



# **Abel Reservoir Management Report**

*Popular Report*

**Federal Aid Project – F111R**

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Abel Reservoir is a 185 acre impoundment built for water supply. The reservoir is long and riverine and only allows electric motors. It has one primitive boat ramp on the upper end of the lake (off Rt. 651) maintained by Stafford County Parks and Recreation Department. The reservoir offers anglers a typical warm water fishery comprised of Largemouth Bass, Bluegill, Redear Sunfish, Black Crappie, and Channel Catfish. Other species known to exist in this include other sunfish species, Yellow and Brown Bullhead and Chain Pickerel. Northern Snakeheads were illegally introduced into the reservoir sometime around 2016.

Abel Reservoir is sampled approximately 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. Most recent surveys were conducted in 2014 and 2020.

Abundance is described as the number of fish caught 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 proportion of preferred length or greater fish 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. A PSD of 40-70 is indicative of a balanced fish population.

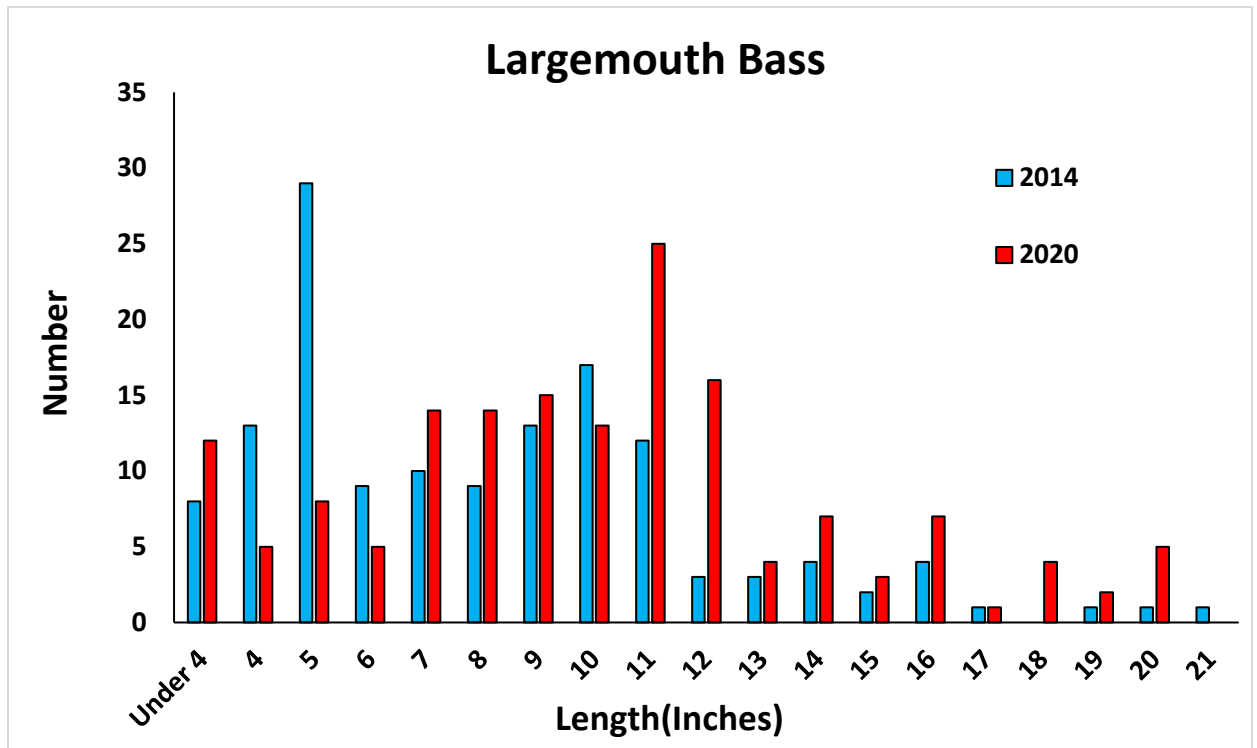
State standard regulations apply to the harvest of most game and nongame fish. New Channel Catfish regulations allow anglers to keep up to 8 per day with a 15” minimum.

