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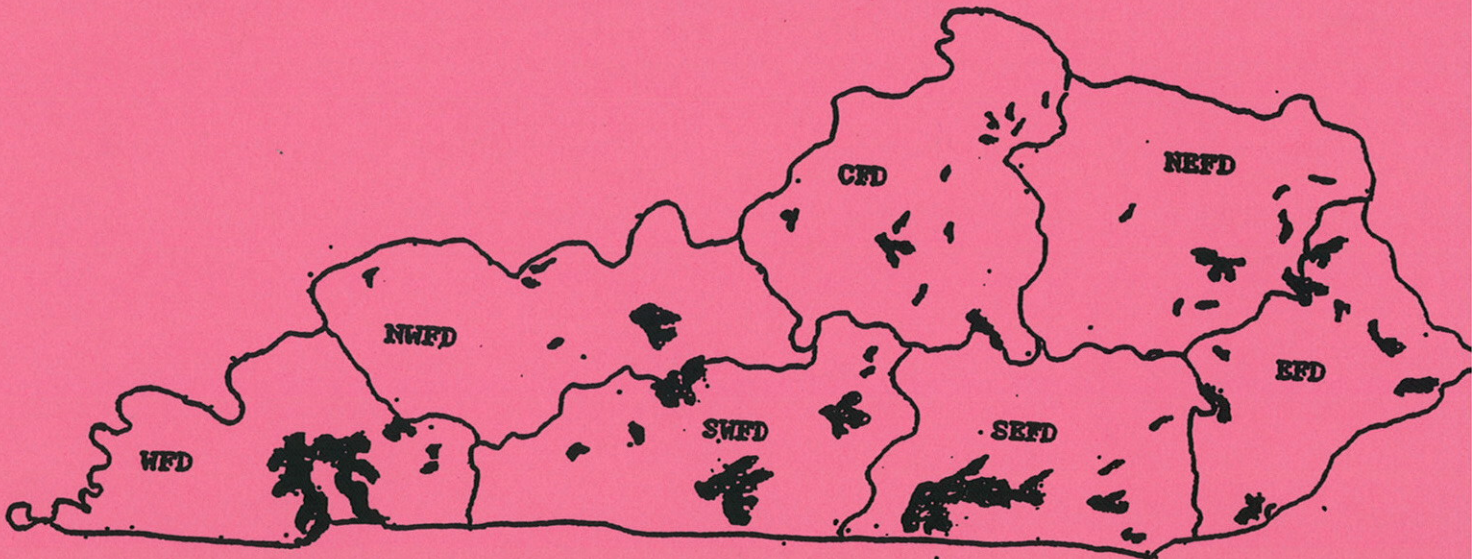
Period: 01 April 2005
through
31 March 2006

ANNUAL PERFORMANCE REPORT

District Fisheries Management

Part I

Project 1: Lake and Tailwater Fishery Surveys



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State: Kentucky

Project No.: F-50-28

Grant Title: District Fisheries Management

Grant Period Covered: 1 April 2005 through 31 March 2006

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 2006

Work accomplishment: 31 March 2006

C. SIGNIFICANT DEVIATIONS

None.

D. REMARKS

See accompanying report.

E. COST

\$ 1,072,611.00

WESTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Kentucky Lake

During May 2005, 1,157 black bass were collected by diurnal electrofishing from standardized sampling locations on Kentucky Lake. Largemouth bass comprised almost 93% (107.4 f/h) of this catch (Table 1). The catch rate of largemouth bass <8.0 in was 24.5 f/h (Table 2). An objective in the Kentucky Lake Fish Management Plan (KLFMP) for the largemouth bass population is to maintain a catch rate of at least 20.0 f/h that are <8.0 in. The average for the past 23 years is 20.8 f/h. The 2000 year-class, reported in 2001 as a high catch of bass <8.0 in, has now grown into the ≥ 15 inch group. The catch rate of harvestable-size (≥ 15.0 in) largemouth bass was 23.6 f/h. The KLFMP objective for largemouth bass ≥ 15.0 in is to maintain a catch rate of at least 18.0 f/h. Table 3 lists the PSD and RSD values for bass collected during the spring of 2005. The overall calculated PSD value for largemouth bass was 85, which is above the targeted ranges (PSD, 55-75) suggested in the KLFMP. The calculated RSD₁₅ was 28, which falls into the range reported in the KLFMP (RSD₁₅, 20-40). The number of largemouth bass 8-12 inches decreased from previous years' data (Table 2). This decrease, along with an increase in the number of bass ≥ 15 in explains the higher calculated PSD value.

Otoliths were removed from 144 largemouth bass to make age and growth assessments. Back calculated age and growth determinations are found in Table 4. Harvestable-size is typically reached during the fourth growing season. Sub-legal size largemouth bass, those less than age 4, made up about 66% of this year's sample (Table 5).

An assessment for largemouth bass was used to evaluate this population (Table 6). The largemouth bass population has been rated "good" during the past five years. This year's score was higher due to an increased catch of largemouth bass in the 12 to 15 inch group, and the group of bass larger than 15 inches. Annual mortality calculated for largemouth bass was 47.2% using catch curve analysis.

During October 2005, 399 black bass were collected by diurnal electrofishing at two locations that had been previously sampled during the spring. Largemouth bass comprised 77% (61.6 f/h) of this catch (Table 7). Length and weight data were recorded from all bass collected to calculate relative weight values (Table 8). Length-weight equations for black bass species at Kentucky Lake are:

Largemouth bass	$\text{Log}_{10}(\text{weight}) = -3.59018 + 3.25856 \times \text{Log}_{10}(\text{length})$
Smallmouth bass	$\text{Log}_{10}(\text{weight}) = -3.36337 + 3.04218 \times \text{Log}_{10}(\text{length})$
Spotted bass	$\text{Log}_{10}(\text{weight}) = -3.40675 + 3.08011 \times \text{Log}_{10}(\text{length})$

The CPUE of age-0 largemouth bass was approximately 28.8 f/h (Table 9). The CPUE of age-0 largemouth bass ≥ 5.0 in was 13.2 f/h, and comprised 46% of all age-0 bass collected. Mean length of the age-0 cohort (2005 year-class) largemouth bass was 4.2 in. These bass ranged in length from 3.0 to 6.3 in by October. The average mean length for 12 years of data is 3.8 inches.

Trap nets were fished for crappie in Blood River and Jonathan Creek embayments for a total of 78 net-nights (nn) during October. This sampling effort yielded 2,314 crappie (29.7 f/nn), of which 5.9 f/nn (20%) were white crappie and 23.7 f/nn (80%) were black crappie (Table 10). The number of black crappie has dominated the trap net catch for the past 9 years (Figure 1). The number of crappie ≥ 8.0 in made up 53% (16.2 f/nn) of the sample (Table 11). The number of crappie ≥ 10.0 in made up 15% (4.5 f/nn) of the sample. The KLFMP objective for crappie is to maintain a catch rate of at least 6.5 f/nn for crappie ≥ 8.0 in and 2.0 f/nn for crappie ≥ 10 in. Both of these objectives were met. PSD and RSD₁₀ values are reported in Table 12. Length-weight equations for white and black crappie are listed below. Weight increased slightly for both species of crappie collected from 2004 to 2005.

White crappie	$\text{Log}_{10}(\text{weight}) = -3.37788 + 3.05194 \times \text{Log}_{10}(\text{length})$
Black crappie	$\text{Log}_{10}(\text{weight}) = -3.46926 + 3.19650 \times \text{Log}_{10}(\text{length})$

Otoliths that were aged from crappie collected in 2004 trap netting sample were extrapolated against this year's length frequency data set to determine age frequency of white and black crappie (Tables 13 and 14, respectively). Age classes 0 and 1 of the white crappie made up 81% of the white crappie collected. Of the black crappie, age classes 1 and 2 made up 84% of the black crappie collected. The assessment of the crappie population is reported in Table 15. Tables 15a and 15b report the assessments for white and black crappie, respectively. Combined, the crappie population at Kentucky Lake rated "good". This is mainly due to the 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. Annual mortality was calculated to be 54.5% for age 2 and older crappie using catch curve analysis ($Z = 0.7880$). Annual mortality between 2004 and 2005 for 5 year-classes of crappie are listed in Table 16.

Blue and channel catfish were collected using trotlines (tl) during May 2005. Data collected was used to determine CPUE, length frequency, age and growth, and mortality. A total of 308 catfish were collected at a rate of 15.4 f/tl. CPUE of blue and channel catfish was 13.0 and 2.4 f/tl, respectively (Table 17). No catfish <12 in were collected, which is most likely the result of gear selectivity towards larger individuals. Relative weight values of both blue and channel catfish indicate excellent health and are listed in Table 18. The length-weight equations for blue and channel catfish are:

Blue catfish	$\text{Log}_{10}(\text{weight}) = -3.76010 + 3.25009 \times \text{Log}_{10}(\text{length})$
Channel catfish	$\text{Log}_{10}(\text{weight}) = -4.13731 + 3.48673 \times \text{Log}_{10}(\text{length})$

Age frequencies for blue and channel catfish caught in 2005 were made using age data collected in 2004. Catch of blue catfish ages 4, 5 and 6 dominated the overall catch, comprising almost 90% of the total catch of blue catfish (Table 19). Catch of channel catfish ages 6, 7 and 8 dominated the overall catch, comprising almost 90% of the total catch of channel catfish (Table 20).

Lake Barkley

Black bass were collected by diurnal electrofishing on 2-6 May 2005 from standardized sampling sites on Lake Barkley. The PSD value for largemouth bass (83) increased compared to the value (57) recorded in 2004 (Table 21). This increase was the result of higher CPUE of quality-size (12.0-14.9 in) largemouth bass (59.4 f/h) in 2005 compared to 2004 (29.3 f/h), as well as lower CPUE of stock size (8-11.9in) largemouth bass (19.3 f/h) in 2005 compared to 2004 (40.9 f/h). This value is well above the 20-year average (59) for Lake Barkley. The RSD_{15} value (32) increased for the third consecutive year and exceeds the 20-year average for the second time since 2000. Both PSD and RSD_{15} values met or exceeded their objective goals (PSD of 55-75 and RSD_{15} of 20-40) established in the Lake Barkley Fish Management Plan (LBFMP).

Table 22 summarizes the length frequency and relative abundance of black bass collected during spring electrofishing on Lake Barkley. A total of 1,490 black bass were collected at a rate of 156.8 f/h, compared to 109.2 f/h in 2004. Spotted and smallmouth bass accounted for less than 3% of the total black bass sampled and too few individuals were collected to accurately yield data reflecting their true population abundance. Largemouth bass accounted for 97.4% of the total catch, and had a catch rate of 152.7 f/h. This catch rate lies above the 20-year average catch of largemouth bass (152.0 f/h) at Lake Barkley (Table 23). The CPUE of all size-classes except stock size (8-11.9in) largemouth bass increased in 2005. The catch rate of largemouth bass ≤ 8.0 was 36.6 f/h, compared to 11.3 f/h recorded in 2004. In 2005, the CPUE of largemouth bass ≤ 8.0 in was above the 20-year average (31.0 f/h) and the minimum desired catch rate of 30.0 f/h set in the LBFMP. CPUE of largemouth bass 12.0-14.9 in increased from 29.3 f/h in 2004 to 59.4 f/h in 2005. This increase is the continued result of the strong year-class of largemouth bass produced in 2001 (now recruiting to the 12.0-14.9 inch-class). Catch of harvestable-size (≥ 15.0 in) largemouth bass increased from 24.7 f/h in 2004 to 37.5 f/h in 2005.

The assessment of the largemouth bass fishery at Lake Barkley during 2005 produced an "excellent" rating (Table 24). The higher rating is the result of excellent size structure (CPUE of age-1 bass, CPUE of 12-14.9 in bass and CPUE of ≥ 15 in bass). The annual mortality of largemouth bass two years and older was 49% in 2005.

Black bass were sampled in late October and early November 2005 to collect length-weight data, relative weight values, and determine the strength of the 2005 year-class. The length-weight equations of each species of black bass at Lake Barkley are:

Largemouth bass	$\text{Log}_{10}(\text{weight}) = -3.58087 + 3.25478 \times \text{Log}_{10}(\text{length})$
Smallmouth bass	$\text{Log}_{10}(\text{weight}) = -3.79688 + 3.48062 \times \text{Log}_{10}(\text{length})$
Spotted bass	$\text{Log}_{10}(\text{weight}) = -3.52523 + 3.18581 \times \text{Log}_{10}(\text{length})$

Similar to previous years, despite high r^2 -values for both spotted ($r^2 = 0.99$) and smallmouth ($r^2 = 0.99$) bass, low overall sample sizes of spotted ($n = 5$) and smallmouth ($n = 7$) bass were collected during the fall sample and therefore these length-weight equations should be used with caution. Length frequency distributions and CPUE of largemouth, smallmouth, and spotted bass are listed in Table 25. Fall CPUE of largemouth bass was 114.4 f/h. Relative weight values of all size-classes of largemouth bass increased for the third consecutive year, indicating excellent health of the largemouth bass population going into winter (Table 26). Mean length of the age-0 cohort was 5.4 in and ranged in length from 3.4 to 6.3 in by October (Table 27). CPUE of age-0 largemouth bass was approximately 5.4 f/h, the lowest catch rate recorded to date. CPUE of age-0 largemouth bass ≥ 5.0 in was 4.8 f/h, and comprised 90% of all age-0 bass collected.

Blue and channel catfish were collected using trotlines (tl) from 23-27 May 2005. This was the second year that catfish were sampled to determine CPUE, length frequency, age frequency, and mortality. Catch rates of catfish were similar in 2005 compared to 2004. In 2005 209 catfish were collected at a rate of 11.0 f/tl-night. The CPUE of blue catfish was 7.2 f/tl (Table 28). Approximately 80% of all blue catfish collected were ≥ 15.0 in, and 46% were ≥ 20.0 in. No blue catfish were captured ≤ 8.0 in in 2005. The CPUE of channel catfish was 3.8 f/tl. Approximately 96% of all channel catfish collected were ≥ 12.0 in, and 60% were ≥ 15.0 in. Like blue catfish, no small channel catfish (≤ 8.0 in) were captured. Relative weight values of both blue and channel catfish indicate excellent health and are listed in Table 29. The length-weight equations of blue and channel catfish are:

Blue catfish	$\text{Log}_{10}(\text{weight}) = -3.99849 + 3.41840 \times \text{Log}_{10}(\text{length})$
Channel catfish	$\text{Log}_{10}(\text{weight}) = -3.91088 + 3.33741 \times \text{Log}_{10}(\text{length})$

Age frequency determinations were made using 2004 age and growth data and 2005 catch data for blue and channel catfish. The catch of blue catfish ages 5 and 6 dominated the overall catch, comprising 30 and 31% of the total catch, respectively (Table 30). Similar to blue catfish, the catch of channel catfish ages 4 and 5 dominated the overall catch, comprising 19 and 28% of the total catch, respectively (Table 31). The catch of young (ages 1-3) blue and channel catfish was extremely low during 2005 and is most likely the result of gear selectivity towards larger catfish. Alternative sampling schemes will be considered in order to obtain better measures of recruitment and abundance of younger catfish.

Trap nets were fished for crappie in Little River and Donaldson Creek embayments for a total of 79 net-nights (nn) during 31 October-4 November 2005. A total of 1,196 crappie were collected at a rate of 15.1 f/nn (Table 32). Similar to 2003, white crappie accounted for 77% of the total catch, and collected at a rate of 11.7 f/nn. Black crappie were collected at a rate of 3.4 f/nn. The CPUE of harvestable-size (≥ 10.0 in) crappie was 3.4 f/nn, compared to 1.8 f/nn recorded in 2004 (Table 33). This value is almost twice that of the 20-year average of 1.8 f/nn but failed to meet the management objective (2.0 f/nn) set in the LBFMP. Since 2000, black crappie have averaged approximately 40% of the harvestable-size crappie collected from trap nets (Figure 2). CPUE of quality-size (≥ 8.0 in) crappie was 5.2 f/nn, which exceeds the 20-year average (4.1 f/nn) of Lake Barkley. This is the second consecutive year since 1998 that this value has exceeded the management objective (5.0 f/nn) set in the LBFMP. The CPUE of quality-size white crappie remained at a high rate of 5.5 f/nn, the same as in 2004. The CPUE of quality-size black crappie (1.4 f/nn) is slightly lower than that recorded in 2004 (1.8 f/nn). Table 34 lists PSD and RSD_{10} values calculated for both white and black crappie. In 2005, the PSD of white crappie (75.4) decreased from 2004 (79), while the RSD_{10} value (54.4) increased dramatically. This increase can be attributed to an increase in CPUE of harvestable-size white crappie, while the CPUE of quality-size white crappie decreased. The 20-year average PSD and RSD_{10} values of white crappie are 57 and 25, respectively. The PSD and RSD_{10} values of black crappie decreased slightly from 2004, with both values being above the 20-year average of 53 and 19, respectively. The RSD_{10} value of black crappie has increased each year since 2002. The relative weight values of white and black crappie are listed in Table 35. The length-weight equations of white and black crappie from Lake Barkley are:

White crappie	$\text{Log}_{10}(\text{weight}) = -3.64390 + 3.35589 \times \text{Log}_{10}(\text{length})$
Black crappie	$\text{Log}_{10}(\text{weight}) = -3.58067 + 3.35662 \times \text{Log}_{10}(\text{length})$

Otoliths were collected from 88 black crappie and 105 white crappie for age and growth analysis in 2005 (Tables 36 and 37). Back-calculated length at age data for 2005 indicated that white crappie were longer than black crappie at each age-class. The catch of black crappie was dominated by age-1 fish (Table 38) while age-0 black crappie were underrepresented in our catch (1.2 f/nn). Age-0 fish, comprising 63% of the total catch, dominated the catch of white crappie (Table 39). The catch of age-1 white crappie (1.7 f/nn) comprised 21% of the total catch. The total CPUE of age-1 crappie was 3.1 f/nn, which failed to meet the management objective (5.0 f/nn) established in the LBFMP. The annual CPUE by age-class of black and white crappie can be found in Tables 40 and 41, respectively. The annual mortality of crappie in Lake Barkley during 2005, calculated using catch curve analysis, was 65.5% (compared to 57.6% in 2004). The annual mortality between 2004 and 2005 of each age-class (1-6) of crappie is listed in Table 42.

Assessment of the white and black crappie populations each yielded a rating of “fair” at Lake Barkley in 2005 (Table 43). The lowest assessment value for white crappie was the recruitment parameter (CPUE of age-0 white crappie). The highest assessment value continues to be the growth parameter (mean length at capture of age-2 white crappie). The black crappie population received poor assessment values for all parameters except growth. When both species were combined, the total crappie population received an assessment rating of “good”. Tables 44, 45, and 46 list the population assessment scores of white crappie, black crappie, and both white and black crappie populations combined from 1988-2005.

Lake Barkley Creel Survey

A non-uniform probability roving creel survey, utilizing a creel clerk was conducted at Lake Barkley. Lake Barkley was surveyed 5 days per week from 1 March 2005 to 31 October 2005 (creel survey period). The creel clerk was on the water for six hours each workday. Of these six hours, approximately one hour was randomly picked to do an angler count. The remaining five hours were for conducting angler interviews. Lake Barkley was divided into 8 work areas (Appendix A). The assigned work area was chosen randomly. The acreage used for this survey was 45,600.

During the creel survey period it was estimated that 192,799 fishing trips were taken to Lake Barkley (4.2 trips / acre) (Table 47). This number was up, in comparison to the last time a creel survey was conducted on Lake Barkley in 1999 (2.6 trips / acre). The fishing pressure exerted from these fishing trips in 2005 was estimated at 16.8 angler-hours per acre (h/a). This measure of fishing pressure was also up from the 12.8 h/a of effort determined during the 1999 survey. Although the number of trips and effort increased, the average trip length decreased from 5.0 hours in 1999 to 4.0 hours in 2005. The number of fish caught during the 2005 survey was 1,197,613, compared to 505,213 caught during the 1999 survey. The numbers of fish harvested were 426,356 and 239,427 during the 2005 and 1999 creel surveys, respectively. In 1999 the harvest rate was 0.4 fish per hour (f/h), compared to the 2005 value of 0.6 f/h.

Table 48 lists the creel data by individual species and groups of species. During the creel survey period black bass were the most sought after species of fish at Lake Barkley. Forty-three percent of the anglers creeled were fishing for black bass. Largemouth bass accounted for 95% of all black bass caught, and 94% of those harvested. The percentage of largemouth bass making up the total black bass caught was down slightly, though the difference was a 2% increase in the number of spotted bass caught. The number of largemouth bass caught per acre was estimated at 3.0 in 1999, though increased to 8.1 in 2005. The catch rate for largemouth bass for these two years was 0.52 f/h and 1.1 f/h, respectively. Table 49 lists the length distribution of black bass harvested and released, as well as all other species caught during the creel survey. It is estimated that 63% of the harvestable size bass caught by bass anglers were released (Table 50). One of the BLFMP objectives is derived from creel survey data. This objective is to maintain an annual catch of $\geq 45,000$ largemouth bass ≥ 15 inches. This value from the 2005 creel survey was 69,822. This can be explained by electrofishing data presented earlier, indicating above average spawns and survival of the young during the past 5 years. Table 51 lists the numbers of bass caught and harvested by month, and by bass anglers versus all anglers. The highest catch rate, almost 1 bass per hour of effort, was recorded in June.

Crappie was the second most sought after species in Lake Barkley during 2005. It was estimated that 249,686 crappie or 5.5 fish per acre (f/a) were caught, of which 85% were white crappie (Table 48). In comparison, the 1999 creel survey estimated a crappie catch to be 3.6 f/a. In 1999, white crappie made up 96% of the crappie catch. The effort exerted by crappie anglers was down slightly from 4.0 h/a in 1999 to 3.6 h/a reported in 2005. Table 49 lists the length distribution of crappie harvested and released. Table 52 lists the catch and harvest statistics for crappie. It is estimated that crappie anglers were releasing about 3% of the harvestable size crappie. Table 53 lists the crappie caught and harvested by month, and by all anglers versus crappie anglers. The highest harvest rate was recorded in March at almost 1 fish per hour, compared to 0.5 f/h reported in March of the 1999 creel survey. One of the management objectives in the BLFMP is to maintain a crappie harvest of ≥ 4.0 lb/a. This value recorded from the 2005 creel survey was 1.5 lb/a, up from 1.3 lb/a reported in 1999. Likewise, trap-netting data presented earlier suggested an increase in the number of harvestable size crappie in the population.

Catfish were the third most sought after species during the 2005 creel survey. By weight, catfish comprised almost 35% of the total pounds of all fish harvested. It was estimated that 95,998 catfish were caught, in comparison with 37,207 during the 1999 creel survey period. Channel catfish comprised almost 62% of the catfish catch, and 61% of the harvested catfish during the 2005 creel survey (Table 54). During the 1999 survey, channel catfish comprised 85% of the catfish catch. The average length of channel catfish harvested during 2005 increased from 13.6 in reported in 1999 to 15.7 in. Likewise, the average weight of channel catfish harvested increased from 0.8 to 1.2 pounds. Catfish anglers had the best success in July and October (Table 55).

Panfish were the fourth most sought after species during the 2005 creel survey. Table 56 lists the species that are included in the panfish group. Bluegill comprised 88% of the panfish catch, and 89% of the harvest. In 1999, 2.8 bluegill were caught per acre, compared to 5.6 in 2005. However, their catch rate decreased from 3.2 f/h to 2.9 f/h respectively between these two survey periods. Redear sunfish comprised 7.2% of the panfish harvest in 2005, compared to 0.6% in 1999. The average size redear harvested in 1999 was 9.0 inches. In 2005, that value was 9.6 inches. Anglers fishing for panfish harvested 84% of their catch. Their best success was reported in March, May and October, where their harvest was over 2 fish per hour (Table 57).

The number of anglers fishing for white bass or all *Morone* species, increased in 2005. It was estimated that these anglers accounted for 4.6% of all fishing trips to Lake Barkley during the creel survey. In 1999, these anglers accounted for only 1.9% of all fishing trips. White bass comprised 52% and yellow bass 45% of the total catch of *Morone* species. Striped bass and hybrid striped bass accounted for 3% and less than 1%, respectively of the catch of all *Morone* species (Table 58). White bass made up 78% of all *Morone* species harvested, and yellow bass another 22%. Striped bass made up less than one percent of the harvested *Morone* species. Anglers fishing for *Morone* species had their greatest fishing success in June and July, when they harvested more than 2 fish per hour (Table 59).

The number of sauger caught was up from previous creel survey years. In 1999 the creel survey indicated 613 sauger were caught. During this most recent survey 42% of the 1,920 sauger caught were harvested (Table 48).

Lake Beshear

Largemouth bass were collected by diurnal electrofishing during May 2005. A total of 237 largemouth bass were collected at a rate of 94.8 f/h (Table 60). CPUE of harvestable-size (≥ 12.0 in) and ≥ 15.0 in largemouth bass were 51.6 and 44.4 f/h, respectively (Table 61). One objective in the Lake Beshear Fish Management Plan (LBFMP) is to maintain a catch rate of 40.0 f/h for harvestable-size largemouth bass. A second objective is to maintain a catch rate for bass < 8 in of 12 f/h. This year was the first time this objective was met in the past decade. The catch rate for these smaller bass was 30.8 f/h, which is a record number for Lake Beshear. The number of 8-12 inch largemouth bass was still low, which allowed for high PSD and RSD₁₅ values, 81 and 69 respectively.

Age and growth determinations were made using this year's spring sampling data, and age data collected in 2003. Largemouth bass reach 12.0 in (harvestable-size) as early as age 2, but more commonly by age 3 (Table 62). The largemouth bass population has rated "good" the past four years (Table 63). This rating has been achieved by good growth of bass and a high density of ≥ 15.0 in bass in the population. The catch rate of age-1 largemouth bass, although high this year, did little to change the overall rating.

During October, largemouth bass were collected by diurnal electrofishing. The catch rate (81.5 f/h) was below that of the spring sample (Table 60). However, the number of bass of <8.0 in was much higher when compared to the spring data, suggesting, possibly a good spawn had occurred. Relative weight data suggests that the larger bass (≥ 15 in) are very healthy with regard to their length-weight ratio. Relative weight values were above 98. The relative weight value was 89 for the bass 8-12 in, and 87 for the bass smaller than 8 in. The length-weight equation for largemouth bass at Lake Beshear is:

$$\text{Log}_{10}(\text{weight}) = -3.51802 + 3.17351 \times \text{Log}_{10}(\text{length})$$

Otoliths were removed from largemouth bass ≤ 8.0 in to determine the mean fall length of the age-0 cohort. The catch rate for this year class was 44.0 f/h (Table 64). The average length of the age-0 bass was 4.5 in.

The channel catfish population was sampled at Lake Beshear using 10 100-hook cheese-baited trotlines (tl) for 3 nights during September 2005. One line was hung the last night; therefore the total sample effort was 29 trotline nights. The length frequency of channel catfish collected is found in Figure 3. Their catch rate was 11.0 f/tl. The catch rate was down from 13.6 f/tl reported in 2004. The majority (7.9 f/tl) of channel catfish collected were from 11-14 in, about 72% of the sample. In 2004, a 12-inch minimum length limit was imposed for channel catfish. During 2005 sampling, 74% of the catch (8.2 f/tl) were ≥ 12 in, 9.2 f/tl in 2004. Two weeks prior to the 2005 sampling, 2,000 blue catfish, ranging in length from 8-12 inches, were stocked in Lake Beshear. Only 4 blue catfish were caught during this sampling. Relative weights ranged from 84 for channel catfish 11-16 in, to 91 for larger channel catfish. The length-weight equation for channel catfish at Lake Beshear is:

$$\text{Log}_{10}(\text{weight}) = -3.92159 + 3.31630 \times \text{Log}_{10}(\text{length})$$

Age and growth determinations were made using otoliths collected from 31 channel catfish. Harvestable-size (≥ 12.0 in) is reached as early as age 3, but more commonly by age 4 (Table 65). The channel catfish population in this lake is still impaired by slow growth. It is better than in previous years when higher stocking rates (25 channel catfish per acre) were used. The current stocking rate is 10 per acre, which was implemented in 2001. Table 66 lists the age frequencies for all channel catfish collected based on the portion that was aged. Approximately 80% of the channel catfish collected were between 1 and 4 years old. As part of the LBFMP, the following parameters of the catfish population were assessed by sampling with trotlines: catch of catfish <8.0 in, ≥ 12.0 in, and ≥ 15.0 in (Table 67). Several years of data have been collected, although sampling methods have changed, while trying to determine the best method. In the past five years the population has rated "good", while prior to this it rated "fair" and "poor". These ratings were affected by the catch of the sample method used each year, so some bias has occurred in catch rate from year to year.

Lake Pennyrile

Lake Pennyrile was sampled by diurnal electrofishing on 20 April 2005. Largemouth bass were collected at a rate of 260.4 f/h (Table 68). This catch rate was much higher than that recorded in 2004 (119.8 f/h), but similar to the catch rates in previous years (Table 69). The CPUE of largemouth bass ≤ 8.0 in was 101.5 f/h, compared to 27.5 f/h recorded in 2004. Similarly, CPUE of largemouth bass 8.0-11.9 in was 127.5 f/h, compared to 63.7 f/h recorded in 2004. CPUE of largemouth bass 12.0-14.9 in was 25.3 f/h, which exceeded the management objective (25.0 f/h) established in the Lake Pennyrile Fish Management Plan (LPFMP). Catch rates of largemouth bass ≥ 15.0 in improved from 2.2 f/h in 2004 to 6.6 f/h in 2005, which exceeds the management objective of 5.0 f/h in the LBFMP. This is the third year that a 12.0-15.0in protective slot limit has been in place on Lake Pennyrile. Continued catch rates of smaller largemouth bass suggest the slot limit has not been effective. PSD and RSD₁₅ values are listed in Table 70, showing a decrease in PSD and a slight improvement in RSD₁₅ from 2004. Both values still lie well below the management objectives set in the LPFMP for PSD (40-50) and RSD₁₅ (10).

The largemouth bass population was rated as "good" during 2005 (Table 71). The lowest ratings were assigned for poor growth (mean length at capture of age-3 bass), which is expected in a stunted population. However, improvements were seen in the CPUE of bass ≥ 15.0 in and ≥ 20.0 in, and were responsible for the improved rating. Table 72 lists CPUE values of each age-class of largemouth bass collected at Lake Pennyrile from 1998-2005.

The catch rate of bluegill was 360.4 f/h (Table 73), which increased drastically after declining in consecutive years. Small fish dominated the catch: almost 80% of the catch was bluegill less than 4 in. The CPUE value of bluegill ≥ 8.0 in declined to 1.1 f/h, compared to 6.2 f/h recorded in 2004, and failed to meet the objective goal (8.0 f/h) in the LPFMP. Table 74 lists the CPUE of each age-class of bluegill collected from Lake Pennyrite from 2000-2005. PSD and RSD₈ values of bluegill were 15 and 0, respectively (Table 70). PSD values decreased after increasing in consecutive years and are below the values (20-40) strived for in the LPFMP. The RSD₈ value failed to meet the objective (10) set in the LPFMP, as a result of the significant decline in CPUE of bluegill ≥ 8.0 in.

Overall, the bluegill population was rated as "fair" and has shown no signs of improvement since 2000 (Table 75). The lowest ratings are the result of extremely slow growth, most likely due to an over-abundance of smaller individuals. A high density of aquatic vegetation in Lake Pennyrite has likely lead to the over abundance of small sunfish by allowing protection from predation.

The catch rate of redear sunfish was 89.0 f/h in 2005. This catch rate is up from the previous years sample, although down from early years samples by more than half (Table 73). The increase in CPUE was evident in the 3.0-5.9in and ≥ 8 in size-classes. CPUE of redear sunfish 3.0-5.9in increased from 20.0 f/h in 2004 to 37.4 f/h in 2005 while the CPUE of redear sunfish ≥ 8.0 in improved from 9.2 in 2004 to 23.1 in 2005. The CPUE of redear sunfish ≥ 6.0 in has exceeded the management objective (40.0 f/h) established in the LPFMP since 2002. CPUE of redear sunfish ≥ 8.0 in failed to meet the management objective (25.0 f/h) for the second consecutive year. PSD and RSD₉ values were 55 and 3, respectively, showing a slight increase from 2004 (Table 70). PSD values for redear sunfish met their management objective (40) while the RSD₉ value failed to meet the management objective (10) for the second consecutive year. The redear sunfish population was rated as "fair" (Table 76). However, the assessment rating showed it's first sign of improvement since 2000 with an increased CPUE of fish ≥ 8.0 in.

Hematite Lake

Hematite Lake is a 90-acre sub-impoundment of Lake Barkley located within the Land Between the Lakes. This lake was drained in the mid 1990's due to a breach in the levee. In the late 1990's the levee was repaired and the lake was allowed to fill. Since that time the lake has been stocked with largemouth bass, redear sunfish and bluegill collected from Lake Barkley. Hematite Lake was once known for its outstanding redear fishery. The management objective for this lake is to reestablish the redear fishery. In spring 2002, the lake was sampled by electrofishing. During that study redear sunfish were collected at a catch rate of 159.0 f/h. In 2004, the redear sunfish population was again sampled resulting in a catch rate of 253.9 f/h, and in 2005 187.6 (Table 77). Fish between 3-6 in dominate the size structure of this population (Table 78). The harvest of redear sunfish is regulated by a creel limit of 10 fish ≥ 10.0 in. Harvest for redear sunfish < 10.0 inches is 20 in aggregate with the larger redear, which is the statewide limit.

Appendix A. Lake Barkley creel survey areas, 2005.

