Tidal Chickahominy River
2013

Prepared by Scott Herrmann
scott.herrmann@dgif.virginia.gov

The tidal Chickahominy River was sampled by DGIF aquatics staff during the fall of 2012 to access the current fishery with emphasis on major game fish species. Electrofishing surveys were conducted from October 15th to October 25th along 22 shoreline sites. These sites ranged from the lower tributaries of Gordon and Morris Creeks on up to a site just below Walker's Dam. Each sample run consisted of 1,000 seconds of electrofishing effort for a total effort of 6.11 hours. The combination of the survey runs provides an in depth look at the fish species composition as well the overall health of fish collected. The surveys collected 37 different fish species with a total of 6,586 fish collected. The five most abundant fish species were the threadfin shad, gizzard shad, white perch, bluegill and largemouth bass.

Largemouth bass

The tidal Chickahominy River supports a nationally recognized largemouth bass fishery that has recently been providing anglers with some excellent bass fishing. Anglers can expect good numbers of largemouth in the 1 – 3 pound range, with an increased abundance of bass in the 3 to 5 pound range. It is possible that anglers will catch some bass pushing the 7 pound weight barrier. This fishery is characterized by high angler catches with bass tournament anglers willing to drive many miles to fish this resource. Boat electrofishing catch rates were fairly high from 2006 to 2009 with catch rates ranging from 85 to nearly 140 bass/hr. The 2011 and 2012 fall electrofishing surveys have shown a slight decline from those high catch rates. The 2011 survey yielded a catch rate of 73 bass/hr while the most recent survey of 2012 had a catch rate of 66 bass/hr.

The 2012 survey yielded a total of 403 largemouth bass (CPUE: 66 bass/hr). Some survey areas provided greater catch rate than others. The three sites within Gordon Creek and the three sites within Morris Creek were rather productive with each creek yielding 65 largemouth bass (CPUE: 78 bass/hr). Diascund Creek provided an even higher catch rate of 106.8 bass/hr with the collection of 89 largemouth bass. The submerged aquatic vegetation (SAV) within middle and upper regions of Diascund Creek provided the ideal protective habitat for juvenile largemouth bass. The majority of bass encountered in Diascund Creek fell within the 6 to 8 inch range. Diascund Creek did

yield one respectable bass that weighed 6.24 pounds. The main river channel sites produced less bass than most of the tributary sites due to the fact that better habitat was usually found within the creeks. The increased salinity in various areas of the river most likely played a role in driving some of the largemouth bass from certain areas where they would normally be encountered.

Figure 1. Length frequency distribution of largemouth bass collected during the 2012 fall electrofishing surveys of the tidal Chickahominy River and its tributaries.

