

Eagle Creek Reservoir Fish Community & Harvest

Fish and Wildlife Research and Management Notes

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Date: 8/24/99

Title: Evaluation of the Fish Community and Harvest at Eagle Creek Reservoir

INTRODUCTION

Located approximately 10 miles northwest of downtown Indianapolis is 1,350 acre Eagle Creek Reservoir. The fish in the reservoir and its watershed were eradicated and the reservoir restocked with game fish after construction was completed in 1968. The renovation was not completely successful, as gizzard shad and other non-game fish were found the following year. Shad quickly became the primary forage fish in the reservoir.

In the mid-1970's white bass and northern pike were stocked in Eagle Creek Reservoir to aide largemouth bass in controlling gizzard shad (Taylor 1971). It was thought that these species would do well and establish self sustaining populations. No pike were ever collected during subsequent surveys of the lake. The 1984 Eagle Creek Reservoir fish management report stated that only minimal reproduction and recruitment of white bass had been observed during surveys following their initial stocking and only a very small population of white bass existed in the lake (Kingsley 1985).

Hybrid striped bass were initially stocked in 1983. Hybrids, also known as wipers, are the result of a cross between male white bass and female striped bass. Wiper fingerlings were stocked at a rate of 10 per acre from 1983 to 1991, except in 1987 when there were not enough available to stock at that rate (Table 1). Beginning in 1992, the targeted stocking rate was increased to 20 fingerlings per acre (27,000 total) due to high angler utilization and the need for increased predatory pressure on shad. Since 1992, this rate has been met or exceeded in all years except 1994 and 1996.

In 1997, 1,780,125 surplus walleye fry were available from state hatcheries. Due to the abundant gizzard shad and a walleye's preference to feed on shad, the excess fry were stocked in Eagle Creek Reservoir. A fall evaluation that year determined the stocking was successful. Excess walleye fry that totaled 1,756,625 fish were again stocked in the lake in the spring of 1998.

The most recent creel survey was attempted in 1995, however, only June and July were creeled. The most recent creel survey suitable for comparison was conducted in 1986. The purposes of the 1998 surveys were to evaluate the fish community, fish harvest, angler preferences, and fishing pressure at the reservoir, and determine the success and utilization of previously stocked hybrids. (Table 1).

FISH COMMUNITY EVALUATION

A fish community evaluation was conducted at Eagle Creek Reservoir June 9, 10, 22 to 25, and 30, 1998. Survey effort consisted of two hours of D.C. electrofishing at night, six standard

experimental mesh gill net lifts, six larger experimental mesh gill net lifts, and six trap net lifts. All collected fish were measured to the nearest 0.1 inch and weighed to the nearest 0.01 pound. Scale samples were taken from the dominant game fish, as well as, gizzard shad and carp for age and growth analysis.

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ANGLER CREEL SURVEY

The creel survey was scheduled to start around the first of April, but a creel clerk was not hired until shortly after the first of May. Therefore, the personal contact creel survey was conducted from May 11 through October 30, 1998. A total of 122 days was sampled during that time. Data was expanded to represent fishing and harvest from May 1 through October 31. The survey was conducted using a non-uniform probability design. A single angler analyst was employed for the creel survey. Only boat and shore anglers at the Eagle Creek Park boat ramp area were interviewed. Previous creels revealed that approximately 50% of the use by boat and shore anglers occurred there. Sampling was divided into two, 7.5 hour periods: morning, 6:30 AM to 2:00 PM, and evening, 2:00 PM to 9:30 PM. These periods were sampled based on probabilities generated from previous creel surveys (25% morning shifts and 75% evening shifts). The probabilities used for fishing activity were 0.051 for weekends and 0.025 for weekdays.

The angler analyst interviewed most anglers upon completion of their trips. Information recorded for each fishing party included: trip length, number of anglers in the party, fishing preference, and county or state of residence. Harvested fish were identified, counted, and measured to the nearest 0.5 inch. Anglers were asked to recall the numbers of legal and sub-legal largemouth bass released, along with the number of hybrid striped bass and walleye released. They were also asked if they were aware of the hybrid stockings and if they were satisfied with the Eagle Creek Reservoir fishery.