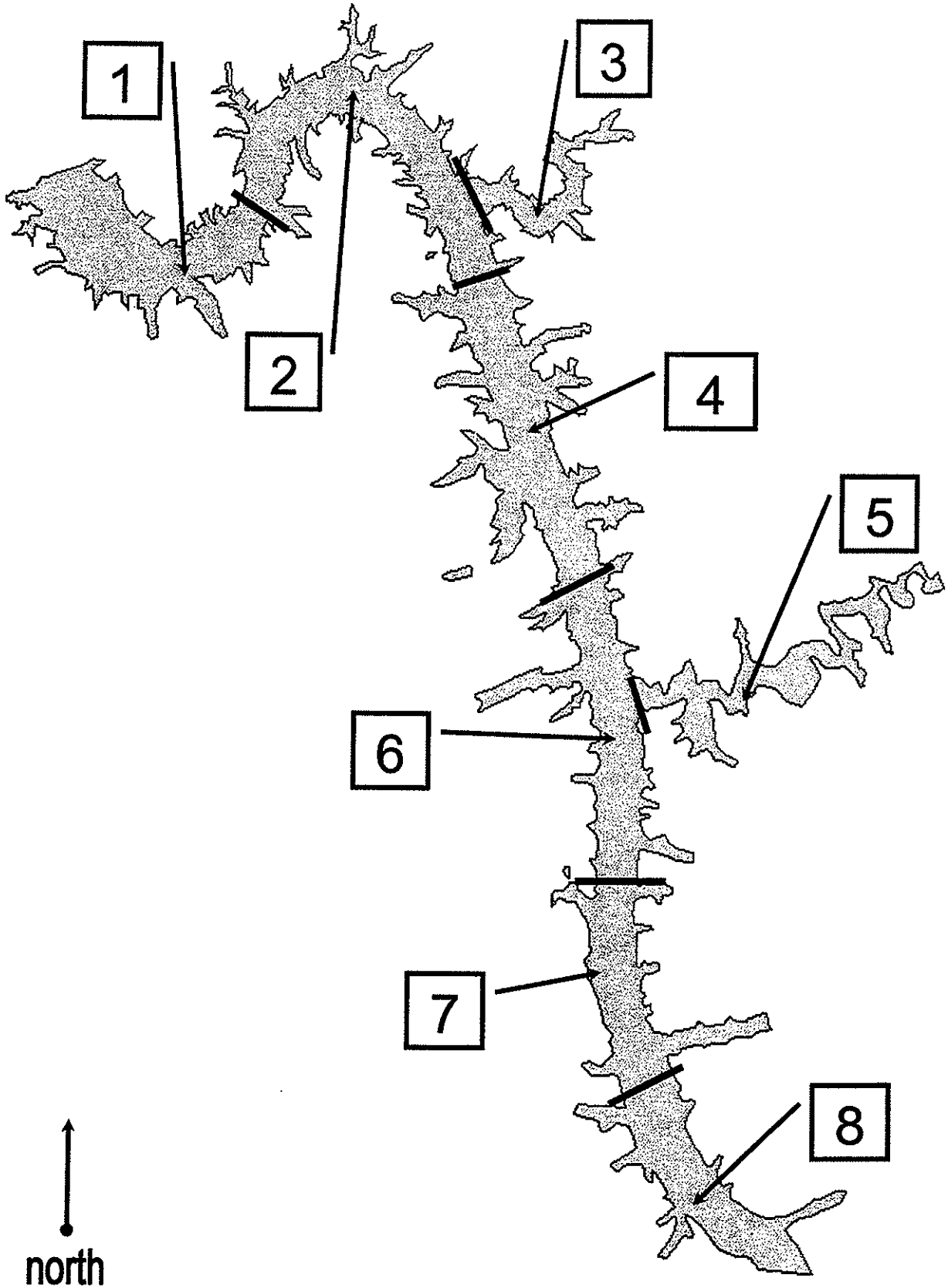


Table 1. Species composition, relative abundance, and CPUE (fish/hour) of black bass collected during 10.0 hours (20 x 30-minute) of diurnal electrofishing at Kentucky Lake during May 2005.

Area	Species	Inch Class																				Total	CPUE	StdErr
		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		9						1											12	1.2	4.8	
	Spotted bass		3	3				1	2	4	10	12	3								38	3.8	13.3	
	Largemouth bass		2	7	21	16	7	4	6	7	15	21	30	17	12	4	1	2	3		175	17.5	8.9	
Big Bear	Smallmouth bass			1																	1	0.1	0.5	
	Largemouth bass	1	9	27	19	11	4	8	22	27	48	31	21	16	6	8	3	1			262	26.2	21.5	
Jonathan	Spotted bass	2																			2	0.2	0.8	
	Largemouth bass	5	9	23	26	12	4	3	3	6	29	53	45	26	21	12	5	1	2	1	287	28.7	7.0	
Sugar Bay	Smallmouth bass		3	4	4	1		1	1	1											15	1.5	1.5	
	Spotted bass	2	2	1			1	1	3	1	2	1		1							15	1.5	1.4	
	Largemouth bass	1	4	21	26	16	14	5	11	13	41	54	71	35	20	9	7	2			350	35.0	11.2	
TOTAL	Smallmouth bass	1	3	14	4	1	1	1	2	1											28	2.8	1.3	
	Spotted bass	2	7	4			1	2	5	5	12	13	3	1							55	5.5	3.4	
	Largemouth bass	7	15	60	100	63	36	16	28	48	112	176	177	99	69	31	21	8	6	1	1,074	107.4	7.6	

Table 2. Spring diurnal electrofishing CPUE of each size-class of largemouth bass collected at Kentucky Lake during May from 1985 - 2005.

Year	Size-class									
	< 8.0 inch		8.0 - 11.9 inch		12.0 - 14.9 inch		> 15.0 inch		Total	
	CPUE	± 95% CI	CPUE	± 95% CI	CPUE	± 95% CI	CPUE	± 95% CI	CPUE	± 95% CI
1983	3.0	0.0	5.1	0.0	1.3		4.2		16.0	0.0
1984	3.3	2.2	9.2	0.0	6.3	1.4	5.8	1.6	24.6	0.0
1985	6.3	0.0	2.9	0.0	2.0		3.6		15.9	0.0
1986	12.6	3.1	12.1	4.3	10.3	3.9	10.1	2.9	45.1	10.4
1987	36.9	11.4	18.5	5.3	10.1	2.6	11.9	3.5	77.3	17.1
1988	28.9	14.5	38.6	18.6	24.2	8.6	14.3	7.5	106.1	47.4
1989	29.2	12.4	30.0	17.6	23.7	7.6	9.8	3.7	92.8	28.8
1990	6.2	3.1	27.4	6.5	12.5	3.5	14.3	3.5	60.4	11.6
1991	38.5	13.9	14.8	3.3	27.0	4.9	19.4	4.9	99.6	20.2
1992	23.4	9.0	32.4	7.6	17.7	2.7	21.9	3.7	95.4	14.7
1993	33.2	10.6	15.8	3.1	26.9	6.3	31.4	6.3	107.2	18.2
1994	21.0	5.9	25.0	6.3	19.6	3.3	18.4	3.9	84.0	11.2
1995	5.9	2.4	15.3	3.3	19.6	4.9	24.6	4.1	65.4	9.8
1996	11.9	5.1	6.9	1.8	15.6	3.5	27.0	5.1	61.2	9.0
1997	6.7	2.6	7.6	2.2	10.8	3.5	21.4	4.7	46.6	9.2
1998	17.3	3.9	8.2	2.4	9.6	3.3	10.0	3.3	44.8	7.6
1999	18.7	6.5	10.0	3.1	11.4	2.9	11.9	3.3	52.0	9.6
2000	19.4	7.5	13.4	1.8	19.0	3.5	22.5	6.9	74.4	12.2
2001	60.6	14.3	26.3	5.7	12.2	3.1	12.0	2.9	111.0	21.0
2002	32.4	10.6	26.7	4.9	21.8	4.5	12.9	2.2	93.8	11.6
2003	21.8	7.4	24.4	6.5	43.6	10.2	15.6	3.8	105.4	22.3
2004	17.7	5.1	25.1	4.5	22.7	4.2	18.1	3.6	83.6	11.3
2005	24.5	4.9	12.8	3.4	46.5	8.6	23.6	4.3	107.4	14.9
Average	20.8		17.8		18.0		15.9		72.6	

(Kentucky/Bass/Database.xls)

Table 3. PSD and RSD values calculated for black bass species collected during diurnal electrofishing at Kentucky Lake during May 2005; 95% confidence limits are in parentheses.

Area	Species	No. Fish \geq 8 in	PSD	(+/- 95%)	RSD ^a	(+/- 95%)
Big Bear Creek	Largemouth bass	206	78	(+/- 6)	27	(+/- 6)
Jonathan Creek	Largemouth bass	212	92	(+/- 4)	33	(+/- 6)
Blood River	Spotted bass	32	90	(+/- 10)	9	(+/- 10)
	Largemouth bass	129	81	(+/- 7)	30	(+/- 8)
Sugar Bay	Spotted bass	10	50	(+/- 33)		
	Largemouth bass	282	85	(+/- 4)	26	(+/- 5)
TOTAL	Smallmouth bass	5	67	(+/- 41)		
	Spotted bass	42	81	(+/- 12)	10	(+/- 9)
	Largemouth bass	829	85	(+/- 2)	28	(+/- 3)

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

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Table 4. Mean back-calculated length (in) at each annulus of largemouth bass collected during diurnal electrofishing at Kentucky Lake during May 2005.

Year-Class	N	Age								
		1	2	3	4	5	6	7	8	9
2004	57	6.6								
2003	27	6	10.9							
2002	22	8.2	11.1	13.3						
2001	7	7.1	11.3	13.4	14.9					
2000	20	7.8	11.7	13.9	15.5	16.5				
1999	3	6.8	11.3	13.9	15.4	16.4	17.0			
1998	5	7.5	12.7	14.9	15.8	17.6	18.5	19.2		
1997	2	7.7	12.5	15.3	17.6	19.0	19.6	20.4	21.2	
1996	1	7.2	14.7	15.6	16.8	17.6	18.5	19.4	20.2	20.8
Mean		7.0	11.4	13.8	15.6	16.9	18.3	19.5	20.9	20.8
Number		144	87	60	37	31	11	8	3	1
Smallest		3.4	8.2	11.4	12.8	14.1	14.9	18.6	20.2	
Largest		12.5	15.1	16.4	18.4	19.5	20.3	21.0	21.7	
Std. Error		0.0	0.1	0.2	0.2	0.3	0.4	0.3	0.4	
Low 95% CI		6.7	11.1	13.5	15.1	16.3	17.5	19.0	20.0	
High 95% CI		7.2	11.6	14.1	16.0	17.4	19.1	20.1	21.7	

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

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Table 5. Age frequencies and CPUE of largemouth bass collected during diurnal electrofishing for 10 hours (20 x 30-minute runs) at Kentucky Lake during May 2005.

Age	Inch-Class																				Total	%	CPUE	StdErr
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21					
1	7	15	60	100	63	36	6													287	26.7	28.70	2.86	
2				10	28	39	45													122	11.4	12.21	1.25	
3					9	67	160	53	12											301	28.0	30.14	3.05	
4						16	53	25	12											106	9.9	10.54	0.95	
5							53	62	46	31	13	2								207	19.3	20.66	1.74	
6							18		12											32	3.0	3.12	0.32	
7												8	4	2	2					14	1.3	1.44	0.28	
8																2	1			3	0.3	0.30	0.15	
9																	2			2	0.2	0.20	0.09	
Total	7	15	60	100	63	36	16	28	48	112	176	177	99	70	31	21	8	6	1	1,074				
%	1	1	6	9	6	3	1	3	4	10	16	16	9	7	3	2	1	1	0					

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Table 6. Population assessment of largemouth bass based on spring sampling at Kentucky Lake from 2001-2005.

Parameter	2005		2004		2003		2002		2001	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Length at Age-3	13.3	4	13.7	4	13.7	4	13.7	4	14.4	4
Spring CPUE of Age-1 Fish	28.7	2	12.0	1	30.9	2	35.5	2	73.9	4
Spring CPUE 12-14.9-in Fish	46.5	4	22.7	2	43.6	4	21.8	2	12.2	1
Spring CPUE \geq 15.0-in Fish	23.6	4	18.1	3	15.6	3	12.9	3	12.0	2
Spring CPUE \geq 20-in Fish	0.8	2	1.3	2	1.0	2	0.9	2	0.4	2
Instantaneous Mortality (z)	0.639		0.697		0.728		0.873		0.633	
Annual Mortality (A)%	47.2		50.2		51.7		58.2		46.9	
Total Score	16		12		15		13		13	
Assessment Rating	G		G		G		G		G	

Rating

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

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Table 7. Species composition, relative abundance, and CPUE (fish/hour) of black bass collected during 5.0 hours (10 x 30-minute) diurnal electrofishing runs for black bass at Kentucky Lake during October 2005.

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			
Blood River	Smallmouth bass				12	1			1	2	1	1	1	3	2					1		24	9.6	3.76
	Spotted bass			6	4	1	1	1	5	1	3	2	5	1								30	12.0	2.68
	Largemouth bass			6		11	5	2	6	4	8	4	12	18	11	6	2	2	2	2	1	118	47.2	7.50
Jonathan	Smallmouth bass										1										6	2.4	1.60	
	Spotted bass			1					8	6	4	1	3	5	2	1					31	12.4	4.75	
	Largemouth bass			23	10	13	13	6	12		10	6	15	17	20	11	8	4	8	4	1	181	76.0	8.92
TOTAL				12	2			2	2	2	1	1	1	4	3	1				1	30	6.0	2.27	
	Spotted bass			6	5	1	1	9	11	5	4	5	10	3	1						61	12.2	2.57	
	Largemouth bass			29	10	24	18	8	18	13	18	10	27	35	38	22	14	6	10	4	3	308	61.6	7.30

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Table 8. Number of fish and relative weight (Wr) for each length group of black bass collected at Kentucky Lake during October 2005. Standard errors are in parentheses.

Species	Area	Size Range					
		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in	
		No.	Wr	No.	Wr	No.	Wr
Largemouth bass	Blood River	22	95 (1.33)	48	94 (1.70)	24	93 (1.87)
	Jonathan Creek	37	95 (1.68)	52	93 (1.13)	36	98 (1.58)
	Total	59	95 (1.16)	100	93 (1.00)	60	96 (1.24)
Species	Area	Size Range					
		7.0-10.9 in		11.0-13.9 in		> 14.0 in	
		No.	Wr	No.	Wr	No.	Wr
Spotted bass	Blood River	10	101 (3.60)	8	98 (3.26)		
	Jonathan Creek	19	102 (2.83)	10	95 (1.72)	1	99
	Total	28	102 (2.27)	18	96 (1.73)	1	99
Smallmouth bass	Blood River	3	87 (3.77)	5	92 (2.69)	3	87 (0.99)
	Jonathan Creek	2	96 (4.13)	1	85	2	89 (0.58)
	Total	5	91 (3.27)	6	91 (2.48)	5	88 (0.66)

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Table 9. Indices of year-class strength at age-0 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	Std. Error	Age 0 ≥ 5.0 in ^A	Age 1 ^B	Std. Error
	Mean Length	CPUE		CPUE	CPUE	
1990	4.1	9.5	3.02	4.2	41.4	7.23
1991					31.5	4.94
1992	3.8	30.6	8.70	5.3	33.1	5.43
1993	3.3	33.3	9.45	2.4	25.4	3.28
1994	3.4	13.1	4.46	1.5	9.2	1.58
1995	3.8	33.0	9.18	6.1	14.3	2.70
1996	3.4	38.5	8.01	2.5	7.3	1.28
1997					52.0	6.74
1998	4.5	9.0	1.86	3.2	41.9	6.40
1999	3.5	36.4	10.68	2.4	21.8	4.04
2000	4.2	14.5	2.82	4.8	73.9	7.96
2001	4.9	18.4	3.83	15.1	35.5	5.26
2002	3.4	12.8	6.52	0.0	30.9	0.00
2003	3.6	15.7	5.36	0.7	12.0	0.00
2004	3.7	18.5	5.56	2.3	28.7	5.60
2005	4.2	28.8	3.53	13.2		

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

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

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Table 10. Species composition, relative abundance, and CPUE (fish/net night) of crappie collected by trap nets fished during 78 net-nights in two embayments of Kentucky Lake during October 2005.

Area	Species	Inch Class															Total	CPUE	StdErr
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
Blood River	White Crappie	46	38	4	6	42	22	11	38	15	3	4	1	2			232	6.0	1.11
	Black Crappie	44	19	5	64	87	285	205	83	68	27	17	4				908	23.3	2.33
Jonathan Cr.	White Crappie	1	53	36		20	13	9	42	38	18	2			1		232	6.0	1.18
	Black Crappie	39	38	4	35	71	125	345	144	109	23	8	1				942	24.2	4.87
TOTAL	White Crappie	1	99	74	4	6	62	35	20	80	53	21	6	1	2	1	464	6.0	0.81
	Black Crappie	83	57	9	99	158	410	550	227	177	50	25	5				1,850	23.7	1.83

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Table 11. CPUE for size groups of crappie collected from multiple years of trap netting on Kentucky 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 \geq 8.0 in			CPUE \geq 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	WC&BC
1985	1.7	0.8	2.5	0.5	0.4	0.9	9.0	8.4	8.4	1.2	5.4	1.6
1986	3.6	2.4	6.1	1.9	1.3	3.2	10.3	10.5	10.6	1.6	0.9	1.3
1987	8.7	1.6	10.4	4.2	0.4	4.6	10.5	9.9	10.5	1.4	1.2	1.4
1988	4.2	0.6	4.9	0.9	0.3	1.3	11.0	10.6	10.5	2.0	0.0	1.7
1989	1.8	0.2	2.0	0.9	0.0	1.0	9.3	9.4	9.9	1.2	0.0	0.9
1990	2.6	0.8	3.4	0.7	0.5	1.2	9.7	10.3	10.6	0.4	0.7	0.4
1991	5.6	0.5	6.1	1.1	0.1	1.2	9.7	8.6	9.4	0.5	0.0	0.4
1992	5.5	1.9	7.4	1.7	0.4	2.1	9.5	8.6	9.3	0.5	0.4	0.5
1993	4.7	1.8	6.5	2.7	0.8	3.5	9.0	8.6	9.7	4.7	8.7	5.6
1994	5.5	0.8	6.3	2.3	0.3	2.6	9.6	8.7	9.4	6.7	13.1	7.9
1995	3.3	1.6	4.9	1.7	0.9	2.6	10.4	9.4	9.9	2.5	2.8	2.7
1996	4.2	3.2	7.4	1.7	0.5	2.2	10.0	9.3	9.7	2.2	1.0	1.6
1997	3.3	5.5	8.8	1.6	0.7	2.3	9.6	8.5	9.0	6.5	4.5	5.2
1998	5.8	11.3	17.1	1.7	1.3	3.0	9.3	9.3	9.3	11.6	7.6	8.6
1999	2.3	12.7	15.0	1.3	1.8	3.1	9.5	8.9	9.1	11.3	8.8	9.2
2000	2.4	10.6	13.0	0.8	2.2	2.9	10.0	8.9	9.4	18.8	6.0	7.6
2001	2.2	12.6	14.8	1.3	3.2	4.5	10.8	9.3	9.8	8.7	8.3	8.3
2002	2.7	8.6	11.3	0.7	4.2	4.9	10.8	9.9	10.4	4.2	9.4	8.3
2003	2.6	6.2	8.8	1.4	1.8	3.1	10.8	9.9	10.4	5.8	4.0	4.2
2004	2.7	11.7	14.4	1.1	3.0	4.1	10.8	9.2	9.7	0.8	0.8	0.8
2005	2.4	13.8	16.2	1.1	3.4	4.5	10.8	9.2	9.7	2.1	1.1	1.3
Average	3.7	5.2	8.9	1.5	1.3	2.8	10.0	9.3	9.7	4.5	4.0	3.8

(Kentucky_Crappie_Database.xls)

Table 12. Proportional stock density (PSD) and relative stock density (RSD10) of white and black crappie collected by trap-nets (78 net-nights) at Kentucky Lake during October 2005.

Location	Species	N	PSD	RSD10
Blood River	White Crappie	232	51 (\pm 8)	17 (\pm 6)
	Black Crappie	908	48 (\pm 3)	13 (\pm 2)
Jonathan Creek	White Crappie	233	76 (\pm 7)	41 (\pm 8)
	Black Crappie	942	73 (\pm 3)	16 (\pm 2)
Total	White Crappie	465	64 (\pm 6)	29 (\pm 5)
	Black Crappie	1,850	61 (\pm 2)	15 (\pm 2)

wfdtpntk.d05

Table 13. Age frequencies and CPUE of white crappie collected in trap nets fished for 78 net nights in Kentucky Lake during October 2005. Age data was obtained using otoliths collected in 2004.

Age	Inch Class														Total	%	CPUE	StdErr	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
0	99	74	4	2												179	38.5	2.29	0.64
1				4	62	35	18	56	22	1						198	42.6	2.55	0.36
2							2	24	11	10	3					50	10.8	0.64	0.10
3									17	10	3	1				31	6.7	0.39	0.09
6									3			1				4	0.9	0.04	0.01
8													2	1		3	0.6	0.04	0.02
Total	99	74	4	6	62	35	20	80	53	21	6	2	2	1		465			
%	21	16	1	1	13	8	4	17	11	5	1	0	0	0			100		

wfdtpntk.d05, wfdtnagk.d04

Table 14. Age frequencies and CPUE of black crappie collected in trap nets fished for 78 net-nights in Kentucky Lake during October 2005. Age data was obtained using otoliths collected in 2004.

Age	Inch Class												Total	%	CPUE	StdErr			
	2	3	4	5	6	7	8	9	10	11	12	13							
0	83	57	3	7												150	8.1	1.92	0.59
1			6	92	149	242	254	45	14	2						804	43.5	10.31	0.81
2					9	168	296	163	95	20	4					755	40.8	9.68	0.93
3								19	68	20	14					121	6.5	1.55	0.23
4										2						2	0.1	0.02	0.00
5											7	3				10	0.5	0.13	0.04
6										4		2				6	0.3	0.07	0.01
10										2						2	0.1	0.02	0.00
Total	83	57	9	99	158	410	550	227	177	50	25	5				1,850			
%	4	3	0	5	9	22	30	12	10	3	1	0					100		

wfdtpntk.d05, wfdtnagk.d04

Table 15. Population assessment determined from white and black crappie based on fall trap netting at Kentucky Lake from 2001-2005, table 15a - white crappie and table 15b - black crappie.

Parameter	2005		2004		2003		2002		2001	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
CPUE of crappie (excluding age 0)	26.66	4	39.43	4	24.08	4	18.98	3	26.50	4
CPUE of age 1 crappie	12.86	3	24.80	4	17.86	4	13.10	4	12.01	4
CPUE of age 0 crappie	4.21	1	1.63	1	15.86	4	3.77	2	51.28	4
CPUE of crappie \geq 8 inches	16.24	4	14.38	4	8.75	3	11.34	4	14.76	4
Mean age-2 length at capture	9.7	4	9.7	4	10.4	4	10.4	4	9.8	4
Instantaneous Mortality (Z)	0.788		0.649		0.709		0.673		0.836	
Annual Mortality (A)%	54.5		47.7		50.8		49.0		56.7	
Total Score	16		17		19		17		20	
Assessment Rating	G		G		E		G		E	

Table 15a. White Crappie

Parameter	2005		2004		2003		2002		2001	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
CPUE of crappie (excluding age 0)	3.91	1	7.38	2	3.75	1	3.85	1	3.91	1
CPUE of age 1 crappie	2.55	1	6.20	2	2.34	1	3.30	2	2.34	1
CPUE of age 0 crappie	2.29	1	0.65	1	10.46	4	0.71	1	26.76	4
CPUE of crappie \geq 8 inches	2.45	2	2.71	2	2.55	2	2.74	2	2.21	2
Mean age-2 length at capture	10.8	4	10.8	4	10.8	4	10.8	4	10.8	4
Instantaneous Mortality (Z)	0.469		0.517		0.255		0.360		0.226	
Annual Mortality (A)%	37.4		40.4		22.5		43.3		20.3	
Total Score	9		11		12		10		12	
Assessment Rating	F		F		F		F		F	

Table 15b. Black Crappie

Parameter	2005		2004		2003		2002		2001	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
CPUE of crappie (excluding age 0)	22.75	4	32.05	4	20.33	3	15.14	3	22.59	4
CPUE of age 1 crappie	10.31	3	18.60	4	15.53	4	9.80	3	9.67	3
CPUE of age 0 crappie	1.92	1	0.98	1	5.40	2	3.06	2	24.52	4
CPUE of crappie \geq 8 inches	13.78	4	11.67	4	6.20	3	8.60	3	12.55	4
Mean age-2 length at capture	9.2	3	9.2	3	9.9	4	9.9	4	9.3	3
Instantaneous Mortality (Z)	1.208		0.685		0.748		0.716		0.915	
Annual Mortality (A)%	70.1		49.6		52.7		51.1		60.0	
Total Score	15		16		16		15		18	
Assessment Rating	G		G		G		G		E	

Rating

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

WFDTPNTK.D05, WFDTPNTK.D04, WFDTPNTK.D03, WFDTPNTK.D02, WFDTPNTK.D01

Table 21. PSD and RSD values obtained for each black bass species collected during 9.5 hours (19 runs; each 0.50 hours) of spring diurnal electrofishing at each area of Lake Barkley from 2-6 May 2005. 95% confidence intervals are in parentheses. (wfdpsdb.d05)

Area	Species	No. fish \geq 8.0 inch	PSD (+ 95% CI)	RSD ^A (+ 95% CI)
Upper ¹	Largemouth bass	300	88 (4)	36 (5)
	Spotted bass	18	94 (11)	*
	Smallmouth bass	3	100 (100)	*
Middle ²	Largemouth bass	506	82 (3)	30 (4)
	Spotted bass	5	80 (39)	*
	Smallmouth bass	1	*	*
Lower ³	Largemouth bass	297	80 (5)	32 (5)
	Spotted bass	3	67 (65)	*
	Smallmouth bass	0		
Total	Largemouth bass	1103	83 (2)	32 (3)
	Spotted bass	26	88 (13)	*
	Smallmouth bass	4	75 (49)	*

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

¹ Upper Lake Barkley samples consisted of Demumbers Bay, Nickel Branch, and Willow Creek.

² Middle Lake Barkley samples consisted of Little River and Eddy Creek.

³ Lower Lake Barkley samples consisted of Donaldson Creek, Fords Bay, and Parsons Bay.

* No fish of sufficient size were collected during sampling.

Table 22. Species composition, relative abundance, and CPUE of black bass collected during 9.5 hours (19 runs; each 0.50 hours) of diurnal electrofishing at Lake Barkley on 2-6 May 2005. (wrfpsdh.d05)

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
Lower Donaldson Cr.	Smallmouth bass																				0	0.0	0.0	
	Spotted bass			1				1	2													4	4.0	4.0
	Largemouth bass	3	14	13	12	3	8	8	7	18	16	10	6	6	4	5	2	3	1		139	139.0	37.0	
Ford's Bay	Smallmouth bass																				0	0.0	0.0	
	Spotted bass																				0	0.0	0.0	
	Largemouth bass	6	11	12	12	6	1	3	12	30	25	14	13	7	6	5	2	2	1		169	169.0	23.0	
Parsons Bay	Smallmouth bass																				0	0.0	0.0	
	Spotted bass																				0	0.0	0.0	
	Largemouth bass	2	5	5	5	3	3	2	6	16	8	7	5	5	4	1	2	1		72	144.0	0.0		
Middle Little River	Smallmouth bass																				1	0.5	0.5	
	Spotted bass																				0	0.0	0.0	
	Largemouth bass	3	17	51	24	10	1	14	28	66	50	25	26	20	19	10	8	1		373	186.5	16.7		
Eddy Cr.	Smallmouth bass																				0	0.0	0.0	
	Spotted bass																				5	2.0	2.0	
	Largemouth bass	13	18	11	5	5	4	1	8	23	43	46	34	27	17	12	10	3		270	108.0	15.5		
Upper Nickel Br.	Smallmouth bass																				1	2.0	0.0	
	Spotted bass																				0	0.0	0.0	
	Largemouth bass	5	10	7	4	1	3	9	18	13	16	2	7	3	2	1				101	202.0	0.0		
Willow Cr.	Smallmouth bass																				3	6.0	0.0	
	Spotted bass																				1	2.0	0.0	
	Largemouth bass	1	7	4	6	2	1	5	10	5	13	3	3	1	2					63	126.0	0.0		
Demersals Bay	Smallmouth bass																				4	2.7	0.7	
	Spotted bass																				20	13.3	13.3	
	Largemouth bass	4	27	29	28	18	2	2	25	46	25	25	13	10	4	2	1	1		264	176.0	24.7		
Total	Smallmouth bass	4	1					1	2	1										9	1.0	0.4		
	Spotted bass	2	2					1	2	8	13	2								30	3.2	2.2		
	Largemouth bass	11	91	141	105	51	13	38	81	212	219	133	131	74	67	43	22	10	6	3	1451	152.7	10.3	

Table 23. Spring diurnal electrofishing CPUE of each size-class of largemouth bass collected at Lake Barkley during late April/early May.

Year	Inch-class									
	< 8.0 inch		8.0 - 11.9 inch		12.0 - 14.9 inch		> 15.0 inch		Total	
	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error
2005	36.6	4.9	19.3	1.9	59.4	4.8	37.5	3.3	152.7	10.3
2004	11.3	1.3	40.9	2.9	29.3	1.6	24.7	2.2	106.2	5.1
2003	41.1	5.2	38.5	3.9	75.3	5.3	26.9	2.3	181.8	10.4
2002	26.4	3.6	49.7	5.9	40.6	4.1	16.3	1.8	133.0	8.5
2001	70.4	8.3	61.2	5.1	31.1	2.5	19.0	1.5	181.7	10.8
2000	32.8	4.2	28.6	2.3	24.7	2.3	27.9	2.4	114.1	6.0
1999	16.3	1.9	21.0	2.2	22.7	2.5	34.0	2.6	93.9	6.0
1998	22.2	4.7	26.2	4.2	28.6	3.0	29.8	3.5	106.8	5.9
1997	7.2	1.0	23.0	2.9	22.4	2.1	35.8	3.3	88.4	5.7
1996	14.4	5.9	36.0	4.0	45.6	7.8	43.2	6.4	139.2	16.6
1995	12.2	2.8	55.6	6.4	42.2	4.3	56.0	5.9	166.0	12.3
1994	49.2	8.4	51.0	6.3	72.8	6.2	36.0	5.3	209.0	19.8
1993	40.2	12.1	65.0	6.0	69.2	6.1	32.2	4.5	206.6	15.2
1992	30.7	4.8	79.0	7.6	20.5	1.7	29.5	2.3	159.7	9.0
1991	57.8	7.6	72.9	7.5	59.4	6.1	34.0	3.9	224.1	16.4
1990	10.4	2.5	47.2	6.9	33.8	5.3	26.6	3.5	118.0	12.9
1989	28.7	8.7	74.6	7.4	34.8	4.2	25.0	4.5	163.2	15.5
1988	39.5	6.6	98.2	12.6	76.9	21.8	29.0	9.5	243.6	45.5
1987	64.9	12.4	84.1	11.2	14.5	3.0	25.9	6.1	189.4	27.7
1986	6.1		7.3		39.0		12.2		64.6	
1985	3.0	1.0	11.6	1.7	4.7	1.0	3.6	1.0	22.9	2.6
Average	29.6		47.2		40.4		28.8		145.9	

(Barkley_LMB_Database.xls)

Table 24. Population assessment of the largemouth bass fishery at Lake Barkley from 1985-2005.

Year	Age-3 Length at Capture	CPUE of Age-1	CPUE of 12.0-14.9 in	CPUE of ≥15.0 in	CPUE of ≥20.0 in	Score	Assessment Rating
1985	10.6	*	4.7	3.6	0.2		
1986	10.8	*	39.0	12.2	1.2		
1987	11.1	*	14.5	25.9	2.2		
1988	11.2	*	76.9	29.0	2.9		
1989	*	*	34.8	25.0	0.9		
1990	11.7	*	33.8	26.6	3.4		
1991	11.4	*	59.4	34.0	1.9		
1992	11.0	*	20.5	29.5	2.7		
1993	11.3	*	69.2	32.2	3.4		
1994	11.1	*	72.8	36.0	4.2		
1995	11.0	*	42.2	56.0	7.6		
1996	10.9	*	45.6	43.2	7.6		
1997	10.9	3.0	22.4	35.8	6.2	12	Good
1998	12.0	23.0	28.6	29.8	7.0	16	Good
1999	12.6	17.3	22.7	34.0	4.7	15	Good
2000	12.6 ^A	37.3	24.7	27.9	2.7	15	Good
2001	14.7	81.0	31.1	19.0	1.6	17	Excellent
2002	14.7 ^A	28.9	40.6	16.3	1.3	15	Good
2003	12.9	59.2	75.3	26.9	1.7	19	Excellent
2004	12.9 ^A	29.2	29.3	24.7	1.8	16	Good
2005	12.9 ^A	42.5	59.4	37.5	2.0	18	Excellent

^A Age and growth data was not collected. Data from the previous year was substituted.

* Data not available.

Table 25. Species composition, relative abundance, and CPUE (fish/hour) 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 from 10-11 October 2005. (wfdwrb.d05)

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	21				
Middle Eddy Creek	Largemouth bass	2	6	6	10	13	43	43	43	27	30	36	43	21	12	11	10	2	1	316	126.40	13.85	
	Spotted bass									1	1	1								3	1.20	0.80	
	Smallmouth bass		3			1	2				1									7	2.80	1.50	
Little River	Largemouth bass	1	10	10	5	11	37	28	18	39	35	23	15	11	4	7	2	1	256	102.40	8.57		
	Spotted bass					2													2	0.80	0.49		
	Smallmouth bass																		0	0	0.0		
Total	Largemouth bass	2	1	16	16	15	24	80	71	45	69	71	66	36	23	15	17	4	1	572	114.40	8.66	
	Spotted bass					2				1	1	1							5	1.00	0.45		
	Smallmouth bass		3			1	2			1									7	1.40	0.85		

Table 26. Number of fish and the relative weight (Wr) values of each size-class of largemouth, spotted, and smallmouth bass collected at Lake Barkley during 5.0 hours (10 runs; each 0.50 hours) of diurnal electrofishing on 10-11 October 2005. (wfdwrb.d05)

Species	Area	Inch-class														
		8.0 - 11.9 inch			12.0 - 14.9 inch			>15.0 inch			Total					
		N	Wr	Std. Error	N	Wr	Std. Error	N	Wr	Std. Error	N	Wr	Std. Error			
Largemouth bass	Middle															
	Eddy Creek	126	93.1	0.9	109	95.2	1	57	101.8	1.6	292	95.6	0.7			
	Little River	94	91.3	0.8	97	102.7	9	39	100.9	1.7	230	97.7	3.8			
	Total	220	92.4	0.6	206	98.7	4.3	96	101.4	1.2	522	96.5	1.7			
Spotted bass	Middle															
	Eddy Creek															
	Little River	2	94.8	6.9	2	104.2	0.3	1	117.7		3	108.7	4.5			
	Total	2	94.80	6.9	2	104.2	0.3	1	117.7		5	103.1	4.7			
Smallmouth bass	Middle															
	Eddy Creek	3	91.2	6.1	1	84.9					4	89.6	4.6			
	Little River															
	Total	3	91.2	6.1	1	84.9					4	89.6	4.60			

Table 29. Relative weight (Wr) of each length-class of blue and channel catfish collected at Lake Barkley from 23-27 May 2005. Fish were collected using trotlines (19 trotline-nights). (wfdcatb.d05)

Species	12.0 - 19.9 in.			20.0 - 29.9 in.			> 30.0 in.			Total		
	N	Wr	Std. Error	N	Wr	Std. Error	N	Wr	Std. Error	N	Wr	Std. Error
Blue Catfish	64	97.4	2.3	60	100.1	1.7	2	118.3	0.3	126	99	1.4
	11.0 - 15.9 in.			16.0 - 23.9 in.			> 24.0 in.			Total		
	N	Wr	Std. Error	N	Wr	Std. Error	N	Wr	Std. Error	N	Wr	Std. Error
Channel Catfish	35	100.4	4.1	33	90.6	2.5	3	102.6	8.6	71	96	2.4

Table 30. Age frequencies and CPUE of blue catfish collected during 19 trotline-nights at Lake Barkley during 23-27 May 2005.

