



# 2024 Non-Tidal Rivers Fishing Forecast

## JAMES RIVER (Upper)

The upper James River begins at the confluence of the Jackson and Cowpasture Rivers near Iron Gate and flows approximately 90 miles downstream to the City of Lynchburg. Anglers can continue to expect reduced numbers of smallmouth bass in most areas of the upper James River in 2024. Poor spawning and survival of young fish from 2015-2020 has led to an overall decrease in smallmouth bass abundance. In fall 2023, 926 smallmouth bass were collected using electrofishing gear with approximately 50% of those bass considered "catchable size" measuring 7 inches or greater. An above average spawn in 2021 has resulted in better numbers of smallmouth bass, ranging 7 to 10 inches. The 2023 spawn appears to be above average based on the catch of juvenile smallmouth bass approximately 5 inches or less. Anglers can expect to see some fish larger than 12 inches as they continue to persist from good year classes six to ten years ago. Approximately 18% of the smallmouth bass collected were 14 inches or greater and therefore protected under the current slot limit regulations. The above average spawns in 2021 and 2023 should yield better numbers of catchable sized smallmouth bass over the next few years. However, more consistent spawning in the future is needed to bring the smallmouth bass abundance up to levels many anglers remember. Recreational usage of the upper James has become extremely popular. Anglers specifically targeting smallmouth bass should consider fishing in less frequented sections of the river.



Numbers of muskies continue to be good especially in areas upstream of Lynchburg. Several above average spawns in recent years have led to good numbers of smaller muskies (25 to 30 inches) as well as adult muskies ranging from 32 to 42 inches in length. The abundance of larger muskies (44 inches or greater) appears to be less than what was collected in previous years. However, given the high number of juvenile muskies, anglers should expect good muskie fishing for the next several years.

The upper James is also home to a variety of sunfish including Rock Bass, Redbreast, and Bluegill. Over 1200 sunfish were collected in 2023 with most fish ranging from 3 to 7 inches in length. Rock bass were most abundant and more plentiful than previous years. As for catfish in the upper James, channel and flathead numbers should be similar to previous years, plentiful in places but not consistently abundant river-wide.

## **JAMES RIVER (Middle)**

Smallmouth Bass numbers in the middle James River (Bent Creek to Watkin's Landing) have declined steadily in recent years. Fall 2023 electrofishing samples revealed modest signs of improvement. A total of 470 Smallmouth Bass were collected in 2023, with 94% of those fish measuring less than 12 inches. Fall 2023 samples revealed fair numbers of 1-year old Smallmouth Bass, approximately 7-8 inches in length. These fish will reach catchable size in 2024 and should provide anglers some action throughout the middle river over the next several years. Low Smallmouth Bass abundances appear to have increased growth rates. The fish that remain in the middle river are growing very quickly and should provide modest opportunities to catch quality fish in the years to come.

Recent detections of Alabama Bass in the tidal James River and a single detection in the fall-line James River indicate an increased potential for illegal introductions into the middle James River. Alabama Bass are known to hybridize with and outcompete Smallmouth Bass populations and pose a serious threat to the future of the fishery.

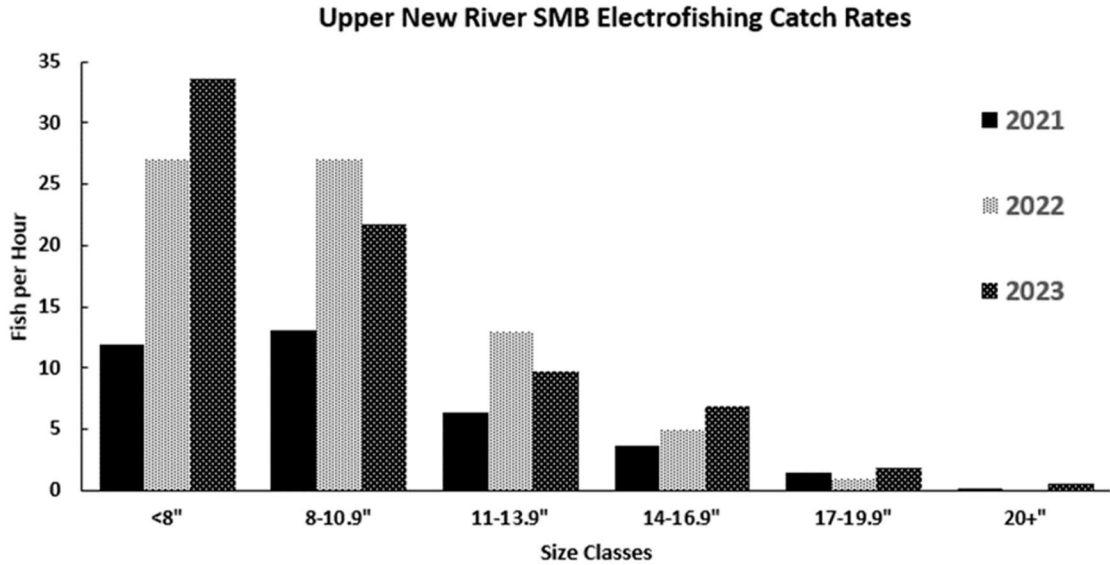
The middle James also provides anglers the opportunity to catch several sunfish species, including Bluegill, Redbreast Sunfish, Redear Sunfish, and Rock Bass. Sunfish numbers are lower than previous years with most fish ranging from 4 to 6 inches in length. These fish can provide good action for anglers, particularly on lighter tackle.

