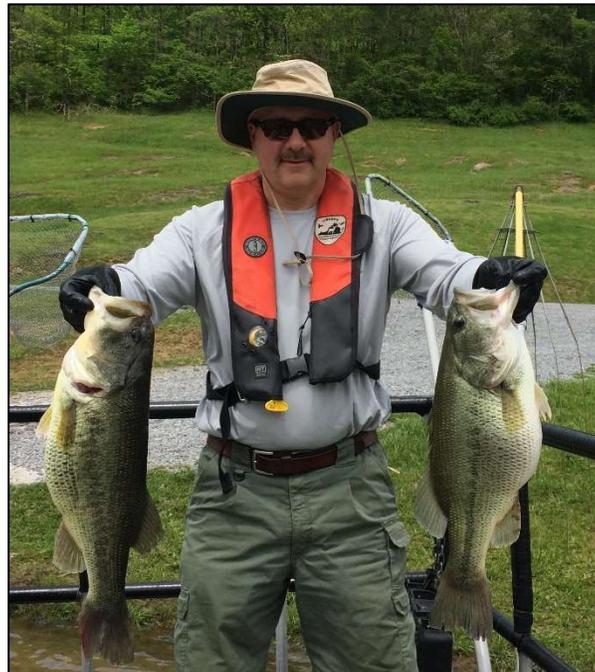




2021 Lake Witten Fisheries Management Report



Lake Witten is a 51-acre impoundment owned by Tazewell County that lies within the boundaries of Cavitt's Creek Park. The reservoir was constructed in 1988 and the land surrounding the lake is a mix of grasslands and forest. The reservoir supports a diverse fish community including: Largemouth Bass, Bluegill, Redbreast Sunfish, Black Crappie, Channel Catfish, Rock Bass, and trout. A Virginia freshwater fishing license is required to fish the lake, and a trout-fishing license is required from October 1st through June 15th.

Stocking

Lake Witten is designated as a stocked trout water and catchable-size Rainbow Trout and Brown Trout are stocked eight times between October 1st and May 31st each year. A total of 520 catchable-sized (average length = 11 inches) Channel Catfish were released into Lake Witten in fall 2020. Grass Carp are also stocked as needed to control aquatic vegetation.

Regulations

As of spring 2020, the fish populations in Lake Witten were managed under the following regulations. Statewide creel and size limits apply for all other species.

<u>Species</u>	<u>Length Limit</u>	<u>Creel Limit</u>
Largemouth Bass	14 - 24 inch protected slot	1 per day
Sunfish (all species combined)	none	50 per day
Trout	7-inch minimum	6 per day

Population Sampling

The fish populations in Lake Witten are sampled each year in May using boat-mounted electrofishing gear. Fish collected during these population surveys are measured, weighed, and released back into the lake. The data collected during the annual samples provide biologists with important information about the relative abundance (number of fish collected per hour of sampling) and size structure of the various fish populations. These ongoing monitoring efforts allow biologists to assess trends in the fish populations over time.

Largemouth Bass – The overall catch rate for Largemouth Bass in 2020 (107 fish/h) was down slightly from that observed in 2019 (140 fish/h), although the 2020 catch rate was within the range of variation observed from previous sampling efforts (Figure 1). The relative abundance of stock-size (≥ 8 in), or adult, Largemouth Bass increased to 93 fish/h from 77 fish/h in 2019. Conversely, the abundance of sub-adult (≤ 8 in) fish decreased from 62 fish/h in 2019 to 14 fish/h in the 2020 sample.

Largemouth Bass observed during the 2020 sample ranged in length from 4 to 21 inches with an average length of about 11 inches (Figure 2). Fifty percent of the adult Largemouth Bass were 12 inches or larger and 9% exceeded 15 inches. Two percent of adult Largemouth Bass in the sample measured 20 inches or more in length. The size structure for the bass population in Lake Witten is one of the best among small impoundments in this region. However, analysis of the length distribution (Figure 2) suggests the possibility of stockpiling of bass beneath the 14-24 inch protected slot limit. The abundance of Largemouth Bass beneath the slot limit (≤ 14 in) has increased steadily from 32 fish/h in 2017 to 78 fish/h in the 2020 sample while the abundance of bass within the protected slot has remained relatively unchanged (Figure 3). Stockpiling can be a problem as increased competition for food among the abundant smaller bass can result in reduced growth for those fish and a longer time for them to reach larger sizes. The effectiveness of a protected slot limit in improving the size structure of a population is dependent on having sufficient harvest on smaller bass to promote satisfactory growth in this size class. If anglers do not harvest enough bass, then the improvement in growth rates is not likely to be achieved. A strong spawning year-class of bass can also contribute significantly to an overabundance of small bass. Previous sampling results suggest that a very strong year-class may have been produced on Lake Witten in 2018 and may be contributing to the current situation.

