

Cagles Mill Reservoir

Fish and Wildlife Research and Management Notes

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Date: February 16, 2000

Title: Cagles Mill Reservoir, Walleye Stocking Evaluation

INTRODUCTION

Cagle's Mill Reservoir, also known as Cataract Lake, is a 1,400 acre Army Corps of Engineers flood control impoundment. The lake is located approximately seven miles southwest of Cloverdale, Indiana. The Division of Fish and Wildlife (DFW) manages the Cagle's Mill fishery. The Division of Parks and Reservoirs owns two properties around the lake: Lieber State Recreation Area and Cataract Falls State Recreation Area. There are two public boat ramps on the lake; one on the Lieber property and one near the town of Cunot.

Since the mid 1980s, the lake has contained gizzard shad which is the primary forage base for predators. To utilize the abundant shad forage, DFW began stocking walleye in 1986. Initially, walleye fry were stocked into a rearing marsh on Lieber's property in an attempt to raise them to fingerling size before they were flushed into the reservoir. This stocking method was rarely successful. In the early 1990s, walleye fry were stocked in both the rearing marsh and directly into the lake. Finally, some successful year classes were produced. It was assumed that the stockings made directly into the lake resulted in better survival since few walleye were found when just the marsh was stocked. Since 1994, the lake has annually been stocked with 4.2 million walleye fry and the rearing marsh has no longer been utilized. Fall evaluations at Cataract indicate that each walleye year class since 1994 has been successful.

The present fall survey was conducted to determine the success of the 1999 walleye stocking and survival of older walleye. The success of the 1999 stocking will also be compared to previous walleye stockings at Cagle's Mill Reservoir

METHODS

A fall evaluation was conducted October 11 to 14, 1999. Survey effort consisted of 4.0 hours (16, 15 minute stations) of night D.C. electrofishing and 14 experimental mesh gill net lifts. Sampling effort was equally divided in the two lake basins and electrofishing stations and net set locations duplicated those of previous fall evaluations at Cataract.

Two hundred and thirty-three walleye were collected that weighed over 134 pounds. Lengths of walleye collected ranged from 6.0 to 22.3 inches and averaged 10.9 inches. Over 25 percent of the walleye collected were 14 inches or longer. When the young-of-year (YOY) walleye are excluded, 81 percent of the walleye were 14 inches and larger. The average length for 1-year-old and older walleye was 15.8 inches.

A total of 154 YOY walleye was collected during electrofishing ([Table 1](#)) and six were sampled with gill nets ([Table 2](#)). The criteria for a successful walleye stocking is to collect at least seven

YOY per hour of fall electrofishing. While the present YOY catch rate of 38.5 per hour far exceeded the success criteria, it was the second lowest YOY electrofishing catch since the lake has been stocked with 4.2 million fry (Table 3). YOY walleye are infrequently collected with gill nets due to their small size, so the low number collected in the present survey is not surprising. The only year a substantial number of YOY walleye was collected in nets was 1996, when 9.5 were sampled per net lift (Table 4). During the same year, nearly 177 YOY walleye were collected per hour of electrofishing. Lengths of YOY walleye collected in 1999 ranged from 6.0 to 10.4 inches and averaged 8.6 inches. The average size of YOY walleye observed in 1999 was the second largest ever observed at Cagle's Mill. In 1991, when 6.2 YOY walleye were collected per hour of electrofishing, the average was 9.0 inches. The average size of YOY walleye is, in general, inversely correlated to the YOY electrofishing catch rate. The most notable exception to this was in 1996 when 177 YOY were collected per hour and they averaged 8.6 inches long. This was an exceptional year however, as the lake was far above normal summer pool for over 3 months.

Table 1. Walleye collected at Cagle's Mill Reservoir in 4 hours of D.C. electrofishing, October 1999.

	YOY	Age 1	Age 2	Total
Total Number	154	3	4	161
Catch per hour	38.5	0.8	1.0	40.3
Length Range (in.)	6.0-10.4	12.2-16.0	16.2-17.8	6.0-17.8
Avg. Length (in.)	8.6	13.8	17.1	8.9

Table 2. Walleye collected at Cagle's Mill Reservoir in 14 gill net lifts, October 1999.

	YOY	Age 1	Age 2	Age 3	Age 4	Total
Total Number	6	47	5	7	7	72
Catch per lift	0.4	3.4	0.4	0.5	0.5	5.1
Length Range (in.)	8.8-9.6	11.6-16.5	16.2-19.0	18.0-21.1	20.3-22.3	8.8-22.3
Average Length (in.)	9.2	14.3	17.8	19.4	21.1	15.3

Table 3. D.C. electrofishing catch rates (fish per hour) of walleye by age collected during fall evaluations at Cagle's Mill Reservoir, 1990 to 1999.

Year	YOY	Age				
		1	2	3	4	5
1990	8.0	0.7	-	-	-	-
1991	6.2	0.2	0.2	-	-	-
1993	94.2	3.6	-	-	-	-
1994	8.8	3.6	0.8	-	-	0.2

1995	57.2	0.4	-	-	-	-
1996	176.7	9.0	-	-	-	-
1998	51.0	3.0	1.3	-	-	-
1999	38.5	0.8	1.0	-	-	-

Table 4. Gill net catch rates (fish per lift) of walleye by age collected during fall evaluations at Cagle's Mill Reservoir, 1990 to 1999.

