



Harwood's Mill Reservoir 2015 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.

An electrofishing survey was conducted on November 5th, 2014. The previous electrofishing survey was conducted on April 20th, 2011. Four electrofishing runs of 1,200 seconds each were conducted. The total effort of 4,800 seconds (1.33 hours) allowed for a representative sample of the fishery. Two survey runs were conducted in the lower basin and two survey runs were conducted in the upper basin. The survey revealed great diversity with 16 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 November 5th, 2014.

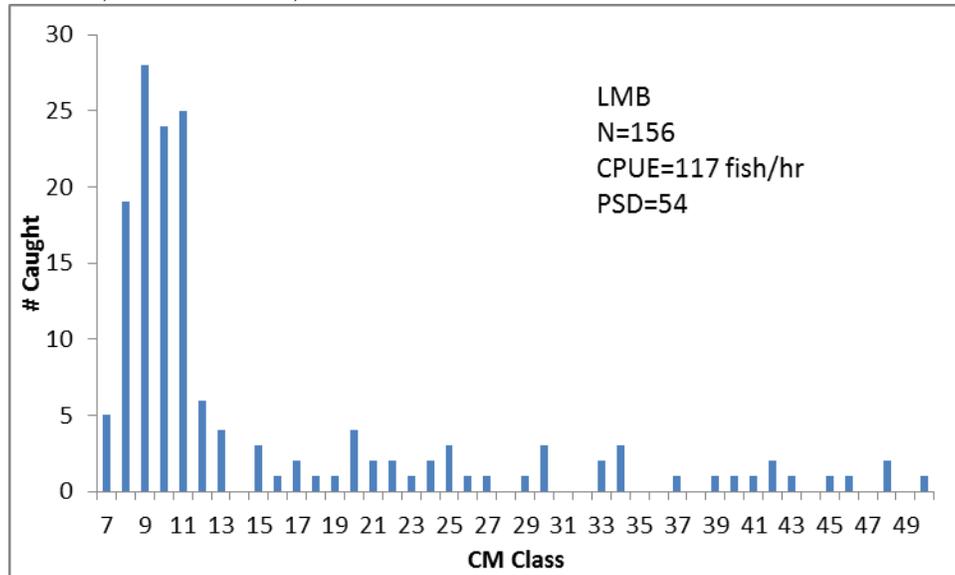
| Species | # Collected | Catch Rate (fish/hr) | Largest Length | Average Length |
|-----------------|-------------|----------------------|----------------|----------------|
| Largemouth Bass | 156 | 117 | 19.76" | 6.2" |
| Chain Pickerel | 62 | 46.5 | 16.61" | 9.29" |
| Yellow Perch | 578 | 433.5 | 10.55" | 4.22" |
| Redear Sunfish | 161 | 120.75 | 8.46" | 6.02" |
| Bluegill | 295 | 221.25 | 6.97" | 4.64" |

Largemouth Bass

The 2014 electrofishing survey was conducted on November 5th, 2014. The typical spring survey was not conducted in 2014 due to the fast warming trend that hit the region in mid-April. The fall survey allows for an assessment of the current fishery, but any wholesale comparison between surveys must account for the different seasons. The 2011 survey revealed an abundance of quality-sized largemouth bass. The 2014 survey was not as impressive. The survey produced a total of 156 largemouth bass for a Catch Per Unit of Effort (CPUE) of 117 fish/hr. This catch rate showed a large increase from the 2011 survey (CPUE = 40.8 fish/hr). The 2014 survey accounted for a large accumulation of juvenile bass (CPUE_{young} = 89.3 fish/hr) compared to the fewer juvenile

bass encountered in 2011 ($CPUE_{\text{young}} = 10.8$ fish/hr). The 2014 survey collected 112 bass from the lower reservoir basin ($CPUE = 168$ fish/hr) and 44 bass from the upper basin ($CPUE = 66$ fish/hr). The lower basin provides better spawning habitat for bass during the spring. It also appears that the lower basin provides a good area for bass to congregate during the mid to late fall time period. Although the overall catch rate of bass was greater than the 2011 survey, the catch rate of preferred-sized bass ($CPUE = 8.3$ fish/hr) showed a large decline from 2011 ($CPUE = 20.4$ fish/hr)..

