

Fisheries Research Summary

Division of Inland Fisheries

N.C. Wildlife Resources Commission



Cape Fear River Black Bass Survey

Every three years, fisheries biologists with the N.C. Wildlife Resources Commission conduct an electrofishing survey of largemouth bass and spotted bass (black bass) in the Cape Fear River. Black bass populations in the Cape Fear River are currently managed with a five-fish daily creel limit (in aggregate) and a 356-mm (14-in) total length (TL) minimum size limit.

Survey objectives are to document changes in these populations over time that will help to make better management decisions to improve angling opportunities for the public. Commission biologists look specifically at fish abundance, population size structure, and age and growth of these species. They also calculate catch rates or catch-per-unit-effort (CPUE) as the number of fish collected greater than 8 inches per hour spent electrofishing.

Commission personnel collected black bass from the Cape Fear River during May and June 2011 using shoreline electrofishing. All fish were identified and then measured (total length, inches) and weighed (lbs.). A subsample of fish was sacrificed for age determination using sagittal otoliths (ear bones); the remaining fish were returned to the river.

They collected 69 largemouth bass and 96 spotted bass from the river during 2011. This was the second consecutive collection since inception of the spring electrofishing survey in 2003 in which spotted bass outnumbered largemouth bass in the sample. CPUE for largemouth bass greater than 8 inches was 17.2 fish/hour while spotted bass greater than 8 inches were captured at a rate of 24.0 fish/hour. CPUE for largemouth bass 14 inches and greater (the minimum legal size limit) was 4.0 fish/hour while CPUE for spotted bass greater than 14 inches was 0.0 fish/hour.

Currently, the Cape Fear River black bass population is dominated by small fish with 78% of all largemouth bass collected smaller than the minimum legal size limit of 14 inches and 100% of all spotted bass smaller than the legal limit.



Keith Ashley, District 4 fisheries biologist with the Commission, holds two Cape Fear River largemouth bass in excellent condition.



While this may indicate good reproduction for both species, it also suggests little opportunity exists for anglers to harvest fish as most are below the legal size limit. Largemouth bass ranged in size from 4 to 22 inches with the largest fish weighing 5 lbs. Spotted bass ranged in size from 4 to 13 inches with the largest fish weighing slightly over 1 lb. (Fig. 1)

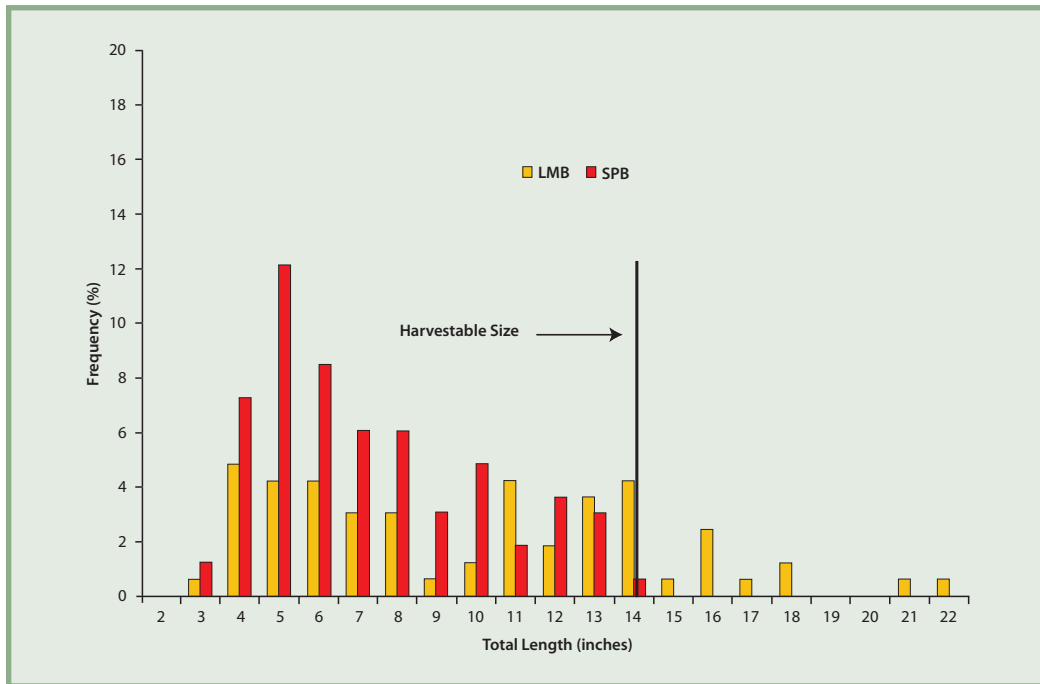


Figure 1. Cape Fear River black bass size structure in 2011. The black line represents the 14-inch minimum size limit.

Under current statewide regulations, (five-fish daily creel limit (in aggregate) and a 14-in. total length minimum size limit, spotted bass do not attain harvestable size in the Cape Fear River. No harvestable size bass were collected in 2011 and the numbers of age-5 and age-6 spotted bass remain low. No spotted bass older than age-6 were collected, suggesting survival is low beyond age-6.

Commission biologists are considering regulation proposals that would allow the harvest of smaller spotted bass and largemouth bass in the Cape Fear River. Commission personnel will continue monitoring black bass abundance and growth rates in the Cape Fear River and collect otoliths for age data again in 2014.



Largemouth bass larger than 14 inches were captured at a rate of 4 fish per hour in 2011.