Determining whether the stockpiling of small bass in Lake Witten is a relatively temporary phenomenon or more of a permanent issue will require additional sampling.

Sunfish – The catch rate for Bluegill in 2020 (175 fish/h) was nearly three times as high as that observed in 2019 (63 fish/h). Redbreast Sunfish were collected at a rate of 42 fish/h in the current sample. Black Crappie are present in Lake Witten, although the abundance varies from year to year. The size structure of Black Crappie in 2020 was good for small impoundments in Southwest Virginia with 87% of the fish measuring 10 inches or longer.

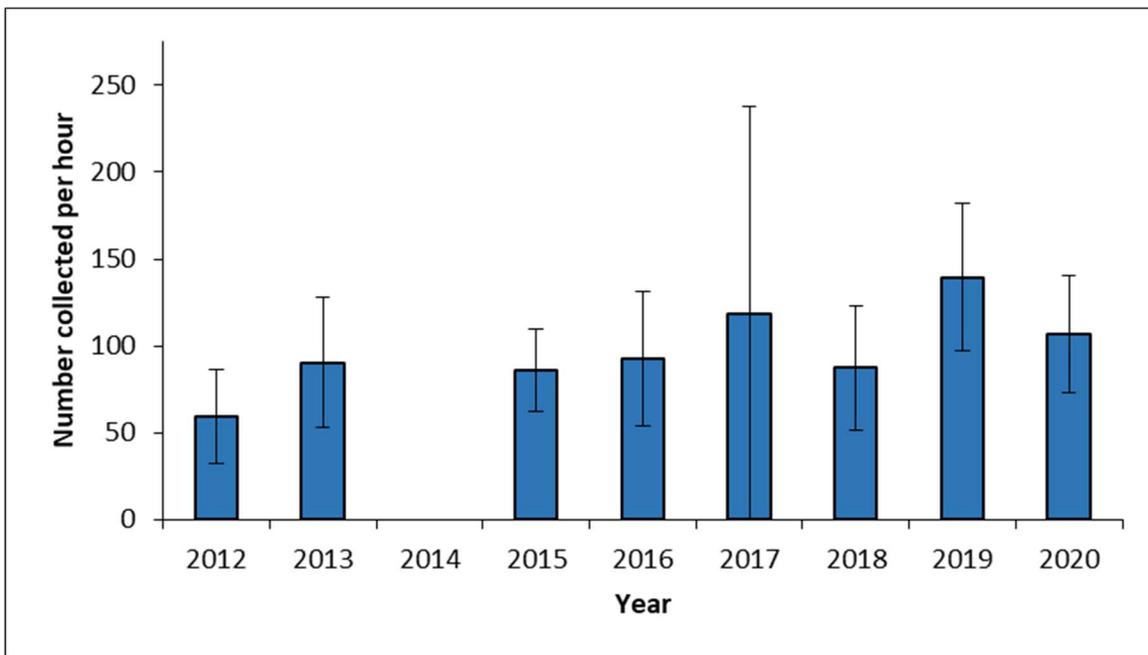


Figure 1. Number of Largemouth Bass collected per hour of sampling in Lake Witten 2012-2020. The lake was not sampled in 2014. Error bars indicate 90% confidence intervals.

Catfish - The lake is not known for exceptional catfishing, but some large Channel Catfish have been collected in the past. Some of these fish were over 24 inches long, so the lake definitely has the potential to produce some memorable fish.

