



## **Virginia Department of Game and Inland Fisheries 2017 Sandy Bottom Pond Management Report**

Sandy Bottom Nature Park consists of 465 acres of land that provides a sanctuary from the development of the Hampton area. The park was established in the early 1990s. It provides various activities for the outdoor enthusiast. There are trails for biking, hiking, and horse riding. Facilities include boat rental, a fishing pier, picnic areas, nature center, wildlife center, primitive camping areas, and tent cabins. The park is home for the 12-acre Sandy Bottom Pond. The pond was formed from an old borrow pit that was originally excavated for construction of Interstate 64. Sandy Bottom Pond provides fishing opportunities for park visitors.

The Virginia Department of Game and Inland Fisheries sampled Sandy Bottom Pond on May 10, 2016. The previous survey was conducted on October 22, 2014. A full community sample was conducted to observe the present fishery. The electrofishing effort of 1,740 seconds (0.483 hour) was used to attain a representative sample of the present fishery. A complete circuit of the shoreline was conducted with the water temperature being 20.6°C (69.1°F), which was warmer than the 2014 survey (19.8°C, 67.6°F). Electrofishing efforts consisted of shocking along the shoreline habitat as close as possible, with the majority of the effort concentrated in the 2 to 5 foot depth range. Being that the pond was constructed from an old borrow pit, the shoreline drops off pretty quickly. Efforts were made to stick to the bank and shoreline brush as close as possible. A total of 5 fish species were collected with the majority of the sample comprised of bluegill and largemouth bass. The remaining fish assemblage was American eel, warmouth sunfish and eastern mudminnow.

### **Largemouth Bass**

Sandy Bottom Pond provides a decent bass fishery for a borrow pit with limited nutrient flow and overall productivity. A total of 118 largemouth bass were collected to provide an expanded CPUE (Catch Per Unit of Effort) of 244 fish/hr. The catch rate showed a slight decline when compared to the 2014 fall sample (CPUE = 252 fish/hr). The mean CPUE from all past surveys is 129 fish/hr. The 2016 survey showed a large increase when compared to the mean CPUE (84 fish/hr) from all past spring surveys. The 2014 fall sample allowed for the collection of numerous juvenile bass from the 2014 year class which in turn helped to elevate the overall catch rate. These juvenile fish accounted for the majority of the bass collection (CPUE = 222 fish/hr). The 2016 survey collected

an abundance of juvenile bass as well (N = 95; CPUE 196 fish/hr). The past spring surveys show a much lower abundance of juvenile bass (Mean CPUE = 26/hr). Year class strength can vary from year to year, but the juvenile bass have historically had a hard time surviving their first winter. The 2015 year class managed to survive their first winter with an abundance of 3 to 4 inch fish collected. This year class will hopefully survive long enough to reach mature size and provide action for anglers that fish the pond.

The survey showed weak recruitment from several year classes with the limited abundance of bass in the 6 to 14 inch size range. The large assortment of juvenile bass set the average bass length at 6.02 inches. This mean total length was actually an improvement from 2014 (4.7" mean TL). The survey produced a total of 16 preferred-sized bass (CPUE-P = 33 fish/hr), which showed a favorable increase from 2014 (CPUE-P = 22 fish/hr). The sampling efforts are just a representative picture of the fish community collected along the shoreline on May 10<sup>th</sup>, 2016. The bass collected during the survey were holding tight to the cover of the shoreline brush. Additional bass may have been holding in deeper water not covered by the boat's electric field.

