DEPARTMENT OF GAME & INLAND FISHERIES
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SPORT FISH RESTORATION

Virginia Department of Game and Inland Fisheries
2018 Three Lakes Park Lake #1 Management Report

Three Lakes Park, located on Wilkinson Road, one mile east of Rt. 301, is owned and operated by Henrico County. As the name states, the park contains three lakes, two of which are open to fishing. The two fishing lakes are approximately 7 acres (Lake #1) and 5 acres (Lake #3) in size, and are actually old borrow pits dug during the construction of I-64. The middle lake (Lake #2) has a nature center with a large aquarium embedded in the shoreline, and it is closed to fishing. No boats are allowed, but various areas of the largest fishing lake (Lake #1) can be accessed along the shoreline, at the picnic pavilion, or from the fishing pier. Lake #1 is immediately on the left after entering the parking lot; just walk past the gate and follow the hard path to the lake on the left. Lake #1 is incorporated into the Department's Community Lakes Improvement Program (CLIP) and receives annual stockings of harvestable-sized channel catfish. Fish attractors have been placed at several locations in Lake #1 to enhance angling opportunities. Lake #3 might be sampled in 2018 if the water level allows for a small electrofishing boat to be launched safely.

On October 5th, 2017, the fish community of Lake #1 was sampled by boat electrofishing. The previous survey was conducted on May 11th, 2016. A total of 14 species were collected. Bluegill accounted for the majority (86.5%) of the fish collected. The most prevalent predator species collected were black crappie and largemouth bass, which both exhibited a decline in catch rate when compared to the previous survey of 2016. The fishery continues to show a high level of diversity, along with the stock-piled bluegill population.

Table 1. Species composition and catch rate of fish collected from the electrofishing survey of Lake #1 at Three Lakes Park on October 5th, 2017

Species	N	CPUE #/ hr	Species	N	CPUE #/ hr
Bluegill	1,090	1,880	Pumpkinseed	4	6.9
Gizzard Shad	56	96.6	Creek Chubsucker	4	6.9
Black Crappie	41	70.7	Brown Bullhead	2	3.5
Largemouth Bass	26	44.9	Warmouth Sunfish	2	3.5
Redear Sunfish	18	31.1	Channel Catfish	1	1.7
Golden Shiner	9	15.5	Bowfin	1	1.7
Common Carp	5	8.6	American Eel	1	1.7

Largemouth Bass

The survey produced a limited total of 26 largemouth bass for a CPUE (Catch Per Unit of Effort) of 44.9 fish/hr. This catch rate ranks lower than most public, small impoundments within Region 1, District 1, but higher than most Henrico County park ponds. The catch rate showed a sizeable decline when compared to the 2016 survey (N = 32; CPUE = 82 fish/hr). The seasonal difference between May 2016 and October 2017 may have impacted the catch rates or there might have been a significant level of bass harvest between the survey dates. The fishery has some potential to produce a few larger bass due to the abundance of forage that is present and the protective regulations that are in place. Collected bass range in size from 7 to 51 centimeters (3 to 20 inches). The two largest bass measured 19.88 and 20.2 inches with weights of 5.5 and 5.34 pounds. The average length for the 26 collected bass was a disappointing 8.04 inches due the accumulation of smaller bass in the 3 to 5 inch range. These 3 to 5 inch bass most likely represent the 2017 year class making their way through the system. The 2016 mean total length was a more impressive 11.44 inches.

The collected bass were in good shape with favorable relative weight values. Relative weight values from 95-100 represent an ideal range that indicates collected fish are finding plenty of suitable forage. The overall relative weight value was 98, which showed a decline from 2016 (Wr = 101). The three preferred-sized bass (≥ 15 inches) had a relative weight value of 110, which showed an increase from 2016 (Wr = 103). The difference in relative weight values may be directly related to the difference in survey date. Bass tend to stock-pile body fat reserves during the fall for the approaching winter months. Bass during the mid to late spring can reveal decreased relative weight values due to the stress associated with spawning activity. The larger bass should have easy access to the abundant forage base of bluegill and juvenile gizzard shad.

