



Harwood's Mill Reservoir 2010

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 2009 survey was a combination of sampling days conducted on April 23rd and May 6th. The reservoir was last sampled on April 24, 2007. Six electrofishing runs of 1,200 seconds each were conducted. The total effort of 7,200 seconds (120 minutes) allowed for a representative sample of the fishery. The April 23rd survey consisted of 3 runs on the lower reservoir basin. The May 6th survey consisted of 3 runs in the upper reservoir basin. The survey revealed great diversity with 18 species collected. An in depth look at several of these species will be covered in this report.

Species	# Collected	Largest Length	Average Length
Largemouth Bass	90	21.7"	14.5"
Chain Pickerel	26	20.6"	9.7"
Yellow Perch	49	10"	6.7"
Redear Sunfish	23	9"	5"
Bluegill	404	6.9"	2.8"

Table 1. Summary of primary fish species collected from Harwood's Mill Reservoir on April 23rd and May 6th, 2009.

Largemouth Bass

The 2009 electrofishing survey revealed 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 90 largemouth bass for a Catch Per Unit of Effort (CPUE) of 45 f/h. This catch rate was not nearly as impressive as the 2007 survey (CPUE: 77.5 f/h). The 2007 CPUE was the highest catch rate recorded for a spring electrofishing surveys on Harwood's Mill. Harwood's Mill Reservoir has historically had low catch rates of bass during electrofishing efforts. The 2009 sample collected a total of 58 bass from the lower reservoir basin and 32 bass from the upper basin. 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. Although the overall catch rate of bass was lower during the 2009 survey, the catch rate of preferred-sized bass was still an impressive 23.5 bass/hr. This catch rate ranks Harwood's Mill Reservoir in

first place for all public impoundments sampled in Region 1, District 1 during 2009 surveys.

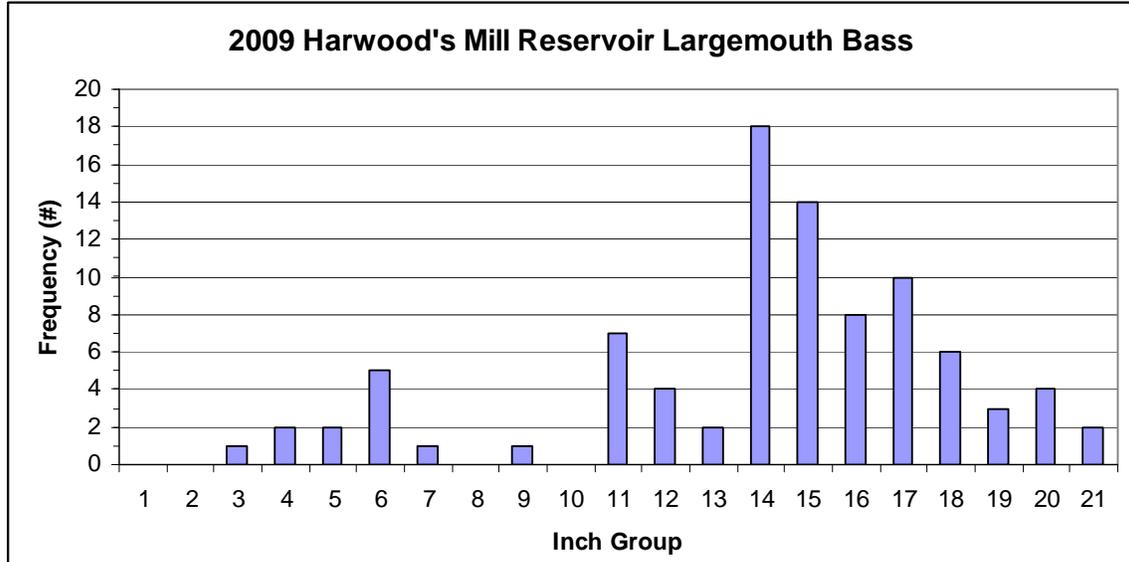


Figure 1. Length frequency of largemouth bass collected from Harwood's Mill Reservoir, April 23rd and May 6th, 2009. (N = 90, CPUE = 45 f/h)