Numbers of both Channel and Flathead Catfish remain high and stable throughout the middle James River, with most fish between 12 and 20 inches. Blue Catfish appeared in middle James River electrofishing samples in 2016 but abundance has remained low since that time.

## **UPPER NEW RIVER (Above Claytor Lake to NC state line)**



Smallmouth Bass Spring Electrofishing catch rates remained fairly consistent from 2022 to 2023 but are still well above 2021 catch rates. More fish less than 8" were collected in 2023 indicating a strong cohort moving through the system from the 2021- and 2022-year classes. If you're looking to catch good numbers of fish try Baywood, Independence, Fries, Old Town, or Wilson. Looking to target larger fish >14" or trophy catches, head to Fries, Independence, Shot Tower, or Baywood. Anglers looking for other opportunities should target sunfish or Rock Bass from the mouth of Wilson to Fries. Catfish, both Flatheads and Channels can be found in plentiful numbers in any of the slower moving pool areas along the upper New River.



Upper New River Smallmouth Bass catch rates from spring electrofishing surveys in 2021-2023.

## LOWER NEW RIVER (Claytor Dam downstream to WV state line)

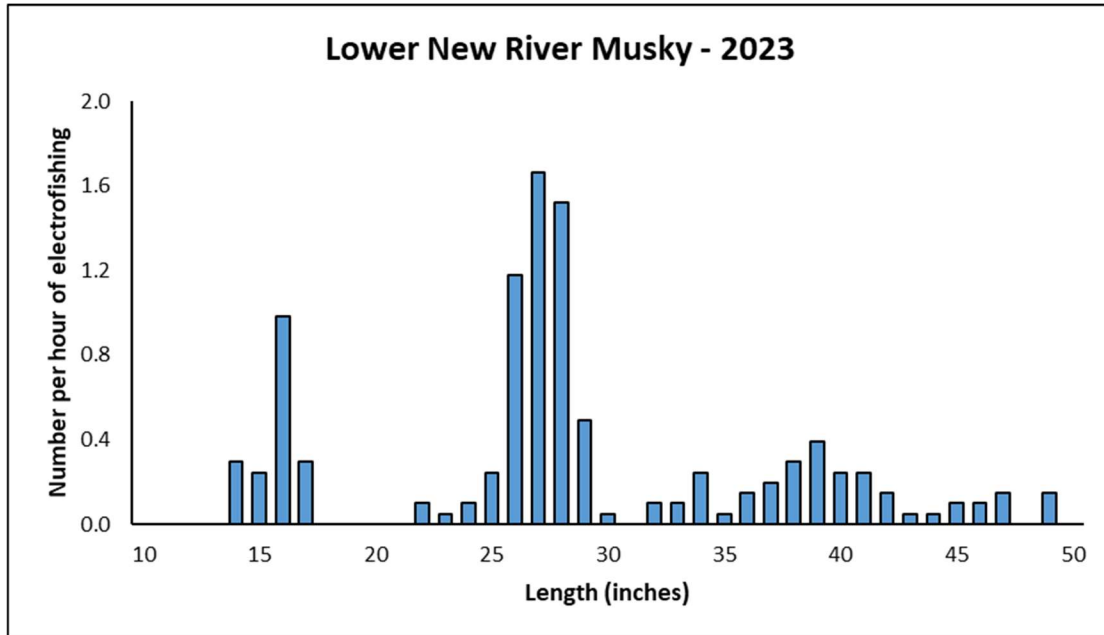
Unfortunately, the Lower New River (from Claytor Dam to the WV border) was unable to be sampled in the Fall of 2023 due to low water levels caused by the statewide drought. This marks the 2<sup>nd</sup> year in a row



