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## Virginia Department of Game and Inland Fisheries 2019 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 horseback 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.

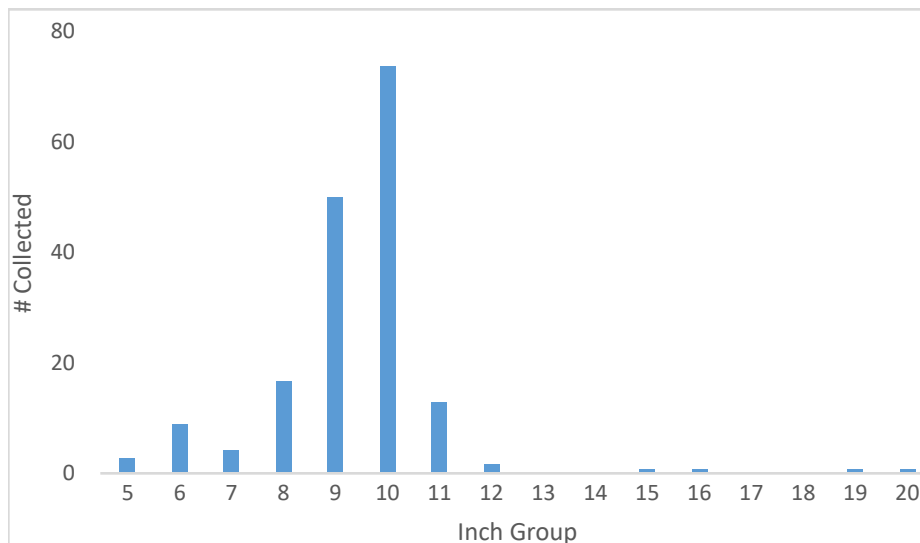
The Virginia Department of Game and Inland Fisheries sampled Sandy Bottom Pond on April 23, 2018. The previous survey was conducted on May 10, 2016. A full community sample was conducted to observe the present fishery. The electrofishing effort of 1,685 seconds (0.468 hour) was used to attain a representative sample of the present fishery. A complete circuit of the shoreline was conducted with the water temperature being an ideal 17.7°C (63.9°F) and slightly cooler than the 2016 survey (20.6°C, 69.1°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 hold tight 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 largemouth bass and bluegill. The remaining fish assemblage was American eel, warmouth sunfish and creek chubsucker.

### **Largemouth Bass**

Sandy Bottom Pond has historically provided a decent bass fishery for a borrow pit with limited nutrient flow and overall productivity. A total of 176 largemouth bass were collected which yielded a CPUE (Catch Per Unit of Effort) of 376 fish/hr. The catch rate showed a large increase when compared to the 2016 sample (CPUE = 244 fish/hr). The mean CPUE from all past surveys is 139 fish/hr. The 2018 survey showed a large increase when compared to the mean CPUE (100 fish/hr) from past spring surveys. The 2016 survey collected an abundance of juvenile bass (N = 95; CPUE 196 fish/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 and is still holding on strong. The majority of the 2018 bass collection was centered in the 22 to 28 centimeter range (8.6 to 11 inches) and are most likely from the 2015 year class. Age and growth analysis (otolith collection) was not conducted at this time. The protective catch and release regulation on the largemouth bass population was recently removed by park staff. It would be in the best interest of the bass population if anglers would harvest these abundant small bass to allow surviving fish to potentially have an increased growth rate.

The survey showed weak recruitment from several year classes with the limited abundance of bass greater than 12 inches in total length. The large assortment of stock-sized bass set the average bass length at 9.92 inches, an improvement from 2016 (6.02” mean TL), but leaves something to be desired. The survey produced only 4 preferred-sized bass (CPUE-P = 8.5 fish/hr), which showed a large decline from 2016 (CPUE-P = 33 fish/hr). The sampling efforts are a representative picture of the fish community collected along the shoreline on April 23, 2018. 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.



LMB  
N = 176  
CPUE = 376 fish/hr  
CPUE-P = 8.5 fish/hr  
PSD = 4

Figure 1. Length-frequency distribution of largemouth bass collected from the electrofishing survey of Sandy Bottom Pond on April 23, 2018

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 161 stocked-size bass ( $\geq 8''$ ) in which 7 of those bass were of quality size ( $\geq 12''$ ). The PSD value of 4 is well below the desired range of 40-60 and showed a drastic decline from 2016 (PSD = 83). The RSD-P value of 2 is based upon the collection of 4 preferred-sized bass and fell well below the 2016 survey (RSD-P = 70). 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 greater than 12 inches were encountered.