Year	YOY	Age				
		1	2	3	4	5
1990	1.8	3.6	-	0.7	-	-
1991	0.7	0.2	0.2	-	-	-
1993	1.1	3.0	0.1	0.3	0.2	-
1994	0.6	7.4	0.7	-	-	0.2
1996	9.5	10.2	0.9	0.7	-	-
1998	0.3	1.9	3.7	0.8	0.3	-
1999	0.4	3.4	0.4	0.5	0.5	-

Fifty 1-year-old walleye were collected which ranged in length from 11.6 to 16.5 inches and averaged 14.3 inches. One-year-old walleye were collected at the rate of 0.8 per hour of electrofishing and 3.4 per net lift. These 1-year-old catch rates are some of the lowest observed despite a very strong showing of this year class during the 1998 fall evaluation (51 per hour of electrofishing). Approximately 72 percent of the 1-year-old walleye sampled were 14 inches or larger. Traditionally, anywhere from 65 percent to 100 percent of the 1-year-old walleye are 14 inches by October.

The 1997 year class (2-year-old) was collected at the rate of 1.0 per hour of electrofishing and 0.4 per net lift. The nine 2-year-old walleye collected ranged from 16.2 to 19.0 inches long with the average being 17.5 inches. The 2-year-old walleye had a good catch by electrofishing gear compared to previous surveys but a poor catch with gill nets.

Seven 3-year-old and seven 4-year-old walleye completed the sample. 3-year-old walleye ranged in length from 18.0 to 21.1 inches and averaged 19.4 inches. 4-year-old fish were up to 22.3 inches long with the average walleye measuring 21.1 inches.

Due to the high abundance of gizzard shad and other forage species in the reservoir, walleye grow extremely fast in the lake. In the present survey, walleye at 1-year-old averaged 9.3 inches in length, while they were 15.5 inches at 2-year-old, 18.7 inches at 3-year-old, and 20.6 inches long at 4-year-old. Walleye growth in the present survey is nearly identical to the average growth observed at Cagle's Mill during all of the surveys since 1991. Even though the walleye population has expanded considerably since the mid 1990s, growth has not slowed. Average weights of walleye were slightly to well below normal for 17 inch and larger fish when compared to walleye in other central Indiana reservoirs.

CONCLUSION

The 1999 fall survey at Cagle's Mill Reservoir was the eighth fall evaluation conducted at the lake in the 1990's. The only time the lake did not surpass the success criteria of seven YOY walleye per hour of electrofishing was 1991 and that was prior to the time when annual stockings were up to the current stocking rate of 4.2 million fry. The current annual stocking goal has been achieved each year since 1994. The present survey produced the second poorest YOY electrofishing catch rate (38.5 per hour). However, the 1999 stocking was still considered extremely successful based on the criteria.

For the first year in quite a few years, the lake in 1999 did not rise considerably above summer pool which may be the reason for the second lowest YOY catch. The best survival of young walleye has been observed during years when the lake rises well above summer pool soon after the fry are stocked. The most notable year was 1996 when the lake rose approximately 55 feet over summer pool and the fall catch rate was 177 per hour. With a larger volume of water in the lake, fry are able to spread out and avoid predators, more nutrients enter the lake to fuel plankton production, and young walleye are not competing as heavily with each other for food. While high lake levels appear to greatly benefit the walleye population, unfortunately, it severely restricts angler access.

From the beginning of the 1990s to the close of the 20th century, the Cagle's Mill Reservoir walleye fishery has greatly improved. At the beginning of the decade, the use of the rearing marsh resulted in very weak walleye year classes. Once it was observed that fry stockings made directly into the lake showed promise, the stocking plans were changed and a fishable walleye population soon developed. In the early 1990s, few anglers sought walleye at the lake and actually landing one was rare. With the boom in the walleye population, the word has spread about the quality opportunity available which is bringing more walleye anglers to the lake and they are catching many fish. Surveys in the latter half of the decade have produced excellent numbers of walleye from 14 to 22 inches long. In the present survey, the largest walleye weighed nearly four pounds, however, anglers are regularly pulling 6 to 8 pound fish from the lake. Walleye growth rates are excellent and have not slowed despite the large increase in the population. This is an indication that the population could continue to increase. With the introduction of walleye into the lake, an excellent tailwater walleye fishery has also developed as some of the fish escape from the reservoir. Walleye angling is the best in April and May in the tailwater, while walleye fishing in the lake begins picking up in May and June.

A survey of the entire Cagle's Mill fish community will be conducted in the summer of 2000. Another fall walleye evaluation will be performed in October of 2000. An angler creel survey is planned for the 2001 fishing season.

Based on the recent surveys at Cataract, besides walleye, other excellent fishing opportunities are available for crappie, channel catfish, and white bass. Bluegill and largemouth bass fishing should also be good. For anglers seeking extremely large flathead catfish, Cagle's Mill Reservoir would be a good bet. Anglers are reminded that there is a 14 inch minimum size limit on walleye and a six fish bag limit. Largemouth bass must be at least 14 inches long to possess and the maximum allowed is five per person. While there is no size limit on catfish caught from lakes, there is a ten fish bag limit.

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