that the Lower New was not able to be sampled in the fall. Anglers should still be enjoying fish from the 2016-year class, with much of that age class reaching 17". Biologists also reported seeing good numbers of quality Smallmouth while conducting musky sampling in both 2023 and 2024. Some good news on the horizon is that the Lower New River typically mirrors the Upper River when it comes to year class strength. Anglers should expect to see some stronger year classes from 2021 and 2022 start to enter the 8-12" range.

Anglers looking to catch a musky on the lower New River in 2024 should have a good chance of landing one. Annual sampling efforts in 2023 show the continued presence of fish from the strong 2021 spawning year-class. During the 2023 sample these fish were Age-2 and were about 25-28 inches in length. Sampling efforts in 2023 also revealed a relatively strong cohort produced in 2022. At the time of the 2023 sample these juvenile muskies measured about 14-17 inches in length. There are

still good numbers of larger adult musky available for anglers to target, although the numbers of larger fish have been down slightly as older fish have aged out. Preliminary results from sampling in 2024 show that fish from the 2021 year-class are now in the 28–32-inch length range and will provide anglers the opportunity to catch larger fish as they grow and mature in the system. The best areas for anglers to target musky continue to be the reach between Claytor Dam and Radford and the area of Whitethorne. These two stretches of river consistently produce some of the highest sampling catch rates compared to other parts of the lower New River.



Lower New River Musky catch rates from 2023 electrofishing surveys.

## RAPPAHANNOCK AND RAPIDAN RIVERS

These rivers experienced extraordinarily low flows during fall 2022 and 2023 which resulted in fisheries surveys being canceled for lack of watercraft access. Thus, this year’s forecast is similar to the 2021 survey since no new data were forthcoming. The good news is we have further distanced ourselves from 2018 “the wettest year in history” and its failed year classes for nearly every riverine population. Spring flows were conducive for successful Smallmouth Bass reproduction from 2019-2022, so fishing on the upper Rappahannock and Rapidan Rivers (above Fredericksburg) in 2024 should be better than previous years. Like most rivers in eastern and central Virginia, high water during spring in many recent years has resulted in poor spawning success, and consequently Smallmouth Bass abundance was near a record low in 2020 but has been rebounding. The Largemouth Bass population has also been expanding, and their numbers are strong on the slower stretches especially where *Hydrilla* is present. Snakeheads can be found in these same slower, vegetated habitats; so weedless baits (soft plastics in spring, and topwater in summer) are a good choice. Look for snakeheads to stack up below Rapidan Mill Dam in mid-April through early May before they drop back from their pre-spawn migration. The rivers are full of perfect eating-size Channel Catfish which have colonized the upper watershed since Embrey Dam came down. Yellow Perch, White Perch and Striped Bass can now also be found far above Fredericksburg with migration barriers gone.

## NORTH FORK SHENANDOAH RIVER



Consistent spawning success should aid in improving the Smallmouth Bass population in the North Fork Shenandoah over the next few years. During our 2023 spring raft sampling we collected 239 Smallmouth Bass at a rate of 43.4 fish per hour within three 6-mile floats located within the upper, middle, and lower sections of the North Fork. Our catch rate was unchanged from our 2022 sample and below the long-term average. Approximately 57% of the smallmouth were 11" or greater with 23% topping 14". We caught good numbers of memorable fish with 10% measuring 17"

plus. The number of quality sized fish continues to increase when compared to previous year's samples. However, overall numbers are below average frustrating both biologists and anglers alike. Unfortunately, we continue to experience poor spawning success within the North Fork which is causing a lag in the population's recovery. In 2018 the North Fork Shenandoah experienced long-term record flooding which appears to have had a negative impact on the fish community. The population continues to struggle to recover from this event.

