Huntingburg Lake

Fish and Wildlife Research and Management Notes
Author: Daniel P. Carnahan, Fisheries Biologist
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INTRODUCTION

Huntingburg Lake is a 188 acre impoundment located approximately one mile west of the Town of Huntingburg on State Road 64. The lake serves as Huntingburg's secondary source of water. Consequently, chemicals cannot be used to manipulate the fishery or aquatic vegetation. The watershed consists of agricultural land, golf course, forest, and a nature walk around the lake. A concrete boat ramp and gravel parking area are located at the lake's northeast corner. Currently, only electric trolling motors are allowed. Shore fishing opportunities are good. Shore anglers have numerous areas to fish around the lake.

Fish management activities by the Division of Fish and Wildlife (DFW) at the lake have been intensive. An unsuccessful renovation with dry rotenone was conducted in 1965. A 14–inch minimum size limit was established in August 1996 on saugeye, and on largemouth bass sometime between 1976 and 1981.

Numerous fish stockings have occurred since 1978. The channel catfish stocking program was initiated in 1978. Approximately 4,350 catfish were stocked every third year until 1995 when the stocking was changed to 3,008 fish every two years. White bass were stocked in 1979 and tiger musky were stocked in 1981. Both stockings were unsuccessful. The first successful predator stocking occurred in 1988 when 9,400 saugeye or hybrid walleye (a cross between a male sauger and female walleye) were stocked. Saugeye stockings have occurred on an annual basis through 2000. Currently, at least 9,400 saugeye fingerlings are stocked annually.

Standard fisheries management surveys were conducted in 1964, 1968, 1969, 1973, 1976, 1981, 1984, 1992, and 1997. Angler creel surveys were conducted in 1992 and 1997. Fall electrofishing surveys were conducted in 1988, 1990, and 1993 through 1998 to determine saugeye stocking success.

These past surveys have all indicated that the fishery was composed of a small bass population dominated by larger bass, a good saugeye population, a large channel catfish population maintained by stockings, stunted white crappie and bluegill populations, and large common carp and gizzard shad populations.

A lake enhancement feasibility study, funded by the Indiana Division of Soil Conservation's Lake Enhancement Program, was completed in January 1991 by Donan Engineering Company of Jasper. The study mentioned that problems concerning aquatic vegetation, rough fish populations, sedimentation, and turbidity have been documented since the early 1940’s (Donan Engineering Co. 1991). The study stated that Huntingburg Lake is undergoing the consequences of excessive nutrient and sediment loading as a consequence of cultural eutrophication. The

study recommended that 1) agricultural areas that were identified as the primary sources of nutrient and sediment loading be converted to permanent ungrazed meadowlands or cropped using a proposed five year reduced tillage/crop rotation plan; 2) restoration of Huntingburg Lake must secondly concentrate on a significant reduction in septic loading through construction of small alternative wastewater systems; 3) marsh area of the lake be dredged for further sediment control and removal of accumulated nutrient rich sediments; and 4) a management plan be established for the lake and its watershed. None of these recommendations appear to have been completed.

The present survey was conducted under DFW work plan 98478 entitled "General Management of Fisheries in Impoundments and Excavated Lakes."

METHODS

The survey was conducted on May 16 and 17, 2000. Total fish collection effort was one hour of pulsed D.C. night electrofishing, four gill net lifts, and four trap net lifts. Two dippers collected fish stunned by the electrofishing boat. Dissolved oxygen and temperature profiles, pH, conductivity, turbidity, and total alkalinity data were collected as per standard lake survey guidelines. The lake's aquatic vegetation was surveyed on July 24, 2000. The vegetation was measured in six different transects around the lake as per standard survey guidelines.

RESULTS

Water chemistry data were standard for a lake in southwest Indiana. Dissolved oxygen was sufficient to the lake bottom as the lake had not yet stratified. American water willow was the predominant aquatic plant observed. American bulrush, buttonbrush, and common cattail were also present. American water willow makes a complete five to twelve foot wide band around most of the lake.

A total of 1,655 fish was sampled, representing nine species and one hybrid, which weighed 549.18 pounds. Gizzard shad, bluegill, and white crappie were the three most abundant species by number. Gizzard shad, common carp, and largemouth bass were most abundant by weight.

Gizzard shad were first in abundance by number (59 percent) and weight (26 percent). The 969 gizzard shad sampled ranged in length from 4.9 to 15.0 inches and weighed 140.40 pounds. The shad catch nearly doubled compared to 1997 results. In 1997, shad accounted for 43 percent of the collection by number and 9 percent of the weight. In 1992, gizzard shad relative abundance by number was 27 percent and by weight was 29 percent.