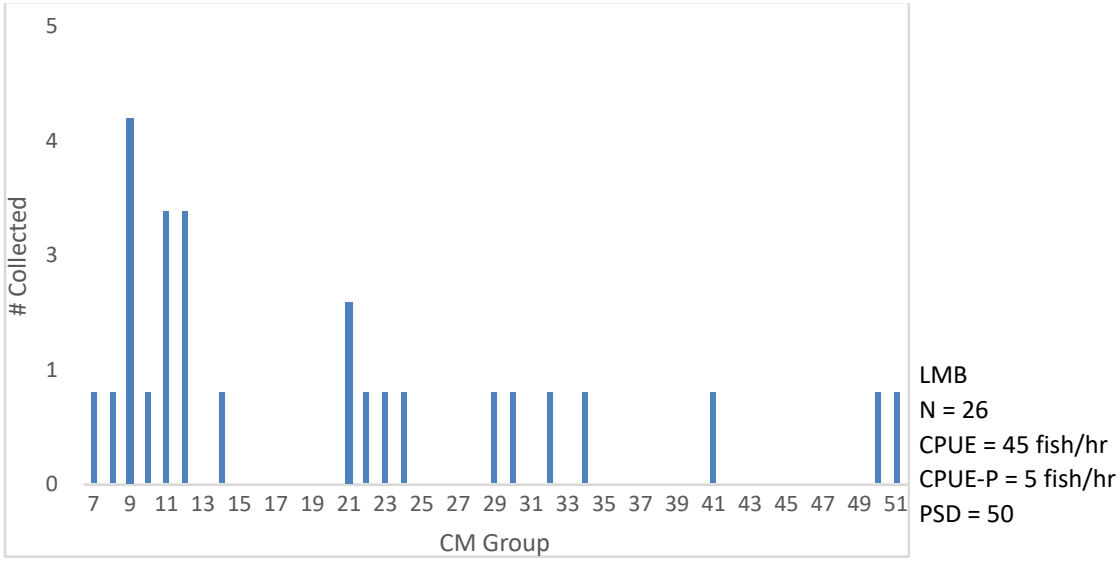

Figure 1. Length frequency of largemouth bass collected from electrofishing survey of Lake #1 at Three Lakes Park on October 5th, 2017

The survey produced a decreased catch rate of preferred-bass (≥ 15 inches). The collection of 3 preferred-sized bass yielded a CPUE of 5 fish/hr, which was a large decline from 2016 (CPUE-P = 25 fish/hr). The limited abundance of preferred-sized bass is an area of concern. The bass population

in Lake #1 is regulated under a minimum size limit of 18 inches with a harvest limit of one bass per day. The potential of illegal harvest of under-sized bass can have a detrimental effect on the overall bass population, thereby complicating the goal of reaching a better balance in the fishery. Although anglers can harvest one bass per day, anglers should carefully release all bass from the lake unless they are in serious need of a fish dinner. By protecting the bass population, the fishery may eventually reach a better balance in the future.

Bluegill

The survey produced a total of 1,090 bluegill for a CPUE of 1,880 fish/hr. This catch rate showed a large increase when compared to the 2016 survey (N = 428; CPUE = 1,100 fish/hr). The collected bluegill ranged in size from 3 to 16 centimeters (1.5 to 6 inches), with the majority of fish in the 3 to 4 inch range. The largest bluegill measured 6.42 inches, which did not match the 2016 survey (max TL = 7.79 inches). The average size bluegill was only 3.52 inches, which showed a decline from 2016 (mean TL = 3.76 inches). The survey collected a total of only 9 quality-sized bluegill (≥ 5.9 inches). Anglers that fish the lake should not expect to catch too many larger bluegill. The bass population and the limited assortment of other predator fish have not been able to keep the bluegill population in check. The bass population spends the majority of their effort feeding on the gizzard shad population instead of foraging on the small bluegill stock.

