

# An Overview of the Falls Lake Largemouth Bass Fishery (2007-2015)

February 2018



Falls Lake is a 12,500-acre impoundment in the upper Neuse River drainage, located approximately 12 miles northwest of Raleigh, NC. Falls Lake was impounded in 1982 and is managed by the United States Army Corp of Engineers. Falls Lake is used for flood control, downstream water quality, fish and wildlife enhancement, recreation, and is the main water supply for the city of Raleigh. Its proximity to the Triangle, diverse sport fish opportunities, and unique habitat make it a popular destination for anglers.

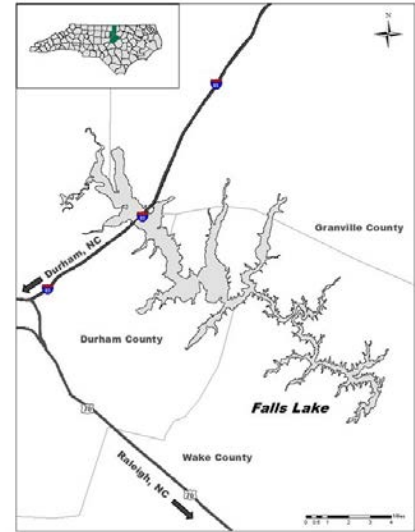
The N.C. Wildlife Resources Commission (NCWRC) has been conducting routine surveys of the Largemouth Bass fishery on Falls Lake since 1986. These routine surveys allow NCWRC biologists to monitor the fishery and ensure that size and creel regulations are appropriate for achieving management goals. Historically, the Largemouth Bass fishery was managed by a minimum size limit of 16 inches and a daily creel limit of five fish. However, in 2010 to provide more opportunities for harvest, the regulation was changed to the statewide Largemouth Bass regulation, which includes a minimum size limit of 14 inches and a daily creel limit of five fish, with the exception that two fish may be less than 14 inches. Analysis of multi-year data is important to determine long-term trends and changes to a fishery due to varying environmental factors or increased fishing pressure.

## Project Objectives:

- Give an overview of the Largemouth Bass fishery in Falls Lake over the past eight years.
- Monitor changes in size structure, condition, recruitment, and growth within the Largemouth Bass fishery to determine if current size and creel regulations are appropriate for the fishery.

## Methods:

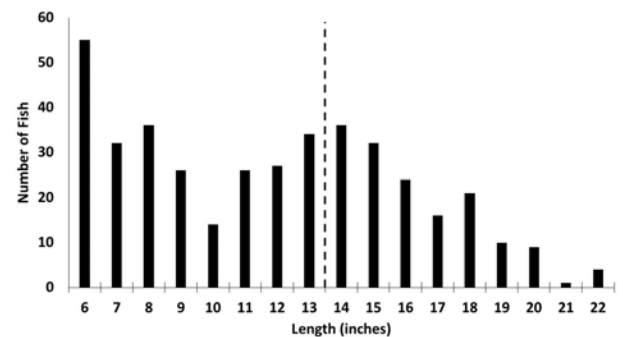
- Survey the Largemouth Bass fishery every other year (2007–2015) by electrofishing the shoreline during the spring season.
- Collect and analyze data needed to assess the population to determine relative abundance, condition, age and length distribution, and growth.
- When collected, age and growth data is obtained by sacrificing a sub-set of Largemouth Bass and removing the otoliths (ear bones).



A map of Falls Lake, located in the upper Neuse drainage

	2007	2009	2011	2013	2015
<b>Sample Size</b>	341	301	385	405	403
<b>Relative Abundance (fish/hour)</b>	67	73	38	81	62
<b>% Harvestable (Over 14 in.)</b>	52	43	41	65	38
<b>Largest Fish</b>	22 in 7 lbs	23 in 7 lbs	23 in 6.8 lbs	22 in 7 lbs	22 in 7.3 lbs

Survey results from the past 8 years (2007–2015) of Falls Lake Largemouth Bass



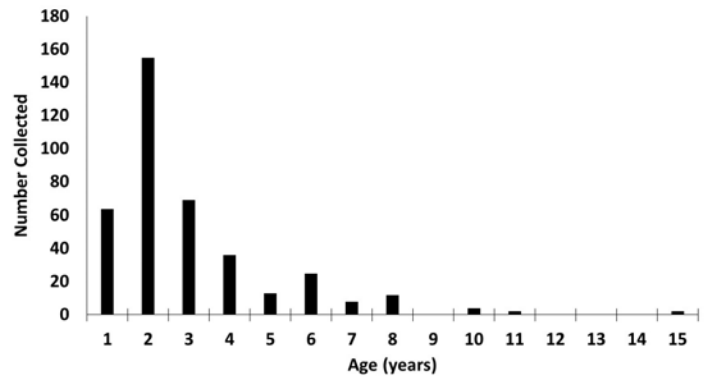
Length distribution for the 2015 Falls Lake Largemouth Bass survey. The percentage of fish surveyed that were above the harvestable size limit are shown above.



