

The Black Crappie Population at Randleman Lake: What's changed in the last decade?

March 2021



Randleman Regional Reservoir (Randleman Lake) is a 3,007-acre reservoir located on the Deep River in Randolph County and is used for recreation and water supply (Figure 1). Randleman Lake was impounded in 2006, stocked with Largemouth Bass *Micropterus salmoides* and Channel Catfish *Ictalurus punctatus* fingerlings in 2007, and opened to the public in March 2010.

Biologists with the N.C. Wildlife Resources Commission (Commission) routinely monitor the sportfish populations in Randleman Lake to ensure the regulations reflect the needs of current populations. Below are the results highlighting how the Black Crappie (*Pomoxis nigromaculatus*) fishery in Randleman Lake has changed over the last decade:

Methods:

- Using trapnets, biologists surveyed Black Crappie in Randleman Lake during the fall months in 2009, 2011, 2015, and 2019.
- All fish were weighed and measured, and otoliths (ear bones) were removed from a sub-set of fish to assess age structure and growth.
- There are many parameters used to assess the overall health of a population, but the following are important when planning fishing trips:
 - ◊ CPUE (catch per unit of effort): For trapnet surveys this is the number of fish collected per net per night of sampling.
 - ◊ Body Condition: This is an index of how much a fish should weigh relative to its length. Fish with body conditions in the 90s are considered healthy.
 - ◊ The number of fish that are of harvestable or desirable size and/or the number of fish over a certain weight.
 - ◊ Growth: Black Crappie in the Piedmont region typically reach 8 inches by age 2. Age distribution can also tell biologists information about recruitment and if the population appears to consist of mostly younger or mostly older individuals, or a mix of all age classes.

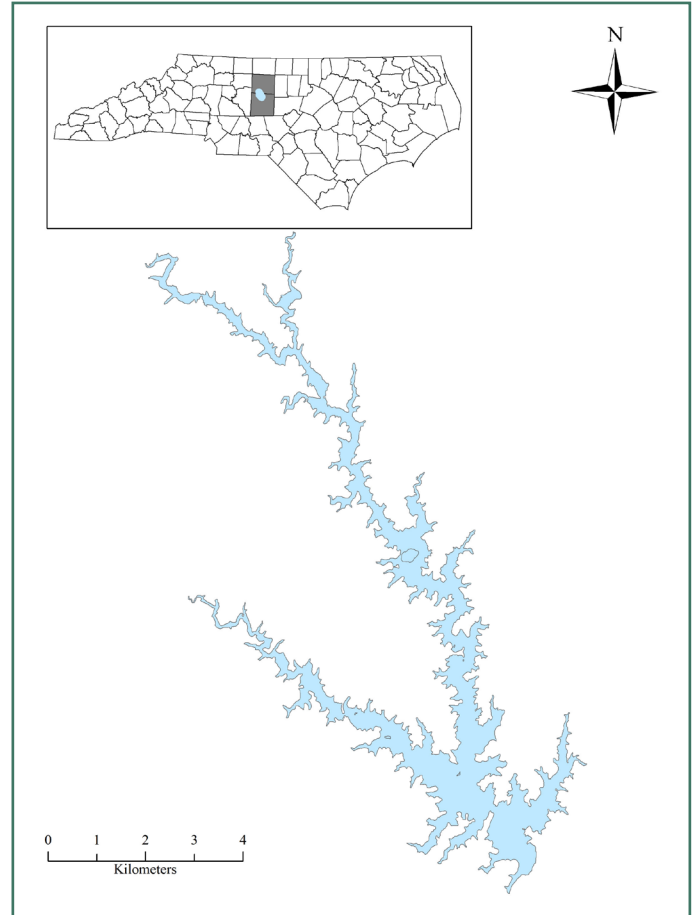


Figure 1: Map of Randleman Lake and its location relevant to Guilford and Randolph counties



Black Crappie

Illustration: Duane Raver



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Results so far:

- CPUE and body conditions of Black Crappie in Randleman Lake were average for Piedmont reservoirs and have remained relatively unchanged over the last decade.
- Growth was average (fish reached 8 inches by age 2) from 2009 – 2015. In 2019, there was an increase in growth where fish reached 11 inches by age 2. This increase in growth is likely related to an incoming strong year class coupled with little competition or a shift in the density and health of the forage base populations.
- In addition, this population has shifted from one dominated by younger individuals in 2009 (as it was a new lake), to one that is more balanced and contains several older age classes.
- This shift in size distribution and increase in growth resulted in an increase in the number of fish that are over 10 in from 2% in 2009 to 66% in 2019. The percentage of fish weighing over a pound also increased from less than 1% in 2009 to 19% in 2019.

