



Waller Mill Reservoir 2012 Fisheries Management Report Virginia Department of Game and Inland Fisheries

This 360-acre water supply reservoir is owned by the City of Williamsburg and is located within the boundaries of Waller Mill Park, York County. The reservoir was originally constructed in 1942 with the intention of providing water to Camp Peary, but was sold three years later to the City of Williamsburg in 1945. The reservoir is divided into two sections by the crossing of Airport Road. A navigable tunnel connects the upper and lower portions of the reservoir. The upper basin accounts for roughly a third of the reservoir's acreage. The lower basin provides greater fishing access to deeper water and larger creek arms. The heavily wooded shoreline and the many branches and coves of the reservoir provide a very pleasing environment in which to hike, bike, fish and pleasure boat. Waller Mill Reservoir has been known to produce some large striped bass (some in the 25 to 30 pound range). The reservoir provides a rather diverse fishery that should interest anglers.

The Virginia Department of Game and Inland Fisheries conducted electrofishing surveys of Waller Mill Reservoir on April 15th, 2011. The last electrofishing survey was on April 13th and May 7th, 2009. The 2011 sample was conducted in 4 different regions of the reservoir to get a broad spectrum of the fish assemblage present. The water temperature during the April 15th survey ranged from 17.4°C to 18.6°C. Electrofishing efforts consisted of shocking along the shoreline habitat as close as possible, with the majority of the effort concentrated in the 2 to 4 foot depth range. A total electrofishing effort of 1.33 hours yielded 11 fish species. This report will concentrate primarily upon the six fish species of largemouth bass, bluegill, black crappie, white perch, redear sunfish and yellow perch. Data collected from the survey will be included to expand the information for certain species.

Table 1. Summary of the electrofishing surveys April 15th, 2011 for the primary fish species of Waller Mill Reservoir.

Species	# Collected	Largest Length	Average Length
Largemouth Bass	105	20.6"	13.4"
Bluegill	130	7.9"	5.4"
Black Crappie	24	13.2"	9.7"
White Perch	23	10.2"	7.1"
Redear Sunfish	19	9.5"	7.1"
Yellow Perch	48	8.7"	6.0"

Largemouth Bass

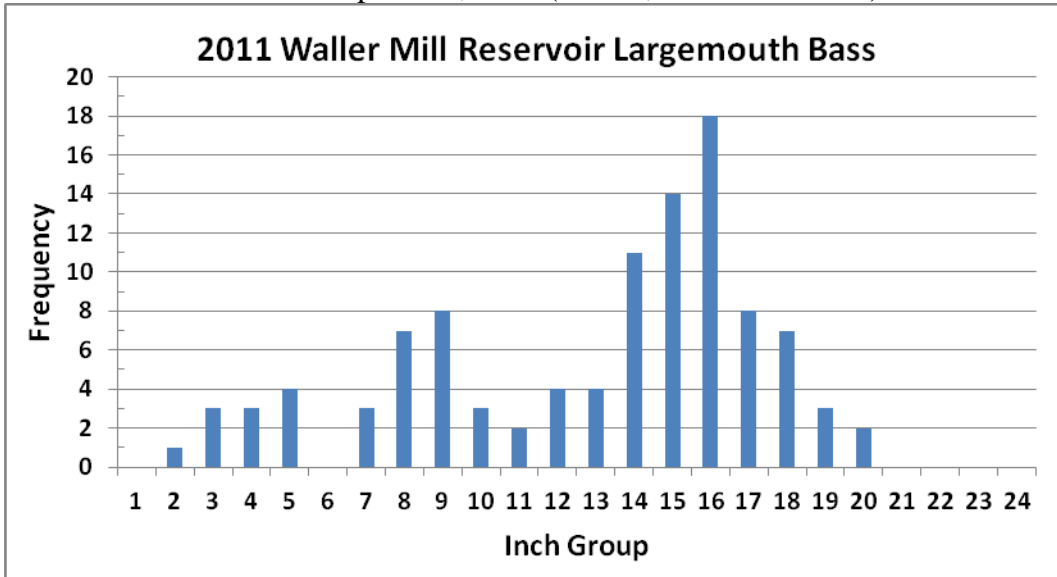
The largemouth bass population within Waller Mill Reservoir appears to be in good shape and reasonably balanced. A total of 105 largemouth bass were collected. The

CPUE (Catch Per Unit of Effort) for largemouth bass was 78.8 bass/hr. This catch rate showed a major increase when compared to the 2009 survey (CPUE: 44.4 bass/hr). The average sized bass showed a slight decline from 13.7 inches in 2009 to 13.4 inches in 2011. Refer to Table 2 for comparison of sample runs. Sample runs 1 and 2 were conducted in the upper basin of the reservoir. Runs 3 and 4 were conducted in the lower basin. The size distribution of the collected bass can be seen on the enclosed length frequency graph.

