



The Upper New River in Virginia: A Tale of Two Rivers

The Upper New River in Virginia is the 80-mile section of river from the Virginia-North Carolina state line near Mouth of Wilson in Grayson County downstream to Allisonia in Pulaski County at the headwaters of Claytor Lake. The fishery in this section of the New River is different from the New River downstream from Claytor Lake, so it is managed separately. Fish communities in the Upper New River vary, with stocked Walleye and Muskie and plenty of Channel and Flathead Catfish in the section from Fries Dam downstream to Allisonia, where river pools are deep and water is swift. Upstream from Fries Dam (pictured below), the river is shallower and slower, with fewer deep pools. In this section of the river, Walleye are not stocked. The fishery in this section is dominated by Smallmouth Bass, Rock Bass, and Redbreast Sunfish.

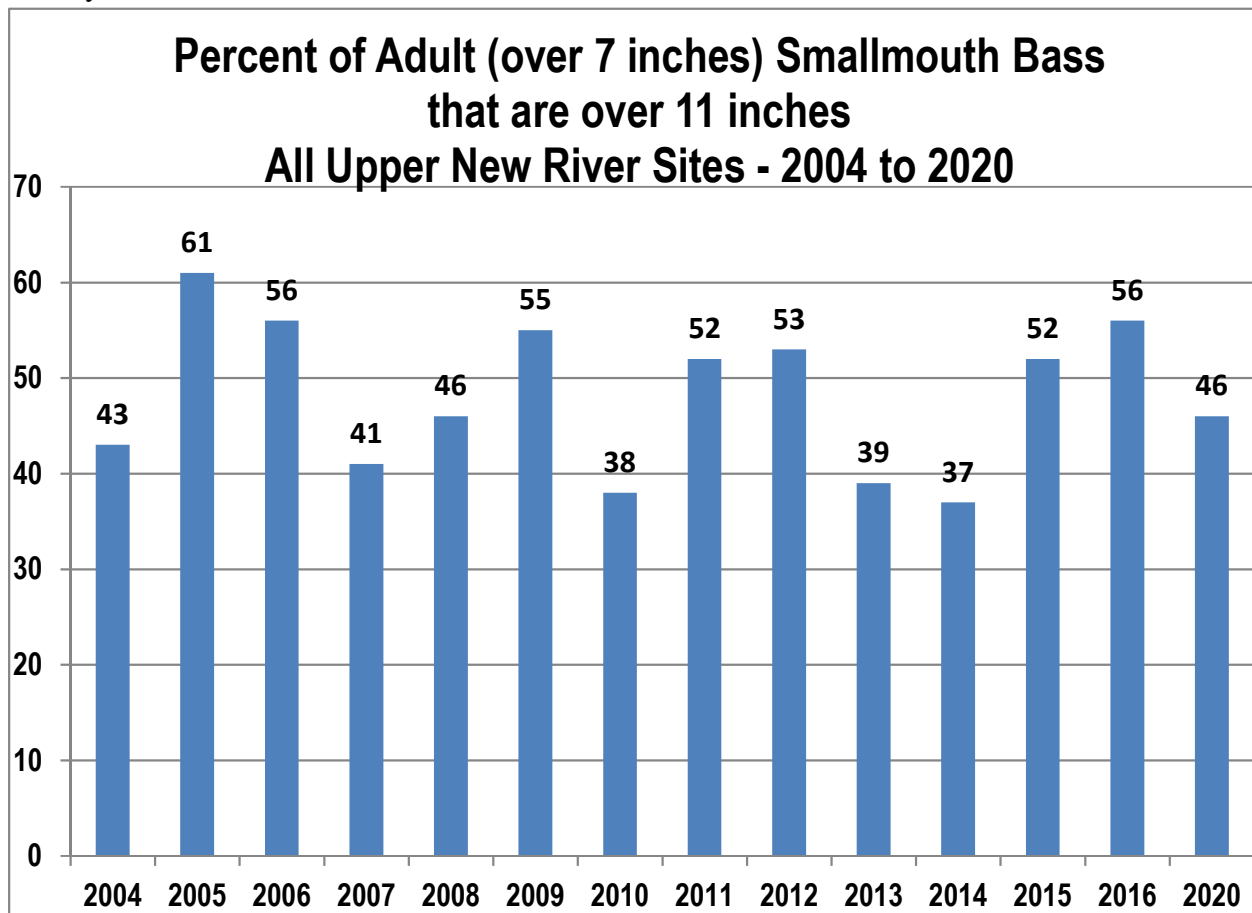


The New River upstream from Fries Dam is different from the New River from Fries Dam downstream to Claytor Lake. Fish habitat in this section is characterized by long shallow stretches of sandy bottom river broken by fewer fast moving rapids.