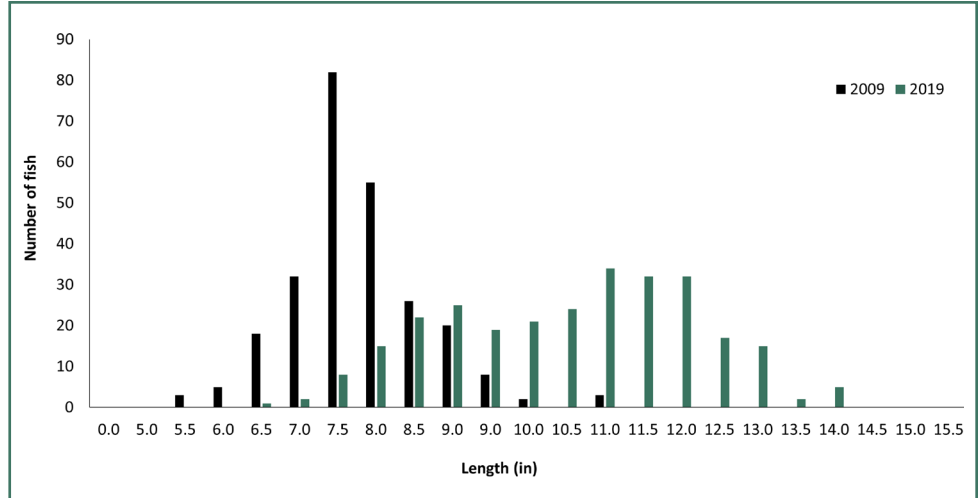


Figure 2: Length distributions in 2009 and 2019, where the x-axis labels are length categories in increments of 0.5 inch. For example, fish in the column labeled 5.0 in are fish that fell into the length category of 5.0 to 5.5 in.

What's Next:

- Biologists will continue to monitor the Black Crappie population every four to five years.
- To view the current regulations, [download a Regulations Digest](#).
- For information on fisheries near you please call or email the district biologist in your area.
- To view other fact sheets about fisheries in your area, visit our website.

For more information, contact:

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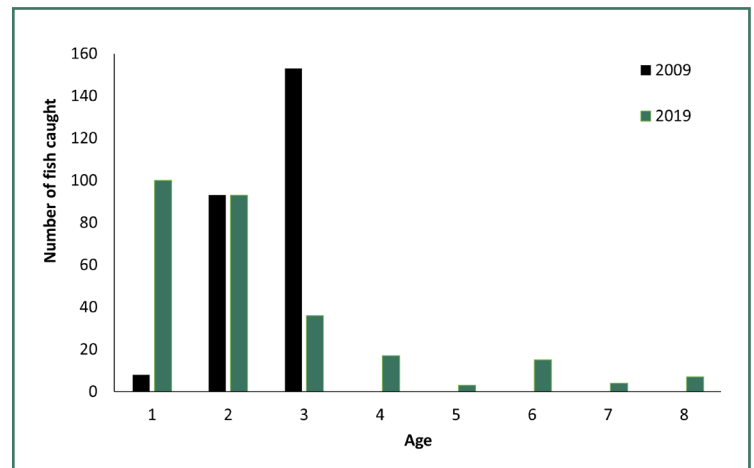


Figure 3: Age distributions for 2009 and 2019, where the x-axis label is the age of the fish and y-axis is how many fish were collected for each age.

| Year | CPUE | % >10 in | % >1 lb | Body Condition | Length at Age 2 (in) |
|------|------|----------|---------|----------------|----------------------|
| 2009 | 8 | 2 | <1 | 91 | 8 |
| 2011 | 8 | 20 | <1 | 85 | 8 |
| 2015 | 13 | 18 | <1 | 88 | 9 |
| 2019 | 6 | 66 | 19 | 90 | 11 |

Table 1: This table lists the results for the key population parameters for Black Crappie collected in 2009, 2011, 2015, and 2019.