Age	Inch-Class																			Total	Percent	Cum. Percent	CPUE				
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26					27	28	29	30
2	1																										
3		6	9																								
4				6	2	4	2	4	2	2																	
5						4	2	5	16	2	5	6															
6								3	5	7	4	3	6	4	3												
7										2	4	2	1	2	1	1											
8														2													
9																		4									
Total	1	6	9	6	2	8	2	10	21	7	9	12	10	12	1	8	5	3	1								
%	1	5	7	5	2	5	2	8	16	5	7	10	7	9	1	6	4	2	1								

(wfdcatb.d05) (wfdcbcabg.d04)

Table 31. Age frequencies and CPUE of channel catfish collected during 19 trotline-nights at Lake Barkley during 23-27 May 2005.

Age														Total	Percent	Cum. Percent	CPUE	Std. Error		
	10	11	12	13	14	15	16	17	18	19	20	21	22						23	
3	1			2												3	4.4	2.8	0.2	0.1
4		2	3	4	4											13	19.1	21.9	0.7	0.2
5			1	4	6	3	2	1	1		1					19	27.9	49.9	1.1	0.2
6					2	3	2			2	1					10	14.7	64.6	0.5	0.1
7						1	1	1				1				4	5.9	70.4	0.2	0.1
8								1	2				2			5	7.4	77.8	0.3	0.1
9									2	2	1	2				7	10.3	88.1	0.4	0.1
10								4				2		1		7	10.3	100.0	0.3	0.1
Total	3	6	14	22	19	12	12	12	9	7	8	7	3	1		68				
%	1	3	6	14	17	10	9	10	9	4	6	6	3	1		100				

(wfdcatb.d05) (wfdccagb.d04)

Table 32. Length frequency and CPUE (#/net-night) of each inch-class of white and black crappie collected by trap-net (79 net-nights) at Lake Barkley from 31 October-4 November 2005. (wfdtpntb.d05)

Location	Species	Inch-Class													Total	CPUE	Std. Error
		1	2	3	4	5	6	7	8	9	10	11	12	13			
Little River	White Crappie	1	38	103	138	80	9		7	46	62	65	12	2	563	14.1	1.4
	Black Crappie		16	38	10		3	6	14	17	8	3	1	1	117	2.9	0.4
Donaldson Creek	White Crappie		49	130	67	4	3	2	13	18	31	35	10		362	9.3	1.7
	Black Crappie		7	17	7	15	29	14	20	9	15	16	4	1	154	4.0	0.6
Total	White Crappie	1	87	233	205	84	12	2	20	64	93	100	22	2	925	11.7	1.1
	Black Crappie		23	55	17	15	32	20	34	26	23	19	5	2	271	3.4	0.4

Table 33. CPUE for size groups of crappie collected from multiple years of trap netting on Lake Barkley. 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 \geq 8.0 in			CPUE \geq 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	WC&BC
1985	3.4	0.1	3.5	1.2	0.1	1.3	9.5	8.4	9.4	0.1	0.0	0.2
1986	5.9	0.2	6.0	2.3	0.0	2.3	10.9	9.9	10.8	1.1	0.0	1.0
1987	2.0	0.4	2.4	1.5	0.1	1.6	11.4	10.8	11.3	0.8	0.0	0.7
1988	3.5	0.2	3.6	1.5	0.1	1.6	10.1	10.0	10.1	3.0	8.3	3.2
1989	1.3	0.1	1.4	0.5	0.1	0.6	8.8	9.1	8.9	10.7	0.0	10.0
1990	4.6	0.2	4.7	2.0	0.0	2.0	11.0	10.9	11.0	0.0	0.0	0.0
1991	3.2	0.2	3.4	1.1	0.1	1.1	10.5	10.4	10.5	1.0	0.0	0.7
1992	2.1	2.0	4.1	0.9	0.4	1.3	10.2	9.4	9.8	0.0	0.0	0.0
1993	1.4	0.5	1.9	0.5	0.3	0.8	9.8	9.4	9.7	0.6	13.7	3.6
1994	3.4	0.8	4.2	1.1	0.7	1.8	10.5	10.4	10.4	1.1	10.9	3.5
1995	4.4	0.7	5.2	1.0	0.2	1.2	11.0	9.2	10.1	0.2	2.1	0.5
1996	5.6	0.7	6.3	2.9	0.2	3.1	10.4	9.1	10.0	0.7	0.0	0.5
1997	2.5	0.6	3.1	1.1	0.1	1.2	10.5	8.8	9.2	0.3	1.5	0.4
1998	4.5	1.5	6.0	1.3	0.2	1.5	9.5	8.2	9.3	5.1	0.6	3.0
1999	1.9	1.0	2.9	1.4	0.1	1.4	10.3	9.2	9.8	1.0	1.7	1.3
2000	2.0	1.9	3.9	0.8	0.6	1.4	11.4	10.5	10.9	9.2	1.0	4.0
2001	1.1	1.6	2.6	0.9	1.0	2.0	11.3	10.2	10.4	2.2	7.8	5.8
2002	2.6	2.7	5.3	1.1	0.6	1.7	10.4	10.0	10.2	2.7	6.8	4.9
2003	2.3	1.6	3.9	1.1	1.1	2.2	11.1	10.3	10.7	4.2	4.3	4.2
2004	5.5	1.8	7.3	1.0	0.7	1.8	11.1	10.3	10.7	1.8	3.4	2.3
2005	3.8	1.4	5.2	2.8	0.6	3.4	11.3	10.3	10.8	0.0	0.0	0.0
Average	3.2	1.0	4.1	1.3	0.3	1.7	10.5	9.7	10.2	2.2	3.0	2.4

(Barkley_Crappie_Database.xls)

Table 34. Proportional stock density (PSD) and relative stock density (RSD) of white and black crappie collected by trap-nets (79 net-nights) at Lake Barkley from 31 October-4 November 2005. Numbers in parentheses represent 95% confidence intervals. (wfdtpntb.05)

Location	Species	N	PSD	RSD ₁₀
Little River	White Crappie	283	68.5 (\pm 5.4)	49.8 (\pm 5.8)
	Black Crappie	53	83.0 (\pm 10.2)	24.5 (\pm 11.7)
Donaldson Creek	White Crappie	116	92.2 (\pm 4.9)	65.5 (\pm 8.7)
	Black Crappie	123	52.8 (\pm 8.9)	29.3 (\pm 8.1)
Total	White Crappie	399	75.4 (\pm 4.2)	54.4 (\pm 5.0)
	Black Crappie	176	61.9 (\pm 7.2)	27.8 (\pm 6.6)

Table 35. Relative weight values of each size-class of white and black crappie collected by trap-net (79 net-nights) at Lake Barkley from 31 October-4 November 2005. (wfdtpnb.d05)

Location	5.0 - 7.9 Inch			8.0 - 9.9 Inch			> 10.0 Inch			Total		
	N	Wr	St. Error	N	Wr	St. Error	N	Wr	St. Error	N	Wr	St. Error
Little River												
White Crappie	89	85.2	1.3	53	102.8	1.4	141	106.0	0.7	283	98.8	0.8
Black Crappie	9	94.8	1.4	31	104.4	2.0	13	105.4	1.7	53	103.0	1.4
Donaldson Creek												
White Crappie	9	102.0	7.5	31	113.9	2.2	76	113.0	1.0	116	112.4	1.1
Black Crappie	58	100.2	2.4	29	105.3	2.4	36	106.1	1.0	123	103.1	1.3
Total												
White Crappie	98	86.7	1.4	84	106.9	1.4	217	108.5	0.6	399	102.8	0.7
Black Crappie	67	99.5	2.1	60	104.9	1.5	49	105.9	0.9	176	103.1	1.0

Table 36. Mean back-calculated length (in.) at each annulus of black crappie collected by trap-netting (79 net-nights) at Lake Barkley from 31 October-4 November 2005, including the range in length of black crappie at each age and the 95% confidence interval of each age group^A.

Year-Class	Age					
	1	2	3	4	5	6
2004	43	4.0				
2003	27	4.5	8.2			
2002	14	4.2	7.3	9.8		
2001	2	4.6	6.8	8.4	10.5	
1999	2	3.5	5.6	7.7	8.8	9.9
Mean	88	4.2	7.7	9.4	9.7	12.1
Smallest		2.4	4.1	5.1	6.1	11.4
Largest		6.5	9.9	11.6	11.5	12.8
Std. Error		0.1	0.2	0.4	1.2	0.7
Low 95% CI		4.1	7.4	8.7	7.3	10.7
High 95% CI		4.4	8.1	10.1	12.0	13.5

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

Table 37. Mean back-calculated length (in.) at each annulus of white crappie collected by trap-netting (79 net-nights) at Lake Barkley from 31 October- 4 November 2004, including the range in length of white crappie at each age and the 95% confidence interval of each.

Year-Class	N	Age			
		1	2	3	4
2004	41	4.3			
2003	59	4.6	8.9		
2002	4	5.2	8.7	11.5	
2001	1	5.2	9.8	11.3	12.0
Mean	105	4.5	8.9	11.5	12.0
Smallest		2.5	4.5	10.6	12.0
Largest		7.0	11.2	12.0	12.0
Std. Error		0.1	0.2	0.3	
Low 95% CI		4.4	8.6	11.0	
High 95% CI		4.7	9.3	12.0	

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

(wfdtpntb.d05) (wfdtnagb.d05)

Table 38. Age frequencies and CPUE of black crappie collected during 79 net-nights at Lake Barkley during 30 October-4 November 2005.

Age	2	3	4	5	6	7	8	9	10	11	12	Total	Percent	Cum. Percent	CPUE	Std. Error
0	23	55	14									92	34.1	34.1	1.2	0.2
1			3	15	32	20	25	16	1			112	41.5	75.6	1.4	0.2
2							6	10	18	10		44	16.3	91.9	0.6	0.1
3							3		4	10	3	20	7.4	99.3	0.3	0.1
4											2	2	0.7	100.0	0.0	0.0
Total	23	55	17	15	32	20	34	26	23	20	5	270				
%	9	20	6	6	12	7	13	10	9	7	2	100				

(wfdtpntb.d05)
(wfdtnagb.d05)

Table 39. Age frequencies and CPUE of white crappie collected during 79 net-nights at Lake Barkley during 31 October-4 November 2005.

Age	Inch-Class												Total	Percent	Cum. Percent	CPUE	Std. Error	
	1	2	3	4	5	6	7	8	9	10	11	12						13
0	1	87	233	185	75	2								583	63.0	63.0	7.4	1.0
1				21	9	10	2	18	52	22				134	14.5	77.5	1.7	0.2
2								2	12	71	100	18		203	21.9	99.4	2.6	0.3
3												3	2	5	0.5	99.9	0.1	0.0
4												1		1	0.1	100.0	0.0	0.0
Total	1	87	0	206	0	12	2	20	64	93	100	22	2	926				
%	0	9	25	22	9	1	0	2	7	10	11	2	0	100				

(wfdtpntb.d05) (wfdtnagb.d05)

Table 40. Annual fall trap netting CPUE (fish/net night) of each age-class of white crappie collected from Lake Barkley from 1985-2005.

Year	Age-Class						
	0	1	2	3	4	5	6
1985	8.10	11.62	4.89	0.44	0.02	0.00	0.00
1986	1.22	5.17	1.80	0.07	0.01	0.04	0.03
1987	1.62	3.95	0.62	0.22	0.00	0.03	0.00
1988	0.24	1.35	2.08	0.19	0.11	0.00	0.00
1989	3.70	1.32	0.56	0.20	0.20	0.05	0.00
1990	4.58	6.36	0.34	0.01	0.00	0.00	0.00
1991	1.18	3.62	1.28	0.17	0.04	0.00	0.00
1992	0.95	1.34	1.16	0.10	0.00	0.00	0.00
1993	3.65	0.83	1.13	0.16	0.01	0.00	0.00
1994	6.63	7.09	1.10	0.16	0.06	0.02	0.00
1995	1.75	9.50	0.86	0.04	0.00	0.02	0.00
1996	5.96	2.21	4.90	0.32	0.03	0.00	0.00
1997	2.44	7.61	0.53	1.01	0.01	0.00	0.00
1998	1.09	5.52	4.77	0.15	0.52	0.04	0.00
1999	2.19	0.81	0.84	0.78	0.00	0.03	0.00
2000	0.80	1.91	0.11	0.09	0.18	0.01	0.01
2001	28.43	0.69	0.17	0.24	0.02	0.00	0.00
2002	0.91	1.49	1.06	0.12	0.02	0.00	0.04
2003	9.89	1.84	0.87	0.12	0.07	0.01	0.01
2004 ^A	1.73	5.15	1.14	0.08	0.07	0.01	0.01
2005	7.37	1.70	2.56	0.06	0.01	0.00	0.00
Average	4.50	3.86	1.56	0.23	0.07	0.01	0.00

(Barkley_Crappie_Database.xls)

^A - Age and growth data not collected, data from previous year was used to determine CPUE of each age-class.

Table 41. Annual fall trap netting CPUE (fish/net night) of each age-class of black crappie collected from Lake Barkley from 1985-2005.

Year	Age-Class						
	0	1	2	3	4	5	6
1985	0.10	0.27	0.03	0.07	0.02	0.00	0.00
1986	0.03	0.36	0.05	0.00	0.00	0.00	0.00
1987	0.14	0.24	0.07	0.04	0.00	0.00	0.00
1988	0.05	0.00	0.12	0.03	0.02	0.00	0.00
1989	0.03	0.08	0.05	0.05	0.00	0.00	0.00
1990	2.67	0.18	0.01	0.00	0.00	0.00	0.00
1991	0.19	2.05	0.08	0.01	0.00	0.00	0.00
1992	0.53	0.21	2.01	0.04	0.00	0.00	0.00
1993	1.33	0.23	0.19	0.14	0.09	0.00	0.00
1994	0.34	2.06	0.32	0.13	0.28	0.05	0.00
1995	0.67	0.79	0.79	0.05	0.01	0.02	0.00
1996	0.79	2.52	0.70	0.11	0.00	0.00	0.00
1997	0.86	0.72	0.86	0.02	0.01	0.00	0.00
1998	0.96	8.17	0.88	0.83	0.06	0.00	0.00
1999	1.41	0.90	0.56	0.05	0.03	0.00	0.00
2000	0.54	3.37	0.16	0.38	0.02	0.01	0.00
2001	8.23	0.88	1.00	0.05	0.14	0.03	0.00
2002	0.99	2.13	0.46	0.32	0.13	0.08	0.00
2003	2.14	2.96	1.10	0.14	0.15	0.01	0.03
2004 ^A	1.50	1.17	1.33	0.10	0.06	0.01	0.01
2005	1.16	1.42	0.55	0.25	0.02	0.00	0.00
Average	1.18	1.46	0.54	0.13	0.05	0.01	0.00

(Barkley_Crappie_Database.xls)

^A - Age and growth data not collected, data from previous year was used to determine CPUE of each age-class.

Table 42. Annual mortality (A) between 2004 and 2005, and CPUE (fish/net-night) of the last five year-classes of white and black crappie (combined), estimated from trap-net data collected at Lake Barkley during October/November 2004 and 2005. (wfdtpntb.d05) (wfdtnagb.d05) (wfdtpntb.d04) (wfdtnagb.d03)

Year-Class	Age Intervals	CPUE (2004)	CPUE (2005)	Mortality of Cohort (%)
2003	1+ - 2+	6.32	3.11	50.8
2002	2+ - 3+	2.47	0.31	87.4
2001	3+ - 4+	0.18	0.03	83.3
2000	4+ - 5+	0.13	0.03	76.9
1999	5+ - 6+	0.02	0.01	50.0

Table 43. Population assessment for white, black, and white and black crappie combined from Lake Barkley trap-net data collected in November 2005.

Parameter	White Crappie		Black Crappie		Combined	
	Actual Value	Score	Actual Value	Score	Actual Value	Score
Population Density (CPUE of age-1 and older crappie)	4.3	1	2.2	1	6.5	2
Recruitment (CPUE of age-1 crappie)	1.7	1	1.4	1	3.1	2
Recruitment (CPUE of age-0 crappie)	7.4	3	1.2	1	8.6	3
Size Structure (CPUE of > 8.0 inches)	3.8	2	1.4	1	5.2	3
Growth (Mean age-2 length at capture)	10.6	4	9.7	4	10.7	4
Instantaneous Mortality (Z)	1.400		0.865		1.065	
Annual Mortality (A)%	75.4		57.9		65.5	
Total Score:		11		8		14
Assessment Rating:		F		F		G

(wfdtpntb.d05) (wfdtnagb.d05)

Table 44. Population assessment of the white crappie population at Lake Barkley from 1985-2005.

Year	Population Density	Recruitment		Size Structure	Growth	Score	Rating
	CPUE of age-1 and older	CPUE of Age-1	CPUE of Age-0	CPUE of ≥ 8.0 in	Length of Age-2 at Capture		
1985	3	3	3	2	3	14	G
1986	2	2	1	3	4	12	F
1987	1	2	1	2	4	10	F
1988	1	1	1	2	4	9	F
1989	1	1	2	1	2	7	P
1990	2	2	2	2	4	12	F
1991 ^A	2	2	1	2	4	11	F
1992 ^B	1	1	1	2	4	9	F
1993 ^A	1	1	2	1	4	9	F
1994 ^A	2	3	3	2	4	14	G
1995	2	3	1	2	4	12	F
1996 ^A	2	1	2	3	4	12	F
1997 ^A	2	3	1	2	4	12	F
1998 ^B	2	2	1	2	3	10	F
1999 ^B	1	1	1	1	4	8	F
2000 ^C	1	1	1	2	4	9	F
2001 ^C	1	1	4	1	4	11	F
2002 ^C	1	1	1	2	4	9	F
2003 ^C	1	1	3	2	4	11	F
2004 ^A	2	2	1	3	4	12	F
2005 ^A	1	1	3	2	4	11	F

^A Indicate years where the black crappie population comprised 15.0-34.9% of the age-1 and older crappie.

^B Indicate years where the black crappie population comprised 35.0-49.9% of the age-1 and older crappie.

^C Indicate years where the black crappie population comprised $\geq 50.0\%$ of the age-1 and older crappie.

Table 45. Population assessment of the black crappie population at Lake Barkley from 1985-2005.

Year	Population Density	Recruitment		Size Structure	Growth	Score	Rating
	CPUE of age-1 and older	CPUE of Age-1	CPUE of Age-0	CPUE of ≥ 8.0 in	Length of Age-2 at Capture		
1985	1	1	1	1	1	5	P
1986	1	1	1	1	4	8	F
1987	1	1	1	1	4	8	F
1988	1	1	1	1	4	8	F
1989	1	1	1	1	2	6	P
1990	1	1	1	1	4	8	F
1991 ^A	1	1	1	1	4	8	F
1992 ^B	1	1	1	1	3	7	P
1993 ^A	1	1	1	1	3	7	P
1994 ^A	1	1	1	1	4	8	F
1995	1	1	1	1	3	7	P
1996 ^A	1	1	1	1	2	6	P
1997 ^A	1	1	1	1	2	6	P
1998 ^B	2	3	1	1	1	8	F
1999 ^B	1	1	1	1	3	7	P
2000 ^C	1	2	1	1	4	9	F
2001 ^C	1	1	3	1	4	10	F
2002 ^C	1	1	1	2	4	9	F
2003 ^C	1	1	1	1	4	8	F
2004 ^A	1	1	1	1	4	8	F
2005 ^A	1	1	1	1	4	8	F

^A Indicate years where the black crappie population comprised 15.0-34.9% of the age-1 and older crappie.

^B Indicate years where the black crappie population comprised 35.0-49.9% of the age-1 and older crappie.

^C Indicate years where the black crappie population comprised $\geq 50.0\%$ of the age-1 and older crappie.

Table 46. Population assessment of the white and black crappie population (combined) at Lake Barkley from 1985-2005.

Year	Population Density	Recruitment		Size Structure	Growth	Score	Rating
	CPUE of age-1 and older	CPUE of Age-1	CPUE of Age-0	CPUE of ≥ 8.0 in	Length of Age-2 at Capture		
1985	3	3	3	2	3	14	G
1986	2	2	1	3	4	12	F
1987	2	2	1	2	4	11	F
1988	1	1	1	2	4	9	F
1989	1	1	2	1	2	7	P
1990	2	2	3	2	4	13	G
1991 ^A	2	2	1	2	4	11	F
1992 ^B	1	1	1	2	4	9	F
1993 ^A	1	1	2	1	4	9	F
1994 ^A	2	3	3	2	4	14	G
1995	2	3	1	3	4	13	G
1996 ^A	2	2	3	3	4	14	G
1997 ^A	2	3	2	2	3	12	F
1998 ^B	3	3	1	3	3	13	G
1999 ^B	1	1	2	2	4	10	F
2000 ^C	2	2	1	2	4	11	F
2001 ^C	1	1	4	2	4	12	F
2002 ^C	2	2	1	3	4	12	F
2003 ^C	2	2	4	2	4	14	G
2004 ^A	2	2	2	3	4	13	G
2005 ^A	2	2	3	3	4	14	G

^A Indicate years where the black crappie population comprised 15.0-34.9% of the age-1 and older crappie.

^B Indicate years where the black crappie population comprised 35.0-49.9% of the age-1 and older crappie.

^C Indicate years where the black crappie population comprised $\geq 50.0\%$ of the age-1 and older crappie.

Table 47. Fishery statistics derived from a creel survey at Lake Barkley (45,600 a) from 1 March through 31 October 2005.

Fishing Trips			
	No. of fishing trips (per acre)	192,799	(4.23)
Fishing Pressure			
	Total angler-hours (S.E.)	765,331	(21,270)
	Angler-hours/acre	16.78	
Catch / Harvest			
	No. of fish caught (S.E.)	1,197,613	(99,591)
	No. of fish harvested (S.E.)	426,356	(42,938)
	Lb of fish harvested	310,667	
Harvest Rates			
	Fish/hour	0.55	
	Fish/acre	9.35	
	Pounds/acre	6.81	
Catch Rates			
	Fish/hour	1.56	
	Fish/acre	26.26	
Miscellaneous Characteristics (%)			
	Male	85.52	
	Female	14.48	
	Resident	71.36	
	Non-resident	28.64	
Method (%)			
	Still fishing	29.83	
	Casting	48.68	
	Trolling	1.47	
	Fly Rod	0.04	
	Spider Rig (> 3 poles/angler)	1.19	
	Crappie Casting	8.25	
	Crappie Still fishing (< 3 poles/angler)	10.54	
Mode (%)			
	Boat	86.19	
	Bank	9.95	
	Dock	3.86	

Table 48. Fish harvest derived from a creel survey at Lake Barkley (45,600 a) from 1 March-31 October 2005.

	Black bass group	Largemouth bass	Smallmouth bass	Spotted bass	Croppie group	White croppie	Black crappie	Carolinian group	Channe crappie	Fathead crappie	Blue catfish	Bullhead	Parfish group	Bluegill	Redear sunfish	Longear sunfish	Warmouth	Green sunfish	Sauger	Yellow perch
No. caught	387,218	367,866	11,493	7,860	249,886	213,226	36,480	95,998	59,248	1,247	35,312	191	289,307	255,492	11,823	17,104	3,507	1,380	1,920	187.8
(per acre)	(8.48)	(8.07)	(0.25)	(0.17)	(5.48)	(4.68)	(0.80)	(2.11)	(1.30)	(0.03)	(0.77)	(0.00)	(6.34)	(5.60)	(0.28)	(0.38)	(0.08)	(0.03)	(0.04)	(0.00)
No. harvested	27,341	25,593	696	1,052	112,450	97,112	15,338	77,594	47,644	692	29,141	118	138,443	123,207	9,988	4,700	388	160	807	
(per acre)	(0.66)	(0.56)	(0.02)	(0.02)	(2.47)	(2.13)	(0.34)	(1.70)	(1.04)	(0.02)	(0.64)	(0.00)	(3.04)	(2.70)	(0.22)	(0.10)	(0.01)	(0.00)	(0.02)	
% of total no. harvested	6.41	6.00	0.16	0.25	26.37	22.76	3.60	18.20	11.17	0.16	6.83	0.03	32.47	28.90	2.34	1.10	0.09	0.04	0.19	
Lb. harvested	62,516	59,895	1,578	1,043	87,829	56,625	11,204	108,325	63,218	1,041	44,007	60	33,227	26,520	5,929	643	105	30	1,043	
(per acre)	(1.37)	(1.31)	(0.03)	(0.02)	(1.49)	(1.24)	(0.25)	(2.38)	(1.39)	(0.02)	(0.97)	(0.00)	(0.73)	(0.58)	(0.13)	(0.01)	(0.00)	(0.00)	(0.02)	
% of total lb. harvested	20.12	19.28	0.51	0.34	21.83	18.23	3.61	34.87	20.35	0.34	14.17	0.02	10.70	8.54	1.91	0.21	0.03	0.01	0.34	
Mean length (in)		16.5	17.0	13.4		11.3	10.9	15.7	15.7	15.7	16.6	10.5		6.9	9.6	8.2	7.3	6.7	16.5	
Mean weight (lb)		2.34	2.33	1.02		0.70	0.71	1.24	1.24	1.57	1.62	0.51		0.21	0.60	0.14	0.27	0.19	1.41	
No. of fishing trips for that species	83,242				41,404			30,632												
% of all trips	43.2				21.5			15.9												
Hours fished for that species	330,434				164,358			121,597												
(per acre)	(7.25)				(3.60)			(2.67)												
No. harvested fishing for that species	26,029				109,751			70,777												
Lb. harvested fishing for that species	59,504				66,029			98,795												
No. /hr harvested fishing for that species	0.07				0.68			0.58												
% success fishing for that species	14.2				53.9			47.4												

t = < 0.005

Table 48 (continued). Fish harvest derived from a creel survey at Lake Barkley (45,600 a) from 1 March-31 October 2005.

	Moore Group	White bass	Striped bass	Yellow bass	Hybrid Striped bass	Drum	Skipjack herring	Mooneye	Shad	Gal	Golden shiner	Carp	Paddlefish	Illegal bass	Illegal Black Crappie	Illegal White Crappie	Other species	Anything
No. caught (per acre)	141,730 (3.11)	73,765 (1.82)	3,841 (0.08)	63,916 (1.40)	208 (0.00)	15,750 (0.35)	12,401 (0.27)	62 (0.00)	43 (0.00)	63 (0.00)	62 (0.00)	62 (0.00)	63 (0.00)	476 (0.01)	520 (0.01)	2,022 (0.04)	60 (0.00)	
No. harvested (per acre)	62,789 (1.38)	48,874 (1.07)	395 (0.01)	13,531 (0.30)		560 (0.01)	3,222 (0.07)	62 (0.00)						476 (0.01)	520 (0.01)	2,022 (0.04)	60 (0.00)	
% of total no. harvested	14.73	11.46	0.09	3.17		0.13	0.76	0.01						0.11	0.12	0.47	0.01	
Lb. harvested (per acre)	35,435 (0.78)	30,264 (0.68)	1,675 (0.04)	3,496 (0.08)		550 (0.01)	365 (0.01)	19 (0.00)						474 (0.01)	153 (0.00)	732 (0.02)		
% of total lb. harvested	11.41	9.74	0.54	1.13		0.18	0.12	0.01						0.15	0.05	0.24	0.00	
Mean length (in)		11.5	21.6	8.6		12.1	9.4	10.0						12.9	8.8	8.9	7.0	
Mean weight (lb)		0.65	4.06	0.25		0.93	0.27	0.30						1.10	0.30	0.37		
No. of fishing trips for that species	8,888						369											6,075
% of all trips	4.6						0.2											3.2
Hours fished for that species (per acre)	35,321 (0.77)						1,465 (0.03)											24,116 (0.53)
No. harvested fishing for that species	54,803						3,166											
Lb. harvested fishing for that species	31,649						341											
No. / hr harvested fishing for that species	1.78						8.79											
% success fishing for that species	66.80						50.00											11.31

t = < 0.005

Table 49. Length distribution for each species of fish harvested or released (lengths of released fish are estimated) at Lake Berkley (45,600 a) from the 1 March to 31 October 2005 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			
White crappie	H								62,141	28,517	8,171	3,613	2,778	558	334										
Black crappie	H	66	444	167	3,720	2,865	18,376	88,772	1,258	273	184		219												
	R								5,531	5,769	2,851	865	171	114	56										
Largemouth bass	H		174	59	1,217	174	2,550	15,821	508	189	169	68	189	58											
	R								14,220	2,179	33,084	3,085	78,088	92,407	111,980	10,772	12,952	6,208	3,939	1,433	1,428	514	57	229	57
Smallmouth bass	H								1,663	333	2,051	887	2,494	778	1,441	185	274	274	329						
	R								55	55	277	368	111	111	55	55									
Spotted bass	R								229	67	853	288	2,851	1,430	1,030	68									
Bluegill	H	172	401	2,291	24,630	63,623	31,962	172		58															
	R	176	1,580	11,355	41,140	50,338	21,423	6,205	58																
Rock bass	H								1,241	2,834	2,539	1,806	678												
	R		61	245	612	245	245	61	122	183		60													
Longear sunfish	H								411	3,701	411														
	R	358	831	6,944	4,273																				
Warmouth	H								277	110															
	R	520	116	635	635	751	347	58																	
Green sunfish	H								83	107															
	R		174	523	523																				
Channel catfish	H								62	681	248	5,012	4,146	7,239	6,373	6,883	2,808	4,208	2,228	3,403	1,423	1,052	619		
	R								1,753	483	2,659	60	1,834	544	1,088	604	423	181	423	80	302	242	80		
Blue catfish	H								115	749	884	4,031	2,131	4,435	2,534	2,534	1,728	2,880	891	1,801	891	884	748		
	R		235	784	588				1,848	646	1,117	118	529	176	59	59									
Fathead catfish	H																								
	R								185		62	62	58	173	231	82								61	
Bullhead	H								59																
	R																								
White bass	H								1,784	2,103	13,700	11,087	12,653	2,358	3,186	1,529	448	127							
	R	879	1,981	351	4,383	2,284	5,798	1,874	3,983	844	1,757	234	410	178	59	57									
Striped bass	H																								
	R								638	680	290	1,181	58	116	174										
Hybrid striped bass	R								52																
Yellow bass	H								633	5,527	5,008	2,015	348												
	R	901	857	9,176	10,922	18,240	0,765	3,096	225	112															
Sauger	H								66		465	66	169	200	58										
	R								111																
Yellow perch	R																								
Drum	H																								
	R	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	
Striped herring	H																								
	R	202							58	175	2,105	351	877	117	4,443	58	175	409	58	61					
Gar	R																								
Shad	R								43																
Golden shiner	H								62																
Carp	R																								
Mooneye	H																								
Packfish	R																								
Other species	H																								
Illegal Black bass	H																								
Illegal B. Crappie	H								116	404															
Illegal W. Crappie	H								188	1,833															

Table 49 (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 2005 creel survey.

Species	Inch Class													Total									
	24	25	26	27	28	29	30	31	32	33	34	35	36		37	38	39	40	41	42	43	44	
White crappie																							87,111
Black crappie																							118,114
																							16,337
Largemouth bass																							21,121
																							25,663
Smallmouth bass																							342,271
																							696
Spotted bass																							10,787
																							1,062
Bluegill																							8,907
																							123,207
Rock bass																							132,284
																							9,876
Longear sunfish																							1,834
																							4,999
Warmouth																							12,404
																							387
Green sunfish																							3,118
																							180
Channel catfish																							1,220
																							47,843
Blue catfish																							11,603
																							20,141
Flathead catfish																							6,171
																							681
Bullhead																							555
																							117
White bass																							73
																							40,873
Striped bass																							24,890
																							394
Hybrid striped bass																							3,445
Yellow bass																							208
																							13,530
Sauger																							60,385
																							806
Yellow perch																							1,112
Drum																							167
																							559
Stripack herring																							15,180
																							3,221
Gar																							9,179
																							62
Shad																							43
Golden shiner																							62
Carp																							62
Mooneye																							62
Paddlefish																							62
Other species																							60
Illegal Black bass																							475
Illegal B. Crappie																							520
Illegal W. Crappie																							2,021

Table 50. Black bass catch and harvest statistics derived from the 1 March to 31 October 2005 creel survey at Lake Barkley (45,600 a).

	Largemouth bass				Smallmouth bass				Spotted bass			
	Harvest	Catch & release	Total	Total	Harvest	Catch & release	Total	Total	Harvest	Catch & release	Total	Total
		12 - 14.9 inches	≥ 15 inches			12 - 14.9 inches	≥ 15 inches			12 - 14.9 inches	≥ 15 inches	
Total no. of bass	25,593	240,476	44,229	367,866	696	4,711	1,152	11,493	1,052	5,321	57	7,860
% of bass harvested by no.	93.6				2.5				3.8			
Total weight of bass (lb)	59,895	234,274	100,259	450,510	1,578	3,045	2,698	10,510	1,043	4,040	43	6,212
% of bass harvested by weight	95.8				2.5				1.7			
Mean length (in)	16.5				17.0				13.4			
Mean weight (lb)	2.34				2.33				1.02			
Rate (f/hr)	0.0337				0.0009				0.0014			

Table 51. Monthly black bass angling success at Lake Barkley during the 2005 creel survey.

