



Fisheries Research Fact Sheet

Badin Lake Black Crappie Population Assessment After a Regulation Removal

August 2022

The N.C. Wildlife Resources Commission recently conducted a trap net survey at Badin Lake to determine the status of the Black Crappie population and to evaluate the management of the fishery. Located in Stanly and Montgomery counties, Badin Lake is between Tuckertown and Falls reservoirs on the Yadkin-Pee Dee River chain of reservoirs. Badin Lake, a 5,350-acre reservoir, is a popular destination for North Carolina anglers with several species

of interest including Largemouth Bass, Striped Bass, White Bass, White Perch, Black Crappie, Bluegill, Flathead Catfish, and Blue Catfish. Badin Lake generally produces a quality Black Crappie fishery and the population is surveyed every three years by fisheries staff.

In 1991, an 8-inch minimum size limit and 20-fish per day creel limit were enacted at Badin Lake. The objectives were to produce larger fish and increase harvest by anglers.

Data collected and analyzed by fisheries biologists over the last 20 years have demonstrated the regulation to be largely ineffective. Fisheries biologists removed harvest restrictions on crappies at Badin Lake in 2020 to promote harvest of 6- to 8-inch crappies, leading to reduced competition and improved growth. Evaluating population responses to regulation changes is critical for proper sportfish management.

Project Objectives:

- Determine the status of the Black Crappie population by analyzing relative abundance, length distribution, age distribution, and growth.
- Compare these results to previous survey results to determine the effects, if any, of the regulation removal on the crappie population.

Methods:

- In November 2021, 12 trap nets were set perpendicular to the shore, usually on or near a point. The trap nets were checked daily for four days to remove any fish collected.
- Black Crappies were identified to species, weighed, and measured. Otoliths (ear stones) were removed from a subsample of fish to determine age and the rest of the fish were released back into the lake unharmed.

Results:

- Fisheries biologists collected 566 Black Crappies over 48 net-nights for a catch rate of 11.8 fish per net-night, nearly double the Badin Lake average of approximately 6 fish per net-night in previous years (Table 1).

Year	Fish per net night	% 8 in and larger	% 10 in and larger	% Age 3 and older	Mean length at age 2 (in)	Mean length at age 3 (in)
2003	5.3	83	46	9.9	9.5	10.7
2006	7.2	92	34	15.6	10.6	11.9
2009	3.8	89	51	12.8	10.3	12.1
2012	7.1	93	56	3.5	10.5	10.8
2015	7.9	97	71	9.0	10.5	11.5
2018	7.0	99	44	8.4	11.2	12.4
2021	11.8	97	35	11.0	10.3	11.7

Table 1. Population parameters of Black Crappies collected from Badin Lake with trap nets in November 2003, 2006, 2009, 2012, 2015, 2018, and 2021.



Badin Lake Black Crappie Population Assessment After a Regulation Removal

- The high catch rates observed in 2021 are likely due to strong year classes produced from 2018–2020. Badin Lake continues to have consistent recruitment and no consecutive weak year-classes have been produced since 2008–2009.
- Fast growth is typical at Badin Lake. Despite the increased catch rate, adequate forage did not seem to be lacking as growth rates remained high in 2021 (Table 1). Although the average size of an age-2 Black Crappie in a Piedmont reservoir is around 9 inches, Black Crappies at Badin Lake reached this length at age-1 (Figure 1).
- Approximately 97% of the population was greater than 8 inches (Figure 2). Because this value is typically high at Badin Lake (Table 1), it also indicates that a small portion of the population was affected by the old minimum length limit of 8 inches.
- Thirty-five percent of the fish surveyed were greater than 10 inches in length (Figure 2), indicating that plenty of larger fish were available for angler harvest. This value has varied over time (Table 1) and is primarily driven by the number of younger fish in the population.
- The largest crappie collected weighed 1.5 pounds and the oldest fish was 4 years old (Figure 3). Nearly 4% of the fish collected weighed a pound or more.
- Overall, while size and age distribution and growth vary over time, the results of this survey indicate that removing the regulation has not had an immediate effect on the population.