Figure 1. Length frequency of largemouth bass collected the electrofishing of Harwood’s Mill Reservoir, November 5th, 2014



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 40–60 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 2014 values for PSD and RSD-P (54 and 30) showed a large decline from the 2011 survey (PSD = 88; RSD-P = 68), but fell within the desired ranges that would describe a balanced bass population. The 2014 PSD value represents the collection of 20 quality-sized bass from the total of 37 stock-sized bass. The RSD-P value represents the 11 preferred-sized bass (≥ 15 inches) to the total of 37 stock-sized bass. The largest bass measured by length was 19.76 inches and weighed 4.66 pounds. The largest bass by weight was 5.01 pounds and measured 19.1 inches.

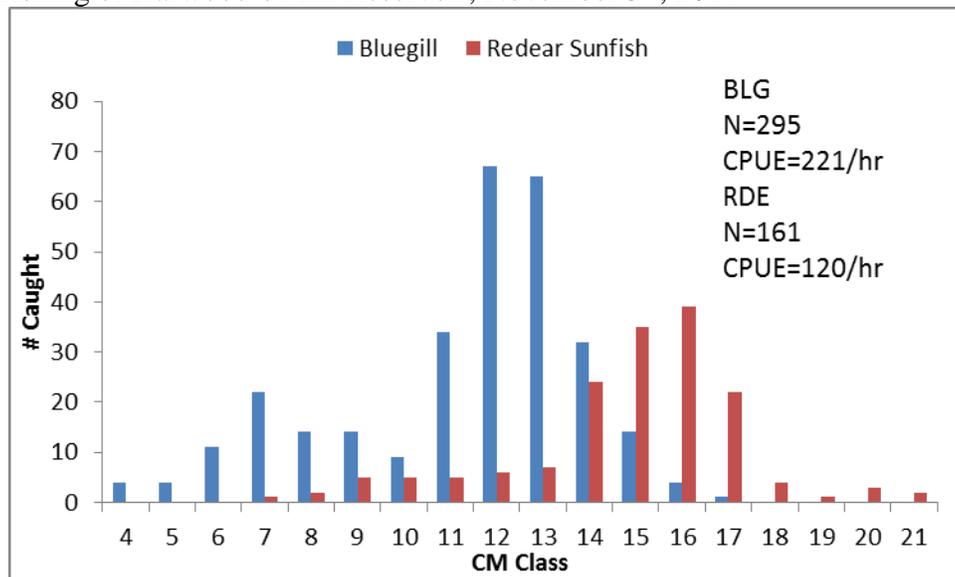
Weights were taken on largemouth bass to calculate relative weight values. Relative weight values are an indication of body condition. A value from 95 to 100 represents a fish that is in the healthy range and finding a decent amount of food. A

higher relative weight value indicates fish with a better body condition. The relative weight values for stock, quality, preferred and memorable bass ($\geq 8''$, $\geq 12''$, $\geq 15''$) were 111, 116, and 120 respectively. These values showed a large increase from the 2011 survey (stock = 105, quality = 106, preferred = 108). These relative weight values are well above the preferred range of 95 to 100 and show that the bass are finding plenty of food. The abundance of juvenile yellow perch and small gizzard shad are the forage base that the bass are targeting.