The age structure of the Upper New River smallmouth bass population was examined from 2001 to 2003 (see table below). Smallmouth bass ranged from age 1 to 13 years of age and have an average growth rate compared to similar river smallmouth bass populations in Virginia. An average smallmouth bass in the Upper New River takes 10 to 13 years to reach a trophy size of 20 inches. Total annual mortality is about 40%, meaning smallmouth bass numbers are reduced at a rate of 40% per year on average.

	Age 1	Age 2	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8	Age 9	Age 10	Age 11	Age 13
Length (inches)	4.1	6.6	8.8	11.1	12.7	14.5	15.3	16.6	17.2	18.5	19.1	19.7

The most recent population data collected was in spring 2020, when electrofishing samples were collected at 12 sites from Fries Dam downstream to Allisonia and from Fries Dam upstream to Mouth of Wilson. This report summarizes the annual sampling results in 2020 and compares them with past sampling from 2004 to 2016. Since the Upper New River is really 2 sections of river, from Mouth of Wilson downstream to Fries Dam and from Fries Dam downstream to Claytor Lake, each section's electrofishing data is summarized separately. Upstream from Fries Dam, Smallmouth Bass and Rock Bass were the most abundant fish collected by electrofishing in spring 2020, followed by Redbreast Sunfish and Flathead Catfish. Downstream from Fries Dam, Smallmouth Bass dominated the spring 2020 electrofishing catch, followed by Channel Catfish, Walleye, Rock Bass, Redbreast Sunfish, and Flathead Catfish.

