

Reservoir #26

Fish and Wildlife Research and Management Notes

Author: Robin G. Freeman, Naturalist Aide

Date: January 22, 2001

Title: Reservoir 26 in Greene-Sullivan State Forest

INTRODUCTION

Reservoir #26 is a shallow, 40-acre impoundment located on Greene-Sullivan State Forest. It has an average depth of 4.5 feet with a maximum depth of approximately 12 feet. The lake is highly productive and has provided excellent fishing opportunities over the years. In the past, excessive algae blooms have occurred at the lake due to its high productivity. These algae blooms have resulted in oxygen depletion and fish kills.

In 1995, a lake restoration project was initiated to make repairs to the levee. Channels were created in the shallow portion of the lake by pushing sediment up into islands. The restoration altered the physiochemical properties of the lake. Conductivity increased from approximately 400 S to 698 S. Aquatic vegetation, while initially sparse, has increased significantly (Schoenung 1999). Annual herbicide treatments were conducted at the lake prior to the restoration efforts and have been implemented again in 2000.

In the fall of 1995, the fishery at Reservoir #26 was eradicated when repairs were made to the levee during a restoration project. During the spring of 1996, the lake was restocked with 8,040 largemouth bass, 30,095 bluegill and 2,127 channel catfish. Additionally, in the fall of 1996, 10,000 redear sunfish fingerlings were stocked. Initial stockings of redear and channel catfish exhibited poor survival, therefore, an additional 20,932 redear and 1,043 channel catfish fingerlings were stocked in the fall of 1997. An additional 10,118 redear were stocked in the fall of 1999.

The present survey was conducted June 5-6, 2000. The objective of the survey was to continue to monitor the development of the fishery. Fish sampling effort included 0.75 hour of night D.C. electrofishing, two gill nets and two trap nets set overnight. This report presents the results of the survey and recommendations for future work.

RESULTS AND DISCUSSION

The water at Reservoir #26 appeared grey-green with a secchi disk reading of six feet. Dissolved oxygen was satisfactory for game fish survival (5 ppm or more) to a depth of at least eight feet. The pH was normal, both at the surface and at the bottom and the conductivity was 698 S.

Submersed aquatic vegetation included small pondweed, curlyleaf pondweed, Eurasian water milfoil, chara, water lily, creeping water primrose, filamentous algae, and water stargrass. Submersed aquatic vegetation was found to a depth of six feet. Emergent aquatic vegetation included button bush, multiflora rose, American bulrush, and common cattail. In the previous survey, curlyleaf pondweed was the most abundant submersed aquatic plant. Submersed

vegetation was dense at the time of the current survey. Small pondweed was most abundant (70 percent coverage), followed by curlyleaf pondweed (10 percent coverage), and Eurasian water milfoil (10 percent coverage). Chara covered approximately 30 percent of the lake bottom.

A total of 695 fish were collected in this survey. The most abundant species collected was bluegill (88.9 percent) followed by largemouth bass (7.3 percent), redear sunfish (2.2 percent), and channel catfish (1.0 percent). Also collected were three warmouth and one yellow bullhead.

The bluegill sample consisted of 618 fish ranging from 2.2 to 8.2 inches in total length. Less than one percent of bluegill were of harvestable size (over six inches in length). Most bluegill collected (90 percent) were under 4 inches in length. Growth was average for all year classes when compared to bluegill growth in similar impoundments in the district. Most of the bluegill collected were from the 1997 year class, as was found in the 1998 survey (Schoenung 1999).

The largemouth bass sample consisted of 51 fish ranging from 2.9 to 17.5 inches in length with 25 percent of these fish being of harvestable size (14 inches or larger). Largemouth bass growth was slightly below average for one-year-old, average for two-years-old, and above average for three-years-old bass when compared to largemouth bass growth at similar impoundments in the district.

Fifteen redear sunfish were collected, ranging from 6.9 to 8.9 inches in length. All of the fish collected were of harvestable size. There is not enough data to assess growth of this species, but all redear sunfish sampled were three-year-old fish, indicating recruitment may be limited. However, small redear are often under represented in surveys.

Other species collected included seven channel catfish, three warmouth and one yellow bullhead. The current warmouth and yellow bullhead densities are low and not considered a management problem.

CONCLUSION

In 1995, Reservoir 26 was drawn down to make repairs to the aging dam structure. Following completion of the repairs, the fishery was eradicated. The lake was restocked in the spring of 1996. A spot check survey of the fishery in 1997 uncovered poor initial survival of redear sunfish and channel catfish and these species were subsequently restocked in the fall of 1997 (Andrews 1998).

Typically, fish growth is above average following a renovation project such as this due to the lack of competition. As the fish population expands to fill all available habitat and competition increases, growth declines and becomes more representative. The fish in Reservoir 26 should still be expected to exhibit this above average growth pattern. The current survey revealed that this is not the case for several species.

Growth of bluegill was found to be average even though the majority of the fish collected were from the first spawn of the bluegill stocked in 1996. These fish would normally be expected to exhibit above average growth. Bluegill densities appeared too high, particularly for smaller fish.

This is likely resulting in increased competition which is reflected in lower than expected growth. The rapid increase in aquatic vegetation coverage since the last survey may be partially responsible for these high densities. Reservoir 26 had a history of excessive aquatic vegetation prior to the renovation. Excessive aquatic vegetation limits largemouth bass predation, resulting in poor bluegill growth.

The largemouth bass population appears to be doing well with a good number of fish exceeding the 14-inch minimum size limit. Growth of largemouth bass was below the district average for one-year-old fish but well above the district average by the time fish reached three-years-old. Most of the bass collected were from the first spawn of adult fish. Largemouth bass densities appeared to be low compared to other area lakes, suggesting that recruitment may be limited. Largemouth bass often exhibit low recruitment in the presence of a dense bluegill population.

All of the redear collected in the survey were of harvestable size (greater than six inches in length). Reservoir #26 was stocked with redear sunfish in 1996, 1997, and 1999. Most of the fish collected in the survey were from the 1997 year class. None of the redear sunfish stocked in 1999 were collected during the survey.

Only seven channel catfish were collected and it appears the population is low. This is possibly due to heavy fishing pressure and poor survival of the initial channel catfish stocking. Channel catfish are stocked at a rate of 1,043 fish biennially. These stockings should continue in order to maintain a fishable population.

In past years, annual herbicide treatments for submersed vegetation and algae were necessary at Reservoir #26. However, aquatic vegetation was limited in 1998 and 1999 and herbicide treatments were not required. Aquatic vegetation has increased dramatically since the last survey and is now hindering angler access and limiting bass predation on small bluegill. During the summer of 2000, an aquatic herbicide was applied to control excessive vegetation. Annual herbicide treatments should continue at Reservoir #26 to control aquatic vegetation and maintain a balanced bluegill and largemouth bass population.

A general survey of Reservoir #26 should be conducted in 2002 to continue to evaluate the development of the fishery. Areas of special concern for this survey should be overabundant small bluegill, redear sunfish reproduction and channel catfish stocking success.

LITERATURE CITED

Andrews S.J. 1998. 1997 Reservoir #26 Spot Check Survey. Indiana Department of Natural Resources. Indianapolis. 4pp.

Schoenung, B.M. 1999. 1998 Reservoir #26 Fish Management Report. Indiana Department of Natural Resources. Indianapolis. 10pp.

These management and research notes are issued periodically to provide a quick source of information on wildlife surveys and investigations, and various wildlife programs prior to more

formal reports. Any information provided is subject to further analysis and therefore is not for publications without permission.