



Pelham Reservoir Management Report

Popular Report

Federal Aid Project – F111R

January 2022

Robbie Willis, Assistant Fisheries Biologist

Virginia Department of Wildlife Resources

1320 Belman Road

Fredericksburg, VA 22401

Pelham Reservoir is a water supply reservoir for the Town of Culpeper. It covers 255 acres with a combination of forested and open, sloped banks along its shores. Shorelines consist of Water Willow and submerged timber. If you like Largemouth Bass and Channel Catfish then Pelham is the place to go. Currently, fish populations consist of Largemouth Bass, Bluegill, Redear Sunfish, Black Crappie, White Perch, Yellow Perch, Brown and Yellow Bullheads and Channel Catfish. Northern Snakeheads were illegally introduced around 2016.

Pelham Reservoir is sampled every 4-5 years by electrofishing (EF) to get an accurate picture of the fisheries status. Electrofishing is an active sampling method used to determine abundance, density, and species composition of fish populations.

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. Anglers are also encouraged to keep Black Crappie (25 per day). Channel Catfish new regulations allow anglers to keep 8 per day with a 15 inch minimum.

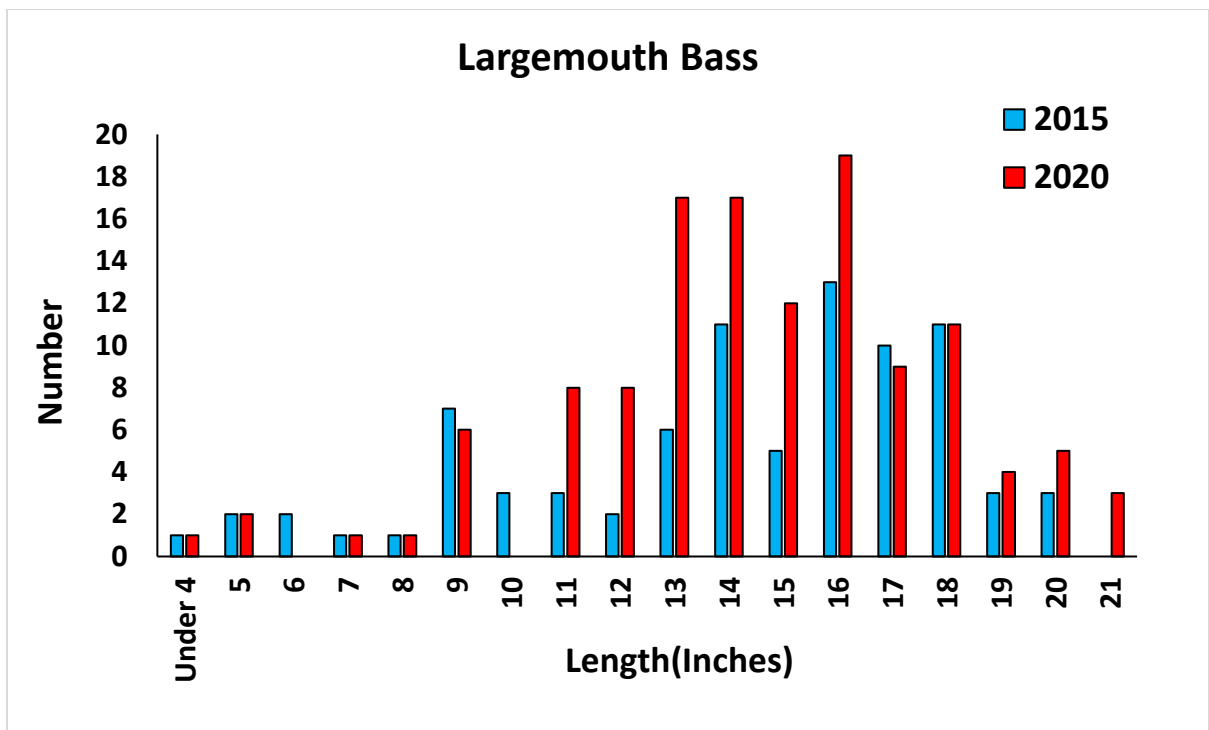
Largemouth Bass

The 2020 electrofishing sample produced 124 Largemouth Bass/hour of sampling. The population size structure of Largemouth Bass (LMB) in 2020 was slightly better than the previous sample in 2015, where PSD increased to 89 from 81. 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”) remained about the same in 2020 (57) as compared to 63 in 2015, and indicative of a desirable size structure with a population trending towards larger individuals. Total catch per unit effort (CPUE) of LMB increased to 124 fish/hr in 2020 from 84 fish/hr in 2015. CPUE of preferred size bass (>15”) increased from 50/hr (2015) to 68/hr in 2020. The CPUE of memorable size bass (20”) also increased from 3 to 8. The bass were holding close to shoreline cover with some along outside edges of flooded timber. Length distribution ranged from 3 to 21”, with a large proportion in the 13 to 18” suggesting desirable size structure (larger fish).

