

Fisheries Research Summary

Division of Inland Fisheries

N.C. Wildlife Resources Commission



Hyc0 Lake Largemouth Bass Assessment

Hyc0 Lake is a 3,751-acre impoundment that is used as a cooling reservoir for Progress Energy's Roxboro Steam Electric Plant and is also a source of recreation. Hyc0 Lake contains many fish species of interest to anglers including sunfish, catfish, white crappie, black crappie and largemouth bass.

The largemouth bass fishery in Hyc0 Lake is governed by a minimum size limit of 14 inches with a creel limit of five fish per day, with two fish allowed below 14 inches. Periodic sampling of largemouth bass populations is needed to determine if current size and creel regulations are adequately protecting the fisheries. The objective of this survey was to obtain stock assessment data needed to evaluate and manage largemouth bass in Hyc0 Lake.



Largemouth bass were sampled in early May 2010 by Commission biologists using shoreline electrofishing. All fish collected were measured (total length, inches) and weighed (lbs). A subsample of fish were sacrificed for age determination using sagittal otoliths (ear bones) and the remaining fish were returned to the reservoir.

In general, Lake Hyc0 supports a fair largemouth bass fishery. Mean catch-per-unit effort was 73 fish/hour of electrofishing and is above the average range for Piedmont reservoirs (30-60 fish/hour) suggesting a high density of largemouth bass. However, only 20 percent of the largemouth bass collected were greater than 14 inches (Figure 1).

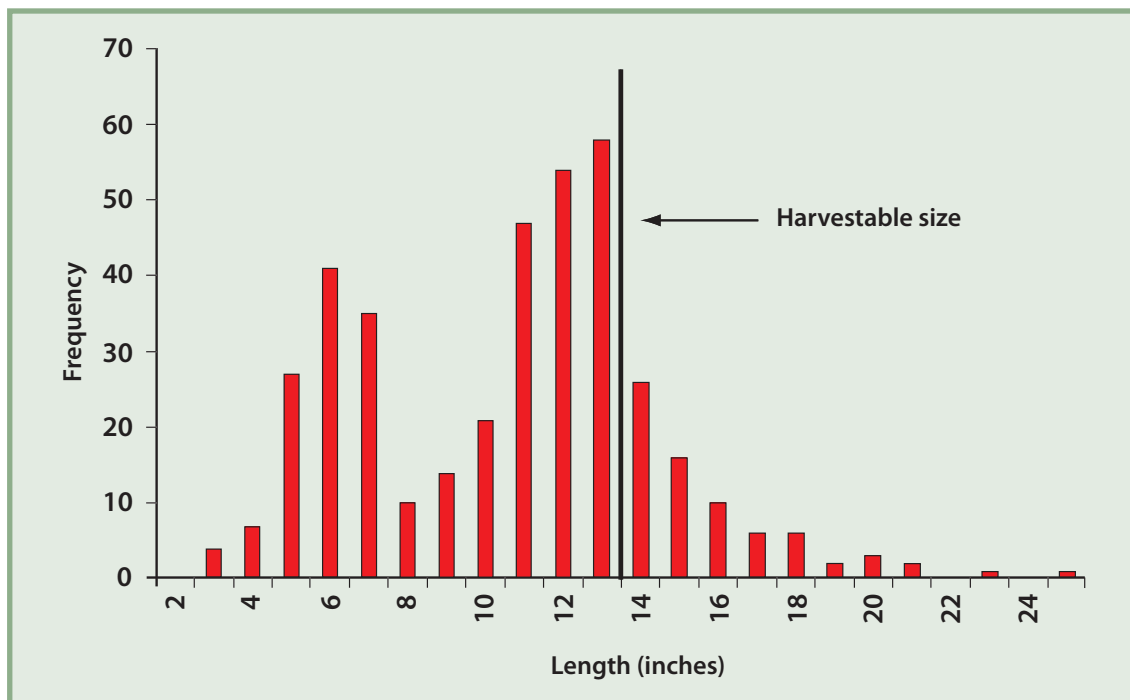


Figure 1 - Largemouth bass size structure at Hyc0 Lake, 2010. The black line represents the 14 inch minimum size limit.