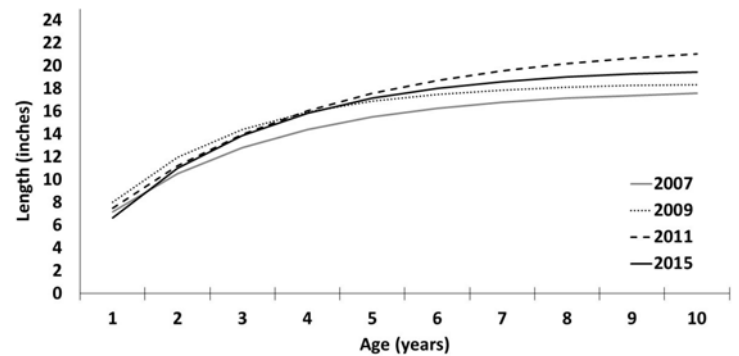
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## Results:

- Falls Lake supports an excellent Largemouth Bass fishery and is being appropriately regulated.
- Survey results indicate that the abundance of Largemouth Bass and the size structure of the fishery has been relatively stable with slight fluctuations over the past eight years. These fluctuations are normal and usually represent strong age classes within the fishery, often due to variable recruitment in relation to environmental factors. Over the past five surveys, the largest fish has consistently been around 7 pounds and 22.5 inches.
- The 2015 Largemouth Bass survey indicates a lower quantity of harvestable sized fish (38% greater than 14 inches), than reported in the 2013 survey (65%). Although values in 2015 were closer to those found in 2011 (40%) and still considered good.
- Body condition, a term that describes the weight of a fish relative to its length, is represented by a numerical value where the average range for Largemouth Bass in a North Carolina piedmont reservoir is between 90 and 100. Overall, Largemouth Bass in Falls Lake display average condition. To improve overall Largemouth Bass condition, Threadfin Shad were stocked into Falls Lake in 2014 and 2015.
- Growth rates have not changed over the past eight years. Largemouth Bass reach 14 inches around age 3, which is average for a piedmont reservoir. It takes about a decade for these fish to reach the memorable size of 20 inches.
- Age analysis from the 2015 survey shows healthy Largemouth Bass recruitment by the presence of younger bass and some fish surviving up to 15 years in Falls Lake.



Age structure for the 2015 Falls Lake Largemouth Bass survey. An age-length key was constructed to estimate ages of fish collected, measured, and released, utilizing known ages from sacrificed fish.



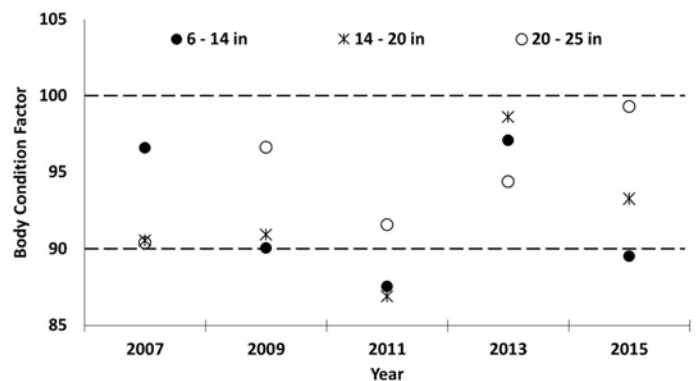
Growth rates for Falls Lake Largemouth Bass over the past 8 years (2007-2015). Growth was only calculated for survey years where age data was collected.

## What's next?:

- Continue monitoring Largemouth Bass in Falls Lake every two years to ensure proper management of the fishery.
- The next survey is scheduled for 2019, when additional otoliths will be collected for age and growth analysis.

## For more information, contact:

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Body condition of Falls Lake Largemouth Bass over the past 8 years (2007-2015). The dotted lines indicate the upper and lower range of average body conditions for Largemouth Bass in a piedmont reservoir.