Bluegill and Redear Sunfish

Harwood's Mill Reservoir has an average bluegill population. The electrofishing survey produced 295 bluegill (CPUE = 221 fish/hr), which showed an increase from the 2011 survey (CPUE = 183 fish/hr). The majority of the collected bluegill were in the 11 to 14 centimeter range (4.5 to 5.5 inch range). There was a limited abundance of bluegill less than 7 cm in size (3 inches). The average sized bluegill measured 4.64 inches, which was actually an increase from 2011 (mean TL = 4.38 inches). The largest bluegill measured 6.97 inches. The bluegill PSD value of 7 showed a decline from 2011 (PSD = 15). This PSD value reflects the fact that the survey collected 254 stock-sized bluegills in which 19 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 bluegill and redear sunfish collected from the electrofishing of Harwood's Mill Reservoir, November 5th, 2014



The redear sunfish population provides some better results than the bluegill population when it comes to the possibility of encountering a few larger specimens. The survey produced a total of 161 redear sunfish (CPUE = 120 fish/hr), which showed an increase from the 2011 survey (CPUE = 22.8 fish/hr). The collected redear sunfish had a length frequency distribution from 7 to 21 cm (3 to 8.46 inches). The average length for

the redear sunfish was a respectable 6.02 inches. The redear sunfish will surprise an angler from time to time.

Black Crappie

The black crappie fishery within Harwood's Mill Reservoir has historically been severely limited. Past electrofishing surveys of Harwood's Mill Reservoir have yielded limited numbers of black crappie. Surveys have collected only a handful of black crappie at a time. The 2014 survey revealed some serious changes in the black crappie population. The total of 143 black crappie (CPUE = 107 fish/hr) showed a large increase from the 2011 survey (N = 11; CPUE = 6.6 fish/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. The 2014 size distribution ranged from 7 to 25 centimeters (3. to 10 inches), with the majority of fish in the 8 to 11 cm range. These juvenile fish are the proof that enough brood stock crappie are present to produce a strong year class of fish. Another year class of fish in the 15 to 17 cm range was collected. Positive reports have surfaced from anglers that fish the reservoir on a regular basis. Anglers have been able to catch their fair share of decent crappie from the reservoir.

Yellow Perch and Saugeye

The yellow perch population appears to be dominated by an abundance of juvenile fish. The survey produced a total 578 yellow perch for a catch rate of 433 fish/hr. This catch rate showed a large increase from the 2011 survey (CPUE = 118 fish/hr). The length distribution was 8 to 26 cm, with the majority of fish in the 9 to 12 cm range (3.5 to 5 inches). Harwood's Mill Reservoir has some potential to produce a few larger yellow perch. 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 3 to 4-inch yellow perch will provide a great forage base for the various predator fish species. One of those predator fish species that anglers should be on the lookout for are the saugeyes that were stocked into the reservoir on May 22nd, 2013.

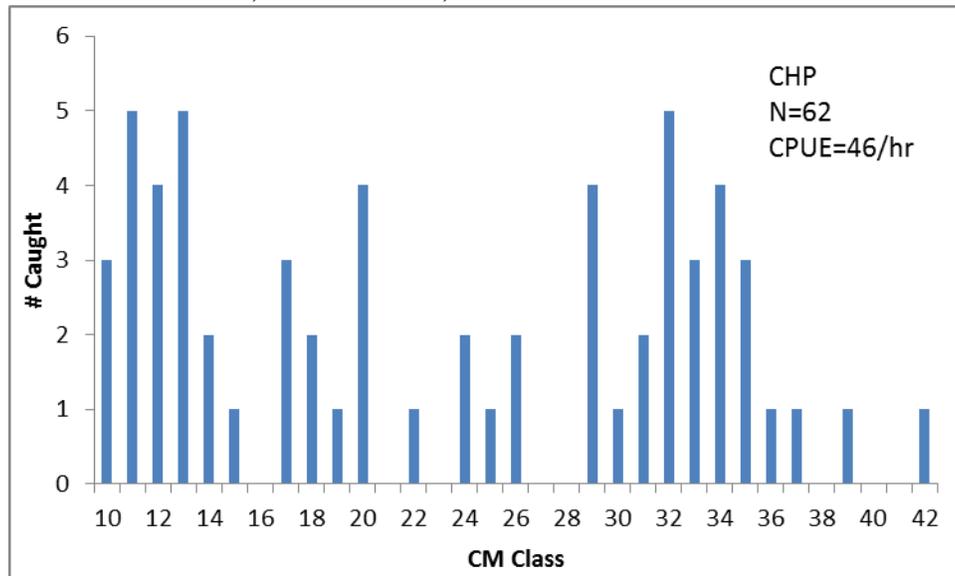
DGIF hatchery staff stocked 31,791 saugeye fingerlings into the reservoir as an initial attempt to diversify the fishery. This stocking was an allotment of surplus fish that the hatchery was trying to find a suitable home for. The electrofishing survey collected two of the saugeye. The first saugeye came from the lower basin and it measured 17.4 inches and weighed 2.03 pounds. The second saugeye was collected from the upper basin and it measured 13.7 inches and weighed 0.82 pounds. The abundance of juvenile yellow perch and gizzard shad will provide plenty of forage for the saugeye population. A night time electrofishing survey may be on order in the near future to gather additional data on the strength of the saugeye population. Reports have surfaced of at least two other saugeye being caught by anglers.

