



## The Non-Tidal James River 2015



*22+ inch smallmouth bass collected from the James River in Richmond*

From its formation at the confluence of the Cowpasture and Jackson rivers to the swift rapids through Richmond City, the 241 miles of the non-tidal James River offers numerous recreational opportunities to outdoor enthusiasts. Anglers have long sought out this stretch of the James as a fishing destination because of the diversity and quality of fisheries. The non-tidal James can be characterized in three different sections, the upper, middle, and fall-line sections due to differences in river characteristics and types of fisheries. The upper James (Iron Gate to Lynchburg) is a cool water section with mainly swift boulder-filled rapids and pool/run complexes with gravel/cobble substrates. This section is known for its abundance of smallmouth bass, trophy-sized muskellunge, and scenic mountain views. The middle James (Lynchburg to Boshers Dam in Henrico) flows through the piedmont of Virginia, is the flattest portion of the non-tidal James, and is composed of mild to moderate rapids and long sandy runs. In this section, the popular fisheries shift to smallmouth bass, redbreast sunfish, and catfish (channel and flathead). The most eastern portion of the non-tidal James, also known as the fall-line, is exceptionally unique for its tremendous rapids that flow through the backdrop of Richmond City. The fall-line contains fewer numbers of smallmouth bass but is known for its trophy-size bass and large catfish (blue, channel, and flathead). This section is also very popular in the spring due to the influx of the anadromous shad species and striped bass.

In the fall of 2014, 27 sites were sampled between Lick Run in Botetourt County and the 14<sup>th</sup> Street Bridge in Richmond. This report summarizes the findings from the 2014 survey by river section and informs anglers on what they can expect to catch throughout the non-tidal James River.

## Upper James River (Iron Gate to Lynchburg)

From the confluence of the Jackson and Cowpasture Rivers near Iron Gate downstream to Lynchburg (approximately 90 miles) the upper James River offers a diverse variety of sport fishing challenges. Smallmouth bass, muskie, catfish, rock bass and sunfish offer something for every angler. Smallmouth bass are the most popular sport fish anglers seek and they are the most abundant species collected in fall sampling, with 905 individuals collected in 2014, with sizes ranging from 3-22 inches. There was an abundance of juvenile smallmouth bass (less than 7 inches) collected in the 2014 samples making up 51% of all smallmouth bass collected. This should mean that smallmouth bass fishing in the future should be improving with all these young fish growing into the population. Conversely, adult abundance was considerably low, likely still recovering from several years of poor recruitment. The majority of the adult smallmouth bass collected were between 7-14 inches and only 36 individuals greater than 14 inches were collected (Figure 1).

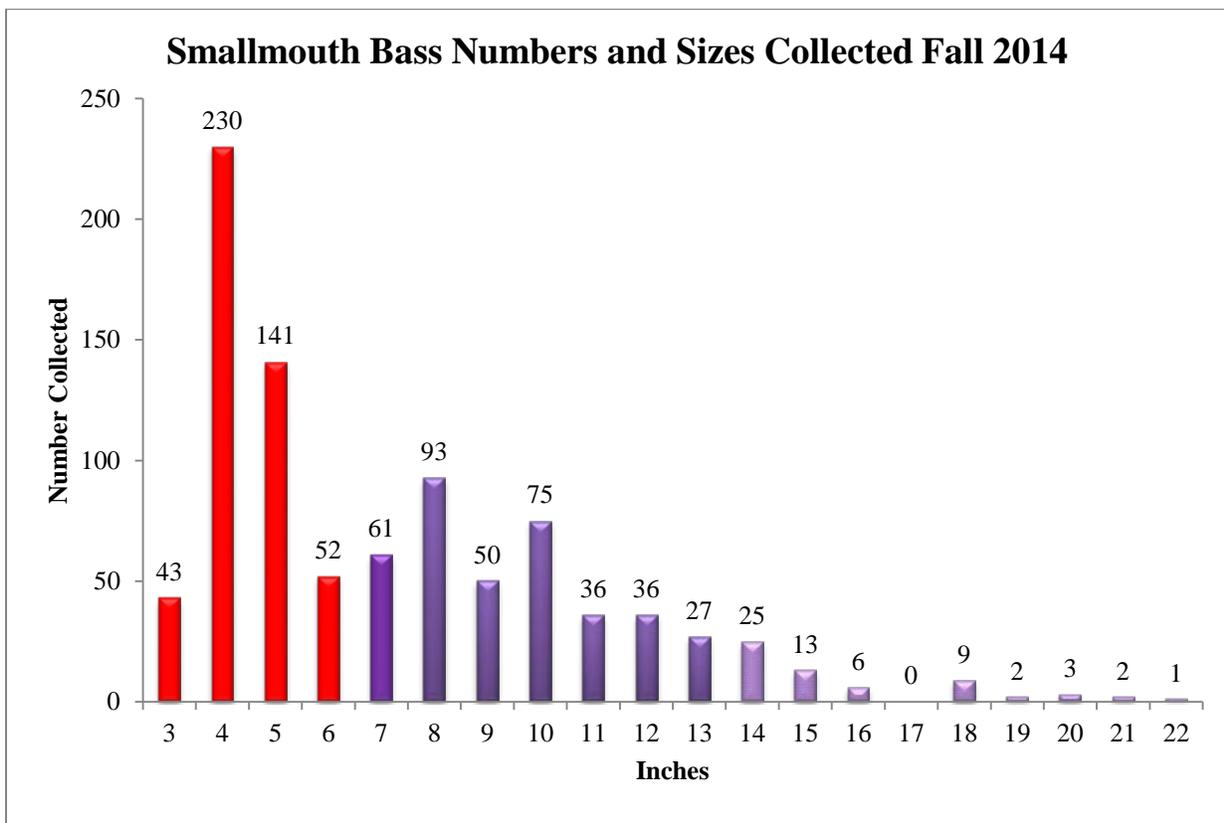


Figure 1. 2014 smallmouth bass catch from Lick run to Lynchburg with young bass (red bars) and adult bass (purple bars) numbers. The current smallmouth bass size regulation protects smallmouth bass in the 14-22 inch size range (light purple bars).

