

## South Fork Shenandoah River Biologist Report: 2021

Department biologists and technicians sampled the South Fork Shenandoah during the fall of 2021 using their boat electrofishing equipment. Nine permanent sites are sampled annually. The sites are evenly spread throughout the river, three are located in the upper river (Port Republic to Shenandoah Dam), three in the mid river (Shenandoah Dam to Luray Dam), and three in the lower river (Luray Dam to Warren Dam). A total of 1,910 fish were collected during the fall sampling period (Table 1).

Species	Number Caught	Average Length
Black Crappie	1	10"
Bluegill Sunfish	25	5"
Green Sunfish	42	5"
Largemouth Bass	115	12"
Muskellunge	4	16"
Pumpkinseed Sun.	1	4"
Red Breast Sunfish	454	5"
Rock Bass	75	5"
Smallmouth Bass	1,192	7"

Table 1

### Smallmouth Bass

The South Fork Shenandoah River has a long-standing reputation as an excellent smallmouth bass river. Densities of smallmouth bass in the South Fork Shenandoah River are at times greater than any other river in Virginia. It is not



uncommon for experienced anglers to catch 30-60 smallmouth during an eight hour float trip. The South Fork Shenandoah may be known for its high catch rates of smallmouth bass, but it does not produce the number of trophy-size smallmouth bass compared to other Virginia waters. Growth rates are extremely slow with smallmouth not reaching twelve inches until age 5-6.

Fishing success can vary depending upon environmental conditions. The smallmouth bass population is mostly controlled by environmental influences (floods/droughts). Years where there is a very successful spawn produces a strong “year-class” of bass. These strong year-classes are what makes the

fishing favorable. When one or two strong year-classes of bass are reaching the sizes that anglers are targeting, fishing can be excellent. However, when poor year-classes are recruiting to the fishery, fishing success can become poor. Our sampling this fall yielded a catch rate of young of year smallmouth bass just above the yearly average (Figure 1). This will have a positive effect on the population numbers in the coming years.

Overall our sample yielded high numbers of smaller fish, with a majority falling short of the 11” mark. This is pretty typical for the South Fork, fantastic catch rates with low numbers of quality sized fish. Anglers can expect to catch high

numbers of 7-10” fish

(Figure 2). Currently there are several strong year classes recruiting into the smallmouth fishery (2014, 2015, and 2019). Typically this results in above average catch rates of quality sized



bass within the system. We saw a slight dip in the number of quality fish present after the high water year of 2018, however anglers can expect above average catch rates of fish over 11” during the upcoming season (Figure 3). The South

Fork has had its fair share of struggles over the years with fish health problems, but by in large the fishing on the Shenandoah should be excellent.

Anglers will find smallmouth throughout all habitat areas on the river. The best places to find smallmouth bass in higher concentrations are directly below bedrock ledges, at the head of pools directly below riffles, runs with various pockets and eddies, and the tail-end of pools. These areas produce faster currents which wash food items to waiting smallmouth. Smallmouth can be caught with all types of artificial lures and live bait. Anglers can catch smallmouth every month of the year in the South Fork Shenandoah River.