A total of 248 bluegill was sampled that weighed 21.97 pounds. They were second in relative abundance by number (15 percent) and sixth by weight (four percent). Bluegill ranged in length from 2.0 to 7.3 inches. Six of the bluegill sampled were at least 7 inches long. No bluegill greater than 6.7 inches long were sampled in 1992 and 1997. The electrofishing catch rate was 216 per hour. Electrofishing catch rates in 1992 and 1997 were 291 and 288 per hour respectively. Bluegill growth was nearly identical to 1997 growth rates and were at the low end of the average range when compared to district averages.

A total of 221 white crappie was sampled that weighed 23.11 pounds. The crappie ranged in length from 4.3 to 11.6 inches. They accounted for 13 percent of the collection by number and 4 percent by weight. White crappie relative abundances were similar to 1997 results. Their catch rates were 20 per hour of electrofishing, 25 per gill net lift, and 26 per trap net lift. Catch rates in 1997 were 94 per hour of electrofishing, 20 per gill net lift, and 4 per trap net lift. White crappie growth rates have improved since 1997 by approximately a half inch for three– and four–years old. However, they are still at the low end of the average range when compared to district averages.

A total of 74 largemouth bass was sampled that weighed 105.41 pounds. Bass accounted for 5 percent of the collection by number and 20 percent by weight. These percentages were similar to 1992 and 1997 figures. They ranged in length from 5.0 to 21.3 inches and 37 percent were longer than 14 inches. The electrofishing catch rate was 73 per hour. Electrofishing catch rates in 1992 and 1997 were 32 and 75 per hour. Bass growth was excellent. Growth rates were at the high end of the average range for one–, two–, and six–year–old bass, and above average for three–, four–, and five–year–olds. No one–year–old bass were sampled in 1997 and only four were collected in this survey. Bass recruitment continues to be low at the lake due to competition with gizzard shad.

Forty-nine channel catfish were sampled that weighed 61.83 pounds. They accounted for three percent of the collection by number and 11 percent by weight. They ranged in length from 9.3 to 21.8 inches and 74 percent were at least 14 inches in length. The electrofishing catch rate was 14 per hour and the gill net catch rate was eight per lift.

Thirty-seven saugeye were sampled that weighed 72.55 pounds. They ranged in length from 6.1 to 24.1 inches. Seventy percent of the saugeye were at least 14 inches in length and 43 percent were at least 18.0 inches. Saugeye accounted for 2 percent of the collection by number and 13 percent by weight. The electrofishing catch rate was 19 per hour and the gill net catch rate was four per lift. The electrofishing catch rate in 1997 was 35 per hour and the gill net catch was 2 per lift. The imposition of the 14 inch minimum length limit has helped produce more bigger saugeye than in 1997. Saugeye growth rates have declined since 1997, but their growth was still good.

A total of 21 black crappie was sampled that weighed 4.78 pounds. They ranged in length from 4.3 to 14.0 inches. Black crappie accounted for 1 percent of the collection by number and weight. Their growth rates improved since 1997, but were still at the low end of the average range when compared to district averages.

Common carp, warmouth, and yellow bullhead comprised the remainder of the sample. They accounted for 2 percent of the collection by number and 22 percent by weight. Most of the weight was attributed to the 19 common carp.

CONCLUSION

Best fishing at Huntingburg Lake would be for channel catfish, saugeye, and big largemouth bass. The channel catfish catch rates were high and most fish were greater than 14 inches. Even

though the overall number of largemouth bass was low, bass fishing for large bass (greater than 18 inches) should be good. Most of the crappie and bluegill fishing opportunities are limited to small fish. The majority of the crappie and bluegill sampled during the survey were less than seven inches.

The major reason for the poor condition of the bluegill and crappie populations, and the low bass recruitment is the large gizzard shad population. Gizzard shad feed heavily on zooplankton throughout their lives. Zooplankton is also the first type of food eaten by small individuals of most fish species, including bluegill, crappie, and bass. Gizzard shad outcompete these other species in zooplankton predation, literally starving the bluegill, small bass, and crappie, which results in stunted panfish populations and low bass recruitment. Since Huntingburg Lake is a water supply lake, the fishery cannot be renovated with chemicals.

Saugeye catch rates continue to be good. The 14 inch minimum length limit has helped increase the numbers of larger saugeye. Seventy percent of the saugeye sampled were greater than 14 inches and 35 percent were greater than 20 inches. It is recommended that the annual saugeye stocking program continue.

Channel catfish fishing opportunities are great at Huntingburg Lake. Catch rates were 14 per hour of electrofishing and eight per gill net lift. These catch rates indicate that a large channel catfish population exists at Huntingburg. Channel catfish fishing is popular at the lake as they ranked second in the 1997 creel survey harvest. It is recommended that the channel catfish stocking regime continue without any changes.

Huntingburg Lake should be resurveyed in six or seven years to monitor the fishery.

LITERATURE CITED

Donan Engineering Co.. 1991. Lake enhancement program feasibility study for Huntingburg Lake. Donan Engineering Co., Inc. 85 pp.