

BRALEY POND

Fisheries Management Report

Sport Fish Restoration Document F-111-R-12

April 1, 2003 to March 31, 2004



Who is responsible for fisheries management at Braley Pond?

The professionals responsible for fishing programs at Braley Pond are fisheries biologists at the Virginia Department of Game and Inland Fisheries (DGIF) in Verona, VA (540-248-9360) and the U. S. Forest Service (USFS) in Staunton, VA (540-885-8028).

What are the responsibilities of the fisheries biologists?

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

What is the history of fisheries management at Braley Pond?

Braley Pond is a 5-acre lake built in the 1960's. It has been stocked with trout since its inception, but emphasis on warm water species (non-trout) is increasing. Braley Pond was limed in 1983 and 1990 to increase the pH of the water. Forest Service personnel periodically fertilized the lake to increase the primary production and ultimately increase fish growth. It was drained and dredged in 1989, and the spoil from the dredging was used to build a fishing "jetty" at the head of the lake. Also, while the lake was empty, rock piles, log cribs, and brush shelters were added to create fish habitat. Sampling for sport fish was done with seine hauls (nets) and electrofishing since the 1970's.

What kind of fish can I catch from Braley Pond?

Catchable size rainbow trout are stocked eight times from October - May each year. Channel catfish are the only other fish species stocked. Largemouth bass, bluegill, and redear sunfish reproduce in these waters.

Who needs a license to fish?

A state resident or non-resident license for those 16 years and older is required at all times. A trout license is required from October 1 through June 15. No trout license is needed from June 16 - September 30. A five-day trip license is valid from June 16 - September 30. A National Forest Permit is also required.

Fishing Regulations		
Species	Daily Limit	Minimum size
Trout	6/day	7 inches
Largemouth bass	5/day	12 inches
Sunfish	50/day	no min. size
Channel catfish	5/day	15 inches

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 Braley Pond to assess the warm water fish population. Bass and panfish populations were examined with electrofishing gear in 1984, 1987, 1999, 2000, and 2003. Trout can be effectively monitored with gill nets, but these are not used at Braley Pond.

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, they net whatever bass, panfish, and catfish that get stunned and can be easily netted. In a small lake like Braley Pond, 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.

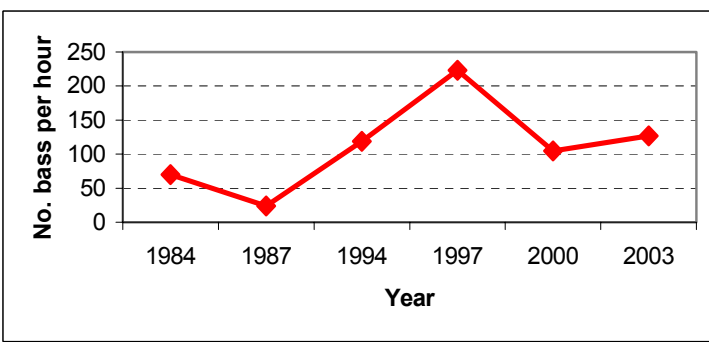
What do biologists do with the information?

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. Growth is determined by looking at a fish's length at a given age. This can be accomplished 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.

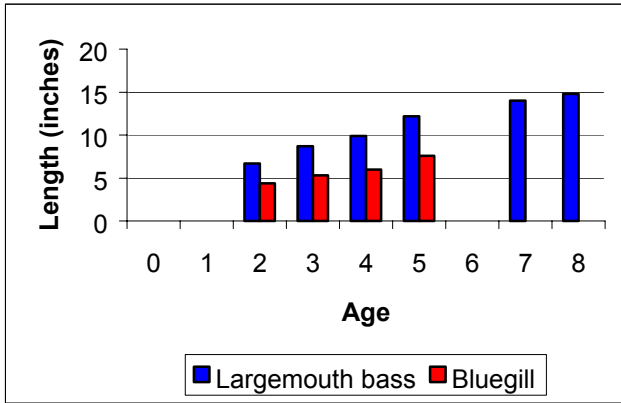
What does the fish population look like in Braley Pond?

This report focuses on the warm water fish populations in Braley Pond. 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 2003 was around 127 fish per hour. This rate is considered high. Look at the red line graph to see how largemouth bass samples have changed over time. So, there's a sizeable population of largemouth bass in Braley Pond. Are they all small? Any trophies? In 2003, the average size in the sample was 8.5 inches long. The largest was a whopping 20-inch specimen that weighed 6 pounds! Size indices show that of all bass in the lake over 8 inches, 52% are greater than 12 inches long, 19% are greater than 15 inches,



and 5% are greater than 20 inches. This indicates a very balanced distribution of quality size largemouth. Are they fat for their size? Not bad! The average relative weight was 96 (out of 100) for bass over 12 inches long. The graph below shows the age of both largemouth bass and bluegill at a given size.



In productive waters, a largemouth bass should be 12 inches in 3 years. You can see that bass grow slowly in Braley Pond. It takes around 5 years for bass to reach quality size in this 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 Braley Pond, bluegill provide hours of fun for families and are the main prey species. Bluegill are abundant (221 fish per hour) but are on the small side (15% of the adult catch was 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 brush piles, fallen trees, beaver lodges, and shady areas.

Redear sunfish: This species, also known as shellcracker, was introduced to Braley Pond after it was drained in 1987. Redears grow faster and larger than their sunfish cousins. They occupy deep water and can be located in schools on drop-offs, old roadbeds, and woody debris. These stocky panfish often attain trophy (greater than one pound) proportions. In our 2003 sample, 50% of the redears in our sample were greater than 7 inches long.

Channel catfish: Adult channel catfish are stocked annually into Braley Pond. Occasionally, a large channel cat is caught, but it is the exception rather than the rule. The past problem with poor catfish angling was probably that the catfish were stocked at too small a size into a lake with an abundance of predators. The solution is to stock larger catfish, and DGIF began addressing that issue in 2003.

What does the future hold for fishing at Braley Pond?

Of course, trout stocking will continue at its usual rate. We will continue to monitor warm water species at least every 3 years. We will continue to stock larger channel catfish in the future. We hope to periodically add woody structure to improve fish habitat. Finally, we will continue to work with the Forest Service staff and the general public to provide quality sportfishing.