



An Overview of the Jordan Lake Largemouth Bass Fishery 2006-2016

July 2020

B. Everett Jordan Reservoir (Jordan Lake) is a 13,943-acre impoundment at the confluence of the Haw River and New Hope Creek in Chatham County approximately 30 miles due west of Raleigh, N.C. Jordan Lake was impounded in 1982 by the United States Army Corps of Engineers and provides drinking water for eight surrounding municipalities. The lake also provides flood control for the cities along the Cape Fear River downstream to Wilmington, N.C. The lake's proximity to the Triangle, diverse fish community, and ample amount of fish holding cover make it a popular destination for anglers. The N.C. Wildlife Resources Commission (Commission) has been conducting routine surveys of the Largemouth Bass fishery on Jordan Lake since 1983. These routine surveys allow Commission biologists to monitor the fishery to ensure that size and creel regulations are appropriate for achieving management goals. Currently, the Largemouth Bass fishery in Jordan Lake is managed by a daily creel limit of 5 fish and a size limit of 14 inches, with the exception that 2 fish may be less than 14 inches total length. Commission biologists have compiled the Largemouth Bass data for Jordan Lake to create a multi-year dataset that can be used to examine long-term trends in the fishery.

Project Objectives:

- Provide a 10-year summary of the Largemouth Bass fishery in Jordan Lake from 2006 to 2016 using data from 6 surveys.
- Monitor changes in recruitment (number of fish reaching harvestable size), size structure, condition, and growth of Largemouth Bass within the population to determine if current size and creel regulations are appropriate for the fishery.

Methods:

- Survey the Largemouth Bass fishery every three to six years by electrofishing the shoreline during the spring spawning events.
- Collect and analyze data needed to assess the population and determine population parameters such as relative abundance, condition, age and length distribution, and growth.

Results:

- Jordan Lake supports an exceptional Largemouth Bass fishery as fish larger than 5 pounds are very common. A total of 130 out of 2,595, or 5%, of Largemouth Bass captured in Jordan Lake between 2006 and 2016 weighed greater than 5 pounds and measured more than 20 inches long.
- Largemouth Bass size structure in Jordan Lake has been relatively stable over the past 10+ years. A strong year class (likely born during 2005 or 2006) was present in the 2008 survey where almost 15% of the Largemouth Bass captured were 14-15 inches long. This group was also observed in the 2014 survey as healthy 18 to 20-inch fish (Figure 1). The group remained dominant and made up almost a quarter of the 2014 captures (24.2%).

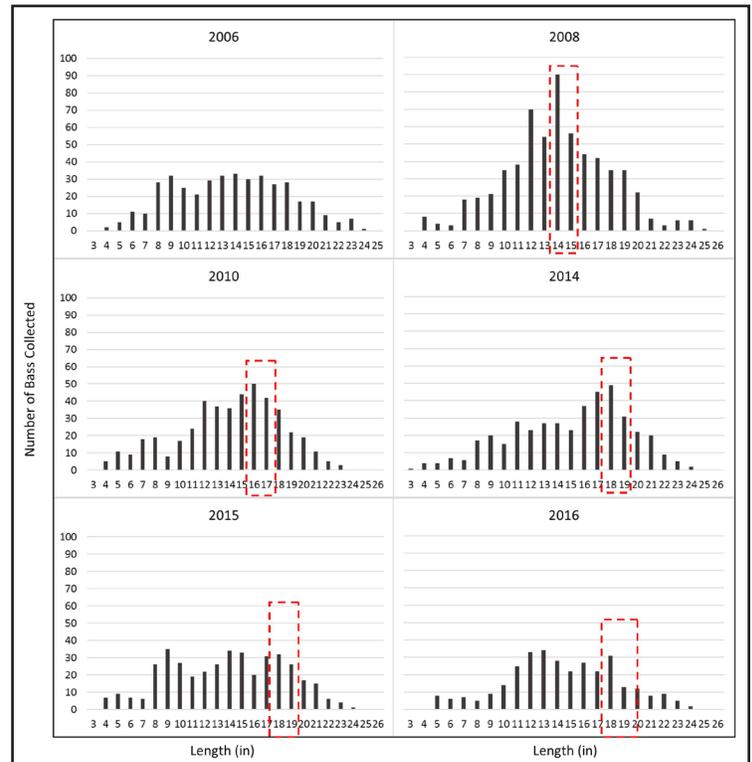


Figure 1. Size structure of the Largemouth Bass population of Jordan Lake between 2006 and 2016. The red boxes track the 2006 size class as they grew through time.