During the spring biologists and hatchery staff raised fingerling smallmouth bass at the Front Royal Fish Cultural Station. This effort is part of a long-term smallmouth bass stocking project. Fortunately, the hatchery produced more fish than what was required for the study. A surplus of 1,554 fingerlings were stocked into the North Fork Shenandoah as a result. The fish were spread out within the Deer Rapids to Strasburg Park area at several sites. Each bass was marked using oxytetracycline to help biologists determine the percentage of stocked fish that recruit to the population. Hopefully survival will be high and assist with the recovery of this section of river.

As for fishing in 2024, anglers should target the middle reaches of the North Fork within the Woodstock and Edinburg area. Biologists observed decent overall numbers and the highest amount of quality fish within this section.

The North Fork has more than just Smallmouth to offer our avid anglers. Fallfish are plentiful in some sections of the North Fork, can exceed 14 inches, and should not be overlooked. Anglers may also encounter fair numbers of Redbreast Sunfish in most areas, Bluegill in deeper pools, and the opportunity to catch a quality-sized Largemouth Bass, Channel Catfish, or the occasional Musky. Pool habitat is limited, so seek out deeper water when targeting these species. If you plan a float trip here; stick to spring and early summer, as low flows and dense vegetation can make fishing and navigation difficult later in the year.

## MAIN STEM SHENANDOAH RIVER

Since 2017 biologists have been observing Smallmouth Bass catch rates below the long-term average, but



this year the bass bounced back. During our 2023 fall sampling we collected 203 Smallmouth Bass from three sites and observed a catch rate of 64.2 fish per hour. This was a 28% increase in total catch when compared to our 2022 sample. About 43% were 11" of greater with 15% topping 14". Five percent measured 17" plus. The Main Stem suffers from inconsistent fish health issues much like the South Fork as well as low spawning success. However, the spawn from 2022 and 2023 were right

on the long-term average of 12 fish per hour which helped improve our catch rates. Overall, we observed a good mix of size classes albeit at low numbers. Therefore, anglers can expect a slight improvement in their catch rates in 2024.

Anglers also have the opportunity to catch Musky in the longer deeper pools. VDWR periodically stocks fingerling-size musky on the Main Stem Shenandoah River at 8 sites stretching from Warren Dam to the route 7 bridge. It was last stocked in the fall of 2021 with 226 advanced fingerling musky (approximately 8"). There has been limited evidence of muskies reproducing naturally in the Main Stem, therefore they must be stocked to sustain a fishery. Adult musky densities are not as high as some of the other rivers in the state. However, when you come across a pool on the Main Stem, anglers have the chance to come into contact with one. Anglers should target pools within the upstream reaches of the Main Stem, closer to the Warren Dam.

The Walleye have arrived. In the spring of 2014, DWR began stocking Walleye fry in the Shenandoah River annually to supplement the natural population and increase the number of Walleye present. In the spring of 2023, the Main Stem received 42,988 walleye fry. Anglers should continue to experience increased catch rates and better numbers of big Walleye in 2024. During our January sample we captured 25 walleye at a rate of 8.1 fish per hour, which was slightly below average. During the February spawning run biologists and technicians handled 80 fish (catch rate = 52.4 fish



per hour). The walleye averaged 20 inches in length, with the largest female measuring 31 inches and weighing 13 pounds. Most fish sampled were of legal harvest size or greater. Local anglers are starting to reap the benefits of this fishery, so plan a trip to the Shenandoah soon.

Unfortunately, Flathead catfish were accidentally or illegally introduced into the river. Biologists have discovered both adults and wild spawned individuals from Warren Dam to the Route 50 bridge. The flathead population is expected to expand in the coming years and biologists will be evaluating their potential impacts to the other fish populations closely.

Channel Catfish in the 2-to-6-pound range are common throughout the Main Stem Shenandoah. Don't be surprised if you catch quality-sized Redbreast Sunfish, Pumpkinseed, Bluegill, Green Sunfish, Fallfish, or Black Crappie.

## SOUTH FORK SHENANDOAH RIVER

The South Fork Shenandoah River is known by anglers as a “numbers” fishery, meaning anglers can expect to catch a reasonable number of bass and sunfish on any given day. During our 2023 fall sampling we collected 701 Smallmouth Bass from nine sample sites at a rate of 91.6 fish per hour. Approximately 26% were 11” or greater, 9% topped 14” and 2% measured 17” and up. Our catch rate dipped slightly from previous years, but due to record low flows, many of our sites were inaccessible. Lack of access paired with low clear water biases our samples toward a lower catch rate. Despite the difficult conditions, the



population looks excellent, with good numbers of quality fish. 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. Currently there are several strong year classes recruiting into the smallmouth fishery (2014, 2015, 2019, and 2021). The number of young of the year captured in 2023 was well below the long-term average. Regardless, the success from earlier spawning events should result in above average catch rates of quality sized bass within the system.

