



## **North Fork Holston River 2010**

From its origin in the southeast corner of Bland County, the North Fork of the Holston River flows more than 100 miles through Southwest Virginia before crossing the Tennessee State line near the community of Yuma. The river boasts an outstanding smallmouth bass population, and supports populations of many other fish species.

Sport fish populations are sampled in the North Fork of the Holston River using boat-mounted electrofishing gear. This sampling equipment generates a controlled field of electricity around the boat that immobilizes the fish. The fish can then be collected with dipnets and placed in a livewell on the boat to recover. This method does not kill the fish, but only stuns the fish so that they can be collected, counted, measured and released. These population samples are typically conducted during April and May, when most fish are in shallow water.

The relative abundance of each fish species is calculated as the number of fish collected per hour of sampling. This is also referred to as the catch rate or catch per unit of effort (CPE). The total length and weight of individual fish are measured to determine the condition of the fish and also to evaluate the size structure of the populations. A balanced size structure with representative numbers of both large and small fish is ideal. Mostly small fish in the population might mean that growth is slow or few fish are surviving to older ages. Mostly large fish in the population might mean that natural reproduction is lacking and there are not enough young fish being recruited to replace older fish that die. Periodically fish are collected for the purpose of determining the age structure of the populations. These data provide biologists with the information necessary to calculate average growth rates and mortality rates for the population. Age data are not collected each year, because it requires killing the fish.

All of these data together are used to make management decisions about the fishery. Biologists use the data to make stocking recommendations and regulation proposals. The relative abundance of a particular species or the size structure of that species may not always correspond with what you catch as an angler. The electrofishing method tends to collect average and small fish better than really big fish. It is likely that you will catch more or bigger fish in your efforts than biologists collect in sampling. The data collected in sampling is best used to track trends in the population from year to year and also to compare to another location on the river or other rivers in Virginia.

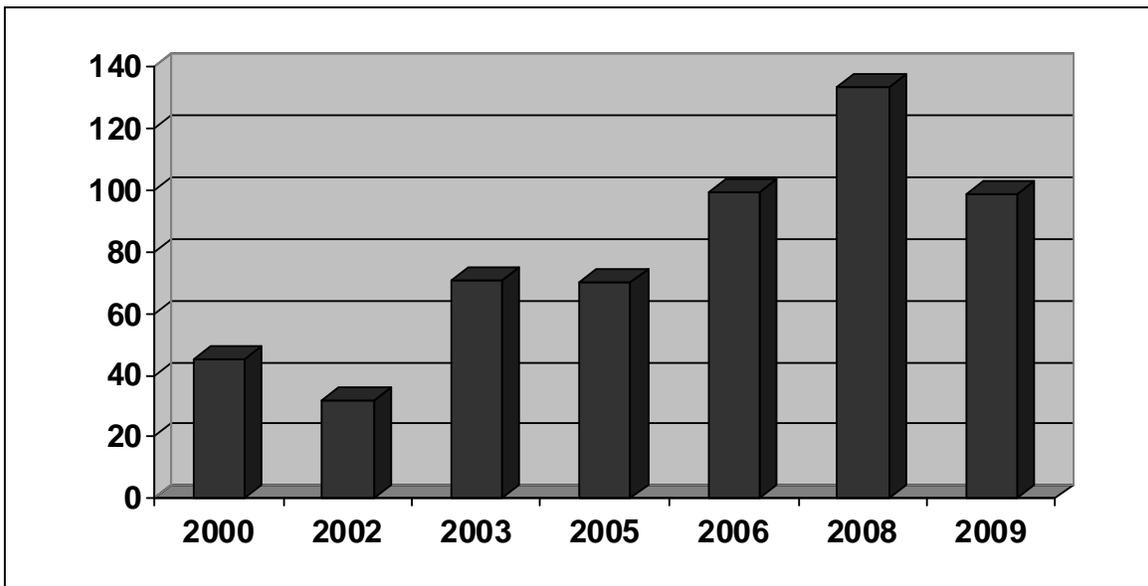
Routine sampling locations include: Saltville, Clinch Mountain Wildlife Management Area Boat Landing, Mendota and Weber City. Other locations are sampled where boat access is suitable and when the schedule allows.