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FISH COMMUNITY EVALUATION

A total of 3,366 fish that weighed 905.17 pounds was collected. Thirty-one species were represented in the survey (Appendix A).

Gizzard shad was by far the most abundant species collected by both number (39.7%) and weight (28.8%). A total of 1,335 shad was collected that weighed just over 261 pounds. Shad ranged in length from 5.1 to 14.0 inches, and averaged 8.2 inches (Appendix B). Age 2 shad was the dominant year class, accounting for nearly 45% of all those collected in the present survey. This is likely the result of a significant shad die-off that was observed at many Indiana lakes during the winter of 1995-96 and then their subsequent successful spawn during the spring of 1996. Shad were collected up to age 7. Compared to gizzard shad in other central Indiana lakes, average growth of shad was slightly below normal to age 3, but improved after that (Appendix C). Average weights of shad were mostly normal.

A total of 637 bluegill which weighed 68.61 pounds was collected. Bluegill were second in abundance by number (18.9%) and fifth by weight (7.6%). Bluegill ranged in length from 2.2 to 8.7 inches and averaged 5.2 inches. Thirty-three percent of the bluegill collected were a harvestable size of 6.0 inches or better. Average growth and weights of bluegill were normal.

To compare bluegill fishing quality among Indiana's lakes and ponds, a bluegill fishing potential index was devised ([Ball and Tousignant 1996](#)). Four parameters are used to calculate the index score: density, growth, proportional stock density, and relative stock density. The Eagle Creek Reservoir bluegill fishery scored 16 out of a possible 40 points, which rates the bluegill fishery as "fair".

White crappie ranked third in abundance by number (11.4%) and sixth by weight (5.9%). Three hundred and eighty-four crappie were collected that weighed 53.32 pounds. The largest crappie collected was 13.2 inches and overall they averaged 6.7 inches. Only 9.4% of the white crappie were a harvestable size of at least 8.5 inches. The small average size and low percentage of harvestable size crappie is due to the fact that the bulk of the crappie were ages 1 or 2. Average growth of white crappie was slightly below normal. Average weights of crappie were slightly below normal to normal.

Longear sunfish was the fourth most abundant species collected by number (9.2%) and tenth by weight (2.4%). A total of 309 longear was collected that weighed 22.10 pounds. Longear ranged in length from 1.7 to 5.8 inches and averaged 4.3 inches. Longear rarely attain a size which is desirable to anglers.

Two hundred and eight channel catfish that weighed almost 103 pounds were collected. Although fifth in abundance by number (6.2%), channels were third in abundance by weight (11.4%). Over 36% of the catfish were at least 12 inches long, with the largest being a 27 inch fish that weighed 8.50 pounds. A relatively normal distribution of catfish sizes indicates that reproduction has been fairly consistent. This is expected in larger bodies of water where there is ample spawning habitat and predation on catfish fry is lessened. Average weights of channel catfish were slightly below normal.

A total of 92 largemouth bass that weighed just over 77 pounds was sampled. Largemouth were sixth in abundance by number (2.7%) and fourth by weight (8.5%). The largest bass collected was almost 20 inches long and the average size of all those collected was 10.1 inches. Excluding two young-of-the-year (YOY) bass collected, 27.8% of the sampled largemouth were 14 inches or longer. As was the case with most of the other species that were aged, the 1996 year class of bass dominated the collection (47.8%). Average growth of bass was normal to slightly above normal for age 2 and older fish. Largemouth are reaching 14 inches in just over four years. Average weights of bass were mostly normal.

Sixty common carp which weighed 151.25 pounds were collected. Although eighth in abundance by number (1.8%), carp were second in abundance by weight (16.7%). Carp ranged in length from 9.8 to 23.8 inches and averaged 17.5 inches. Average growth was normal. Average weights of carp tended to be well below to slightly below normal.

