



Motts Run Reservoir Management Report

Popular Format

Federal Aid Project – F111R

February 2025

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Motts Run is a Fredericksburg water supply reservoir 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, so annual maintenance stockings (10 fish/acre) are necessary. The state-record Northern Pike (31 pounds, 4 ounces) was caught here in July 1994 following limited stockings, but stockings have been discontinued due to lack of angler interest, poor survival and production problems. Sterile (triploid) Grass Carp were stocked in the early 2000s to control nuisance *Hydrilla* growth, however too many were put in. Over the years the Grass Carp have been removed during electrofishing surveys and via natural mortality.

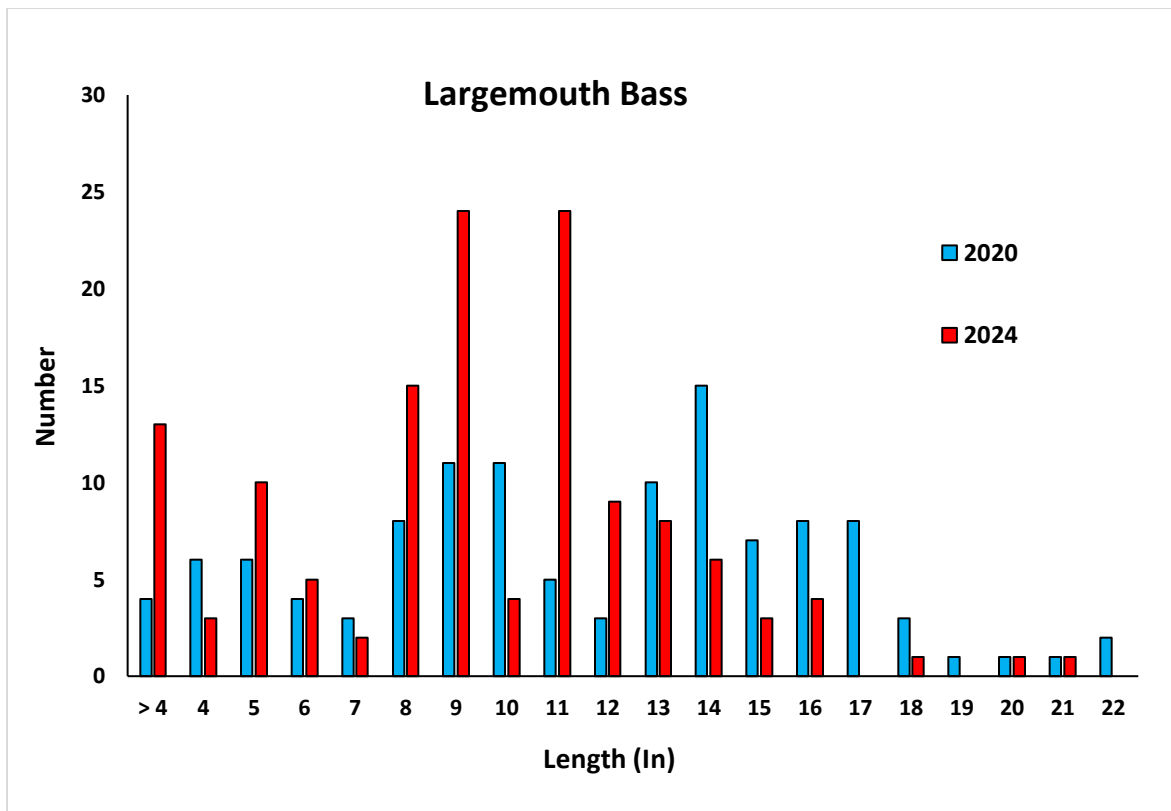
Historically, the Motts Reservoir gamefish community is sampled by spring electrofishing about every three or four years, as populations rarely fluctuated. Motts is renowned as a premier panfish fishery (primarily Bluegill and Redear Sunfish) but was also a very good place to catch Largemouth Bass – both in terms of quality and quantity. In 2012 a decline occurred, symptoms were similar to outbreaks of Largemouth Bass Virus (LMB-V). LMB-V has been documented in nearly every population tested.

