



Motts Run Management Report

Popular Format

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Motts Run is a city of Fredericksburg water supply reservoir located in Spotsylvania County. The shoreline around this steep-sided 160-acre lake is undeveloped providing anglers with spectacular scenery and a genuine feeling of solitude. Motts Run was initially stocked in 1971 with Largemouth Bass, Bluegill, and Channel Catfish. Naturally reproducing populations of Largemouth Bass, Bluegill, Redear Sunfish, Black Crappie, and White Perch exist in the reservoir. Other “nongame” species are also self-sustaining and have sizeable biomass including White Sucker. Currently, little to no natural reproduction occurs for Channel Catfish and Northern Pike in Motts Run. In order to maintain these two populations, annual maintenance stockings of Channel Catfish (10 fish/acre) and Northern Pike (2 fish/acre) are necessary. A trophy Northern Pike fishery has developed in the reservoir producing the current Virginia state record (31 pounds, 4 ounces) caught in July, 1994. Sterile (triploid) Grass Carp (n=256) were stocked in 2003 to control nuisance *Hydrilla* growth. Unfortunately, it appears Grass Carp were overstocked and now are quite abundant along shorelines having extirpated all species of aquatic vegetation (it is often difficult to determine the appropriate number of carp to stock in order to achieve reduction of target nuisance aquatic vegetation but allow survival of some beneficial plants). Experimental archery harvesting was tested in late 2016 and may be repeated if interest subsists.

Historically, the Motts Reservoir gamefish community was sampled by spring electrofishing about every three or four years, as populations rarely fluctuated. Motts was renowned as a premier panfish fishery (primarily Bluegill and Redear Sunfish) but was also regarded as a very good place to catch Largemouth Bass – both in terms of quality and quantity. However, in spring 2012; anglers began complaining about historically low numbers of large bass. Data provided by Weekend Bassers (Ice Breaker Tournament results for the past decade) supported these assertions. Following reports of poor fishing, DGIF began annual bass sampling in efforts to determine population status and monitor trends. Although the cause of decline was never determined, symptoms were similar to outbreaks of Largemouth Bass Virus (LMB-V). LMB-V has been documented in nearly every population tested (e.g., fish are carrying the virus), but kills have been rare in Virginia. Largemouth Bass electrofishing samples were conducted by DGIF fisheries biologists annually for the past five years (2012-2016) usually during the

first week of May. The most recent community electrofishing sample (other species collected in addition to bass) was conducted in 2012 and will of limited value in this report (the entire fishery will be resampled in spring 2017).

Largemouth Bass catch rates, based on electrofishing, generally declined during the time series 2008-2016 (Table 1). The index “CPUE” stands for “catch per unit effort.” This is a measure of how many bass were collected by biologists during a set unit of effort (in this case, one hour of electrofishing). Thus, the higher the number is, the more abundant bass were during the sample. The population was divided into various nationally-accepted standards (shown beneath Table 1). Several factors can bias the data (e.g., weather conditions, fish behavior), but samples were conducted with efforts to minimize these biases. This decline persisted even when the 2016 sample was omitted from analysis (spring 2016 bass samples in the District were heavily biased by unusual weather patterns, and catch rates were extraordinarily low in all reservoirs sampled). These trends suggested bass of all sizes have recently become less abundant in Motts. The only category that displayed an increasing trend in catch rates was memorable size which is typically the most highly variable (due to low sample size of the very largest group of fish in a given population). However, the six-year average of 3.5 memorable fish per hour in Motts was impressive, as only three reservoirs (out of 21) in the District provided a higher CPUE-M in recent a recent ranking.

The term “PSD” (below) stands for “proportional stock density” and is the proportion of bass in a population over eight inches (stock size or “recruits”) that are also over 12” (quality size). “RSD-P” is similar but stands for “relative stock density of preferred fish” – which is the proportion of bass in a population over eight inches (stock size or “recruits”) that are also at least 15” (preferred size). Thus, these indices describe the size structure of the population - the higher the number, the larger the percentage of the population is composed of big fish within the size categories. PSD and RSD-P were relatively stable over the period suggesting consistent recruitment, “balance” within a predator-prey context given the average of the indices, and normal undulation due to variable recruitment (strong and weak year classes over time based on environmental conditions). These indices in 2016 were above average suggesting bass size structure was skewed towards larger fish, albeit less abundant.

Table 1. Catch and Structural Indices for Largemouth Bass from Electrofishing Surveys at Motts Reservoir.

| Index | 2008 | 2012 | 2013 | 2014 | 2015 | 2016 |
|--------|------|------|------|------|------|------|
| CPUE-T | 117 | 197 | 132 | 105 | 101 | 32 |
| CPUE-M | 4 | 1 | 2 | 7 | 2 | 5 |
| CPUE-P | 32 | 11 | 13 | 22 | 7 | 10 |
| CPUE-Q | 49 | 29 | 26 | 27 | 19 | 21 |
| CPUE-S | 93 | 110 | 94 | 83 | 59 | 29 |
| CPUE-F | 24 | 87 | 38 | 22 | 42 | 3 |
| PSD | 53 | 26 | 27 | 33 | 32 | 74 |
| RSD-P | 35 | 10 | 14 | 27 | 12 | 34 |

CPUE=catch per unit effort, or number of bass of that size category sampled per hour of electrofishing. Sizes: T=total (stock+fingerling), M=memorable (at least 20”), P=preferred (at least 15”), Q=quality (at least 12”), S=stock (at least 8”), and F=fingerling (less than 8”). PSD=proportional stock density, and RSD-P=relative stock density of preferred bass (see narrative for explanation).

In addition to bass, Motts Run supports good fisheries for Channel Catfish, Bluegill, Black Crappie, and White Perch. The latter species is considered undesirable in small impoundments due to their propensity to compete with more desirable species, overpopulate and stunt. Thus, anglers are encouraged to harvest and consume these tasty fish. The most recent community sample provided good numbers of 6-8” Bluegill, fair numbers of 8-12” Black Crappie, and good numbers of 9-11” White Perch. Fishing can be challenging for anglers new to Motts Run Reservoir. The lake was dug out and scraped clean at construction, leaving very little complex fish habitat. The key is to find structure - points, rocks, beaver lodges, fallen timber, or underwater islands (a spectacular example exists adjacent to the dam and always holds large bass).

The Fredericksburg Recreation and Parks Department operates a newly renovated boat ramp and concession facility, which normally opens in late-March and runs until late-October. Facilities at this city park include the concession building, portable toilets,

picnic area, and newly constructed fishing piers. Electric motors only are allowed, and all anglers must purchase a daily or seasonal permit. Anglers interested in more information about the park can contact the Fredericksburg Recreation and Parks at 540-786-8989 (at the lake) or 540-372-1086. Specific fisheries information is available from the DGIF Fredericksburg Regional Office at 540-899-4169.