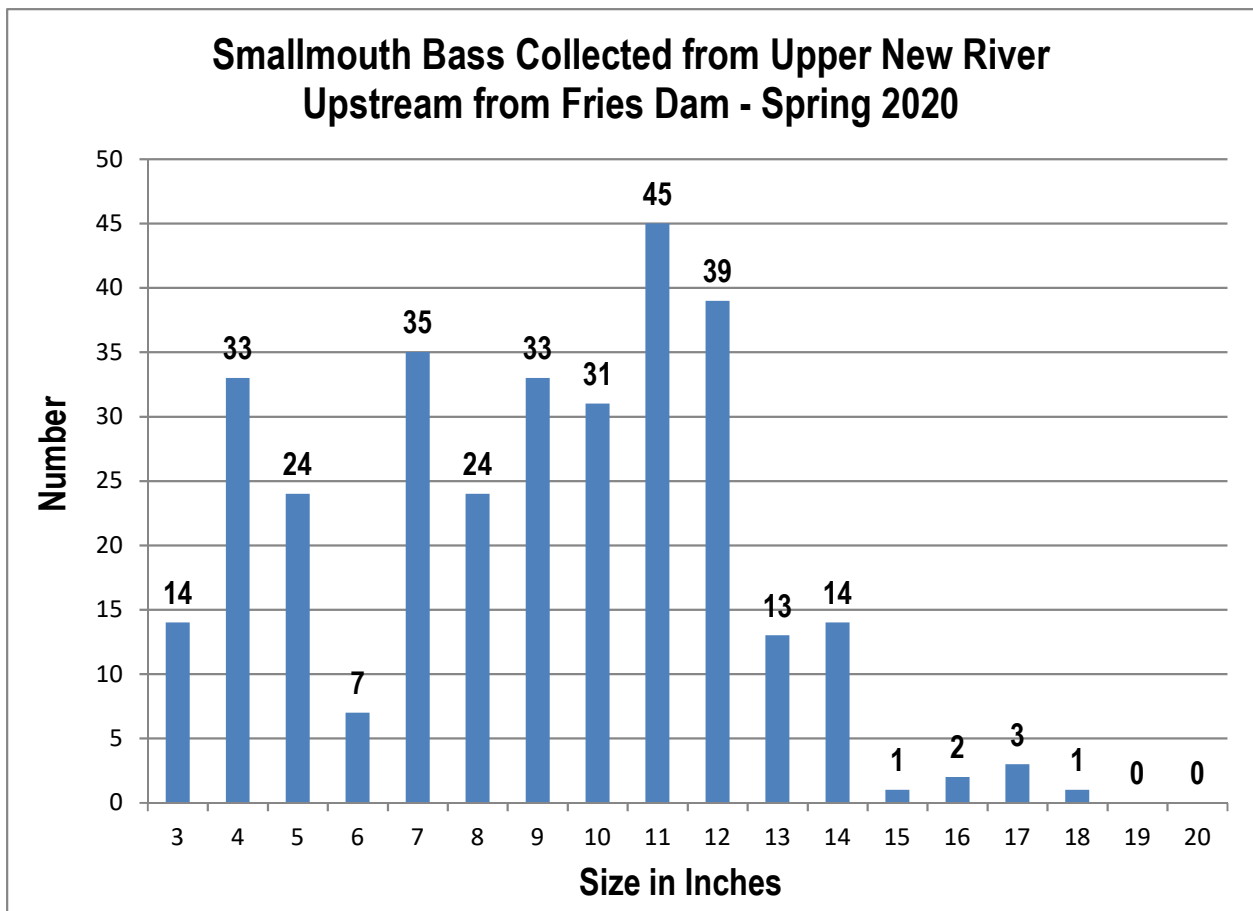


One measure of smallmouth bass population health used by fisheries biologists is called Proportional Size Distribution (abbreviated PSD), an index measuring the percentage of adult Smallmouth Bass (over 7 inches) that are also over 11 inches. The figure above shows Smallmouth Bass PSD for collections made from the entire Upper New River from 2004 to 2020. Healthy river Smallmouth Bass populations usually have PSD values between 40 and 60. The values below 40 in 2013 and 2014 electrofishing are due to poor Smallmouth Bass spawns in 2008, 2009, and 2011.

Upstream from Fries Dam

Smallmouth Bass

Between 2014 and 2020, Smallmouth Bass electrofishing catch in the New River upstream from Fries Dam ranged from a low of 63 (2020) to a high of 94 (2016) bass per hour of electrofishing. Catch per hour is influenced by Smallmouth Bass spawning and rearing success, which varies with river flow during the spawning and rearing season. In low and high flow years, newly hatched river Smallmouth Bass do not survive as well as they do in average flow years. Virginia Department of Wildlife Resources fisheries biologists determine Smallmouth Bass spawning success each year based on collections of Age-1 Smallmouth Bass in their electrofishing samples. Above average Smallmouth Bass spawns occurred in this section of river in 2010 and 2014, average spawns in 2005, 2012 and 2019, and below average spawns in 2011, 2013, and 2015. The good news is that the above average spawns in 2010 and 2014 are still providing catches of 14 to 18 inch Smallmouth Bass. The average spawn in 2019 will result in better catches of 7 to 10 inch Smallmouth Bass in 2021 and 2022.



The size of Smallmouth Bass collected in spring 2020 ranged from 3 to 18 inches, with good numbers of Smallmouth Bass from 7 to 12 inches. The best area to find good numbers and sizes of Smallmouth Bass is from Fields Dam downstream to Independence. In 2020, the Smallmouth Bass PSD in the New River upstream from Fries Dam was 49, which means that 49% of all adult Smallmouth Bass collected in 2016 were 11 inches or larger. Healthy Smallmouth Bass populations generally have PSD values between 40 and 60. The percentage of adult fish 14

inches or larger collected in 2020 was 9% and the percentage of adult fish that were 17 inches or larger was 1%.

Body condition of Smallmouth Bass is measured by relative weight, which is an index of the fatness or plumpness of a fish. Relative weights around 100 indicate that fish are in good condition. Relative weights well below 100 indicate that fish are in fair to poor condition. The average relative weight or condition of Smallmouth Bass upstream from Fries Dam in 2020 was 89, indicating that the Smallmouth Bass in this section of the New River are healthy.

Rock Bass

Rock Bass were the second most abundant sport fish collected upstream from Fries Dam in spring 2020 electrofishing samples. On average, 19 Rock Bass were collected in one hour of spring electrofishing in 2020. Rock Bass sizes ranged from 1 to 9 inches in spring 2020, with an average size of 5 inches. One measure of Rock Bass population health is Proportional Size Distribution (abbreviated PSD), an index measuring the percentage of adult Rock Bass (over 4 inches) that are also over 7 inches. Rock Bass PSD upstream from Fries dam was 46 in 2020, meaning approximately 46% of all Rock Bass in the population are 7 inches or larger. At 113, Rock Bass relative weights are excellent. Good areas to fish for Rock Bass include Old Town, Baywood, and Cox's Chapel.