How do these numbers compare to previous collections? Many anglers have commented that in the last few years they have caught fewer smallmouth bass than in the past. We collect fish using an electrofishing boat and compare our catch by looking at the rate at which we catch fish (fish per hour). Collections since 1991 have ranged from 19 to 77 smallmouth bass per hour with the average being 41 per hour. In 2014 we collected 52 smallmouth bass per hour of sampling averaged over nine sampling locations in the upper James River portion (Figure 2). This is above the long term average of 41 per hour.

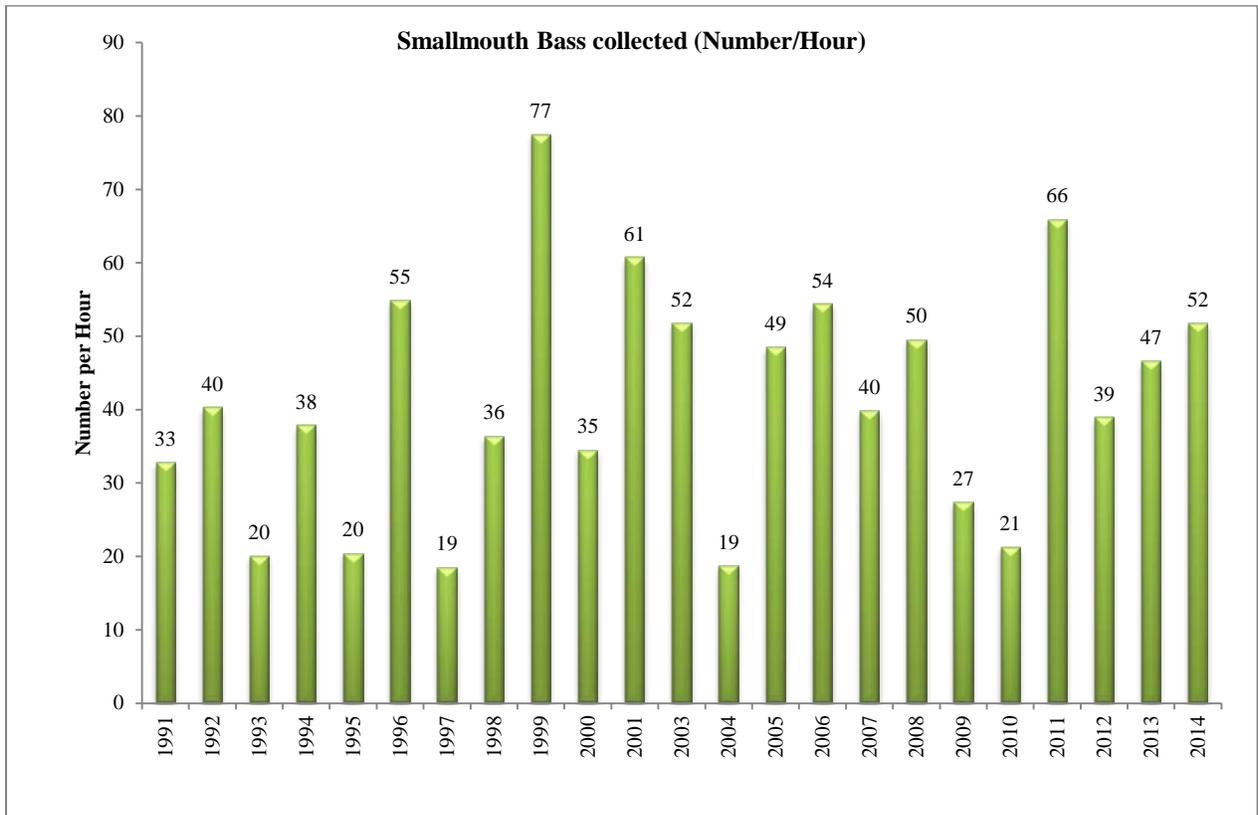


Figure 2. Annual catch of adult smallmouth bass from 1991-2014 for the James River.

So what causes the catch rates to differ? Our best explanation is fluctuations in young of the year (YOY) survival, which is driven by water levels in June, after the eggs hatch. YOY survival is best in years with average June flows but survival drops severely during dry and wet years. This drop in survival causes declines in smallmouth abundance and angling success in subsequent years. From 1991-2014, the catch per hour for YOY has ranged between 7 and 59 per hour with an average of 27 with most years experiencing below average survival (Figure 3). However, 2014 was an above average year, so the future looks promising.