A total of 47 yellow bass was collected. This was the first time yellow bass were collected in the reservoir. Yellow bass were likely illegally stocked by well intentioned anglers who thought they were stocking white or hybrid striped bass. Yellow bass are not desirable because they are often small, rarely exceeding 10 inches, and compete with more desirable game fish. Yellow bass ranged in length from 5.2 to 7.8 inches. Their average weights were normal.

Thirty-seven white bass were collected. White bass ranged in length from 5.5 to 16.7 inches long and averaged 11.9 inches. Over 51% of them were 12 inches or longer. White bass reproduction appears fairly constant as all year classes from 1992 through 1997 were represented. The dominant white bass year class was spawned in 1996. White bass growth was below normal at age 1 and normal thereafter. Weights of white bass were mostly below to slightly below normal.

Fourteen hybrid striped bass were collected. Twelve age 1 wipers were collected up to 11.3 inches. The remaining hybrids were age 3 and were over 18 inches long. This was only the second time ever that age 3 wipers were collected at Eagle Creek Reservoir. The previous collection of three year old hybrids occurred during the 1997 fall evaluation.

There were 21 other species collected that accounted for 7.1% of the sample number and 13.6% of the sample weight. Some of the most abundant of these species by number and/or weight were spotted sucker, brown bullhead, white catfish, logperch, and quillback. Other game fish of interest collected were two walleye from the 1997 stocking, a flathead catfish, a blue catfish, and a smallmouth bass.

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ANGLER CREEL SURVEY

Angling Effort

Fishing pressure at Eagle Creek Reservoir from May 1 through October 31, 1998 was estimated at 72,932 hours or 54.02 hours per acre ([Table 2](#)). For the same six months in 1986, fishing pressure at the lake was estimated at 43,221 hours or 32.02 hours per acre. During the six months creeled in 1998, an estimated 15,165 anglers (11.23 per acre) fished at the reservoir compared to 9,371 (6.94 per acre) in 1986. Fishing pressure was highest in May (23,478 hours), as it was in 1986, followed by July and then June. Also like 1986, fishing pressure was lowest in October (6,282 hours) ([Table 2](#)).

Anglers from 15 different counties fished at Eagle Creek Reservoir in 1998 ([Appendix D](#)). As in 1986, over 86% of those anglers were from Marion County. The only other county with a significant number of anglers visiting the lake was Hendricks County (8.7%). Over 99% of the interviewed anglers indicated that they were satisfied with the Eagle Creek Reservoir fishery and 72% were aware of the hybrid striped bass stockings.

Overall Harvest Rate

The overall harvest rate in the present survey was 0.729 fish per hour compared to 0.910 fish per hour in 1986. The highest harvest rates occurred in October and May with 1.002 and 0.891 fish per hour, respectively. The lowest harvest rate occurred in July with 0.512 fish per hour.

Harvest and Yield

An estimated 53,162 fish that weighed 20,322 pounds were harvested from Eagle Creek Reservoir between May 1 and October 31, 1998 (Table 3). Overall harvest and yield estimates were 39.4 fish per acre and 15.1 pounds per acre, respectively. In the 1986 creel survey, harvest was estimated at 30.8 fish per acre. The number of fish harvested in May was by far the highest, 20,922 fish (Appendix E). Harvest was similar between the remaining months, except for August which had considerably less than any other month (Table 3).

Angler Preference

Crappie was the most preferred species to catch in May, June, September, and October (Table 4). Largemouth bass was most preferred in July and August. All months combined, over 37% of the anglers creeled preferred to catch crappie, followed by largemouth bass (24.6%), "anything" (9.6%), and catfish (4.7%). Preference for hybrid striped bass was 3.4 % and walleye anglers began showing up in August and accounted for an overall preference of 0.3% (Table 4).