Chain Pickerel

The survey produced a total of 62 chain pickerel (CPUE = 46 fish/hr). This catch rate showed a major increase from the 2011 survey (CPUE = 4 fish/hr). The chain pickerel length distribution was 10 to 42 cm (4 to 16 inches), with several year classes

represented in the collection. It appears that the 2014 year class is very strong with an abundance of fish in the 10 to 14 cm range. 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. Anglers are reminded that chain pickerel are important in helping to control the excessive number of juvenile yellow perch that are present.

Figure 3. Length frequency of chain pickerel collected from the electrofishing of Harwood's Mill Reservoir, November 5th, 2014



Gizzard Shad

The survey revealed an abundance of gizzard shad to be present. A total 159 gizzard shad (CPUE = 119 fish/hr) showed an increase from 2011 which revealed no shad in the collection. The majority of the shad (N = 138) were collected from the second survey run on the lower basin. The gizzard shad length frequency distribution was 8 to 41 cm (3.5 to 16.4 inches), with the majority of fish in the 9 to 14 cm range. These juvenile shad provide a great forage base for the largemouth bass and the suageye populations.

Additional Species

The electrofishing survey of 2014 collected 16 fish species. The sample collected the above listed species along with limited abundance of brown bullhead (13), creek chubsucker (34), American eel (1), white perch (6), pumpkinseed sunfish (2), golden shiner (13), bluespotted sunfish (35) and warmouth sunfish (25). Out of these species, the only one that will truly provide some angling excitement will be the white perch. Anglers fishing for black crappie will have the most luck with the limited white perch population.

Sample Summary

The 2014 electrofishing survey of Harwood's Mill Reservoir provided some additional insight into the current fishery. The fall sample was able to collect an abundance of largemouth bass with an increase in catch rate noted. The bass size distribution showed an abundance of juvenile bass making their way through the fishery. The catch rate of preferred-sized bass showed a decline when compared to the spring

survey of 2011. This may be a reflection of the fall survey or other factors at play. Harwood's Mill Reservoir has historically been one of the better bass fisheries for trophy bass. It is quite possible that the timing of the survey did not yield the opportunity to cross paths with the 5 to 7 pound bass that are normally found during the electrofishing surveys. Relative weight values of collected bass were extremely high and reflect the relative ease that bass have in finding sufficient forage. 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 has shown an increase in abundance with several year classes represented. The collection of a couple saugeye during the day survey came as pleasant surprise. It appears that the stocked saugeye are growing rather well in their new home. Harwood's Mill Reservoir provides a wide assortment of fish diversity with a total of 16 species collected. Anglers may find some excitement from a variety of fish species that are present, but most of the action will be targeted at the largemouth bass population.

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).