Month	Total no. of bass caught	Total no. of bass harvested	No. of black bass fishing trips	Hours fished by bass anglers	Bass caught/ hour by bass anglers	Bass harvested/ hour by bass anglers	Bass harvested by bass anglers	Bass harvested/ hour by bass anglers
Mar	13,180	718	4,789	19,012	0.56	0.03	591	0.03
Apr	47,194	3,012	12,729	50,530	0.77	0.05	2,824	0.05
May	73,877	7,041	15,472	61,419	1.04	0.10	6,821	0.10
Jun	75,343	3,861	13,746	54,565	1.18	0.05	3,221	0.05
Jul	29,517	1,754	8,524	33,836	0.75	0.04	1,572	0.04
Aug	37,249	3,787	7,364	29,232	1.14	0.12	3,787	0.12
Sept	43,302	2,734	8,276	32,853	1.13	0.07	2,691	0.07
Oct	67,557	4,634	12,341	48,988	1.11	0.08	4,522	0.08
Total	387,219	27,341	83,242	330,434	0.99	0.07	26,029	0.07
Mean								

Table 52. Crappie catch and harvest statistics derived from the 1 March to 31 October 2005 creel survey at Lake Barkley (45,600 a).

	White Crappie			Black Crappie				
	Harvested	Caught & released 8 - 9.9 inches	Caught & released ≥ 10 inches	Total	Harvested	Caught & released 8 - 9.9 inches	Caught & released ≥ 10 inches	Total
Total no. of Crappie	97,112	107,148	1,914	213,226	15,338	18,371	1,128	36,460
% of Crappie harvested by no.	86.4				13.6			
Total weight of Crappie (lb)	56,625	29,951	1,263	89,811	11,204	5,990	961	18,685
% of Crappie harvested by weight	83.5				16.5			
Mean length (in)	11.3				10.9			
Mean weight (lb)	0.70				0.71			
Rate (f/hr)	0.1315				0.0202			

Table 53. Monthly crappie angling success at Lake Barkley during the 2005 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 crappie anglers	Crappie harvested by crappie anglers	Crappie caught/ hour by crappie anglers	Crappie harvested/ hour by crappie anglers
Mar	48,665	21,418	5,709	22,664	48,243	21,164	2.07	0.91
Apr	146,727	63,511	21,941	87,095	145,284	63,322	1.63	0.71
May	32,675	13,422	5,993	23,791	26,239	11,222	1.12	0.48
Jun	1,538	805	524	2,080	1,098	805	0.54	0.40
Jul	665	484	163	646	483	483	0.89	0.89
Aug	186	186	102	404	186	186	0.16	0.16
Sept	1,866	955	517	2,053	1,823	955	0.98	0.51
Oct	17,364	11,669	6,455	25,624	17,198	11,614	0.82	0.56
Total	249,686	112,450	41,404	164,358	240,554	109,751	1.50	0.68
Mean								

Table 54. Catfish catch and harvest statistics derived from the 1March to 31October 2005 creel survey at Lake Barkley (45,600 a).

	Channel catfish			Blue catfish			Flathead catfish		
	Harvest	Catch & release 8 - 11.9 inches	Total	Harvest	Catch & release 8 - 11.9 inches	Total	Harvest	Catch & release 8 - 11.9 inches	Total
Total no. of Catfish	47,644	4,955	59,248	29,141	3,527	35,312	692	185	1,247
% of Catfish harvested by no.	61.4			37.6			0.9		
Total weight of Catfish (lb)	63,218	2,718	69,582	44,007	799	45,406	1,041	243	1,771
% of Catfish harvested by weight	58.4			40.6			1.0		
Mean length (in)	15.7			16.6			15.7		
Mean weight (lb)	1.24			1.62			1.57		
Rate (f/hr)	0.0579			0.0381			0.0009		

Table 55. Monthly catfish angling success at Lake Barkley during the 2005 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 catfish anglers	Catfish caught/ hour by catfish anglers	Catfish harvested by catfish anglers	Catfish harvested/ hour by catfish anglers
Mar	718	718	352	1,396	718	0.55	718	0.55
Apr	2,950	2,008	1,435	5,696	1,004	0.34	1,004	0.34
May	13,147	11,112	5,823	23,116	10,506	0.44	9,186	0.39
Jun	24,895	20,209	7,861	31,203	22,405	0.71	18,671	0.60
Jul	19,779	16,210	5,108	20,276	18,630	0.87	15,424	0.72
Aug	15,210	11,857	3,495	13,875	13,782	0.86	11,174	0.69
Sept	7,072	5,207	2,799	11,112	6,032	0.60	4,773	0.48
Oct	12,227	10,273	3,759	14,922	11,167	0.87	9,827	0.76
Total	95,998	77,594	30,632	121,597	84,244	0.69	70,777	0.58
Mean								

Table 56. Panfish catch and harvest statistics derived from the 1March to 31October 2005 creel survey at Lake Barkley (45,600 a).

	Warmouth			Green Sunfish			Bluegill			
	Harvest	Catch & release 8 - 9.9 inches	Total ≥ 10 inches	Harvest	Catch & release 8 - 9.9 inches	Total ≥ 10 inches	Harvest	Catch & release 8 - 9.9 inches	Total ≥ 10 inches	
Total no. of Panfish	388	1,733	116	160	523	1,380	123,207	77,966	59	255,492
% of Panfish harvested by no.	0.3			0.1			89.0			
Total weight of Panfish (lb)	105	251	17	30	52	153	26,520	9,392	8	42,455
% of Panfish harvested by weight	0.3			0.1			79.8			
Mean length (in)	7.3			6.7			6.9			
Mean weight (lb)	0.27			0.19			0.21			
Rate (f/hr)	0.0005			0.0002			0.1619			
Longear Sunfish										
Redear Sunfish										
	Harvest	Catch & release 8 - 9.9 inches	Total ≥ 10 inches	Harvest	Catch & release 8 - 9.9 inches	Total ≥ 10 inches	Harvest	Catch & release 8 - 9.9 inches	Total ≥ 10 inches	
Total no. of Panfish	4,700	4,273	-	17,104	9,988	1,163	366	11,823		
% of Panfish harvested by no.	3.4			7.2						
% of Panfish harvested by weight	1.9			17.8						
Mean length (in)	6.2			9.6						
Mean weight (lb)	0.14			0.60						
Rate (f/hr)	0.0060			0.0133						

Table 57. Monthly panfish angling success at Lake Barkley during the 2005 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 panfish anglers	Panfish caught/ hour by panfish anglers	Panfish harvested by panfish anglers	Panfish harvested/ hour by panfish anglers
Mar	7,519	3,760	325	1,289	4,096	2.96	2,998	2.16
Apr	34,015	11,171	1,713	6,799	16,256	2.56	6,653	1.05
May	100,006	52,314	6,971	27,672	85,484	3.71	48,023	2.09
Jun	44,664	18,012	4,233	16,802	29,873	2.37	14,571	1.16
Jul	36,050	13,428	3,318	13,173	29,819	2.84	11,915	1.13
Aug	13,844	7,760	2,002	7,948	7,884	1.29	5,339	0.87
Sept	14,015	6,595	1,187	4,711	10,067	2.68	4,513	1.20
Oct	39,194	25,404	2,430	9,647	27,806	3.05	21,664	2.37
Total	289,307	138,443	22,179	88,039	211,285	2.94	115,676	1.62
Mean								

Table 58. Morone catch and harvest statistics derived from the 1 March to 31 October 2005 creel survey at Lake Barkley (45,600 a).

	White bass			Yellow bass			Striped bass		
	Harvest	Catch & release	Total	Harvest	Catch & release	Total	Harvest	Catch & release	Total
		8 - 14.9 inches	≥ 15 inches		8 - 14.9 inches	≥ 15 inches		8 - 14.9 inches	≥ 15 inches
Total no. of Morones by no.	48,874	14,700	293	73,765	13,531	63,916	395	2,379	3,841
% of Morones harvested	77.8				21.5		0.6		
Total weight of Morones (lb)	30,264	4,016	78	37,062	3,496	12,072	1,675	747	3,319
% of Morones harvested by weight	85.4				9.9		4.7		
Mean length (in)	11.5				8.6		21.6		
Mean weight (lb)	0.65				0.25		4.06		
Rate (f/hr)	0.0577				0.0177		0.0006		

Table 59. Monthly Morones angling success at Lake Barkley during the 2005 creel survey.

Month	Total no. of Morones caught	Total no. of Morones harvested	No. of Morones fishing trips	Hours fished by Morones anglers	Morones caught by Morones anglers	Morones caught/hour by Morones anglers	Morones harvested by Morones anglers	Morones harvested/hour by Morones anglers
Mar	7,731	1,394	81	322	253	1.50	211	1.25
Apr	20,082	2,385	93	367	-	-	-	-
May	9,847	3,246	893	3,543	4,180	1.35	2,090	0.68
Jun	26,579	19,330	2,136	8,481	24,014	3.66	18,378	2.80
Jul	31,150	22,501	2,635	10,461	29,094	3.11	22,078	2.36
Aug	15,706	8,753	1,357	5,388	14,775	2.85	8,629	1.67
Sept	6,291	1,953	791	3,140	2,690	1.45	1,128	0.61
Oct	24,343	3,238	911	3,618	8,988	3.15	2,289	0.80
Total	141,730	62,799	8,898	35,321	83,994	2.79	54,803	1.78
Mean								

Table 60. Relative abundance and CPUE (fish/hour) of largemouth bass collected during 30-minute diurnal electrofishing runs at Lake Beshear for 2.5 hours during May, and 2.0 hours during October, 2005.

Season	Species	Inch Class																				Total	CPUE	StdErr
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
Spring	Largemouth bass	18	16	6	11	26	19	4	4	4	4	1	8	9	21	18	23	17	8	1	237	94.8	8.5	
Fall	Largemouth bass	5	39	38	11	14	11	5	11	6	2	1	3	2	6	6	1	1	1	1	163	81.5	15.9	

wfdpsdlb.d05
wfdwrib.d05

Table 61. Spring diurnal electrofishing CPUE for each size class of largemouth bass collected at Lake Beshear. Nocturnal sampling was conducted from 1995 to 2002. CPUE = fish/hour/run

Year	Inch Group										Total	
	<8.0		8.0-11.9		>12.0		>15.0		>18.0		CPUE	StdErr
1986	4.8		11.3		18.5		14.5		4.8		34.7	
1987	4.0		22.6		9.7		5.7		1.6		56.7	
1988	1.8		16.5		38.4		30.5		15.2		22.6	
1989	9.8		15.7		54.9		26.5		6.9		80.4	
1990	4.7	1.8	7.3	2.7	38.7	3.3	29.3	4.8	13.3	1.3	50.7	2.9
1991	15.0	2.4	16.0	3.4	34.0	5.7	23.5	4.0	10.5	3.9	65.0	6.0
1992	2.7	0.7	24.0	6.4	65.3	0.7	45.3	1.8	18.0	1.2	92.0	5.3
1993	6.5	1.7	4.0	1.8	37.5	13.7	31.5	10.8	17.0	5.6	48.0	15.4
1994	11.2	2.9	8.0	1.4	48.8	10.8	34.0	9.5	14.8	5.0	68.0	10.1
1995	13.5	3.7	22.5	7.4	51.0	16.5	35.5	12.6	16.5	5.9	87.0	21.6
1996	5.5	2.2	12.5	1.7	55.5	5.1	39.0	4.2	19.5	4.6	73.5	6.2
1997	4.5	2.5	10.0	2.0	39.0	7.0	28.5	4.8	14.0	2.6	53.5	8.3
1998	5.0	1.3	13.0	3.1	70.0	8.7	53.0	5.3	22.0	2.2	88.0	8.3
1999	4.0	1.8	11.5	3.0	39.5	6.7	25.5	4.9	8.0	2.7	55.0	8.8
2000	11.2	3.7	18.0	4.9	36.0	8.7	32.0	7.6	16.4	3.1	65.2	10.9
2001	5.0	2.4	42.0	8.1	26.0	6.1	15.5	3.8	5.5	1.3	73.0	6.7
2002	11.5	1.7	24.0	7.2	64.5	10.7	36.5	8.6	11.5	2.9	100.0	16.4
2003	5.2	2.9	6.4	2.0	33.6	7.8	25.6	7.2	3.6	0.7	45.2	9.5
2004	4.4	1.6	12.0	2.8	52.0	9.3	42.4	8.5	16.0	3.7	68.4	11.7
2005	30.8	4.9	12.4	2.8	51.6	6.2	44.4	5.9	19.6	2.4	94.8	8.5
Average	8.1		15.5		43.2		30.9		12.7		66.1	

wfdpsdlb.dxx

Table 62. Age frequencies and CPUE of largemouth bass collected from Lake Beshear in May 2005 during 2.5 hours of diurnal sampling. Age data from 2003 were combined to make estimations.

Age	Inch Class																						Total	%	CPUE	StdErr
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22						
1	18								3													97	40.9	6.4	1.9	
2							2	1	3	2												8	3.4	14.8	2.0	
3									1	1	1	7	3	3								16	6.8	4.0	0.8	
4										1		1	6	16	12	18						54	22.8	20.8	4.7	
5													2	6	5	9	6					28	11.8	1.6	0.5	
7																4	6	8				18	7.6	10.8	2.1	
9																5	5					10	4.2	4.1	0.9	
10																				1		1	0.4	1.2	0.3	
11																	5					5	2.1	1.2	0.3	
Total	18	16	6	11	26	19	4	4	4	4	4	1	8	9	21	18	23	23	17	8	1	237				
%	8	7	3	5	11	8	2	2	2	2	2	0	3	4	9	8	10	10	7	3	0	100				

wfdpsdb.D05, wfdlbbag.D03

Table 63. Population assessment determined from largemouth bass based on spring sampling at Lake Beshear from 2001-2005.

Parameter	2005		2004		2003		2002		2001	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Length at Age 3	14.0	4	14.0	4	14.0	4	14.0	4	14.1	4
Spring CPUE of Age 1 fish	38.8	2	6.4	1	0.8	1	3.5	1	1.0	1
Spring CPUE 12-14.9-in fish	7.2	1	9.6	1	8.0	1	28.0	2	10.5	1
Spring CPUE \geq 15.0-in fish	44.4	4	42.4	4	25.6	3	36.5	4	15.5	2
Spring CPUE \geq 20-in fish	3.6	3	2.8	3	2.0	3	3.5	3	1.5	2
Instantaneous Mortality (z)	0.270		0.262		0.430		0.547		0.803	
Annual Mortality (A)%	23.7		23.0		34.9		54.7		55.2	
Total Score	14		13		12		14		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)

WFDPSDLB.Dxx

Table 64. Indices of year-class strength at age 0 and age 1 and mean length (in) of largemouth bass collected in the fall diurnal electrofishing sampling at Lake Beshear.

Year-class	Age 0 ^A		Age 0 ^A		Age 0 ≥ 5.0 in ^A		Age 1 ^B	
	Mean Length	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error
2001	4.1		4.8	1.58	1.2		15.0	2.94
2002	4.1		6.9	1.34	2.0		13.5	1.33
2003	2.7		19.0	4.14	0.0		4.3	1.94
2004	3.8		17.6	4.12	0.0		38.8	1.8
2005	4.5		44.0	15.02	22.0			

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

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

WFDWRLB.Dxx, WFDWRAGB.Dxx, WFDPSDLB.Dxx

Table 65. Mean back-calculated length (in) at each annulus of channel catfish collected by trotline for 29 line-nights at Lake Beshear during September 2005, including the range in length of channel catfish at each age and the 95% confidence interval of each age group. (wfdcagbe.d05)

Year-Class	N	Age													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2004	3	6.8													
2003	7	6.7	9.2												
2002	3	7.5	9.7	12.3											
2001	6	6.2	8.9	10.7	12.2										
2000	1	7.2	10.3	18.1	14.5	16.0									
1998	2	7.0	9.1	10.7	12.2	13.7	15.0	16.1							
1996	1	6.4	7.8	9.2	10.1	11.4	12.4	13.7	15.6	16.9					
1995	3	6.0	8.0	9.1	10.6	11.7	13.0	14.1	15.0	16.0	16.8				
1994	2	6.4	7.5	9.3	10.4	11.3	12.4	13.5	14.6	15.4	16.5	17.2			
1993	2	6.3	7.3	8.1	9.0	9.6	10.5	11.4	12.1	13.2	14.1	15.0	15.9		
1991	1	6.2	7.7	8.9	10.0	11.2	12.0	13.5	14.7	15.8	17.0	18.2	19.3	20.1	21.3
Mean		6.6	8.7	10.5	11.3	11.9	12.7	13.8	14.3	15.3	16.1	16.5	17.0	20.1	21.2
Number		31	28	21	18	12	11	11	9	9	8	5	3	1	1
Smallest		4.9	6.2	7.1	8.1	8.7	9.6	10.5	11.2	12.1	13.0	14.0	14.9		
Largest		8.8	11.5	18.1	15.2	17.1	18.9	19.8	17.5	18.1	19.2	19.2	19.3		
Std. Error		0.2	0.2	0.5	0.5	0.7	0.8	0.8	0.6	0.6	0.7	1.0	1.3		
Low 95% CI		6.2	8.3	9.5	10.4	10.5	11.2	12.3	13.1	14.1	14.7	14.6	14.5		
High 95% CI		6.9	9.2	11.6	12.2	13.3	14.1	15.2	15.5	16.6	17.5	18.4	19.5		
Otoliths were used to make age determinations. Intercept = 0.															

Table 66. Age frequencies and CPUE of channel catfish collected from Lake Beshear in September 2005. Age was determined by using sectioned otoliths collected in 2005.

Age	Inch Class															Total	%	CPUE	StdErr	
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22					23
1	3	4	5														12	3.9	0.41	0.15
2			14	55	39												108	34.7	3.72	0.60
3						15	26										41	13.2	1.41	0.18
4					20	32	27	5									84	27.0	2.90	0.34
5										4							4	1.3	0.14	0.06
6																				
7						16									3		19	6.1	0.66	0.11
8																				
9										4							4	1.3	0.14	0.06
10									15				2				17	5.5	0.59	0.14
11									6				3				9	2.9	0.31	0.09
12									6		4						10	3.2	0.34	0.05
13																				
14															3		3	1.0	0.10	0.07
Total	3	4	19	55	59	63	53	17	15	4	8	0	5	3	3	0	311			
%	1	1	6	18	19	20	17	5	5	1	3	0	2	1	1	0		100		
wfdccb.d04, wfdcagbe.d03																				

Table 67. Population assessment by year for channel catfish at Lake Beshear.

Year	Parameters										Assessment Rating	
	CPUE < 8 in	score	Total CPUE	score	CPUE ≥ 12 in	score	CPUE ≥ 15 in	score	CPUE ≥ 20 in	score		Total Score
1998	0.00	0	12.8	4	6.0	4	0.8	2	0.0	1	11	F
1999	0.00	0	3.9	3	3.0	4	0.8	2	0.0	0	9	F
2000	0.00	0	0.9	1	0.9	2	0.6	2	0.1	1	6	P
2001	0.00	0	4.4	3	3.6	4	2.0	4	0.6	3	14	G
2002	0.03	1	4.9	4	3.2	4	1.7	4	0.5	3	16	G
2003	0.00	0	8.9	4	6.1	4	2.6	4	0.4	2	14	G
2004	0.04	1	13.6	4	9.2	4	12.9	4	0.6	3	16	G
2005	0.00	0	11.0	4	8.2	4	2.1	4	0.4	2	14	G

Sampling method

1998 - 1999 : slat traps and hoop nets

2000 : slat traps

2001 - 2002 : gill nets

2003 : gill nets and trotlines

2004-2005 : trotlines

Table 68. Species composition, relative abundance, and CPUE (#/hour) of largemouth bass, bluegill, redear sunfish, white crappie, and channel catfish collected during 0.875 hours (7 runs; each 450s) of diurnal electrofishing at Lake Pennyrite on 20 April 2005. (wfdpsdp.d05)

Species	Inch-Class																						Total	CPUE	Std. Error
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
Largemouth bass			4	36	41	7	4	23	32	32	29	14	5	4	3				1			2	237	260.4	22.9
Bluegill	13	34	93	117	29	18	23	1															328	360.4	72.3
Redear Sunfish		1		18	16	2	23	19	2														81	89.0	28.7
Longear Sunfish	3	24	56	38	11	6	2																140	153.9	18.8
Warmouth		2	1	3	8	26	6																46	50.6	10.7
Green Sunfish							1																1	1.1	1.1
Channel Catfish						2	1		1	2	1	1	5							1			8	8.8	5.2
White Crappie																							13	14.3	4.9
Yellow Bullhead								5	3														8	8.8	3.9

Table 69. Spring, diurnal electrofishing CPUE of each size-class of largemouth bass collected at Lake Pennyryle from 1990-2005.

Year	Inch-class								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
2005	101.1	11.6	127.5	21.0	25.3	5.8	6.6	2.6	260.4	22.9
2004	27.5	7.1	63.7	10.7	26.4	4.7	2.2	1.4	119.8	14.4
2003	96.6	17.6	118.8	9.4	24.8	4.8	0.9	0.9	241.0	27.3
2002	132.3	24.2	116.2	14.7	30.8	5.4	5.4	3.3	284.0	36.9
2001 ^A	54.0	0.0	138.0	10.0	12.0	4.0	5.0	1.0	209.0	15.0
2000 ^A	46.0	4.0	87.0	5.0	11.0	7.0	3.0	3.0	147.0	1.0
1999 ^A	26.0	8.0	102.0	8.0	3.0	1.0	2.0	2.0	133.0	1.0
1998	12.0	8.0	70.0	1.0	7.0	1.0	2.0	2.0	91.0	21.0
1994	47.0	9.0	52.0	6.0	2.0	2.0	1.0	1.0	102.0	12.0
1990	28.0	2.0	87.0	1.0	3.0	1.0	0.0	0.0	118.0	0.0
Mean	57.1		96.2		14.5		2.8		170.5	

^A Data collected by spring, nocturnal electrofishing.

Table 70. PSD and RSD values obtained for largemouth bass, bluegill, redear sunfish, and white crappie collected during 0.875 hours of diurnal electrofishing (7 runs; each 450s) at Lake Pennyryle on 20 April 2005. (wfdpsdp.d05)

Species	N	PSD (+ 95% CI)	RSD (+ 95% CI)
Largemouth bass	145	20 (7)	4 (3)
Bluegill ^A		15 (4)	0 (1)
Redear sunfish ^B		55 (11)	3 (3)
White crappie		77 (24)	54 (28)

^A Bluegill = RSD₀.

^B Redear sunfish = RSD₀.

Table 71. Population assessment of the largemouth bass population based on spring diurnal electrofishing at Lake Pennyrite from 2000-2005.

Parameter ^A	Year											
	2000 ^{BC}		2001 ^B		2002 ^D		2003		2004 ^E		2005 ^E	
	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score	Actual Value	Score
Growth (Mean length at capture of age-3 LMB)	10.4	2	10.4	2	9.7	1	9.7	1	9.7	1	9.7	1
Recruitment (Spring CPUE of age-1)	41.1	2	26.0	2	111.5	4	59.4	3	13.1	1	85.7	4
Size Structure (Spring CPUE of LMB 12.0-14.9 in.)	11.0	1	12.0	1	30.8	2	24.8	2	26.4	2	25.3	2
Size Structure (Spring CPUE of LMB ≥ 15.0 in.)	3.0	1	5.0	2	5.4	2	0.9	1	2.2	1	6.6	2
Size Structure (Spring CPUE of LMB ≥ 20.0 in.)	3.0	3	2.0	3	0.8	1	0.0	1	0.0	1	3.3	3
Instantaneous Mortality (Z)			0.473				0.457					
Annual Mortality (A)%			37.7				36.7					
Total Score		9		10		10		8		6		12
Assessment Rating		Fair		Fair		Fair		Fair		Poor		Good

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

^B Spring electrofishing samples were collected nocturnally.

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

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

Table 72. Spring, diurnal electrofishing CPUE (f/h) of each age-class of largemouth bass collected from Lake Pennyrite from 1998-2005.

Year	Age-Class									
	1	2	3	4	5	6	7	8	9	10
2005 ^D	85.65	55.89	28.37	35.1	29.18	7.82	3.54	3.91	0.00	0.00
2004 ^D	13.05	38.09	12.83	26.06	17.50	5.39	1.95	2.70	0.00	2.21
2003	59.39	83.41	23.39	33.92	25.75	7.26	3.42	3.63	0.00	0.00
2002 ^C	111.51	49.89	34.77	28.38	31.52	9.99	8.02	2.54	0.00	1.10
2001 ^A	26.00	103.76	39.13	6.25	21.57	4.14	3.00	0.00	0.00	1.14
2000 ^{AB}	41.06	37.53	25.23	14.88	15.11	3.76	2.31	1.63	0.00	0.50
1999 ^{AB}	22.69	22.34	40.07	20.26	15.18	6.21	2.62	2.58	0.00	0.06
1998	5.00	9.30	28.30	26.60	7.70	3.00	5.00	4.00	0.00	0.00
Mean	45.54	50.03	29.01	23.93	20.44	5.95	3.73	2.62	0.00	0.63

^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.

Table 73. Spring electrofishing CPUE for each size-class of bluegill and redear sunfish collected at Lake Pennyrite during May from 1990-2005.

Species	Year	Inch-Class											
		< 3.0 in		3.0 - 5.9 in		6.0 - 7.9 in		> 8.0 in		> 10.0 in		Total	
		CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error	CPUE	Std. Error
Bluegill	2005	51.7	20.0	262.6	64.0	45.1	13.4	1.1	1.1	0.0	0.0	360.4	72.3
	2004	3.1	3.1	38.5	10.6	23.1	11.9	6.2	4.5	0.0	0.0	70.8	21.7
	2003	27.7	5.2	80.0	14.5	18.5	5.2	12.3	5.2	0.0	0.0	138.5	8.8
	2002	77.6	22.9	98.4	32.0	29.6	7.3	1.6	1.1	0.0	0.0	207.2	52.1
	2001	0.0	0.0	21.0	3.0	65.9	53.9	3.0	3.0	0.0	0.0	89.8	53.9
	2000	80.8	9.0	95.8	18.0	65.9	12.0	9.0	3.0	0.0	0.0	251.5	35.9
	1999	6.0	0.0	61.0	15.0	72.0	2.0	4.0	0.0	0.0	0.0	143.0	17.0
	1998	16.0	4.0	40.0	2.0	16.0	6.0	1.0	1.0	0.0	0.0	73.0	11.0
	1994	5.0	5.0	27.0	5.0	8.0	4.0	0.0	0.0	0.0	0.0	40.0	6.0
	1990	2.0	2.0	48.0	4.0	6.0	0.0	12.0	2.0	0.0	0.0	68.0	4.0
Mean		27.0		77.2		35.0		5.0		0.0		144.2	
Redear sunfish	2005	1.1	1.1	37.4	12.8	27.5	10.7	23.1	5.3	0.0	0.0	89.0	28.7
	2004	0.0	0.0	20.0	12.8	40.0	17.1	9.2	2.9	0.0	0.0	69.2	31.1
	2003	0.0	0.0	55.4	12.7	26.2	3.1	21.5	2.9	0.0	0.0	103.1	13.0
	2002	0.0	0.0	59.2	11.4	49.2	9.9	53.8	20.9	0.0	0.0	162.3	27.3
	2001	0.0	0.0	21.0	15.0	12.0	6.0	9.0	3.0	0.0	0.0	44.9	21.0
	2000	3.0	3.0	41.9	18.0	24.0	0.0	134.7	68.9	3.0	3.0	206.6	50.9
	1999	0.0	0.0	11.0	3.0	40.0	4.0	65.0	11.0	1.0	1.0	119.0	11.0
	1998	0.0	0.0	6.0	2.0	16.0	8.0	9.0	1.0	1.0	1.0	32.0	12.0
	1994	0.0	0.0	8.0	8.0	5.0	5.0	7.0	3.0	1.0	1.0	21.0	7.0
	Mean		0.4		26.0		24.0		33.2		1.1		84.7

Table 74. Spring, diurnal electrofishing CPUE for each age-class of bluegill collected from Lake Pennyrile during May from 2000-2005.

Year	Age-Class					
	1	2	3	4	5	6
2005 ^A	21.76	98.02	186.15	39.12	5.05	10.33
2004 ^A	0.62	12.72	28.27	15.74	4.00	9.42
2003 ^A	15.38	41.03	47.93	19.33	3.38	11.40
2002	55.23	51.18	61.08	19.69	3.38	7.13
2001 ^{A,B}	0.00	3.92	19.67	42.25	7.06	15.33
2000 ^{A,B}	27.65	94.90	50.07	42.25	10.59	21.60

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

^B Samples were collected by nocturnal electrofishing.

Table 75. Population assessment of the bluegill sunfish population at Lake Pennyrile from 2000-2005.

Parameter	2000 ^A		2001 ^A		2002		2003 ^A		2004 ^A		2005 ^A	
	Actual Value	Score	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)	2.9	(1)
Growth (Years to reach 6.0 in)	4	(2)	4	(2)	4	(2)	4	(2)	4	(2)	4	(2)
Size Structure (CPUE ≥ 6.0 in)	74.9	(3)	67.6	(3)	30.0	(2)	30.8	(2)	29.2	(2)	46.2	(2)
Size Structure (CPUE > 8.0 in)	9.0	(3)	2.9	(2)	1.5	(2)	12.3	(3)	6.2	(2)	1.1	(2)
Total Score: Assessment Rating:	(9) Fair		(8) Fair		(7) Fair		(8) Fair		(7) Fair		(7) Fair	

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

(Pennyrile_BLG_Database)

Table 76. Population assessment of the redear sunfish population at Lake Pennyrile from 2000-2005.

Parameter	2000 ^A		2001 ^A		2002		2003		2004		2005		
	Actual Value	Score	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	(2)	5.4 ^B	(2)	5.4	(2)	5.4 ^B	(2)	5.4 ^B	(2)	5.4 ^B	(2)	
Growth (Years to reach 8.0 in)	5 ^B	(2)	5 ^B	(2)	5	(2)	5 ^B	(2)	5 ^B	(2)	5 ^B	(2)	
Size Structure (CPUE ≥ 8.0 in)	134.7	(4)	9.0	(2)	53.8	(4)	21.5	(4)	9.2	(2)	23.1	(4)	
Size Structure (CPUE > 10.0 in)	3.0	(3)	3.0	(3)	0.0	(1)	0.0	(1)	0.0	(1)	0.0	(1)	
Total Score: Assessment Rating:		(11)	Good	(9)	Fair	(8)	Fair	(9)	Fair	(7)	Fair	(9)	Fair

^A Population assessments were based upon nocturnal electrofishing samples.

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

Table 77. Relative species abundance, size distribution, and CPUE of fish collected during diurnal electrofishing (3 runs; total 0.50 hours) at Hematite Lake on 09 May 2005.

Species	Inch-Class																							Total	CPUE	Std. Error
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	20	21	22	23					
Largemouth bass			1	1		1				1	1	3	1	1	2	1	1						14	27.5	10.92	
Redear sunfish		2	13	38	23	12	6																94	184.3	48.07	
Bluegill		13	23	39	84	20	10	1															190	372.6	156.72	
Warmouth sunfish			1	1		3	1																6	11.8	8.99	
Yellow Bullhead								1		1	1												3	5.9	0.00	
Spotted Gar																		1	1	2	1		5	9.8	5.19	
Golden Shiner																							1	2.0	1.96	
Gizzard Shad																							0			
Total																							313	613.7		

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Table 78. Spring electrofishing CPUE for each inch group of redear sunfish collected at Hematite Lake. Standard error in parentheses.