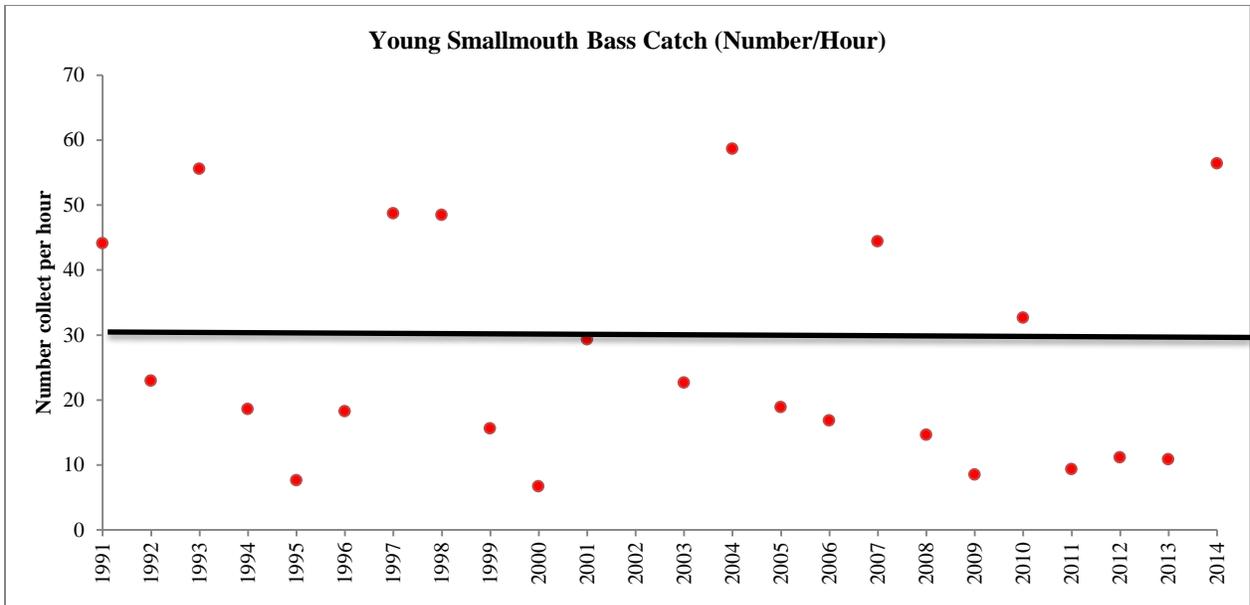


Figure 3. Annual catch of SMB YOY since 1991, the black line represents the long-term average.

The upper James River has many different fish other than smallmouth bass. Sunfish or panfish for example includes; bluegill, redbreast sunfish, redear sunfish, and rock bass. Collections from 2014 consisted of 1,052 panfish. Rock bass were the most numerous of the panfish collected (n=732). Rock bass size ranged from 2-10 inches with the average being about 6 inches. Bluegill and redbreast sunfish were slightly smaller in size ranging from 2-9 inches but most are in the 4-7 inch range (Figure 4). Panfish numbers can fluctuate annually like smallmouth bass and when abundant offer excellent fishing opportunities.

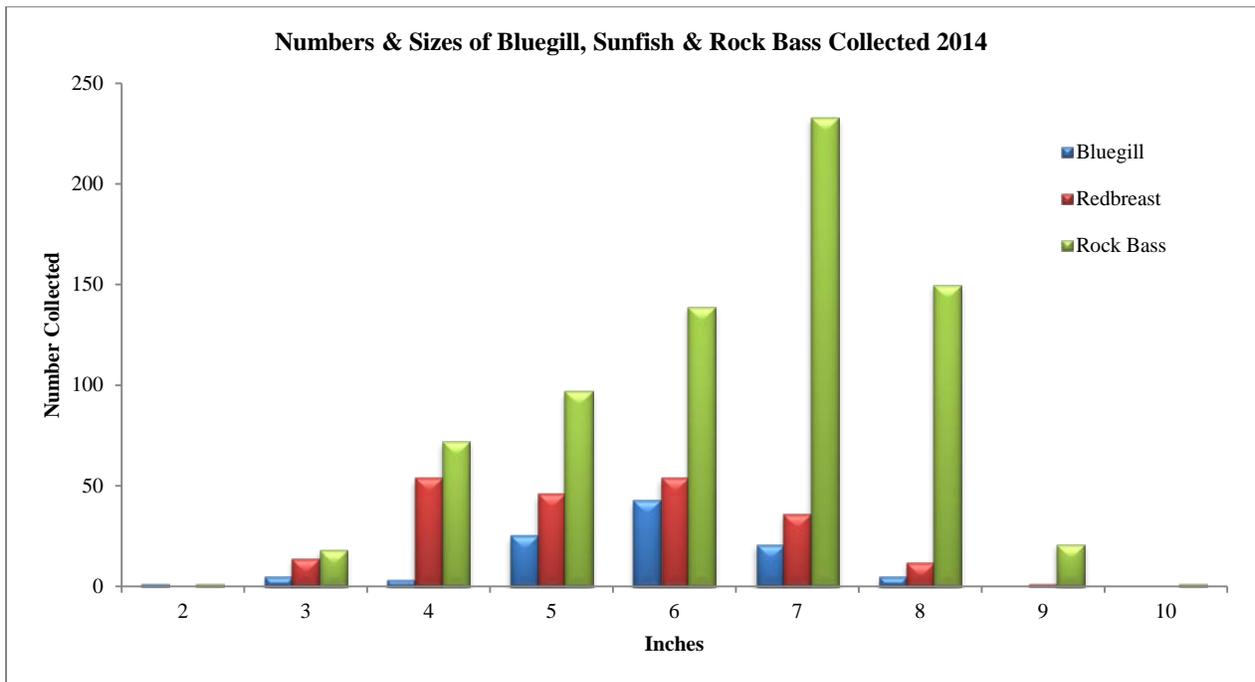


Figure 4. Length frequency distributions of common panfish in the James River.

Muskies are the most challenging, rewarding and largest sport fish the upper James River has to offer. Muskies are most abundant in pool areas of the upper James making fishing for them there most productive. Muskies are collected in fall (community sampling) and winter (targeted muskie sampling). Twenty- three muskies were collected in fall sampling in 2014. Sizes ranged from 9-45 inches weighing up to 22 pounds. Winter sampling targets only muskie to study diets and growth trends. Winter 2014-2015 has produced 80 muskies with some as large as 44 inches and weighing in at 23 pounds. Muskie diets have consisted of suckers, various panfish, shad and shiners. No smallmouth bass have been identified in muskie stomachs in the 2014-2015 winter sampling. Anglers can find great muskie fishing in the pool areas near, Lick Run, Buchanan, Hunting/Reed Creek, and Lynchburg.