The LMB population of Pelham is in excellent condition with bass averaging 2-3 pounds and 6+ pound fish available. Due to the abundant forage; Largemouth Bass can be difficult to catch as bass feed heavily upon Gizzard Shad and Bluegill. A good fish finder will allow you to find schools of baitfish. Although it’s possible to catch a big Largemouth Bass with any lure, there are certain lures may get them to bite more frequently. Large bass are older and wiser but may be fooled by lures that are either thrown less often, trigger a reaction strike, and/or have a bigger overall profile. Jigs can be good big bass lures, as they can be fished anywhere rigged weedless. Casting to spots where most anglers can’t reach can be productive. Fish sitting in those areas are not seeing as many lures, making them less suspicious. A buzzbait is a topwater lure that can work well in light conditions. The biggest bass in a lake are often found in the natural

hiding spots such as under thick matted vegetation. Try throwing weedless plastics through the top of the mat for a reaction strike. Anglers should also try a variety of bait fish imitating lures such as crank baits (lip-less and diving) and swim baits. Pelham Reservoir has consistently ranked at or near the top of the list of 18 impoundments in the NOVA district for CPUE of preferred bass and currently is ranked third.

Anglers may harvest five bass per day but are encouraged to practice catch and release on larger bass, as their value to the fishery can provide enjoyment for many others and contribute to the spawning stock.



Panfish

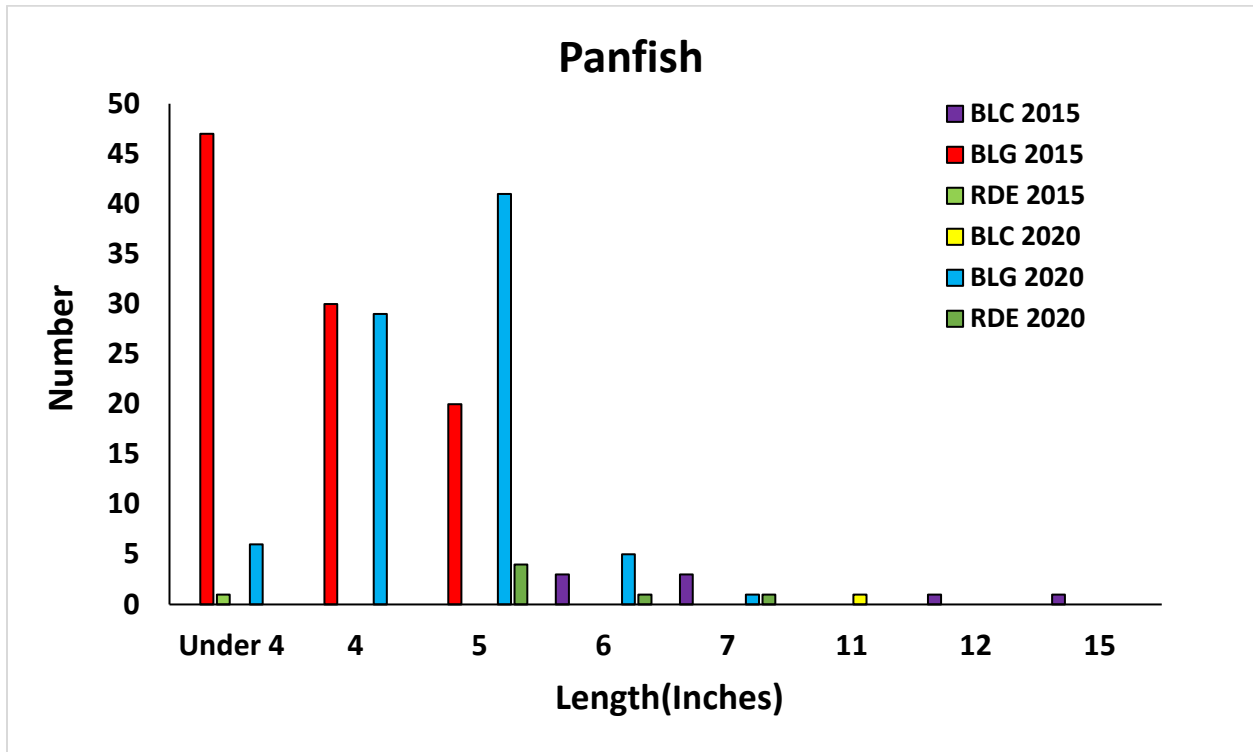
Pelham provides an adequate Black Crappie fishery, but EF is not an efficient gear for describing this species' population status. Black Crappie (BLC) electrofishing CPUE was lower in 2020 (1 fish/hr) compared to 2015 (8 fish/hr). The reservoir has a good population of crappie but the sampling date in 2020 was during a cold front resulting in colder than usual water

