

North Fork Shenandoah River Biologist Report: 2021

Department biologists and technicians sampled the North Fork three times during the spring of 2021 using their raft electrofishing gear. Three permanent floats measuring approximately 6 miles each are sampled annually. The floats are located within the upper, middle, and lower sections of the North Fork. A total of 623 fish were collected during the three days of sampling (Table 1).

Species	Number Caught	Average Length
Black Crappie	1	7"
Bluegill Sunfish	2	6"
Largemouth Bass	2	8"
Pumpkin Seed Sun	1	5"
Redbreast Sunfish	261	5"
Rock Bass	37	6"
Smallmouth Bass	318	8"

Table 1

Smallmouth Bass

The most sought after sportfish in the North Fork Shenandoah River is the smallmouth bass. Densities of smallmouth are high and anglers can experience catch rates that average 1.2 bass per hour. Fisheries biologists consider a catch rate greater than one fish per hour to be very good. Experienced anglers can expect catches of 50+ smallmouth in a day of fishing when population numbers are normal. Remember, fishing



success can vary depending upon environmental conditions. The natural mortality rate of smallmouth in the North Fork is high and harvest by anglers is low, based on research conducted by biologists. Therefore, the smallmouth bass population is mostly influenced by environmental conditions (flood/drought/fish health).

Overall our sample yielded high numbers of smaller fish, with a majority falling short of the 11” mark (Figure 1). About 33% of the smallmouth were 11” or

greater with only 14% topping 14". We found low numbers of memorable fish with only 5% measuring 17" plus. We believe that the North Fork fish population suffered losses due to the frequent high water events during 2018 (Figure 2). Although no specific fish kills were reported, our data suggests a reduction in overall numbers within the bass population.

