

**A FISHERY MANAGEMENT PLAN FOR  
LAKE GASTON AND ROANOKE RAPIDS LAKE, 2011-2015**

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It is the mission of the North Carolina Wildlife Resources Commission's (NCWRC) Division of Inland Fisheries to manage freshwater fisheries through research, fisheries management, hatchery operation, and habitat conservation. The continued management, regulation, and enhancement of the fisheries at Lake Gaston and Roanoke Rapids Lake are a vital goal in fulfilling this mission. This goal will be achieved by meeting species specific objectives through research, harvest regulations, habitat manipulations, and stocking as necessary.

This document provides a general plan for management actions by species over a five-year period from 2011 through 2015 and was developed as part of the requirements of the U.S. Federal Energy Regulatory Commission (FERC) license for the Roanoke Rapids and Gaston Hydroelectric Project (FERC 2005). Activities identified in this document including fish stocking, ongoing sportfish population monitoring and management, and a sportfish creel survey will be supported in part by funds provided by Dominion/NC Power (Dominion) under the FERC license.

### **Resource Description**

Lake Gaston and Roanoke Rapids Lake are located in the middle portion of the Roanoke River Basin. Lake Gaston is a 20,300-acre impoundment located on the Virginia-North Carolina border. Roanoke Rapids Lake (4,600 acres) is immediately downstream of Lake Gaston and located entirely within North Carolina. Both reservoirs are operated by Dominion for hydropower generation. In addition, other reservoir functions include public water supply and recreation.

Lake Gaston and Roanoke Rapids Lake support multi-species fisheries consisting of largemouth bass *Micropterus salmoides*, striped bass *Morone saxatilis*, black crappie *Pomoxis nigromaculatus*, white crappie *Pomoxis annularis*, sunfish *Lepomis* spp., catfish *Ameiurus* spp. and *Ictalurus* spp., white perch *Morone americana*, yellow perch *Perca flavescens*, and walleye *Sander vitreus*. Additionally, open water forage fish, species in the family Clupeidae, including alewife *Alosa pseudoharengus*, blueback herring *Alosa aestivalis*, gizzard shad *Dorosoma cepedianum*, and threadfin shad *Dorosoma petenense*, are important to the lakes' sportfish populations. Restoration efforts encompassing potential habitat above Roanoke Rapids Dam are on-going for American shad *Alosa sapidissima* and American eels *Anguilla rostrata*, based on recommendations by the Diadromous Fish and Restoration Technical Advisory Committee (DFRTAC) as described in Settlement Article FS-2 (FERC 2005).

The portion of Lake Gaston located in Virginia is managed under the regulatory authority of the Virginia Department of Game and Inland Fisheries (VDGIF). Therefore, management of the Lake Gaston fishery is a cooperative effort between NCWRC and VDGIF with NCWRC generally being the lead agency.

### **Species Specific Goals**

#### *Largemouth Bass*

The largemouth bass fisheries in both reservoirs are managed for self-sustaining populations with a 5 fish per day creel limit and a 14-inch minimum size limit, except

that 2 fish can be less than 14 inches. Our objective is to continue to provide quality largemouth bass fishing by managing for a balance between anglers who harvest largemouth bass and those who practice catch and release (NCWRC 1993). We will also work cooperatively with other agencies, Dominion, and angling groups to protect and enhance littoral habitat (NCWRC 1993).

To monitor adult largemouth bass, we will conduct spring shoreline electrofishing every other year at Lake Gaston and at least once during the five-year period at Roanoke Rapids Lake. Data collected will be assessed using standard stock assessment techniques to determine the overall health of the largemouth bass fishery.

### *Striped Bass*

The striped bass populations in both reservoirs are maintained as put-grow-and-take fisheries and managed with a 4 fish daily creel limit and a 20-inch minimum size limit from October 1 through May 31, whereas no minimum size limit is in effect from June 1 through September 30, while still maintaining the 4 fish daily creel limit. Striped bass fingerlings (1 to 2 inches) are stocked annually in Lake Gaston at a base rate of 10 fish per acre and when available up to an additional 10 fish per acre. The majority of these stockings at Lake Gaston are conducted by the NCWRC, however, in some years assistance is provided by the VDGIF. Roanoke Rapids Lake is generally stocked annually at a base rate of 5 striped bass fingerlings per acre. All striped bass stocked into both reservoirs are obtained from Roanoke River broodstock to maintain genetic integrity of the downstream anadromous population. Our objective is to provide a quality striped bass fishery that reflects angler expectations through continued stocking, communicating with anglers, protecting habitat and water quality, and regulating harvest (NCWRC 1994).