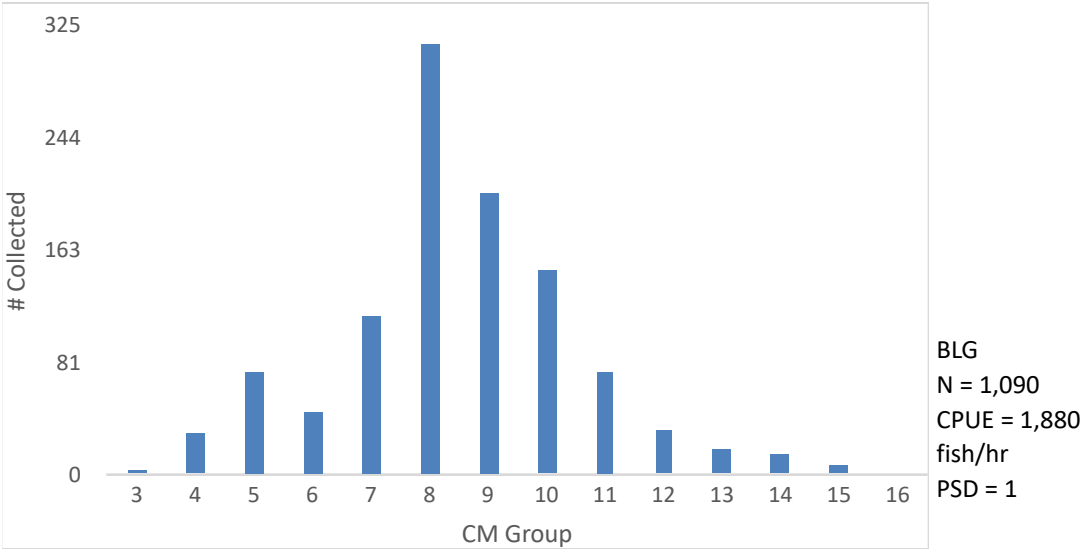

Figure 2. Length frequency of bluegill collected from electrofishing survey of Lake #1 at Three Lakes Park on October 5th, 2017

Redear Sunfish

The survey collected a total of 18 redear sunfish for a CPUE of 31 fish/hr. This catch rate showed a large decline from 2016 (CPUE = 141 fish/hr) even though redear sunfish fingerlings have been stocked into the lake by DGIF hatchery staff. The collected redear sunfish ranged in size from 2 to roughly 6 inches, with a high proportion of fish in the 4 to 5 inch range. The largest redear sunfish measured 5.98 inches, which was much smaller than the 2016 max total length of 8.74 inches. The

average size redear sunfish was 4.52 inches, which showed a sizeable decline from 2016 (mean TL = 5.52 inches). The redear sunfish population provides added diversity to the fishery along with increased size potential when compared to the bluegill population. The fishery, based on past surveys, has some potential to produce decent redear sunfish even though redear sunfish typically grow better in impoundments that have clearer water than the normal turbid conditions found in Lake #1.

Black Crappie

The survey produced a total of 41 black crappie (CPUE = 70 fish/hr) which showed a minor decline from 2016 (CPUE = 77 fish/hr). Collected crappie were relatively small in length and ranged from 8 to 30 centimeters (3 to 12 inches). The largest crappie measured 12 inches (0.83 lb.), which showed an increase from 2016 (max TL = 8.74 inches). The average size crappie measured a disappointing 5.65 inches, which was actually a surprising increase from 2016 (mean TL = 4.65 inches). The relative weight value from the limited sample set of 27 stock-sized crappie was 89, which almost matched the 2016 survey (Wr-stock = 90). This relative weight value is greater than most values from ponds of similar size. Crappie populations within small impoundments can typically result in an overcrowded and stunted population. Based upon the last two electrofishing surveys, the limitations of the black crappie population are most likely derived from the shallow, turbid water conditions than from a large stock-pile of stunted fish. There is no creel survey data to shed light on the amount of black crappie harvest that might occur over the course of any given fishing season. The abundant bluegill population may also have some impact on black crappie recruitment.

