

DOUTHAT LAKE

Fisheries Management

Sport Fish Restoration Document F-111-R-16
April 1, 2007 to March 31, 2008



Who is responsible for fisheries management at Douthat Lake?

The professionals responsible for fishing programs at Douthat Lake are fisheries biologists at the Virginia Department of Game and Inland Fisheries in Verona, VA (540-248-9360) and Douthat State Park personnel.

What are the responsibilities of the fisheries biologists?

Fish stocking, fish sampling, water quality monitoring, habitat improvement, angler surveys, program development, fishing regulation proposals, angler access, coordination with Park staff, and public outreach.

How big is Douthat Lake?

Douthat Lake is about 50 surface acres in area, is around 45 feet at its deepest, and backs up a 17 square mile area of Wilson Creek. Douthat Lake was built in 1936. The beautiful stonework on the dam, the lodge, and other structures were constructed by the Civilian Conservation Corps, or better known as the CCC. Although it is stocked with trout, Douthat Lake's surface waters become too warm for trout stocking during the summer months. Springs and groundwater provide carryover habitat for trout stocked earlier in the winter and spring.

What kind of fish can I catch in Douthat Lake?

Catchable size rainbow, brook, and brown trout are stocked at least twice a week from April-June and again in September and October. Trout Heritage Day is celebrated at Douthat Lake annually. The lake is closed to fishing 5 days prior to the first Saturday in April, then opened to angling at 9 a.m. on that day. Channel catfish are the only other fish species stocked. Largemouth bass, bluegill, pumpkinseed sunfish, redbreast sunfish, black crappie, chain pickerel, white sucker, and yellow bullhead reproduce in these waters.

Who needs a license to fish?

A state resident, non-resident, or 5-day trip license for those 16 years and older is required at all times. Children 12 and under can fish without a permit as long as they remain under the direct supervision of a permitted adult and don't exceed the combined limit of 6 trout.

FISHING LICENSE REQUIREMENTS

Fee season opens 1st Saturday in April

1st Sat. in April – June 15: Daily fishing permit and fishing license needed

June 16 – Sept. 14: Only fishing license needed

Sept. 15 – Oct. 31: Daily fishing permit and fishing license needed

Nov. 1 to 5 days prior to 1st Sat. in April: Fishing license and trout license needed

Area is closed to fishing 5 days prior to 1st Sat. in April

How do the biologists check the fish populations in the lake?

Biologists sample fish populations in a variety of ways. Different types of nets can be employed to target different sport fish. Electrofishing is used at Douthat Lake to assess the warm water fish population. Bass and panfish populations were examined with electrofishing gear in 1982, 1988, 1993, 1997, 2000, 2001, 2003, 2005, and 2008. Trout can be effectively monitored with gill nets, but these are not used at Douthat. An angler survey was conducted in 1996 to determine angling pressure and harvest of trout from the lake. Water quality measurements of dissolved oxygen and temperature has been taken periodically during the summer since 1996 in order to determine the amount of available trout habitat.

What kind of things do biologists do with the fish after they "shock" them?

Biologists target both predators and prey. As they work their way around the shoreline at night, biologists net whatever bass, panfish, catfish, and pickerel that get stunned and can be dip netted. In a small lake like Douthat, usually one trip around the lake constitutes a sample. The entire sampling trip is timed. Fish are identified, counted, measured, weighed, and released unharmed. In specific studies, some fish are tagged and others are taken back to the lab for age and growth analysis.

What do biologists do with the information?

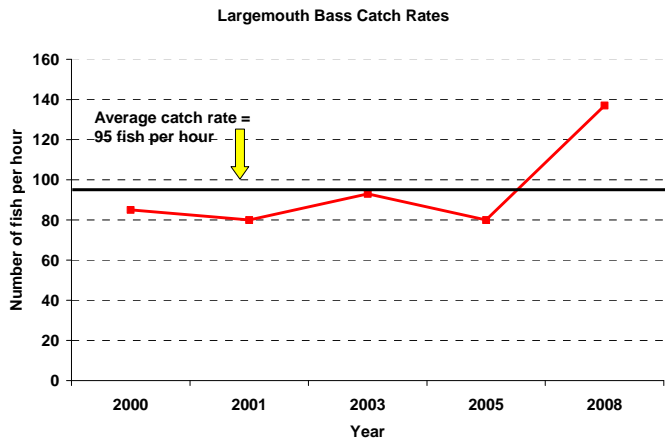
First, density or relative abundance of target species is determined. This is calculated by taking the total number of an individual species and dividing by 3,600 seconds (1hour). By normalizing our count by one hour, we can compare the number of largemouth bass from sample to sample, from year to year, from lake to lake. Too many predators can result in an abundance of small, skinny fish. Too few can produce more trophy size fish, but longer waits between boating a bass. The same reasoning applies to prey species. The idea is to achieve balance in a fish population. Slow growth can be found by determining a fish's age and looking at its length at that age. This can be done by counting annuli, or growth "rings", on hard structures such as scales or otoliths (ear stones). Biologists also divide fish into size groups and use simple ratios to evaluate the balance of medium, keeper, and trophy size fish in the population. These are referred to as population indices, and they can be used to look at an individual species over time. Are fish too thin for their length? "Plumpness" can be measured using an index that compares the weight of an individual fish to those of the same size across the U.S. This is called relative weight and a fish scoring 100 would be considered the right weight for its length. Fishing regulations, such as length limits, are usually derived from periodic sampling and from harvest data that is generated through angler surveys. Often, a minimum length limit, such as 12 inches for bass, is imposed on a lake. Such a regulation is designed to make anglers "throw back the little ones". This type of regulation is fine if you are trying to maintain a large number of small bass. Another type of length regulation is a "slot size limit". A slot limit is meant to protect a

group of fish (usually of larger size), and allows anglers to harvest younger and trophy fish. This regulation is used to “thin out” plentiful young fish while protecting substantial numbers of quality size fish.