### Smallmouth bass

Smallmouth bass relative abundance (number of fish collected per hour of sampling) in the North Fork Holston River varies from year to year (Figure 1). The catch rate for smallmouth in the North Fork is typically about average compared to other rivers in the state. In recent years the catch rates have been above average. The 2009 catch was 99 smallmouths per hour of electrofishing, and the 2008 catch rate was 133 fish per hour.

The abundance of smallmouth bass populations in rivers is heavily influenced by reproductive success. In years with good spawning conditions and survival, strong year classes are produced. Strong year classes increase the population abundance and create better fishing opportunities. These strong year classes usually persist for 10 years or more, until most of the individual fish die of old age or other causes. When two or more strong year classes are produced in quick succession, the fishing can be extraordinary. Of course, when average or weak year classes are produced the population declines and fishing is not as good. Population samples indicate that smallmouth recruitment in the North Fork Holston was fairly consistent in recent years. Below-average year classes were observed from 1999 through 2004. Average year classes were produced in 2005 and 2008. The best news is that the 2007 year class appears to be well above average. The increase in the overall catch rate in 2008 is the result of catching twice as many young smallmouths.

The size structure of the smallmouth population is excellent. The catch rates of quality (11 inch) and preferred (14 inch) size smallmouth have been high in recent samples. About 33 percent of the adult smallmouths in population samples measured more than 14 inches total length, and more than 10 percent were longer than 17 inches. A few trophy smallmouths (over 20 inches) were also collected. The proportion of 14 and 17-inch smallmouths in the North Fork is higher than in most Virginia rivers.



**Figure 1.** Number of smallmouth bass collected per hour of sampling in the North Fork Holston River from 2000 to 2009.

The abundance of big smallmouths in the North Fork Holston is the result of an unusually high annual survival rate of 79 percent. Smallmouths do not grow fast in the river, but they are able to live to older ages. Smallmouths from one to seventeen years old were collected in 2003. One of the 17-year-old fish was 17 inches long and the other measured 20 inches long. If you would like to know the age of a smallmouth you catch in the North Fork Holston, you can estimate its age by measuring the total length of the fish (measured from nose to tail) and using the length-at-age curve presented in Figure 2.