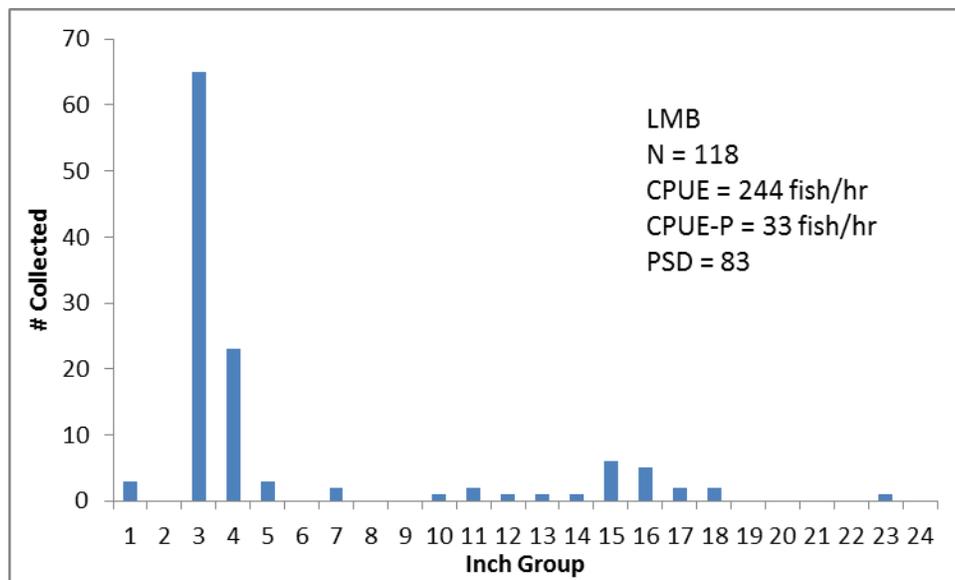


Figure 1. Length-frequency distribution of largemouth bass collected from the electrofishing survey of Sandy Bottom Pond on May 10<sup>th</sup>, 2016

With largemouth bass being the most popular game fish in this country, it has been considered that a “quality” bass is one that is 12 inches or larger. A “preferred” bass is one that is 15 inches or larger in length. These size classifications help to describe the present dynamics of the population. The PSD (Proportional Stock Density) is the proportion of bass in the population over 8 inches (stock size) that are also at least 12 inches. One must consider the relatively small sample size of bass collected when assessing the PSD and RSD-P values. The survey collected a total of 23 stocked-size bass

( $\geq 8''$ ) in which 19 of those bass were of quality size ( $\geq 12''$ ). The PSD value of 83 is well above the desired range of 40-60 and showed an increase from 2014 (PSD = 69). The RSD-P value of 70 is based upon the collection of 16 preferred-sized bass and almost matched the 2014 survey (RSD-P = 69). A balanced fishery has a population that is composed of various year classes that are represented by distribution peaks. Your typical length frequency graph from Sandy Bottom Pond has some major gaps in the distribution where very few bass in the 6 to 14 inch range are found. Cormorants will typically be found on Sandy Bottom Pond during the winter months. Their presence most likely has had some impact on the survival rate of juvenile bass in the 6 to 10 inch range.

Weights were taken on largemouth bass to calculate relative weight values. Relative weight values are an indication of body condition. A value from 95 to 100 represents a fish that is in the healthy range and finding a decent amount of food. A higher relative weight value indicates fish with a better body condition. The relative weight values for the 23 stock-sized bass ( $\geq 8''$ ) was 97 and the 16 preferred-sized bass ( $\geq 15''$ ) was 94. These relative weight values showed an increase from to the 2014 survey (Wr stock = 93, Wr preferred = 93). The largest bass measured 23.11 inches and weighed 6.35 pounds. This larger bass was more impressive than the largest bass collected in 2014 (18.8 inches and 3.66 pounds).

### **Bluegill**

The 2016 survey was similar to past surveys as it showed the bluegill fishery in Sandy Bottom Pond to be dominated by fish less than 5 inches in length. The survey collected only 47 bluegill for an expanded CPUE of 97 fish/hr. The catch rate showed a major decline when compared to 2014 (CPUE = 944 bluegill/hr). The mean bluegill CPUE for all past spring surveys is 232 fish/hr. The bluegill size distribution ranged from 1 to 6 inches with the majority of fish in the 3 to 4 inch range. The PSD for bluegill is the proportion of bluegill over 8 cm (stock-size) that are also at least 15 cm (quality-size). The bluegill PSD of 8 is a reflection of the 3 quality-sized bluegill that were collected. The PSD value showed an increase from 2014 (PSD = 1), but was still below the desired range of 20-40. The survey produced a total of 37 stock-sized bluegill. The average size bluegill measured in at 4.05 inches, which was slightly improved from 2014 (mean TL = 3.5 inches). The largest bluegill measured 6.81 inches in length. Relative weight values of the 37 stock-sized bluegill was a very impressive 115. This value showed the fish to be in great physical shape and finding more than adequate food resources. Anglers that fish Sandy Bottom Pond should not expect to catch too many large bluegill.