COMPOSITION OF THE HARVEST

Crappie

Crappie was the dominant species harvested by both number (70.0%) and weight (64.6%). An estimated 37,213 crappie that weighed 13,131 pounds were harvested from May 1 to October 31, 1998 (Appendix F). In 1986, crappie was the most abundant species harvested by both number (25,070 fish) and weight (6,017 pounds). Harvested crappie ranged in length from 5.0 to 15.0 inches and averaged 9.0 inches, an increase from 7.8 inches in 1986. The overall harvest rate of crappie was 0.510 fish per hour (Table 5) and was highest in October (0.745), followed by May (0.679) and September (0.647). Nearly 43% of the crappie were harvested in May. Preference harvest rate is the number of fish per hour of a species harvested by anglers specifically fishing for that species. The overall preference harvest rate of crappie was 1.127 fish per hour (Table 6) and was higher than that of 1986, 0.94. Out of the 478 interviewed parties fishing exclusively for crappie, 13 of them caught their limit of 25 fish per angler. More limits were caught in September (5) than in any other month.

Bluegill

A total of 9,679 bluegill which weighed 1,652 pounds was harvested during the creel period. Bluegill ranked second by number (18.2%) and fourth by weight (8.1%) in the harvest. In 1986, 12,114 bluegill that weighed 2,059 pounds were harvested. Harvested bluegill ranged (Table 5) (Table 6) in length from 5.0 to 8.5 inches and averaged 6.1 inches. In 1986, harvested bluegill averaged 6.5 inches long. Due to the small average size of bluegill, angler preference for them was low (3.5%). The overall harvest rate for bluegill was 0.133 fish per hour.

Hybrid Striped Bass

Wipers were third in total harvest by number (4.8%) and by weight (9.7%). A total of 2,534 hybrids that weighed 1,966 pounds was estimated to have been harvested. This was more than the 1,782 hybrids that weighed 1,354 pounds harvested in 1986. Harvest and catch and release numbers for wipers in the 1998 creel are questionable because of the difficulty distinguishing between white bass and young hybrid striped bass. Hybrids ranged in length from 6.0 to 21.0 inches and only averaged 11.6 inches. The majority harvested, 76.5%, were between 10 and 14 inches long. Preference catch rate differs from preference harvest rate in that it is the catch (harvest plus those released) of a species by anglers fishing specifically for that species. The overall preference catch rate of hybrids was 1.645 fish per hour with the highest rates occurring in June (4.039) and October (3.241). The overall catch and release rate of wipers was 0.070 fish released per hour (Table 7). The overall harvest rate of wipers was 0.035 fish per hour, with the highest rate, 0.168, and the greatest number of fish harvested, 1,055, being taken in October. Preference for wipers, 3.4%, was down from 1986, 6.8% (Table 7).

Channel Catfish

An estimated 2,260 channel cats that weighed 2,439 pounds were harvested in 1998. This nearly doubled the 1986 harvest of channel catfish (1,252 fish that weighed 1,377 pounds). Channels were fourth in total harvest by number (4.3%) and second by weight (12.0%). Channel cats ranged in length from 8.0 to 28.5 inches and averaged 14.2 inches. The preference harvest rate for catfish was 0.153 fish per hour and was highest from May through August. The overall harvest rate of channels was 0.031 fish per hour. June had the highest harvest rate for channel cats with 0.042 fish harvested per hour.

White Bass

Compared to 1986, harvest of white bass substantially increased. Even when considered in the "other" category with several different species in 1986, white bass harvest was not more than 0.1% of the total that year. White bass accounted for 0.8% of the 1998 harvest by number and 1.3% by weight. Four hundred and eleven white bass that weighed 263 pounds were harvested. As was the case with hybrid striped bass, white bass harvest numbers are suspect because of the trouble distinguishing between the two species. At 11.2 inches, the average size white bass harvested was similar to the average size wiper harvested. Over 59% of the white bass were harvested in May. The overall harvest rate of white bass was 0.006 fish per hour.

Bullhead

Brown, yellow, and black bullheads and white catfish were all considered in this category. A total of 386 bullheads which weighed 200 pounds was harvested. Bullheads up to 14 inches were harvested, and the average size of those harvested was 10.1 inches. The overall harvest rate of bullheads was 0.005 fish per hour.

