



## **Lake Orange Management Report**

*Popular Report*

**Federal Aid Project – F111R**

**February 2026**

**Robbie Willis, Assistant Fisheries Biologist**

**Virginia Department of Wildlife Resources**

Lake Orange is a 124-acre DWR owned public fishing lake in Orange County impounded in 1964 and opened to fishing in 1967. Once famous for the world record White Bass weighing 6 pounds 13 ounces in 1989, the lake is located just a few miles east of the town of Orange, and offers a scenic setting surrounded by gently rolling farmland and hardwood forests. Lake Orange can be reached by taking Route 629 off either Route 20 or Route 522, depending on route. Turn onto Route 739 and follow it to the end. Lake access is on the western side where the boat ramp, concession, fishing pier, parking lot, picnic facilities and plenty of great shoreline access can be found.

Lake Orange offers a concession that provides boat rental, bait, tackle and food. Picnic facilities of a shelter, tables and grills make for an enjoyable family outing. The lake is open year-round and 24 hours a day for shore fishing and private boats. The concession is open from mid-March through mid-October (Thursday to Monday), however; the other facilities are open all year. The fishing pier is a popular spot for shore-bound anglers and provides handicapped access. Several fish attractor reefs have been installed around the lake to help concentrate fish in areas accessible to anglers. Fish reefs are marked by buoys and a few have been suspended under the fishing pier.

The lake is fertilized annually to stimulate the aquatic food chain. The added nutrients increase the lake's productivity and overall fish production but are used within the system without adding nutrient loads downstream. In 2017, JMU was contracted to conduct a study on impoundments to evaluate nutrient budgets and assess the effectiveness of DWR's fertilization program and to ensure downstream impacts were negligible. This initiative was due in large part to the 2010 United States Environmental Protection Agency (EPA) Total Maximum Daily Load (TMDL) nutrient reduction strategy. Results confirmed that the DWR impoundments fertilized acted as nutrient sinks with no export of nitrogen or phosphorous.

Lake Orange is sampled annually by electrofishing (EF) to get an accurate picture of the fisheries status since the illegal stocking of Northern Snakehead around 2022 to monitor any effects on fish populations within the lake. Electrofishing is an active sampling method used to determine abundance, density, and species composition of fish populations. Typically, community sampling is done in daylight.

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 Size Distribution (PSD) and Proportional Size Distribution – Preferred (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 (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 preferred length group found within a population. It is calculated by dividing the (number of fish  $\geq$  preferred length by the number of fish  $\geq$  minimum stock length) x 100. Preferred bass are those 15” or larger, while memorable bass are those 20” or larger.

State standard regulations apply to the harvest of most game and nongame fish (e.g., catfish), but Largemouth Bass harvest has been regulated by a 16-22” protected slot limit. Anglers are required to immediately release any bass between 16 and 22” (inclusive) and can creel only one bass per day over 22” but up to four bass per day under 16” or five bass under 16”. Harvest of bass below the slot is beneficial to minimize stockpiling of small fish, increase growth and maintain a desirable size structure. In order to sustain Lake Orange as a trophy bass fishery, anglers are encouraged to keep bass under 16 inches, (especially those 10-12”), and release bass over 22”. Anglers are also encouraged to keep Black Crappie (25 per day, 9” minimum). New Channel Catfish regulations allow anglers to keep up to 8 per day with a 15” minimum. Walleye harvest is controlled by a 5/day 18” minimum regulation.