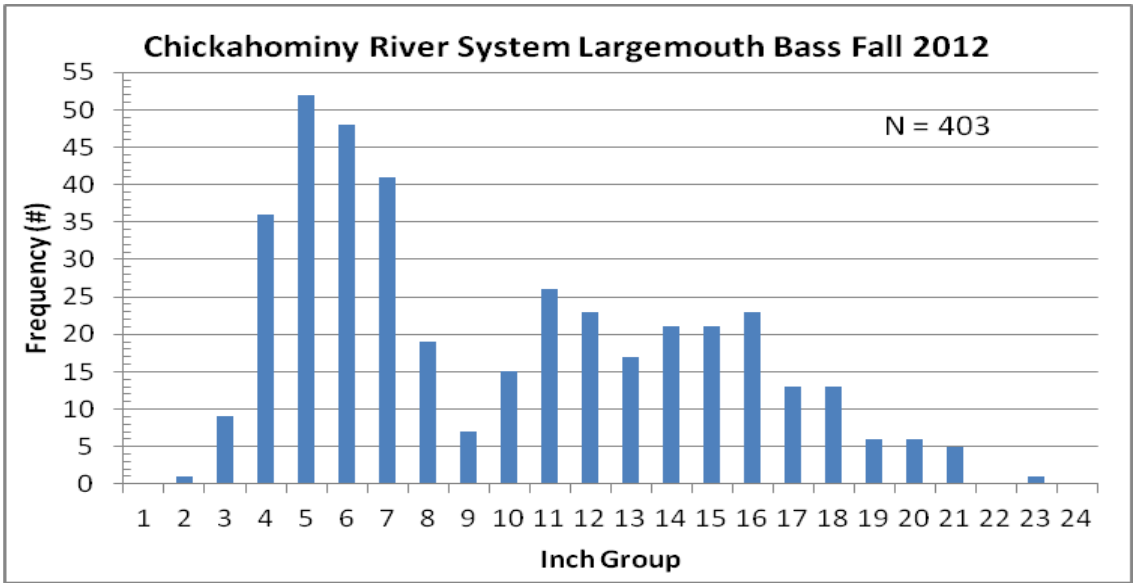


Figure 2. Distribution by length of largemouth bass collected in the fall 2012 boat electrofishing survey of the tidal