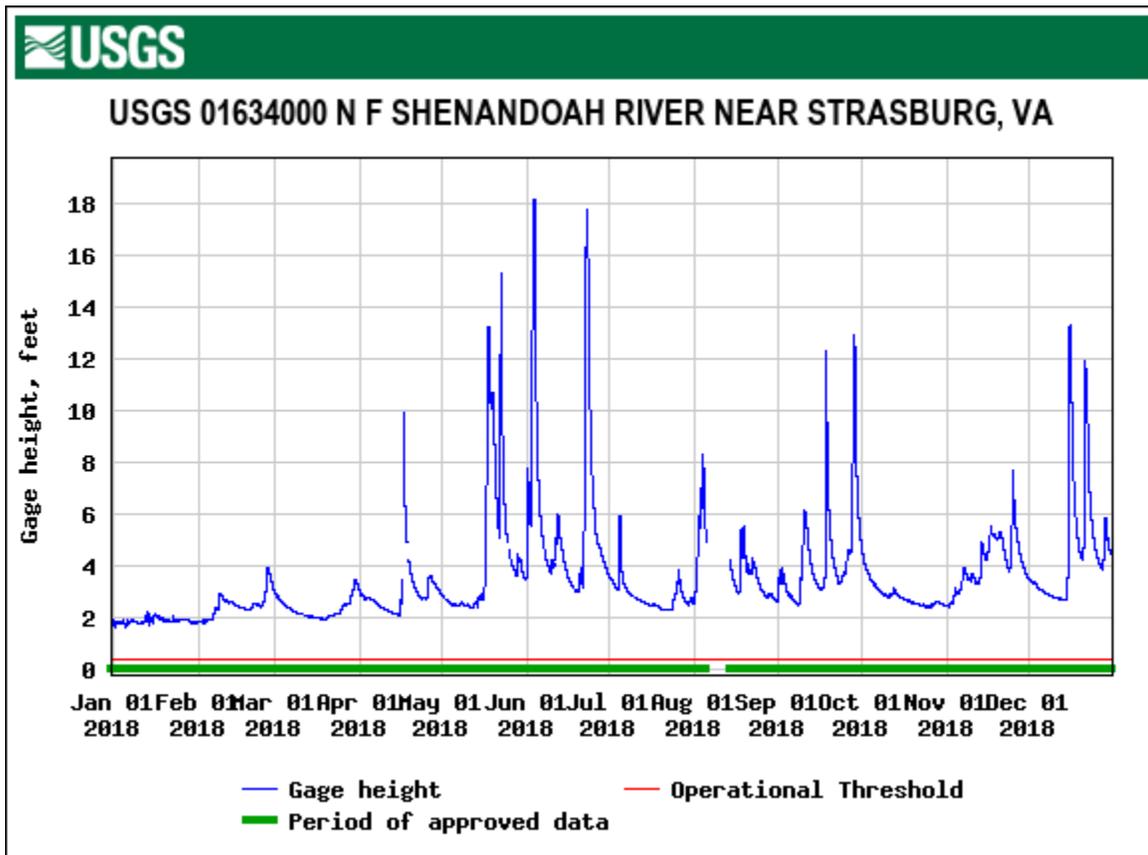


Figure 2

The good news is, the population is slowly rebounding, and our total catch rate has doubled since we hit a historical low in the spring of 2019 (Figure 3). If you break down the numbers by reach, anglers can expect higher numbers of smaller fish within the upper and lower reaches of the river. For those that prefer larger

fish try the middle reaches, overall numbers are lower but some quality fish are still cruising the ledges (Figure 4). Within the next 3-4 years anglers should see the population recover as long as the bass continue to experience spawning success.

Years when there is a very successful spawn results in 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 prefer, fishing can be considered excellent. However, when weak year-classes are produced by environmental variables (like high flows in the spring), fishing success can be poor.

It can be challenging for us to track young of the year bass when sampling takes place in the spring (the young of the year haven’t been born yet). Therefore, we track juvenile bass (<7”) to assist us with predicting changes to the population through time. Currently, we have experienced a number of years of below average to average numbers of juvenile fish within the system (Figure 5). This helps explain the gradual population recovery after the high flows in 2018.

Anglers will find smallmouth throughout all habitats on the river. One of the most productive areas to find smallmouth is directly below riffle areas or bedrock ledges. The area of the North Fork between Edinburg and Strasburg contains many bedrock ledges. Various types of artificial lures and live baits can be effective for catching smallmouth on the North Fork. Anglers should not limit

their smallmouth fishing to just the warmer months. Smallmouth are active throughout the year and some of the largest bass are caught during the colder months.

