



Harwood's Mill Reservoir 2012 Fisheries Management Report Virginia Department of Game and Inland Fisheries

This 265-acre impoundment is the terminal reservoir for the City of Newport News water supply system. Oriana Road (Route 620) divides the reservoir into two sections that differ in terms of habitat and fish population characteristics. The northern section has an abundance of cypress trees and is the better producer of bass while the southern section is more open water and has historically produced decent action for yellow perch and various sunfish species.

The 2011 survey was conducted on April 20th. The reservoir was last sampled on April 23rd and May 6th, 2009. Five electrofishing runs of 1,200 seconds each were conducted. The total effort of 6,000 seconds (100 minutes) allowed for a representative sample of the fishery. The first three survey runs were conducted in the lower basin. Two additional runs were conducted in the upper basin. The survey revealed great diversity with 17 species collected. An in depth look at several of these species will be covered in this report.

Table 1. Summary of primary fish species collected from Harwood's Mill Reservoir on April 20th, 2011.

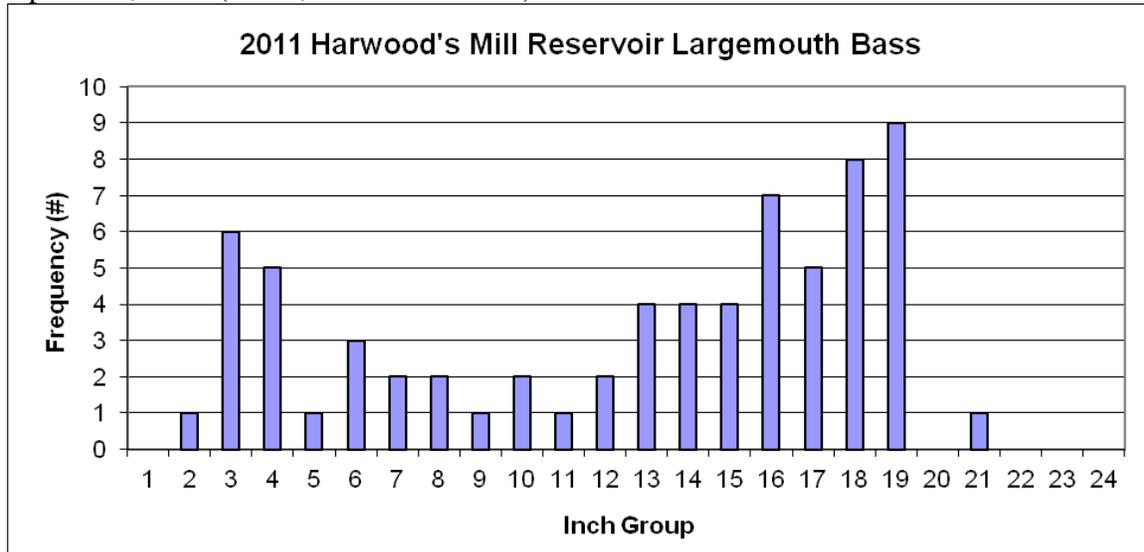
Species	# Collected	Catch Rate (fish/hr)	Largest Length	Average Length
Largemouth Bass	68	40.8	21.34"	13.07"
Chain Pickerel	7	4.2	15"	8.88"
Yellow Perch	198	118.8	7.8"	5.29"
Redear Sunfish	38	22.8	7.95"	4.61"
Bluegill	305	183	6.77"	4.38"

Largemouth Bass

The 2011 electrofishing survey was similar to the 2009 survey in revealing an abundance of quality-sized largemouth bass. The largemouth bass fishery consists of a high proportion of fish greater than 15 inches in length. This is great for fishermen interested in catching a preferred-sized bass. Sampling efforts collected 68 largemouth bass for a Catch Per Unit of Effort (CPUE) of 40.8 f/hr. This catch rate showed a decline from the 2009 survey (CPUE: 45 f/hr). The 2011 sample collected a total of 36 bass from the lower reservoir basin (CPUE: 36/hr) and 32 bass from the upper basin (CPUE: 48/hr). The lower basin provides better spawning habitat for bass than the upper basin. The lower basin has large shoreline areas with ideal bottom substrate in the form of sand and pea gravel that bass take advantage of when the spawning period starts warming up. The upper basin has a larger assortment of forage fish for bass to consume. The bulk of the forage comes in the form of creek chubsuckers. A sum of 143 of the total 146 creek

chubsuckers came from the 2 sample runs in the upper basin. Although the overall catch rate of bass was lower during the 2009 survey, the catch rate of preferred-sized bass was still a decent 20.4 bass/hr. This catch rate showed a decline from the 2009 survey (23.5 bass/hr).