Chickahominy River and its tributaries.

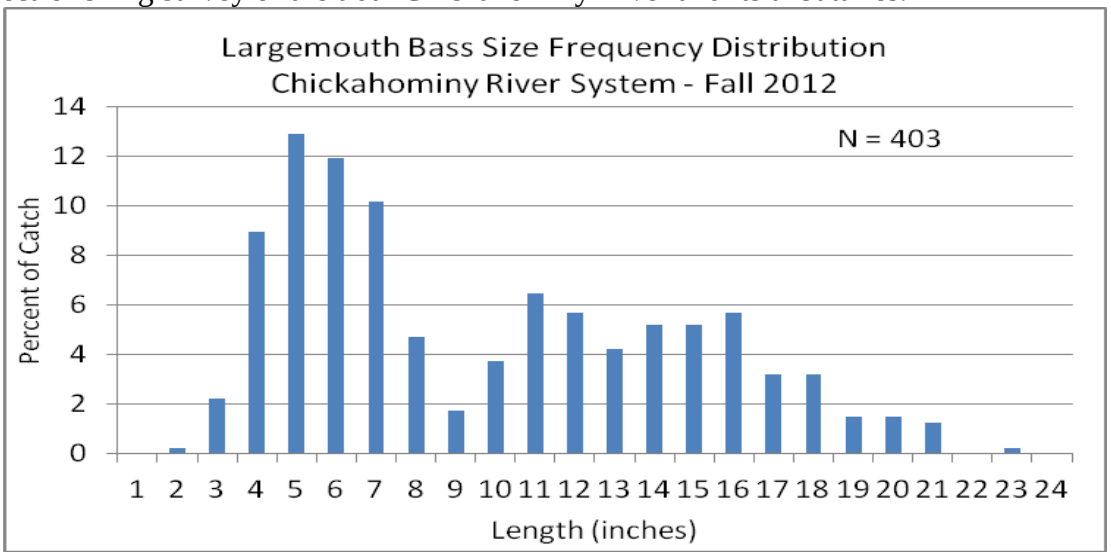
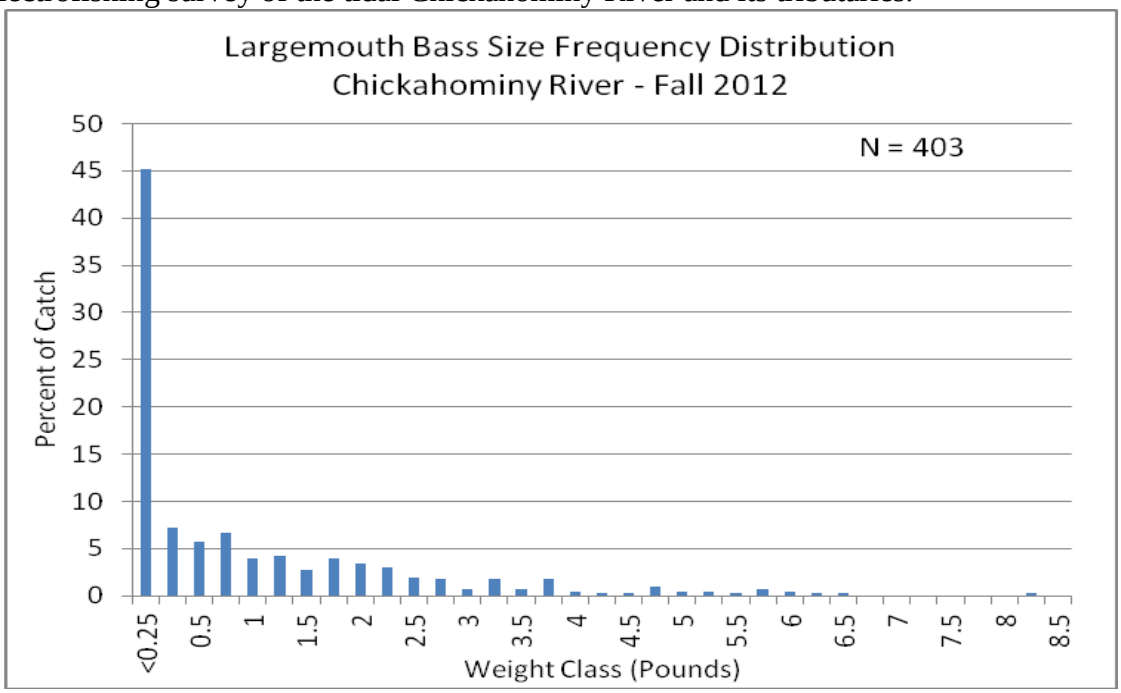
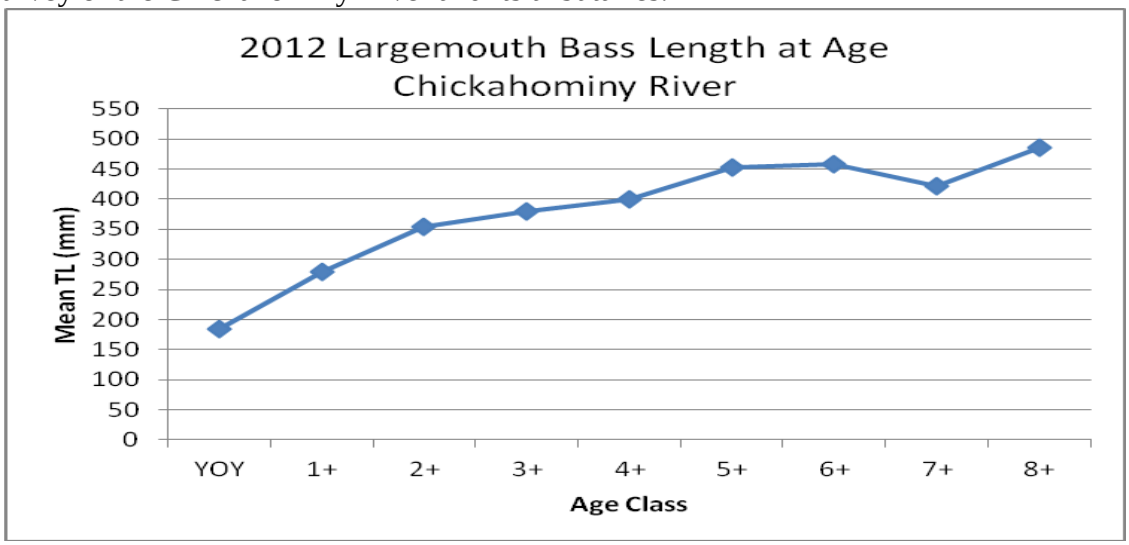