Yellow Bass

As was the case with the fish community survey, yellow bass appeared in the creel at Eagle Creek Reservoir for the first time. Yellow bass were harvested from 8.0 to 11.0 inches and averaged 9.9 inches. The highest harvest rate for yellow bass was 0.015 fish per hour in July, and the overall harvest rate was 0.004 fish per hour.

Largemouth Bass

With over 95% of all legal size largemouth bass being released, the trend towards catch and release of bass appears to have caught on at Eagle Creek Reservoir. This is important since nearly 25% of the anglers that visited the lake targeted that species. Largemouth bass harvest decreased from 406 bass that weighed 901 pounds in 1986 to 187 largemouth bass that weighed 358 pounds in 1998. Largemouth ranged in length from 14.0 to 19.5 inches and averaged 15.3 inches. Over 42% of all bass caught were 14 inches or longer. The overall harvest rate of bass was 0.003 fish per hour and was highest in May and August (0.005). The overall catch rate of bass was 0.127 fish per hour. The preference catch rate of largemouth was 0.389 fish per hour and was highest in October (0.650) and June (0.564). An estimated 5,316 bass under 14.0 inches, and 3,725 bass 14.0 inches or longer were released.

Other Species

Other species harvested, in order of abundance by number, included miscellaneous sunfish (the majority were probably longear sunfish), flathead catfish, yellow perch, suckers, carp, and blue catfish. Collectively, these species accounted for 0.4% of the total harvest by number and 0.9% by weight.

Walleye

Although no walleye were observed being harvested during the creel survey, there were reports of a few keeper (14.0 inches and longer) walleye being harvested at times that were not creeled. A total of 95 walleye was caught and released, the majority of which were likely less than 14 inches long. The overall catch and release rate of walleye was 0.001 fish per hour and had a high in June of 0.005 fish per hour. Anglers specifically targeting walleye began appearing in August and were at a high of 1.3% of the anglers at Eagle Creek Reservoir during October. Two out of the six parties creeled that were specifically targeting walleye caught and released at least one walleye.

Economic Value of the Fishery

A national survey of fishing, hunting, and wildlife-associated recreation conducted by the U.S. Fish and Wildlife Service (1996) estimated the cost of an average fishing trip in Indiana at \$50.55 per person. Therefore, the estimated 15,165 anglers at Eagle Creek Reservoir between May 1 and October 31, 1998 spent roughly \$766,591.

An estimated 516 anglers fished exclusively for hybrid striped bass during the creel period. The approximate value of the Eagle Creek hybrid fishery in 1998 was \$26,084. The average cost of production for hybrids in 1995 and 1997 was \$0.09 per fish. Therefore in 1998, the estimated

cost to stock Eagle Creek Reservoir with hybrids at the recommended rate of 27,000 fingerlings was \$2,430. The cost to benefit ratio for the 1998 Eagle Creek Reservoir hybrid fishery was 1:10.7.

CONCLUSIONS AND RECOMMENDATIONS

Gizzard shad dominate the Eagle Creek Reservoir fish community by both number and weight. Overabundant shad populations are detrimental to popular game fish, especially largemouth bass. Shad are prolific spawners that often times spawn before largemouth. Young bass cannot compete well with abundant shad for food, thus, as is the case at this reservoir, largemouth recruitment is poor.

The 1996 year class was the dominant year class for most species aged, in particular shad, crappie, and largemouth bass. This year class should provide a boost to angling for crappie and bass in 1999 and beyond. Due to their delicate nature and their high numbers, a cold winter could possibly cause a major shad kill similar to the one in the winter of 1995-96. Like 1996, this may benefit the fishery through increased spawning success in the year following a major shad die-off.

Crappie continue to be the most preferred and most harvested species, with 70% of the 53,162 fish harvested being crappie. Preference for largemouth is much increased from 1986 and bass fishing is apparently benefitting from increased catch and release. Anglers had more success catching channel catfish in 1998 than they did in 1986, both the harvest rate and number of channels harvested was greater in 1998 than it was in 1986. Bluegill had the most noticeable decline in harvest when compared to 1986, approximately 2,800 less fish. The decline is due to the fact that preference for bluegill has declined likely because of their small size.