Flathead and Channel Catfish

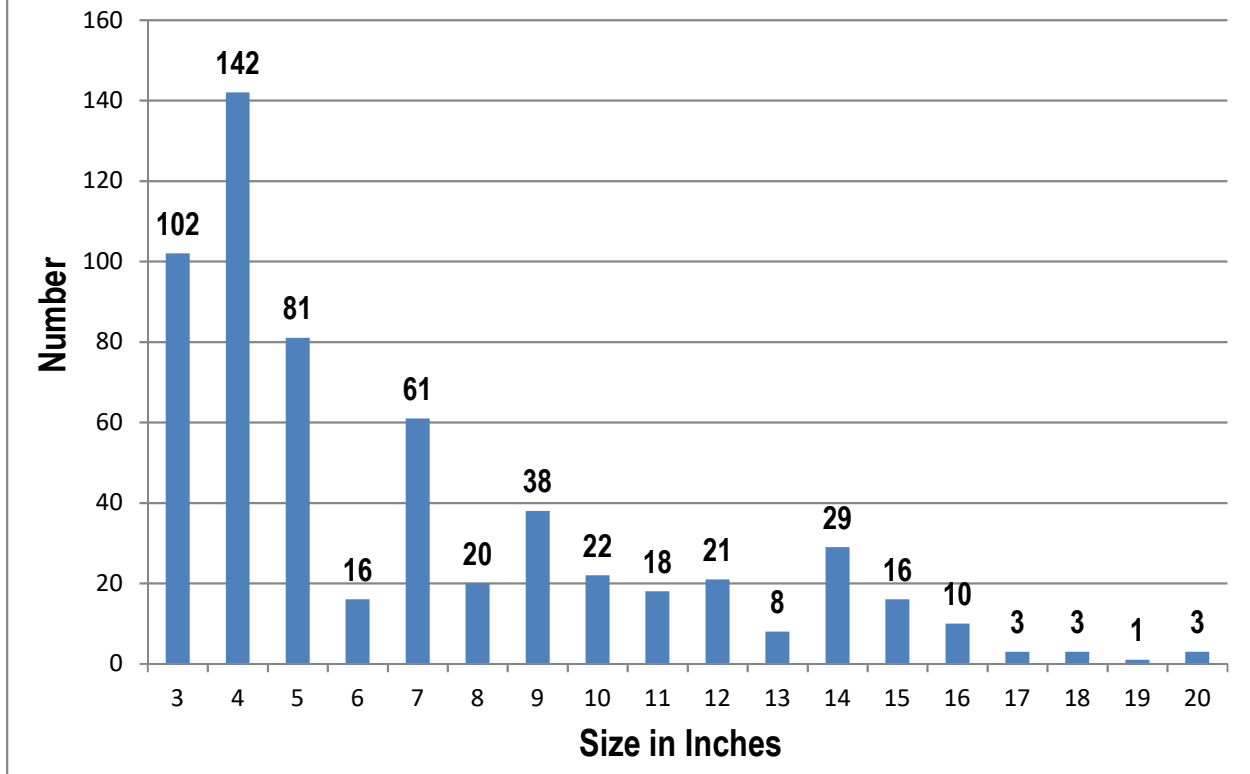
This section of the New River does not have excellent catfish habitat, but these New River native catfish species are still found in some areas. You are likely to find them in deep slow pools near woody debris. Good places to fish for catfish are the pool upstream from Fields Dam at Mouth of Wilson and the pool upstream from Fries Dam near the Old Town boat ramp.

Downstream from Fries Dam

Smallmouth Bass

Between 2014 and 2020, Smallmouth Bass electrofishing catch in the New River downstream from Fries Dam ranged from a low of 39 (2014) to a high of 69 (2020) bass per hour of electrofishing. Above average Smallmouth Bass spawns occurred in this section of river in 2010, 2012, 2014, and 2019, an average spawn in 2011, and below average spawns in 2013, 2015, and 2017. As a result of the average and below average spawns in 2011, 2013, 2015, and 2017, larger size Smallmouth Bass numbers are reduced in this section of river. The good news is that the above average spawns in 2012 and 2014 are creating good fishing for 14 to 16 inch Smallmouth Bass. The record spawn in 2019 will provide good numbers of 7 to 10 inch Smallmouth Bass in 2021 and 2022 and larger Smallmouth Bass in 2023 and beyond.