Figure 3. Distribution by weight of largemouth bass collected in the fall of 2012 boat electrofishing survey of the tidal Chickahominy River and its tributaries.



The presence of juvenile bass was extremely high during the 2012 survey. A total of 206 largemouth bass were less than 9 inches in length (51.12% of the 403 bass). Over 45% of the bass were less than a quarter of a pound in weight. From all indications, the 2012 year class is extremely abundant and will hopefully mature to produce some great fishing opportunities in the next few years. A sub-sample of the collected bass was used for length at age determination. The Young of Year (YOY) from the 2012 year class averaged 7.27 inches at the time of collection. With continued good recruitment, this fishery should continue to produce high angler catch rates over the next several years.

Figure 4. Length at age of largemouth bass collected in the fall 2012 boat electrofishing survey of the Chickahominy River and its tributaries.



Aged bass were classified to an age class with the + sign representing a half year of growth/life. The mean lengths at age of collected bass were: YOY: 7.27", 1+: 10.98", 2+: 13.95", 3+: 14.92", 4+: 15.72", 5+: 17.83", 6+: 18.02", 7+: 16.6" and 8+: 19.12". The small sample set of 2 male largemouth bass in 7+ age class provided the dip in the mean length at age growth line. A total of 13 bass were from the 5+ age class (year class 2007). Of these bass, seven were OTC tagged fish from the supplemental bass stocking. Their mean total length at age was 18.51 inches. The six, naturally produced bass from the 2007 year class had a mean total length at age of 17.05 inches. A total of 8 bass from the 2006 year class were aged. Six of these bass were OTC tagged fish from the second year of the supplemental bass stocking. These fish had a mean total length at age of 18.27 inches. The two naturally produced bass had a mean total length at age of 17.28 inches. The limited sample set of recaptured tagged fish did provide an increased mean length which might reflect the initial head start of growth that these fish benefitted from.

The survey yielded a total of 88 preferred-sized largemouth bass (≥ 15 inches) for a CPUE of 14.4 bass/hr. A total of 12 memorable-sized bass (≥ 20 inches) were collected for a CPUE of 2.0 bass/hr. The bass relative weight values showed the fish to be in good health. Relative weight values in the 95 to 100 range are considered good. The mean 2012 relative weight values were all above 100 (Wr stock: 106, Wr quality: 106, Wr preferred: 107 and Wr memorable: 108). The adult bass are surely taking advantage of the excessive amounts of threadfin shad that were present in various areas of the river. Some of the larger bass will be able to consume the adult gizzard shad that are present. The largest bass collected during the survey measured 23.03 inches and weighed 8.27 pounds. This bass would have weighed even more if it had not regurgitated the 14 inch gizzard shad that it had partially digested. This account of this large bass just goes to show what type of forage some of the larger specimens might try to consume.

Black Crappie

Black crappie abundance can vary considerably from year-to-year in any water body. The tidal Chickahominy River is not immune from these fluctuations. Anglers that fish the Chickahominy River on a consistent basis will typically have a decent idea where these schooling fish will be holding throughout the various times of the year. Anglers typically do well from the late fall to the early spring. The size structure of this tidal river crappie population has historically been excellent, with high relative stock density values (RSD-P) for preferred-size fish (≥ 10 inches in length). The RSD-P is an index of the proportion of the population of preferred fish in relation to the abundance of stock-sized fish.

The 2012 survey produced a total of 81 black crappies for a CPUE of 13.3 crappies/hr. The collection revealed a total of 38 preferred sized crappies from the total of 76 stock-sized fish. This ratio provided a respectable RSD-P of 50. The relative weight values of the crappies showed the fish to finding sufficient forage. Relative weight values ranged from 97 for nine memorable-sized fish to 100 for the total of 76 stock-sized fish. The mean total length of the crappies was 9.22 inches. The two largest crappies came from the middle reach of Yarmouth Creek. These fish measured 13.2 inches (1.52 lbs) and 13.27 inches (1.44 lbs). The highest abundance of black crappies came from the three sites within Diascund Creek with a total of 39 crappies collected (48% of total crappie

catch). The upper sample site on Diascund Creek was the most productive with 26 crappies collected. The collection of crappies during any electrofishing survey is more a matter of luck than skill when it comes to encountering the location of any sizeable school of fish. The below length frequency histograms will easily show the majority of the sample was based around fish in the 9 to 11 inch range with limited recruitment of juvenile-sized fish.

Figure 5. Length frequency distribution of largemouth bass collected during the 2012 fall electrofishing surveys of the tidal Chickahominy River and its tributaries.