### ***Largemouth Bass***

The 2020 EF survey produced a Largemouth Bass (LMB) catch rate of 160/hr which was an increase from 2014 (140/hr). The population size structure LMB in 2020 was much better than the previous sample in 2014, as PSD increased to 50 from 28. PSD-P improved in 2020 (18) compared to 14 in 2014, indicative of a population trending towards larger individuals. CPUE of preferred size bass increased from 10/hr (2014) to 22/hr in 2020. Length distribution of collected bass ranged from 3 to 20”, with a large proportion of bass less than 12” which suggests strong year classes recruiting to the fishery. Abel is ranked 13<sup>th</sup> out of 18 lakes in the NOVA district for CPUE of preferred bass.

Abel has some big Largemouth Bass, however they can be difficult to catch, as there isn't much structure. There are plenty of steep-sided banks covered with rocky outcroppings and large hemlocks. Much of the shoreline has been colonized by Hydrilla. When fishing steep banks, bass will be holding to ledges, so look for sloping rock banks. These banks, as the bank descends through the lake, will have slight outcroppings at all depths throughout the water column. Some baits to try are spinnerbaits, crankbaits and Carolina rigs. A spinnerbait should allow enhanced coverages once at depth allowing it to remain close to a ledge for a longer period of time before it begins its ascent. Chartreuse and white are great colors to try. The Carolina rig is perfect for covering a lot of water thoroughly but without taking a lot of time. Stick with the green pumpkin and pumpkinseed colors with this application, since those are the best imitators of crawfish. Bright colors can be great for visibility in murky water. At even a few feet of depth, everything changes to shades of blue, so bright yellows, reds, and oranges stay visible

much deeper than blues and greens. For crankbaits opt for a crankbait that runs slightly deeper than the water you are fishing. Consider lighting when selecting colors. If it is gray out, white crankbait will be more visible. If there is sun, metallic finishes will reflect and lure bass. In clear water, choose colors that are represented in the local bait fish species.

