



Effects of a Regulation Change on White Bass in Jordan Lake

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Photo by Melissa McGaw

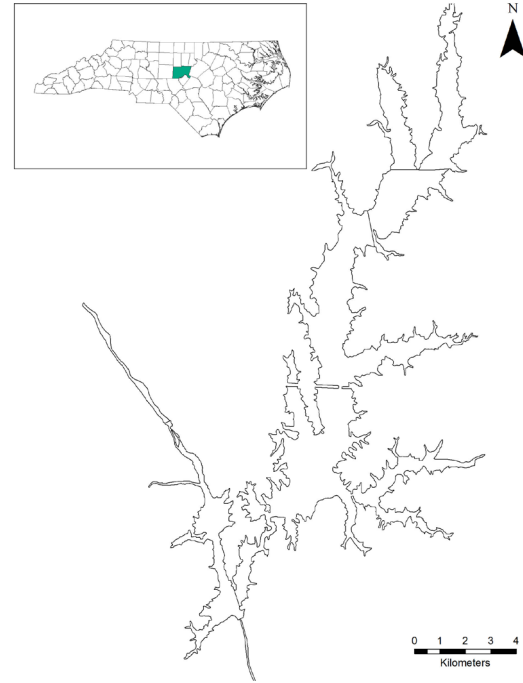
The N.C. Wildlife Resources Commission (NCWRC) is monitoring changes in the population structure, growth, and body condition of White Bass Morone chrysops in Jordan Lake, located in the Piedmont region, in order to understand how regulations can affect local populations.

White Bass are an important sport fish in the Piedmont and Mountain regions of North Carolina. Population assessments throughout both regions have documented declining populations as a result of negative interactions from introduced species as well as high rates of harvest from anglers. Research conducted at North Carolina State University on Jordan Lake shows that fishing mortality, or the number of fish removed from the lake via fishing, might be negatively impacting their populations, especially during their spring spawning run. Routine monitoring surveys also show that White Bass in Jordan lake exhibit symptoms of an over-fished population; fast growth, a high abundance of young fish and a lack of older fish, and excellent body conditions. White Bass mature at age 1 for males and age 2 for females and have been shown to live up to 14 years. Fast growth can be an issue if White Bass reach a desired length and are removed before they can mature and reproduce. Additionally, the short lived nature of these populations depend on successful spawning events each year making them vulnerable to unfavorable spawning conditions and susceptible to frequent changes in population size.

The NCWRC is proposing regulation in 2018 to change the daily creel limit from 25 fish a day with no minimum length to 10 fish a day where no fish less than 14 in can be kept. Monitoring this population throughout the implemented changes will shed light on how regulations affect populations and will improve our understanding of the year to year fluctuations of population characteristics for White Bass.

Project Objectives:

- Measure the effects of the regulation change by documenting changes in population structure, growth, and condition of White Bass before and after the regulation change.
- Monitor the frequency of occurrence of strong age classes or successful spawning years in relation to environmental factors to predict good years for fishing.



Map of Jordan Lake showing its location in Chatham County, North Carolina.



White Bass Morone chrysops are in the same family as Striped Bass Morone saxatilis and White Perch Morone americana, all of which are present in Jordan Lake.



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Methods:

- Fish are collected annually in December and/or January at six to eight sites using multi-mesh gillnets.
- Nets that are 8 feet in height are set near the bottom perpendicular to shore or underwater shoals in 12 to 25 feet of water and are left to “soak” overnight.
- In the field, otoliths, or ear bones, from a sub-sample of White Bass are removed for age structure and growth analyses. Fish are weighed and measured to assess size structure, recruitment, and body condition.

Results:

- NCWRC has surveyed White Bass annually since 2013. Most fish collected are age 2 or younger. Fish have exceedingly high body conditions and reach 12 inches around age 1. To date, strong year classes were represented by age-1 fish in 2013 and 2015. Due to the lack of older fish and the life history of White Bass, this fishery is heavily reliant on the frequent production of strong year classes.

What's next?:

- Assess the effectiveness of the regulation change by continuing to survey the population after the regulation is enacted. The proposed regulation should allow White Bass a chance to spawn before they can be removed by anglers from the population.
- Research and analyze the conditions that foster successful spawning years to ensure the production of strong year classes.
- Determine impacts of introduced species like White Perch on White Bass life history.



NCWRC Fisheries Technician Madison Polera deploys a buoy used to suspend the gillnets in the water column, gillnets are marked with one buoy on each end.

For more information, please contact:

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How You Can Help

Your purchase of fishing tackle, fishing licenses and motorboat fuel helps support fisheries work conducted by N.C. Wildlife Resources Commission fisheries biologists through the Sport Fish Restoration Program administered by the U.S. Fish and Wildlife Service.