Smallmouth Bass Collected from Upper New River Downstream from Fries Dam - Spring 2020



The size of Smallmouth Bass collected in spring 2020 ranged from 3 to 20 inches, with excellent numbers of young Smallmouth Bass (less than 7 inches), as a result of the record spawn in 2019. In 2020, the Smallmouth Bass PSD in the New River downstream from Fries Dam was 44, which means that 44% of all adult Smallmouth Bass collected in 2020 were 11 inches or larger, in line with what is considered a healthy range for river Smallmouth Bass populations (between 40 and 60). The percentage of adult fish collected during electrofishing that were 14 inches or larger was 27 and the percentage of adult fish 17 inches or larger was 5, and the percentage larger than 20 inches was 1. The average relative weight or condition of Smallmouth Bass downstream from Fries Dam in 2020 was 87, indicating that the Smallmouth Bass in this section of the New River are healthy. The bottom-line is that there are some hard fighting Smallmouth Bass in this section of the river waiting to tug on the end of your line! The best area to find good numbers and sizes of Smallmouth Bass is from Shot Tower Falls downstream to Allisonia.

Rock Bass

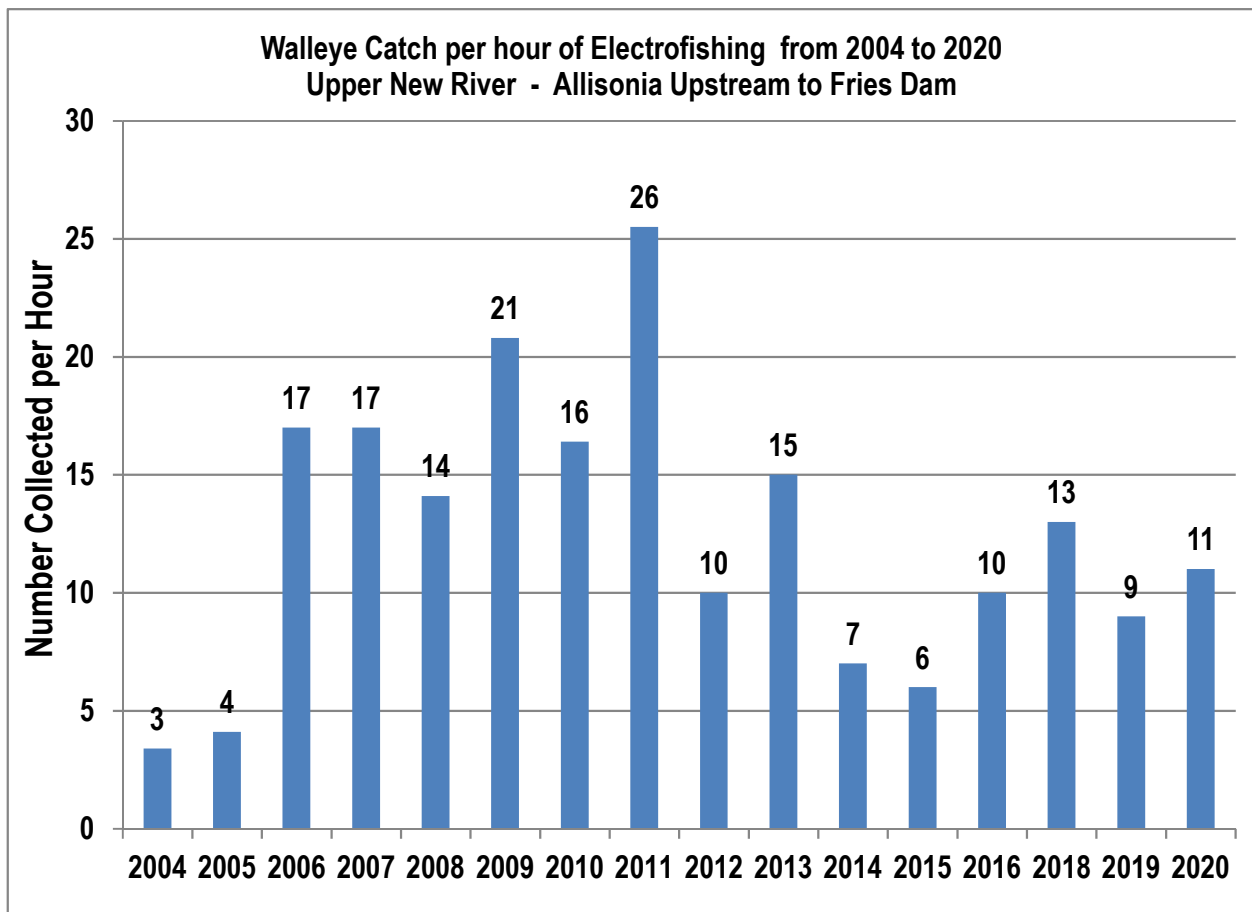
Rock Bass were the fourth most abundant sport fish collected downstream from Fries Dam in spring 2020 electrofishing samples. Rock Bass numbers in this section are less than Rock Bass numbers upstream from Fries dam and are reduced from historical numbers. Between 2014 and 2020, Rock Bass electrofishing catch in this section of river ranged from a low of 3 (2019) to a high of 15 (2016 and 2018) Rock Bass per hour of electrofishing. Rock Bass sizes ranged from 1 to 9 inches in spring 2020, with an average size of 5 inches. Good areas to fish for Rock Bass include Ivanhoe, Austinville, and Foster Falls.