Most recently, a boat electrofishing survey was conducted in May 2024. Biologists use shoreline electrofishing to obtain estimates of population size structure and relative abundance. Abundance is usually described as a catch rate in number of fish per hour (CPUE, or Catch per Unit Effort). Biologists employ numerical descriptors of length-frequency data such as Proportional Stock Density (PSD) and Relative Stock Density (RSD) now known as PSD-P when evaluating fish populations. PSD is calculated by dividing the number of fish \geq minimum quality length by the number of fish \geq minimum stock length x 100. Quality length is defined as the minimum size of fish most anglers like to catch (these are by national standards -for example, 12” for Largemouth Bass). Stock length is the minimum length at which a fish provides recreational value and/or is recruited to the fishery (8” for Largemouth Bass). PSD-P is the percentage of any designated length group found within a population. PSD-P is calculated by dividing the number of fish \geq specified length by the number of fish \geq minimum stock length x 100. Preferred bass are those 15” or larger, while memorable fish are those 20” or larger.

Abundance is usually quantified using catch rate or number of fish captured per hour of electrofishing time (also known as CPUE or catch per unit effort). These indices and size groups are nationally accepted standards.

Largemouth Bass

Largemouth Bass (LMB) catch rates increased in 2024 (133 fish/hr) from 117 in 2020. The reservoir has been down for 2 years due to drought conditions. LMB population size structure was balanced (PSD=40; bass PSD between 40 and 60 suggests balance within a predator/prey context), but PSD was greater in 2020 at 64. Additionally, larger fish were slightly more common in 2020 (CPE-P=35; PSD-P=37) as compared to 2024 (CPE-P=11; PSD-P=11); in this case, “P” is preferred fish, or those bass at least 15” total length). Conductivity may have played a role in the missing larger fish in the sample as they were not being shocked consistently. The reservoir being down 2 feet also pushed the bass into deeper water where they weren’t susceptible to the electricity. This fishery ranked 16th for impoundments managed in the district based on catch of 15”+ bass. Potential for trophy fish does exist with bass up to 21” present in the sample.



In addition to bass, Motts Run supports good fisheries for Channel Catfish, Bluegill, Redear, Black Crappie, and 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