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Growth rates are similar to those reported previously at Hycó Lake as largemouth bass reached 14 inches around 4 years of age and suggest average growth (Figure 2).

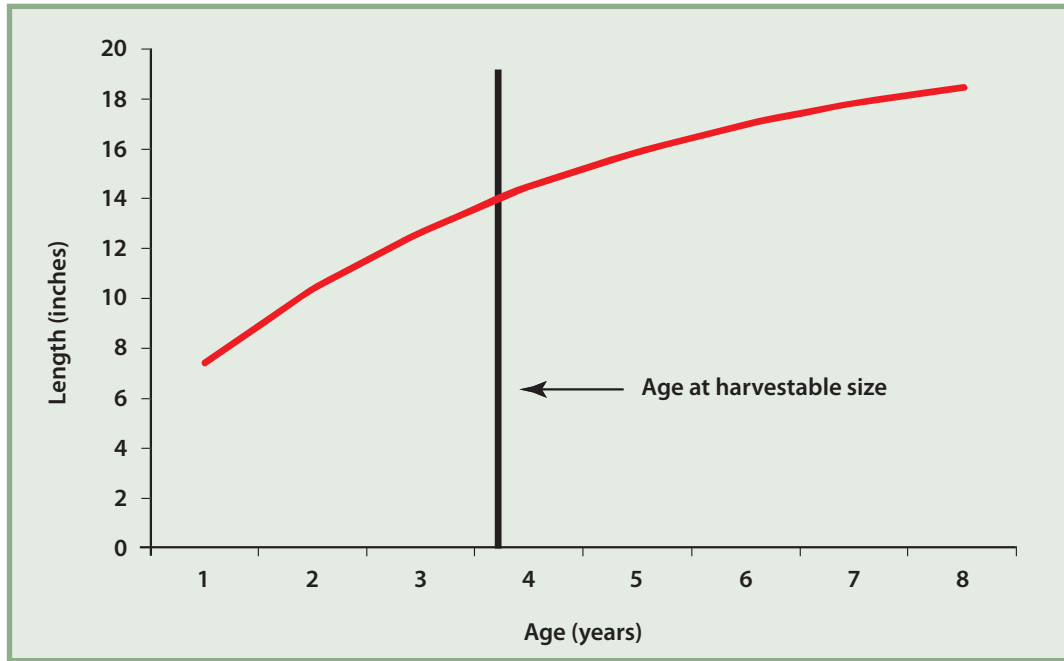


Figure 2 - Growth curve for largemouth bass at Hycó Lake in 2010. The black line represents the age largemouth bass reach 14 inches.

Mean relative weight values, a measure of plumpness, were well below the ideal value of 100 for all size classes. These results indicate that the fish are in poor body condition and suggest that the population could be overcrowded. The largest fish captured measured 20 inches and weighed 4 pounds.

Overall, the largemouth bass population appears to be in less than ideal shape. The lake is essentially divided into two areas, an upper section with productive habitat that maintains larger fish as well as a higher abundance of largemouth bass and a lower section that has decreased productivity and contains smaller fish in poorer condition. The overall quality of the fishery is reduced because of the poor conditions observed in the lower section of the reservoir. However, there is still concern of overcrowding throughout the entire population. Current size and creel regulations are adequately protecting the largemouth bass in Hycó Lake, but the fishery would benefit from legal harvest of largemouth bass, particularly those that are less than 14 inches.



Overall, the largemouth bass population in Hycó Lake appears to be in less than ideal shape.

Biologists recommend that Hycó Lake continue to be managed under the general statewide regulation of a 14-inch minimum length limit with a creel limit of five largemouth bass per day including two fish less than 14 inches. They also recommend that Commission personnel resample Hycó Lake in three to four years.