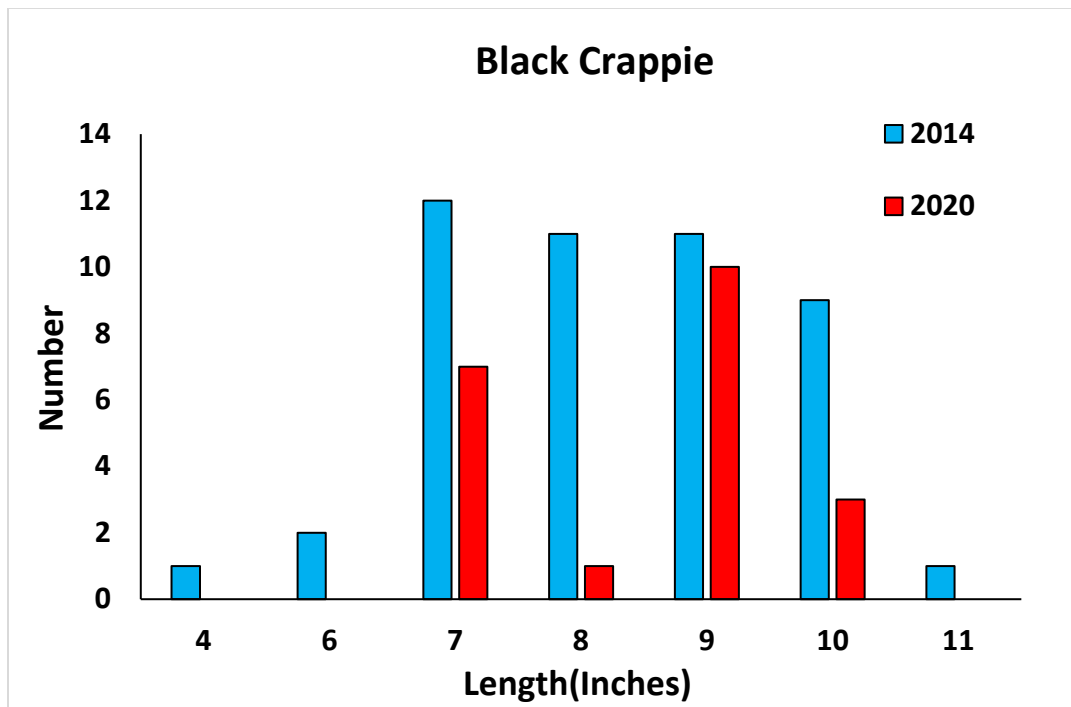


### ***Black Crappie***

Abel reservoir provides an adequate Black Crappie fishery. Black Crappie (BLC) electrofishing CPUE was lower in 2020 (21 fish/hr) compared to 2014 (47 fish/hr), but EF is not an overly efficient method for sampling this species. Proportional Size Distribution (PSD) decreased from 89 to 76 in 2020 (30-60 is balanced) suggesting the population is still made up of larger fish. Proportional Size Distribution of preferred fish (PSD-P; ratio of adults greater than 10”) was better in 2020 (38) compared to 32 in 2014, and indicative of a desirable size structure

with a population with larger individuals. The length distribution ranged from 7 to 10” with the majority being 7 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 creel limit. Try various crappie style jigs until a pattern is found that works well. A good technique for crappie is using light jig heads tipped with small minnows. Also look for downed trees or beaver lodges as they provide structure and will hold good numbers of fish.