During the spring biologists and hatchery staff raised fingerling smallmouth bass at the Front Royal Fish Cultural Station. This effort is part of a long-term smallmouth bass stocking project. A 16 km study site was selected ranging from Newport dam to the Whitehouse boat landing. 6,700 fingerling smallmouth were stocked and spread between 6 sites. Each bass was marked using oxytetracycline to help biologists determine the percentage of stocked fish that recruit to the population. Hopefully survival will be high and help bolster the poor year class experienced in 2023.

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 in 2024. Largemouth Bass also present excellent

opportunities for anglers, as this river harbors a quality population. Finding 2-to-4-pound fish should not



be difficult in deeper, slower sections when woody debris are targeted. Overall, 72.9% of our sample contained quality sized fish (>12") with a majority falling into the 10-16" size range. The Shenandoah River is a sleeper largemouth fishery for quality bass. Although there has been a reduction in overall numbers of largemouth, anglers should see an increase in the number of 15-20" bass in the coming years.

There is also the opportunity to catch Musky in the longer

and deeper pools. 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 2023 with 1,940 fingerling musky (approximately 3-8"). 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 add 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 one.

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 in early 2023 they collected a total of 32 fish at a rate of 3.4 fish per hour, with a majority falling in the 35 – 40" range which is typical for the South Fork. This catch rate is very similar to the previous 5 years, indicating that the population is stable. Anglers should notice an increase in juvenile fish between 25-35". This is a direct result of consistent stocking efforts. The river received repetitive stockings in 2018, 2020, 2021, 2022 and 2023. 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: [How to Fish for Musky](#)



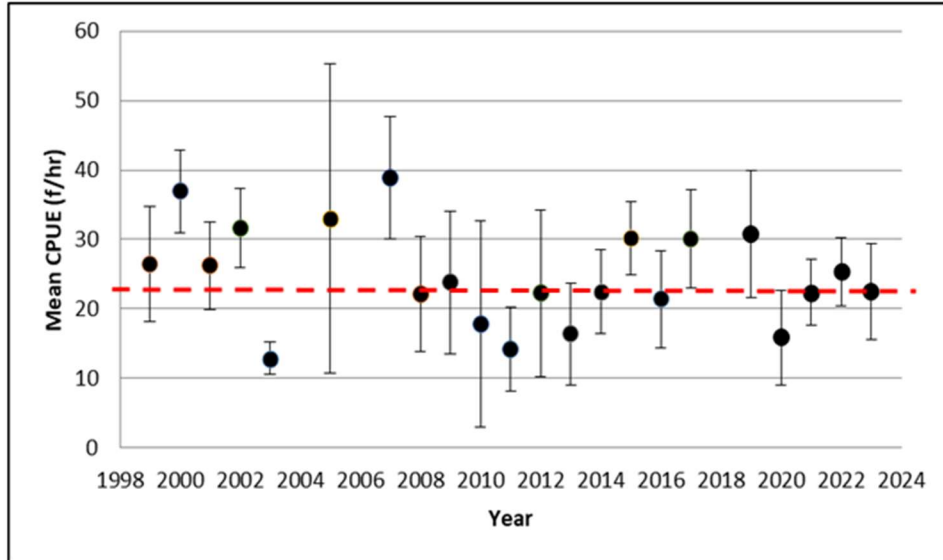
Unfortunately, Flathead catfish and Snakehead were accidentally or illegally introduced into the river. Biologists discovered one adult Flathead Catfish below the Newport Dam and one adult Snakehead upstream of Elkton. Both fish were removed and euthanized. This was the first time that either of these species were captured in the South Fork Shenandoah. Biologists and anglers alike should be on the lookout for both of these species in the coming years.

Channel Catfish in the 2-to-6-pound range are common, and anglers should concentrate on the lower South Fork when targeting them. Don't be surprised if you catch quality-sized Redbreast Sunfish, Pumpkinseed, Bluegill, Green Sunfish, Fallfish, or Black Crappie.