Table 2. Largemouth bass abundance values for each sampling run along with the average size, maximum lengths and CPUE (fish/hr).

Run #	1	2	3	4
# of bass	28	27	22	28
Average size	14.5"	13.3"	14.8"	11.2"
Max size	20.2"	20.6"	18.1"	18.0"
CPUE (#/hr)	84	81	66	84

Figure 1. Length frequency of largemouth bass collected from electrofishing survey of Waller Mill Reservoir on April 15th, 2011 (N: 105, CPUE: 78.8 f/hr)



The 2011 distribution showed a high proportion of bass in the 14 to 18 inch size range. These bass will provide a great deal of the fishing excitement. The distribution showed limited recruitment and slow growth rate of juvenile bass. Bass that ranged in size from 2 to 5 inches most likely represents the 2010 year class of bass. The largest bass by length measured 20.6 inches and weighed 5.65 pounds. Our sampling efforts are just a representative picture of the fish community collected along the shoreline and various habitat structures on the days. The reservoir has produced a limited number of trophy largemouth bass over the years. Larger bass may have been able to escape from the electrofishing boat or may just be living in other areas of the reservoir that were not sampled.

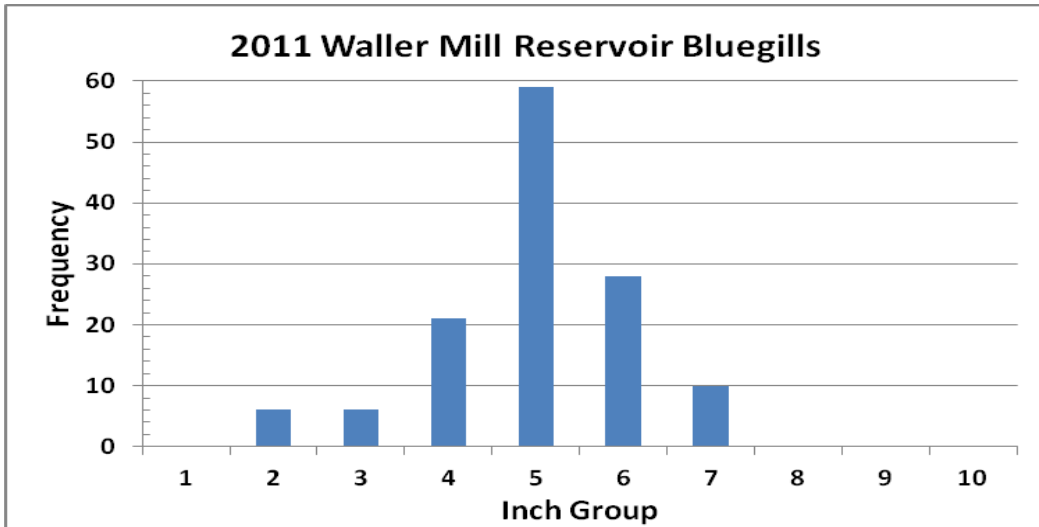
With largemouth bass being the most popular game fish in this country, it has been considered that a “preferred” bass is one that is over 15 inches in length. It is through this size classification that population dynamics are analyzed. The PSD (Proportional Stock Density) is the proportion of bass in the population over 8 inches (stock size) that are also at least 12 inches (quality-sized). The sample showed an extremely high PSD value of 77, which is a direct reflection of the 71 quality-sized bass. The sample had a total of 92 bass that were stock size or larger. A balanced bass/bluegill fishery has a bass PSD value within the 40 – 70 range. The RSD-P (Relative Stock Density of Preferred bass) is the proportion of bass in the population over 8 inches that are also at least 15 inches. The RSD-P value of 57 is a direct reflection of the 52 preferred fish being collected. The 2011 PSD value was slightly lower than the 2009 value (PSD: 79). The 2011 RSD-P value showed a greater proportion of preferred-sized bass when compared to the 2009 survey (RSD-P: 51). The catch rate of 39 preferred-sized bass/hr was the highest ranked public impoundment sampled in Region 1, District 1 during 2011.