Figure 1. Length frequency of largemouth bass collected from Harwood’s Mill Reservoir, April 20th, 2011 (N: 68, CPUE: 40.8 f/hr)



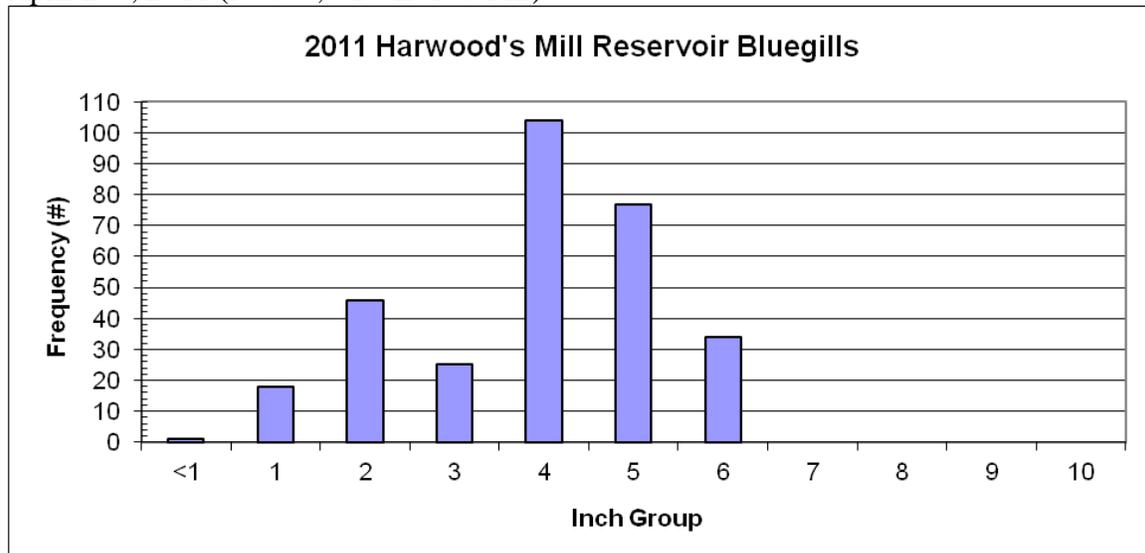
Fisheries biologists of the past established certain size classifications to describe the fish they collected. It is through these size classifications that population dynamics are analyzed. The size designations are stock, quality, preferred, memorable, and trophy. The PSD (Proportional Stock Density) is the proportion of stock-sized bass (8 inches or larger) that are also equal to or greater than 12 inches (quality size). A balanced bass/bluegill fishery has a bass PSD value within the 40–70 range. 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. The RSD-P (Relative Stock Density of Preferred bass) is the proportion of stock-sized bass that are also equal to or greater than 15 inches in length. The 2011 values for PSD and RSD-P (88 and 68) were extremely high and showed a decrease from the 2009 PSD (94) and an increase from the 2009 RSD-P (59). The PSD value represents the collection of 44 quality-sized bass with a total of 50 stock-sized bass. The RSD-P value represents the 34 preferred-sized bass (15 inches or greater) to the total of 50 stock-sized bass. The largest bass measured 21.34 inches and weighed 5.96 pounds.

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 stock, quality, preferred and memorable bass (>8”, >12”, >15” and >20”) were 105, 106, 108 and 106 respectively. These relative weight values are well above the preferred range of 95 to 100 and show that the bass are finding plenty of food.

