11. What level of satisfaction do you have with the walleye fishing at Nolin River Lake? **N = 57**

Very satisfied **35.1%** Somewhat satisfied **31.6%** Neutral **12.3%** Somewhat dissatisfied **7.0%** Very dissatisfied **0%** No opinion **14.0%**

11a. If you responded with somewhat or very dissatisfied in question (12) – what is the single most important reason for your dissatisfaction? **N = 5**

Number of fish **60.0%** Size of fish **20.0%** Too many anglers **20.0%**

White Bass Anglers

12. What level of satisfaction do you have with the white bass fishing at Nolin River Lake? **N = 52**

Very satisfied **59.6%** Somewhat satisfied **23.1%** Neutral **11.5%** Somewhat dissatisfied **1.9%** Very dissatisfied **0%** No opinion **3.8%**

12a. If you responded with somewhat or very dissatisfied in question (13) – what is the single most important reason for your dissatisfaction? **N = 1**

Number of fish **100.0%**

All Anglers

13. Would you support or oppose removing the "1 fish under" portion of the current 15 inch size limit on largemouth and smallmouth bass at Nolin River Lake? This would result in a straight 15-inch minimum size limit with a daily creel limit of 6 fish. **N = 527**

Support **59.6%** Oppose **17.6%** No opinion **22.8%**

13a. If you do not support removing the "1 fish under" portion of the current 15 inch size limit, what is your primary reason for wanting to keep the 1 fish under 15 inches? **N = 79**

Allow kids to keep **8.9%** Bass tournaments **57.0%** Happy with reg. as it is **3.8%** To eat **20.3%** Doesn't hurt population **10.1%**

14. Would you support or oppose a reduction in the current statewide 30 fish daily crappie creel limit to 20 fish? **N = 502**

Support **47.8%** Oppose **11.4%** No opinion **40.8%**

15. Are you satisfied with the current size and creel limits on all sport fish at Nolin River Lake? **N = 449** Yes **89.8%** No **10.2%**

If **NO**:

15a. If not, which species are you dissatisfied with and what size and creel limits would you prefer?

Bass size (N = 8): 10" (12.5%) 12" (50.0%) 17" (12.5%) 20" (25.0%)

Bass Creel (N = 1): 6 fish (100.0%)

Crappie size (N = 26): 10" (92.3%) 11" (7.7%)

Crappie creel (N = 12): 15 fish (58.3%) 20 fish (41.7%)

Walleye size (N = 2): 12" (50.0%) 18" (50.0%)

16. KDFWR would like your opinion of a proposed statewide regulation that would provide limited protection of trophy-size catfish. Would you support or oppose a regulation where the angler could continue to keep the same number of catfish under 34 inches as in the past but could keep only 1 catfish greater than 34 inches per day?

Support **58.7%** Oppose **4.8%** No opinion **36.5%**

SOUTHWESTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Table 1 summarizes lake sampling conditions in 2008.

Barren River Lake (10,000 acres)

Black Bass

Black bass were collected by diurnal electrofishing in May and results are shown in Tables 2-11. The total black bass catch rate was 167.10 f/h. Largemouth bass accounted for 82% (CPUE=137.17 f/h), spotted bass accounted for 17 % (CPUE=28.17 f/h) and smallmouth bass accounted for 1% (CPUE =1.83 fish/hr) of the bass population sample. Otoliths were taken for age and growth assessment from the spring sample.

Largemouth bass length group catch rates and size structure indices (PSD=69 RSD₁₅=39) were similar to previous year averages (Table 4). The largemouth bass population assessment remains "Good", similar to previous years (Table 5). Largemouth bass achieved 15.0 inches in 4.3 years (calculated from von Bertalanffy growth function; FAST version 3.0). The mean length at capture of age-3 fish rose slightly from 14.1 inches in previous years to 14.4 in (Tables 6 and 8).

The spotted bass population continues to be low density (28.17 f/h), but high quality (PSD=64 RSD₁₄=21). Spotted bass reached a quality length (11.0 in) by age 3 and a preferred length (14.0 in) by age 6 (Tables 7 and 9). The smallmouth population statistics are unknown due to the chronic small sample sizes.

Fall diurnal black bass sampling in early October indicated a higher than average number (358.00 f/h) of young of the year largemouth (Tables 10-11). Age-0 largemouth catch rate greater than 5.0 in (59.67 f/h) was the second highest in the past 7 years. Spring conditions were favorable for a good year class as drought of 2007 allowed a good stand of vegetation (Knotweed - an emergent wetland plant) to develop on mud flats and shallow areas not inundated by water. During 2008, much of the debris (dead, but upright stands of Knotweed) remained and may have facilitated survival/development of the 2008 year class. The last excellent year class was in 2003. Small sample size of larger bass, likely due to early sample time, prohibited calculation of length-weight equations.

Crappie

Trap netting for crappie resulted in the collection of 362 total crappie (339 black crappie and 23 white crappie) in 106 net nights (Tables 12-16). Most crappie fell within the 8.0-10.0 in classes. The crappie population remains dominated by black crappie (94 %). White crappie recruitment remains chronically low (since 2000). Assessment for black crappie was "Fair" and white crappie was also "Fair". The combined crappie assessment was "Fair" as it has been for past years (Tables 14 -16). Small sample size of white crappie negated calculation of the length-weight equation. The following length-weight equation for black crappie should be used with caution due to the small sample size (n=188).

$$\text{Black Crappie } \text{Log}_{10}(\text{weight}) = -3.40172 + 3.15671 * \text{Log}_{10}(\text{Length})$$

White Bass / Hybrid Stripped Bass

Gill netting for white bass and hybrid striped bass was completed in November. Good numbers of hybrids were collected; however, white bass population numbers continue to be low. Sampling results can be found in the Lake Fisheries Research Section annual performance report.

Briggs Lake (18 acres)

Black Bass

Diurnal largemouth electrofishing samples were collected on April 22 (Table 17). Largemouth catch rate (490.00 f/h; Table 18) eclipsed last year's previous high. Recent strong year classes, 2005 and 2006, have caused a stockpiling of fish below 12.0 in (PSD=15; Table 19). Although the PSD value is low, these population parameters for largemouth bass are excellent for accomplishing the goals set in the Briggs strategic management plan (BRGSMP 2009). As the primary management plan for this lake is based around the sunfish population.

Sunfish

The sunfish population was sampled by diurnal electrofishing on the May 16 (Tables 20-25). The bluegill assessment fell to "Good" due to a decrease in fish greater than 6.0 in. This decrease in larger fish could be due to sample timing. Larger bluegill and redear sunfish were noted in earlier bass samples, but these fish were virtually absent at the time of sunfish sampling. The bluegill size structure remains good with a PSD of 45. Redear assessment and population values were much lower than previous years; again, possibly due to timing of the sample. Only 4 of the 10 goals were met in the BRGSMP 2009: length at capture of age 2 bluegill of 5.0 in, mean length at capture of age 3 redear of 8.0 in, largemouth bass CPUE of 300.00 f/h and total CPUE of greater than 6.0 in sunfish of 300.00 f/h. Contribution of warmouth (164.00 f/h) help to achieve the last goal stated (6.0 in plus sunfish CPUE > 300.00 f/h).