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. The higher the value, the better the condition of the fish in terms of overall body mass. The relative weight values for stock, quality, preferred and memorable bass (>8”, >12”, >15” and >20”) were 96, 101, 102 and 116 respectfully. These relative weight values showed a favorable increase from the 2009 values (stock: 95, quality: 97, preferred: 97 and memorable: 85).

Bluegill

The bluegill fishery of Waller Mill Reservoir appears to consist primarily of fish in the 4 to 6 inch range. The electrofishing survey was able to collect 130 bluegills (CPUE: 97.5 bluegills/hr). This catch rate showed a favorable increase when compared to the 2009 survey (CPUE: 55.8 bluegills/hr). The size distribution can be seen on the attached length frequency graph. The average sized bluegill was 5.4 inches and showed a decline from the average length of 5.9 inches in 2009. The PSD for bluegill is the proportion of bluegill over 3.15 inches (stock size) that are also at least 5.9 inches (quality size). The bluegill PSD value of 34 showed a major decrease from the 2009 survey (PSD: 59). The collection consisted of 42 quality-sized bluegills and a total of 123 stock-sized fish. The PSD value is within the desired 20 - 40 range that would represent a balanced bluegill population. The survey was similar to past years with a limited abundance of juvenile bluegills less than 4 inches in length. Survival rates of juvenile bluegills may be seriously impacted by the largemouth bass and white perch populations.

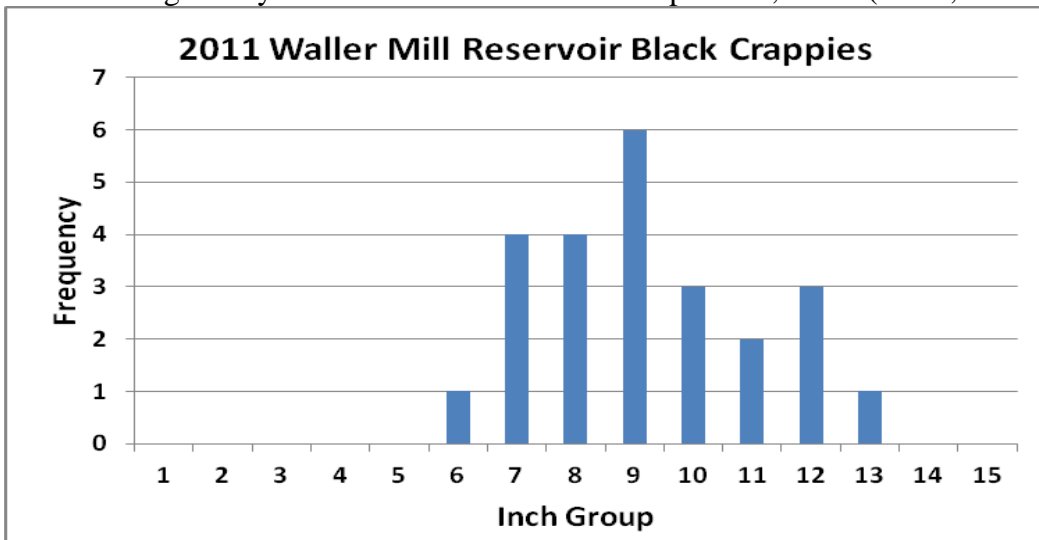
Figure 2. Length frequency distribution of bluegills collected from the electrofishing survey of Waller Mill Reservoir on April 15th, 2011. (N: 130, CPUE: 97.5/hr)



Black Crappie

The electrofishing sample collected a total of 24 black crappies (CPUE: 18/hr). This catch rate showed an increase from the 2009 sample (CPUE: 3.6/hr). The collected crappies ranged in size from 6 to 13 inches with the average size at 9.7 inches. Black crappies tend to school in waters deeper than bass and bluegills. Taking this into account, the typical shoreline sample can be very random as to whether or not a school is encountered during a sample run. The reservoir has potential to produce some larger black crappies in the 1.5 to 2 pound range. Anglers have managed to catch a few decent crappies over the last few years. Recent gill net surveys have been more successful at finding schools of crappies from the upper basin of the reservoir. The electrofishing demonstrations in October 2011 also showed a higher than average abundance of crappies in and around the boat ramp area.