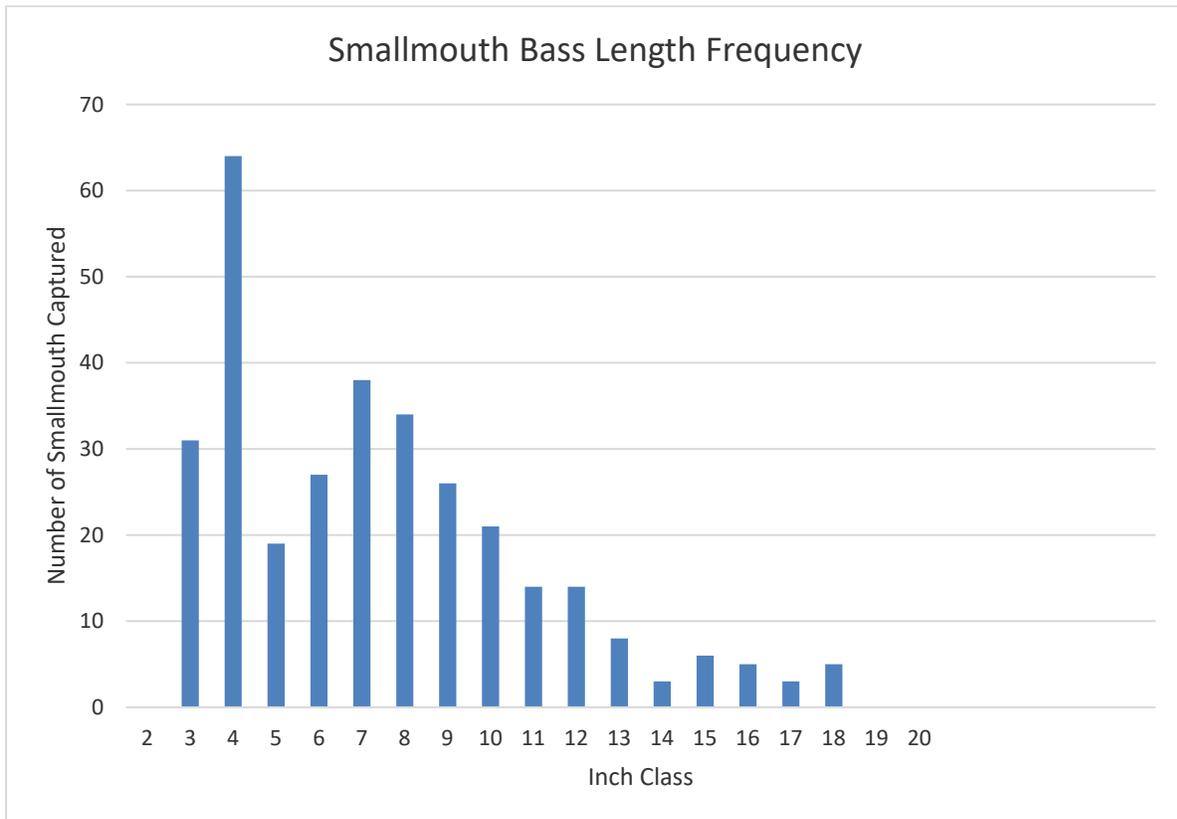


Figure 1

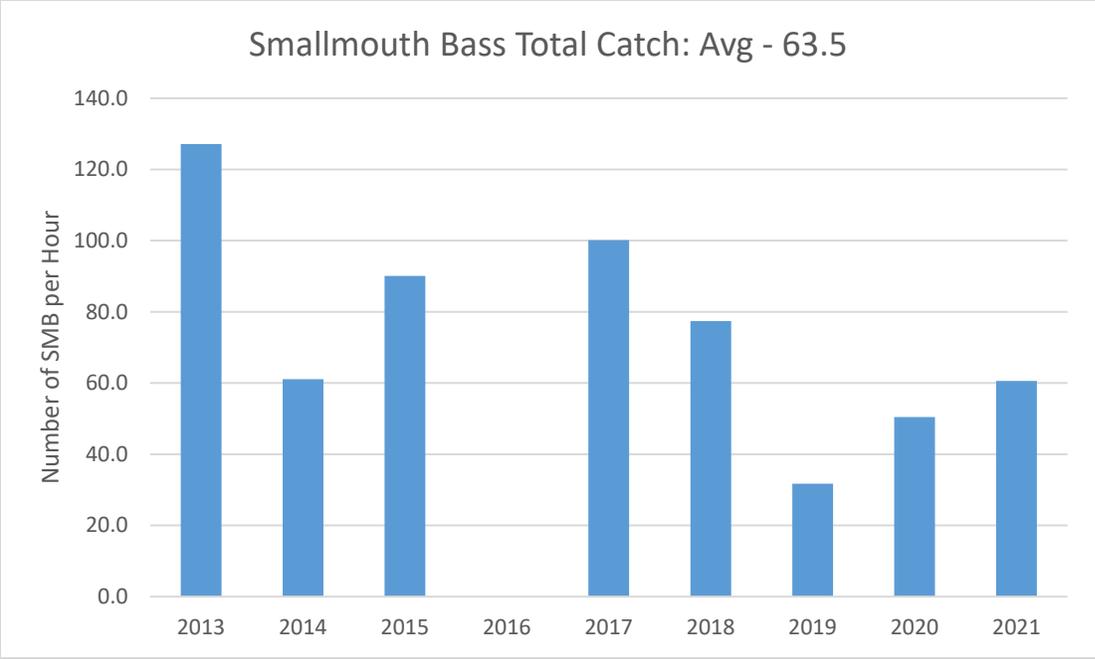


Figure 3

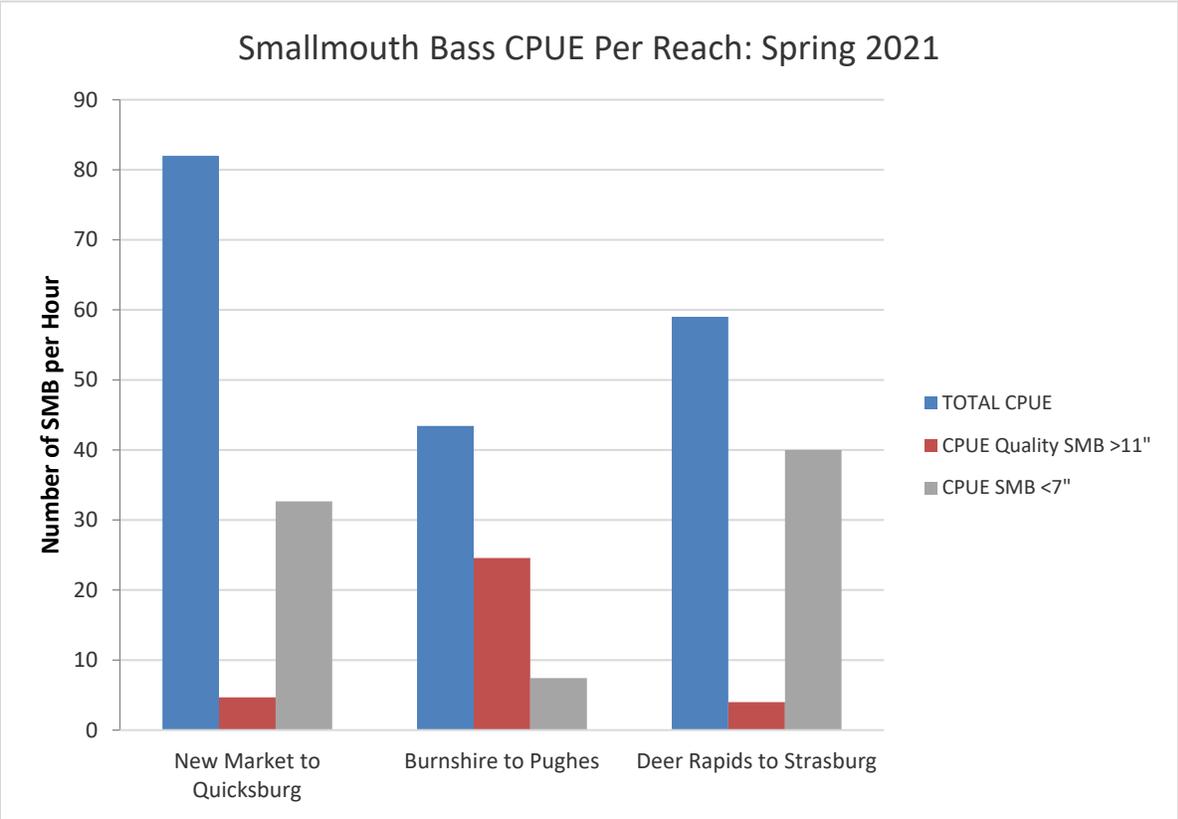


Figure 4

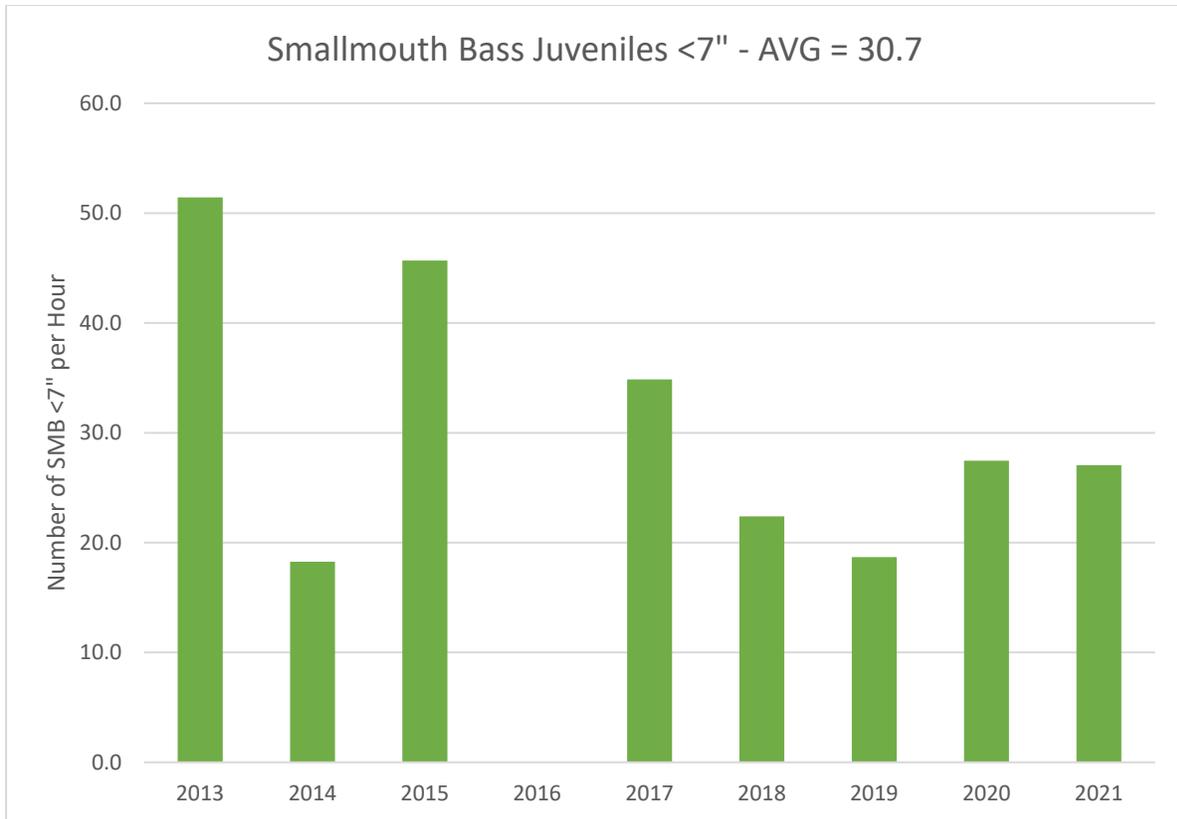


Figure 5

Largemouth Bass

Largemouth bass are limited to relatively few areas of the North Fork where deep pools with slower currents exist. The North Fork has a low percentage of pool habitat compared to the South Fork Shenandoah. However, anglers can encounter some good largemouth fishing in the pools of the North Fork. Most any offering of artificial or natural bait should entice a hungry largemouth.

Sunfish

The North 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. This year we experienced the highest catch rate since we started raft sampling in 2013 (Figure 6). Anglers should not overlook the sunfish population when fishing the North Fork.