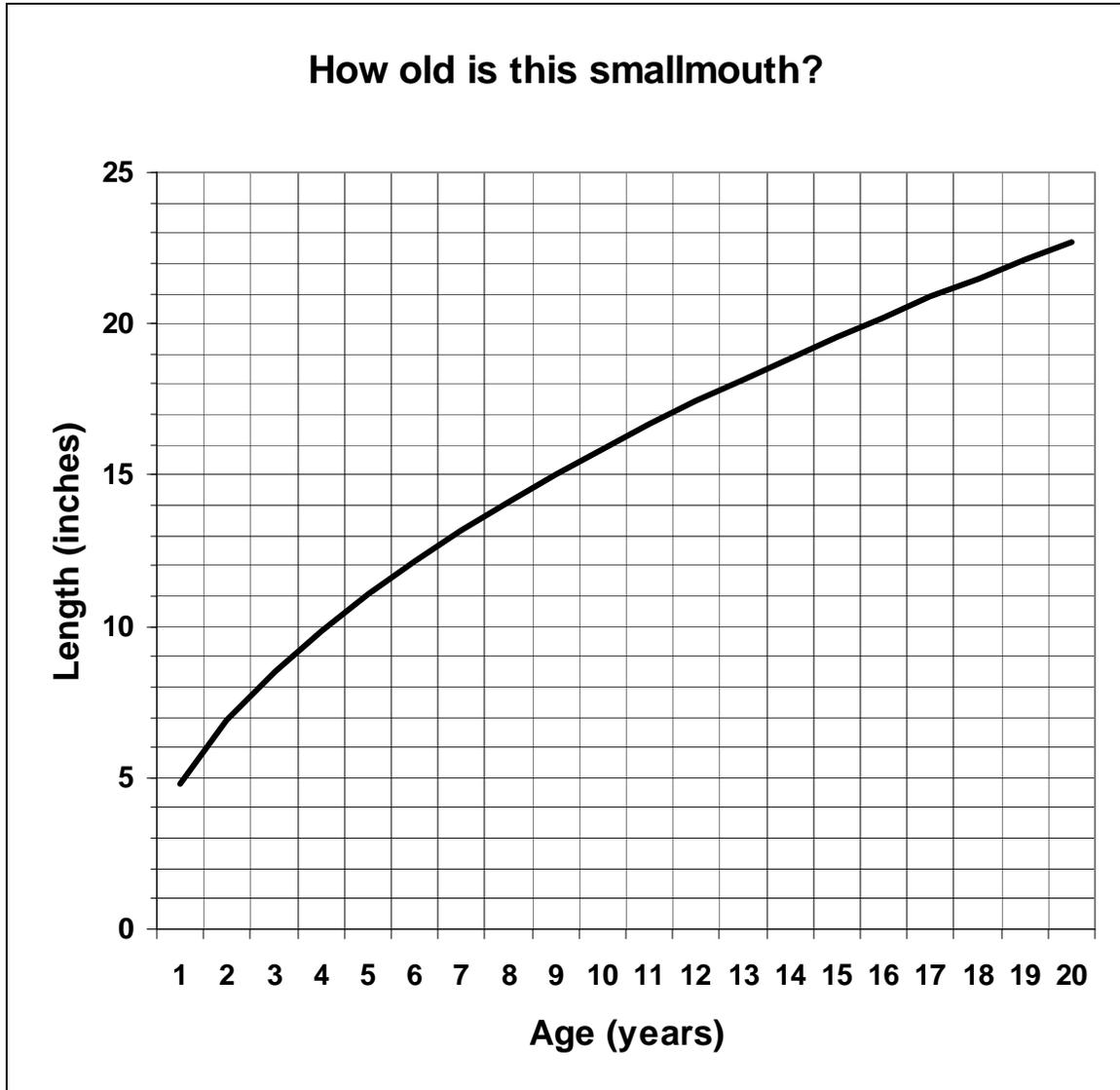
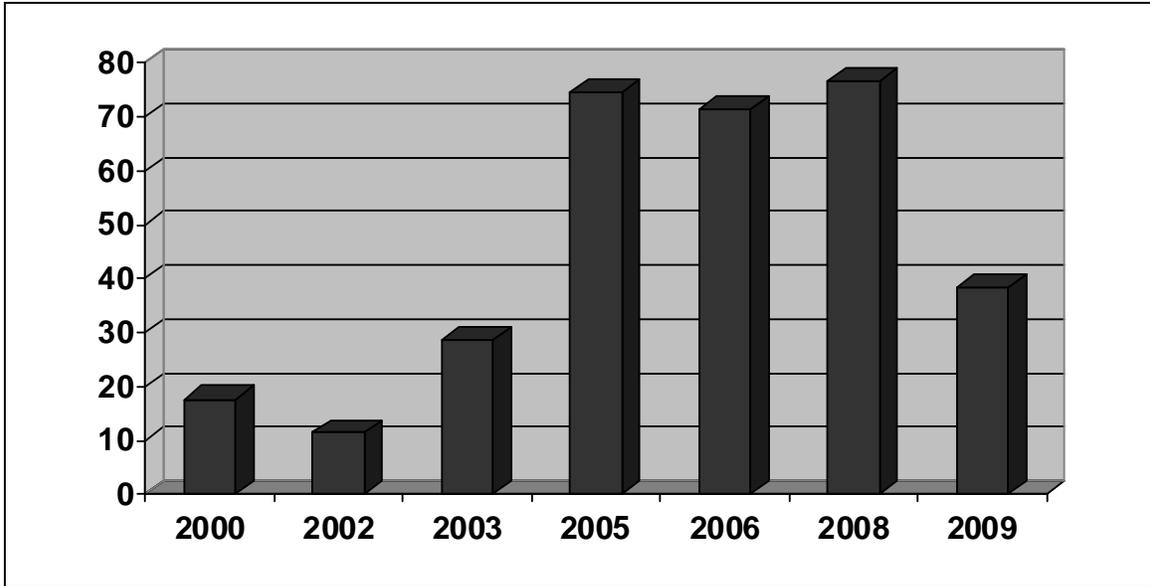


Figure 2. Use this chart to estimate the age of a smallmouth you catch in the North Fork Holston River. Find the length of your fish in inches on the vertical axis, and then follow the horizontal grid line across until it intersects with the curve. Then follow the vertical grid line down to estimate the age of your fish.