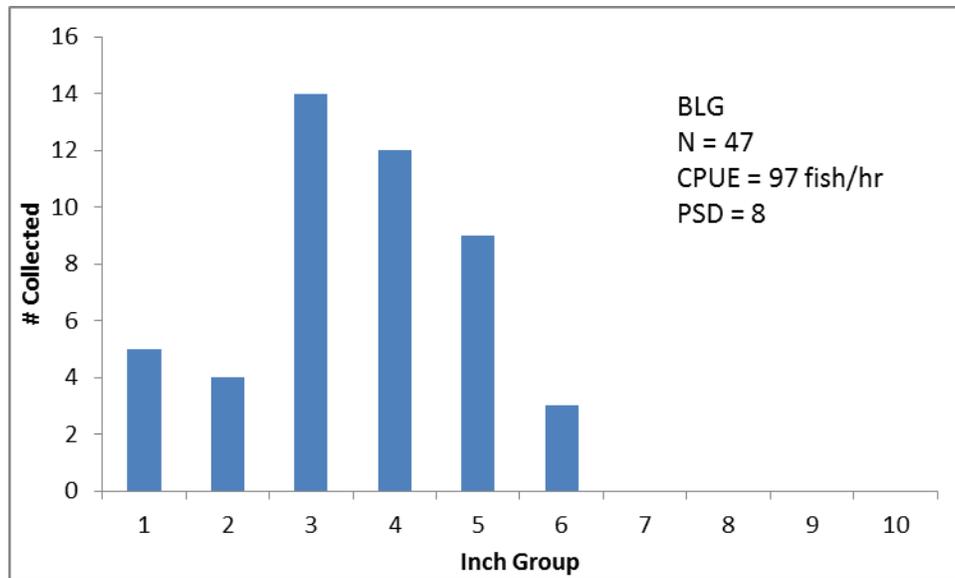


Figure 2. Length-frequency distribution of bluegill collected from the electrofishing survey of Sandy Bottom Pond on May 10<sup>th</sup>, 2016

### Additional Species

The survey revealed limited diversity with only 5 fish species collected. The remaining species collected in limited abundance were American eels, warmouth sunfish and eastern mudminnow. A total of 25 American eels were collected (CPUE = 51 fish/hr). The eels ranged in size from 12.4 to 21.5 inches with an average length of 16.75 inches. Additional eels were observed along the shoreline as they avoided the edge of the electric field. All collected eels were removed from the pond. American eels can directly compete with the bass population for the limited abundance of juvenile sunfish. The survey collected a total of 12 warmouth sunfish (CPUE = 24 fish/hr). The warmouth sunfish ranged in size from 3.7 to 4.4 inches with the average length of 4.1 inches. One eastern mudminnow of 3.27 inches was also collected. The survey did not reveal any channel catfish that are stocked into the pond each October. These fish species collected in limited abundance will provide some level of excitement to anglers that are lucky enough to find them.

### Sample Summary

The electrofishing survey of Sandy Bottom Pond revealed some changes from the previous survey conducted in October 2014. The fishery, for the most part, is the classic largemouth bass and bluegill water with a few other species present in a limited capacity. The largemouth bass population continues to be out of balance with very few bass in the 6 to 14 inch range. The survey revealed an increased abundance of bass greater than 15 inches in length. The abundance of juvenile bass in the 3 to 4 inch range represents the strong 2015 year class that managed to show better than average survival over their first year of life. This is a good sign that successful spawns will hopefully continue to

strengthen the bass population to eventually replace weak or missing year classes. Anglers have reported high catch rates of largemouth bass during the summer of 2016. The deep water along the shorelines might have allowed a good proportion of the bass population to escape the electric field. It is quite possible that the recent surveys have underestimated the strength and abundance of the bass population.

The bluegill population appears to be in fair shape with very few fish greater than 5 inches in size. The bluegill size distribution showed a high proportion of fish in 3 to 4 inch range. Very few juvenile sunfish were collected during the survey. The majority of the 1 to 2 inch bluegill from the 2015 year class were most likely consumed by the largemouth bass and the American eels. Sandy Bottom Pond is stocked with channel catfish each October. The survey did not reveal any channel catfish. Catfish will typically hold tight to the bottom in deep water that is hard to survey with high frequency electrofishing methods/gear. The continued stocking of channel catfish into Sandy Bottom Pond will hopefully assist the fishery and excite a few fishermen along the way. The survey provided some additional diversity in the form of American eels, warmouth sunfish and eastern mudminnow.

The park is open from sunrise to sunset every day except for Christmas; however the fishing pier is open to pedestrians for fishing 24 hours a day. The park is located at 1255 Big Bethel Road, a few minutes from I-64 by way of the Hampton Roads Center Parkway West exit. Please call the park office at (757) 825-4657 or try their website at [www.hampton.va.us/sandybottom](http://www.hampton.va.us/sandybottom) for additional information.

Report prepared by Scott Herrmann, Aquatic Biologist for the Virginia Department of Game and Inland Fisheries (804) 829-6580 ext. 126