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Harwood's Mill Reservoir 2019 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 April 20th, 2018. The previous electrofishing survey was conducted on April 29th, 2016. Five electrofishing runs of 1,200 seconds each were conducted. The total effort of 6,000 seconds (1.66 hours) allowed for a representative sample of the fishery. Three survey runs were conducted in the lower basin and two survey runs were conducted in the upper basin. The survey revealed good diversity with 13 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, 2018

Species	#	CPUE (#/ hr)	Max Length	Average Length
Largemouth Bass	105	63	22.1"	14.1"
Chain Pickerel	14	8.4	21.6"	13.6"
Yellow Perch	50	30	12.4"	6.4"
Redear Sunfish	160	96	7.1"	5.6"
Bluegill	310	186	3.4"	7.1"
Black Crappie	4	2.4	5.9"	5.6"

Largemouth Bass

The 2018 electrofishing survey provided some decent insight into the strength of the largemouth bass population. The survey produced a total of 105 largemouth bass for a

Catch Per Unit of Effort (CPUE) of 63 fish/hr. This catch rate showed an increase from the 2016 survey (CPUE = 53 fish/hr). The 2018 survey collected 56 bass from the lower reservoir basin (CPUE = 56 fish/hr) and 49 bass from the upper basin (CPUE = 73.5 fish/hr). The lower basin typically provides better spawning habitat for bass during the spring. The CPUE of upper basin sites was surprisingly greater than the 3 survey runs conducted in the lower basin. The upper basin has excessive amounts of silt, filamentous algae and curly leaf pondweed which does not provide the best areas for spawning habitat. The catch rate of preferred-sized bass (bass ≥ 15 inches in total length) was a very respectable 33 fish/hr, which showed a favorable increase from the 2016 survey (CPUE-P = 12 fish/hr). The 2018 survey most likely found the majority of bass starting to pair up for their spawn.

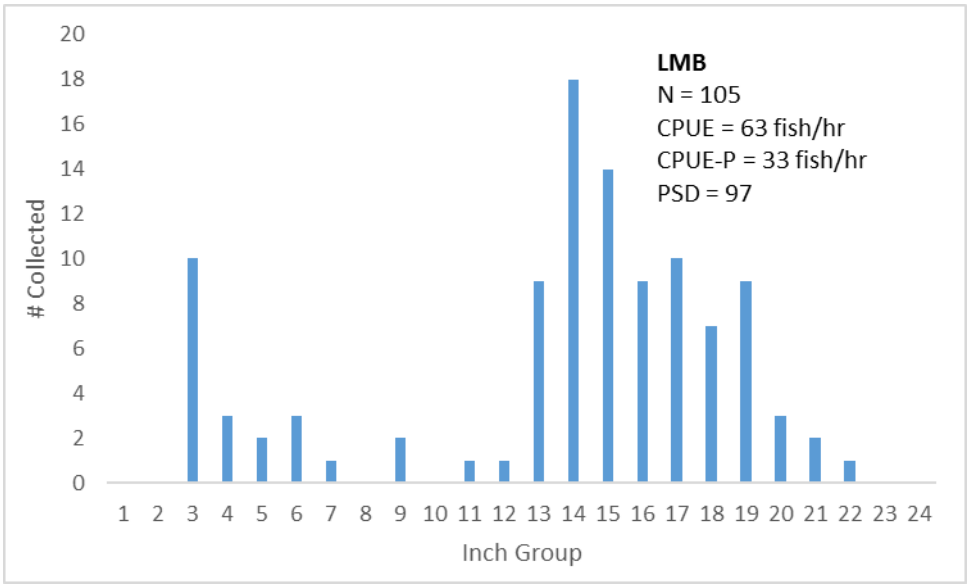

Figure 1. Length frequency of largemouth bass collected during the electrofishing of Harwood's Mill Reservoir, April 29th, 2016

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 2018 values for PSD and RSD-P (97 and 64) showed a distinct increase from the 2016 survey (PSD = 64; RSD-P = 44), with the PSD value well above the desired range of 40-60. The 2018 PSD value represents the collection of 83 quality-

sized bass from the total of 86 stock-sized bass. The RSD-P value represents the 55 preferred-sized bass (≥ 15 inches) to the total of 86 stock-sized bass. The largest bass measured was 22.13 inches in total length with a weight of 6.53 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, and preferred bass (≥8", ≥12", ≥15") were 101, 101, and 100 respectively. These values showed a decline when compared to the 2016 survey (stock = 104, quality = 104, preferred = 104). The relative weight values are still within or slightly above the preferred range of 95 to 100. From all indications, the bass population is finding sufficient amounts of prey within the size range they can utilize. Past surveys of the reservoir have yielded an abundance of juvenile yellow perch and small gizzard shad that serve as the main forage base that the bass are targeting.

Bluegill and Redear Sunfish

Harwood's Mill Reservoir has an average bluegill population. The electrofishing survey produced 310 bluegill (CPUE = 186 fish/hr), which showed an increase from the 2016 survey (CPUE = 145 fish/hr). The majority of the collected bluegill were in the 2 to 4 inch range. Only four bluegill measured greater than 6 inches in total length. The average sized bluegill measured 3.44 inches, which showed a slight increase from 2016 (mean TL = 3.39 inches). The largest bluegill measured 7.1 inches. The bluegill PSD value of 2 showed a disappointing decline from 2016 (PSD = 9). This PSD value reflects the fact that the survey collected 193 stock-sized bluegills in which only 4 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 bluegill, but should not expect to catch many larger fish during your average day on the water.