*44 inch Muskie caught at Buchanan.*

## Middle James River (Lynchburg to Boshers Dam in Henrico)



*22+ inch smallmouth bass collected from the James River in 2014 near Hardware River boat launch*

The middle James River section is considered to be the river portion from Lynchburg downstream to Boshers' Dam (approximately 130 miles) above the City of Richmond. This section of the James River has a slightly different fish community than the upper James River section. The middle James River has fewer rock bass and muskie, while largemouth bass, channel catfish and flathead catfish are more abundant. Smallmouth bass are a dominant sport species in this section and in the 2014 samples 418 individuals were collected ranging from 3-22 inches. As with the upper section of the river, there was an abundance of juvenile smallmouth bass (less than 7 inches) collected making up 56% of all smallmouth bass collected. The 2014 samples for adult smallmouth bass was less impressive with only 44% of the total sample being adults 7 inches or larger. The majority of the adult smallmouth bass collected were between 7-12 inches and only 32 individuals greater than 12 inches were collected (Figure 5). Like the upper James River section, the current smallmouth bass size regulation protects smallmouth bass in the 14-22 inch size range (light purple bars).

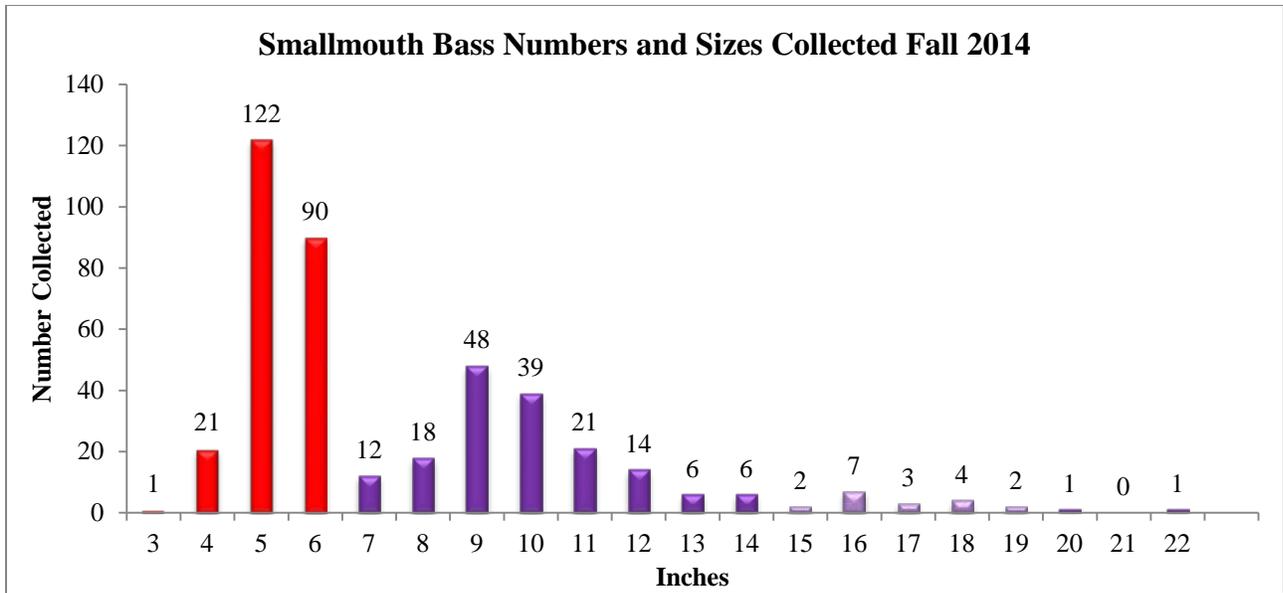


Figure 5. 2014 smallmouth bass catch from Lynchburg downstream to Bosher’s Dam with young bass (red bars) and adult bass (purple bars).

The middle James River has many different fish other than smallmouth bass. Sunfish or panfish for example includes bluegill, redbreast sunfish, redear sunfish, and rock bass. Collections from 2014 consisted of 258 panfish. Rock bass were the least abundant of the panfish collected (n=14). Rock bass size ranged from 2-7 inches with the average being about 5 inches. Bluegill and redbreast sunfish were the most abundant panfish collected (n=244) and slightly larger than rock bass with sizes ranging from 3-10 inches but most are in the 4-8 inch range. Panfish numbers can fluctuate like smallmouth bass annually and when abundant offer excellent fishing opportunities (Figure 6).