Year	Inch Group					Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	> 8.0	> 10.0	
2002	1.0 (1.0)	73.0 (17.5)	69.0 (10.0)	16.0 (4.0)	0.0 (0.0)	159.0 (22.9)
2004	8.4 (3.6)	216.0 (26.1)	27.5 (3.6)	1.2 (1.2)	0.0 (0.0)	253.9 (25.8)
2005	4.0 (4.0)	147.7 (34.8)	35.9 (19.2)	0.0 (0.0)	0.0 (0.0)	187.6 (49.2)

wfdpsdhl.dxx

Figure 1. Relative species composition of white and black crappie collected during annual fall trap-netting from 1985-2005 at Kentucky Lake. (Kentucky_Crappie_Database.xls)

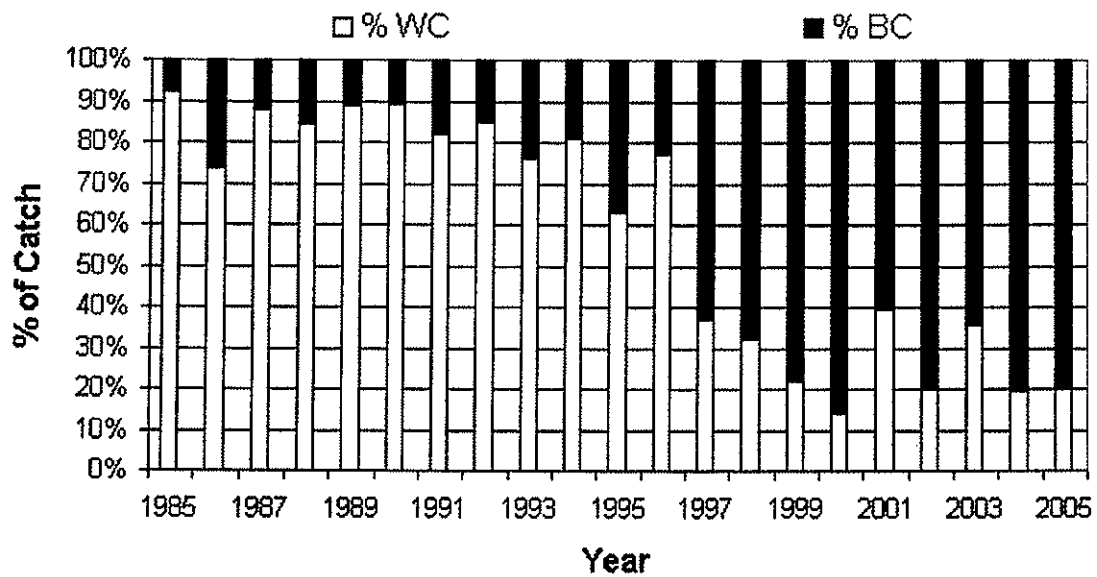
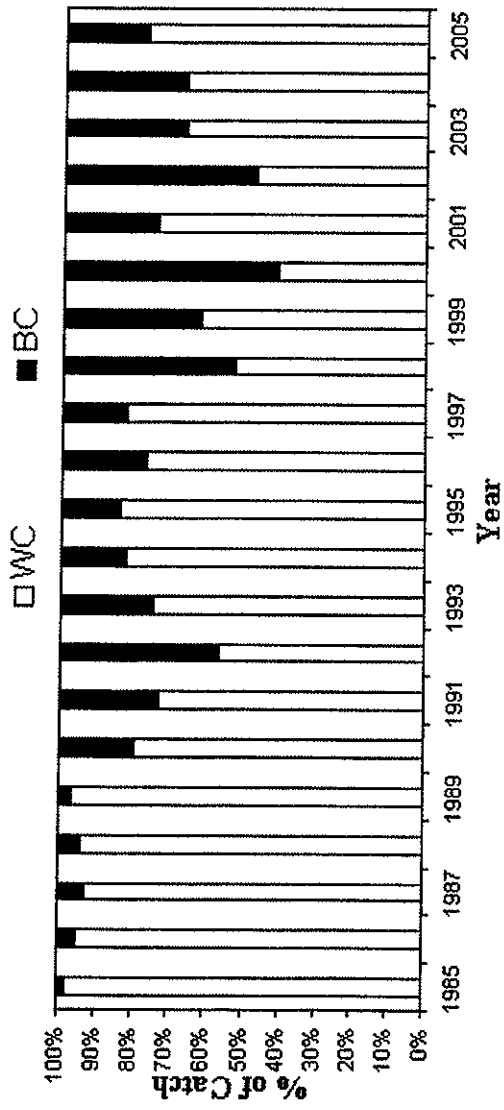


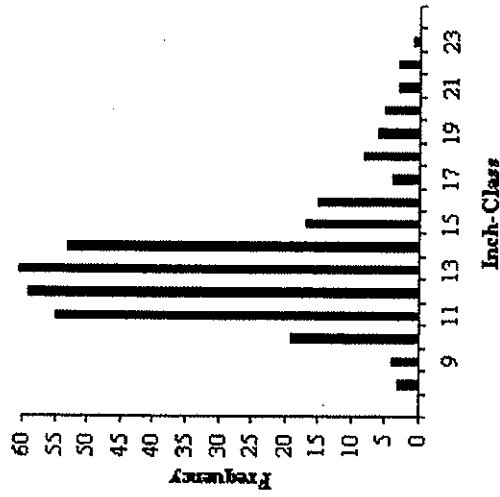
Figure 2. Relative species composition of all sizes of white and black crappie collected during fall trap-netting from 1985-2005 at Lake Barkley.



(Barkley_Crappie_Database.xls)

Figure 3. Length frequency distribution and CPUE for channel catfish collected by fishing 10 100-hook trotlines with cheese bait at Lake Beshear for three nights during September 2005 (total effort was 29 line nights due to one line being hungup).

Inch Class	Freq.	Cum. Freq.	%	Cum. %	CPUE	Std Error
8	3	3	0.9	0.9	0.10	0.09
9	4	7	1.3	2.2	0.14	0.08
10	19	26	6.0	8.2	0.66	0.17
11	55	81	17.3	25.5	1.90	0.40
12	59	140	18.6	44.0	2.03	0.35
13	63	203	19.8	63.8	2.17	0.31
14	53	256	16.7	80.5	1.83	0.28
15	17	273	5.3	85.8	0.59	0.15
16	15	288	4.7	90.6	0.52	0.12
17	4	292	1.3	91.8	0.14	0.06
18	8	300	2.5	94.3	0.28	0.12
19	6	306	1.9	96.2	0.21	0.09
20	5	311	1.6	97.8	0.17	0.07
21	3	314	0.9	98.7	0.10	0.07
22	3	317	0.9	99.7	0.10	0.07
23	1	318	0.3	100.0	0.03	0.03
					10.97	



NORTHWESTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Nolin River Lake

Black Bass Sampling

Spring electrofishing for black bass population indices was conducted during April 2005 (Tables 1 and 2). Results indicate that Nolin's largemouth bass population continues to show improvement (Tables 3 and 4). Increases are noted in the CPUE of all size ranges and age classes of largemouth bass from lows observed during 2001-2005. Data used in age calculations were collected in 2002. CPUE by age class is presented in Table 5 and cohort mortality in Table 6. Instantaneous mortality was estimated to be 0.617 and annual mortality to be 46.0%. The log 10 length weight equation is $\log W = -3.34 + 3.03 (\log L)$. Fall electrofishing was conducted during September (Table 7) to determine relative weight values (Table 8) and CPUE and mean length of age 0 fish (Table 9). W_r values for all size groups were at acceptable levels. Age 0 fish results indicate that mean length and CPUE of age 0 fish have also improved over those data collected the last few years. Nolin River Lake Strategic Management Plan (SMP) objectives for largemouth bass state that electrofishing catch rates be at least 40 fish/hr for 8.0-11.9 inch fish, 30 fish/hr for 12.0-14.9 inch fish, and 7 fish/hour for fish 15.0 inches and above. The first two objectives were not met with a CPUE of 27.1 fish/hr for 8-11.9 inch fish and 25.3 for 12-14.9 inch fish. The objective for 15 inch and above fish was met with 14.2 fish/hr being captured.

Crappie Sampling

Fall trap netting was conducted during October to assess various parameters of Nolin Lake's crappie population. Data resulting from that effort are presented in Tables 10-15. Of the 898 crappie collected during 80 net-nights of effort (11.22 crappie/net night) 815 were white crappie (91%) and 83 black crappie (9%). Most population parameters were similar to those collected during 2004 with the exception of a significant decline in the CPUE of age 0 fish (age 0 CPUE of 5.1 f/h in 2004 was highest in last several years) and a slight reduction in the CPUE of age 1 fish (Table 15). Age frequencies, growth rates and CPUE of 8 inch and larger fish have remained fairly consistent for several years. The CPUE of fish greater than 10 inches increased from 2.0 f/h in 2004 to 2.7 f/h in 2005. Age data used to calculate age-frequencies and cohort mortalities was collected in 2004. Annual mortality was estimated to be 52.7% and instantaneous mortality 0.749. The log 10 length-weight equation is $\log W = -3.70 + 3.36 (\log L)$. The Nolin Lake SMP management objectives for white crappie state that at least 6 fish/hr 8.0 inches and above be captured per net night during fall trap netting and that crappie reach at least 9.5 inches at capture at end of third growing season (age 2+). Both of these objectives were met with 7.4 crappie over 8.0 inches caught per net night and fish averaging 9.7 at end of third growing season (2004 data).

Rough River Lake

Creel Survey

A random, stratified, roving creel survey was conducted at Rough River Lake from April 02 – October 30 2005 to determine angler pressure and catch/harvest statistics (Tables 16-21). The lake was divided into 2 areas (North Fork and South Fork) each with equal pressure probabilities. Days were divided into 2 time periods (morning and afternoon) six hours in length each with equal probabilities. Weekend day probabilities were 2.5x those of weekdays. Each area (North Fork/South Fork) was divided into 4 "sub-areas" of approximately equal size in which the clerk would spend 1.5 hours of the six hour time period (counting and interviewing) before moving to the next sub-area.

General pressure, catch, and harvest statistics (Table 16) are very similar to results obtained during 1999 when Rough River Lake was last surveyed. Important to creel comparisons (especially crappie statistics) is the late start date for the 2005 creel (April 02 in 2005 vs. March 01 in 1999). An estimated 35,293 fishing trips (6.92 trips/a) and 147,472 man-hours (28.92 man-hours/a) were expended at Rough River Lake during the 2005 creel survey period. These values are slightly higher than the 1999 estimates of 33,087 fishing trips and 137,922 total man-hours. The number of fish estimated caught in 2005 (220,423) is slightly higher than the 195,493 estimated caught in 1999. The estimated total number of harvested fish (59,590) in 2005 is slightly lower than the 1999 estimated harvest (61,129). The rates at which fish were caught (1.47 fish/h) and harvested (0.41 fish/h) are nearly identical to 1999 values. The total pounds of fish harvested in 2005 (41,903 lbs.) was a 24% increase from the 31,959 pounds estimated harvested in 1999. Black bass was the most sought after species group with 51,008 man-hours of pressure followed by the crappie group at 28,916 man-hours and the "anything" group at 27,448 man-hours. In 1999 the crappie group and black bass group were nearly equal with crappie receiving 41,186 man-hours and black bass 37,774 man-hours. Man-hours spent in pursuit of panfish, catfish and anything groups were similar for both surveys. Man-hours directed toward hybrid striped bass increased from 6,822 in 1999 to 19,643 during 2005.

Black bass pressure and catch/harvest estimates obtained in 2005 increased over those seen in 1999. Man-hours of black bass angling increased from 37,774 man-hours in 1999 to 51,008 man-hours in 2005. The black bass catch rate increased from 0.66 fish/hr in 1999 to 0.76 fish/hr in 2005. The black bass harvest rate increased slightly from 0.07 fish/hr in 1999 to 0.10 fish/hr in 2005. An estimated 52,762 black bass were caught of which 49,336 (93%) were largemouth bass. Of the 49,336 largemouth caught, 5,909 largemouth bass weighing 10,821 pounds were harvested. The 1999 survey estimated 39,182 largemouth were caught and 4,305 largemouth weighing 6,088 pounds were harvested. Slight increases in both the mean length (14.9" in 2005 vs. 14.1" in 1999) and mean weight (1.73 lbs. in 2005 vs. 1.42 lbs. in 1999) of harvested largemouth bass were observed in 2005. Of the 49,336 largemouth bass caught in 2005, 33,206 (67.3%) were \geq 12.0 inches and 6,730 (13.6%) were \geq 15 inches. Of the total 1999 catch of 39,182 largemouth bass 24,724 (63.1%) were \geq 12.0 inches and 3,787 (9.7%) were \geq 15.0 inches. Results of the 2005 survey estimated that 1,736 (29.4%) of the largemouth bass harvested were $<$ 15.0 inches (15-1 creel limit) while in 1999 that estimate was 2,744 (63.7%). The Rough River Lake SMP objectives for largemouth bass states that at least 20,000 largemouth bass \geq 12.0 inches be caught annually and at the rate of .20 fish/hour by bass anglers and that at least 1,500 largemouth bass \geq 15.0 inches be caught. All of these objectives were exceeded with 27,561 largemouth bass \geq 12.0 inches being caught at the rate of .54 fish/hour by bass anglers and a total of 6,730 bass over 15.0 inches being caught.

As opposed to black bass, most crappie pressure and catch/harvest statistics decreased in 2005, due in part to the late start date of the survey. There was a 12,200 man-hour decrease in crappie pressure (41,186 man-hours in 1999 vs. 28,915 man-hours in 2005) and a 21,400 fish decrease in the number of crappie caught (80,656 in 1999 vs. 59,590 in 2005). During March 1999 angler pressure was 6,800 man-hours and 12,000 crappie were caught. The number of white crappie harvested in 2005 (19,841) also decreased from 1999 (28,755 crappie harvested). The rate at which crappie were harvested (0.77 fish/hr) was identical for both 1999 and 2005. The 11,032 pounds of white crappie harvested in 2005 was a decrease from the 12,628 pounds harvested in 1999. The mean length of crappie harvested increased (10.4 inches in 2005 vs. 9.8 inches in 1999) as did the mean weight of harvested crappie (0.53 lbs. in 2005 vs. 0.42 lbs. in 1999). In 2005, 15,430 (78%) of the harvested white crappie were $>$ 10.0 while in 1999, 20,171 (70%) of the white crappie harvested were $>$ 10.0 inches. Rough River Lake SMP objectives for crappie management state that at least 4.5 lbs./acre be harvested annually at the harvest rate of at least 1 fish/hour by crappie anglers. Neither of these objectives were met with 2.87 lbs. of crappie harvested per acre at the harvest rate of 0.77 fish/hour.

With the exception of the total number caught, which was 9,062 in 1999 and 6,048 in 2005, the creel statistics for hybrid striped bass improved. These increases are expected since Rough River Lake was initially stocked with hybrids in 1995 and only 2-year classes of fish would have been available for harvest in 1999. Angling pressure increased from 6,823 man-hours in 1999 to 19,643 man-hours in 2005. The dramatic increase in pressure and decrease in total catch led to a decrease in the catch rate from 1.33 fish/hr in 1999 to 0.31 fish/hr in 2005. Although the catch rate decreased the harvest rate increased from 0.07 fish/hr in 1999 to 0.15 fish/hr in 2005 more than likely due to the larger number of legal fish in the population. The number of hybrid striped bass harvested increased from 1,073 in 1999 to 3,086 in 2005.

Mean length of harvested hybrid striped bass also increased (16.3 inches in 1999 vs. 18.1 inches in 2005) as did mean weight of harvested hybrids (2.19 lbs. in 1999 vs. 3.08 lbs. in 2005). The Rough River Lake SMP objectives for the management of hybrid striped bass state that at least 2.0 lbs./acre be harvested at the rate of 0.25 fish/hr by intent. The first objective was nearly met with 1.94 lbs./acre harvested, but they were harvested at a rate of 0.15 fish/hr so the second objective was not met.

An angler attitude survey was conducted in conjunction with the creel survey. The survey questionnaire and responses are as follows:

ROUGH RIVER LAKE ANGLER ATTITUDE SURVEY 2005 (52 Respondents)

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 Rough River Lake? (check all that apply)
 Bass 65% Crappie 77% Channel Catfish 21% Flathead Catfish 6% Other: Hybrid Striped Bass 19% Bluegill 15%
4. Which one species do you fish for most at Rough River Lake? (check only one)
 Bass 44% Crappie 44% Channel Catfish 4% Flathead Catfish 0% Hybrid Striped Bass 6% Panfish 2%

-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 Rough River Lake?
 Very satisfied 20% Somewhat satisfied 45% Neutral 25% Somewhat dissatisfied 10% Very dissatisfied 0%
6. Do you support or oppose the 15 inch 1 fish under limit on largemouth bass at the lake? Support 81% Oppose 19% No opinion 0%
- 6a. What size limit would you prefer on largemouth bass at the lake? Current (15" 1 fish under) 63% Straight 15" 17% 18" 15% Other 5%
- 6b. If it is determined that too many small bass are being harvested with the 15-1 size limit, would you support a straight 15" size limit?
 Support 71% Oppose 26% No opinion 3%

Crappie Anglers

7. What level of satisfaction do you have with crappie fishing at Rough River Lake?
 Very satisfied 27% Somewhat satisfied 38% Neutral 22% Somewhat dissatisfied 8% Very dissatisfied 5%
8. Do you support or oppose the 9-inch size limit on crappie at the lake? Support 92% Oppose 8% No opinion 0%
- 8a. What size limit would you prefer? No size limit 3% 8" 3% Current (9") 77% 10" 19% Other 0%
9. Do you support or oppose the 30 fish creel limit on crappie at the lake? Support 92% Oppose 8% No opinion 0%
- 9a. What creel limit would you prefer? Current (30) 76% 20 21% 15 3% 10 0% Other 0%

Catfish Anglers

10. What level of satisfaction do you have with the channel catfish fishing at Rough River Lake?
 Very satisfied 23% Somewhat satisfied 59% Neutral 12% Somewhat dissatisfied 6% Very dissatisfied 0%
11. Do you support or oppose the no size limit regulation on channel catfish at the lake? Support 88% Oppose 6% No Opinion 6%
- 11a. What size limit would you prefer on channel catfish at the lake? Current (none) 76% 12" 18% 14" 6% Other 0%
12. Do you support or oppose the no creel limit regulation on channel catfish at the lake? Support 75% Oppose 6% No opinion 19%
- 12a. What creel limit would you prefer on channel catfish at the lake? Current (none) 80% 5 0% 15 13% 30 7% Other 7%
13. What level of satisfaction do you have with the flathead catfish fishing at Rough River Lake?
 Very satisfied 14% Somewhat satisfied 36% Neutral 43% Somewhat dissatisfied 7% Very dissatisfied 0%
14. Do you support or oppose the no size limit regulation on flathead catfish at the lake? Support 80% Oppose 7% No Opinion 13%
- 14a. What size limit would you prefer on flathead catfish at the lake? Current (none) 92% 20" 0% Other 15" 8%
15. Do you support or oppose the no creel limit regulation on flathead catfish at the lake? Support 67% Oppose 7% No Opinion 27%
- 15a. What creel limit would you prefer on flathead catfish at the lake? Current (none) 92% 5 8% 15 8% 30 0% Other 0%
16. How many times per year do you fish for catfish at Rough River Lake?
 1-5 times per year 44% More than 5 times per year 50% Other (list) 6%
17. Which catfish species do you prefer to fish for at Rough River Lake?
 Channel catfish 88% Flathead catfish 12%
18. Check all methods that you use to catch catfish at Rough River Lake
 Rod and reel 78% Trotlines 0% Limblines 0% Jugfishing 19% Tickling and Noodling (hand grabbing) 0%

ROUGH RIVER LAKE ANGLER ATTITUDE SURVEY 2005 (52 Respondents) cont.

19. Which method do you **most often use** to catch catfish at Rough River Lake?
Rod and reel 81% Trotlines 0% Limblines 0% Jugfishing 19% Tickling and Noodling (hand grabbing) 0%
20. Tickling and Noodling is a method of harvesting catfish by handgrabbing or hooking catfish from underwater spawning cavities. Are you in favor of this method of harvesting catfish?
yes (go to question 21) 18% no (go to questions 20a and 20b) 47% No opinion (go to question 20a and 20b) 35%
- 20a. Why are you not in favor of tickling and noodling as a method of harvesting catfish?
to many catfish harvested 10% it targets fish that are spawning 30% catfish may be injured and escape to die later 30%
just do not like it 10% Other (please list) 20%
- 20b. If hooks and gaffs were made illegal and only hand grabbing or roping were legal for tickling and noodling, would you be in favor of this method?
Yes 31% No 69%
21. Commercial fisherman can legally harvest rough fish, including catfish from Rough River Lake. Do you support or oppose commercial fishing at Rough River Lake.
Strongly support 0% Support 8% Neutral 8% Oppose 33% Strongly oppose 50%

Black Bass Sampling

Spring electrofishing for black bass population indices was conducted during April 2005 (Tables 22-27). A total of 578 black bass were collected during 4.5 hours of electrofishing of which 513 (89%) were largemouth bass. The CPUE of largemouth bass under 12.0 inches is similar to that collected for the last several years. The catch rate for fish over 12.0 inches increased in 2005 to values higher than have been obtained the last several years resulting in a total largemouth bass CPUE higher than has been seen since at least 1999. The increased catch rate of larger fish increased the overall largemouth bass population assessment score from 12 in 1999 to 15 in 2005, both of which result in a "good" rating. Age data for analysis was collected in 2004. Fall electrofishing for Wr's and for mean length and CPUE of age 0 fish was conducted in September. Condition factors for all size ranges of largemouth bass are at acceptable levels (Table 8). The length-weight equation for Rough River Lake largemouth bass equals $\text{Log } W = -3.52 + 3.15(\text{Log } L)$. Annual mortality was estimated at 53.19% and instantaneous mortality at 0.759. Table 28 lists results for each inch class collected during fall sampling. Table 29 gives indices of year class strength for age 0 and age 1 largemouth bass at Rough River Lake. Largemouth bass SMP management objectives are population densities of ≥ 50 bass/hour for 8.0-11.9 inch fish, ≥ 25 bass/hour for 12.0-14.9 inch fish, and ≥ 10 bass/hour for ≥ 15 inch bass collected during spring electrofishing. The objective for 8-11.9 inch fish was not met and should be adjusted lower to better "fit" Rough River Lake. Both of the last two objectives were exceeded with 38.89 fish/hour for 12-14.9 inch bass and 14.22 fish/hour for largemouth over 15 inches.

Crappie Sampling

Fall trap netting to assess Rough River Lake's crappie population was conducted during October 2005. A total of 744 white crappie (75%) and 243 black crappie (25%) were collected during 80 net days of netting (Table 30). With the exception of age 0 fish, catch rates for all size groups of crappie decreased from 2004 values, but are in line with data collected over the last several years (Table 31). Catch rates collected in 2004 were also a decrease from 2003, however 2003 was an exceptional year with catch rates (especially of larger fish) much higher than any collected since at least 1998. Table 32 gives PSD and RSD values for white and black crappie. Age data used in calculations was collected in 2004. The length weight equation for white crappie is $\text{Log } W = -3.70 + 3.36(\text{Log } L)$. Annual mortality was determined to be 58% and instantaneous mortality to be 0.869. Age frequencies (Table 33) indicate a dominant age 0 population. Annual mortality of yearly cohorts is provided in Table 34. Population assessment values and scores for 2005 are presented in Table 35. White crappie management objective 3 states that the white crappie population density should be at least 9 fish > 8.0 in/net night, objective 4 states that at least 40% of the population be age 2 or older, and objective 5 requires a growth rate of at least 9.0 inches of age 2+ fish at capture. Objectives 3 and 4 were not met with only 3.25 crappie 8.0 inches or greater captured per net night and only 12.6% of the population age 2 or older. These values should improve over the next couple of years as the abundant age 0 and age 1 year classes increase in age and length. Objective 5 was met as age 2+ fish at capture averaged 10.4 inches in length (2004 data).

Lake Malone

Largemouth Bass Sampling

Lake Malone was electrofished for largemouth bass population composition in April 2005 (Table 36). Slight increases in CPUE were noted for all size groups when compared with 2004 data, but otherwise the data is very similar (Tables 37 and 38). The largemouth bass at Lake Malone continue to exhibit excellent population characteristics as it has since 2002. CPUE of 15 inch and larger and 20 inch and larger fish increased from the 1990's until 2002 and 2003, presumably due to the 12"-15" protective slot limit initiated in 1996, but now seem to have stabilized. PSD values and RSD15 values remain at high levels (Table 39). Tables 40 and 41 examine CPUE by age group and mortality by age group of largemouth bass at Lake Malone. Largemouth bass instantaneous mortality was 0.387 and annual mortality was 32%.

Fall electrofishing was conducted during October to determine length frequency and CPUE of age 0 largemouth bass. Due to equipment problems and time constraints, only two of the normal five 30-minute runs were able to be completed.

Table 42 provides length frequency data and Table 43 provides CPUE and mean length of age 0 fish at capture. This data will be used to track year class strength and growth through time. Management objectives for largemouth bass at Lake Malone are a population density of 50 bass/hour for 8.0-11.9 inch bass, 60 bass/hour for 12.0-14.9 inch bass, and 15 bass/hour for bass greater than 15 inches. Objectives for the intermediate bass were not met and may need to be adjusted to better fit Lake Malone's population dynamics. The other objectives were exceeded.

Bluegill/Redear Sunfish Sampling

Bluegill and redear sunfish were sampled by electrofishing in June 2005 (Table 44). Catch rates for bluegill under 6 inches increased while catch rates for bluegill over 6 inches decreased from 2004 observations (Table 45). Catch rates for the smaller fish are slightly higher than those observed since 1999. The increased catch rate for bluegill 6-8 inches in 2004 was encouraging; however it decreased again in 2005 and is similar to data collected since 1999. Length-frequency data as well as PSD and RSD values (Table 46) reflect a population dominated by smaller bluegill. CPUE by age group is presented in Table 47. The overall population assessment for bluegill is fair, similar to assessments for previous years (Table 48). Bluegill management objectives at Lake Malone call for electrofishing CPUE to be ≥ 72 fish 3.0-5.9 inches, ≥ 48 for bluegill greater than 6.0 inches and at least 5 fish/hour for 8.0 inch and larger bluegill. The first objective was easily met, the second objective was nearly met, but the objective for large bluegill has not been met for several years. Redear sunfish were not assessed due to the small number sampled.

Mauzy Lake

A 50 ft. x 50 ft. "T" shaped floating fishing pier was installed in Mauzy during May. During June, 15 "sea urchin" PVC fish attractors were placed around the pier. Gravel spawning beds were placed around the pier prior to the lake filling following a 2003 drawdown for renovation. Cedar tree brush attractors will also be placed around the pier in the spring of 2006.

Largemouth Bass Sampling

Largemouth bass were electrofished for population analysis during April 2005. This is the first sample conducted with the lake at pool since 2002. The 2003 sample was conducted as the lake was being drawn down for renovations and the 2004 sample prior to the lake refilling completely.

Table 49 contains length frequency and CPUE data and shows a fairly balanced population. During the 1990's the bass population was characterized as slow growing with an abundance of 8-11 inch fish. The lower number of 8-11 inch fish collected (possibly due to predation and competition from crowding during the drawdown) and higher number of 12-15 inch fish collected during 2005 offer some encouragement this trend may be reversing. A couple more years of collections at stable water levels will be needed to fully assess improvements. Table 50 provides CPUE data for size groups and Table 51 for age groups over the past several years. PSD and RSD values are presented in Table 39 and age-frequency data in Table 52. Age and growth data for calculations was collected in 2004. Population assessment values for largemouth bass are shown in Table 53 and further indicate population improvements.

Bluegill/redear sunfish sampling

Mauzy Lake was sampled for bluegill in May 2005 (Table 54). A dramatic increase in the number of bluegill under 6 inches and decrease in the number of bluegill over 6 inches was observed in 2005 (Table 55). This could be due in part to poor spawning success and/or increased harvest efficiency during the drawdown. Further sampling will also be necessary to fully assess bluegill population trends. PSD and RSD values are contained in Table 56 and age-growth information in Table 57. Bluegill population assessments for the last several years (Table 58) also reflect the decrease in larger size fish and lead to a "fair" population rating in 2005. Redear sunfish have been stocked in Mauzy the last two years, but have not been collected during electrofishing surveys.

Carpenter Lake

Largemouth Bass

Carpenter Lake was electrofished for largemouth bass population composition in April 2005. Length-frequency and CPUE data are presented in Table 59 and CPUE by size group for the last several years in Table 60. The catch rate for bass 12 inches and under has increased steadily over the last 4-5 years. The catch rate for bass 13 inches and over has decreased slightly the last couple of years and dropped dramatically in 2005. This trend will be closely monitored over the next couple of years to determine if the population is moving toward an over abundance of sublegal fish or if the decrease in the number of larger fish is due to sampling variability or harvest. Electrofishing CPUE per age class is presented in Table 61 and a comparison of population assessments for the last 7 years in Table 62, both of which reflect the decrease in older and larger fish. Mortality among age classes is contained in Table 63 and PSD and RSD values in Table 39. Largemouth bass management objectives at Carpenter Lake state that at least 60 bass from 8.0-11.9 inches, 30 bass from 12.0-14.9 inches and 8 bass 15 inches or larger be collected per hour of electrofishing. Objectives 1 and 2 were met while objective 3 was not (Table 60).

Bluegill and redear sunfish sampling

Electrofishing for bluegill and redear sunfish parameters was conducted in May 2005 at Carpenter Lake (Table 64). Although a substantial increase in catch rate was observed in most size classes of bluegill in 2005, sampling results over the last several years have been highly variable (Table 65) with no clear trends evident. This is probably due as much to sampling inefficiencies as it is to any actual population fluctuations. The PSD and RSD8 values for bluegill were 38 and 6, respectively (Table 66). Table 67 compares electrofishing catch rates for each age class of bluegill. The overall population assessment for bluegill was excellent (Table 68). Bluegill management objectives at Carpenter Lake require 200 fish/hour for 3-5.9 inch fish, 120 fish/hour for 6-7.9 inch fish and 20 fish/hour for fish ≥ 8.0 inches. Although none of these objectives were met, all were fairly close. Redear sunfish were not collected in sufficient numbers for assessment.

Kingfisher Lake

Largemouth Bass

Electrofishing for largemouth bass population assessment was conducted at Kingfisher Lake during April 2005. For approximately the last 10 years Kingfisher Lake's bass population has been dominated by slow growing sublegal fish. Age and growth determinations in 2003 revealed age 5 bass were less than 12.0 inches. Annual removal and relocation of 250-500 sublegal bass has taken place for several years in an effort to reduce competition and increase growth. Although there was an increase in the CPUE for all size ranges of largemouth bass in 2005, a moderate increase in the catch rate of 12 inch and larger bass was finally observed. Additional removal of sublegal bass and population monitoring should encourage this trend to continue. Length frequency and CPUE data are given in Table 69 and PSD and RSD15 are given in Table 39. CPUE trends over the past several years for selected size ranges are given in Table 70. Table 71 gives CPUE for each age class over the past four years. Annual mortality of cohort is listed in Table 72. Table 73 tracks population assessments over the past several years. The shortage of larger sized fish in Kingfisher is the primary causative agent in low assessment scores.

Bluegill sampling

Bluegill were sampled at Kingfisher Lake in May 2005. Length frequency and CPUE are listed in Table 74 and CPUE by inch groups are compared in Table 75 for the last several years. The catch rate of bluegill under 6 inches has been erratic. Catch rates of bluegill between 6 and 8 inches have declined since 2003, while the catch rate of 8 inch fish and larger have remained fairly steady, but with a slight increase in 2005. The PSD and RSD value are contained in Table 76. CPUE for each age class of bluegill collected over the past four years is listed in Table 77. Table 78 tracks population assessments over the past several years.

Kingfisher Lakes have good growth rates but are low in overall population numbers, especially the larger sized fish. This is a heavily fished small lake near a metropolitan center (Owensboro), which partially explains this situation.

Washburn Lake

Washburn Lake was renovated and restocked with largemouth bass, bluegill, redear sunfish, and channel catfish in 2000. Population assessments are limited due to the age of fishes present. Age and growth data collected in 2004 revealed a slow growing bass population and a fertilizer program was initiated in 2004 to help correct this.

Largemouth bass sampling

Largemouth bass were sampled in April 2005. Table 79 gives length frequency and CPUE for collected fish and the 2005 sample is the first one where any bass over 12 inches have been collected since restocking in 2000. Table 80 provides CPUE for selected size groups of largemouth bass but is limited by the age of bass available in the lake. The collection of 12 inch and larger bass in 2005 (primarily the collection of one 21 inch bass) pushed the population assessment into the good category (Table 81).

Bluegill and redear sunfish sampling

Bluegill were collected during electrofishing in May (Table 82). PSD and RSD information is contained in Table 83. CPUE by inch class is compared for the previous five years in Table 84. The catch rate of bluegill over 6 inches decreased from 2004, especially those greater than 8 inches, and reduced the population assessment to the poor category (Table 85). This decline could be due in part to sampling variability, but the lake also received substantial bluegill angling pressure. Additional monitoring will be necessary to detect population trends. No redear sunfish were observed.

Peabody WMA

Clear water and high conductivity make electrofishing ineffective at most Peabody WMA lakes. In an effort to assess the fish population of these lakes SCUBA transect surveys were initiated in 2005. A SCUBA diver swam for 30 minutes parallel to the shoreline at the 10-ft depth contour and recorded the species, number, and size group of each fish observed. Data for Goose Lake and Island Lake are presented in Tables 86 and 87 respectively.

Table 1. Species composition, relative abundance, and CPUE (no./hour) of black bass collected during 4.5 hours of 30-minute diurnal electrofishing runs at Nolin River Lake in April 2005.

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	2	6	6	6	25	45	11	12	26	29	37	20	16	9	10	6	3	8		272	108.80	11.00	
	Spotted bass	1				1	3	4	3	7	5	1									25	10.00	3.16	
Lower	Largemouth bass	2	8	5	13	10	9	10	13	12	16	17	8	6	8	8	1	3	1		150	75.00	14.01	
	Spotted bass																				41	20.50	5.97	
Total	Largemouth bass	4	14	11	38	55	20	22	39	41	53	37	24	15	18	14	4	11	1		422	93.78	10.08	
	Spotted bass	1			7	9	8	11	16	8	5	1									66	14.67	3.48	

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Table 2. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples in each area of Nolin River Lake during April 2005; 95% confidence intervals are in parentheses.

Area	Species	No. fish $\geq 8.0''$	PSD (+/- 95%)	RSD ^a (+/- 95%)
Upper	Largemouth bass	188	58 (+/- 7)	20 (+/- 6)
	Spotted bass	23	26 (+/- 18)	0
Lower	Largemouth bass	112	61 (+/- 9)	24 (+/- 8)
	Spotted bass	35	23 (+/- 13)	3 (+/- 5)
Total	Largemouth bass	300	59 (+/- 4)	21 (+/- 5)
	Spotted bass	58	24 (+/- 11)	2 (+/- 3)

^a Largemouth bass = RSD-15, spotted bass = RSD-14.

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Table 3. Spring electrofishing CPUE for each size class of largemouth bass collected at Nolin River Lake during spring electrofishing 1999-2005. CPUE = fish/hour.

Year	Inch Class											
	<8.0	8.0-11.9		12.0-14.9		≥15.0		≥20.0		Total		
CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	
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
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
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
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
2001	5.50	1.68	27.00	7.44	18.00	3.30	9.00	2.80	0.00	0.5	59.50	11.72
2000	9.50	3.11	35.00	6.27	41.50	5.12	14.00	4.34	0.50	0.5	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

Table 4. Population assessment for largemouth bass based on spring electrofishing at Nolin River Lake from 1999-2005.

Parameter	Year											
	1999	2000		2001		2002		2003		2004		2005
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Length at age 3	13.09	4	13.09	4.00	13.09	4	13.09	4	13.09	4	13.09	4
Spring CPUE age 1 fish	n/d		9.00	1	5.00	1	3.78	1	11.33	1	22.89	2
Spring CPUE 12-14.9 in fish	56.89	4	41.50	4	18.00	2	8.00	1	8.89	1	16.22	2
Spring CPUE ≥ 15.0 inch fish	8.00	2	14.00	3	9.00	2	8.00	2	7.56	2	8.89	2
Spring CPUE ≥ 20.0 inch fish	0.44	2	0.50	2	0.00	0	0.00	0	0.00	0	0.22	2
Total score			14	G	9	F	8	F	8	F	12	G
Assessment rating												

Table 5. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Nolin River Lake during April 2005.