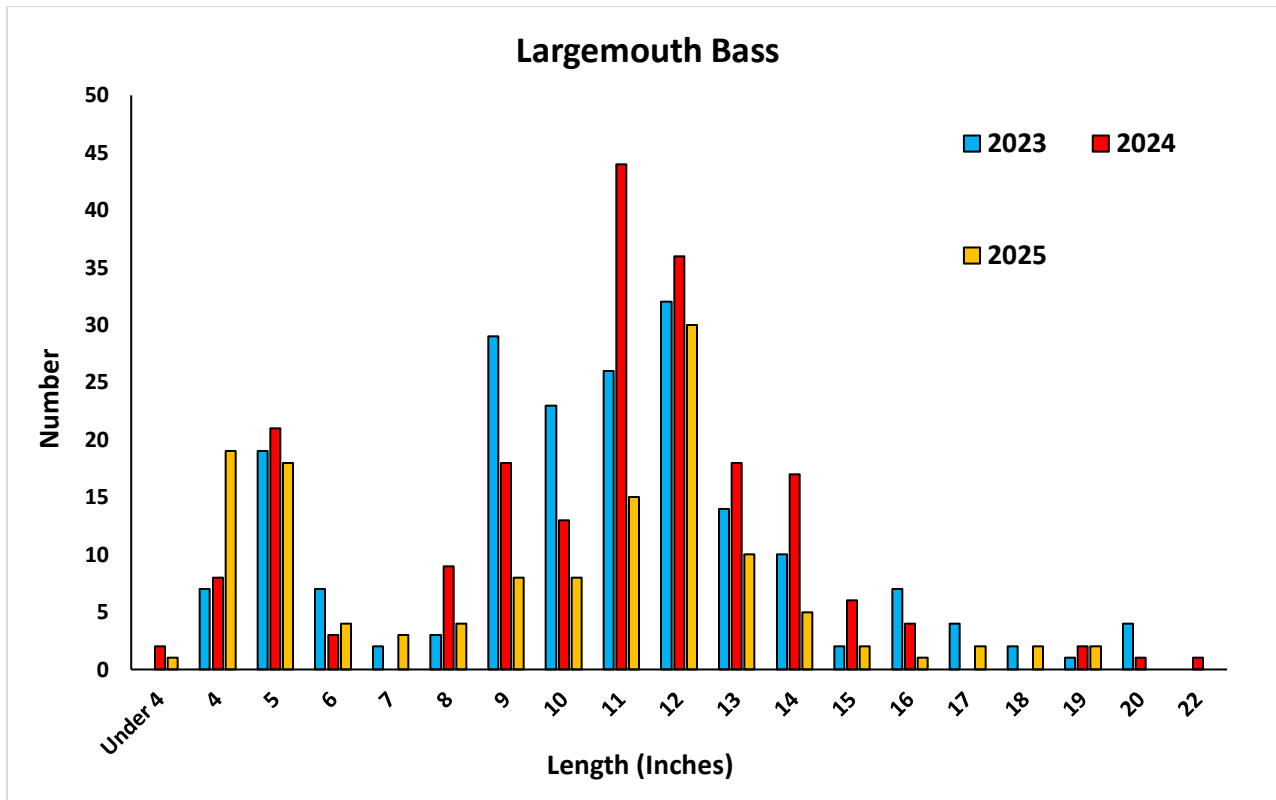
### ***Largemouth Bass***

The 2025 electrofishing survey produced a catch rate of 134 Largemouth Bass/hr. of sampling which was lowest in the last 3 years (192, 203). The population size structure of Largemouth Bass (bass) in 2025 was similar to the previous samples of 2023 and 2024. PSD increased to 65 from 59 and 56 (2023). A PSD of 40-70 is indicative of a balanced fish population. Proportional Size Distribution of preferred fish (PSD-P; ratio of adults greater than 15”) has also remained similar with values of 12, 11 and 15. CPUE of preferred size bass has decreased from 24/hr (2023), 18/hr (2024) to 11 in 2025. The collected bass were holding close to shoreline cover with some bass along the outside edges of flooded timber. Length distribution of collected bass ranged from 3 to 19”, with a large proportion of bass in the 4 to 5” and the 10 to 12” range which suggests overall bass size structure is comprised of smaller fish. Water temps

had already gone up at the time of the sample and a lot of the larger fish were missed by EF gear as a result as they went back deep. Lake Orange is ranked 16<sup>th</sup> in the NOVA district for CPUE of preferred bass.