temperatures for the month and most likely pushed them deeper where the gear wasn't effective. The length distribution ranged from 6 to 15" in 2015 while the lone fish in the sample in 2020 was 11 inches. 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 exacerbating 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. They can be caught year-round, but fall and spring are the best times. Generally, fishing for crappie is best in the shallows near banks during spring and fall and deep during summer and winter. It's possible to catch crappie throughout the day, but they mostly feed at dawn and dusk. Black Crappie can be found in areas with shelter, such as tree limbs and brush piles in clear water near structure. Small jigs or live minnows are both very productive. Crickets, grasshoppers, and worms rigged on a bait hook can also be effective. Red or green with white jig and chartreuse jigs are some of the more popular colors.

Bluegill (BLG) electrofishing CPUE decreased slightly to 82 in 2020 from 97 in 2015. PSD increased from 2 to 27 suggesting a currently balanced population. Panfish fisheries are typically considered balanced when PSD falls in the range of 20 – 60. Redear Sunfish (RDE) PSD values increased greatly from 0 in 2015 to 17 in 2020, CPUE also increased from 2015 (1 fish/hr) to 2020 (6 fish/hr). Electrofishing data indicated most of fish were 4 to 7 inches, these populations appeared stable.

Ample opportunities exist for anglers to target sunfish during spring/summer when fish move shallow to spawn and are easily accessible to bank or boat anglers. Natural baits such as worms or crickets tend to work best. There is no size limit on sunfish (Bluegill, Redear Sunfish,

Warmouth, etc.), and anglers may harvest 50 sunfish (combined) per day. Anglers are encouraged to harvest to thin the populations and allow for increased growth rates resulting in larger fish.



Additional Fish Species

Channel Catfish (CCF) have done well in this impoundment. DWR discontinued Channel Catfish stocking in 1989 when it became apparent that natural reproduction was occurring at a level to maintain a sport fishery. A new regulation of 8 per day and 15 inch minimum is now in effect. CCF are not overly vulnerable to EF gear and as a result none were collected in the last 2 samples. A good bait for Channel Catfish is a nightcrawler, but anglers can also try shrimp, fresh cut bait, chicken livers, and live minnows, as Channel Catfish are true omnivores and will eat just about anything. The current fish community also includes populations of Yellow Perch, White Perch, Pumpkinseed Sunfish, Common Carp, Golden Shiner, Gizzard Shad and Yellow and Brown Bullhead.

Northern Snakehead(NSH) were illegally introduced into the reservoir around 2016. They are present in numerous water bodies throughout the district and biologists continue to monitor the fish community very closely to see if impacts are occurring as a result of the introduction and learn more about their ecology, biology, food habits, growth, and behavior. There were 2 NSH collected in the 2020 sample which were removed. Anglers targeting NSH should fish very shallow near heavy vegetation and/or structure using weedless lures. During the spawning season, you may spot fry balls which adults guard aggressively. Northern Snakehead are a very good eating fish, and there are numerous ways to prepare it. Anglers are encouraged to harvest these fish. However, it is illegal to possess a live snakehead so the fish must be dead before leaving the lake. Effective methods to kill the fish are removal of the head, gills arches or internal organs.

The town of Culpeper has a newer ramp on the lower end of Pelham. To access this ramp get off of Rt. 29 at the Madison Rd. exit and take through the town of Culpeper, turn left onto 522 and then left onto Virginia Ave, follow Virginia Ave all the way to the back and you will see the ramp. There is no bank fishing access. Electric motors only are allowed, and a permit is required (\$25 for boating and \$10 for fishing – good for the calendar year purchased). Permits are sold weekdays from 8am to 5pm at the office of: The Treasurer 400 South Main Street, Suite 109 Culpeper, VA 22701 Phone: (540) 829-8220. There is also a fishing pier and ramp on the upper end of the lake that can be accessed by turning onto Country Store Rd.-just south of the reservoir off of Rt. 29.

For more information about Pelham Reservoir, please contact:

Virginia Department of Wildlife Resources

1320 Belman Road

Fredericksburg, VA 22401

540-899-4169