Spurlington Lake (25 acres)

Black Bass

Results of nocturnal largemouth bass electrofishing are in Tables 26-28. The overall catch rate returned to normal levels (392.00 f/h) from last years (184.00 f/h). Catch rate (32.00 f/h) for > 15.0 in fish was the second highest in the past 7 years. The bass population remains diverse (PSD=57).

Sunfish

Results of bluegill and redear diurnal sampling on May 13 are in Tables 29-34. The overall CPUE fell from last year, due to a decrease in the catch rate of fish < 3.0 in. The bluegill assessment remained "Good" as in previous years. Otoliths were taken from the spring sample for an age and growth assessment. Bluegill reach "quality size" (6.0 in) between 3 and 4 years. No redear were noted in spring sunfish sampling or fall bass sampling despite stockings in 2007 and 2008.

Green River Lake (8,210 Acres)

Muskie

Similar to the past three years, muskellunge sampling was limited due to unsuitable sampling conditions (water clarity too high or high water levels); however, limited results are presented in Tables 35-36. Since the change to reservoir drawdown and guide curve in 2003, historical sampling conditions (stained – muddy water) have been limited (4 of 6 years) and may warrant a change in sampling strategy to improve sampling efficiency and future data comparability.

Black Bass

Nocturnal black bass sampling (Tables 37-40) was conducted on the upper and lower sites of each lake arm (Green River and Robinson Creek) on April 30. Overall largemouth CPUE (107.00 f/h) was bolstered by a better than average 2007 year-class and the persisting dominance of the strong 2004 year class.

Homes Bend area (upper Green River arm) largemouth catch rate doubled from previous year (178.00 f/h). Majority of age-1 largemouth were collected in this area. All other areas were similar to the previous year. Comparatively, spotted bass catch rates nearly doubled in all areas compared to previous years.

Overall largemouth bass size structure remains diverse (PSD = 69; RSD = 36) with the strong 2004 year class bolstering a higher than average PSD. Population assessment for largemouth bass remained "Good", similar to most years.

Fall YOY sampling (Tables 41-42) suggests a fair 2008 year class (overall CPUE = 23.67 f/h; ≥ 5.0 in = 11.50 f/h). Supplementary stocked (16,000; 2 fish/acre) 5.0 in largemouth added in the fall of 2006 have never been detected.

Crappie

Results from trap netting for white crappie are presented in Tables 43-46. The moderate year classes of 2005 and 2006 appear to be carrying the fishery. However, crappie growth in 2008 was the poorest on record for age-2+ (7.7 in) fish. This poor growth rate coupled with two years of poor recruitment (2007 and 2008) dropped the crappie population assessment for Green River Lake to its first ever "Poor" rating. YOY CPUE (0.86 f/nn) suggest another poor year class; however, age-0 CPUE has not always been a reliable indicator of year class strength. The length-weight equation for white crappie is:

$$\text{Log}_{10}(\text{weight}) = -3.70105 + 3.35420 \times \text{Log}(\text{length})$$

Walleye/White bass

Results of the experimental gill net sampling for white bass and walleye are shown in Tables 47-51. The white bass population reached rock bottom as no white bass were collected in 2008. Older fish dominated the last year's (2007) gillnet sample, with 2005 being the last decent year class. Anglers reported having caught fish in the spring of 2008 spawning run; however, anglers also reported a white bass die off in late spring/early summer 2008 followed by very poor summer fishing success. Walleye CPUE (5.07 f/nn) fell slightly from last year (7.00 f/nn) as population continues to be carried by the 2006 year class. The walleye population assessment dropped back to a "Good" rating as the overall catch rate and age-1 fish dipped from 2007. Walleye growth rates remain very good as they achieved 19.5 in by age-2+ at capture. The recent establishment of alewives and their effect on white bass and walleye population dynamics is unclear. Alewives were first noted in this system in 2004 gill net by-catch. The length-weight equation for walleye is:

$$\text{Log}(\text{weight}) = -3.80759 + 3.31194 \times \text{Log}(\text{length})$$

Shanty Hollow Lake (136 acres)

Black Bass

Nocturnal bass sampling results are shown in Tables 52-55. Overall CPUE of largemouth (297.50 f/h) was similar to previous years. Size structure index (PSD = 24) improved slightly from the previous year with recruitment of the stronger 2004 and 2005 year classes to the 12.0-14.0 length group. Recruitment of 2007 year class (age-1 CPUE = 30.00 f/h) appears moderate at best. The largemouth population assessment returned to "Good", similar to previous years.

Sunfish

Sunfish sampling results are shown in Tables 56-65. Bluegill CPUE (368.00 f/h) dipped from last years all-time high (614.00 f/h) due to a decrease in fish less than 6.0 in. Bluegill achieved 6.0 inches in 2.6 years, similar to 2002 age data. The bluegill assessment remains "Good" similar to previous years. The redear population remained at lower density (CPUE = 25.23 f/h) and maintained a "Fair" assessment rating. Redear achieved 8.0 in at approximately age 3 ½.

Shanty Hollow Lake experiences notable water level fluctuations due to a leak. Water level fluctuations range from 2-12 feet below normal pool within a year depending on rainfall. Erratic population shifts in sunfish and bass whether due to heightened predation, spawning interruptions, etc., may be symptoms of these frequent water level changes.

Marion County Lake (25 acres)

Black Bass

Results of nocturnal largemouth bass electrofishing are shown in Tables 66-69. The largemouth population is dominated by fish less than 12.0 in (PSD=8). A strong year class in 2007 will likely keep the size structure dominated by smaller fish. However, the catch rate of ≥ 15.0 in fish continues to gain momentum as CPUE remained in double digits for the third consecutive year.

Sunfish

Diurnal electrofishing results for bluegill and redear on May 15 are presented Tables 70-75. Bluegill overall CPUE (274.00 f/h) dropped considerably from previous years due to lower numbers of the 3.0-5.0 in length group. The bluegill assessment increased to "Good" this year, due to a marked increase in the CPUE of ≥ 6.0 in fish. Redear overall CPUE (75.00 f/h) doubled from last year with solid contributions from two good year classes. Redear reclaimed an "Excellent" assessment rating.

Nolin River Lake Tailwater Creel Survey

Results of a daytime creel survey conducted on 0.5 miles of tailwater directly below Nolin River Lake dam are in Tables 76-83. Due to budget constraints, survey was conducted over a 1-hour period in either early morning, midday or end of the day (front or back of scheduled lake survey).