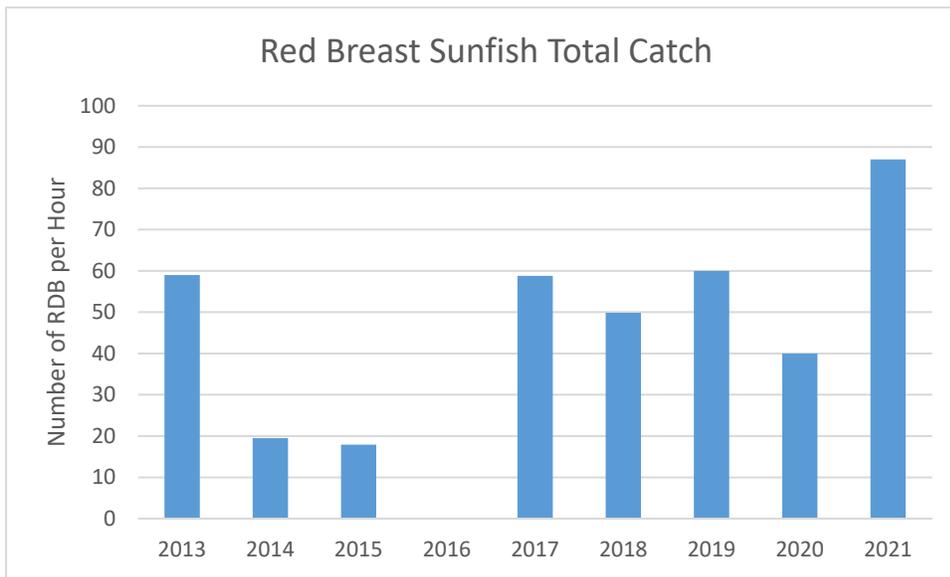


Figure 6

Fallfish

The fallfish feel right at home in the mid-depth currents of the North Fork. These fish are numerous and can attain lengths of up to 15 inches. Fallfish are often overlooked as a sportfish, but they can put up a good fight on light tackle. Fallfish often feed on the surface taking mayflies and other insects. Fly fishing for “rising” fallfish on the North Fork can be very rewarding.

Muskellunge

VDWR periodically stocks fingerling-size musky on the North Fork Shenandoah River at 11 sites stretching from New Market to Front Royal. It was last stocked in the fall of 2020 with 204 advanced fingerling musky (approximately 8”). There has been no evidence of muskies reproducing naturally in the North 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 low, but can be a rewarding surprise when hooking into one.

To learn how to fish for musky, please visit:

dwr.virginia.gov/wildlife/fish/muskellunge/

Channel Catfish

The North Fork Shenandoah features an underrated catfish fishery. Anglers should focus their efforts from the Woodstock area downstream to Front Royal. Unlike the South Fork there is no fish consumption advisory on the North Fork. This provides an excellent opportunity for anglers to harvest some fish for the frying pan.



Other fish species

American eel, white sucker, northern hogsucker, common carp, crappie, and yellow bullhead, are some other fish species that anglers might encounter in the North Fork.