White bass and young hybrid striped bass under 16 inches long can be especially difficult to distinguish between. Therefore, it is likely that some improper identification of these species occurred during the creel survey since 98.7% of the harvested "hybrids" were less than 16 inches long. Since considerably more white bass were collected than wipers in the fish community evaluation and many more wipers were estimated to have been harvested than white bass, it is reasonable to assume that the wiper harvest was biased high and the white bass harvest was biased low. In March, when age 1 hybrids probably began their growing season, they averaged 5.6 inches. Assuming that they grew an average of one inch per month, they would have been approximately 12.5 inches long at the end of their second growing season sometime around the end of October. This is reasonable to assume because based on growth analysis of hybrid striped bass from previous surveys at Eagle Creek Reservoir they average 12.3 inches at the end of their second growing season. Therefore, age 1 hybrids averaged from 7.5 inches in May to 12.5 inches in October.

Using this information and knowing that the standard deviation for average growth of age 1 wipers is +/- 2.0 inches, a minimum estimate of error can be determined. By looking at the observed monthly length frequency of harvested hybrids and excluding any possible age 3 or older fish (16 inches or longer), a fish not within the range of the average size hybrid for that month, and one standard deviation, was likely a white bass (Table 8). This is possible because

there were no age 2 hybrids in the lake to occupy the size gap between the age 1 and age 3 fish. Error in the number of wipers harvested is at least 34.8%, or a difference of 882 fish. The new estimates for the number of harvested hybrid striped bass and white bass would then be 1,652 and 1,293 fish, respectively. These estimates are still probably biased in favor of hybrids since far more white bass less than 16 inches long were collected during the community evaluation than hybrid striped bass. The estimated number of released hybrids is probably also high for the same reasons that the harvest number is high.

Based on the findings of the fish community and creel surveys it is recommended that hybrid striped bass stockings be discontinued. The Division of Fish and Wildlife Impoundments Strategic Plan (1997) suggests discontinuing hybrid stockings if a viable white bass population exists in a body of water due to the risk of their genetics being contaminated by wipers. Unlike previous survey reports showed, a self sustaining population of white bass does exist. Another consideration for ending hybrid stockings is that few age one and older wipers have been collected in all surveys of the reservoir. This could be because of poor survival beyond age 0, harvest of small fish, and/or flushing from the lake. There are only two surveys in which any three year old wipers have ever been collected and very few over 16 inches are showing up in the creel (Table 8).

Future survey work is needed at Eagle Creek Reservoir to monitor the fish community and any major changes that may occur in it. With hybrid striped bass stockings being halted and the prospect of walleye stockings being increased, another fish community evaluation should be conducted in 2003 and about every four years thereafter. Fall evaluations of hybrid striped bass were scheduled for 1999 and 2000. These surveys should still be conducted, but to evaluate stockings of walleye rather than wipers. News releases should continue to be written on the work and findings at Eagle Creek Reservoir and the area to which they are released should be expanded to make more people aware of the fishing opportunities there.

Crappie fishing should be extremely good in 1999. With continued catch and release of bass, that fishery should improve even more. Bluegill fishing should be fair, however, few will exceed 7 inches in length. Catfish anglers should have good success and there is the possibility of catching some really big fish. Anglers targeting white bass should again have good luck catching large numbers of 10 to 14 inch fish. Keeper walleye should be available in 1999.

Table 1. Hybrid striped bass stockings in Eagle Creek Reservoir from 1983 to 1998.

Date	Number Stocked	Density (No./Acre)	Average Size (In.)
1983	14,000	10.4	1.7
1984	13,500	10.0	2.3
1985	13,500	10.0	2.0
1986	17,500	13.0	1.5
1987	3,601	2.7	3.0
1988	13,968	10.3	2.0
1989	13,500	10.0	2.1
1990	13,500	10.0	1.2
1991	13,593	10.1	1.3
1992	27,000	20.0	1.5
1993	27,000	20.0	0.9
1994	9,529	7.1	1.9
1995	27,000	20.0	1.1
1996	0	0.0	NA
1997	27,000	20.0	1.1
1998	77,000	57.0	1.5

Table 2. Monthly and seasonal estimates of fishing pressure, number of anglers, and overall harvest rates at Eagle Creek Reservoir, May 1 to October 31,1998.