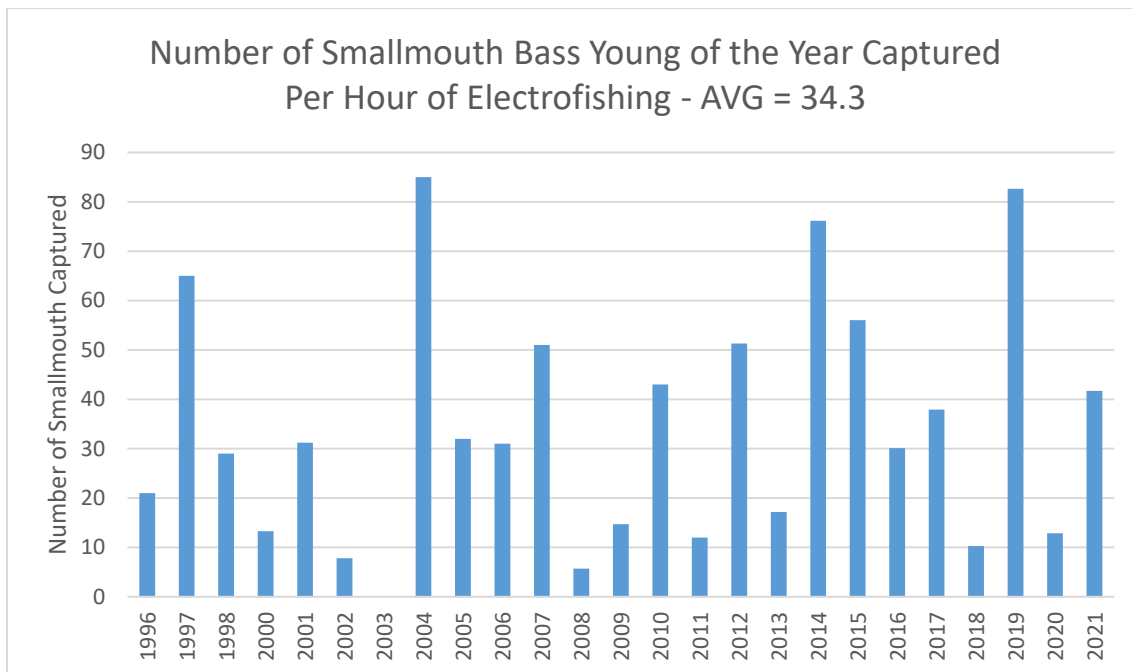


Figure 1

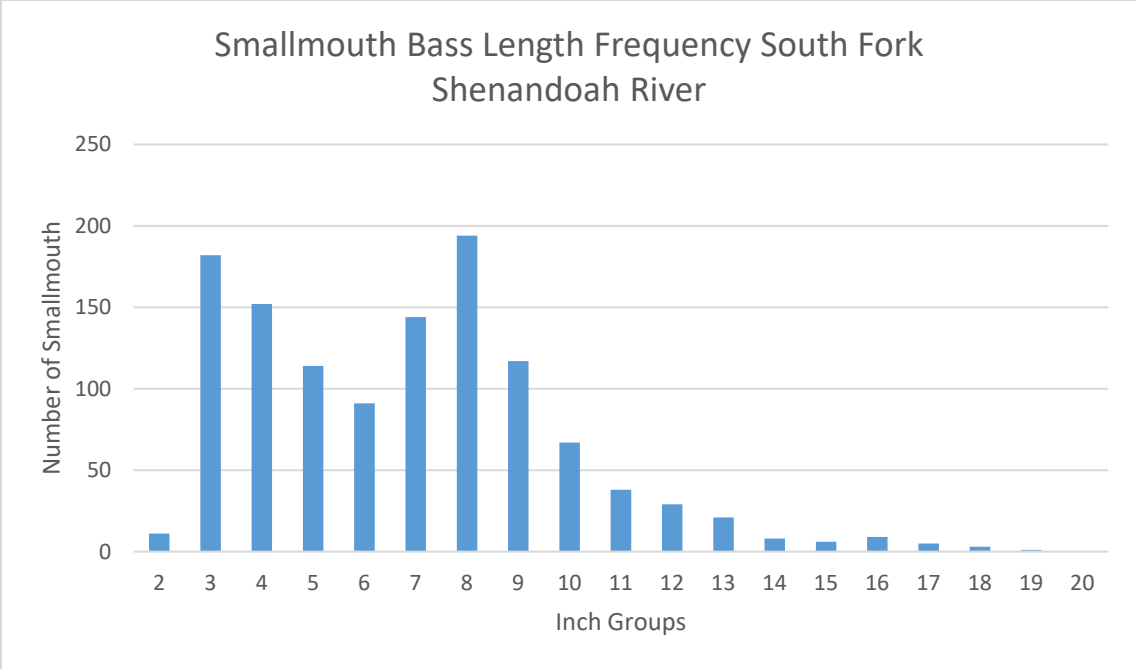


Figure 2

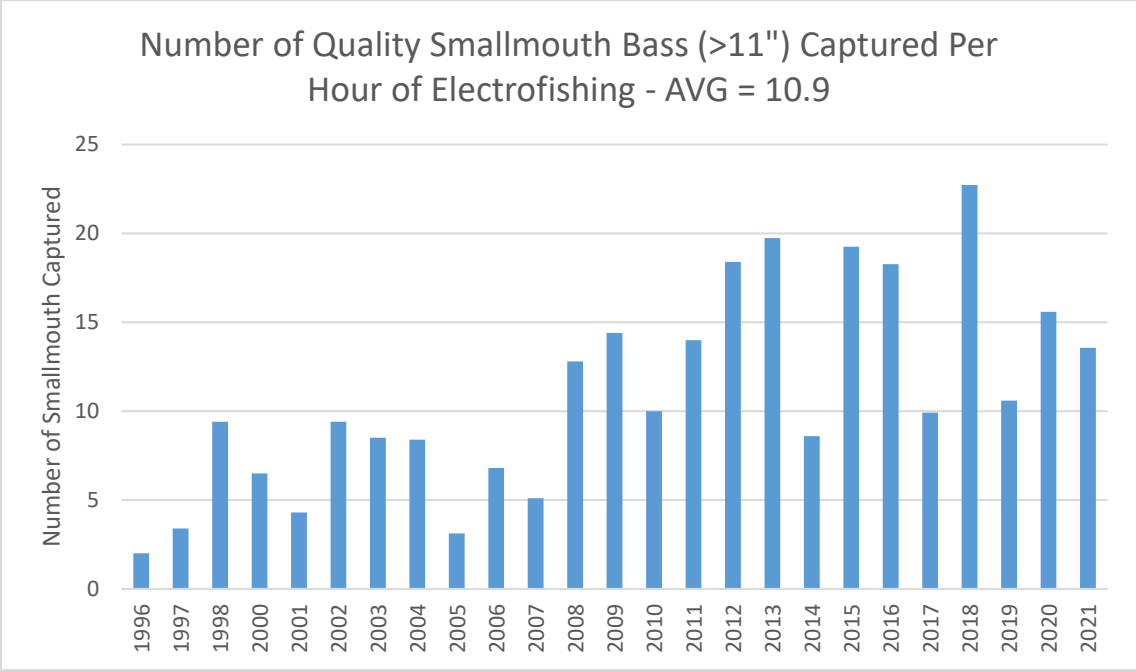


Figure 3



## Largemouth Bass

Largemouth bass do not gain as much attention as their cousin the smallmouth bass, but the South Fork Shenandoah harbors a very good largemouth population.

Overall, our sample contained a wide range of sizes with a majority falling into the 10-17” size range (Figure 4).

However, the river is a sleeper largemouth



fishery for quality bass. Our heaviest fish weighed in at 6.4lbs. Although there has been a reduction in overall numbers of largemouth, anglers can expect an increase in the number of 15-20” bass in the coming years.

To catch one for yourself cast in the slower, deeper pool habitat areas of the river. Any large pool, including the power pools created by the hydropower dams, contain fishable populations of largemouth bass. Target your efforts near woody debris in the pools of the river. Most any offering of artificial or natural bait should entice a largemouth.