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- Over this period, the size structure of the population has remained in a healthy balance. The most recent survey in 2016 indicated a good balance of both large and smaller fish looking very similar to other survey years.
- Body condition, a term that describes the weight of a fish relative to its length, can be translated into an index value where the average range for Largemouth Bass in a North Carolina Piedmont reservoir is between 90 and 100. Overall, Largemouth Bass over this 10-year period displayed average, and in some years, above average body condition values (Figure 2). In 2008, Largemouth Bass exhibited an exceptional average body condition of 110.
- Growth rates have been very constant in Jordan Lake with it taking between 5 and 6 years for a Largemouth Bass to reach 18 inches (Figure 3).
- The total number of harvestable bass observed in surveys appear to have decreased slightly over time (Table 1), but this is likely due to normal variation in sampling effort and water temperature ranges during each survey. The catch per unit effort (CPUE), a measure of the number of fish collected relative to the effort put into each sample, has been steady with Jordan Lake consistently producing more than 40 fish per hour of electrofishing.
- In the most recent survey (2016), fish ages 2-4 dominated the sample (Figure 4). This is not uncommon in many North Carolina Piedmont reservoirs, and these young fish provide a base for the Largemouth Bass population that will grow to become larger adults.
- Overall, the Jordan Lake Largemouth Bass population contains healthy fish with high body condition values and numerous large fish in the range of sizes preferred by anglers. Some year classes have been stronger than others, but recruitment to the 16-to 20-inch range and growth have been consistent over the past 10 years.

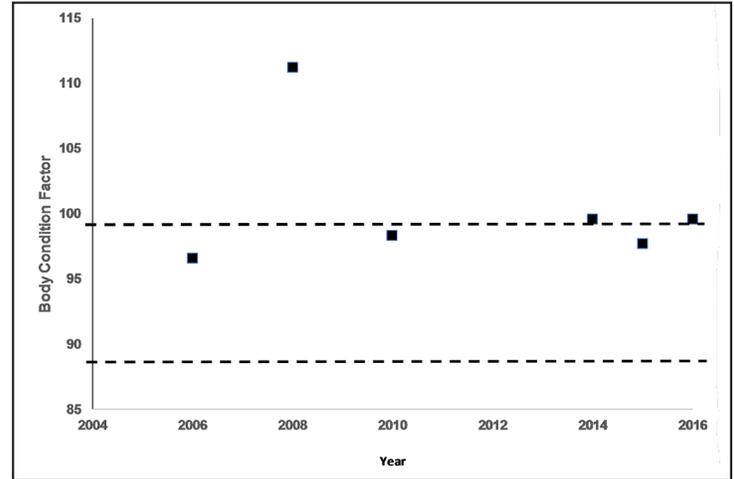


Figure 2: Overall body condition of Jordan Lake Largemouth Bass between 2006 and 2016. The dotted lines represent the average range for Piedmont reservoirs.

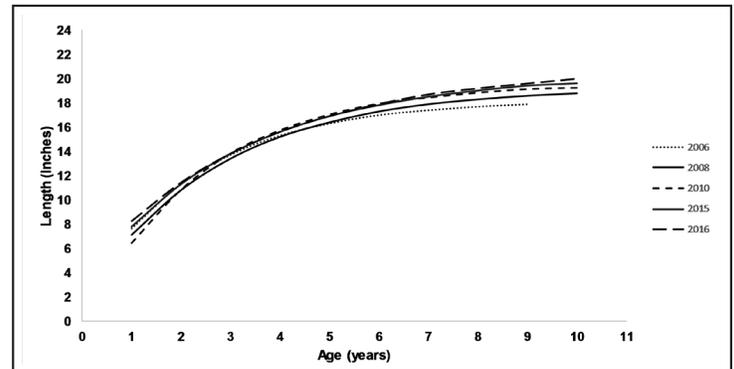


Figure 3: Growth curves of Largemouth Bass in Jordan Lake.

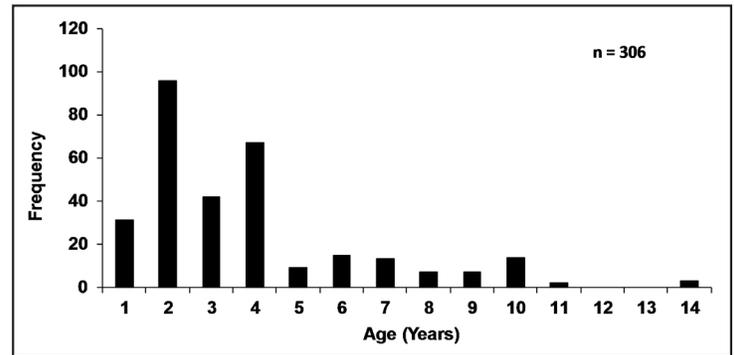


Figure 4: Age structure of Largemouth Bass in Jordan Lake surveyed in 2016.

What's Next:

- The Commission will continue to monitor the Jordan Lake Largemouth Bass fishery every 4 to 6 years.
- During the next survey, otoliths will be collected for current age and growth analyses.

For more information, contact:

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	2006	2008	2010	2014	2015	2016
Sample size	401	617	455	422	403	320
CPUE (fish/hr.)	67	NA	61	66	81	49
% Harvestable (Over 14in)	51	56	51	64	44	47
Largest Fish	23 in 7.5 lbs	23 in 9.1 lbs	22 in 11.1 lbs	22 in 7.3 lbs	23 in 8.1 lbs	23 in 8.8 lbs

Table 1: Summary of the Largemouth Bass population surveys in Jordan Lake between 2006 and 2016.