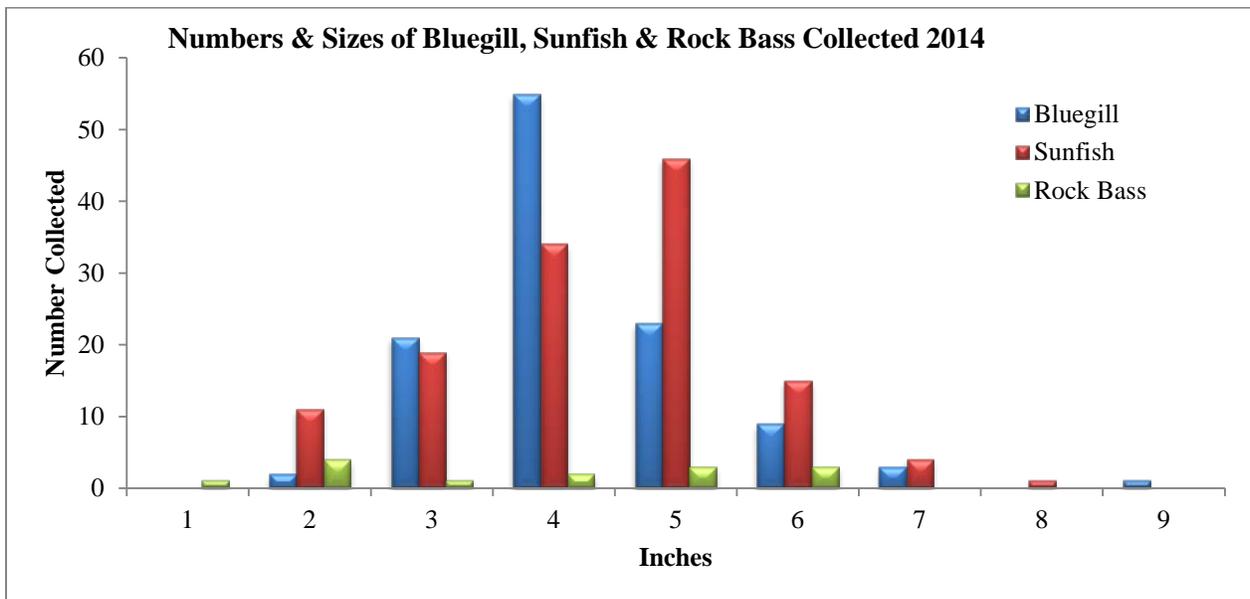


Figure 6. Length-frequency distribution of panfish collected in the middle James River from fall 2014 electrofishing samples collected by VDGIF.

There are two species of catfish found in the middle James River, channel and flathead catfish. Flathead catfish grow larger than channel catfish but both offer challenging and rewarding fishing opportunities. Catfish are generally found in pool and ledge areas of the middle James. Catfish are collected in fall (community sampling). One hundred fifty-eight catfish (70 channel, 58 flathead) were collected in fall sampling in 2014. Sizes of channel catfish ranged from 3-27 inches and weighed up to 8 pounds while sizes of flathead catfish collected ranged from 3-44 inches and weighed up to 16 pounds (Figure 7).

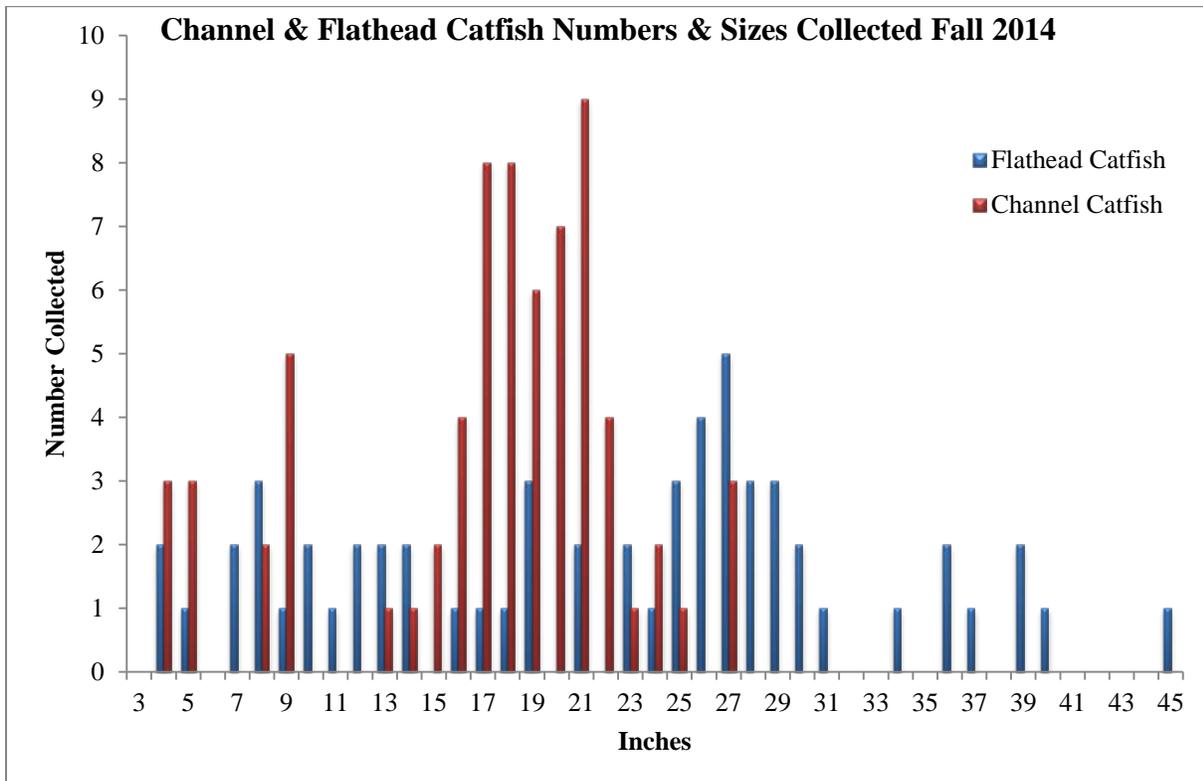


Figure 7. Length-frequency distributions of catfish collected in the middle James River in fall 2014.