Anglers made an estimated 3,678 trips and fished for 18,941 hours with the average trip approximating 5.15 hours. Compared to other tailwater creels in the southwest district (Barren & Green) angler hours were nearly half that at Barren (31,522 hours), but nearly twice that of Green (9,484 hours). Additionally, average trip length was nearly three times that noted at Barren (1.72 hours) and Green (1.85 hours). Explanation for possible skewed trip length may lie with the difference in creel design, as Barren and Green tailwater surveys were conducted over 4-hour periods with random counts.

Similar to other surveys, "Anything" anglers expended the most effort (34%) followed closely by catfish anglers (30%), trout (11%), walleye (11%) and crappie (8%) anglers. Fishing success appeared strongly related to lake discharge as Nolin River Lake was essentially at base flow (100 CFS or less) from mid-June to mid-October. Trout seemingly did little to buffer the lack of fish emigration from the lake, as only approximately 700 trout were caught from July through September. Low angler use of the April trout stocking (47 fish caught) was likely due to high discharge rates and suspected flushing of trout downstream of the survey area and high angler use area. The white bass fishery was remarkably seasonal (April and May only), especially given their high abundance in the lake. The Green River Tailwater white bass fishery lasted well into July, despite a longer period of low discharge (late-May through October). Overall angler catch rate (0.65 f/h) was similar to other surveys (Barren – 0.66 f/h, Green – 1.09 f/h). However, overall harvest rate (0.22 f/h) was at least half that experienced at other tailwaters (Barren – 0.44 f/h Green – 0.50 f/h).

Table 1. Lake sampling conditions in the Southwestern Fisheries District in 2008.

Lake	Date	Species	Weather	Surface water temp.(F)	Conductivity (umhos)	Secchi (in.)	Comments
Barren River	30-Apr	Bass	Mild	65-70	150-155	54	2.5-ft above summer pool
	17-Sep	YOY bass	Calm	73-74			2-ft below summer pool & stable
	28-Oct	Crappie	Clear	50-57			6.5-ft below summer pool & falling 1/2-ft. per day
Green River	4-Nov	Morones	Calm	54			9-ft below summer pool & falling 1/2-ft. per day
	1-Feb	Muskie	Variety	41-45	80-100		3.5-ft below to 4.5-ft above summer pool
	8-May	Bass	Clear & mild	63-66	110	44	1.7-ft below summer pool & stable
	2-Oct	YOY bass	Sunny & calm	72		36-84	1.5 feet below summer pool & stable
	18-Nov	White bass & walleye	Clear & breezy	53-54			3-feet below summer pool & stable. On tailend of turnover
	3-Dec	Crappie	Clear & breezy	41-45			4-feet below summer pool & dropping 1/2-ft per day
Briggs	22-Apr	Bass	Clear	68		50	
	16-May	Bluegill & redear	Partly sunny	64		72	
Manion Co.	25-Sep	YOY bass	Sunny	74	150		
	29-Apr	Bass	Clear & cool	64	110	36	mid-size bass 10-13" thin
	13-May	Bluegill & redear	Sunny	66	110	55	
	9-Oct	YOY bass		68		72	
	24-Apr	Bass	Clear	69	140	49	
Spurlington	13-May	Bluegill	Sunny	65	140	28	
	9-Oct	YOY bass		68		72	
Shanty Hollow	23-Apr	Bass	Clear	68		59	
	19-May	Bluegill & redear		66	95	30	1-ft above normal pool
	2-Oct	YOY bass		70		25	Lake 9-foot below summer pool

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 during early May (5-7, 9) 2008.

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				
Peninsula	Smallmouth bass					1					1	1	1	2	2	1	1		10	6.67	5.70		
	Spotted bass	5	2	2	3	10	9	3	9	13	14	19	15	6	1				111	74.00	26.41		
	Largemouth bass	3	33	34	30	15	13	5	15	9	9	10	15	27	11	18	2	2	253	168.67	24.83		
Beaver Creek	Smallmouth bass																						
	Spotted bass					1	1		1										4	2.67	1.76		
	Largemouth bass	4	9	11	11	11	9	12	10	16	27	16	18	14	11	9	2	2	181	120.67	13.38		
Peter Creek	Smallmouth bass																		1	0.67	0.67		
	Spotted bass																		38	25.33	2.91		
	Largemouth bass	5	4	20	16	11	6	11	10	9	6	14	18	17	24	12	10	1	196	130.67	13.78		
Wainut Creek	Smallmouth bass																						
	Spotted bass	1																	16	10.67	6.77		
	Largemouth bass	1	5	9	8	8	8	7	17	25	19	14	16	20	14	16	4	5	193	128.67	34.97		
TOTAL	Smallmouth bass																		11	1.83	1.49		
	Spotted bass	5	3	2	4	16	17	11	12	20	22	25	23	8	1				169	28.17	10.20		
	Largemouth bass	8	42	68	66	45	36	35	52	59	61	54	67	78	60	55	18	10	823	137.17	11.48		

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Table 3. Spring diurnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Barren River Lake during April, May and early March since 1997.

Year	Length Group											
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in		≥20.0 in		Total	
	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error
1997	6.67	1.40	31.11	5.23	48.40	6.44	49.30	6.48	3.33	0.67	135.60	11.61
1998	17.20	4.15	11.40	2.68	23.20	3.10	32.20	2.66	1.20	0.44	83.80	8.27
1999	10.67	2.40	31.33	5.62	41.67	6.90	36.33	4.66	2.33	0.64	120.80	11.16
2000	8.29	1.67	24.14	3.45	33.00	3.19	27.29	2.42	1.43	0.51	92.70	7.29
2001	11.81	1.64	42.29	4.02	49.33	6.34	61.90	4.10	1.14	0.40	165.30	9.60
2002	12.55	2.24	22.36	2.87	30.36	4.03	37.64	4.22	1.27	0.41	102.91	9.50
2003	21.69	3.42	22.46	3.47	20.46	2.90	39.54	4.71	0.31	0.21	104.15	10.58
2004	47.66	13.97	37.66	6.25	16.67	3.96	18.44	3.25	0.67	0.47	120.22	22.15
2005	17.67	2.93	66.00	7.73	31.50	4.65	36.83	3.36	2.00	0.68	152.00	8.62
2006	22.83	4.71	46.17	6.88	57.17	9.80	44.00	5.96	1.33	0.42	170.17	21.78
2007	12.67	3.09	44.17	10.94	37.67	5.00	37.17	5.84	1.00	0.58	131.67	17.03
2008	38.17	7.78	30.33	4.57	30.33	3.08	38.33	3.84	1.50	0.56	137.17	11.48
Average	18.99		34.12		34.98		38.25		1.46		126.4	

swdbr:bb.D97-D08

Table 4. PSD and RSD values obtained for each black bass species collected during 6 hours (12 runs, 0.50-hour) of spring diurnal electrofishing at each area of Barren River Lake in early-May 2008. 95% confidence intervals are in parentheses.