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 161 stock-sized bass ( $\geq 8''$ ) was 87 and the 4 preferred-sized bass ( $\geq 15''$ ) was 87. These relative weight values showed a substantial decline from to the 2016 survey ( $W_r$  stock = 97,  $W_r$  preferred = 94). The largest bass measured 20.51 inches and weighed 4.71 pounds. This larger bass had a more favorable relative weight value of 95, but was not nearly as impressive as the largest bass of 2016 (23.11 inches and 6.35 pounds).

## **Bluegill**

The bluegill population within Sandy Bottom Pond has been severely impacted by the overcrowded largemouth bass population. The survey collected only 48 bluegill for a CPUE of 102 fish/hr. It is never a good sign of fishery balance when a survey reveals more predator fish than prey fish. The catch rate showed a slight increase when compared to 2016 (CPUE = 97 bluegill/hr). The mean bluegill CPUE from past spring surveys is 219 fish/hr. The bluegill size distribution ranged from 1.46 to 7.95 inches with the majority of fish in the 4 to 6 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 41 is a reflection of the 16 quality-sized bluegill from the 39 stock-sized bluegill that were collected. The PSD value showed a favorable increase from 2016 (PSD = 8) and was a tick over the desired range of 20-40. This favorable PSD value was based on a very small

sample set of 39 stock-sized bluegill. The average size bluegill measured in at 4.84 inches, which showed an improvement from 2016 (mean TL = 4.05). The largest bluegill measured a respectable 7.95 inches in length. Relative weight values of the stock-sized bluegill was 94. This value showed the fish to be in decent physical shape and finding adequate food resources. Although the upper end of the size distribution showed some improvements from past surveys, anglers that fish Sandy Bottom Pond should not expect to catch too many large bluegill.

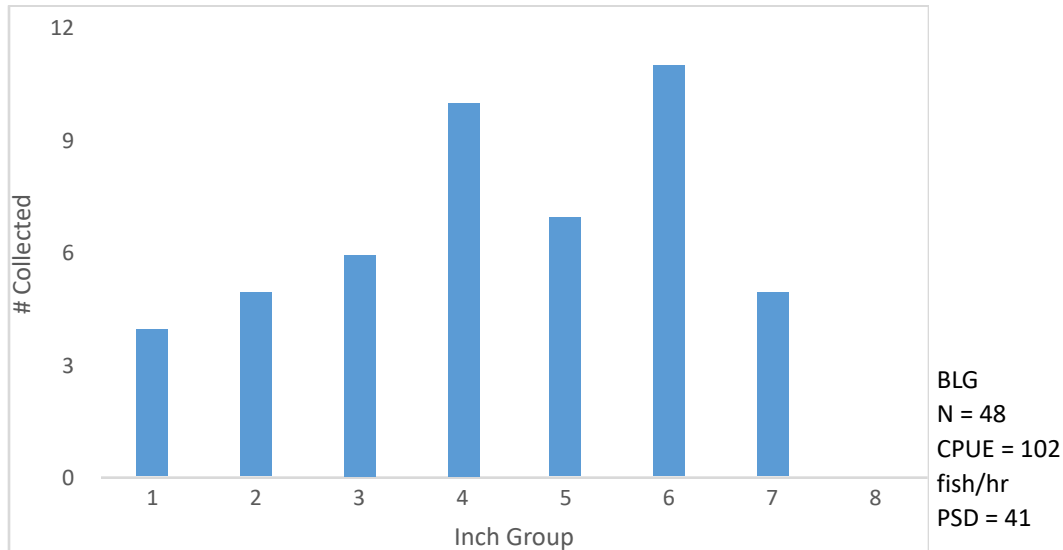


Figure 2. Length-frequency distribution of bluegill collected from the electrofishing survey of Sandy Bottom Pond on April 23, 2018

### 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 creek chubsucker. A total of 6 American eels were collected (CPUE = 12 fish/hr), which showed a decline from 2016 (CPUE = 51 fish/hr). The eels ranged in size from 11 to 18.3 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 only one warmouth sunfish for a CPUE of 2 fish/hr. This was a rather large decline from 2016 (CPUE = 24 fish/hr). The warmouth sunfish was a juvenile fish that measured 3.42 inches in total length. One creek chubsucker of 12.91 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 major changes from the previous survey conducted in 2016. 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 the survey revealing a stockpile of bass in 9 to 11 inch range. The decreased abundance of bass greater than 15 inches in length is an area of concern. Angler harvest of bass greater than 12 inches in length may have directly changed the standing biomass of the population.

The bluegill population appears to be in poor shape based on their low abundance when compared to the largemouth bass population. The bluegill size distribution showed some potential with the largest bluegill measured at 7.95 inches. Very few juvenile sunfish were collected during the survey. The majority of the 1 to 2 inch bluegill from the 2017 year class were most likely consumed by largemouth bass and 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 creek chubsucker.

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.

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