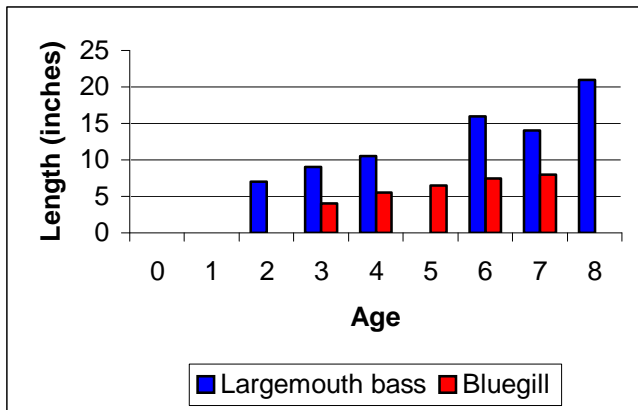
What does the fish population look like in Douthat Lake?

This report focuses on the warm water fish populations in Douthat Lake. These fish, except channel catfish, reproduce naturally and provide an alternative type of fishing experience to trout fishing. Below is a breakdown by species:

Largemouth bass: The catch rate for this predator in 2008 was around 137 fish per hour. This rate is considered very good. Look at the graph below to see how largemouth bass samples change over time.



So, there’s a nice population of largemouth bass in Douthat Lake. Are they all small? Any trophies? In 2008, the average size in the sample was 9 inches long. The largest was an 20-inch specimen, but largemouth bass up to 10 pounds have been taken. Size indices show that 25% of adult bass sampled in 2008 were greater than 12 inches long. This indicates a fair distribution of quality size largemouth. Approximately 7% of adult bass were greater than 15 inches. Are they fat for their size? Yes. The average relative weight was 98 (out of 100). The table below



shows the age of both largemouth bass and bluegill at a given age. In productive waters, a largemouth bass should be 12 inches in 3 years. You can see that bass grow slowly in Douthat Lake. Bass can be caught around any woody debris (brush piles, beaver lodges, fallen trees, artificial habitat), ledges, channels, and drop-offs.

Bluegill: Although trout and bass are the most popular sport fish at Douthat Lake, bluegill provide hours of fun for families and are the main prey species. Bluegill are abundant (253 fish per hour) and well balanced (75% of the adult catch were greater than 6 inches long). Bluegill, however, grow slowly. It takes at least 4

years for them to reach a desirable size of 6 inches. This is due to the unproductive nature of the lake. Locate bluegill around sunken Christmas trees and shady areas such as the handicap fishing piers.

Black crappie: This species was introduced to the lake by anglers. Although it is a desirable sport fish, crappie tend to “stunt” or overpopulate a small lake such as Douthat. Crappie haven’t stunted here to date and nice 10 inch fish can be located near beaver lodges and woody debris.

Chain pickerel: The state record for this hard-hitting predator has been set twice at Douthat Lake. Chain pickerel are cousins to northern pike, but are smaller. They are native to Wilson Creek and have never been stocked into the lake. Chain pickerel are moderately abundant and citation (24 inches or 4 pounds) fish are not uncommon. In fact, one 22-inch specimen was sampled and released in 2008. Catch pickerel on the surface with crankbaits for explosive action or with twistertail grubs when they are lying in deep water.

Channel catfish: Around 500 channel catfish fingerlings are stocked annually into Douthat Lake. Occasionally, a large channel cat is caught, but it is the exception rather than the rule. The past problem with low catfish numbers is that they were stocked at too small a size into a lake with an abundance of predators. One solution was to stock larger catfish, and DGIF is currently addressing that issue.

Other species: Anglers will sometimes catch yellow bullhead catfish, redbreast sunfish, pumpkinseed sunfish, and white suckers. Yellow perch have recently been introduced into Douthat Lake by anglers. These species are not very abundant and are not generally targeted by the fishing public.

What does the future hold for fishing at Douthat Lake?

Of course, trout stocking will continue at its usual rate, but will be curtailed by June 15 from now on. We will continue to monitor warm water species at least every 3 years. We are stocking larger (10 inch) channel catfish. We plan to reintroduce redear sunfish to the lake. Finally, we will continue to work with the Douthat Park staff and the general public to provide quality sportfishing.

Fishing Regulations		
Species	Daily Limit	Minimum size
Trout	6/day	7 inches
Largemouth bass	5/day	12 inches
Sunfish	50/day	no min. size
Crappie	25/day	no min. size
Pickerel	8/day	no min. size
Channel catfish	5/day	20 inches

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