## STAUNTON RIVER

Smallmouth Bass fishing in the Staunton River in 2024 should continue to be average to good. While the 2020-year class (measured by the density of young bass in our samples) was poor, better than average year classes produced in 2015, 2017, 2019, 2021, and 2022 will maintain consistent catch rates of quality fish for the next several years. Catch rates in fall, electrofishing sampling show population densities for four of the last eight sample years above average and among the best catch rates in 25 years (see chart below). The 2016-, 2020-, and 2023-year classes were poor/average and high rainfall and extreme flows in 2018 likely resulted in few fish added to the fishery that year but the other year classes will compensate for these poor years. Consistent numbers of smallmouth over 16 inches have existed in the Staunton for the last 15 years so anglers still have great opportunities to catch quality fish in this stretch of river. Growth rates of Smallmouth Bass are above average, and survival is good which helps the Staunton River be a consistent producer of quality-size smallmouth. The Staunton has excellent Smallmouth Bass habitat in the reach above Brookneal; anglers new to the river should concentrate on the abundant rocky habitat as well as submerged trees extending from the riverbank. The river also holds several Kentucky Spotted Bass and the chance to catch a spot over 12 inches is very good; especially in the lower river below Brookneal.



Average catch rates of Smallmouth Bass from electrofishing samples on the Staunton River. Red line is the long-term average.



Smallmouth Bass sampled during a fall electrofishing survey on the Staunton River.

**Recent introductions of Alabama Bass into the system will be closely monitored in the coming years. This species is known to hybridize and outcompete smallmouth populations so we will have to see the fate of the Staunton River Smallmouth Bass population.**

Walleye and Saugeye fishing have really taken off in the Staunton, especially from Leesville dam to Altavista. Quality Walleye are now consistently being caught and sampled all the way to Brookneal. A tag reward study ran from 2020 through 2023 to assess the extent of angler exploitation of the Walleye/Saugeye fishery. In 2020, 260 Walleye and 40 Saugeye were tagged for a total of 300 reward tags. Of those 300, 50 were released into Leesville Lake to determine fishing pressure in the reservoir. 16–18-inch Walleye dominated the catch in 2020 and 2021 so anglers can expect a high density of legal fish in the river. Thirty tags were returned in 2020 for an exploitation or catch rate of 10% (corrected to 15% due to non-reporting bias). Again in 2021, 300 additional tags were placed in Walleye (290) and Saugeye (10) with 50 again going into Leesville Lake. Forty tags were returned in 2021 for an exploitation rate of 13% (corrected to 19% due to non-reporting bias). In 2022, 300 tags were placed in Walleye (282) and Saugeye (18) with 50 moved to Leesville Lake. Only 14 tags were returned for an exploitation rate of 5% (corrected to 6% due to non-reporting bias). Finally, in 2023 298 additional tags were placed in Walleye (276), Saugeye (15), and hybrids (7). No fish were transported to Leesville in 2023. Thirty-three tags were returned in 2023 for an uncorrected capture rate of 11% (23% when corrected for not-reporting). These results indicate that this fishery had consistent fishing pressure for the four years of the study. There was a decline in 2022 for unknown reasons (environmental variables possibly) but the percent of tagged fish returned changed very little with an average, corrected, capture rate of 16%. Only four tags from fish moved up to Leesville Reservoir were returned in the four years of the study. Three of those were caught from the river meaning those fish passed through the dam while only one was caught in the reservoir itself.

In addition to black bass and Walleye, anglers in the Staunton River will find fishing for Channel Catfish and Flathead Catfish to be excellent. Catfish are well distributed throughout the river and should be available to anglers fishing from the shore and from boats. A Striped Bass spawning run from Kerr Reservoir also provides a very popular and unique fishing opportunity in April and May.

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**FOR MORE INFORMATION ON VIRGINIA'S NON-TIDAL RIVERS, CONTACT THE FOLLOWING REGIONAL OFFICES:**

- **Staunton River and Middle James River: Farmville Office (434) 392-9645**
- **Upper James River: Forest Office (434) 525-7522**
- **New River: Marion Office (276) 783-4860**
- **Rappahannock and Rapidan Rivers: Fredericksburg Office (540) 889-4169**
- **Shenandoah Rivers: Verona Office (540) 248-9360**