Area	Species	No. ≥ 8.0 in	PSD (\pm 95% CI)	RSD ^A (\pm 95% CI)
Peninsula	Largemouth bass	138	70 (7)	45 (8)
	Spotted bass	99	69 (9)	22 (8)
	Smallmouth bass	10	90 (20)	80 (26)
Beaver Creek	Largemouth bass	146	68(8)	26(7)
	Spotted bass	3	33 (65)	*
	Smallmouth bass	0	*	*
Peter Creek	Largemouth bass	140	74 (7)	47 (8)
	Spotted bass	38	53 (16)	24 (10)
	Smallmouth bass	0	*	*
Walnut Creek	Largemouth bass	170	66 (8)	38 (8)
	Spotted bass	15	67 (25)	6 (13)
	Smallmouth bass	0	*	*
Total	Largemouth bass	594	69 (3)	39 (4)
	Spotted bass	155	64 (7)	21(6)
	Smallmouth bass	10	90 (20)	80 (26)

^A Largemouth bass = RSD₁₅, spotted bass and smallmouth bass = RSD₁₄.

* No fish of sufficient size were collected during sampling.

swdbrlbb.d08

Table 5. Population assessment of largemouth bass based on spring sampling at Barren River Lake from 2002-2008.

Parameter	2002		2003		2004		2005		2006		2007		2008	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age-3 at capture	14.1	4	14.1	4	14.1	4	14.1	4	14.1	4	14.1	4	14.40	4
Spring CPUE age-1	14.95	1	19.60	1	26.90	2	13.48	1	17.52	1	9.67	1	44.45	3
Spring CPUE 12.0-14.9 in	30.36	3	20.46	2	16.67	2	31.50	3	57.17	4	37.67	4	30.33	3
Spring CPUE \geq 15.0 in	37.64	4	39.54	4	18.44	3	36.83	4	44.00	4	37.17	4	38.33	4
Spring CPUE \geq 20.0 in	1.27	2	0.31	2	0.67	2	2.00	2	1.33	2	1.00	2	1.50	2
Instantaneous Mortality (z)														
Annual Mortality (A) %														-0.62
Total Score		14		13		13		14		15		15		16
Assessment Rating		Good		Good		Good		Good		Good		Good		Good
swdbrlbb.D02-D08														46.2

Table 7. Mean back-calculated length (in) at each annulus of spotted bass collected by electrofishing at Barren River Lake from May 2008, including the range in length of spotted bass at each age and the 95% confidence interval for each age class.

Year-Class	N	Age																		
		1	2	3	4	5	6	7	8	9	10									
2007	8	7.7																		
2006	42	4.5	8.5																	
2005	20	5.7	9.4	11.7																
2004	49	5.1	8.7	11.3	13.0															
2003	10	5.2	8.5	10.7	12.3	13.6														
2002	4	5.0	9.3	11.5	12.9	14.0	14.6													
1998	1	6.0	6.6	7.5	9.0	9.9	10.5	11.7	12.9	13.5	15.0									
Mean	134	5.2	8.7	11.3	12.8	13.4	13.8	13.8	12.9	13.5	15.0									
Smallest		2.2	5.9	7.5	9.0	9.9	10.5	10.5	12.9	13.5	15.0									
Largest		8.6	12.7	15.0	17.5	15.0	15.4	15.4	12.9	13.5	15.0									
Std. Error		0.1	0.1	0.1	0.2	0.3	0.9	0.9	12.1	13.5	15.0									
Low 95% CI		5.0	8.5	11.0	12.5	12.7	12.1	12.1	12.9	13.5	15.0									
High 95% CI		5.3	9.0	11.6	13.2	14.1	15.4	15.4	12.9	13.5	15.0									

Otoliths were used to make age determinations. Intercept = 0.

swdbrlag.d08

Table 8. Age frequency and CPUE (fish/hr) of largemouth bass collected during electrofishing at Barren River Lake during May 2008.

Age	Inch Class																				Total	Percent	CPUE	Std. Error
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
1	8	42	68	66	44	27	11	2												267	32	44.45	8.06	
2					1	9	24	50	59	42	10	2	2							202	24	33.59	5.12	
3										19	35	41	16	8	10					129	16	21.50	1.90	
4										8	8	19	48	33	21	9	1			139	17	23.25	2.32	
5												4	11	15	16	5	6	1		58	7	9.64	0.78	
6															3	1				5	1	0.78	0.12	
7														5		1	1			8	1	1.36	0.18	
8															3	2				6	1	1.03	0.17	
9															3	1				5	1	0.78	0.12	
10																	2	1		4	0	0.58	0.19	
13																		1		1	0	0.21	0.08	

Total	45	36	35	35	52	59	61	54	66	78	60	55	18	10	9	823	100
%	7	4	4	4	6	7	7	7	8	9	7	7	2	1	1	100	

swdbrlbb.d08; swdbrlag.d08

Table 9. Age frequency and CPUE (fish/hr) of spotted bass collected during electrofishing at Barren River Lake during May 2008.

Age	Inch Class											Total	Percent	CPUE	Std. Error	
	6	7	8	9	10	11	12	13	14	15	16					
1	1	3	4										8	5	1.43	0.39
2	3	13	13	11	4		1						45	28	7.44	2.19
3					4	8	7		4	1			24	15	4.01	1.44
4					4	11	13	18	14	2	1		63	39	10.52	4.63
5						1		7	3	3			14	9	2.23	1.24
6									3	2			5	3	0.72	0.40
7													0	0		
8													0	0		
10										1			1	1	0.15	0.10
Total	4	16	17	11	12	20	21	25	24	9	1		160	100		
%	3	10	11	7	8	13	13	16	15	6	1		100			

swdbrlbb.d08; swdbrlag.d08

Table 10. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours (12-0.50-hour runs) of diurnal electrofishing at Barren River Lake in October 2008.

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	9	6			1	1												18	12.00	6.00	
	Spotted bass	38	11			5	14	6	5	1	1		1						82	54.67	16.59	
	Largemouth bass	199	17	2	17	9	16	10	14	15	9	3	5		1	16		1	319	212.67	59.07	
Beaver Creek	Smallmouth bass																					
	Spotted bass		3			1	2	5	1	2			1		1				16	10.67	1.33	
	Largemouth bass	102	296	36	24	56	43	27	3	18	16	9	7	3	1	8	1	1	652	434.67	22.93	
Peter Creek	Smallmouth bass		5					1		1									7	4.67	1.76	
	Spotted bass	16	34			1	1	1	7	5	3	1	3	1				73	48.67	12.67		
	Largemouth bass	80	123	10	15	19	10	4	14	14	13	3	14	6	1	1	2	329	219.33	34.26		
Walnut Creek	Smallmouth bass																					
	Spotted bass					1		2	1	1	1		1						7	4.67	2.67	
	Largemouth bass	234	335	55	46	46	36	7	13	36	14	5	6	3	6	1	1	850	566.67	44.76		
TOTAL	Smallmouth bass	9	11			1	1	1	1	1								25	4.17	1.99		
	Spotted bass	54	48			8	17	14	14	9	4	2	4	3	1			178	29.67	8.06		
	Largemouth bass	615	771	103	102	130	105	48	44	83	52	20	31	15	6	16	4	2	2150	358.33	48.65	

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Table 11. 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.