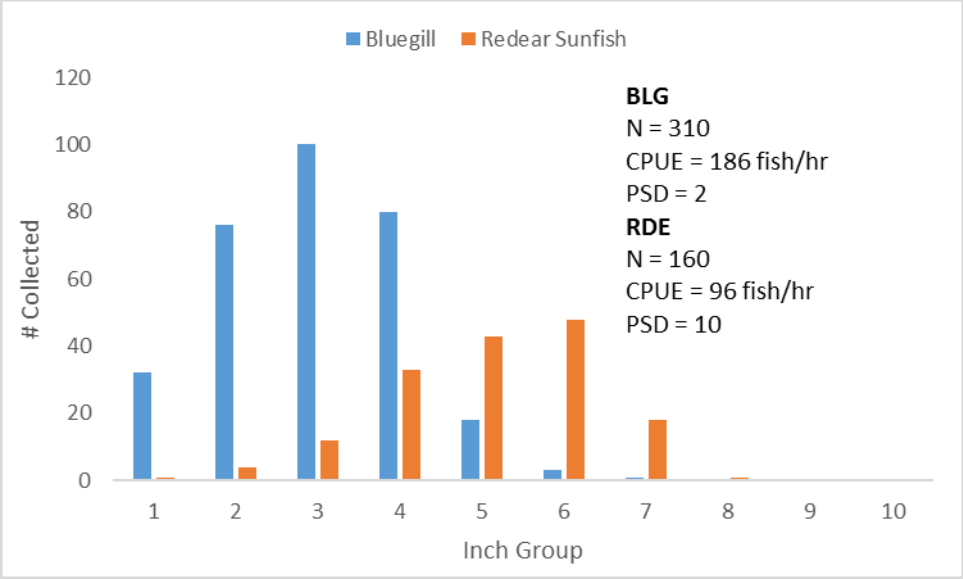

Figure 2. Length frequency of bluegill and redear sunfish collected from the electrofishing of Harwood's Mill Reservoir, April 20th, 2018

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 160 redear sunfish (CPUE = 96 fish/hr), which showed a favorable increase from the 2016 survey (CPUE = 79 fish/hr). The collected redear sunfish had a length frequency distribution from 1 to 8 inches. The average length for the redear sunfish was 5.55 inches with the largest redear sunfish measured at 8.34 inches. The redear sunfish population is decent and 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. Black crappie tend to school up tightly in deeper water more than bass and bluegill. So the typical shoreline electrofishing run could miss the black crappie if they were holding in deeper water. The 2018 survey revealed only 4 juvenile black crappie all less than 6 inches in total length. The CPUE of 2.4 fish/hr showed a decline from 2016 (CPUE = 30 fish/hr). The 2016 size distribution ranged from 3 to 8 inches, with the majority of fish in the 4 to 5 inch range. Positive reports have surfaced from anglers that fish the reservoir on a regular basis. Experienced anglers have been able to catch their fair share of decent crappie from the reservoir. Recent DGIF trap net surveys have been able to collect some solid black crappie in the 11 to 14 inch range.

Yellow Perch

The yellow perch population has historically been dominated by an abundance of juvenile fish. The 2018 survey produced a total of 50 yellow perch (CPUE = 30 fish/hr). This catch rate showed a large decline from the 2016 survey that collected 175 yellow perch (CPUE = 105 fish/hr). The 2018 length distribution was 4 to 12 inches, with several year classes of recruitment represented. Half of the collected yellow perch were juvenile fish in the 4 to 5 inch range. 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. The largest collected yellow perch measured 12.4 inches and weighed 0.96 lb. One angler recently reported catching a near state record perch from the reservoir. This fish goes to show that you never know what might be lurking below the surface on any given waterbody.

Chain Pickerel

The survey produced a total of 14 chain pickerel (CPUE = 8.4 fish/hr). This catch rate showed a minor increase from the 2016 survey (CPUE = 6 fish/hr). The chain pickerel length distribution of the limited sample set was 2 to 21 inches. The average size pickerel measured 13.6 inches which was a minor improvement from 2016 (mean TL = 11.05 inches). The largest chain pickerel measured 21.57 inches and weighed 2.76 pounds. 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 a native fish species that can serve an important role in controlling the excessive number of juvenile yellow perch that are present.

Additional Species

The 2018 electrofishing survey collected 13 fish species. The sample collected the above listed species along with limited abundance of creek chubsucker (25), American eel (4), pumpkinseed sunfish (1), gizzard shad (3), golden shiner (6), bluespotted sunfish (5) and warmouth sunfish (3). Out of these species, the only one that will truly provide some angling excitement will be the American eels.

Sample Summary

The 2018 electrofishing survey of Harwood's Mill Reservoir provided some additional insight into the current fishery. The fishery provides a high level of diversity with the collection of 13 fish species. The survey date of April 20th was in an ideal time slot to collect the majority of the bass and sunfish species still within a pre-spawn pattern. The survey revealed an abundance of bass within the 14 to 19 inch size range. Anglers may be able to catch some larger bass, but the majority of the bass action will come from the 2 to 4 pound fish. The survey showed a limited abundance of bass less than 13 inches in length. It appears there are couple of weak year classes of recruitment pushing their way through the fishery. The catch rate of preferred-sized bass (fish $\geq$ 15 inches) showed an increase up to 33 preferred bass/hr. Relative weight values of collected bass were still above the desired range, but showed a decline from the 2016 survey.

The size structure of the bluegill population continues to leave something to be desired with the majority of these fish in the 2 to 4 inch range. The redear sunfish population, although not as abundant as the bluegill, will provide anglers with some larger specimens. The chain pickerel population showed a minor increase in catch rate when compared to the 2016 survey even though the CPUE was not that impressive. The survey did not provide much insight into the strength of the black crappie population as only a handful of juvenile fish were encountered. Harwood's Mill Reservoir provides a wide assortment of fish diversity. 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).