Bluegills

Harwood's Mill Reservoir has an average bluegill population. The electrofishing survey of 2011 collected 305 bluegills (CPUE: 183 f/hr). This catch rate showed a decline when compared to the 2009 survey (CPUE: 202 f/hr). The 2011 survey showed the majority of the fish to be within the 4-6 inch range. There was a limited abundance of bluegills less than 4 inches in size. The average sized bluegill measured 4.38 inches with the largest bluegill measured at 6.77 inches. The bluegill PSD value of 15 showed a major increase from 2009 (PSD: 3). This PSD value reflects the fact that the survey collected 240 stock-sized bluegills in which 36 fish were of quality-size. No preferred-sized bluegills were collected. Bluegill growth rates have not been analyzed. The limited nutrients in this high flow through system may be holding back the growth rates of the bluegill population. Anglers can expect to have decent action from the bluegills, but should not expect to catch many larger fish during your average day on the water.

Figure 2. Length frequency of largemouth bass collected from Harwood's Mill Reservoir, April 20th, 2011 (N: 305, CPUE: 183 f/hr)



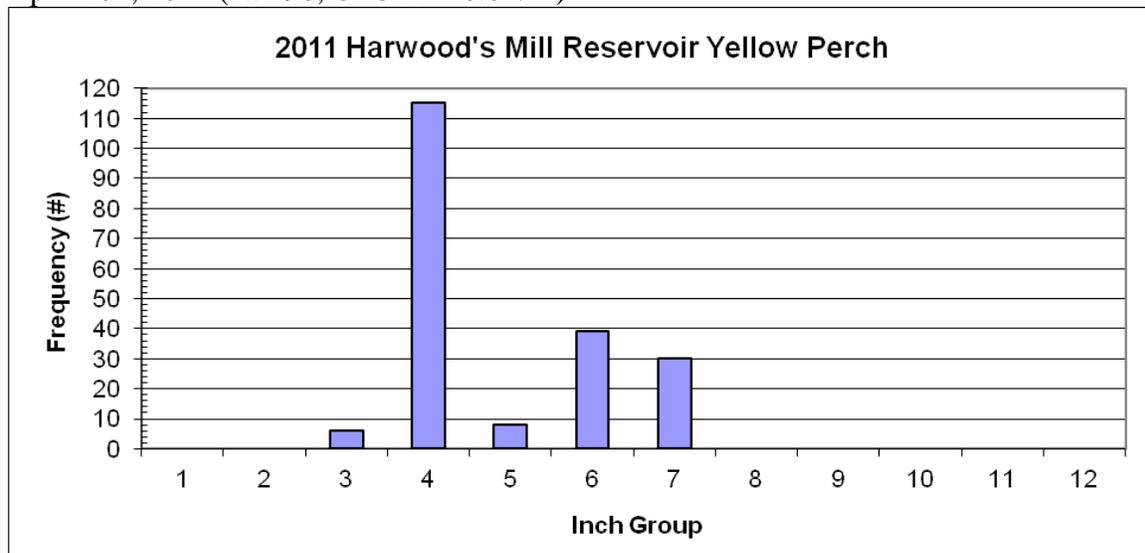
Black Crappies

The black crappie fishery within Harwood's Mill Reservoir appears to be severely limited. Past electrofishing surveys of Harwood's Mill Reservoir have yielded limited numbers of black crappies. Surveys have collected only a handful of black crappies at a time. The 2011 survey collected a total of 11 black crappies (CPUE: 6.6 f/hr). This catch rate showed a slight improvement when compared to 2009 (CPUE: 3.5 f/hr). Black crappies tend to school up tightly in deeper water more than bass and bluegill. So the typical shoreline electrofishing run could miss the black crappies if they were holding in deeper water. Based upon our results from various samples, the black crappie population does not appear to be very strong in terms of overall abundance. The 2011 size distribution ranged from 8 to 12 centimeters (3.1 to 4.7 inches). These juvenile fish are at least some proof that at least one pair of spawning adults were present in the reservoir. The abundant yellow perch population has most likely been impacting the survival of black crappie fry and fingerlings.