Year-class	Age 0 ^A		Age 0 ^A		Age 0 \geq 5.0 in ^A		Age 1 ^B	
	Mean length	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error
2002	4.0	0.05	171.67	25.76	34.17	4.06	26.90	3.71
2003	4.4	0.04	198.00	30.81	84.00	18.74	44.90	13.25
2004	3.7	0.04	108.44	22.20	20.78	3.85	11.20	2.51
2005	3.7	0.04	160.67	25.63	25.33	4.20	17.50	3.63
2006	3.4	0.02	299.67	87.22	21.83	5.62	18.00	4.78
2007	4.2	0.06	61.50	12.80	14.00	2.47	13.79	1.49
2008	3.8	0.03	307.53	46.86	59.67	10.53		

^A Data collected by fall (October) diurnal electrofishing. Mean lengths were determined by a analysis of otolith, removed from a subsample of LMB <9.0 in, and extrapolated to the entire catch of the fall sample.

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

swdbrlbb.D02 - D08

swdbrlag.D02 - D08

swdbrly.D02 - D08

Table 12. Length frequency and CPUE (fish/mn) of each inch-class of white and black crappie collected by trap-net (106 net-nights) at Barren River Lake from in late-October 2008.

Location	Species	Inch Class									Total	CPUE	Std. Error	
		3	4	5	6	7	8	9	10	11				
Walnut Creek	White Crappie		6	2		1				1	10	0.19	0.07	
	Black Crappie	69	37	2	5	9	19	28	25	7	201	3.87	0.98	
Beaver Creek	White Crappie		5	6						1	1	13	0.24	0.10
	Black Crappie	40	5			4	15	42	24	8	138	2.56	0.62	
Total	White Crappie		11	8		1				2	1	23	0.22	0.66
	Black Crappie	109	42	2	5	13	34	70	49	15	339	3.20	0.57	

swdbrltn.d08

Table 13. Proportional stock density (PSD) and relative stock density (RSD_{10}) of white and black crappie collected by trap-nets (106 net-nights) at Barren River lake from late-October 2008. Numbers in parentheses represent 95% confidence intervals.

Location	Species	Number ≥ 5.0 in	PSD	RSD_{10}
Barren River Lake	White Crappie	12	25(25)	25(25)
	Black Crappie	188	89(5)	34(7)

swdbrltn.D08

Table 14. Black crappie assessment from trap netting at Barren River Lake from 1985-2008.

Year	Black crappie												Total score	Rating		
	CPUE excluding age 0				CPUE age 0				CPUE ≥8.0 in						Mean length age-2 at capture	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score			Value	Score
1985	3.53	1	0.72	1	0.33	1	0.78	1	7.4	1			5	P		
1986	10.72	2	6.94	3	3.83	2	2.80	1	8.7	2			10	F		
1987	3.27	1	1.90	1	2.82	1	1.34	1	9.6	4			8	F		
1988	6.18	2	5.68	2	0.10	1	0.44	1	9.3	3			9	F		
1989	9.19	2	1.48	1	7.51	3	5.90	2	8.2	1			9	F		
1990	29.12	4	26.11	4	0.10	1	1.92	1	8.8	2			12	F		
1991	3.53	1	0.95	1	0.86	1	3.55	1	7.6	1			5	F		
1992	9.20	2	3.49	2	0.07	1	4.24	2	7.7	1			8	F		
1993	12.61	2	1.06	1	0.29	1	9.13	2	8.1	1			7	P		
1994	0.74	1	0.10	1	0.82	1	0.70	1	8.8	2			6	P		
1995	7.39	2	6.54	2	1.29	1	0.53	1	8.9	2			8	F		
1996	9.03	2	0.79	1	0.48	1	4.16	2	7.8	1			7	P		
1997	9.12	2	1.45	1	0.87	1	5.98	2	7.6	1			7	P		
1998	1.71	1	0.12	1	1.79	1	1.56	1	8.2	1			5	P		
1999	4.66	1	3.82	2	0.26	1	0.85	1	8.6	2			7	P		
2000	1.81	1	0.18	1	0.22	1	0.65	1	7.8	1			5	P		
2001	5.72	2	0.33	1	0.41	1	4.47	2	7.6	1			7	P		
2002	4.58	1	1.02	1	3.09	2	3.34	1	8.7	2			7	P		
2003	2.37	1	1.19	1	5.35	2	0.89	1	9.7	4			9	F		
2004	6.90	2	4.36	2	0.65	1	2.20	1	9.2	3			9	F		
2005*	6.40	2	2.30	1	2.00	1	4.40	2	9.1	3			9	F		
2006*	2.70	1	1.40	1	0.60	1	1.30	1	8.9	3			7	P		
2007	6.59	2	3.23	2	0.16	1	1.30	1	8.5	2			8	F		
2008*	1.77	1	0.19	1	1.43	1	1.58	1	9.7	4			8	F		

* Age assessment data extrapolated from previous age data
swdbrltn.D85 - D08

Table 15. White crappie assessment from trap netting at Barren River Lake from 1985 - 2008.

Year	White crappie												Total score	Rating		
	CPUE excluding age 0				CPUE age 1				CPUE age 0						Mean length age-2 at capture	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score			Value	Score
1985	30.98	4	24.40	4	0.42	1	2.20	1	9.4	3	13	G				
1986	13.56	3	3.61	2	1.91	1	8.87	2	9.0	2	10	F				
1987	3.99	1	1.26	1	0.41	1	2.48	1	10.8	4	8	F				
1988	3.07	1	2.49	1	0.24	1	2.48	1	11.1	4	8	F				
1989	4.15	1	1.69	1	3.25	2	2.56	1	11.0	4	9	F				
1990	22.83	4	20.80	4	0.50	1	13.38	2	10.8	4	15	G				
1991	30.98	4	0.52	1	0.98	1	8.86	2	9.8	4	12	F				
1992	6.82	2	5.09	2	0.07	1	4.04	2	11.5	4	11	F				
1993	5.77	2	0.59	1	0.04	1	5.22	2	10.0	4	10	F				
1994	0.66	1	0.11	1	0.65	1	0.44	1	10.6	4	8	F				
1995	7.95	2	7.69	3	0.64	1	5.47	2	11.5	4	12	F				
1996	6.34	2	0.80	1	1.40	1	5.59	2	9.7	4	10	F				
1997	6.71	2	5.12	2	1.04	1	5.16	2	10.2	4	11	F				
1998	1.22	1	0.68	1	2.03	1	0.93	1	10.9	4	8	F				
1999	6.48	2	5.91	2	0.54	1	2.93	1	10.9	4	10	F				
2000	2.50	1	0.32	1	0.03	1	2.38	1	9.3	3	7	P				
2001	1.58	1	0.51	1	0.21	1	1.34	1	10.5	4	8	F				
2002	1.41	1	0.29	1	1.16	1	0.80	1	10.7	4	8	F				
2003	1.37	1	1.02	1	0.43	1	1.05	1	11.5	4	8	F				
2004	1.55	1	0.88	1	0.16	1	1.29	1	11.1	4	8	F				
2005*	0.70	1	0.60	1	0.01	1	0.70	1	11.0	4	8	F				
2006*	0.30	1	0.20	1	0.00	0	0.20	1	10.6	4	7	P				
2007	0.37	1	0.32	1	0.80	1	0.29	1	11.2	4	8	F				
2008	0.03	1	0.01	1	0.18	1	0.03	1	10.8	4	8	F				

* Age Assessment data extrapolated from previous age data

Table 16. Population assessment for all crappie from Barren River trap-net data collected from 2001-2008.