Age	Year				
	2002	2003	2004	2005	2005
1	3.78	11.33	22.89	26.22	26.22
2	8.33	9.64	14.82	23.38	23.38
3	8.90	9.08	16.35	27.24	27.24
4	1.59	1.57	1.86	3.57	3.57
5	0.73	0.82	0.97	1.60	1.60
6	1.78	2.44	2.44	3.11	3.11
7					
8					
9					
10					

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Table 6. Annual mortality (A) between 2004-2005, and CPUE (fish/hr) of the last five year classes estimated from largemouth bass captured in spring electrofishing samples at Nolin River Lake.

Year	Age Class Intervals	CPUE (2004)	CPUE (2005)	Mortality of Cohort (%)
2003	1+ - 2+	22.89	23.38	
2002	2+ - 3+	14.82	27.24	
2001	3+ - 4+	16.35	3.57	78
2000	4+ - 5+	1.86	1.60	14
1999	5+ - 6+	0.97	3.11	
1998	6+ - 7+	2.44	0.00	100

Table 7. Species composition, relative abundance, and CPUE (no./hour) of black bass collected during 4.5 hours of 30-minute diurnal electrofishing runs at Nolin River Lake in September 2005.

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	29	138	29	20	58	63	21	20	44	37	31	21	13	7	5	1	1	1	1	537	214.80	72.68	
	Spotted bass	3	34	8	8	2	2	2	4	12	12	3	1								89	35.60	9.00	
Lower	Largemouth bass	10	10	10	16	11	7	12	7	5	11	4	8	5	2	1	2	1			122	61.00	8.89	
	Spotted bass	6	26	2	10	15	16	5	6	5	7	3	3								105	52.50	2.63	
Total	Largemouth bass	39	148	39	36	67	70	33	27	49	48	35	29	18	9	6	2	2	1	1	659	146.44	47.02	
	Spotted bass	9	60	10	10	23	18	7	10	17	19	6	4								194	43.11	5.70	

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Table 8. Number of fish and relative weight (Wr) for length groups of black bass collected in NWFD lakes during October 2005.

Species	Location	Siz Range						
		8.0-11.9 in		12.0-14.9 in		≥ 15.0 in		
		No.	Wr	No.	Wr	No.	Wr	
Largemouth Bass	<u>Nolin River Lake</u>							
	Upper	37	83.2 (0.8)	27	86.0 (1.1)	6	88.5 (2.5)	
	Lower	35	85.0 (1.3)	17	83.0 (1.9)	6	88.9 (3.1)	
	Total	72	84.1 (0.7)	44	84.9 (1.0)	12	88.7 (1.9)	
	<u>Rough River Lake</u>							
	Upper	38	88.2 (1.3)	34	86.6 (1.6)	13	84.9 (6.5)	
	Lower	31	86.4 (1.6)	12	89.8 (2.1)	18	91.6 (3.0)	
	Total	69	87.4 (1.0)	46	87.4 (1.3)	31	88.8 (3.2)	
	<u>Lake Malone*</u>							
*Not sampled 05								
Spotted Bass	<u>Nolin Lake</u>							
	Upper	10	86.7 (2.6)	6	91.0 (1.9)	0		
	Lower	0		0		0		
	Total	10	86.7 (2.6)	6	91.0 (1.9)	0		
	<u>Rough River Lake</u>							
	Upper	1	93.2	1	88.4	2	81.6 (2.0)	
	Lower	0		0		0		
	Total	1	93.2	1	88.4	2	81.6 (2.0)	

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		Age 0 > 5.0		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		

Table 10. Length frequency and CPUE for each specie of crappie collected in 80 net-nights of sampling at Nolin River Lake during October 2005.

Species	Inch class													Total	CPUE	Std. Error
	3	4	5	6	7	8	9	10	11	12	13					
White crappie	26	88	22	30	56	188	189	152	52	9	3	815	10.19	0.99		
Black crappie	22	8	3	4	13	16	5	11	1			83	1.04	0.16		

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Table 11. PSD and RSD values calculated for crappie collected in trap nets from Nolin River Lake during October 2005; 95% confidence limits are in parentheses.

Lake/Species	No.	PSD	RSD-10
Nolin River Lake			
White Crappie	701	85 (+/- 2)	31 (+/- 4)
Black Crappie	53	62 (+/- 12)	23 (+/- 11)

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Table 12. Age-frequency and CPUE (no./net day) per inch class of white crappie trap netted for 80 net days at Nolin River Lake in October 2005. Numbers in parentheses are standard errors.

Age	Inch class												CPUE (Std. Error)	Age (%)	
	2	3	4	5	6	7	8	9	10	11	12	No.			
0	26	88											114	1.42	14
1			22	26	44	148	52						291	3.64	36
2			4	12	27	103	106	22					275	3.44	34
3				13	34	30	30						108	1.35	13
4					15								20	0.25	2
7									4	5	9	5	5	0.06	1
Total	26	88	22	30	56	188	189	151	52	9	813				100
(%)	3	11	3	4	7	23	23	19	6	1					

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Table 13. Annual mortality (A) estimates between 2004-2005, and CPUE (fish/hr) of the last five year classes of white crappie trap netted during October 2005 at Nolin River Lake.

Year Class	Age Intervals	CPUE (2004)	CPUE (2005)	Mortality of Cohort (%)
2003	1+ - 2+	4.15	3.44	17%
2002	2+ - 3+	3.07	1.35	56%
2001	3+ - 4+	1.16	0.25	79%
2000	4+ - 5+	0.16	0.06	63%
1999	5+ - 6+	0.02	0.00	100%

Table 14. Population assessment for white crappie trap netted at Nolin River Lake during October 2005.

Parameter	Actual Value	Assessment Score
Population density (CPUE age 1 fish and older)	8.76	2
Growth rate (Mean length of age 2+ fish at capture)	9.72	4
Size Structure (CPUE fish \geq 8.0 in.)	7.41	3
Recruitment (CPUE of age 1 fish)	3.64	2
Recruitment (CPUE of age 0 fish)	1.42	1
Total Score		12
Assessment rating		F
Instantaneous mortality (Z)	0.749	
Annual mortality (A)	52.71%	

Table 15. Population assessment for white crappie based on fall trapnetting at Nolin River Lake from 1999-2005.

Parameter	Year											
	1999		2001		2002		2003		2004		2005	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
CPUE (excluding age 0)	8.72	2	10.21	2	11.99	2	13.23	3	8.56	2	8.76	2
CPUE of age 1	4.85	2	4.82	2	10.02	3	8.00	3	4.15	2	3.64	2
CPUE of age 0	0.18	1	2.62	1	4.26	2	2.04	1	5.09	2	1.42	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
Mean length age 2 at capture	9.8	4	9.1	3	9.5	3	9.8	4	9.7	4	9.7	4
Total score	12		10		13		14		13		12	
Assessment rating	F		F		G		G		G		F	

Table 16. Fishery statistics derived from a creel survey at Rough River Lake (5,100 acres) from April 2 through October 30 2005.

<u>Fishing trips</u>		
No. of fishing trips (per acre)	35,293	(6.92)
<u>Fishing pressure</u>		
Total man-hours (S.E.) ^a	147,472	(3,996.55)
Man-hours/acre	28.92	
<u>Catch/harvest</u>		
No. of fish caught (S.E.)	220,423	(19,062.71)
No. of fish harvested (S.E.)	59,590	(6,328.44)
Lb of fish harvested	41,903	
<u>Harvest rates</u>		
Fish/hour	0.41	
Fish/acre	11.68	
Lb/acre	8.22	
<u>Catch rates</u>		
Fish/hour	1.47	
Fish/acre	43.22	
<u>Miscellaneous characteristics (%)</u>		
Male	82.45	
Female	17.55	
Resident	91.52	
Non-resident	8.48	
<u>Method (%)</u>		
Still fishing	7.86	
Casting	86.87	
Fly fishing		
Trolling	5.23	
<u>Mode (%)</u>		
Boat	83.33	
Bank	8.68	
Dock	7.99	

t < 0.5%

^aS.E. = standard error

Table 17. Fish harvest statistics derived from a creel survey at Rough River Lake (5,100 acres) during 2 April through 30 October 2005.

	Carp	Fathead catfish	Channel catfish	Green Sunfish	Drum	Warmouth	Bluegill	Longear sunfish	Spotted Bass	Largemouth bass	White crappie	Black crappie	Hybrid Rockfish	Gar	Black bass group	Catfish group	Panfish group	Anything group
No. caught (per acre)	312.10 0.06	237.34 0.05	1637.96 0.32	9943.27 1.95	457.72 0.09	399.58 0.08	91216.93 17.89	50.74 0.01	3428.25 0.67	48335.60 9.67	49000.73 9.61	7604.84 1.49	6048.09 1.19	55.63 0.01	52,761.85 10.35	1,875.31 0.37	102,059.82 20.01	
No. harvested (per acre)	39.16 0.01	218.37 0.04	1131.20 0.22	1509.81 0.30	75.69 0.01	39.16 0.01	21086.15 4.14	18.91 t	897.76 0.18	5908.70 1.16	19841.06 3.89	5483.18 1.08	3086.04 0.61		6,806.48 1.33	1,347.57 0.26	22,664.04 4.44	
% of total no. harvested	0.07	0.36	1.90	2.53	0.13	0.07	35.41	0.03	1.51	9.92	33.30	9.20	5.18		11.42	2.28	38.03	
Lb harvested (per acre)	62.70 0.01	790.70 0.16	1945.20 0.38	44.10 0.01	143.50 0.03	2.90 t	2368.70 0.46	1.30 t	1085.20 0.21	10821.20 2.12	11032.30 2.16	3809.10 0.71	9894.30 1.94		11,906.40 2.33	2,735.90 0.54	2,417.00 0.47	
% of total lb harvested	0.15	1.89	4.64	0.11	0.34	0.01	5.65	t	2.59	25.82	26.33	8.61	23.61		28.41	6.53	5.77	
Mean length (in)	15.00	18.90	17.55	3.53	17.50	4.50	5.64	5.00	12.98	14.95	10.41	10.52	18.15					
Mean weight (lb)	1.69	3.38	1.76	0.03	2.27	0.08	0.12	0.08	0.97	1.73	0.53	0.64	3.08					
No. of fishing trips for that species													4701.21		12,207.57	851.85	4,017.24	6,569.08
% of all trips													13.33		34.61	2.42	11.39	18.63
Hours fished for that species (per acre)													19643.81 3.85		51,008.86 10.00	3,559.44 0.70	16,785.86 3.30	27,448.66 5.38
No. harvested fishing for that species													2579.00		5,748.00	679.00	14,392.00	
Lb harvested fishing for that species													8544.30		10,464.90	1,475.60	1,575.10	
No. hour harvested fishing for that species													0.15		0.10	0.14	1.02	
% success fishing for that species													17.69		18.14	25.00	30.16	14.42

Table 17 Continued.

	Crappie group	Illegal black crappie	illegal white crappie	illegal hybrid rockfish	illegal bass
No. caught (per acre)	56,605.57 11.10	33.83 0.01	164.47 0.03	13.68 t	34.65 0.01
No. harvested (per acre)	25,324.24 4.97	33.83 0.01	164.47 0.03	13.68 t	34.65 0.01
% of total no. harvested	42.50	0.06	0.28	0.02	0.06
Lb harvested (per acre)	14,641.40 2.87	7.20 t	41.70 0.01	11.80 t	41.10 0.01
% of total lb harvested	34.94	0.02	0.10	0.03	0.10
Mean length (in)		8.00	8.00	12.00	13.00
Mean weight (lb)		0.21	0.25	0.86	1.13
No. of fishing trips for that species	6,920.47				
% of all trips	19.62				
Hours fished for that species (per acre)	28,916.90 5.67				
No. harvested fishing for that species	24,006.00				
Lb harvested fishing for that species	13,847.80				
No./hour harvested fishing for that species	0.77				
% success fishing for that species	52.11				

Table 18. Length distribution for each species of fish harvested or released at Fough River Lake (6,100 a) during 2 April - 30 October 2005.

Species	Inch class																													
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	30			
Carp																														
Harvested											20					19														
Sublegal													19																	
Drum																														
Harvested																														
Sublegal																														
Gar																														
Harvested																														
Sublegal																														
Green sunfish																														
Harvested																														
Sublegal																														
Channel catfish																														
Harvested																														
Sublegal																														
Flathead Catfish																														
Harvested																														
Sublegal																														
White crappie																														
Released																														
Harvested																														
Sublegal																														
Black Crappie																														
Released																														
Harvested																														
Sublegal																														
Warmouth																														
Harvested																														
Sublegal																														
Bluegill																														
Harvested																														
Sublegal																														
Longear sunfish																														
Harvested																														
Sublegal																														

Table 18 continued.

Species	Inch class																											
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	30	
Langemouth bass																												
Harvested										117	468	527	624	1794	995	936	234	137	77									
Released											36	54	1,044	758	414	252	54	37										
Sublegal							2,883	1,216	7,983	3,923	17,222	3,825	3,728															
Spotted Bass																												
Harvested								21			42	125	313	251	104	42												
Sublegal							459	381	477	257	459	257	202	18	19													
Hybrid Striped Bass																												
Harvested														373	354	649	432	413	256	236	216	118	39					
Released														311	233	194	155	97	117	39	58	20						
Sublegal	36	18			107	107	179	72	215	125	269	233	377															
Redear																												
Harvested																												
Sublegal																												
Illegal Blk Crappie																												
Harvested																												
Illegal Wt Crappie																												
Harvested																												
Illegal Hyb Striped Bass																												
Harvested																												
Illegal Bass																												
Harvested											14																	
											17																	

Table 19. Monthly black bass angling success at Rough River Lake (5,100 a) from 2 April - 30 Oct. 2005 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 by bass anglers	Bass harvested/hour by bass anglers
Apr	3,315.10	575.07	1,250.07	5,223.35	2,386	0.52	440	0.10
May	9,793.15	875.36	2,148.47	8,977.30	8,549	0.77	766	0.07
Jun	5,034.35	398.55	1,131.00	4,725.85	2,475	0.50	231	0.05
Jul	6,007.46	1,134.74	1,622.06	6,777.71	4,360	0.45	1,068	0.11
Aug	5,154.97	156.21	1,118.54	4,673.76	3,347	0.56	45	0.01
Sep	8,868.83	1,026.62	2,789.94	11,657.64	8,754	0.74	969	0.08
Oct	14,587.99	2,639.92	2,147.50	8,973.25	13,747	1.39	2,229	0.23
Total	52,761.85	6,806.48	12,207.57	51,008.86	43,618		5,748	
Mean						0.76		0.10

Table 20. Black bass catch and harvest statistics derived from a creel survey at Rough River Lake (5,100 a) from 2 April - 30 October 2005 for each species of black bass.

	Largemouth bass						Spotted bass			
	Harvest		Catch and release		Harvest		Catch and release			
	<15.0	≥15.0	8.0-14.9	≥15.0	8.0-14.9	≥15.0	8.0-14.9	>15.0		
Total no. of bass	1,736	4,173	5,909	24,865	2,557	27,422	898	918	37	955
% of black bass harvested by no.			86.81							13.19
Total weight of fish (lb)			10,821.20							2,472.80
% of bass harvested by weight			90.89							9.11
Mean length			14.95							12.98
Mean weight			1.73							0.97
Rate (f/hrs)			0.12							0.02

Table 21. Monthly hybrid striped bass angling success at Rough River Lake (5,100 a) from 2 April - 30 Oct. 2005.

Month	Total number of hybrid striped bass caught	Total no. of hybrid striped bass harvested	No. of hybrid striped bass fishing trips	Hours fished by hybrid striped bass anglers	Hybrid striped bass caught by hybrid striped bass anglers	Hybrid striped bass harvested by hybrid striped bass anglers	Hybrid striped bass harvested/hour by hybrid striped bass anglers
Apr	422.84	169.14	40.99	171.26	203.00	135.00	1.33
May	1,217.30	492.39	424.50	1,773.74	575.00	301.00	0.31
Jun	1,866.91	797.11	1,587.55	6,633.53	1,427.00	671.00	0.26
Jul	1,001.24	556.25	1,219.34	5,094.97	779.00	445.00	0.19
Aug	1,539.80	1,071.16	1,353.43	5,655.24	1,384.00	1,027.00	0.26
Sep	0.00						
Oct	0.00						
Total	6,048.09	3,086.04	4,701.21	19,643.81	4,368.00	2,579.00	0.26
Mean							0.15

Table 22. Species composition, relative abundance, and CPUE (no./hour) of black bass collected during 4.5 hours of 30-minute diurnal electrofishing runs at Rough River Lake in April 2005.

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			3	2	13	33	32	14	9	16	26	27	42	24	7	6	6	5	2	267	106.80	14.60	
	Spotted bass			2			1		1	1	2	2		1	2						12	4.80	2.06	
Lower	Largemouth bass	1	13	4	10	10	10	13	21	25	29	24	29	29	15	13	6	2	1	1	246	123.00	27.05	
	Spotted bass	1	1	1	1	1	9	16	5	4	7	7		1							53	26.50	4.50	
Total	Largemouth bass	4	15	17	43	42	42	27	30	41	55	51	71	53	22	19	12	2	6	3	513	114.00	13.76	
	Spotted bass	1	3	1	2	9	17	6	6	9	7	7	1	3							65	14.44	4.37	

nwdrpsd.d05

Table 23. Spring electrofishing CPUE for each size class of largemouth bass collected at River River Lake during April 2005. CPUE = fish/hour.

Year	Inch Class											
	<8.0		8.0-11.9		12.0-14.9		>15.0		>20.0		Total	
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2005	26.89	6.15	34.00	7.60	38.89	5.15	14.22	2.48	0.67	0.33	229.80	41.65
2004	31.11	3.86	35.56	5.12	12.89	2.16	9.78	1.08	0.22	0.22	89.33	9.50
2003	61.56	7.01	27.78	6.93	20.00	5.56	18.44	3.18	0.67	0.33	127.78	15.36
2002	7.33	1.70	7.11	2.29	2.00	0.88	1.56	0.44	0.00	0.00	18.00	3.82
2001	30.67	7.45	21.33	4.47	16.44	4.96	3.11	1.74	0.00	0.00	71.56	11.18
2000	15.11	3.45	32.89	4.31	21.78	2.76	5.33	2.11	1.78	0.97	75.11	6.42
1999	n/d		28.44	2.05	21.33	4.11	8.89	2.38	0.44	0.44	58.67	4.57

Table 24. PSD and RSD values obtained for each black bass species taken in spring electrofishing samples in each area of Rough River Lake during April 2005; 95% confidence intervals are in parentheses.

Area	Species	No. fish $\geq 8.0"$	PSD (+/- 95%)	RSD ^a (+/- 95%)
Upper	Largemouth bass	184	65 (+/- 7)	14 (+/- 5)
	Spotted bass	9	55 (+/- 34)	22 (+/- 29)
Lower	Largemouth bass	208	58 (+/- 7)	18 (+/- 5)
	Spotted bass	49	31 (+/- 12)	2 (+/- 4)
Total	Largemouth bass	392	61 (+/- 5)	16 (+/- 3)
	Spotted bass	58	34 (+/- 12)	5 (+/- 6)

^a Largemouth bass = RSD-15, spotted bass = RSD-14.

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Table 25. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Rough River Lake during spring samples 2002- 2005.

Age	Year			
	2002	2003	2004	2005
1	7.93	44.30	32.82	28.04
2	6.19	25.63	34.10	34.65
3	2.33	11.40	12.00	32.94
4	0.22	8.00	5.75	12.33
5	0.00	0.00	1.01	1.14
6	0.00	0.00	2.31	2.44
7	0.00	0.00	0.89	0.44

nwdrrpsd.d03, nwdrrlag.d02, nwdrrpsd.d04,
nwdrrlag.d04, nwdrrpsd.d05

Table 26. Annual mortality (A) between 2004-2005, and CPUE (fish/hr) of the last five year classes estimated from largemouth bass captured in spring electrofishing samples at Rough River Lake.

Year Class	Age Intervals	CPUE (2004)	CPUE (2005)	Mortality of Cohort (%)
2003	1+ - 2+	32.82	34.65	
2002	2+ - 3+	34.10	32.94	4%
2001	3+ - 4+	12.00	12.33	
2000	4+ - 5+	5.75	1.14	80%
1999	5+ - 6+	1.01	2.44	
1998	6+ - 7+	2.31	0.44	81%
1997	7+ - 8+	0.89	0.00	100%

Table 27. Population assessment for largemouth bass based on spring electrofishing at Rough River Lake from 1999-2005.

Parameter	Year													
	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Length at age 3 at capture	12.5	4	12.5	4	12.5	4	12.5	4	12.5	4	12.5	4	13.6	4
Spring CPUE age 1 fish	2.96	1	10.52	1	28.00	2	7.93	1	44.30	3	32.82	3	28.04	2
Spring CPUE 12-14.9 in fish	21.33	2	21.78	2	16.44	2	2.00	1	20.00	2	12.89	1	38.89	4
Spring CPUE ≥ 15.0 inch fish	8.89	2	5.33	2	3.11	1	1.56	1	18.4	3	9.78	2	14.22	3
Spring CPUE ≥ 20.0 inch fish	0.44	2	1.78	2	0.00	1	0.00	1	0.67	2	0.22	2	0.67	2
Total score	11	12	10	8	14	12	15	15	12	15	12	15	12	15
Assessment rating	F	G	F	F	G	F	F	F	G	G	G	G	G	G

Table 28. Species composition, relative abundance, and CPUE (no./hour) of black bass collected during 4.5 hours of 30-minute diurnal electrofishing runs at Rough River Lake in September 2005.

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	52	102	15	17	24	36	16	13	21	27	20	22	9	7	3	4	1	3	392	156.80	9.60		
	Spotted bass	3	28	1	1	1	1	2	1	1	3	1	1	1	1	1	1	1	1	44	17.60	8.38		
Lower	Largemouth bass	8	29	19	10	11	10	9	8	9	5	7	3	3	4	6	5	2	1	149	74.50	6.50		
	Spotted bass	8	47	9	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	74	37.00	8.19		
Total	Largemouth bass	60	131	34	27	35	46	25	21	30	32	27	25	12	11	9	9	3	4	541	120.22	15.55		
	Spotted bass	11	75	10	1	1	3	2	2	3	3	3	2	1	1	1	1	1	1	118	26.22	6.50		

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Table 29. 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			Age 1		
		Mean length	Std. error	CPUE	Std. error	CPUE	Std. Error	CPUE	Std. Error	
2001	Total	4.0		38.6	3.9	29.3	0.9	7.93	1.70	
2002	Total	5.0		60.5	18.3	34.3	2.6	44.30	5.61	
2003	Total	4.8		34.9	3.2	20.0	2.9	32.82	3.85	
2004	Total	4.0	0.06	100.4	18.6	24.2	5.9	28.04	5.91	
2005	Total	4.3	0.08	72.4	10.4	22.4	4.4			

Table 30. Length frequency and CPUE for each specie of crappie collected in 80 net-nights of sampling at Rough River Lake during October 2005.

Species	Inch class													Total	CPUE	Std. Error
	3	4	5	6	7	8	9	10	11	12	13					
White crappie	27	183	163	27	84	99	108	32	16	3	2	744	9.30	0.93		
Black crappie	72	58	38	61	8	2	2	2				243	3.04	0.49		

nwdrrfn.d05

Table 31. Population assessment for white crappie based on fall trapnetting at Rough River Lake from 1999-2005.

Parameter	Year											
	1998		2000		2002		2003		2004		2005	
	Value	Score	Value	Score	Value	Score	Value	Score	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
CPUE of age 1	7.50	3	1.36	1	10.02	3	10.8	3	5.5	2	3.5	2
CPUE of age 0	1.87	1	2.12	1	4.26	2	18.85	4	1.8	1	4.61	2
CPUE of crappie \geq 8.0 in.	5.46	3	3.07	2	8.78	3	9.92	3	7.1	3	3.25	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
Total score	12		8		13		17		12		12	
Assessment rating	F		F		G		G		F		F	

Table 32. PSD and RSD values calculated for crappie collected in trap nets from Rough River Lake during October 2005; 95% confidence limits are in parentheses.

Lake/Species	No.	PSD	RSD-10
Rough River Lake			
White Crappie	534	49 (+/- 4)	10 (+/- 2)
Black Crappie	113	5 (+/- 4)	2 (+/- 2)

nwdrrtn.d05

Table 33. Age-frequency and CPUE (no./net night) per inch class of white crappie trap netted for 80 net nights at Rough River Lake in October 2005. Numbers in parentheses are standard errors.

Age	No.													CPUE		Age (%)
	3	4	5	6	7	8	9	10	11	12	13	No.	Error	Std.		
0	27	183	163									373	4.66		50	
1				27	84	81	76	6	3				277	3.46	0.47	37
2						18	32	23	11	1		85	1.07	0.16	11	
3							3	2				5	0.06	0.01	1	
4									1	2	3	3	0.04	0.02	<1	
7										1		1	0.01	0.01	<1	
Total	27	183	163	27	84	99	108	32	16	3	2	744				
(%)	4	25	22	4	11	13	14	4	2	<1	<1					

nwdrrtn.d05,
nwdrrcag.d04

Table 34. Annual mortality (A) estimates between 2004-2005, and CPUE (fish/hr) of the last five year classes of white crappie trap netted during October 2005 at Rough River Lake.

Year Class	Age Intervals	CPUE (2004)	CPUE (2005)	Mortality of Cohort (%)
2003	1+ - 2+	4.15	1.07	74%
2002	2+ - 3+	2.52	0.06	98%
2001	3+ - 4+	0.15	0.04	74%
2000	4+ - 5+	0.03	0.01	67%
1999	5+ - 6+	0.02	0.00	100%

Table 35. Population assessment for white crappie trap netted at Rough River Lake during October 2005.

Parameter	Actual Value	Assessment Score
Population density (CPUE age 1 fish and older)	4.64	2
Growth rate (Mean length of age 2+ fish at capture)	10.4	4
Size Structure (CPUE fish \geq 8.0 in.)	3.25	2
Recruitment (CPUE of age 1 fish)	3.46	2
Recruitment (CPUE of age 0 fish)	4.61	2
Total Score		12
Assessment rating		F
Instantaneous mortality (Z)	0.8694	
Annual mortality (A)	58.08%	

Table 36. Relative abundance, and CPUE (no./hour) of largemouth bass collected during 2.5 hours of 30-minute diurnal electrofishing runs at Lake Malone in April 2005.

Species	Inch Class																							CPUE	Std. Error
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Largemouth bass	3	22	18	9	29	48	36	55	34	30	18	32	23	24	20	27	19	12	8	1		187.20	30.12		
nwdlmpsd.d05																									

Table 37. Spring electrofishing CPUE for each size class of largemouth bass collected at Lake Malone 1999-2005. CPUE = fish/hour.

Year	Inch Class												Total			
	<8.0			8.0-11.9			12.0-14.9			>15.0			> 20.0			
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
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 38. Population assessment for largemouth bass based on spring electrofishing at Lake Malone from 1999-2005.

Parameter	Year													
	1999		2000		2001		2002		2003		2004		2005	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Length at age 3 at capture	12.9	4	12.9	4	12.9	4	11.5	4	11.5	4	11.5	4	11.5	4
Spring CPUE age 1 fish	n/d		2.44	1	14.00	1	6.00	1	35.00	2	19.00	1	19.00	1
Spring CPUE 12-14.9 in fish	61.33	4	51.33	4	50.00	4	43.43	4	35.00	3	26.40	3	32.00	3
Spring CPUE ≥ 15.0 inch fish	23.33	3	24.00	3	31.33	4	41.71	4	48	4	53.20	4	53.60	4
Spring CPUE ≥ 20.0 inch fish	2.67	3	2.00	3	0.67	1	8.00	4	8.50	4	6.00	4	8.40	4
Total score	14+		15		14		17		17		16		16	
Assessment rating			G		G		E		E		G		G	

Z= 0.3867 A= 32.07%

Table 39. 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 2005; 95% confidence intervals are in parentheses.

Lake	Species	No. fish \geq 8.0"	PSD (+/- 95%)	RSD ^a (+/- 95%)
Malone	Largemouth	387	55 (+/- 5)	35 (+/- 4)
Carpenter	Largemouth	149	17 (+/-6)	1 (+/-2)
Kingfisher	Largemouth	188	11 (+/- 4)	2 (+/- 2)
Mauzy	Largemouth	193	87 (+/- 5)	11 (+/- 4)
Washburn	Largemouth	69	17 (+/- 9)	1 (+/- 2)

^a Largemouth bass = RSD-15

Table 40. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Lake Malone during spring samples 2002- 2005.

Age	Year			
	2002*	2003	2004	2005
1	6.00	35.00	19.00	19.00
2	28.3	69.16	37.54	49.74
3	28.85	34.51	29.81	37.52
4	31.09	30.13	23.43	27.49
5	15.78	16.03	13.93	13.87
6	6.84	9.31	8.74	8.34
7	7.37	12.39	12.24	11.85
8	2.86	7.03	6.77	7.89
9	5.71	9.53	7.57	9.49
10	1.49	1.90	1.36	1.60

*nocturnal sample

Table 41. Annual mortality between 2002-2005 and CPUE (fish/hr) of the last 10 year classes estimated from largemouth bass captured in spring electrofishing samples at Lake Malone.

Year Class	Age Intervals	CPUE (2004)	CPUE (2005)	Mortality of Cohort (%)
2003	1+ - 2+	19.00	49.74	
2002	2+ - 3+	37.54	37.52	0%
2001	3+ - 4+	29.81	27.49	8%
2000	4+ - 5+	23.43	13.87	41%
1999	5+ - 6+	13.93	8.34	40%
1998	6+ - 7+	8.74	11.85	
1997	7+ - 8+	12.24	7.89	36%
1996	8+ - 9+	6.77	9.49	
1995	9+ - 10+ 10+ -	7.57	1.60	79%
1994	11+	1.36	0.00	100%

Table 42. Relative abundance, and CPUE (no./hour) of largemouth bass collected during 1.0 hour of 30-minute diurnal electrofishing runs at Lake Malone in October 2005.

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	23						
Total	Largemouth bass	1	24	21	4	12	43	38	26	19	14	8	7	1	3	4	1	2						228	228.00	6.00	
nwdlmlmb.d05																											

Table 43. 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 > 5.0			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			

nwdlimb.d05

Table 44. Length frequency and CPUE for bluegill and redear sunfish collected in 1.25 hours of electrofishing at Lake Malone in June 2005.

Species	Inch class											Total	CPUE	Std. Error	
	1	2	3	4	5	6	7	8	9	10	11				
Bluegill	2	34	195	203	92	46	14						586	450.77	54.06
Redear sunfish					1	2	2	3	3	3	3	3	17	13.08	3.98

nwdlimbg.d05

Table 45. Spring electrofishing CPUE for each size class of bluegill collected at Lake Malone during spring 1999-2005. CPUE = fish/hour.

Year	Inch Class												
	<3.0		3.0-5.9		6.0-7.9		≥ 8.0		>10.0		Total		
CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2005	27.69	8.21	376.92	44.63	46.15	10.76	0.00	0.00		450.77	54.06		
2004	16.15	9.62	300.77	49.90	73.08	15.44	0.00	0.00		390.00	56.47		
2003	25.38	6.49	173.08	24.06	22.31	6.22	0.00	0.00		220.77	25.54		
2002	16.67	6.21	331.67	40.59	59.17	10.50	0.00	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	0.00		74.67	18.03		

Table 46. PSD and RSD values calculated for bluegill and redear sunfish collected by electrofishing from Lake Malone during June 2005; 95% confidence limits are in parentheses.

Lake/Species	No.	PSD	RSD-8
Lake Malone			
Bluegill	550	11 (+/- 3)	0
Redear sunfish	17	82 (+/- 19)	53 (+/- 24)

nwdlmbg.d05

Table 47. Electrofishing catch rate (fish/hr) for each age of bluegill collected from Lake Malone during spring samples 2002- 2005.

Age	Year			
	2002	2003	2004	2005
1	16.67	23.85	15.38	26.15
2	167.38	106.59	120.33	216.92
3	169.72	69.19	189.63	165.27
4	53.73	19.60	63.88	40.88

nwdlmbg.d05

Table 48. Population assessment for bluegill based on spring electrofishing at Lake Malone from 1999-2005.

Parameter	Year													
	1999		2000		2001		2002		2003		2004		2005	
	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	3.9	2
Years to 6 inches	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 inch fish	21.33	1	52.67	3	47.33	2	56.80	3	7.75	1	73.08	3	48.00	2
CPUE of > 8.0 inch fish	0.67	2	2.00	2	0.67	2	0.00	0	0.00	0	0.00	0	0.00	0
Total score	8	F	10	F	9	F	8	F	6	P	8	F	7	F
Assessment rating														

Table 51. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Mauzy Lake during spring samples 2004 - 2005.

Age	Year	
	2004	2005
1	2.67	34.00
2	80.80	34.40
3	52.27	5.60
4	8.13	6.17
5	9.87	10.33
6	2.27	0.50

nwdmzlag.d04,
nwdmzpsd.d05

Table 52. Age-frequency and CPUE per inch class of largemouth bass electrofished at Mauzy Lake in April 2005. Numbers in parentheses are standard errors.

Age	Inch Class															No.	CPUE Std. Error	Age (%)	
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				
1	9	25														34	34.00	9.02	37
2			18	14	2											35	34.40	6.51	38
3				4												6	5.60	2.47	6
4					2	5										7	6.17	2.10	7
5						1	9									11	10.33	3.37	11
6							1									1	0.50	0.50	1
Total	9	25	18	14	6		5	14								91			
(%)	10	27	20	15	7		5	15								100			

Table 53. Population assessment for largemouth bass based on spring electrofishing at Mauzy Lake from 2000-2005.

Parameter	Year											
	2000		2001		2002		2003*		2004		2005	
	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
Spring CPUE age 1 fish	25.33	2	5.33	1	25.33	2	86.81	4	2.67	1	34.00	2
Spring CPUE 12-14.9 in fish	2.67	1	26.67	2	9.33	1	73.61	4	5.33	1	147.00	4
Spring CPUE ≥ 15.0 inch fish	5.33	2	4.00	2	6.67	2	20.83	3	6.67	2	21.00	3
Spring CPUE ≥ 20.0 inch fish	0.00	0	0.00	0	1.33	2	2.78	3	0.00	0	4.00	4
Total score	7	7	7	7	9	9	16	16	6	6	15	15
Assessment rating	P	P	P	P	F	F	G	G	P	P	G	G

*Mauzy renovated summer2003

Table 54. Length frequency and CPUE for bluegill collected during 0.75 hours of electrofishing at Mauzy Lake in May 2005.