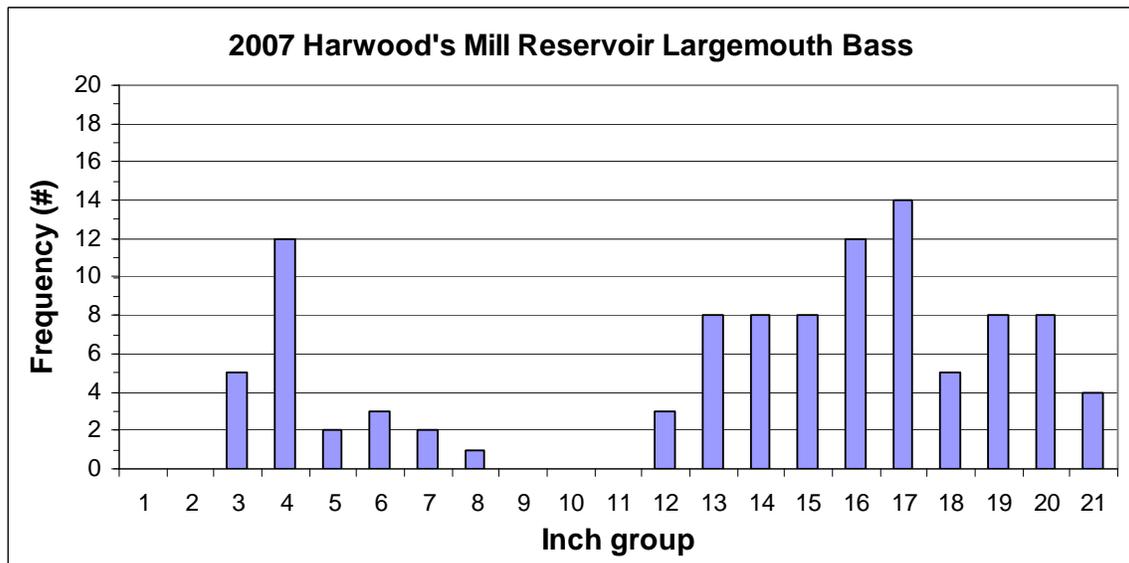


Figure 2. Length frequency of largemouth bass collected from Harwood's Mill Reservoir, April 24, 2007 (N = 103, CPUE = 77.3 f/h)

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 2009 values for PSD and RSD-P (94 and 59) were extremely high and showed a decrease from the 2007 values for PSD and RSD-P (99 and 75). The PSD value represents the collection of 74 quality-sized bass with a total of 79 stock-sized bass. The RSD-P value represents the 47 preferred-sized bass (15 inches or greater) to the total of 79 stock-sized bass. The largest bass measured 21.7 inches and weighed 6.7 pounds. The lower half of the reservoir was more productive for preferred-size bass with 32 collected. The upper basin produced only 15 preferred-size bass.

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, 107 and 109 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 sample of 2009 collected 404 bluegills (CPUE = 202 f/hr). This catch rate showed a major increase when compared to the 2007 survey (CPUE = 60 f/h). The 2009 survey showed an increased abundance of juvenile-sized bluegills in the 2 to 3 inch range. The average sized bluegill measured 2.8 inches with the largest bluegill measured at 6.9 inches. The bluegill PSD value of 3 showed a major decline from 2007 (PSD = 20). This decrease in PSD reflects the fact that the survey collected 86 stock-sized bluegills in which only 3 fish were of quality-size. 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. On a positive note, the abundance of juvenile-sized bluegills will provide additional forage for predators such as largemouth bass, chain pickerel and black crappies.

Black Crappies

Black crappie fishery is 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. A total of 5 black crappies were collected during the 2005 electrofishing survey. Only 2 black crappies were sampled in the 2004 electrofishing survey. Those fish were of noteworthy size at 14.25 and 15.3 inches long. The 2007 survey could not beat any of those totals as only one crappie of 10.4 inches was collected. The 2009 survey produced a total of 7 black crappies. Four of the crappies were collected from the upper basin and the other 3 from the lower basin. Five of the crappies were in the 5 to 6 inch range and the remaining two were 9.5 and 10 inches long. 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.

Yellow Perch

The yellow perch population appears to be limited. The 2009 survey collected a total of 49 yellow perch for catch rate of 24.5 f/hr. This catch rate is below the 2007 CPUE of 44.3 f/hr. The majority of the 2009 sample consisted of yellow perch in the 5 to 7 inch range. Harwood's Mill Reservoir has some potential to produce a few larger yellow perch. The largest collected perch measured 10 inches. The chain pickerel population has most likely been able to take advantage of the excessive number of juvenile-sized perch found during the 2005 survey.

Chain Pickerel

The survey yielded a limited abundance of chain pickerel with only 7 collected (CPUE: 5.3/hr). This catch rate is down slightly from the 2005 survey (N = 12, CPUE: 9/hr). The 2007 size distribution ranged from 8 to 22.5 inches. The average sized chain pickerel measured 18.2 inches in length. The chain pickerel will have the ability to surprise an angler from time to time.

Redear Sunfish

The electrofishing sample of 2007 consisted of 18 fish species. The sample collected the above listed species along with limited numbers of redear sunfish (2), warmouth (3), yellow bullhead (3), common carp (1), American eel (16), pirate perch (1), white perch (2), gizzard shad (3), banded sunfish (4) and bluespotted sunfish (13). Other non-game species collected in higher abundance were the creek chubsuckers (105), eastern silvery minnows (84), and brown bullheads (49).

Sample Summary

The 2007 electrofishing survey of Harwood's Mill Reservoir provided a decent surprise in the size structure of the largemouth bass population. The 2005 survey revealed good numbers of 3 to 4 pound bass. The 2007 survey was perfectly timed to collect an abundance of 4 to 8 pound bass in a pre-spawn pattern. The overall bass collection was one of the best we have seen from any of the public impoundments in Region 1, District 1. The size structure of the bluegills and yellow perch leaves 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 some quality-sized pickerel up to 22.5 inches in length were collected. Harwood's Mill Reservoir provides a wide assortment of fish diversity with a total of 18 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).