The 2025 Lake Orange creel survey revealed bass were heavily sought after, although the fishery was primarily catch and release (86%). Anglers caught and released a total of 1951 bass, however anglers harvested 265 bass with the average weight being 1.5 pounds indicating that smaller bass are being creeded as a result of the 16-22” protected slot limit.

The abundance of Gizzard Shad in the lake has made bass fishing a little more difficult. Anglers should try using crankbaits and other artificial lures that resemble a shad pattern and shape. Jigging spoons through schools of bass feeding on shad is another good pattern.

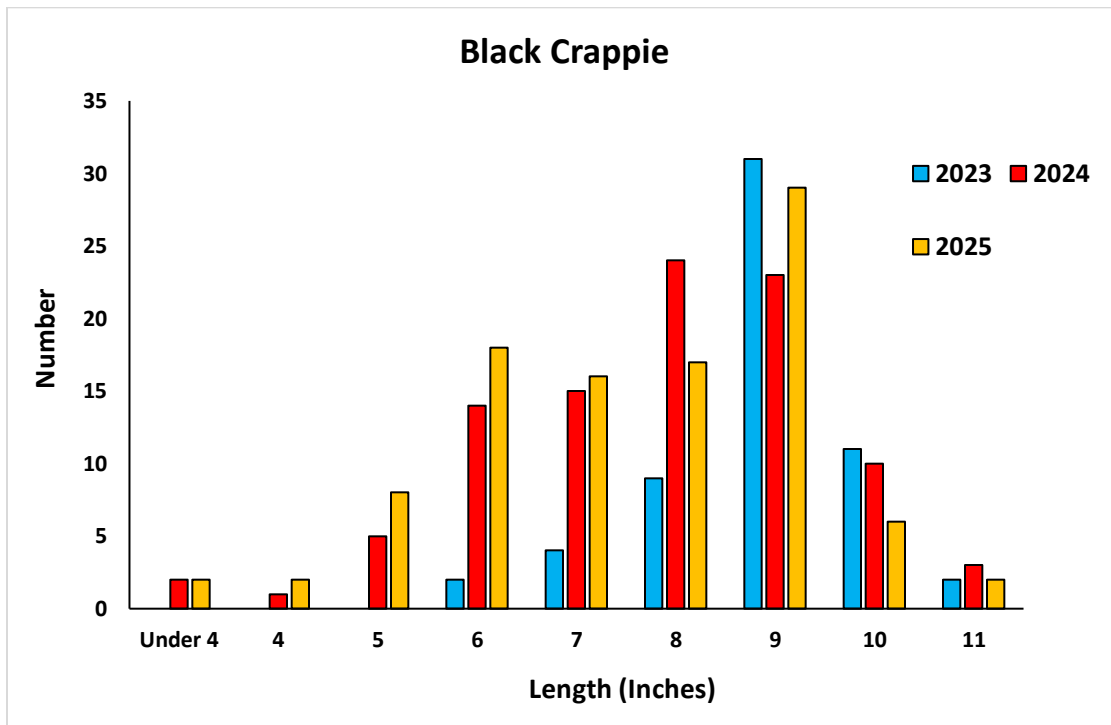


### ***Black Crappie***

Lake Orange provides an adequate Black Crappie fishery. Black Crappie electrofishing CPUE has varied over the last 3 years with values of 59, 97 and 100. Proportional Size Distribution (PSD) decreased from 90 to 74 (2023-24) to the 2025 sample of 66, (30-60 is

balanced) suggesting the population made up of larger fish in past years is becoming balanced. Proportional Size Distribution of preferred fish (PSD-P; ratio of adults greater than 10”) also decreased since 2023 (100) compared to 26 in 2024 and 17 in 2025; indicative of smaller size structure and fewer larger fish. The length distribution ranged from 3 to 11” with the majority 6 to 9”. Crappie populations are known to fluctuate due to high annual variation in spawning success, and while not a positive sign for crappie anglers; reduced abundance of this species in this predator heavy community can be viewed beneficially. Crappie are predominately piscivorous and can compete with bass resulting in poor growth and suboptimal size structure for both species especially in smaller, less productive lakes. Anglers are encouraged to harvest any crappie caught up to the 25-fish/day (9” minimum) creel limit. Crappie are readily available lake-wide during spring to early summer.