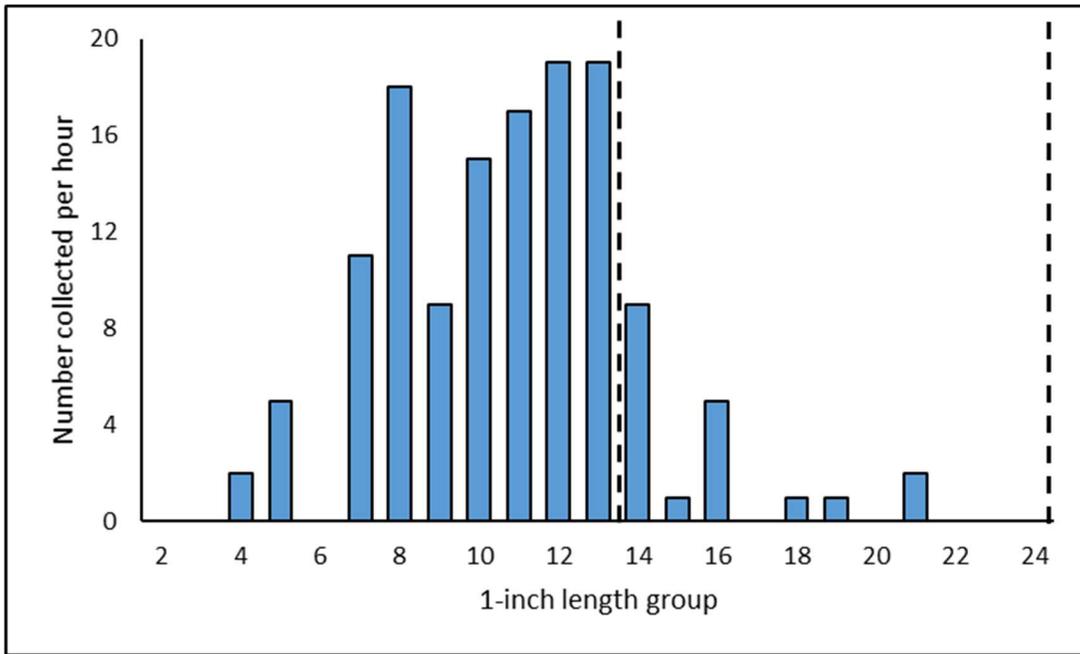


Figure 2. Length frequency distribution of Largemouth Bass collected during Lake Witten electrofishing samples in spring 2020. Dashed, vertical lines represent the 14 – 24 inch protected slot limit in place for this species.

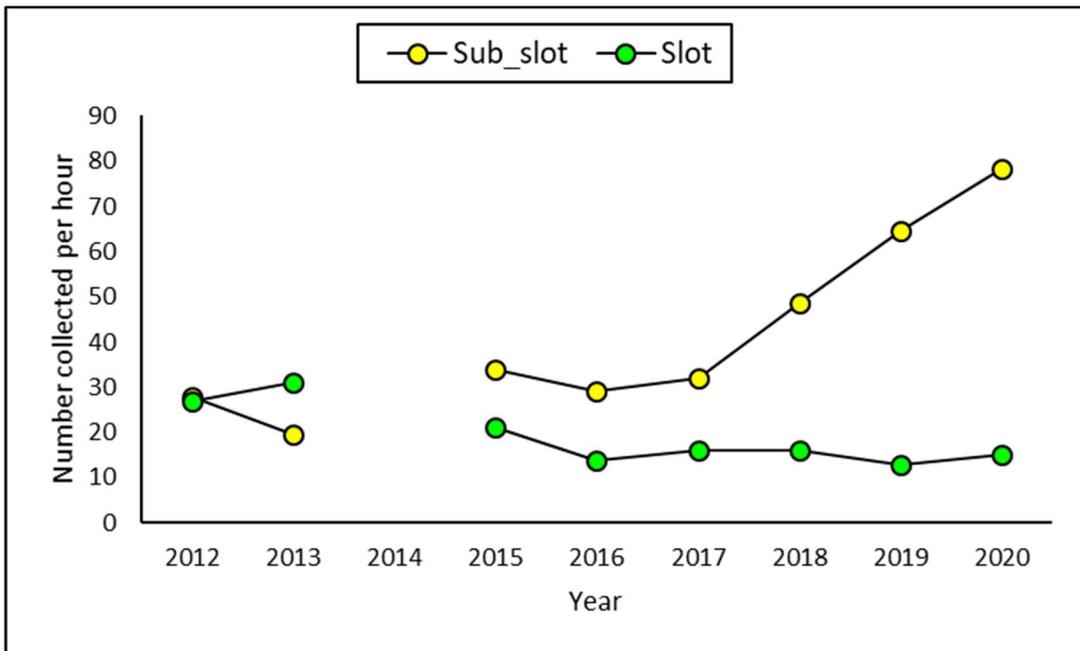


Figure 3. Number of Largemouth Bass collected per hour of sampling in Lake Witten 2012-2020 for fish below the 14-24 inch protected slot limit and those within the protected slot limit. The lake was not sampled in 2014

Anglers fishing Lake Witten can enjoy exceptional fishing for a variety of species. Whether one is pursuing stocked trout or trophy Largemouth Bass, this lake is hard to beat. Cavitt's Creek Park offers anglers boat launching facilities and a seasonal campground. More information pertaining to Cavitt's Creek Park and its facilities can be obtained by contacting the park manager (276-988-7250).

For more information on the fishery, contact Jeff Williams by telephone (276) 783-4860 or by e-mail jeff.williams@dwr.virginia.gov