## The Fall-Line of the James (Bosher's Dam to 14<sup>th</sup> Street Bridge)



*20+ inch smallmouth bass collected from the James below Bosher's Dam in the fall of 2014*

The 9-mile stretch of the James River that flows through Richmond (known locally as the fall-line section) separates the non-tidal and tidal portions of the James River and contains various habitat types including rocky outcrops, large runs, deep pools, shallow riffles, and intense rapids. The fall-line is renowned for kayaking, canoeing, and has traditionally supported popular sport fisheries for trophy smallmouth bass, sunfish, and catfish. Smallmouth bass was the most abundant sportfish species collected throughout the fall-line in 2014 and catch rates of smallmouth were the greatest in seven years (Figure 8). The increase in catch from previous years was mainly due to high catches of YOY (Figure 9). Smallmouth bass reproduction was exceptional in 2014 due to average June flow conditions.

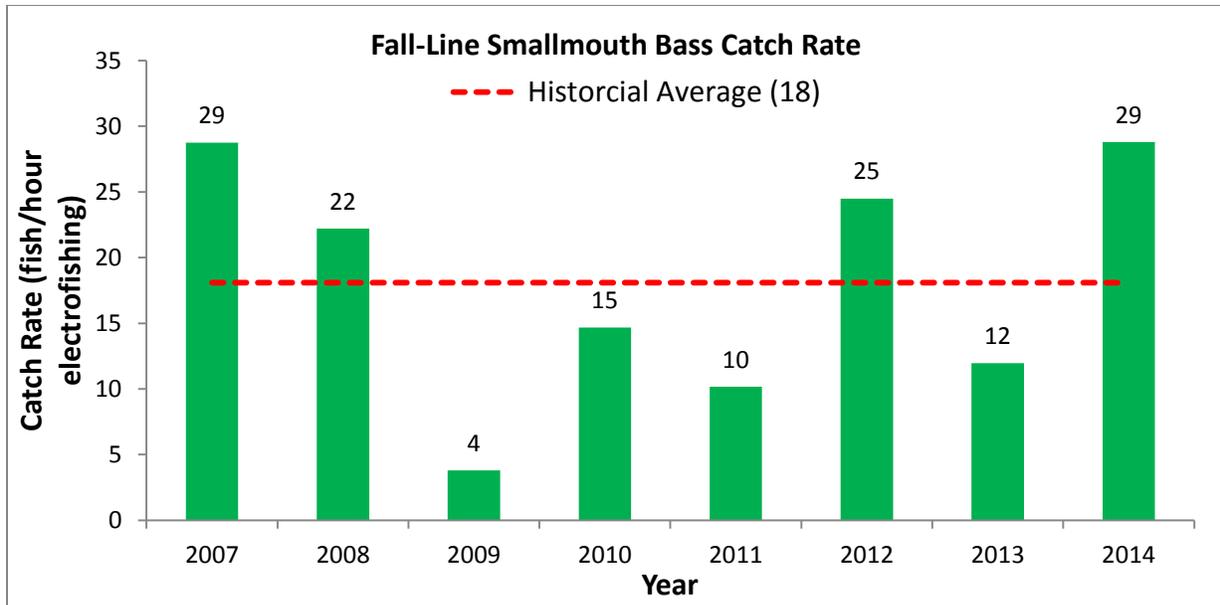


Figure 8. Annual catch rates of smallmouth bass for the fall-line section of the James River.

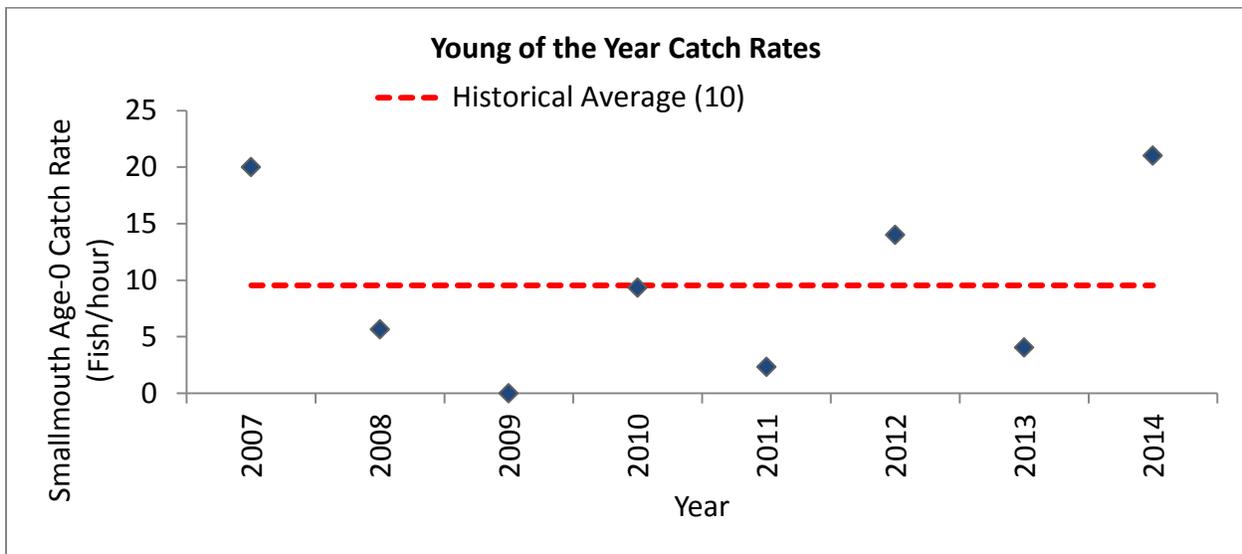


Figure 9. Annual catch rates of YOY smallmouth bass for the fall-line section of the James River.

The abundant 2014 year class of smallmouth should offer good fishing success for 9 to 10 inch smallmouth bass in 2015 and help adult numbers in subsequent years. Although reproduction was good in 2014, anglers should not expect to catch high numbers of large bass throughout the fall-line due to six consecutive years of fair to poor recruitment (Figure 9). The catch rate of adult bass in 2014 was one of the worst on record (Figure 10).