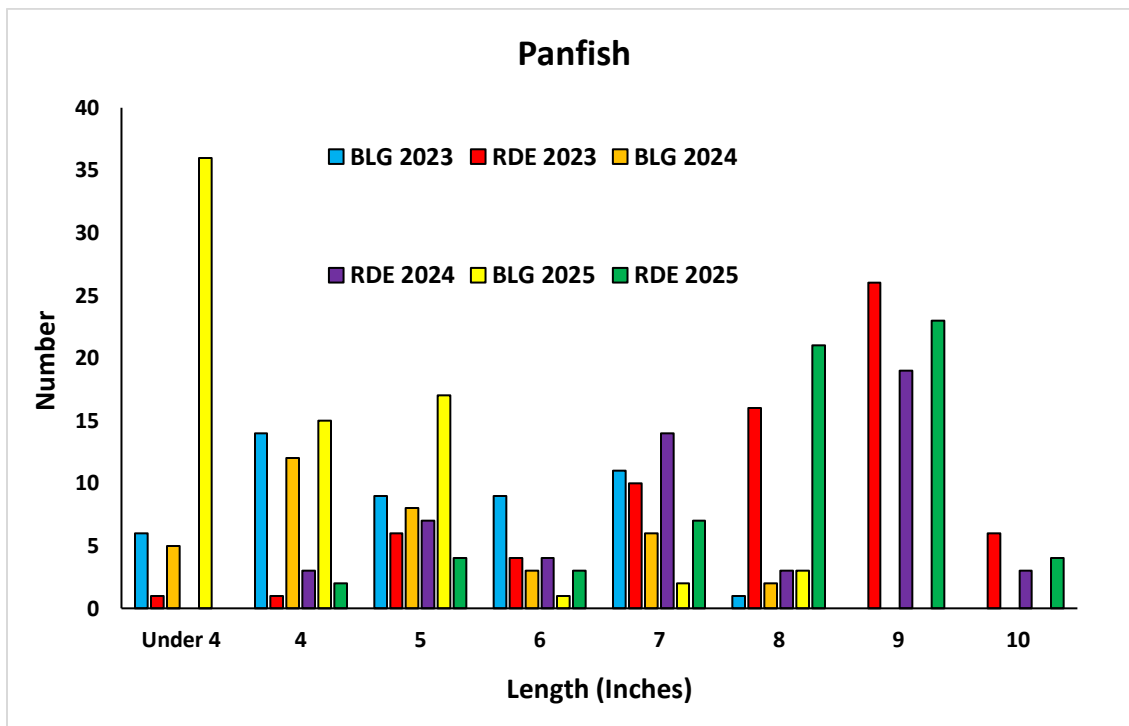
Crappie were the dominant species harvested during the 2025 creel survey with a total of 3146 fish weighing 1600 pounds (avg. weight of 0.5 lb. and an avg. length of 10”). Anglers do well catching crappie from the fishing pier, fish attractors, or near beaver lodges. Anglers are encouraged to try various crappie jigs or fresh minnows until they find a pattern that works best. A good technique for Lake Orange crappie is using light jig heads tipped with small minnows.



## *Panfish*

The 2025 electrofishing survey collected 74 Bluegill per hour, an increase from previous 2 years (50 and 36 fish/hr). Size distribution ranged from 3 to 8", with most fish in the 5 to 8" range. Bluegill PSD has decreased annually from 50 (2023) to 33 and 18, but the population remains nearly balanced (20-60 is balanced). Bluegill were the third most species harvested in the 2025 creel survey with a total of 551 and an average weight of 0.33 lbs. Anglers are encouraged to continue harvesting BLG to avoid an overcrowded, stunted population.