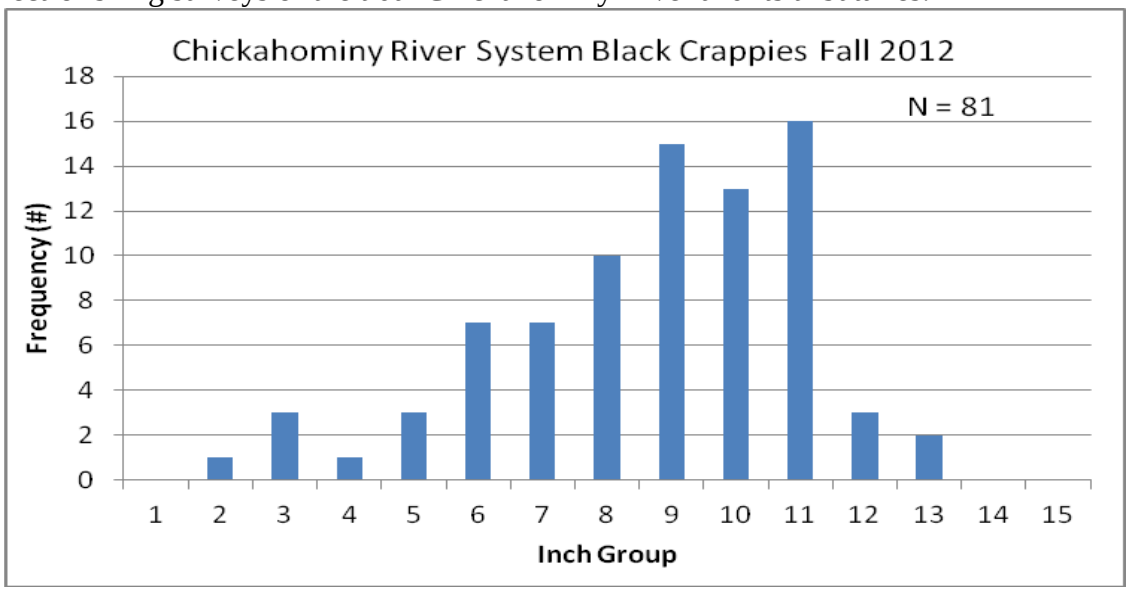
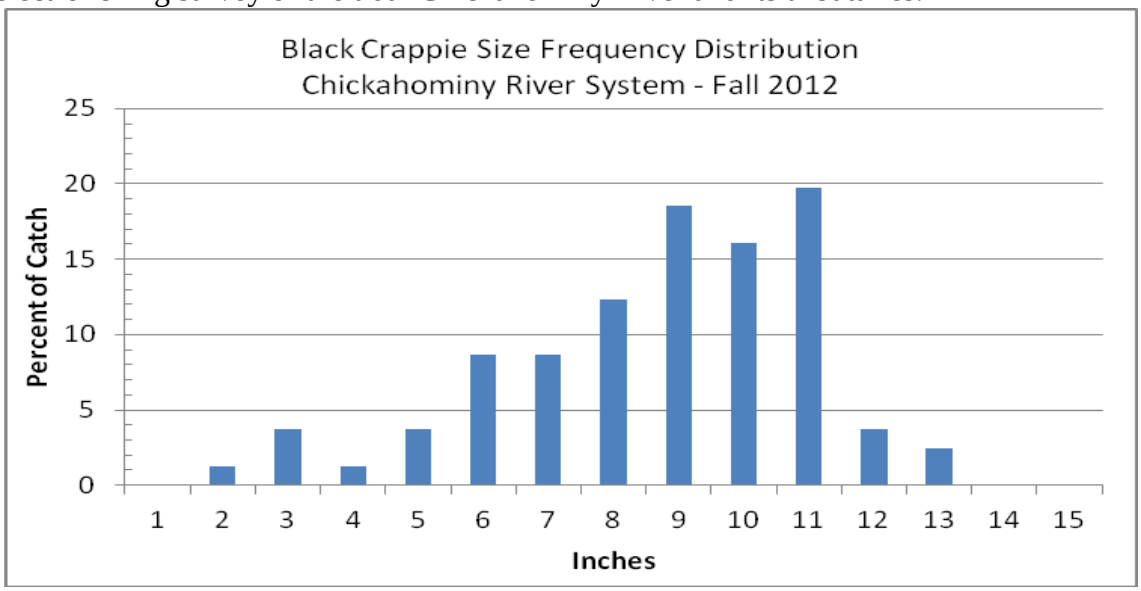


Figure 6. Distribution by length of black crappie collected in the fall 2012 boat electrofishing survey of the tidal Chickahominy River and its tributaries.