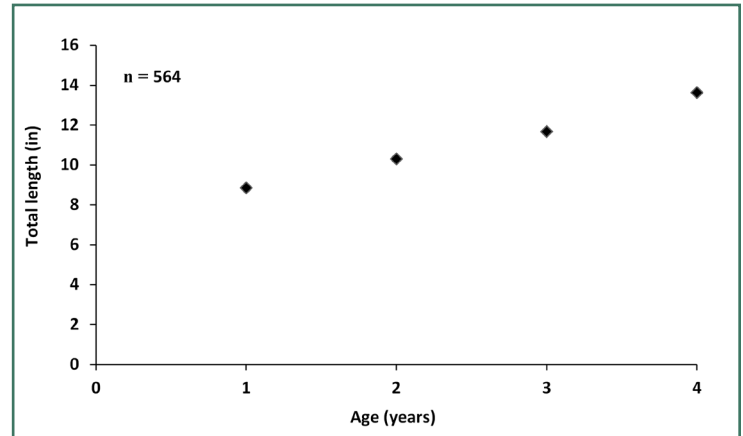


Figure 1. Mean total length at age of Black Crappies collected from Badin Lake with trap nets, November 2021.

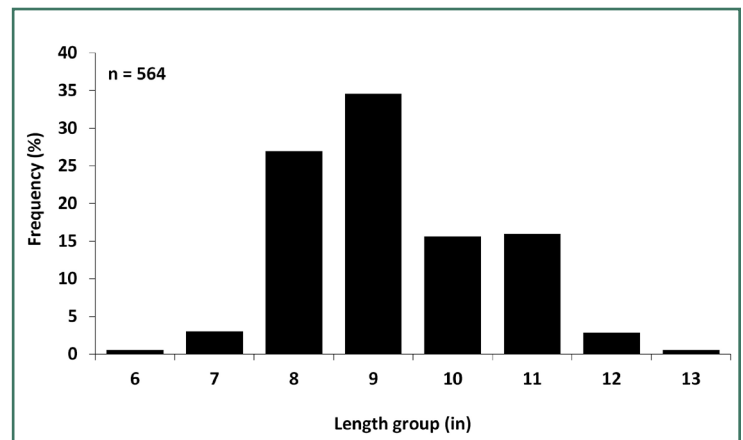


Figure 2. Length frequency distribution of Black Crappies collected from Badin Lake with trap nets, November 2021.

What's Next?

- Long term monitoring of the Black Crappie population in Badin Lake will provide a more comprehensive review of any potential changes in the future. Currently the reservoir is sampled every three years and the next survey is planned for the fall of 2024.
- To view current regulations, [download](#) the latest NCWRC Regulations Digest or view [online](#).
- For information on fisheries near you please call or email the district biologist in your area.
- [View other fact sheets about fisheries](#) in your area.

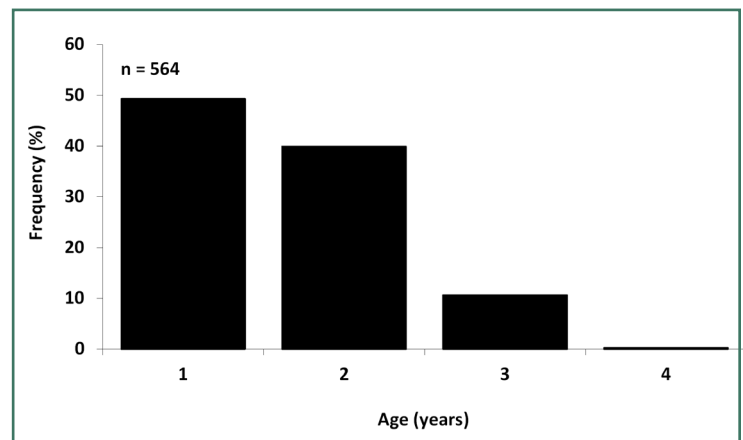


Figure 3. Age frequency distribution of Black Crappies collected from Badin Lake with trap nets, November 2021.

Contact

Troy Thompson, District 6 Fisheries Biologist I
910-439-2006; troy.thompson@ncwildlife.org