Parameter	2006		2007		2008	
	Value	Score	Value	Score	Value	Score
Population Density (CPUE age-1 and older crappie)	2.90	1	6.96	2	1.80	1
Recruitment (CPUE age-1)	1.60	1	3.58	2	0.20	1
Recruitment (CPUE age-0)	0.60	1	0.96	1	1.61	1
Size Structure (CPUE >8.0 in)	1.50	1	1.59	1	1.61	1
Growth (Mean length age-2 at capture)	10.2	4	8.6	2	9.8	4
Instantaneous Mortality (Z)			-1.586		-1.39	
Annual Mortality (A)%			79.9		75.3	
Total Score:		8		8		8
Assessment Rating:		Fair		Fair		Fair

swdbrltn.D06 - D08

Table 17. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 0.50 hours (4runs; each 0.125 hours) of nocturnal electrofishing at Briggs Lake on 22 April 2008.

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	
Largemouth bass	3	16	25	33	10	15	59	59	15		3	1					2	1	3	245	490.00	30.88

swdbrgbb.D08

Table 18. Spring nocturnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Briggs Lake during late-April to early May 2000-2008.

Year	Length Group								Total	
	<8.0 in		8.0-11.9 in		12.0-14.9 in		>15.0 in			
	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error
2000	27.94	8.10	92.63	19.12	64.71	12.01	10.29	2.82	195.60	35.97
2001	120.59	21.57	73.53	10.87	41.18	9.30	5.88	4.16	241.00	24.96
2002	27.45	10.38	109.80	8.55	39.22	7.07	21.57	5.19	202.00	17.48
2003	28.85	13.82	175.00	39.02	19.23	4.97	26.92	4.97	260.00	51.07
2004	11.54	4.97	117.30	3.68	51.92	10.59	7.69	3.14	196.00	20.26
2005	46.00	6.83	194.00	21.26	28.00	5.16	26.00	5.03	294.00	27.40
2006	56.00	4.38	171.20	9.67	25.60	4.66	11.20	5.43	264.00	12.13
2007	38.00	6.83	412.00	32.41	18.00	2.00	2.00	2.00	470.00	31.39
2008	154.00	16.12	286.00	19.70	36.00	6.93	14.00	6.83	490.00	30.88

swdbrgbb.D00 - D08

Table 19. PSD and RSD₁₅ values obtained for largemouth bass collected during 0.50 hours (4- 0.125-hour runs) of spring nocturnal electrofishing at Briggs Lake on April 22, 2008. 95% confidence intervals are in parentheses.

Species	No. ≥8.0 in	PSD (+ 95% CI)	RSD ₁₅ (+ 95% CI)
Largemouth bass	168	15 (5)	4 (3)

swdbrgbb.D08

Table 20. Length frequency and CPUE (fish/hr) of bluegill and redear collected by diurnal electrofishing at Briggs Lake on 16 May 2008.

Species	Inch Class									Total	CPUE	Std. Error
	1	2	3	4	5	6	7	8	9			
Bluegill	48	96	26	10	17	10	25	8		240	384.00	96.23
Redear	1	2						1	1	5	8.00	3.58
Warmouth	2	5		1	10	39	23	2		82	164.00	17.74

swdbrgbg.D08

Table 21. Spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Briggs Lake from early-mid May 2005-2008. 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	14.00 (14.00)	80.00 (16.33)	84.00 (14.79)	18.00 (8.25)	196.00 (12.44)
2006	4.00 (2.31)	86.00 (33.53)	100.00 (42.90)	52.00 (14.00)	242.00 (72.07)
2007	8.00 (4.38)	83.20 (9.93)	84.80 (26.12)	25.60 (9.93)	201.60 (33.70)
2008	230.40 (89.78)	84.80 (32.16)	56.00 (20.24)	12.80 (5.43)	384.00 (96.23)

swdbrgbg.D05 - D08

Table 22. Spring electrofishing CPUE (fish/hr) for each length group of redear sunfish collected at Briggs Lake during early-mid May 2005-2008. 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	
2005	0.00	14.00 (8.87)	2.00 (2.00)	4.00 (4.00)	0.00	20.00 (6.93)
2006	4.00 (2.31)	2.00 (2.00)	70.00 (8.25)	22.00 (6.00)	2.00 (2.00)	98.00 (10.52)
2007	0.00	8.00 (3.60)	62.40 (13.00)	12.80 (6.50)	1.60 (1.60)	83.20 (16.90)
2008	1.60 (1.60)	3.20 (1.96)	*	3.20 (1.96)	*	8.00 (3.58)

* No fish of sufficient size were collected during sampling.

swdbrgbg.D05 - D08

Table 23. Proportional stock density (PSD) and relative stock density (RSD₈) of bluegill and redear collected by diurnal electrofishing at Briggs lake on 16 May 2008. Numbers in parentheses represent 95% confidence intervals.

Species	N	PSD	RSD
Bluegill	96	45 (10)	8 (6)
Redear	2	*	*

* No fish of sufficient size were collected during sampling.

swdbrgbg.D08

Table 24. Bluegill population assessment for Briggs Lake 2006 - 2008.

Parameter	2006		2007		2008	
	Value	Score	Value	Score	Value	Score
Growth						
Mean length age-2 at capture	5.4	4	5.1	4	4.1	3
Growth						
Years to 6.0 in	2.3	4	2.5	4	2.5	4
Size Structure						
CPUE \geq 6.0 in	152.00	4	110.40	4	68.80	3
Size Structure						
CPUE $>$ 8.0 in	52.00	4	25.60	4	12.80	3
Total Score:		16		16		13
Assessment Rating:		Excellent		Excellent		Good

swdbrgbg.D06 - D08

Table 25. Redear population assessment for Briggs Lake 2006 - 2008

Parameter	2006		2007		2008	
	Actual Value	Score	Actual Value	Score	Actual Value	Score
Growth						
Mean length age-3 at capture	6.8	4	8.8	4	8.8	4
Growth						
Years to 8.0 in	3.0	4	2.5	4	2.5	4
Size Structure						
CPUE \geq 8.0 in	22.00	4	12.80	3	3.20	1
Size Structure						
CPUE $>$ 10.0 in	2.00	2	1.60	2	0.00	1
Total Score:		14		13		10
Assessment Rating:		Excellent		Good		Fair

swdbrgbg.D06 - D08

Table 26. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 0.50 hours (4-0.125-hour runs) of nocturnal electrofishing at Spurlington Lake during 2008.