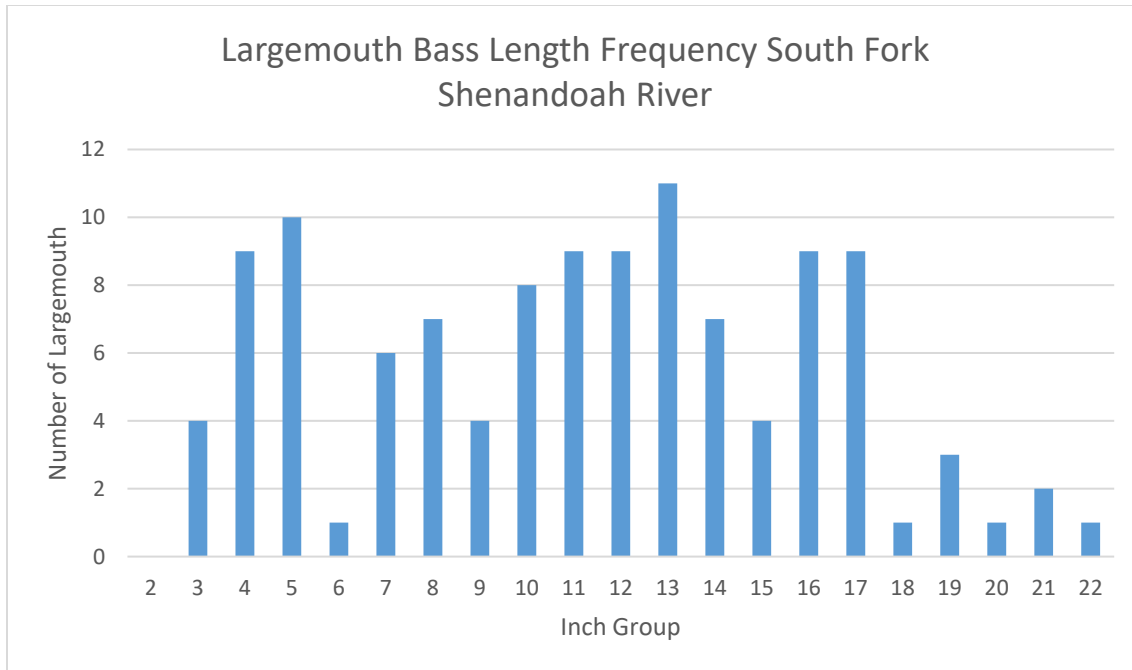


Figure 4

## Sunfish

The South Fork Shenandoah River is home to several sunfish species. They include: redbreast sunfish, rock bass, bluegill, and pumpkinseed sunfish. All these sunfish species tend to occupy the same habitats. They prefer to associate with areas of reduced current and structure. The redbreast sunfish may also be located in areas with faster currents. Sunfish densities are excellent and the number of larger “hand-size” panfish is above average.

## Crappie

Both black and white crappie inhabit the South Fork. The black crappie is the more dominant of the two species. Crappie are predominantly found only in the

large pools of the South Fork. The pools formed by the hydropower dams at Shenandoah, Newport and Luray have the highest concentrations of crappie. Anglers should target woody debris in these pools when fishing for crappie.

## **Muskellunge**

VDWR periodically stocks fingerling-size musky on the South Fork Shenandoah River at 15 sites stretching from Port Republic to Front Royal. It was last stocked in the fall of 2021 with 453 advanced fingerling musky (approximately 10-12”). There has been limited evidence of muskies reproducing naturally in the South Fork, therefore they must be stocked to sustain a fishery. Musky are stocked to increase diversity to the fishery and provide a challenging trophy fish for anglers to target. Adult musky densities are not as high as some of the other rivers in the state due to the lack of consistent pool





habitats. However, when you come across a pool on the South Fork, anglers have a good opportunity to come in contact with a musky.

Our biologists and technicians typically sample the river for musky in January or February. They sample 4 sites using three electrofishing boats. During the last sampling event they collected a total of 36 fish with a majority falling in the 36 – 44” range, which is typical for the South Fork (Figure 5). We are noticing a reduction of younger fish within the population. This is probably the result of inconsistent stocking. However, we should see a good number of young fish in the coming years. The river received repetitive stockings in 2018, 2020, and 2021. This past fall we received word of higher than normal catch rates of young musky by anglers. We also captured above average numbers of juvenile musky during our smallmouth sampling. This is a good sign for the future. Musky grow fast in Virginia, with females reaching citation size (40”) in 5-6 years.