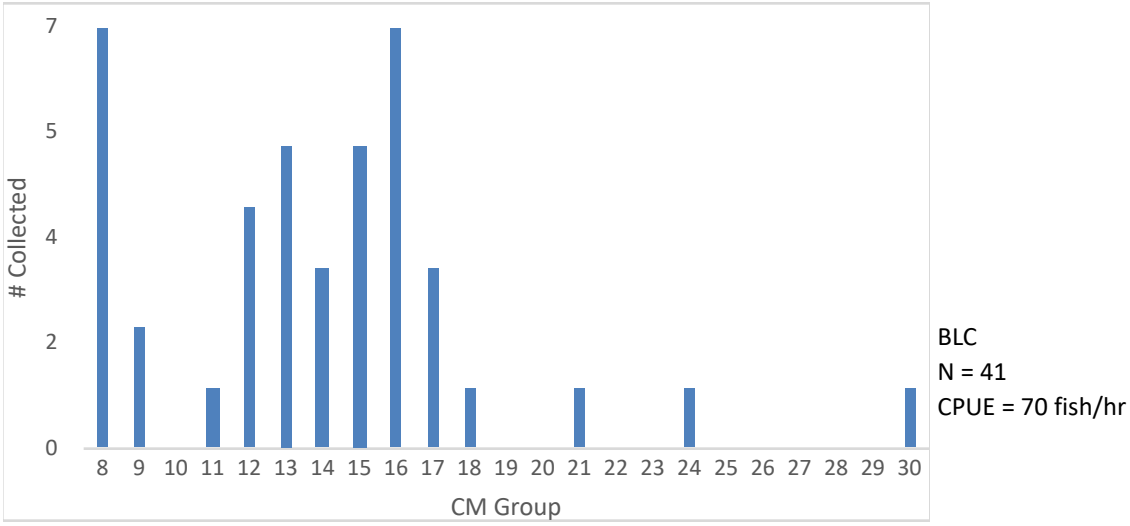

Figure 3. Length frequency of black crappie collected from electrofishing survey of Lake #1 at Three Lakes Park on October 5th, 2017

Additional Species

The survey revealed high species diversity within Lake #1 with the collection of 14 fish species. The survey collected a total of 56 gizzard shad (CPUE = 96 fish/hr), which showed a decline when compared to 2016 (CPUE = 136 fish/hr). Gizzard shad ranged in size from 4 to 10 inches with the average shad measured at 6.06 inches. The average length is a more favorable size for the bass population than what was observed in 2016 (mean TL = 8.2 inches). The presence of gizzard shad

within a small impoundment can create serious complications on the fishery's balance and overall dynamics. Gizzard shad will filter feed zooplankton from the water column. They can also forage through the substrate and detritus for a variety of macroinvertebrates. These feeding patterns will have the gizzard shad competing with the sunfish species along with juvenile bass and crappie. Another potential detriment to the fishery is the presence of common carp. The lake remains somewhat turbid and unfortunately this could be due to the carp. The suspended materials created by the carp feeding in the shallows could negatively affect the spawning success of largemouth bass and black crappie. The survey only collected 5 common carp (CPUE = 8 fish/hr), which showed a decline from 2016 (CPUE = 28 fish/hr). Collected carp measured 19.2 to 23.9 inches in total length, with the average length at 21.3 inches.

The survey revealed only one channel catfish that measured 17.64 inches with a weight of 1.67 pounds. This fish was most likely a holdover fish from one of the past stockings. Many of the catfish stocked in the previous years were most likely caught and harvested by anglers. The catfish fishing regulation consists of a 15 inch minimum size with a creel limit of 5 catfish/person/day. This regulation will hopefully serve to protect the stocked catfish long enough to allow them to reach a more favorable size. Channel catfish continue to be stocked annually at high rates, so anglers always have a good chance of catching a few especially near the time of the stocking.

The fishery within Lake #1 has some potential with a high species diversity of 14 species detected. The bass population over the last few years has shown signs of improvement in size structure with a few larger fish available to create some excitement. The bluegill population is still dominated by an abundance of smaller fish. The redear sunfish population shows some decent size potential even though overall abundance is limited. The black crappie population showed a less than ideal distribution of smaller fish during the survey. The fishery can provide a variety of action for anglers using night crawlers on the bottom as you may catch a variety of fish from common carp to channel catfish. The bowfin population within the lake observed a recent improvement. The bowfin population will be called upon to pick up the slack from the bass and try their best to forage on the stunted bluegill population. Fishing at Three Lakes Park is ideally suited for young children that don't mind catching a high number of sunfish over the course of a fishing trip. Bass fishermen might find some decent fish as they try the various fishing spots along the trail that loops around the lake.