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					
Largemouth bass	2	2	9	5	5	12	15	24	24	36	29	17	9	1	1	3	1	1	1	196	392.00	46.65	

swdsp1b.b.D08

Table 27. Spring nocturnal electrofishing CPUE (fish/hr) of each length group of largemouth bass collected at Spurlington Lake during April / early March since 2002.

Year	Length Group									Total	
	<8.0 in			8.0-11.9 in			12.0-14.9 in				≥15.0 in
CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error
2002	21.60	3.90	145.10	14.10	174.50	22.10	35.30	3.40	384.00	32.80	
2003	61.50	14.40	233.90	29.20	123.10	11.40	12.30	3.10	448.00	47.20	
2004	28.90	6.60	200.00	40.60	109.60	10.60	19.20	5.00	372.00	39.80	
2005	42.00	13.20	130.00	26.20	146.00	12.40	20.00	2.30	338.00	23.20	
2006	30.40	11.70	168.00	26.90	137.60	22.70	28.80	7.40	364.80	19.70	
2007	12.00	5.16	92.00	6.93	66.00	6.00	14.00	3.83	184.00	3.27	
2008	46.00	20.75	150.00	26.00	164.00	15.49	32.00	7.30	392.00	46.65	

swdsp1b.b.D02 - D08

Table 28. PSD and RSD₁₅ values obtained for largemouth bass collected during 0.50 hour (4- 0.125-hour runs) of spring nocturnal electrofishing at Spurlington Lake on 24 April 2008. 95% confidence intervals are in parentheses.

Species	No. >8.0 in	PSD (+ 95% CI)	RSD ₁₅ (± 95% CI)
Largemouth bass	173	57 (7)	9 (5)

swdsplbb.D08

Table 29. Length frequency and CPUE (fish/hr) of bluegill collected by diurnal electrofishing at Spurlington Lake on 13 May 2008.

Species	Inch Class								Total	CPUE	Std. Error
	1	2	3	4	5	6	7	8			
Bluegill	31	68	111	104	60	35	25	7	441	882.00	236.25

swdsplbg.D08

Table 30. Diurnal spring electrofishing CPUE (fish/hr) for each length group of bluegill collected at Spurlington Lake from 2005-2008. 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	66.00 (14.38)	216.00 (45.72)	50.00 (15.79)	16.00 (8.64)	348.00 (68.90)
2006	138.00 (47.71)	302.00 (54.69)	46.00 (8.87)	14.00 (2.00)	482.00 (100.18)
2007	496.00 (85.23)	606.00 (73.49)	50.00 (18.29)	4.00 (4.00)	1156.00 (137.39)
2008	198.00 (38.42)	550.00 (145.60)	120.00 (43.20)	14.00 (14.00)	882.00 (236.25)

swdsplbg.D05 - D08

Table 31. Proportional stock density (PSD) and relative stock density (RSD₈) of bluegill collected by diurnal electrofishing at Spurlington Lake on 13 May 2008. Numbers in parentheses represent 95% confidence intervals.

Species	N	PSD	RSD ₈
Bluegill	342	20(4)	2(2)

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Table 32. Bluegill population assessment for Spurlington Lake from 2002-2008.

	2002	2003	2004	2005	2006	2007
Parameter	Score	Score	Score	Score	Score	Score
Mean length age-2 at capture	2	2	2	2	2	2
Years to 6.0 in	4	4	4	4	4	4
CPUE \geq 6.0 in	2	3	3	3	3	3
CPUE \geq 8.0 in	2	4	4	4	3	2
Instantaneous mortality (z)						
Annual Mortality (A)						
Total Score:	14	13	13	13	12	11
Assessment Rating:	Excellent	Good	Good	Good	Good	Good

swdspibg.D02 - D08

Table 33. Mean back-calculated length (in) at each annulus of bluegill collected by diurnal electrofishing at Spurlington Lake on 13 May 2008, including the range in length of bluegill at each age and the 95% confidence interval.

Year-Class	N	Age					
		1	2	3	4	5	6
2007	1	3.1					
2006	23	2.2	3.8				
2005	37	2.3	3.8	5.6			
2004	18	2.4	3.9	5.9	7.4		
2003	5	1.9	3.6	5.3	6.9	7.8	
2002	2	1.6	2.8	4.1	5.4	6.8	7.8
Mean	86	2.2	3.8	5.6	7.1	7.5	7.8
Smallest		1.3	2.6	3.9	5.2	6.5	7.5
Largest		3.5	5.6	7.3	8.0	8.3	8.0
Std. Error		0.1	0.1	0.1	0.2	0.3	0.3
Low 95% CI		2.1	3.7	5.4	6.8	7.0	7.3
High 95% CI		2.4	3.9	5.8	7.4	8.0	8.2

Otoliths were used to make age determinations. Intercept = 0.
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Table 34. Age frequency and CPUE (fish/hr) of bluegill collected during diurnal electrofishing at Spurlington Lake on 13 May 2008.

Age	Inch Class								Total	Percent	CPUE	Std. Error
	1	2	3	4	5	6	7	8				
1	31	68	7						106	24.0	211.88	41.3
2			104	52					156	35.0	312.13	83.12
3				52	60	28	2		142	32.0	284.00	74.50
4						4	20	3	27	6.0	55.38	31.81
5						2	2	3	7	2.0	13.50	8.56
6							2	1	3	1.0	5.13	3.84
Total	31	68	111	104	60	34	26	7	441	100		
%	7	15	25	24	14	8	6	2	100			

swdspibg.D08 swdsplag.D08

Table 35. Length frequency and CPUE (fish/hr) of muskellunge collected with diurnal electrofishing (11 hours; 44 runs; 0.25 hours each) during late-winter/early spring at Green River Lake in 2008.

	Inch Class														Total	CPUE	StdErr								
	13	14	15	23	24	25	26	27	28	30	31	32	33	34				35	36	37	38	39	40	42	43
Muskellunge	1	7	2	1	4	4	8	11	5	3	2	8	2	3	5	3	4	1	2	1	2	1	80	7.27	1.03

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Table 36. Muskellunge population assessment for Green River Lake diurnal late-winter/early spring electrofishing from 1990-2008.