The Redear Sunfish population also appears to be in good shape. A total of 64 per hour were collected in 2025 which was similar to the previous 2 years (70 and 53 fish/hr.). The majority of fish were in the 7 to 9" range. PSD has also remained consistent since 2023 - 83 to 74 to 86. Proportional Size Distribution of preferred fish (PSD-P; ratio of adults greater than 9") remained consistent as well since 2023 with values ranging from 42-47, indicating desirable size structure. Redear Sunfish were the fourth most harvested fish (545) and averaged 0.4 lbs.



## *Additional Fish Species*

Channel Catfish have done well at Lake Orange and are the second most harvested species. Channel Catfish have been stocked annually most years since the lake was impounded in 1964 with about 20 fish/acre which has produced numerous catfish over 2pounds. Due to budgetary constraints, stockings beginning in 2025 are on hold as these fish are purchased and not raised in-house like many other species. In 2025, anglers harvested 660 catfish totaling 1745 pounds. The average weight of harvested catfish was just over 2.5 pounds. A regulation of 8/day and 15” minimum is in effect.

Lake Orange offers a limited Walleye and saugeye fishery and was part of a DWR Walleye study designed to learn more about angler catch rates and harvest of these fish with variable stocking rates. Due to poor collection numbers within nighttime EF surveys, the stockings have been discontinued. Anglers who actively target Walleye have some success with catches of fish in the 3 to 5 pound range. During March 2025, the populations were sampled with boat electrofishing gear along shoreline sites for a combined 2.3 hours. A total of 18 were collected for a below average catch rate of 8 fish/hr. Historically, catch rates at Lake Orange have been lower than at other small impoundments (small impoundments goal is  $\geq 10$  fish/hour). Collected fish ranged in size from 10 – 25 inches with only 17% of fish collected being legal size of 18 inches. Creel data estimated 99 were caught in 2025, and 23 were harvested with an average weight of 4 lbs.

Northern Snakehead were illegally introduced around 2022 and first began showing up in surveys in 2023. Since then, biologists annually sample snakehead in an effort to learn more about their ecology and biology, food habits, growth, and behavior. Biologists have been monitoring the lake community very closely to see if impacts are occurring as a result of the introduction. During Walleye night surveys over the past 3 years, snakehead CPUE was 3, 4 and 6 fish/hr. showing an increasing trend in abundance. Snakehead CPUE over the last 3 years during daytime community sampling (CPUE of 9, 8 and 14 fish/hr.) also backs that trend. All snakehead caught were removed from the lake, aged, and evaluated for food habits. The 2025 creel survey estimated 60 snakeheads were caught with 36 harvested averaging nearly 3.5 lbs. Anglers targeting snakehead should fish very shallow near heavy vegetation and/or structure using weedless lures such as frogs. Often these fish will give away their position as they rise to the surface to gulp air or roll and expose their back. During the spawning season you may spot

their fry balls which adult snakeheads guard aggressively. Northern Snakehead are very good eating, and there are numerous ways to prepare it. Anglers are encouraged to harvest these fish but can release them back into the lake after hook removal. It is illegal to possess a live snakehead, so the fish must be dead before putting it into a cooler or livewell. Effective methods to kill the fish are removal of the head, gills arches or internal organs.

The current fish community also includes populations of Yellow Perch, White Perch, Chain Pickerel, Warmouth, Green Sunfish, and Brown Bullhead. Other species that are still present include Golden Shiners, sucker species and Flathead Catfish introduced illegally years ago.

Lake Orange offers a variety of habitat to attract fish. Shoreline habitat consists of Water Willow, Hydrilla and downed timber. There are several beaver lodges and brush piles around the lake that hold large numbers of crappie and other sunfish. Over the years, fish habitat has been added in the form of trees and artificial structures marked by buoys.

For more information on Lake Orange, please contact:

Virginia Department of Wildlife Resources

Verona Office

917 Lee Highway Verona Va, 24482

(540) 248-9360

or

Angler's Landing at Lake Orange

(540) 672-3997