To learn how to fish for musky, please visit:

[dwr.virginia.gov/wildlife/fish/muskellunge/](http://dwr.virginia.gov/wildlife/fish/muskellunge/)

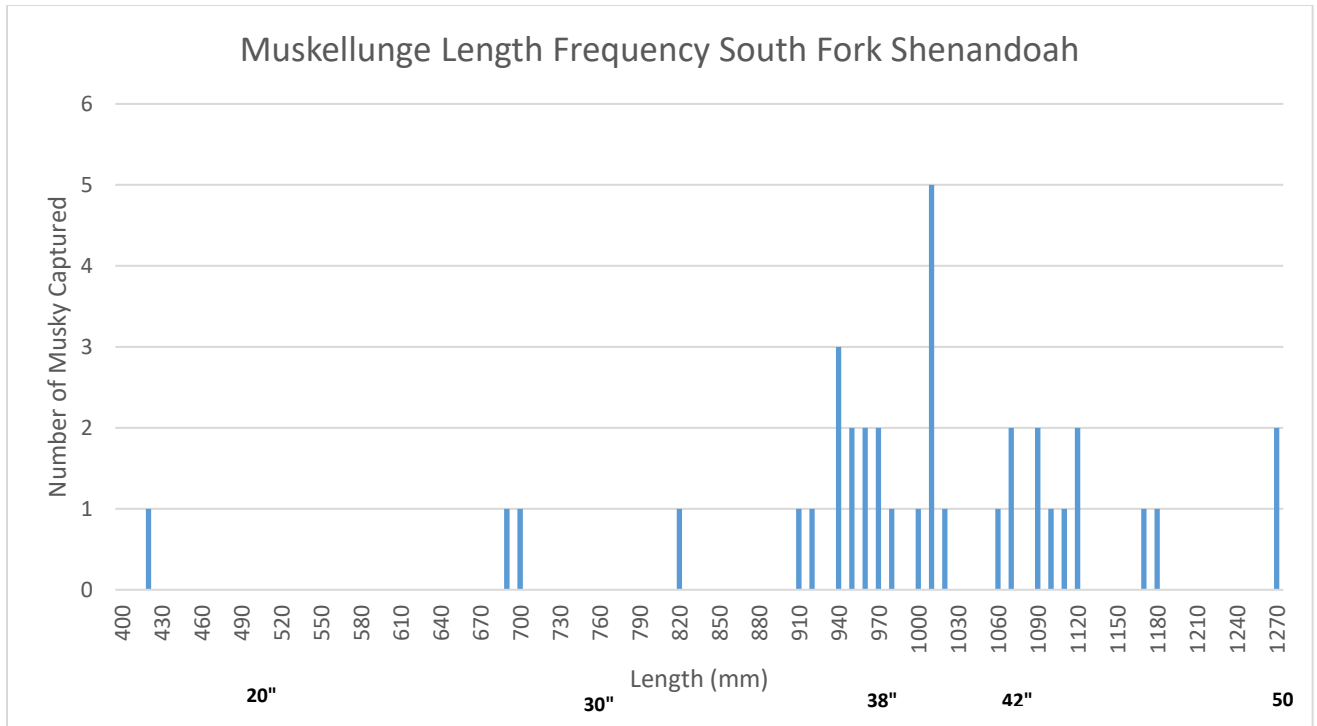


Figure 5

## Channel Catfish

The South Fork Shenandoah features an underrated catfish fishery that stretches the entire length of the river. Anglers should focus their efforts in the slower pools, but don't be surprised if you catch one in faster moving current. Anglers are often surprised by a cat on the end of their line while fishing for bass.

Channel catfish are active feeders and will feed during the day as well as at night. Anglers can expect an increase in numbers and size as they move downstream.



### **Other fish species**

American eel, white sucker, northern hogsucker, common carp, Fallfish, shorthead redhorse, river chub, and yellow bullhead, are some other fish species that anglers might encounter in the South Fork.