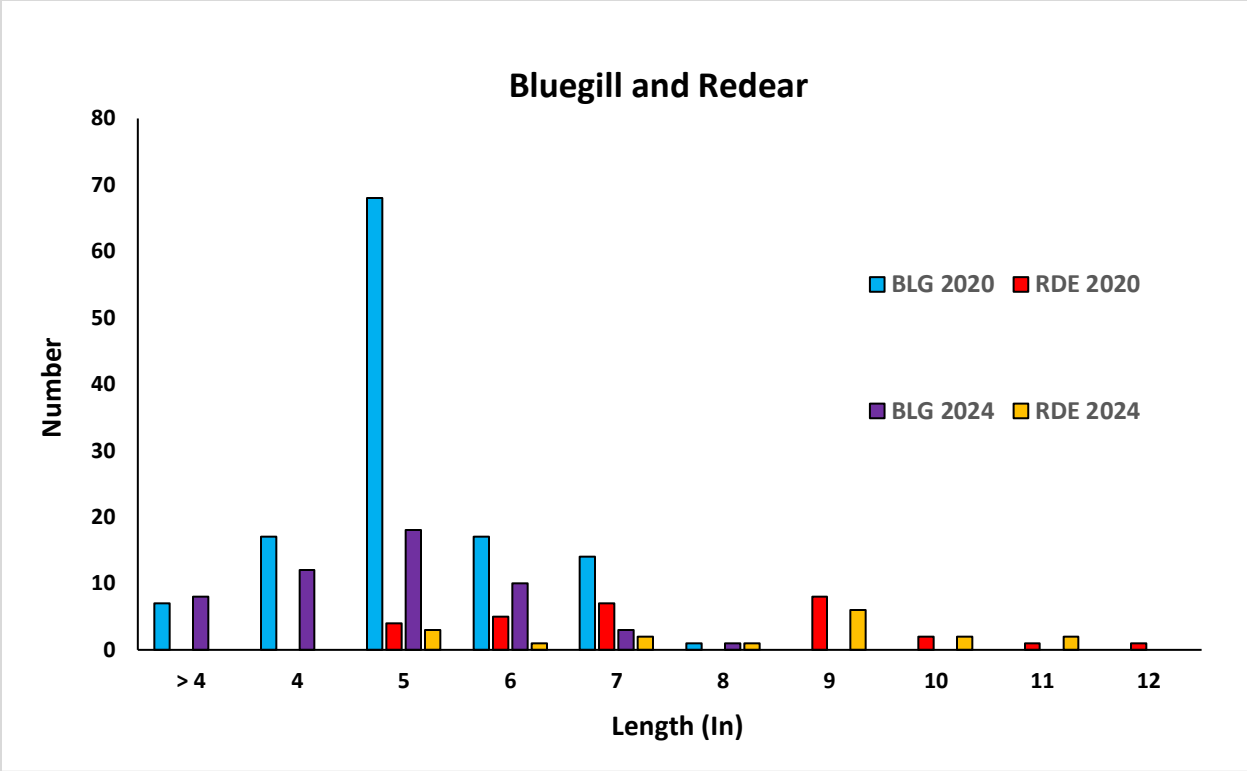
complex fish habitat. The key is to find structure - points, rocks, beaver lodges, fallen timber, or underwater islands (a spectacular example exists adjacent to the dam and usually holds a few large bass).

Black Crappie

Black Crappie (BLC) electrofishing CPUE was higher in 2024 (19 fish/hr) than that of 2020 (6 fish/hr). Motts Run provides a decent BLC fishery with most fish in the 9-11" range. Proportional Stock Density (PSD) increased significantly in 2024 to 100 from the previous sample of 63. A PSD of value of 30-60 is indicative of a balanced population. The PSD value of 100 suggests the population is mostly comprised of larger fish. Crappie populations are known for fluctuating due to high annual variation in spawning success and are generally considered undesirable in small impoundments due to their ability to quickly overpopulate and stunt. Anglers are encouraged to harvest their limit (25 per day) no matter the size since this species exacerbates the predator-heavy scenario already in place due to bass stockpiling.

Panfish

Bluegill (BLG) electrofishing PSD slightly decreased to 38 in 2024 from 40, suggesting the population is balanced and stable. CPUE decreased to 52 fish/hr from 124 fish/hr in 2020. Redear Sunfish (RDE) PSD values increased to 76 in 2024 from 68 in 2020. Most fish are in the 6-9" range but can be found as large as 11". Panfish fisheries are typically considered balanced when PSD falls in the range of 20 – 60. The Redear population is comprised of mostly larger fish. The remaining Grass Carp eating most of the vegetation is likely allowing for smaller fish to be eaten as they have nowhere to hide from predators. There is no size limit on sunfish (Bluegill, Redear Sunfish, Warmouth, etc.) and anglers can harvest 50 (combined) per day.



The Fredericksburg Recreation and Parks Department operates the boat ramp and concession facility, however it is only open Thursday through Monday April 1st to October 31st. Facilities at this city park include the concession building, portable toilets, picnic area, and fishing piers. Only electric motors are allowed. There is a limited concession open April 1st to May 26th with no boat rentals on Mondays and Thursdays and full concession open Friday through Sunday. Beginning May 27th full concessions are open every day the park is. 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 DWR Fredericksburg Regional Office at 540-899-4169.