Year	CPUE age-1		CPUE > 20.0 in		CPUE > 30.0 in		CPUE > 36.0 in		CPUE > 40.0 in		Total	Assessment	Rating
	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment			
1990	12.68	4	7.04	3	2.11	2	1.17	3	0.00	0	12	G	
1991	10.19	4	3.86	3	1.38	1	0.38	1	0.15	1	9	F	
1992	2.25	2	6.13	3	1.71	2	0.65	2	0.09	1	10	F	
1993	13.37	4	6.98	3	4.36	4	1.26	3	0.55	4	17	E	
1994	4.11	3	8.94	3	3.9	3	2.25	4	0.93	4	17	E	
1995	15.73	4	6.95	3	2.78	3	0.82	2	0.44	3	15	G	
1996	5.16	3	16.01	4	3.54	3	0.84	2	0.24	2	14	G	
1997	5.80	3	13.03	4	6.81	4	1.18	3	0.53	3	17	E	
1998	9.24	4	9.01	3	5.05	4	1.94	4	0.47	3	18	E	
1999	8.75	3	9.83	3	4.81	4	1.42	3	0.34	3	16	G	
2000	2.57	2	7.64	3	4.18	4	2.03	4	0.78	3	17	E	
2001	10.76	4	6.41	3	4.48	4	1.45	3	0.55	3	17	E	
2002	5.83	3	10.63	4	4.46	4	2.86	4	0.91	4	19	E	
2003	4.49	3	9.88	3	6.20	4	1.71	4	0.82	4	18	E	
2004	6.52	3	8.26	3	5.16	4	1.81	4	0.19	1	18	E	
2005	2.40	2	7.20	3	4.80	4	1.92	4	0.96	4	17	E	
2006	4.74	3	5.48	3	4.30	4	2.22	4	0.74	4	18	E	
2007	3.76	3	4.24	2	1.65	2	1.41	4	0.94	4	15	G	
2008	0.91	1	6.36	3	3.36	3	1.27	3	0.36	3	13	G	

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Table 37. Species composition, relative abundance, and CPUE (fish/hr) of black bass collected during 6.0 hours (12 runs; each 0.50 hours) of nocturnal electrofishing at Green River Lake April 30, 2008.

Area	Species	Inch Class												Total	CPUE	StdErr								
		2	3	4	5	6	7	8	9	10	11	12	13				14	15	16	17	18	19	20	21
Green River Arm		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Holmes Bend	Smallmouth bass								2		1	1	1									5	3.33	0.67
	Spotted bass			11	7	1	16	19	14	8		1										77	51.33	11.85
	Largemouth bass			12	32	30	19	14	12	23	25	21	19	22	13	9	6	5	3	2		267	178.00	47.38
Ramp 1	Smallmouth bass			2	1	1	2	6	1	2	2											17	11.33	7.42
	Spotted bass	1	4	3	1	8	10	3	7	7	14	5	7	2	1							73	48.67	20.34
	Largemouth bass			1	2	1	2	2	5	7	16	7	13	23	17	21	10	4	3	2		136	90.67	3.33
Robinson Creek Arm																								
Smith Ridge	Smallmouth bass							1														1	0.67	0.67
	Spotted bass			1	5	5	7	5	20	11	9	2	1	1	1	1						77	51.33	11.68
	Largemouth bass			1	4	9	5	2	6	6	10	5	6	8	4	10	9	4	2	1		92	61.33	8.82
Lone Valley	Smallmouth bass			6	3	1	4	5	2	1	1	2				1	1					27	18.00	2.31
	Spotted bass	7	10	10	7	15	18	11	22	14	16	17	13	7	4	2						173	115.33	28.50
	Largemouth bass	1	3	3	4	4	4	6	7	5	9	12	8	23	19	14	11	11	1			145	96.67	15.76
TOTAL	Smallmouth bass	8	4	4	2	6	6	12	3	5	3	1	3	1	1	1						50	8.33	2.65
	Spotted bass	8	15	29	20	31	49	53	54	38	39	24	21	10	6	2	1					400	66.67	11.84
	Largemouth bass	1	4	16	42	44	30	24	30	41	60	45	46	76	53	54	36	24	9	1	4	640	106.67	16.97

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Table 38. Spring diurnal electrofishing CPUE (fish/hr) of largemouth bass by length group collected at Green River Lake during early May since 1997.

Year	Length Group											
	< 8.0 in		8.0 - 11.9 in		12.0 - 14.9 in		≥ 15.0 in		≥ 20.0 in		Total	
	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error
1997	3.67	1.04	22.33	2.46	23.33	2.82	23.17	2.10	1.17	0.46	72.50	5.18
1998	33.50	7.66	9.00	1.82	8.83	2.04	17.50	1.84	2.00	0.70	68.83	8.61
1999	21.38	3.76	53.54	7.18	19.38	4.00	14.31	1.66	2.77	0.77	108.62	12.51
2000	2.50	0.89	41.00	4.37	24.17	3.41	14.67	3.37	3.17	0.97	82.33	8.59
2001	10.17	2.50	26.67	2.99	32.17	6.45	12.50	1.50	1.67	0.41	81.50	7.77
2002	5.00	1.14	9.50	1.46	20.50	2.49	13.00	2.46	1.17	0.39	48.00	4.24
2003	5.83	1.38	12.33	2.07	5.83	1.78	18.17	2.96	1.83	0.67	42.17	4.12
2004	17.33	2.74	22.80	2.10	11.60	1.81	15.60	2.55	0.93	0.27	67.33	6.41
2005	67.83	7.98	30.67	2.78	11.67	1.86	16.83	2.52	1.50	0.66	127.00	12.53
2006	15.07	2.01	44.40	3.56	23.07	2.81	18.93	2.13	0.27	0.18	96.17	5.25
2007	3.83	1.03	20.50	2.51	33.67	5.78	22.17	3.61	0.50	0.26	80.17	10.33
2008	22.83	9.49	25.83	4.71	27.83	3.97	30.17	2.74	0.83	0.39	106.66	16.97

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Table 39. PSD and RSD values for each black bass species collected during 6 hours (12 runs; each 0.50 hours) of nocturnal electrofishing at each area of Green River Lake on April 30, 2008. 95% confidence intervals are in parentheses.

Area	Species	No. \geq 8.0 in	PSD (\pm 95% CI)	RSD ^A (\pm 95% CI)
Green River Arm				
Holmes Bend	Largemouth bass	174	57(7)	22(6)
	Spotted bass	59	2(3)	
Ramp 1	Largemouth bass	130	77(7)	44(9)
	Spotted bass	56	52(13)	5(6)
	Smallmouth bass	13	15(20)	
Robinson Creek Arm				
Smith Ridge	Largemouth bass	73	67(11)	41(11)
	Spotted bass	59	24(11)	5(6)
Lone Valley	Largemouth bass	126	79(8)	44(9)
	Spotted bass	124	48(9)	10(5)
	Smallmouth bass	17	23(22)	12(16)
Total	Largemouth bass	503	69(4)	36(4)
	Spotted bass	297	35(5)	6(2)
	Smallmouth bass	36	28(15)	8(9)

^A Largemouth bass = RSD₁₅, spotted bass and smallmouth bass = RSD₁₄.

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