Species	Inch class								Total	CPUE	Std. Error
	1	2	3	4	5	6	7	8			
Bluegill	2	224	404	48	13	4	7	702	900.00	86.60	

nwdmzbg.d05

Table 55. Spring electrofishing CPUE for each size class of bluegill collected at Mauzy Lake during spring 1999-2005. CPUE = fish/hour.

Year	Inch Class											
	<3.0		3.0-5.9		6.0-7.9		≥ 8.0		>10.0		Total	
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2005	289.74	45.54	596.15	101.27	14.10	5.76	0.00	0.00	0.00	0.00	900.00	86.60
2004	101.10	18.03	84.62	17.53	64.84	11.97	1.10	1.10	0.00	0.00	251.65	36.11
2003*												
2002	9.33	3.53	94.67	19.64	125.33	29.24	1.33	1.33	0.00	0.00	230.67	48.02
2001	5.33	3.53	65.33	16.22	137.33	27.94	1.33	1.33	0.00	0.00	209.33	40.68
2000	1.33	1.33	52.00	4.00	73.33	5.33	4.00	2.31	0.00	0.00	130.67	10.91
1999			28.00	6.11	114.67	6.67	4.00	0.00	0.00	0.00	146.67	5.33

*Mauzy could not be sampled during 2003 due to renovation drawdown

Table 56. PSD and RSD values calculated for bluegill collected by electrofishing from Mauzy Lake during May 2005; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD-8
Bluegill	476	2 (+/- 1)	0
nwdmzbg.d05			

Table 57. Mean back calculated lengths (in) at each annulus for bluegill collected at Mauzy Lake in May 2005.

Year class	Age					
	1	2	3	4	5	6
2003	34	2.7	4.3			
2002	1	3.5	5.3	6.4		
2001	4	3.5	5.8	6.7	7.3	
2000	4	2.3	4.2	5.8	6.5	7.0
1999	1	2.5	4.4	5.8	6.5	7.0
Mean	2.7	4.5	6.2	6.9	7.0	7.0
No.	44	34	34	10	9	5
Smallest	1.3	3.0	5.6	6.1	6.4	7.0
Largest	4.4	6.4	7.2	7.7	7.8	7.0
Std error	0.1	0.1	0.2	0.2	0.2	0.2
95% CI (+)	0.2	0.2	0.3	0.3	0.3	0.4

Table 58. Population assessment for bluegill based on spring electrofishing at Mauzy Lake from 2001-2005.

Parameter	Year					
	2001	2002	2003*	2004	2005	Score
Mean length age 2 at capture	4.3	2	4.3	2	4.3	2
Years to 6 inches	2-2+	4	2-2+	4	2-2+	4
CPUE of > 6.0 inch fish	138.66	4	126.66	4	65.94	3
CPUE of > 8.0 inch fish	1.33	2	1.33	2	1.10	2
Total score	12	12	12	11	7	
Assessment rating	G	G	G	G	F	

*Could not sample due to renovation drawdown

Table 59. Length frequency and CPUE (no./hour) of largemouth bass collected during 0.75 hours of 15-minute diurnal electrofishing runs at Carpenter Lake in April 2005.

Species	Inch Class															Total	CPUE	Std. Error
	3	4	5	6	7	8	9	10	11	12	13	14	15					
Largemouth bass	19	54	33	12	20	20	35	49	18	3						267	356.00	54.60

nwdclpsd.d05

Table 60. Spring electrofishing CPUE for each size class of largemouth bass collected at Carpenter Lake during April 2005. CPUE = fish/hour.

Year	Inch Class															Total	CPUE	Std. err.
	<8.0			8.0-11.9					12.0-14.9					>15.0				
	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2005	157.33	3.53	165.33	48.57	30.67	3.53	30.67	3.53	2.67	1.33	2.67	1.33	356.00	54.60				
2004	80.00	16.65	128.00	28.00	22.67	3.53	22.67	3.53	21.33	8.74	21.33	8.74	252.00	47.72				
2003	181.33	49.33	97.33	11.39	18.67	4.81	18.67	4.81	36.00	12.22	36.00	12.22	333.33	63.43				
2002	12.00	4.62	52.00	4.62	12.00	0.00	12.00	0.00	21.33	3.53	21.33	3.53	97.33	4.81				
2001	14.67	8.74	29.33	5.33	90.67	9.33	90.67	9.33	66.67	2.67	66.67	2.67	201.33	17.64				
2000	2.67	1.33	45.33	7.06	48.00	2.31	48.00	2.31	0.00		0.00		96.00	8.33				
1999	1.33	1.33	142.67	18.52	29.33	13.53	29.33	13.53	1.33	1.33	1.33	1.33	174.67	31.01				

Table 61. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Carpenter Lake during spring samples 2002-2005.

Age	Year			
	2002	2003	2004	2005
1	12.00	162.67	56.00	132.00
2	36.93	57.60	90.13	88.93
3	25.73	55.73	56.53	107.07
4	1.33	2.67	4.00	0.00
5	0.00	0.00	0.00	0.00
6	10.67	14.67	8.00	0.00

nwdcllag.d04, nwdclpsd.d05

Table 62. Population assessment for largemouth bass based on spring electrofishing at Carpenter Lake from 1999-2005.

Parameter	Year													
	1999		2000		2001		2002		2003		2004		2005	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Length at age 3 at capture	11.6	4	11.6	4	11.6	4	11.6	4	11.6	4	11.6	4	11.6	4
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
Spring CPUE 12-14.9 in fish	29.33	2	48.00	3	90.67	4	12.00	1	54.67	4	22.67	2	30.67	2
Spring CPUE \geq 15.0 inch fish	1.33	1	0.00	1	66.67	4	21.33	4	36.00	4	21.33	3	2.67	1
Spring CPUE \geq 20.0 inch fish	0.00	1	0.00	1	1.33	2	0.00	1	1.33	2	2.67	3	0.00	0
Total score														
Assessment rating														

Table 63. Annual mortality (A) between 2004-2005, and CPUE (fish/hr) of the last 6 year classes estimated from largemouth bass captured in spring electrofishing samples at Carpenter Lake.

Year Class	Age Intervals	CPUE (2004)	CPUE (2005)	Mortality of Cohort (%)
2003	1+ - 2+	56.00	88.93	
2002	2+ - 3+	90.13	107.07	
2001	3+ - 4+	56.53	0.00	100%
2000	4+ - 5+	4.00	0.00	100%
1999	5+ - 6+	0.00	0.00	100%
1998	6+ - 7+	8.00	0.00	100%

Table 64. Length frequency and CPUE for bluegill and redear sunfish collected during 0.91 hours of electrofishing at Carpenter Lake in May 2005.

Species	Inch class									Total	CPUE	Std. Error
	1	2	3	4	5	6	7	8	9			
Bluegill	1	10	30	101	42	16	74	16	1	291	319.78	23.07
Redear sunfish nwdclbg.d05				2			1		6	9	9.89	4.66

Table 65. Spring electrofishing CPUE for each size class of bluegill collected at Carpenter Lake during spring 1999-2005. CPUE = fish/hour.

Year	Inch Class												
	<3.0		3.0-5.9		6.0-7.9		> 8.0		>10.0		Total		
CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2005	12.09	9.77	190.11	17.09	98.900	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 66. PSD and RSD values calculated for bluegill and redear sunfish collected by electrofishing from Carpenter Lake during May 2005; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD-8
Bluegill	280	38 (+/- 6)	6 (+/- 3)
Redear sunfish	9	78 (+/- 31)	67 (+/- 33)

nwdcibg.d05

Table 67. Electrofishing catch rate (fish/hr) for each age of bluegill collected from Carpenter Lake during spring samples 2002- 2005.

Age	Year			
	2002	2003	2004	2005
1	2.30	7.69	12.31	10.99
2	14.71	98.80	25.23	180.24
3	9.43	27.26	33.23	66.76
4	2.30	7.26	6.15	26.62

nwdclbg.d05

Table 68. Population assessment for bluegill based on spring electrofishing at Carpenter Lake from 1999-2005.

Parameter	Year													
	1999		2000		2001		2002		2003		2004		2005	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Mean length age 2+ at capture	5.6	4	5.6	4	5.6	4	5.6	4	5.6	4	5.6	4	5.6	4
Years to 6 inches	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4
CPUE of > 6.0 inch fish	94.67	4	22.67	1	145.67	4	18.39	1	53.33	3	47.69	2	117.58	4
CPUE of > 8.0 inch fish	12.00	3	12.00	3	41.33	4	1.15	1	4.00	2	1.54	2	18.68	4
Total score	15		12		16		10		13		12		16	
Assessment rating	E		G		E		F		G		G		E	

Table 69. Length frequency, and CPUE (no./hour) of largemouth bass collected during 0.39 hours of 7.5-minute diurnal electrofishing runs at Kingfisher Lake in April 2005.

Species	Inch class																		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total	CPUE	Std. Error
Largemouth bass	15	32	51	14	9	46	64	48	14	2	2	1	1	1	1	1	300	769.23	141.21
nwdkfpsd.d05																			

Table 70. Spring electrofishing CPUE for each size class of largemouth bass collected at Kingfisher Lake during April 1999-2005. CPUE = fish/hour.

Year	Inch Class										Total	
	<8.0		8.0-11.9		12.0-14.9		>15.0		CPUE	Std. err.	CPUE	Std. err.
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		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 71. Electrofishing catch rate (fish/hr) for each age of largemouth bass collected from Kingfisher Lake during April 2005.

Age	Year			
	2002	2003	2004	2005
1	116.28	57.69	94.87	248.72
2	193.45	16.67	169.00	215.62
3	60.51	3.42	66.90	175.66
4	5.74	6.84	16.24	65.98
5	0.00	5.13	1.71	11.97

nwdkflag.d04,
nwdkfpsd.d05

Table 72. Annual mortality (A) between 2004-2005, and CPUE (fish/hr) of the last 5 year classes estimated from largemouth bass captured in spring electrofishing samples at Kingfisher Lake.

Year Class	Age Intervals	CPUE (2004)	CPUE (2005)	Mortality of Cohort (%)
2003	1+ - 2+	94.87	215.62	
2002	2+ - 3+	169.00	175.66	
2001	3+ - 4+	66.90	65.98	1%
2000	4+ - 5+	16.24	11.97	26%
1999	5+ - 6+	1.71	0.00	100%

Table 73. Population assessment for largemouth bass based on spring electrofishing at Kingfisher Lake from 1999-2005.

Parameter	Year													
	1999		2000		2001		2002		2003		2004		2005	
	Value	Score	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	11.0	3	11.0	3
Spring CPUE age 1 fish	n/d		135.56	4	89.74	4	116.28	4	100.00	4	94.87	4	248.72	4
Spring CPUE 12-14.9 in fish	17.78	1	24.44	2	20.51	2	4.65	1	8.33	1	12.82	1	41.03	3
Spring CPUE ≥ 15.0 inch fish	2.22	1	6.67	2	2.56	1	0.00	1	0.00	1	2.56	1	12.82	2
Spring CPUE ≥ 20.0 inch fish	0.00	1	4.44	4	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Total score	6+		15		10		9		9		9		12	
Assessment rating			G		F		F		F		F		G	

Table 74. Length frequency and CPUE for bluegill collected in 0.375 hours of electrofishing at Kingfisher Lake in May 2005.

Species	Inch class								Total	CPUE	Std. Error
	3	4	5	6	7	8					
Bluegill	2	8	11	5	4	30	76.92	8.88			
nwdkfbg.d05											

Table 75. Spring electrofishing CPUE for each size class of bluegill collected at Kingfisher Lake during spring 1999 - 2005. CPUE = fish/hour.

Year	Inch Class												
	<3.0		3.0-5.9		6.0-7.9		≥ 8.0		>10.0		Total		
CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2005	0.00		53.85	7.69	12.82	6.78	10.26	6.78	0.00	0.00		76.92	8.88
2004	0.00		15.38	8.88	23.08	11.75			0.00	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	0.00		89.74	5.13
2002			9.30		62.79		6.98		0.00	0.00		79.07	0.00
2001			61.54		66.67		7.69		0.00	0.00		135.90	0.00
2000			31.11		66.67		11.11		0.00	0.00		108.99	0.00
1999			6.67		20.00		4.44		0.00	0.00		31.11	0.00

Table 76. PSD and RSD values calculated for bluegill and redear sunfish collected by electrofishing from Kingfisher Lake during May 2005; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD-8
Bluegill	30	30 (+/- 16)	13 (+/- 13)

nwdfkblg.d05

Table 77. Electrofishing catch rate (fish/hr) for each age of bluegill collected from Kingfisher Lake during spring samples 2002- 2005.

Age	Year			
	2002	2003	2004	2005
1	7.56	57.69	13.46	32.69
2	22.67	16.67	4.49	21.15
3	13.95	3.42	6.84	4.27
4	27.91	6.84	13.68	8.55
5	6.98	5.13	0.00	10.26

nwdkfbg.d05

Table 78. Population assessment for bluegill based on spring electrofishing at Kingfisher Lake from 1999-2005.

Parameter	Year													
	1999		2000		2001		2002		2003		2004		2005	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
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
Years to 6 inches	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4	2-2+	4
CPUE of > 6.0 inch fish	24.44	1	77.78	4	64.44	3	69.77	3	21.62	1	23.08	1	23.08	1
CPUE of > 8.0 inch fish	4.44	2	11.11	3	6.67	2	6.98	2	5.40	2	0.00	0	10.26	3
Total score	11		15		13		13		11		9		12	
Assessment rating	G		E		G		G		G		F		G	

Table 79. Relative abundance, and CPUE (no./hour) of largemouth bass collected during 0.37 hours of 7.5-minute diurnal electrofishing runs at Washburn Lake in April 2005.

Species	Inch Class											Total	CPUE	Std. Error
	3	4	5	6	7	8	9	10	11	12	13			
Largemouth bass nwdwipsd.d05	1	7	4	5	9	26	22	10	1	1	86	220.51	25.25	

Table 80. Spring electrofishing CPUE for each size class of largemouth bass collected at Washburn Lake* during April 2001-2005. CPUE = fish/hour.

Year	<8.0			8.0-11.9			12.0-14.9			>15.0			>20.0			Total		
	CPUE	Std. err.	Std. err.	CPUE	Std. err.	Std. err.	CPUE	Std. err.	Std. err.	CPUE	Std. err.	Std. err.	CPUE	Std. err.	Std. err.	CPUE	Std. err.	Std. err.
2005	43.59	11.18	146.15	16.01	5.13	28.21	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	220.51	25.25	25.25
2004	46.15	4.44	353.85	49.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	400.00	51.22	51.22
2003	123.08	33.53	438.46	49.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	561.54	52.36	52.36
2002	50.00		321.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	371.43	0.00	0.00
2001	260.00		8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	268.00	0.00	0.00

*Washburn Lake renovated summer 1999 and restocked spring 2000

Table 81. Population assessment for largemouth bass based on spring electrofishing at Washburn Lake from 2003-2005*.

Parameter	Year					
	2003		2004		2005	
	Value	Score	Value	Score	Value	Score
Length at age 3 at capture	11.2	3	11.2	3	11.2	3
Spring CPUE age 1 fish	131.62	4	48.29	3	41.03	3
Spring CPUE 12-14.9 in fish	0.00	0	0.00	0	28.21	2
Spring CPUE \geq 15.0 inch fish	0.00	0	0.00	0	2.56	1
Spring CPUE \geq 20.0 inch fish	0.00	0	0.00	0	2.56	3
Total score		7		6		12
Assessment rating		P		P		G

*Washburn Lake renovated and restocked spring 2000

Table 82. Length frequency and CPUE for bluegill collected in 0.50 hours of electrofishing at Washburn Lake in May 2005.

Species	Inch class								Total	CPUE	Std. Error
	1	2	3	4	5	6	7	8			
Bluegill	6	78	46	34	1	3	2		170	326.92	39.29

nwdwlbq.d05

Table 83. PSD and RSD values calculated for bluegill and redear sunfish collected by electrofishing from Washburn Lake during May 2005; 95% confidence limits are in parentheses.

Species	No.	PSD	RSD-8
Bluegill	86	6 (+/- 5)	0

nwdwlbq.d05

Table 84. Spring electrofishing CPUE for each size class of bluegill collected at Washburn Lake during May 2005. CPUE = fish/hour.

Year	Inch Class												
	<3.0		3.0-5.9		6.0-7.9		>8.0		>10.0		Total		
CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.	CPUE	Std. err.
2005	161.54	31.87	155.77	18.94	9.62	3.68	0.00	0.00	0.00	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	0.00	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 85. Population assessment for bluegill based on spring electrofishing at Washburn Lake 2003-2005.

Parameter	2003		2004		2005	
	Value	Score	Value	Score	Value	Score
Mean length age 2+ at capture	5.4	4	5.4	4	5.4	4
Years to 6 inches	2-2+	4	2-2+	4	2-2+	4
CPUE of > 6.0 inch fish	118.00	4	32.69	2	9.62	1
CPUE of > 8.0 inch fish	0.00	0	22.00	4	0.00	0
Total score		12		14		5
Assessment rating		G		E		P

Table 86. 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 July 2005.

Species	Inch groups			Total	No./hr	Std. Error
	5-8 In.	8-12 In.	12-15 In.			
Largemouth bass	14	29	15	9	44.67	8.17
	Inch groups > 8					
	3-5 In.	5-8 In.	In.	Total	No./hr	Std Error
Bluegill	141	62	12	215	143.33	42.10
Redear sunfish	0	0	8	8	5.33	2.67

Table 87. Length frequency, composition, and number per hour of fish observed during 1.00 hours of 30-minute scuba transects swam at Musky Lake (Peabody WMA) in August 2005.

Species	Inch groups			Total	No./hr	Std. Error
	5-8 In.	8-12 In.	12-15 In.			
Largemouth bass	9	26	18	7	60	
	Inch groups > 8					
	3-5 In.	5-8 In.	In.	Total	No./hr	Std Error
Bluegill	91	55	13	159	159	
Redear sunfish	33	38	15	86	86	

SOUTHWESTERN FISHERY DISTRICT

Project 1: Lake and Tailwater Fishery Surveys

FINDINGS

Barren River Lake

Black bass sampling results are presented in Tables 1-6. Largemouth bass size structure remains diverse (PSD = 50.9, RSD = 27.4) with the strong 2003 year class bolstering a CPUE of 152 fish/hr. Spotted bass population continues to be low density (CPUE = 13.7 fish /hour), but with good size structure (PSD=69 RSD=40). Smallmouth bass population characteristics are sketchy due to small sample size. The largemouth bass assessment was rated "Good", similar to previous years.

Fall electrofishing targeting YOY black bass yielded results similar to moderate recruitment years. Age-0 largemouth bass had an overall CPUE of 161 fish/hr and 23.2 fish/hr \geq 5 inches.

Crappie sampling with trap nets is presented in Tables 7-11. The 2003 year class of black crappie continues to carry the population. White crappie numbers continue to be low with the last good year class seen in 1998. Crappie assessment values were "Fair" across the board for black and white crappie and the combined population.

Fall experimental gill netting sampling for 8 net nights for white bass and hybrid striped bass was met with very poor results. Extremely low sample sizes for both species did not permit "reasonable" comparisons to previous years.

Briggs Lake

Bass sampling results are presented in Tables 12-15. Largemouth bass remained somewhat stockpiled below 12 inches similar to previous years (PSD = 22). Fall electrofishing of YOY bass (106/hr) was similar to previous years with moderate recruitment.

Sunfish population (bluegill, redear and warmouth) continues to be low density, but with good size structure. CPUE of bluegill \geq 6 inches was 102 fish/hr (likely the 2003 & 2001 year classes) and provided the bulk of the panfish fishery. The bluegill fishery in Briggs Lake was assessed as "excellent" while the redear population assessed as "fair". Results are presented in Tables 16-20.

Marion County Lake

Bass sampling results are presented in Tables 21-24. Size structure (PSD = 54) continues to improve compared to previous years (2004 PSD = 26, 2003 PSD = 18). Removal of smaller bass and liming of the lake helped to improve the stunted largemouth bass population created by overstocking following lake renovation in 1995. A CPUE of 368 fish/hour was similar to previous years.

A bluegill CPUE (\geq 6 inches) of 66 fish/hr and (378/hr) upgraded the bluegill population assessment to "good"; while the redear assessment upgraded to "excellent". Results are presented in Tables 25-29.

Shanty Hollow Lake

Bass sampling results are presented in Tables 30-33. Overall CPUE of largemouth (311 fish) was inflated by the strong 2004 year class. Fall electrofishing results suggest a moderate level of recruitment for the 2005 year class.

The bluegill population assessment remains "good" while the redear population assessment was "fair". The lake was drawn down during summer of 1997 to repair a noted leak. Even so, the lake still experiences notable water level fluctuations due to leak; ranging from 2-8 feet lower than normal pool within a year depending on rainfall. Sunfish sampling results are presented in Tables 34-38.

Spurlington Lake

The largemouth bass size structure was diverse (PSD = 56) and CPUE (338 fish/hr) was similar to previous years (Tables 39-42). Fall sampling of largemouth bass suggests another moderate 2005 year class.

The bluegill population assessment remained "Good" with a CPUE similar to previous years (Tables 43-45).

Metcalf County Lake

Results of the sunfish sampling are presented in tables 46-47. Spurlington Lake is highly productive and supports a substantial population with surprisingly good size structure (PSD=32); despite presence of gizzard shad.

Fagan Branch Lake

Bluegill and redear sampling results are presented in tables 48-49. Despite the lake's low productivity and its obligation to remain so (back up water supply lake for city of Lebanon), the lake supports a decent bluegill and excellent redear fishery.

Green River Lake

Muskellunge sampling results are presented in Tables 50-51. Size structure was similar to previous years; however, CPUE was slightly lower than previous years due to reduced sampling effort resulting from the lack of suitable sampling conditions (water clarity too high). The muskellunge assessment, however, still rated "excellent", as in previous years.

Bass sampling results are presented in Tables 52-57. The largemouth bass size structure remains diverse (PSD = 48; RSD = 29) and a total CPUE of 127 fish/hr is driven by the strong year class of 2004. The population assessment for largemouth bass was "Good". Fall YOY sampling suggests a moderate to good 2005 year class.

Results from the fall trap net sampling for white crappie are presented in Tables 58-60. The strong 2001 year class continues to carry the fishery. The crappie population assessment for Green River Lake was "Fair".

Results of the experimental gill net sampling for white bass and walleye are presented in Tables 61-63. The 2003 year class of white bass continues to carry the fishery. White bass assessment was "Good" due to recruitment of the 2003 year class to larger sizes (12-inch +). Walleye CPUE continues to slide as the strong 2000 year class drops out of the fishery.

Green River Lake Tailwater Creel

Results of a daytime creel survey conducted on 0.5 miles of tailwater directly below Green River Lake dam are presented in Tables 64-71. Results of angler attitude survey are presented in Appendix A. Anglers made an estimated 5,137 trips and fished for 9,484 hours with the average trip approximating 1.85 hours. "Anything" anglers accounted for 55 % of effort followed by catfish (15 %), walleye (10%) and crappie (7%) anglers. Anglers identified channel catfish (40%), walleye (24%) and crappie (14 %) as species they fished for the most. Angler satisfaction with most fisheries was overwhelmingly good with 70 – 90% of responses falling in the "very satisfied to somewhat satisfied" categories. Walleye fishermen were the outliers, with 55% satisfied, but 35% being dissatisfied.

Table 1. Species composition, relative abundance, and CPUE (fish/hour) of black bass collected in 6 hours of 30-minute electrofishing runs at Barren River Lake during mid-April; 1.5 hours effort for each area.

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				
Beaver Creek	Largemouth bass					5	4	5	11	20	34	17	15	24	20	16	12	7	2	1	1	194	129	2.67	
	Spotted bass																					0	0	0	
	Smallmouth bass																					0	0	0	
Peter Creek	Largemouth bass	11	9	6	8	4	4	12	29	26	20	12	13	12	8	12	14	9	4	4	213	158	20.23		
	Spotted bass	5	2		1	2	6	2	1			6	1	4	5	7	1				43	29	9.02		
	Smallmouth bass	1																			1	1	0.67		
Dam	Largemouth bass	2		5	9	4	4	12	24	29	28	20	31	13	18	8	10	6	3	1	1	224	149	24.67	
	Spotted bass			1	1	3	1	3	2	3	3	3	6	3	5	2	1				34	23	7.51		
	Smallmouth bass	1			1	2						1			1	2		2			11	7.33	4.37		
Walnut Creek	Largemouth bass	3	5	7	13	7	12	34	50	45	12	8	11	7	10	9	15	6	1	1	256	171	11.68		
	Spotted bass	1		1		1			1	1											6	4	2.00		
	Smallmouth bass																				0	0	0		
Total	Largemouth bass	1	17	14	20	35	19	39	103	127	127	61	68	60	53	50	46	43	17	9	3	912	152	8.60	
	Spotted bass	5	2	2	2	2	6	7	5	4	4	9	7	8	10	9	2				82	14	4.40		
	Smallmouth bass	2		1	1	2						1		1	1	2		2			12	2	1.33		

SWDBRLBB.D05

Table 2. PSD and RSD values by area for black bass collected from diurnal spring electrofishing samples at Barren River Lake in 2005; 95% confidence intervals are in parentheses. Smallmouth bass and spotted bass omitted where sample sizes too small.

Area	Species	Fish \geq 8 inches		PSD	RSD*
		Fish \geq 8 inches	Fish \geq 8 inches		
Beaver Creek	Largemouth bass	183		62.5 (+/- 7.0)	32.1 (+/- 6.8)
Dam	Largemouth bass	214		55.0 (+/- 6.9)	23.3 (+/- 5.9)
	Spotted bass	32		71.9 (+/- 15.9)	34.4 (+/- 16.7)
Peter Creek	Largemouth bass	175		52.5 (+/- 6.9)	33.3 (+/- 6.5)
	Spotted bass	35		76.4 (+/- 7.8)	48.6 (+/- 16.8)
Walnut Creek	Largemouth bass	221		36.0 (+/- 6.3)	22.1 (+/- 5.5)
Total	Largemouth bass	806		50.9 (+/- 3.5)	27.4 (+/- 3.1)
	Spotted bass	71		69.0 (+/- 10.8)	40.8 (+/- 11.5)

* Largemouth bass RSD = 15; Spotted bass RSD = 14
SWDBRLBB.D05

Table 3. Spring diurnal electrofishing CPUE (fish/hour) for each size class of largemouth bass collected at Barren River Lake from 1997 - 2005.

Year	Inch class										Total
	<8.0		8.0-11.9		12.0-14.9		≥ 15.0		CPUE	Std.err.	
	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.			CPUE
2005	15.7	2.9	60.2	7.7	28.9	4.7	31.7	3.4	152	8.6	
2004	47.6	14.0	37.6	6.2	16.7	4.0	18.4	3.2	120.2	22.2	
2003	22.2	3.4	22.5	3.5	20.5	2.9	39.5	4.7	104.2	10.6	
2002	12.5	2.2	22.4	2.9	30.4	4.0	37.6	4.2	102.9	9.5	
2001	11.8	1.6	42.3	4.0	49.3	6.3	61.9	4.1	165.3	9.6	
2000	8.3	1.7	24.1	3.4	33.0	3.2	27.3	2.4	92.7	7.3	
1999	10.7	2.4	31.7	5.7	42.2	7.3	36.3	4.7	120.8	11.2	
1998	17.0	4.1	11.4	2.7	23.2	3.1	32.2	2.7	83.8	8.3	
1997	6.7	1.4	31.1	5.2	48.4	6.4	19.3	6.5	135.6	11.6	

SWDBRLBB.D97 - .D05

Table 4. Largemouth bass assessment from spring electrofishing at Barren River Lake 1997 - 2005.

Year	Spring CPUE age 1			Spring CPUE 12 - 14.9 inch			Spring CPUE ≥ 15 inch			Total
	Value	Assessment	Rating	Value	Assessment	Rating	Value	Assessment	Rating	
1997	14.10	4	E	48.44	4	G	52.67	4	17	
1998	14.10	4	E	23.20	2	G	33.40	4	13	
1999	14.10	4	E	24.62	4	G	42.17	4	17	
2000	14.10	4	E	15.59	1	G	28.71	2	14	
2001	14.10	4	E	27.83	2	G	63.05	4	16	
2002	14.10	4	E	14.95	1	G	38.91	4	13	
2003	14.10	4	E	19.60	1	G	39.85	4	13	
2004	14.10	4	E	26.00	2	G	19.11	3	13	
2005	14.10	4	E	13.50	1	G	36.80	4	16	

SWDBRLBB.D97 - .D05

Table 5. Length frequency and CPUE of largemouth bass collected during fall electrofishing from Barren River Lake 2005.

Age	Inch class																		Total	Percent	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				
YOY	190	553	82	63	56	20												964	78.06	160.67	
≥ Age-1					8	16	39	50	46	29	40	13	14	9	3	2	2	247	21.94	41.17	
Total	190	553	82	63	64	36	39	50	46	29	40	13	14	9	3	2	2	1235	100.00	205.83	

SWDBRLYY.D05
SWDBRLAG.D05

Table 6. Indices of year class strength at age 0 and age 1 and mean length (in) of largemouth bass collected in the fall and following spring electrofishing samples at Barren River Lake since 2002.

Year class	Area	Age 0			Age 0 ≥ 5.0 Inch			Age 1		
		Mean length	Std error	CPUE	CPUE	Std Error	CPUE	Std Error	CPUE	Std Error
2005	Total	3.72	0.04	160.67	25.63	4.20	25.33			
2004	Total	3.72	0.04	108.44	22.20	3.85	20.78			11.24
2003	Total	4.40	0.04	198.00	30.81	18.74	84.00			44.93
2002	Total	3.96	0.05	171.67	25.76	4.06	34.17			26.92
SWDBRLWR.D02 - D05										
SWDBRLAG.D02 - D05										
SWDBRLBB.D03 - D05										

Table 7. Length frequency and CPUE of crappie collected in 98 net nights with trap nets at Barren River Lake, 2004. Standard error is in parentheses.

Species	Inch class														Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14			
White crappie							8	36	18	1					74	0.75 (0.15)
Black crappie	9	180	6	24	79	100	184	176	56	8	3			825	8.4 (1.29)	
SWDBRLTN.D05																

Table 8. PSD and RSD₁₀ values calculated for crappie collected in trap nets at Barren River Lake during October and November 2005. 95% confidence limits are in parentheses.

Species	Fish ≥ 5 inches	PSD		RSD ₁₀
		Mean	Std Error	
White crappie	66	100 (0)		33.3 (11.4)
Black crappie	632	67.9 (3.7)		10.8 (2.5)
SWDBRLTR.D05				

Table 9. Black crappie assessment from trap netting at Barren River Lake from 1985 - 2005.

Year	CPUe excluding age 0		CPUe age 1		CPUe age 0		CPUe > 8 inches		Mean age-2 length at capture		Total Assessment	Rating
	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment		
1985	3.53	1	0.72	1	0.33	1	0.78	1	7.44	1	5	P
1986	10.72	2	6.94	3	3.83	2	2.80	1	8.69	2	10	F
1987	3.27	1	1.90	1	2.82	1	1.34	1	9.57	4	8	F
1988	6.18	2	5.68	2	0.10	1	0.44	1	9.30	3	9	F
1989	9.19	2	1.48	1	7.51	3	5.90	2	8.19	1	9	F
1990	29.12	4	26.11	4	0.10	1	1.92	1	8.80	2	12	F
1991	3.53	1	0.95	1	0.86	1	3.55	1	7.63	1	5	F
1992	9.20	2	3.49	2	0.07	1	4.24	2	7.66	1	8	F
1993	12.61	2	1.06	1	0.29	1	9.13	2	8.05	1	7	P
1994	0.74	1	0.10	1	0.82	1	0.70	1	8.80	2	6	P
1995	7.39	2	6.54	2	1.29	1	0.53	1	8.94	2	8	F
1996	9.03	2	0.79	1	0.48	1	4.16	2	7.84	1	7	F
1997	9.12	2	1.45	1	0.87	1	5.98	2	7.60	1	7	P
1998	1.71	1	0.12	1	1.79	1	1.56	1	8.19	1	5	P
1999	4.66	1	3.82	2	0.26	1	0.85	1	8.61	2	7	P
2000	1.81	1	0.18	1	0.22	1	0.65	1	7.79	1	5	P
2001	5.72	2	0.33	1	0.41	1	4.47	2	7.60	1	7	P
2002	4.58	1	1.02	1	3.09	2	3.34	1	8.72	2	7	P
2003	2.37	1	1.19	1	5.35	2	0.89	1	9.68	4	9	F
2004	6.90	2	4.36	2	0.65	1	2.20	1	9.22	3	9	F
2005*	6.42	2	2.32	1	1.99	1	4.36	2	9.13	3	9	F

* Age assessment data for 2005 were extrapolated from previous age data on black crappie SWDBRLTR.D85 - D05

Table 10. White crappie assessment from trap netting at Barren River Lake from 1985 - 2005.