Yellow Perch

The yellow perch population appears to have exploded with the survival of a strong year class. The 2011 survey collected a total of 198 yellow perch for catch rate of 118.8 f/hr. This catch rate showed a major increase from the 2009 survey (CPUE: 24.5 f/hr). The distribution ranged from 3 to 7 inches with majority of sample supported by the abundance of 4-inch perch. Harwood's Mill Reservoir has some potential to produce a few larger yellow perch. One citation-sized yellow perch (> 12") was reported during 2011. Anglers may be surprised every once in a while by a better than average yellow perch, but they should be cautioned that there are very few fish greater than 6 inches in size. On the positive note, the abundance of 4-inch yellow perch will provide a great forage base for the chain pickerel population.

Figure 3. Length frequency of largemouth bass collected from Harwood's Mill Reservoir, April 20th, 2011 (N: 198, CPUE: 118.8 f/hr)



Chain Pickerel

The survey yielded 7 chain pickerel for a CPUE 4.2 f/hr. This catch rate showed a decline from the 2009 survey (CPUE: 13/hr). The collected pickerel ranged in size from 7 to 38 centimeters (3 to 15 inches). Two of the pickerel were from the 2011 spawn (72 and 75 mm). The chain pickerel will have the ability to surprise an angler from time to time. A few citation-sized pickerel have been caught by anglers over the last few years. 2011 was a decent year for pickerel citations as anglers reported 4 trophy pickerel. Anglers are reminded that chain pickerel are important in helping to control the excessive number of juvenile yellow perch that are present.

Redear Sunfish

The electrofishing survey produced 38 redear sunfish for a catch rate of 22.8/hr. This catch rate showed some improvement from the 2009 survey (CPUE: 11.5/hr). The collected redear sunfish ranged in size from 3 to 20 centimeters (1.5 to 7.95 inches). The average size for the collected redear sunfish was 4.61 inches. Anglers should not expect

to catch too many large redear sunfish from the reservoir. The three sample runs in the lower reservoir basin collected only 7 redear sunfish. The two sample runs in the upper basin yielded the remaining 31 redear sunfish. It appears these fish preferred searching for food in the more productive flats of the upper basin.

Additional Species

The electrofishing sample of 2011 consisted of 17 fish species. The sample collected the above listed species along with limited numbers of warmouth (10), yellow bullhead (2), common carp (1), American eel (7), pirate perch (1), golden shiner (4) and bluespotted sunfish (9). The other species collected in higher abundance were the creek chubsuckers (146), brown bullhead (83), spottail shiner (45) and pumpkinseed sunfish (44). The creek chubsuckers ranged in size from 5 to 14.75 inches. The majority of the creek chubsuckers were in the 5 to 7 inch range. These fish will provide a great forage base for the adult largemouth bass and chain pickerel. The survey collected a surprisingly high number of brown bullheads with a total of 83 collected. The majority of the bullheads were juvenile fish that measured in the 4 to 7 inch range. One 15 inch brown bullhead was collected. The spottail shiners ranged in size from 1 to 5 inches. The pumpkinseed sunfish ranged from 2 to 6 inches with the majority in the 4 to 5 inch range.

Sample Summary

The 2011 electrofishing survey of Harwood's Mill Reservoir provided a follow up to the great survey of 2009. The bass population continues to show good size structure with a high proportion of collected bass falling into the 2 to 3 pound range. The catch rate of preferred-sized bass (20.4/hr) showed a slight decline from the 2009 survey, but still ranks Harwood's Mill as one of the better bass fisheries when it comes to larger bass. The size structure of the bluegills and yellow perch continues to leave something to be desired with the majority of these fish in the 3 to 6 inch range. The chain pickerel population is not very abundant, but the potential for some quality-sized pickerel does still exist. Harwood's Mill Reservoir provides a wide assortment of fish diversity with a total of 17 species collected. Anglers may find some excitement from a variety of fish species that are present.

Boats can be rented on both sides of the reservoir on weekends and public holidays from May through September. Private boats can be launched from the ramp on the southern portion of the reservoir. There are picnic facilities and a popular biking trail. Further details can be obtained from the Newport News Department of Parks and Recreation at 757-886-7912. The reservoir is Oriana Road (Route 620) off of Denbigh Boulevard (Route 173).