	May	June	July	Aug.	Sept.	Oct.	Total
Fishing Pressure (hours)	23,478	11,632	13,860	8,205	9,475	6,282	72,932
Fishing Pressure (hours/acre)	17.39	8.62	10.27	6.08	7.02	4.65	54.02
No. of Anglers	4,686	2,561	2,816	1,728	1,958	1,416	15,165
No. of Anglers / Acre	3.47	1.90	2.09	1.28	1.45	1.05	11.23
No. of Fish Harvested	20,922	7,240	7,091	4,456	7,157	6,296	53,162
Harvest Rate (fish/hour)	0.891	0.622	0.512	0.543	0.755	1.002	0.729

Table 3- Summary of estimated harvest and yield data for Eagle Creek Reservoir, May 1 to October 31, 1998.

	Harvest		Yield	
	Number	Percent	Pounds	Percent
Crappie	37,213	70.0%	13,131	64.6%
Bluegill	9,679	18.2%	1,652	8.1%
Hybrid Striped Bass	2,534	4.8%	1,966	9.7%
Channel Catfish	2,260	4.3%	2,439	12.0%
White Bass	411	0.8%	263	1.3%
Bullhead	386	0.7%	200	1.0%
Yellow Bass	262	0.5%	131	0.6%
Largemouth Bass	187	0.4%	358	1.8%
Misc. Sunfish	164	0.3%	20	0.1%
Flathead Catfish	23	<0.1%	62	0.3%
Other	23	<0.1%	44	0.2%
Carp	10	<0.1%	43	0.2%
Suckers	10	<0.1%	13	0.1%
TOTALS	53,162		20,322	

Table 4- Monthly and seasonal angler preference (% of all anglers) by species at Eagle Creek Reservoir, May 1 to October 31, 1998.

	May	June	July	Aug.	Sept.	Oct.	Total
Crappie	44.5%	32.5%	28.4%	22.5%	41.0%	52.4%	37.3%
Bass	15.3%	18.6%	34.4%	40.9%	32.2%	16.3%	24.6%
Anything	4.4%	21.1%	9.4%	8.5%	6.2%	12.9%	9.6%
Crappie / Bass	10.7%	1.1%	1.8%	5.8%	1.1%	0.4%	4.7%
Catfish	2.7%	5.8%	6.2%	7.3%	2.6%	4.2%	4.5%
Crappie / Bluegill	8.3%	1.3%	5.8%	2.5%	1.1%	1.3%	4.4%
Bluegill	3.2%	4.6%	5.3%	2.3%	3.0%	0.7%	3.5%
Hybrid Striped Bass	0.7%	2.5%	5.7%	3.8%	6.4%	5.0%	3.4%
Crappie / Catfish	6.5%	0.9%	1.0%	3.2%	0.8%	1.0%	2.9%
Crappie / Hybrids	2.5%	0.2%	0.6%	1.0%	2.7%	1.3%	1.5%
Catfish / Bluegill	1.0%	0.7%	1.2%	--	1.1%	1.0%	0.9%
Other	--	0.4%	0.3%	--	1.0%	1.0%	0.4%
Bass / Hybrids	--	1.2%	--	0.5%	--	0.7%	0.3%
Walleye	--	--	--	0.5%	0.9%	1.3%	0.3%
Bass / Catfish	0.4%	--	--	0.6%	--	--	0.2%

Hybrids / Catfish

-- 0.2%

-- 0.6% --

0.7% 0.2%

Table 5. Monthly and seasonal overall harvest rates in fish per hour at Eagle Creek Reservoir, May 1 to October 31, 1998.