Flathead and Channel Catfish

The New River downstream from Fries Dam has excellent catfish habitat. You are likely to find them in deep slow pools near woody debris. Good places to fish for catfish are Austinville, Foster Falls, Route 100, and Allisonia.

Walleye

Walleye are a major focus of Upper New River fisheries management from Allisonia upstream to Fries Dam, where they are maintained through an annual stocking program. Stocking is an important focus of this management, since New River Walleye are a unique genetic strain maintained by a selective breeding program. In addition, starting in 2021, from Claytor Dam to Buck Dam, a year round Walleye size limit only permitting Walleye harvest under 19 inches or over 28 inches, with a creel limit of 2 per day, provides protection for females of ideal spawning size to increase the number of spawning females to promote natural reproduction.



The figure above shows the total catch of Walleye per hour of electrofishing from Fries Dam downstream to Allisonia from 2004 to 2020. Walleye catch in this section of river was steady from 2006 to 2010 with increased stocking of New River Walleye. Walleye stocking was suspended in 2012 and 2013 to determine whether natural reproduction was occurring. As you might suspect from the decline in the Walleye electrofishing catch rate in 2014 and 2015, Walleye are not reproducing enough on their own to maintain this fishery, so Walleye stocking began again in 2014. Walleye collected in spring 2020 electrofishing ranged from 9 to 29 inches, with an average size of 16 inches. In spring 2020 electrofishing samples, 60% of Walleye collected over

10 inches long were also over 15 inches long, reflecting more consistent numbers of young Walleye being added through stocking since 2014. The lower number of Walleye collected from 2016 to 2020 compared to 2006 to 2011 is the result of a combination of lower stocking numbers and higher fishing pressure.

Fishing the Upper New River in 2021 and Beyond:

Abundant young Smallmouth Bass from the record spawn in 2019 will contribute to angler catches in 2021 with excellent numbers of 7 to 9 inch fish available. By 2023 and 2024, the Smallmouth Bass spawned in 2019 will be 12 to 14 inches long and full of fight. Walleye fishing is best from Buck Dam to Allisonia where the Department concentrates its stocking efforts. Anglers catch good numbers of Walleye in this section from February to May, with Foster Falls a prime location. Rock Bass and Redbreast Sunfish provide fun fishing opportunities, particularly from Mouth of Wilson to Fries where these sunfish are more numerous. Muskie populations have increased from Ivanhoe to Allisonia, offering opportunities to catch a trophy that will light up your lure!



Alvin Porter of Galax is proud of this Upper New River smallmouth bass.

Future Fisheries Management Plans:

Walleye fingerlings will continue to be stocked and monitored in an ongoing effort to increase the abundance of Walleye from Fries Dam downstream to Allisonia. Game fish will be monitored annually in the spring months using electrofishing.

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