Figure 3. Length frequency distribution of black crappies collected from the electrofishing survey of Waller Mill Reservoir on April 15th, 2011. (N: 24, CPUE: 18/hr)



White Perch

Waller Mill Reservoir has historically been one of the better waters to fish for white perch. Recent survey years have seen decreasing trends in catch rates during spring electrofishing surveys. The electrofishing survey was able to collect a total of only 23 white perch (CPUE: 17.3/hr). This catch rate showed a slight increase when compared to the 2009 survey (CPUE: 16.2/hr). Comparing catch rates of schooling fish can be difficult. The random nature of encountering a large school of white perch has a great influence on your catch rate and how the population is perceived. Waller Mill Park staff has seen some anglers harvesting large stringers of white perch over the last couple of years. The 2011 electrofishing survey showed the majority of white perch to be in the 6 to 9 inch range. The average white perch measured 7.1 inches and the largest white perch was 10.2 inches in length.

Redear Sunfish

The redear sunfish population appears to be in fair shape even though the abundance is limited. A total of 19 redear sunfish were collected for a CPUE of 14.3/hr. This catch rate is less than the 2009 survey (CPUE: 16.2/hr). The 2011 size distribution ranged from 3 to 9 inches with the largest redear measured at 9.5 inches in length. The average length of the collected redear sunfish was 7.1 inches. The catch rate of redear sunfish would have been greater if the survey was conducted during the early half of the month of May. Certain areas of the reservoir will draw spawning size fish into the shallows for the spawning season. The electrofishing survey was conducted prior to the redear sunfish spawn. Anglers will be able to spot the large crater-like nests that redear sunfish build along the sand bars of various shallow coves.

Yellow Perch

The survey was able to collect a total of 48 yellow perch (CPUE: 36/hr). The 2011 catch rate showed an increase from the 2009 survey (CPUE: 18/hr). The collected perch ranged in size from 4 to 8.7 inches with the average size at 6 inches. Anglers should not expect to catch too many large yellow perch from Waller Mill Reservoir. Young anglers may find excitement from the occasional perch while fishing for sunfish species. The yellow perch population's growth potential is limited to the amount of available forage within the reservoir. The yellow perch will have to compete for forage with the bass, crappie and white perch.

Common Carp

Waller Mill Reservoir has one of better carp populations within Region 1, District 1. The majority of the carp action is found within the upper basin of the reservoir. Most carp were found along the edge of shoreline brush along straight stretches of shoreline. Some carp were drawn out from the cover of fallen trees. Past surveys have shown decent numbers of 6 to 8 pound carp. The 2011 survey collected/counted a total of 73 carp. This catch rate of 54.8/hr showed a major increase from 2009 (CPUE: 8.4/hr) and is still much higher than the 2008 survey (CPUE: 30/hr). Of the carp that were measured, the average size was just shy of 20 inches with the largest carp measured at 24 inches.

Additional Species

The electrofishing also revealed the presence of American eels, gizzard shad, redbreast sunfish and yellow bullhead. These fish were found in limited abundance, but may surprise an angler from time to time. The survey collected a total of 4 American eels which ranged in size from 16 to 24 inches. A total of 16 gizzard shad were collected. A group of juvenile shad in the 4 to 5 inch range were collected along with a group of larger shad in the 14 to 17 inch range. Although the survey collected a limited abundance of gizzard shad, the reservoir has a decent gizzard shad population that concentrates in the pelagic zones of the reservoir. The shad population provides the bulk of the forage for the striped bass and largemouth bass. A total of 9 redbreast sunfish were collected. They ranged in size from 4 to 6.5 inches. One yellow bullhead of 13 inches was collected. One bluegill/redear sunfish hybrid was also collected.

Summary

Waller Mill Reservoir provides a decent fishing opportunity for people in the greater Williamsburg area. The reservoir has a good largemouth bass population with a high number of bass greater than 15 inches in length. The majority of the bass tend to hold tight to the shoreline cover if they are not out chasing schools of small gizzard shad. The sunfish population is not all that abundant, but the bluegills and redear sunfish that are present are usually of decent size in the 5 to 7 inch range. Redbreast sunfish will provide some excitement from time to time for young fishermen. The yellow perch population appears to be expanding with increased catch rate compared to past survey years even though the overall size structure is not that impressive. The white perch population will provide some action depending on where the schools of perch are cruising. 2011 was a slow year for citations at Waller Mill Reservoir as only one citation striped bass was reported.