	May	June	July	Aug.	Sept.	Oct.	Total
Crappie	0.679	0.365	0.243	0.345	0.647	0.745	0.510
Bluegill	0.150	0.173	0.170	0.137	0.028	0.065	0.133
Hybrid Striped Bass	0.008	0.027	0.022	0.014	0.058	0.168	0.035
Channel Catfish	0.032	0.042	0.039	0.027	0.018	0.012	0.031
White Bass	0.010	0.004	0.004	0.007	---	---	0.006
Bullhead	0.004	0.003	0.008	0.005	0.005	0.010	0.005
Yellow Bass	---	0.001	0.015	0.002	---	0.003	0.004
Largemouth Bass	0.005	0.002	0.001	0.005	---	---	0.003
Misc. Sunfish	0.001	0.003	0.007	---	---	---	0.002
Flathead Catfish	---	---	0.002	---	---	---	<0.001
Other	---	0.001	---	---	---	---	<0.001
Carp	---	---	---	---	---	---	<0.001
Suckers	---	---	---	---	---	---	<0.001

Table 6. Monthly and seasonal preference harvest and catch rates in fish per hour for crappie, channel catfish, hybrid striped bass, and largemouth bass at Eagle Creek Reservoir, May 1 to October 31, 1998.

	May	June	July	Aug.	Sept.	Oct.	Total
Preference Harvest Rate:							
Crappie	1.185	0.842	0.660	1.280	1.479	1.349	1.127
Channel Catfish	0.143	0.188	0.158	0.218	0.000	0.033	0.153
Preference Catch Rate:							
Hybrid Striped Bass	0.727	4.039	0.670	0.606	1.686	3.241	1.645
Largemouth Bass	0.391	0.564	0.369	0.300	0.305	0.650	0.389

Table 7. Monthly and seasonal catch and release for striped hybrid bass, largemouth bass, and walleye at Eagle Creek Reservoir, May 1 to October 31, 1998.

	May	June	July	Aug.	Sept.	Oct.	Total
Fishing Pressure (hours)	23,478	11,632	13,860	8,205	9,475	6,282	72,933
Hybrid Striped Bass released	403	1,686	549	324	1,152	990	5,104
Release Rate (fish / hour)	0.017	0.145	0.040	0.039	0.122	0.158	0.070
Largemouth < 14 in. released	1,840	933	786	569	619	569	5,316
Release Rate (fish / hour)	0.078	0.080	0.057	0.069	0.065	0.091	0.073
Largemouth > 14 in. released	585	736	974	677	496	257	3,725
Release Rate (fish / hour)	0.025	0.063	0.070	0.083	0.052	0.041	0.051
Walleye released	13	63	9	5	5	0	95
Release Rate (fish / hour)	0.001	0.005	0.001	0.001	0.001	--	0.001

Table 8. Observed numbers of hybrid striped bass harvested at Eagle Creek Reservoir, May through October, 1998. Boxes indicate size ranges of possible hybrids.

	May	June	July	Aug.	Sept.	Oct.	Total
Size							
5.5							
6.0		1					1
6.5							
7.0							
7.5		1					1
8.0	3					7	10
8.5	1	1				5	7
9.0	2	3				15	20
9.5	2	1				16	19
10.0	2	7	3		2	9	23
10.5	1	8			2	10	21
11.0	4	2	2	7	7	3	25
11.5	1		1		4	10	16
12.0		4	6	7	11	22	50
12.5	1	1	2		2	12	18
13.0	3		2	4	9	13	31
13.5	1	2				16	19
14.0		3	1	4	2	18	28
14.5		1		1	1	3	6
15.0				2		1	3
15.5							
16.0			2				2
16.5							
17.0			1				1
17.5							
18.0							
18.5							
19.0							
19.5							
20.0							
20.5							
21.0						1	1

Total observed harvested	21	35	20	25	40	161	302
Number outside standard deviation (+/-2.0"), excluding likely age 3 or older fish	13	14	11	11	3	53	105
Percent error	61.9%	40.0%	55.0%	44.0%	7.5%	32.9%	34.8%

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