Year	CPUE excluding age 0			CPUE age 1			CPUE age 0			CPUE ≥ 8 inches			Mean age-2 length at capture			Total Assessment	Rating
	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Value	Assessment	Value		
1985	30.98	4	24.40	4	0.42	1	2.20	1	8.87	1	8.87	1	8.87	9.41	3	13	G
1986	13.56	3	3.61	2	1.91	1	8.87	1	2.48	1	2.48	2	8.97	10.79	2	10	F
1987	3.99	1	1.26	1	0.41	1	2.48	1	2.56	1	2.56	1	11.07	11.03	4	8	F
1988	3.07	1	2.49	1	0.24	1	2.48	1	13.38	2	13.38	1	11.03	10.79	4	8	F
1989	4.15	1	1.69	1	3.25	2	2.56	1	8.86	1	8.86	2	10.79	9.83	4	15	F
1990	22.83	4	20.80	4	0.50	1	13.38	1	4.04	2	4.04	2	10.79	11.50	4	12	G
1991	30.98	4	0.52	1	0.98	1	8.86	1	5.22	2	5.22	2	9.83	10.00	4	11	F
1992	6.82	2	5.09	2	0.07	1	4.04	1	0.44	2	0.44	2	11.50	10.60	4	11	F
1993	5.77	2	0.59	1	0.04	1	4.04	1	5.47	2	5.47	2	10.00	11.50	4	10	F
1994	0.66	1	0.11	1	0.85	1	5.22	1	5.59	2	5.59	2	10.60	9.70	4	8	F
1995	7.95	2	7.69	3	0.64	1	5.47	1	5.16	2	5.16	2	11.50	10.23	4	12	F
1996	6.34	2	0.80	1	1.40	1	5.47	1	0.93	2	0.93	2	9.70	10.91	4	10	F
1997	6.71	2	5.12	2	1.04	1	5.16	1	2.93	2	2.93	2	10.23	10.85	4	11	F
1998	1.22	1	0.68	1	6.72	3	0.93	3	2.38	1	2.38	1	10.91	9.30	4	8	F
1999	6.48	2	5.91	2	0.54	1	2.93	1	1.34	1	1.34	1	10.85	10.45	4	10	F
2000	2.50	1	0.32	1	0.03	1	2.38	1	0.80	1	0.80	1	9.30	10.67	3	7	P
2001	1.58	1	0.51	1	0.21	1	2.38	1	1.05	1	1.05	1	10.45	11.45	4	8	F
2002	1.41	1	0.29	1	1.16	1	1.34	1	1.29	1	1.29	1	10.67	11.08	4	8	F
2003	1.37	1	1.02	1	0.43	1	0.80	1	0.67	1	0.67	1	11.45	11.01	4	8	F
2004	1.55	1	0.88	1	0.16	1	1.05	1	0.67	1	0.67	1	11.08	11.01	4	8	F
2005*	0.67	1	0.63	1	0.01	1	1.29	1	0.67	1	0.67	1	11.08	11.01	4	8	F

* Age assessment data for 2005 were extrapolated from previous data on white crappie SWDBRLTR.D85 - D05

Table 11. Crappie population assessment for Barren River Lake trap netting data collected in October and November 2005.

Parameter	White crappie			Black crappie			Combined		
	Actual value	Assessment	Value	Actual value	Assessment	Value	Actual value	Assessment	Value
Total CPUE (excluding age-0 fish)	0.67	1	6.42	2	7.10	2	7.10	2	7.10
CPUE of age 1 crappie	0.63	1	2.32	1	2.96	2	2.96	2	2.96
CPUE of age 0 crappie	0.01	1	1.99	1	2.07	1	2.07	1	2.07
CPUE of crappie ≥ 8 inches	0.67	1	4.36	2	3.49	2	3.49	2	3.49
Mean ag-2 length at capture	11.01	4	9.13	3	10.15	4	10.15	4	10.15
Total score		8		9		11		11	
Assessment rating		Fair		Fair		Fair		Fair	
SWDBRLTN.D05									

Table 12. Nocturnal bass electrofishing relative abundance and CPUE (0.50 hours) at Briggs Lake on April 21, 2005

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					
Largemouth bass	2	7	3	11	37	19	25	16	6	7	1	3	2	2	2	1	2	1	2	1	147	294	27.4	
SWDBRGBB.D05																								

Table 13. PSD and RSD₁₅ values for largemouth bass from spring electrofishing samples at Briggs Lake 2005. 95% confidence intervals are in parentheses.

No. ≥ 8 inches	PSD	RSD ₁₅
124	21.8 (7.3)	10.5 (5.4)
SWDBRGBB.D05		

Table 14. Spring nocturnal electrofishing CPUE (fish/hour) for each size class of largemouth bass collected at Briggs Lake from 2000 - 2005.

Year	Inch class																					Total
	<8.0			8.0-11.9			12.0-14.9			≥ 15.0			Total									
	CPUE	Std. err.		CPUE	Std. err.		CPUE	Std. err.		CPUE	Std. err.		CPUE	Std. err.		CPUE	Std. err.					
2005	46	6.83		194	21.26		28	5.16		26	5.03		294	27.4								
2004	11.54	4.97		117.31	3.68		51.92	10.59		7.69	3.14		196	20.26								
2003	28.85	13.82		175	39.02		19.23	4.97		26.92	4.97		260	51.07								
2002	27.45	10.38		109.8	8.55		39.22	7.07		21.57	5.19		202	17.48								
2001	120.59	21.55		73.53	10.87		41.18	9.30		5.88	4.16		241	24.96								
2000	27.94	8.10		92.63	19.12		64.71	12.01		10.29	2.82		195.6	35.97								
SWDBRGBB.D00 - D05																						

Table 15. Age-frequency for largemouth bass collected during fall electrofishing at Briggs Lake during 2004.

Age	Inch class																					Total	Percent	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	20								
0	20	20	9	4	1	13	4	14	5	5	2	1	53	29.55	106.0									
Unknown																	45	70.45	90.0					
Total	20	20	9	4	1	13	4	14	5	5	2	1	98	100.00	196.0									
SWDBRGYY.D05																								
SWDBRGAG.D05																								

Table 16. Diurnal sunfish sampling at Briggs Lake on May 12, 2005 for 0.50 hours.

Species	Inch class										Total	CPUE	Std. error
	1	2	3	4	5	6	7	8	9	10			
Warmouth		2	4	2	4	18	12	3			44	88	26.53
Bluegill	2	5	6	14	20	21	21	9			98	196	12.44
Redear sunfish			1	5	1		1	1	1		10	20	6.93
SWDBRGSF.D05													

Table 17. Bluegill population assessment for Briggs Lake during 2005.

Parameter	Value	Assessment score
Mean length age - 2 at capture	5.24	4
Growth	Years to 6.0 inches	4
Size Structure	CPUE \geq 6.0 inches	4
Size Structure	CPUE \geq 8.0 inches	4
Total score		15
Assessment rating		Excellent
SWDBRGSF.D05		
SWDBRGAG.D02		

Table 18. Spring diurnal electrofishing CPUE (fish/hour) for each size class of bluegill collected at Briggs Lake in 2005.

Year	Inch class						Total
	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	
	<3.0		3.0-5.9		6.0-7.9		\geq 8.0
2005	14	14	80	16.33	84	14.79	18
SWDBRLSF.D05							8.25
							196
							12.44

Table 19. Redear population assessment for Briggs Lake during 2005.

Parameter	Value	Assessment score
Mean length age - 2 at capture	6.8	4
Growth		
Years to 8.0 inches	3	4
Size Structure		
CPUE \geq 8.0 inches	4	1
Size Structure		
CPUE \geq 10.0 inches	0	1
Total score		10
Assessment rating		Fair
SWDBRGSF.D05		
SWDBRGAG.D02		

Table 20. Spring diurnal electrofishing CPUE (fish/hour) for each size class of redear collected at Briggs Lake in 2005.

Year	Inch class										Total	
	<3.0	3.0-5.9			6.0-7.9			\geq 8.0				
	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.
2005	0		14	8.87	2	2	4	4	4	4	20	6.93
SWDBRLSF..D05												

Table 21. Nocturnal bass electrofishing relative abundance and CPUE (0.875 hours) at Marion County Lake on April 25, 2005

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	22						
Largemouth bass	18	8	11	19	33	31	12	7	58	59	35	23	2	1	1	3	1	322	368	44.75					
SWDMCLBB.D05																									

Table 22. PSD and RSD values for largemouth bass from spring electrofishing samples at Marion County Lake 2005. 95% confidence intervals are in parentheses.

No. \geq 8 inches	PSD	RSD ₁₅
233	53.7 (6.5)	3.4 (2.3)
SWDBRGGB.D05		

Table 23. Spring nocturnal electrofishing CPUE (fish/hour) for each size class of largemouth bass collected at Marion County Lake from 1997 - 2005.

Year	Inch class															Total
	<8.0					8.0-11.9					12.0-14.9					
	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.
2005	101.7	17.7	123.4	13.4	133.7	20.2	9.1	2.7	368	44.8						
2004	110.3	16.9	197.4	25.8	62.8	9.8	7.7	3.4	378.2	36.6						
2003	42.9	10.6	226.4	18.1	40.7	7.3	7.7	3.4	317.6	13.3						
2002	104.9	23.9	152.9	13.2	15.7	3.6	3.9	1.2	277.5	39.4						
2001	170.6	17.6	173.5	15.9	1	1	2.9	2	384	31.3						
2000	88.2	14.9	177.5	22.4	6.9	3.2	9.8	2	282.4	25.4						
1999	106.7	29.3	46.2	15	39.5	10.6	1.7	1.1	194.1	42.0						

SWDMCLBB.D99 - .D05

Table 24. Age-frequency for largemouth bass collected during fall electrofishing at Marion County Lake during 2005.

Age	Inch groups															Total	Percent	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
0	24	64	35	3	18	31	21	12	8	7	3	7	3	1	126	53.16	144.0	
Unknown	24	64	35	3	18	31	21	12	8	7	3	7	3	1	111	46.84	126.9	
Total	24	64	35	3	18	31	21	12	8	7	3	7	3	1	237	100.00	270.9	

SWDMCLYY.D05
SWDMCLAG.D05

Table 25. Diurnal sunfish sampling at Marion County Lake on May 11, 2005.

Species	Inch class										Total	CPUE	Std. err.
	1	2	3	4	5	6	7	8	9	10			
Bluegill	5	97	115	54	41	38	25	3	1	3	394	70.1	
White crappie	3	29	23	2	2	2	6	1	3	1	67	21.3	
Redear sunfish	2	15	17	21	21	9	12	10	3	3	89	19.0	

Table 26. Bluegill population assessment for Marion County Lake during 2005.

Parameter	Value	Assessment score
Growth	Mean length age - 2 at capture	4.68
Growth	Years to 6.0 inches	3
Size Structure	CPUE ≥ 6.0 inches	3
Size Structure	CPUE ≥ 8.0 inches	2
Total score		11
Assessment rating		Good

SWDMCLSF.D05
SWDMCLAG.D02

Table 27. Spring diurnal electrofishing CPUE (fish/hour) for each size class of bluegill collected at Marion County Lake in 2005.

Year	Inch class						Total			
	<3.0	3.0-5.9	6.0-7.9	≥ 8.0	CPUE	Std.err.				
2005	94.3	22.1	182.2	40.23	61.1	17.5	3	2.1	394	70.1

SWDMCLSF.D05

Table 28. Redear population assessment for Marion County Lake during 2005.

Parameter	Value	Assessment score
Growth	Mean length age - 3 at capture	7.0
		4
Growth	Years to 8.0 inches	4
		3
Size Structure	CPUE ≥ 8.0 inches	25
		4
Size Structure	CPUE ≥ 10.0 inches	3
Total score		14
Assessment rating		Excellent

SWDMCLSF.D05
SWDMCLAG.D02

Table 29. Length frequency of redear sunfish by size group collected in spring electrofishing sampling at Marion County Lake 2005.

Year	Inch Class						Total				
	<3.0	3.0 - 5.9	6.0 - 7.9	> 8.0	CPUE	Std. err.					
2005		28.5	6.6	25.2	10.2	22.1	7.9	3	1.5	89	19.0

SWDMCLSF.D05

Table 30. Nocturnal bass electrofishing relative abundance and CPUE (1.5 hours) at Shanty Hollow Lake on May 5, 2005

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	22						
Largemouth bass	1	18	39	38	19	20	91	71	79	46	14	7	3	7	4	5	3	1	1	467	311.3	45.4			

SWDSHLBB.D05

Table 31. PSD and RSD values for largemouth bass from spring electrofishing samples at Shanty Hollow Lake 2005. 95% confidence intervals are in parentheses.

No. ≥ 8 inches	PSD	RSD ₁₅
352	25.9 (4.6)	6.8 (2.6)

SWDShLBB.D05

Table 32. Spring nocturnal electrofishing CPUE (fish/hour) for each size class of largemouth bass collected at Shanty Hollow Lake from 1999 - 2005.

Year	Inch class										Total	
	<8.0		8.0-11.9		12.0-14.9		≥ 15.0					
	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.
2005	76.7	10.8	174	18.2	44.7	3.8	16	3.6	311.3	3.6	28	
2004	19.4	3.6	133.7	9.7	36.6	5	24	2.8	213.8	5	17	
2003	17.7	4	125.1	12.5	76.6	6.7	32	5	251.4	6.7	18	
2002	20	4.1	52	8	69.7	6.2	16	2.6	157.7	6.2	11.1	
2001	17.1	3.4	49.1	7.3	45.1	8.6	21.7	3.6	133.1	8.6	6.5	
2000	23.4	3.8	44.6	8.3	46.9	3.2	48	3.6	162.3	3.2	7.0	
1999	8.6	2.5	75.4	11.1	90.3	6.5	28	6	202.3	6.5	16.7	

SWDShLBB.D99 - .D05

Table 33. Age-frequency for largemouth bass collected during fall electrofishing at Shanty Hollow Lake during 2005.

Age	Inch groups															Total	Percent	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
0	2	111	106	44	6											269	73.9	
Unknown	2	20	28	5	13	12	9	1	2	3						95	26.1	
Total	2	111	106	44	8	20	28	5	13	12	9	1	2	3			364	100.0

SWDShLYY.D05
SWDShLAG.D05

Table 34. Diurnal sunfish sampling at Shanty Hollow Lake on May 16, 2005.

Species	Inch class										Total	CPUE	Std. err.		
	1	2	3	4	5	6	7	8	9	10					
Bluegill	17	107	96	121	99	118	84	2				644	396	34.5	
Redear sunfish	2	2	3	1	2	11	4	5	1				29	17.8	3.3

SWDShLSF.D05

Table 35. Bluegill population assessment for Shanty Hollow Lake during 2005.

Parameter	Value	Assessment score	
Growth	Mean length age - 2 at capture	4.81	3
Growth	Years to 6.0 inches	2.7	4
Size Structure	CPUE \geq 6.0 inches	126	4
Size Structure	CPUE \geq 8.0 inches	1.2	1
Total score			12
Assessment rating			Good
SWDSHLSF.D05			
SWDSHLAG.D02			

Table 36. Spring diurnal electrofishing CPUE (fish/hour) for each size class of bluegill collected at Shanty Hollow Lake in 2005.

Year	Inch class						Total			
	<3.0	3.0-5.9	6.0-7.9	\geq 8.0	CPUE	Std.err.				
2005	70.9	13.1	180.6	21.8	115.4	12	0.8	1.1	396	3.3
SWDSHLSF.D05										

Table 37. Redear population assessment for Shanty Hollow Lake during 2005.

Parameter	Value	Assessment score	
Growth	Mean length age - 3 at capture	7.2	4
Growth	Years to 8.0 inches	4	3
Size Structure	CPUE \geq 8.0 inches	3.7	1
Size Structure	CPUE \geq 10.0 inches	0	1
Total score			9
Assessment rating			Fair
SWDSHLSF.D05			
SWDSHLAG.D02			

Table 38. Length frequency of redear sunfish by size group collected in spring electrofishing sampling at Stanty Hollow Lake 2005.

Year	Inch Class										Total	
	< 3.0	3.0 - 5.9		6.0 - 7.9		> 8.0		> 10.0		CPUE	Std. err.	
2005	1.1	1.1	3.4	1.4	8.6	2.0	3.4	1.4	0	17.8	19.0	

SWDShLSF.D05

Table 39. Nocturnal bass electrofishing relative abundance and CPUE (1.5 hours) at Spurlington Lake on May 25, 2005

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	22	22	22	22			
Largemouth bass	2	2	6	7	4	12	15	15	23	42	25	6	3	2	2	2	1	1	169	338	23.2				

SWDSP1BB.D05

Table 40. PSD and RSD values for largemouth bass from spring electrofishing samples at Spurlington Lake 2005. 95% confidence intervals are in parentheses.

No. ≥ 8 inches	PSD	RSD ₁₅
148	56.1 (8.0)	6.8 (4.1)

SWDSP1BB.D05

Table 41. Spring nocturnal electrofishing CPUE (fish/hour) for each size class of largemouth bass collected at Spurlington Lake from 2002 - 2005.

Year	Inch class												Total	
	<8.0			8.0-11.9			12.0-14.9			> 15.0			CPUE	Std. err.
2005	42	13.2	26.2	130	200	146	12.4	20	2.3	338	23.2			
2004	28.9	6.6	40.6	200	233.9	109.6	10.6	19.2	5	372	39.8			
2003	61.5	14.4	29.2	233.9	145.1	123.1	11.4	12.3	3.1	448	47.2			
2002	21.6	3.9	14.1	145.1	174.5	174.5	22.1	35.3	3.4	384	32.8			

SWDSP1BB.D02 - .D05

Table 42. Age-frequency for largemouth bass collected during fall electrofishing at Spurlington Lake during 2005.

Age	Inch Class																				Total	Percent	CPUE
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20						
0	8	13	2																		23	31.5	46.0
Unknown	3	4	6	6	1	5	4	6	3	2	4	3	1	1	1	1	1	1	1	50	68.5	100.0	
Total	8	13	5	4	6	6	1	5	4	6	3	2	4	3	1	1	1	1	1	73	100.0	146.0	

SWDSPLY.D05
SWDSPLAG.D05

Table 43. Length frequency and CPUE of sunfish collected by diurnal electrofishing at Spurlington Lake on May 11, 2005.

Species	Inch class										Total	CPUE	Std. error
	1	2	3	4	5	6	7	8	9	10			
Bluegill	6	27	42	40	26	14	11	7	1	1	74	348	68.9
Warmouth				1	1	9	3	2			16	32	6.5
White crappie			1		11	7	1	2	2	5	29	48	34.5

SWDSPLSF.D05

Table 44. Bluegill population assessment for Spurlington Lake during 2005.

Parameter	Value	Assessment score
Growth	Mean length age - 2 at capture	4.11
Growth	Years to 6.0 inches	2.8
Size Structure	CPUE ≥ 6.0 inches	66
Size Structure	CPUE ≥ 8.0 inches	16
Total score		13
Assessment rating		Good

SWDSPLSF.D05
SWDSPLAG.D03

Table 45. Spring diurnal electrofishing CPUE (fish/hour) for each size class of bluegill collected at Spurlington Lake in 2005.

Year	Inch class						Total			
	<3.0	3.0-5.9			6.0-7.9			≥ 8.0		
	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.		
2005	66	14.4	216	45.7	50	15.8	16	8.6	348	68.9
SWDLSF.D05										

Table 46. Length frequency and CPUE of sunfish collected by diurnal electrofishing at Metcalfe County Lake on April 25, 2005.

Species	Inch class										Total	CPUE	Std. error
	1	2	3	4	5	6	7	8	9	10			
Bluegill	1	38	68	149	274	201	28	755	755	1294.3	165.1	38	28.7
White crappie						1	16	22					
SWDMETSF.D05													

Table 47. Spring diurnal electrofishing CPUE (fish/hour) for each size class of bluegill collected at Metcalfe County Hollow Lake in 2005.

Year	<3.0			3.0-5.9			6.0-7.9			> 8.0			Total
	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	
2005	66.8	9.4	807.7	113.5	366.2	61.8	0	1294.3	165.1				
SWDMETSF.D05													

Table 48. Length frequency and CPUE of sunfish collected by diurnal electrofishing at Fagan Branch Lake on May 3, 2005.

Species	Inch class											Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11				
Bluegill	33	43	22	23	14	5	2	142	142	319.5	37.6	51	22.2	
Redear		2	8	1	7	19	7	6						
SWDLCLSF.D05														

Table 49. Spring diurnal electrofishing CPUE (fish/hour) for each size class of bluegill and redear collected at Fagan Branch Lake in 2005.

Species	<3.0						3.0-5.9						6.0-7.9						≥ 8.0						Total
	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.	CPUE	Std.err.			
Bluegill	74.3	18.9	198.2	30.6	42.8	11.9	4.5	2.6	319.5	37.6															
Redear	0		24.8	10	58.6	16.7	31.5	9.4	114.5	22.2															
SWDLCLSF.D05																									

Table 50. Length frequency and diurnal electrofishing CPUE (fish/hour) of muskellunge collected during late-winter/early spring on Green River Lake in 2005 for 6.25 hours.

	Inch class												Total	CPUE	Std Err.																
	13	14	15	16	17	18	19	20	23	24	25	26				27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Muskellunge	1	5	4	2	3	2	3	1	5	1	2	1	1	1	1	1	1	4	2	6	4	2	1	3	2	2	2	2	2	60	
swdgrlmy.d04																														9.60	1.35

Table 51. Muskellunge assessment for Green River Lake spring electrofishing from 1990 to 2005.

Year	CPUE age 1 fish			CPUE ≥ 20.0 inches			CPUE ≥ 30.0 inches			CPUE ≥ 40.0 inches			Total	Assessment	Rating
	Value	Assessment	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	0.00	12		G	
1991	10.19	4	3.86	2	1.38	1	0.38	1	0.15	1	0.15	9		F	
1992	2.25	2	6.13	3	1.71	2	0.65	2	0.09	1	0.09	10		F	
1993	13.37	4	6.98	3	4.36	4	1.26	3	0.55	3	0.55	17		E	
1994	4.11	3	8.94	3	3.90	3	2.25	4	0.93	4	0.93	17		E	
1995	15.73	4	6.95	3	2.78	3	0.82	2	0.44	3	0.44	15		E	
1996	5.16	3	16.01	4	3.54	3	0.84	2	0.24	2	0.24	14		E	
1997	5.80	3	13.03	4	6.81	4	1.18	3	0.53	3	0.53	17		E	
1998	9.24	4	9.01	3	5.05	4	1.94	4	0.47	3	0.47	18		E	
1999	8.75	3	9.83	3	4.81	4	1.42	3	0.34	3	0.34	16		E	
2000	2.57	2	7.64	3	4.18	4	2.03	4	0.78	4	0.78	17		E	
2001	10.76	4	6.41	3	4.48	4	1.45	3	0.55	3	0.55	17		E	
2002	5.83	3	10.63	4	4.46	4	2.86	4	0.91	4	0.91	19		E	
2003	4.49	3	9.88	3	6.20	4	1.71	4	0.82	4	0.82	18		E	
2004	6.52	3	8.26	3	5.16	4	1.81	4	0.19	4	0.19	18		E	
2005	2.40	2	7.20	3	4.80	4	1.92	4	0.96	4	0.96	17		E	

Table 52. Species composition, relative abundance, and CPUE (fish/hour) of black bass collected in 6 hours of 30-minute electrofishing runs at Green River Lake during early May; 1.5 hours effort for each area.

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
Holmes Bend (upper GR arm)	Largemouth bass	5	6	22	47	50	11	15	22	6	6	5	5	6	1	5	1	2	2	2	217	144.7	25.83
	Spotted bass	1	3	8	13	8	2	1	1	2	2	2	1	1	1	1	1	1	1	1	41	27.3	1.76
	Smallmouth bass										1	1	1	1							3	2	1.15
Ramp 1 (lower GR arm)	Largemouth bass	4	9	33	44	39	13	21	9	12	5	14	8	12	3	3	10	3	3	1	247	164.7	19.64
	Spotted bass	4	4	6	23	29	15	3	2	7											93	62	24.11
	Smallmouth bass	1	1	1	1	1	1	1	1	2	1	1	1	1							11	7.33	1.76
Lone Valley (lower RC arm)	Largemouth bass	2	6	14	30	26	12	17	8	12	4	10	8	12	6	5	2	3			177	118	15.53
	Spotted bass	11	5	11	29	35	18	6	13	8	2	2									140	93.3	6.96
	Smallmouth bass	2	1			2		3	1	1		1	1	1							12	8	2.00
Smith Ridge (upper RC arm)	Largemouth bass	1	9	15	28	17	4	11	9	2	3	3	4	5	5	2	1	2			121	80.7	13.38
	Spotted bass	1	1	4	4	23	8	4	1			1									42	28	9.87
	Smallmouth bass																				0	0	0
Total	Largemouth bass	12	30	84	149	132	40	64	48	32	18	27	25	34	20	11	18	9	5	3	762	127	12.53
	Spotted bass	15	11	20	64	100	49	15	17	16	4	3	2								316	52.7	10.06
	Smallmouth bass	3	2		1	3	1	4	1	3	1	1	3	2	2	1	1				26	4.3	1.20

SWDGRLLBB.D05

Table 53. PSD and RSD values by area for black bass collected from nocturnal spring electrofishing samples at Green River Lake in 2005; 95% confidence intervals are in parentheses. Smallmouth bass and spotted bass omitted where sample sizes too small.

Area	Species	Fish ≥ 8 inches	PSD		RSD*
			Mean	95% CI	
Holmes Bend	Largemouth bass	87	37.9 (+/- 10.2)	25.3 (+/- 9.2)	
	Spotted bass	29	17.2 (+/- 14)	6.9 (+/- 9.3)	
Ramp 1	Largemouth bass	118	53.4 (+/- 11)	30.5 (+/- 8.3)	
	Spotted bass	56	12.5 (+/- 9.7)		
Lone Valley	Largemouth bass	99	50.5 (+/- 10.1)	28.3 (+/- 8.9)	
	Spotted bass	84	14.3 (+/- 7.5)		
Smith Ridge	Largemouth bass	51	49.0 (+/- 14.1)	29.4 (+/- 12.6)	
	Spotted Bass	37	2.7 (+/- 5.3)		
Total	Largemouth bass	355	48.2 (+/- 6.2)	28.5 (+/- 5.3)	
	Spotted bass	252	12.1 (+/- 4.4)	1 (+/- 1.3)	
	Smallmouth bass	20	55 (+/- 22.4)	30 (+/- 20.6)	

* Largemouth bass RSD = 15; Smallmouth and Spotted bass RSD = 14
SWDRLBB.D05

Table 54. Largemouth bass assessment for Green River Lake spring electrofishing from 1991 to 2005.

Year	Mean age-3 length at capture			Spring CPUE age 1			Spring CPUE 12 - 14.9 inch			Spring CPUE ≥ 15 inch			Spring CPUE ≥ 20 inch			Total
	Value	Assessment	Std. err.	Value	Assessment	Std. err.	Value	Assessment	Std. err.	Value	Assessment	Std. err.	Value	Assessment	Std. err.	
1991	12.50	4	8.86	22.52	2	6.65	12.78	1	1.49	2.79	1	0.29	0.29	2	0.80	91.93
1992	12.50	4	1.26	2.71	1	3.59	21.73	2	3.94	14.63	3	2.44	2.44	3	2.05	75.24
1993	12.50	4	3.78	4.73	1	2.32	21.60	2	2.17	11.45	2	1.08	1.08	2	1.12	67.0
1994	12.50	4	6.83	9.08	1	9.33	22.74	2	2.81	19.21	3	2.43	2.43	3	2.11	149.2
1995	12.50	4	NA	2.03	1	NA	9.45	1	NA	6.77	2	1.78	1.78	3	NA	NA
1996	12.50	4	NA	6.74	1	NA	14.50	1	NA	9.33	2	0.50	0.50	2	NA	NA
1997	12.65	4	1.04	2.80	1	2.46	23.33	2	2.83	24.33	4	1.17	1.17	2	2.10	72.5
1998	12.65	4	7.66	33.5	2	1.82	8.83	1	2.04	19.50	3	2.00	2.00	3	1.84	68.83
1999	12.65	4	3.76	19.34	1	7.18	21.00	2	4.0	18.50	3	3.00	3.00	4	1.66	117.5
2000	12.65	4	2.5	1.60	1	4.37	24.17	2	3.41	17.83	3	3.17	3.17	4	3.37	82.33
2001	12.65	4	0.89	10.73	1	2.99	32.17	3	6.45	12.5	3	1.67	1.67	4	1.5	81.5
2002	12.65	4	2.50	5.00	1	2.07	20.5	2	2.49	13.0	3	1.17	1.17	2	2.46	48.0
2003	14.35	4	1.38	7.33	1	2.07	5.83	2	1.78	20.00	4	1.83	1.83	3	2.96	42.17
2004	13.20	4	2.74	13.83	1	2.10	11.60	1	1.81	16.53	3	0.93	0.93	2	2.55	67.33
2005	13.20	4	7.98	65.33	4	2.78	11.77	1	1.86	16.83	2	1.5	1.5	2	2.52	127

SWDGRLAG.D91,98,03; SWDGRLLBB.D91-05

Table 55. Spring nocturnal electrofishing CPUE (fish/hour) for each size class of largemouth bass collected at Green River Lake from 1997 - 2005.

Year	<8.0			8.0-11.9			12.0-14.9			≥ 15.0			Total
	CPUE	Std. err.	Assessment	CPUE	Std. err.	Assessment	CPUE	Std. err.	Assessment	CPUE	Std. err.	Assessment	
1991	40.08	8.86	4	36.05	6.65	2	13.27	1.49	1	2.52	0.80	2	91.93
1992	3.74	1.26	4	35.72	3.59	1	24.03	3.94	2	11.75	2.05	3	75.24
1993	19.33	3.78	4	15.37	2.32	1	21.65	2.17	2	10.64	1.12	2	67.0
1994	24.07	6.83	4	86.1	9.33	4	22.38	2.81	3	16.57	2.11	3	149.2
1995	NA	NA	4	NA	NA	1	NA	NA	1	NA	NA	2	NA
1996	NA	NA	4	NA	NA	1	NA	NA	1	NA	NA	2	NA
1997	3.67	1.04	4	22.33	2.46	2	23.33	2.83	3	23.17	2.10	3	72.5
1998	33.5	7.66	4	9.0	1.82	1	8.83	2.04	2	17.5	1.84	3	68.83
1999	21.38	3.76	4	53.54	7.18	4	19.38	4.0	3	14.31	1.66	3	117.5
2000	2.5	0.89	4	41.0	4.37	4	24.17	3.41	3	14.67	3.37	3	82.33
2001	10.17	2.50	4	26.67	2.99	2	32.17	6.45	3	12.5	1.5	2	81.5
2002	5.0	1.14	4	9.5	1.46	1	20.5	2.49	2	13.0	2.46	3	48.0
2003	5.83	1.38	4	12.33	2.07	2	5.83	1.78	3	18.17	2.96	4	42.17
2004	17.33	2.74	4	22.8	2.10	2	11.6	1.81	3	15.6	2.55	3	67.33
2005	67.83	7.98	4	30.67	2.78	2	11.67	1.86	3	16.83	2.52	2	127

SWDGRLLBB.D91 - .D05

Table 56. Fall diurnal electrofishing length frequency and CPUE (fish/hour) for YOY largemouth bass collected from Green River Lake 2005.

Age YOY ≥ Age-1 Total	Inch group																		CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total	
9	27	27	48	46	40	14	1											186	63.7
9	27	27	48	46	40	22	10	17	33	15	10	7	2	3	3	3	3	292	36.3
																			100.0
Swdgrly.d05																			48.66
Swdgrlag.d05																			

Table 57. Indices of year class strength at age 0 and age 1 and mean length (in) of largemouth bass collected in the fall and following spring electrofishing samples at Green River Lake since 2002.

Year class	Age 0			Age 1		
	Mean length	Std error	CPUE	Mean length	Std Error	CPUE
2005	5.17	0.09	31.67	7.44	7.44	16.83
2004	4.96	0.07	60.83	8.97	8.97	28.0
2003	3.88	0.08	32.83	9.69	9.69	5.5
2002	3.87	0.07	32.67	9.70	9.70	5.33

SWDGRLR.D02 - D04, SWDGRLY.D05
 SWDGRLAG.D03 - D05
 SWDGRLLB.D03 - D05

Table 58. Length frequency and CPUE of white crappie collected in 58 net nights with trap nets during October and November at Green River Lake, 2005. Standard error is in parentheses.

Year class	Inch class													Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13				
41	59	11	78	220	198	170	80	14	1	1	1	873	15.86 (2.81)		

SWDBRLTN.D05

Table 59. PSD and RSD10 values calculated for crappie collected in trap nets at Green River Lake during October and November 2005. 95% confidence limits are in parentheses.

Species	Fish >	PSD	RSD ₁₀
White crappie	66	60.0 (3.4)	12.4 (11.4)

SWDGRRLTN.D05

Table 60. White crappie assessment for Green River Lake from 1985 to 2005.

Year	CPUE excluding age 0			CPUE age 1			CPUE age 0			CPUE ≥ 8 inches			Mean age-2 length at capture			Total Assessment	Rating
	Value	Assessment		Value	Assessment		Value	Assessment		Value	Assessment		Value	Assessment			
1986	16.87	3		3.23	2		1.23	1		3.99	1		7.92	1		8	F
1987	15.43	3		4.06	2		19.16	4		5.16	3		8.05	1		13	G
1988	15.87	3		8.87	3		18.62	4		4.52	2		8.00	1		13	G
1989	26.30	4		20.24	4		1.29	1		6.38	3		9.59	4		16	G
1990	12.61	2		5.87	2		0.42	1		7.57	3		9.17	3		11	F
1991	8.68	2		2.93	2		6.88	3		6.15	3		9.25	3		13	G
1992	28.34	4		24.48	4		1.84	1		8.54	3		9.96	4		16	G
1993	24.81	4		6.99	3		1.22	1		15.53	4		9.00	2		14	G
1994	8.65	2		2.47	1		11.78	4		6.08	3		9.30	3		13	G
1995	16.18	3		11.12	3		13.22	4		10.74	3		9.96	4		17	E
1996	13.36	3		6.51	2		3.17	2		5.96	2		9.24	3		12	F
1997	14.08	3		3.94	2		1.89	1		8.11	3		8.65	2		11	F
1998	9.21	2		2.48	1		3.78	2		8.01	3		9.29	3		11	F
1999	7.38	2		5.21	2		0.99	1		2.86	1		9.94	4		10	F
2000	6.29	2		1.45	1		0.01	1		5.17	2		9.66	4		10	F
2001	4.27	1		0.15	1		10.78	4		4.17	2		9.45	3		11	F
2002	10.87	2		9.69	3		0.53	1		4.11	2		9.80	4		12	F
2003	12.95	2		5.08	2		3.30	2		6.80	3		9.12	3		12	F
2004	17.67	3		9.60	3		3.84	2		7.93	3		8.37	1		12	F
2005	13.82	3		3.0	2		1.7	1		8.0	3		8.4	1		10	F

SWDGR.LN.D86 - 05

Table 61. Length frequency and CPE for white bass and walleye collected by experimental gillnets (16 net nights) during late-October at Green River Lake, KY 2005. Standard error in parentheses.

Species	Inch Class														CPUE
	5	6	7	8	9	10	11	12	13	14	15	16	22	24	
White bass	4	4	10	10	1	20	40	24	18	11	2	1			9.67 (2.13)
Walleye				2	2	5	2	2	1	2	1	1	1	1	1.27 (0.43)

SWDGR.LN.D05