

Eagle Creek Walleye Stocking

Fish and Wildlife Research and Management Notes

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Title: Evaluation of Walleye stockings at Eagle Creek Reservoir

INTRODUCTION

Eagle Creek Reservoir is a 1,350 acre impoundment. The reservoir is located about 10 miles northwest of Indianapolis and serves the primary purpose of water supply. Following construction of the reservoir by the city of Indianapolis in 1968, the Division of Fish and Wildlife (DFW) renovated and restocked the lake and its watershed with game fish. The renovation was not a complete success as gizzard shad and other non-game fish were found the following year.

The primary forage fish at Eagle Creek Reservoir is gizzard shad. Management has focused on increasing angling opportunities by stocking predators that utilize shad. Hybrid striped bass were stocked nearly every year from 1983 to 1999. Because survival of adult hybrid stripers and angler interest in them were both apparently low and the white bass population was expanding, the DFW quit stocking hybrids at Eagle Creek Reservoir.

In 1997 and 1998, the lake was stocked with excess walleye fry from state hatcheries that totaled nearly 1.75 million (nearly 1,300 per acre) each year. During a fall evaluation in 1997, young-of-the-year (YOY) walleye were collected at the rate of 8.3 per hour which was better than the DFW criteria for a successful stocking of seven per hour. Since 1999, the annual recommended stocking rate has been 4.05 million walleye fry (3,000 per acre). However, in 1999 no fry were available, but the reservoir was stocked with 143,064 fingerling walleye which was considered slightly more than a full stocking. In 2000, both fry and fingerling walleye were stocked that accounted for about 65 percent of a full stocking.

DFW stocked just over 3.3 million fry in 2001. As part of a settlement for a fish kill that occurred in 2000, Indianapolis Water Company purchased 25,000 walleye fingerlings that were also stocked. Together, these added up to a full stocking of walleye for the reservoir in 2001. A fall evaluation was conducted to judge the success of the 2001 stockings and survival and growth of older walleye.

RESULTS AND DISCUSSION

The fall evaluation was conducted from October 22 to 25 and 29, 2001. Survey effort consisted of 3.75 hours (15, 15 minute stations) of D.C. electrofishing at night and 12 experimental mesh gill net lifts. With the exception of one station that was not electrofished, electrofishing stations and net set locations duplicated those from 2000. All walleye collected were measured to the nearest 0.1 inch and weighed to the nearest 0.01 pound. Scale samples were taken for age and growth analysis.

A total of 147 walleye was collected that weighed 98.87 pounds. Walleye ranged in length from 5.8 to 20.7 inches and averaged 11.0 inches long. Nearly 39 percent of all the walleye sampled were at least 14 inches long, the minimum size limit for walleye. When YOY are excluded, 93.4 percent of age 1 and older walleye were 14 inches or longer. The average size age 1 or older walleye collected was 15.7 inches.

Eighty-six YOY walleye were collected. All of the YOY were sampled while electrofishing except for one that was caught in a gill net. The electrofishing catch rate for YOY in the present survey was 22.7 per hour. This was better than the 2000 catch rate of YOY, 17.8 per hour, and much lower than the 1999 catch rate of 56.8 YOY per hour. The 2001 year class of walleye ranged in length from 5.8 to 9.7 inches and on average measured 7.4 inches. In 1999 and 2000, YOY walleye averaged 7.2 and 8.1 inches long, respectively. Growth of YOY tends to be better when catch rates are lower because competition for food is less. The weights of YOY walleye collected were slightly below normal compared to central Indiana averages.

Combined, there were 56 age 1 and age 2 walleye collected. At least 27 of these were age 1 walleye. The 2000 year class of walleye ranged in length from 12.8 to 16.0 inches and averaged 14.6 inches. Only four of the age 1 fish were less than 14 inches long. In the 2000 survey, age 1 walleye averaged just 13.1 inches in length. No less than 23 walleye from the 1999 year class were sampled in the present survey. Age 2 walleye measured 15.4 to 19.7 inches long and averaged 17.3 inches.

Five age 3 walleye were collected. Walleye from the 1998 year class ranged in length from 19.0 to 20.7 inches and averaged 19.8 inches long. No walleye from the original stocking in 1997 were found. It is not surprising that few age 3 and no age 4 walleye were found since only one fish from each of these year classes was collected in the 2000 fall evaluation. Stockings in 1997 and 1998 both amounted to less than half of what is now the recommended stocking rate.

Growth of the 1999 year class of walleye is substantially slower than the 1998 year class. In 1999, competition for food among YOY of all species was high. Besides a full stocking of walleye that year, for its final hybrid striped bass stocking, Eagle Creek Reservoir received three times more hybrids than recommended. When growth of all year classes is averaged, walleye at Eagle Creek Reservoir are growing normally compared to other central Indiana walleye populations. Average weights of age 1 and older walleye were mostly normal.

CONCLUSION AND DISCUSSION

Other than possibly in 1998 when no fall evaluation was conducted, all of the walleye stockings at Eagle Creek Reservoir have been successful. There were nearly 23 YOY walleye collected per hour of electrofishing in the present survey. A catch rate of 7 YOY per hour is all that is needed to meet the DFW's criteria for a successful stocking. Most of the 2001 year class of walleye should be at least 14 inches long by the fall of 2002.

Good numbers of age 1 and 2 walleye were collected during the recent survey. All of the age 2 fish and nearly all of the age 1 fish were 14 inches or longer. Because of their size and abundance, these two year classes are contributing the most to anglers. As these two year classes

mature, there should be an increase in the number of bigger walleye that anglers catch. With the addition of the 2001 year class to the harvestable population of walleye in 2002, the number of legal size walleye caught should increase.

The walleye fishery at Eagle Creek Reservoir has not yet reached its peak. Further stockings are needed to continue the development of the fishery. The reservoir should be stocked with 4.05 million walleye (3,000 per acre) in 2002. A fall evaluation will be conducted in 2002 to determine if the stocking was successful and to evaluate survival and growth of older walleye.

Anglers should know that in addition to the 14 inch minimum size limit for walleye there is a six fish daily bag limit. Besides walleye, Eagle Creek Reservoir offers anglers good fishing opportunities for crappie, largemouth bass, and catfish.

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