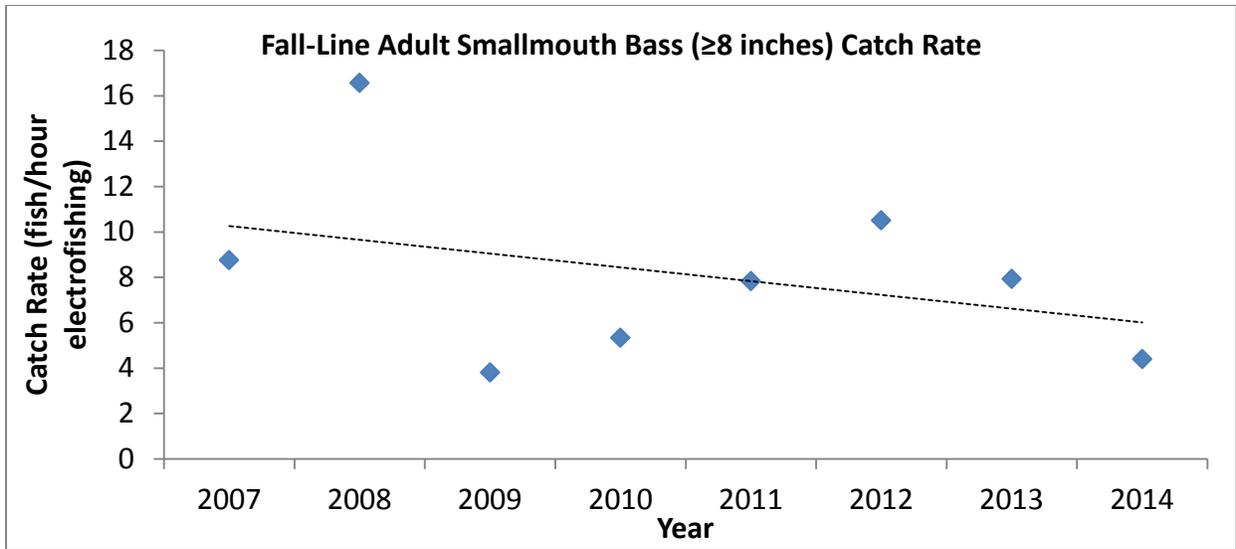


Figure 10. Annual catch rates of adult smallmouth bass for the Fall-Line section of the James River.

There are still some quality-sized and trophy-sized bass in this stretch of the river (Figure 11) but anglers will have to work to catch them. The largest smallmouth bass collected measured 20 inches and weighted 4.5 lbs. The 14-22 inch protective slot limit for smallmouth bass should help to protect the remaining adult fish in the population, but the adult populations needs more frequent successful spawns and juvenile survival to rebound to historic populations.

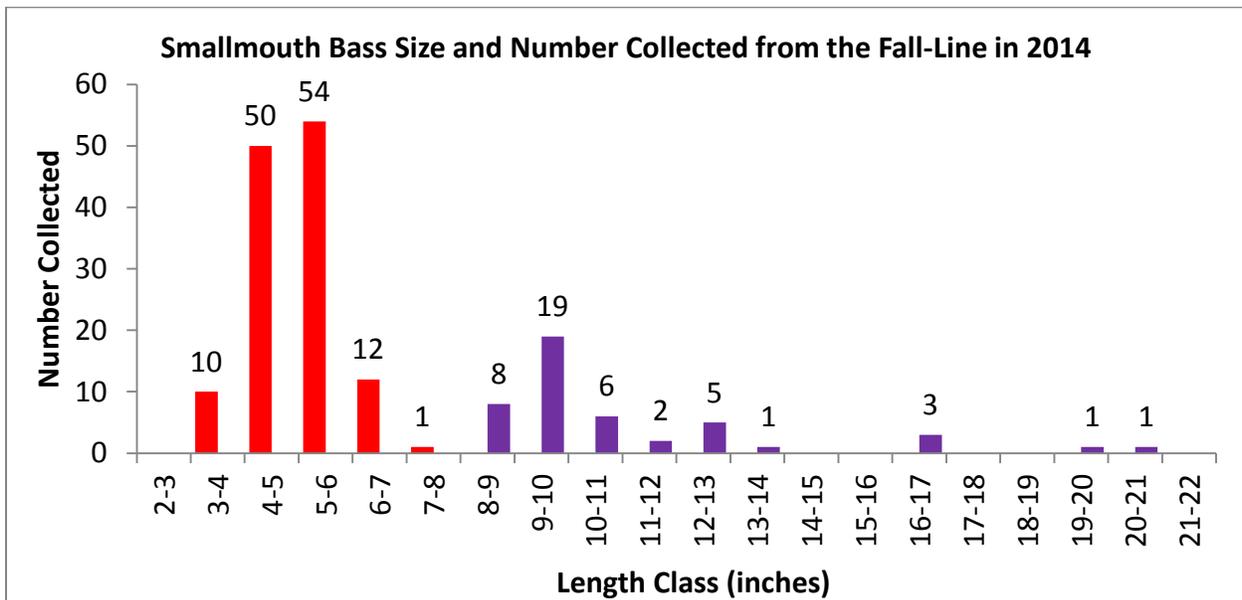


Figure 11. Length-frequency distribution of adult smallmouth bass for the Fall-Line section of the James River, 2014.

Smallmouth bass were present at all sampling sites, so anglers can expect to catch them throughout the fall-line section. Annual surveys indicate that the best sections of the river for

bass are consistently between the Powhite Bridge and Bell’s Island. Anglers should concentrate on shallow to mid-depth riffles or areas near the bank with some type of structure. Previous diet analysis of smallmouth bass indicated that the majority of smallmouth bass feed on shiners and crayfish. Any lure that mimics these diet items should be a must for smallmouth bass anglers of the James River.