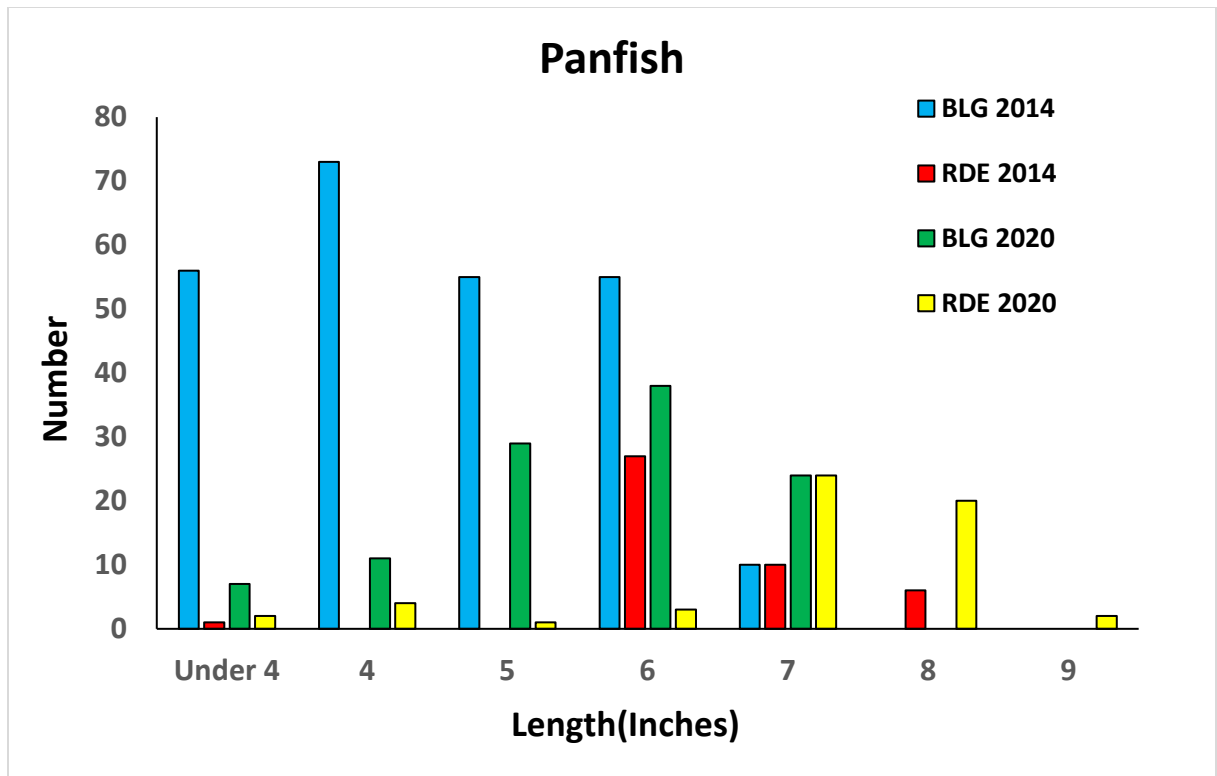
### ***Panfish***

The 2020 EF survey collected 109 Bluegill (BLG) per hour, a significant decrease from 2014 (249 fish/hr). BLG size distribution ranged from 3 to 7”, with most fish in the 5 to 7” range.

Bluegill PSD increased from 29(2014) to 68 in 2020, putting the population slightly out of balance (20-60 is balanced) skewed towards larger fish.

The Redear Sunfish (RDE) population also appears to be in good shape. A total of 56 RDE per hour were collected in 2020 which increased from the 2014 survey (44 fish/hr). The majority of the fish were in the 7 to 8” range. PSD increased from 36 to 79, suggesting a shift towards larger fish in the population. PSD-P (ratio of adults greater than 9”) was 4 in 2020 which was an improvement from 0 in 2014. Redear are stockpiled around the 7” range suggesting predators may be feeding heavily on smaller ones.

Sunfish can be found in shallow water and on nest in the summer. When targeting sunfish the most common baits are worms or night crawlers. Other productive baits include crickets, grasshoppers, red wigglers and meal worms fished with a bobber. Rooster tails produce best with a slow, steady retrieve. Spinners work best in open water as the hook and blade will foul on vegetation. Small crankbaits also can be effective.



### *Additional Fish Species*

Abel is also known as a good Channel Catfish lake and continues to get stocked annually at 10 fish/acre. Though not vulnerable to standard electrofishing gear, Channel Catfish were observed during both the 2014 and 2020 samples up to 26” suggesting a good population was present. Anglers targeting CCF should focus on the reservoir bottom, submerged trees, drop offs, along reed beds and in shallow depression within flats. Some of the best Channel Catfish baits are worms and cut bait fish however, they will also bite on chicken liver, frogs, dip baits, pellets, spam, hotdogs, live minnows and many lures as well. The current fish community also includes populations of Yellow Perch, White Perch, Warmouth, Green Sunfish, White Sucker, Common Carp, American Eel and Brown and Yellow Bullheads. Other species that didn’t appear in the most recent survey but are also likely still present include Golden Shiners and Chain Pickerel.

Northern Snakehead (NSH) were illegally introduced 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 to learn more about their ecology, biology, food habits, growth, and behavior. There were 5 NSH collected and removed in the 2020 sample. Anglers targeting NSH 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 (June-Sept), you may spot their fry balls which adults guard aggressively. Northern Snakehead are very good table fare, and there are numerous ways to prepare it. Anglers are strongly 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 and internal organs.

Anglers can access Abel Reservoir from Route 17 and turning onto Route 616 (Poplar Rd.) and then right again onto Route 651. The ramp and parking lot will be located on the right just before the bridge.

For more information about Abel Reservoir, please contact:

Virginia Department of Wildlife Resources

1320 Belman Road

Fredericksburg, VA 22401

540-899-4169

Or

Stafford County Parks and Recreation Department



540-752-5632