Additional Species of Interest

The electrofishing survey produced a total of 37 fish species. Some species were just represented by a single specimen (Atlantic croaker, bay anchovy, yellow bullhead, silver perch and redbreast sunfish) while other species showed a greater abundance (white perch, bluegill, yellow perch, pumpkinseed sunfish and striped mullet). It just goes to show you the amazing diversity that exists within the various tidal rivers of Virginia.

The survey collected a total of 462 white perch with most ranging on the small size of 5 to 8 inches. The collection of 451 bluegills revealed many fish to be in the 4 to 6 inch range with mean total length at 4.7 inches. The yellow perch population appears to be rather abundant with 329 fish collected. Most yellow perch ranged in size from 8 to 10 inches with a decent number of fish over 10 inches in length. The largest yellow perch measured 12.91 inches. The survey collected 208 pumpkinseed sunfish with most fish in the 4 to 5 inch range. Some large bowfins were encountered along the hydrilla beds. These bowfins will provide some additional excitement for anglers looking for largemouth bass.

The survey revealed an amazing abundance of threadfin shad. A total of 1,864 threadfin shad were collected. Massive schools of these shad were found in the upper third of the river along the northern shoreline. The predator fish species within the river have been taking advantage of this great forage base. The survey also revealed the presence of 1,846 gizzard shad. Any of the larger-sized blue catfish would be happy to get their jaws on some of these gizzard shad.

River Herring (alewife and blueback herring)

The spring herring run has been a tradition for many years at Walkers Dam, unfortunately the Atlantic States Marine Fisheries Commission implemented a moratorium on the herring population on January 1, 2012. This moratorium was put in place in hopes of protecting the breeding stock of this important anadromous fish species. The population of herring along the Atlantic coast has been depleted to only a small percentage of what it used to be. Anglers are not allowed to be in possession of river herring. Any herring that is caught by legal means must be returned to the river unharmed. Anglers are reminded that there is no public access to Walker's dam. Access was lost with the boat lock collapse a few years ago. The City of Newport News has hired a contractor to install a new boat lock. The ongoing repairs will eventually be completed to allow anglers to travel from the river on up to Chickahominy Lake or vice versa. A new fish ladder, toward the northern shore, has been built to replace the older fish ladder. This new fish ladder will hopefully be successful in passing river herring for years to come. Anglers should check with the Virginia Marine Fisheries Commission (http://www.mrc.state.va.us/swrecfishingrules.htm) for additional information on the river herring moratorium and current regulations related to this fishery. The 2012 fall electrofishing survey revealed a limited abundance of juvenile blueback herring with only 58 collected.

Catfish

The two most sought after catfish species in the tidal Chickahominy River, channel cats and blue cats, are not native to the river. Channel catfish likely became established in the river sometime between 1890 and the early 1900's. Blue catfish were stocked in the tidal James River in the mid-1970's, and they colonized the tidal Chickahominy following this introduction. The blue catfish population quickly became the dominant catfish species in the river, replacing channel catfish as the most abundant catfish species.

Anglers can catch an occasional "eating size" 1-3 pound channel catfish by fishing night crawlers or various other cut-baits as well as an abundance of small blue catfish in the 10 to 16 inch range. Anglers looking for larger blue cats will typically use fresh gizzard shad in some of the deeper channels. Trophy blue catfish to 70 pounds do occur in the tidal Chickahominy, however, anglers should be aware that trophy blue catfish are not as abundant in the tidal Chickahominy as they are in the James. Anglers may only have one blue catfish longer than 32 inches in their possession. There is no limit on the possession of channel or blue catfish less than 32 inches in tidal rivers below the designated fall line of tidal rivers. Walker's Dam is the fall line on the Chickahominy River. The 2012 fall electrofishing survey showed the presence of 78 blue catfish along the shorelines sampled. Only two channel catfish were collected. The high frequency electrofishing effort is not the best way to collect the abundance of blue catfish that hang along the river bottom. DGIF typically conducts summer sampling in the form of low pulse electrofishing to draw up thousands of blue catfish that are hanging along the deeper river channels that cannot be effectively reached with high frequency electrofishing gear.

More information on fishing the tidal Chickahominy and other waters of Virginia can be found on the web: www.dgif.virginia.gov.