#### Rock bass

Rock bass (redeyes) catch rates also fluctuate from year to year (Figure 2). The rock bass catch rate was down considerably in 2009. Relative abundance was fairly steady from 2005 to 2008. These fluctuations are most likely the result of good and poor spawning

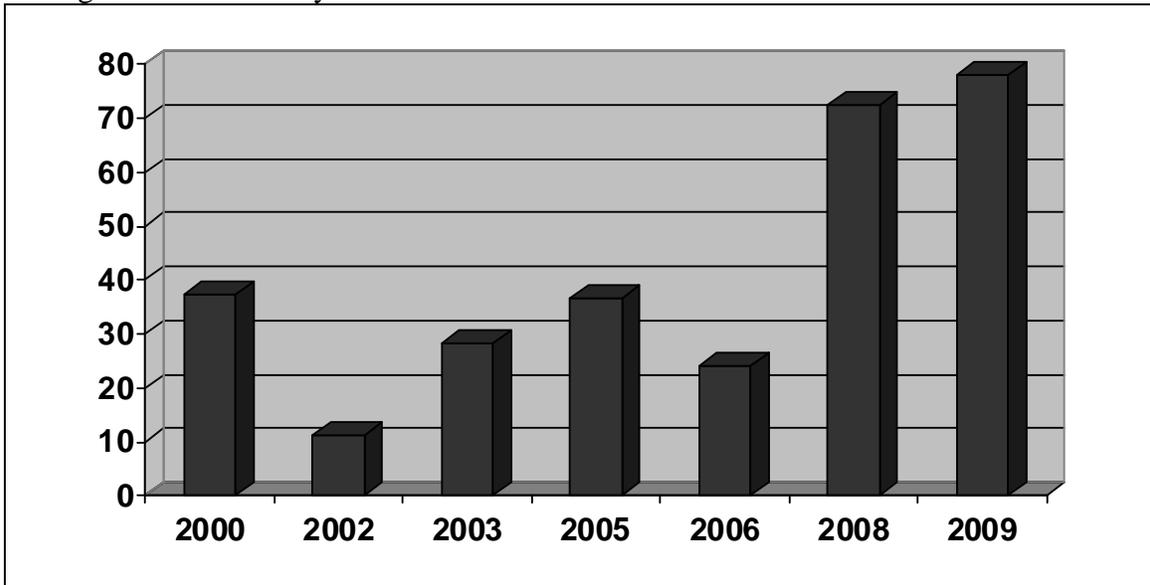
success. The size structure of the rock bass population is good in the North Fork. Anglers should find good numbers of quality-sized rock bass.



**Figure 3.** Number of rock bass collected per hour of sampling in the North Fork Holston River from 2000 to 2009.

#### Sunfish

Redbreast sunfish are the dominant sunfish species in the North Fork. Catch rates for redbreast sunfish vary from year to year, but were very good in 2008 and 2009 (Figure 4). The size structure of the redbreast sunfish population is good in the North Fork. Anglers should find plenty of quality-sized fish. Redbreast sunfish are aggressive and more than willing to attack a variety of baits and lures.



**Figure 4.** Number of redbreast sunfish collected per hour of sampling in the North Fork Holston River from 2000 to 2009.

### Catfish

Channel catfish are not very abundant in the North Fork Holston River. Channel catfish are usually collected at a rate of less than one fish per hour. Flathead catfish are also native to the North Fork and a few are occasionally collected. Because catfish tend to favor deeper water, their population abundance may not be accurately represented in electrofishing samples. Electrofishing samples are concentrated in shallow water to maximize effectiveness and visibility of stunned fish.

Other sport fish species collected in low numbers include largemouth bass, bluegill, black crappie, green sunfish, redear sunfish, longear sunfish and rainbow trout. Various species of redhorse suckers, northern hog suckers, common carp and minnows were also collected.

There is a fish consumption prohibition in effect from Saltville downstream to the Tennessee state line due to mercury contamination. A 20-inch minimum size limit is in effect for smallmouth bass in the North Fork Holston River from the Route 91 Bridge upstream of Saltville downstream to the Tennessee State line. All smallmouth bass less than 20 inches must be released. Only one smallmouth larger than 20 inches may be kept per angler per day. This regulation helps to protect and enhance the trophy smallmouth fishery that has developed in this river.

There are only two boat ramps on the river, and both are near the town of Saltville. One ramp is located within the town limits, and one is located downstream on Rt. 611.

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