To monitor striped bass, we will conduct winter gill netting annually at Lake Gaston and at least once at Roanoke Rapids Lake during the five-year period. Growth and body condition will be assessed as a measure of the overall population health.

### *Black and White Crappie*

The crappie fisheries in both reservoirs are managed for self-sustaining populations, and there is currently no restriction on harvest. The objective of providing a quality crappie fishery will be accomplished through research, habitat protection, and harvest regulation as necessary (NCWRC 2001).

To monitor adult crappie, we will conduct fall trap netting every other year at Lake Gaston and at least once during the five-year period at Roanoke Rapids Lake. Data collected will be assessed using standard stock assessment techniques to determine the overall health of the crappie fishery.

### *Walleye*

Walleye were stocked in Lake Gaston by NCWRC from 1980 through 1982 and by VDGIF during most years from 1978 through 2001 and in 2007 and 2008. Stocking of

walleye was suspended from 2002 through 2006, to determine the extent of natural reproduction occurring in Lake Gaston. Our objective is to maintain a quality walleye fishery through natural reproduction, supplemental stocking as needed, habitat protection, and harvest regulation (currently 8 fish daily creel with no minimum size limit).

To monitor the walleye population, night-time electrofishing will be conducted annually in March below John H. Kerr Dam. These data will provide fishery population metrics used in determining the overall health of the walleye population, and more specifically an evaluation of the spawning population's age structure will continue to be used as an indication of reproductive success.

### *Catfish*

Catfish populations in both reservoirs are self-sustaining and currently managed without any restriction on harvest, except that in the Virginia portion of Lake Gaston only one blue catfish greater than 32 inches is allowed daily. Our objective is to maintain a quality catfish fishery that reflects angler expectations through communicating with anglers along with protecting habitat and water quality. Anecdotal evidence suggests that blue catfish *Ictalurus furcatus* populations have increased substantially in Lake Gaston, while flathead catfish *Pylodictis olivaris* populations remain at low levels. During the five-year period we will establish an exploratory stock assessment of the catfish populations at Lake Gaston.

### *American Shad*

Specific management objectives directed toward American shad, involving fry stocking levels above John H. Kerr Reservoir, along with their outmigration are still in development. During the previous five-year cycle it was determined that American shad holdovers are occurring in John H. Kerr Reservoir, Lake Gaston, and Roanoke Rapids Lake. During this five-year cycle our objective is to explore sampling techniques developed by the DFRTAC, beginning with experimental gill nets set in John H. Kerr Reservoir to determine the level of American shad holdovers. In addition to targeting American shad, open water forage fish (members of the Clupeidae family) will also be sampled with relative abundance recorded. Sampling techniques refined at John H. Kerr Reservoir will most likely be applied at Lake Gaston and Roanoke Rapids Lake over the course of the five-year period.

## **Creel Survey**

In addition to the fisheries independent routine sampling surveys, a year-long access creel survey will be conducted at Roanoke Rapids Lake during 2012-2013 to evaluate angler effort, catch, and harvest for popular fish species.

## References

- FERC (US Federal Energy Regulatory Commission). 2005. Order approving offer of settlement, amending license, and denying rehearing. FERC, Roanoke Rapids and Gaston Hydroelectric Project No. 2009-030, Washington, D.C.
- NCWRC (North Carolina Wildlife Resources Commission). 1993. A plan for managing North Carolina's largemouth, smallmouth, and spotted bass resources. NCWRC, Raleigh.
- NCWRC (North Carolina Wildlife Resources Commission). 1994. Management plan for North Carolina's inland populations of striped bass and their hybrids. NCWRC, Raleigh.
- NCWRC (North Carolina Wildlife Resources Commission). 2001. A management plan for black and white crappie in North Carolina. NCWRC, Raleigh.