Catfish populations continue to be good within the fall-line. The blue and flathead populations have good numbers of big fish available to anglers. Blue and channel catfish made up the majority of the catfish collected in 2014. There is a large abundance of small channel catfish (up to 23 inches) available to anglers, but the larger catfish are the blues and flatheads (Figure 12). Numerous blue and flathead catfish at or above 30 inches were caught throughout the fall-line.

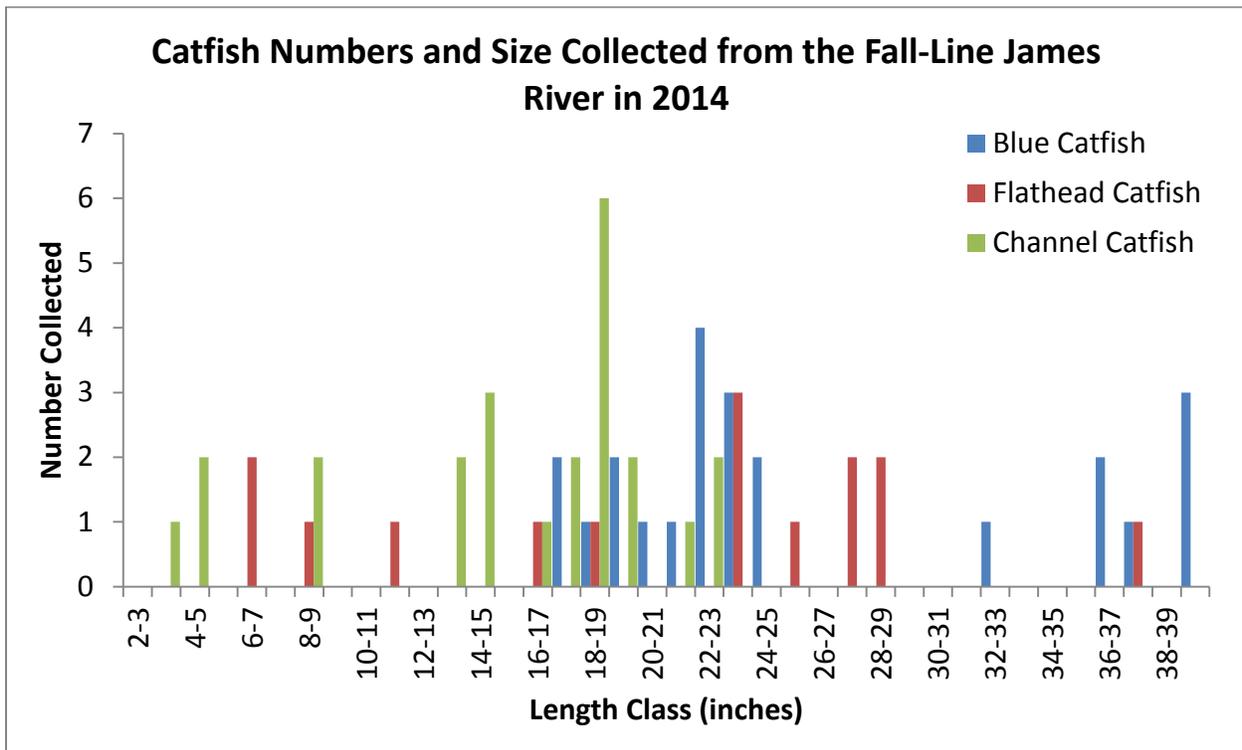


Figure 12. Length-frequency distribution for catfish in the Tidal James River, 2014.

Anglers seeking to catch catfish should concentrate efforts on relatively deep water (> 6ft deep) or waters adjacent to deep holes. The deep pockets above the Pony Pasture recreation area and the deep run just below the Wetlands recreational area (river section that flows past Willow Oaks Country Club) are great places for catfish anglers to wet a line. Anglers should try using live bait for flathead and cut or stink-bait for blue and channel catfish.

Panfish population numbers are about average for the fall-line section and were similar to catch rates observed in the Middle James. Although numbers are good, all panfish collected were small ( $\leq 8$  in.), with the majority of the panfish collected less than 7 inches. The most abundant panfish species collected by far was bluegill followed by redbreast sunfish. Panfish were caught in all locations throughout the fall-line section, and anglers targeting these species should concentrate their efforts around bank structure or slack water adjacent to rocky shoals and

outcrops. Small twister tailed grubs, live crickets, and worms are outstanding baits for any of the panfish species.

The fall-line section of the James can provide a rewarding trip for any angler but caution is warranted when fishing this stretch of river. The fall-line section is prone to flash flooding when there have been heavy rains in head waters of the James River. Furthermore, boaters need to be conscious of the technical rapids within the fall-line section. Before journeying out, anglers should be aware of the current river conditions and boaters need to become familiar with the more technical rapids. To get up-to-date information on river flows and maps of the fall-line section, contact the James River Parks System at (804) 646-8911 or visit their website at <http://www.jamesriverpark.org/>.



*30+ inch flathead catfish captured in the James by hook-and-line near Pony Pasture*

For more information on the James River please contact the following biologists:

Upper James River

George Palmer

[George.palmer@dgif.virginia.gov](mailto:George.palmer@dgif.virginia.gov)

434-525-7522

Middle James River

Dan Goetz

[Dan.goetz@dgif.virginia.gov](mailto:Dan.goetz@dgif.virginia.gov)

434-392-9645

Lower James River

Johnathan Harris

[Johnathan.harris@dgif.virginia.gov](mailto:Johnathan.harris@dgif.virginia.gov)

804.305.8940