

# Hunting Run Reservoir Management Report

Federal Aid Project – F111R

March 2015



## ***Introduction and History***

Hunting Run Reservoir is a 420-acre water supply impoundment owned and operated by Spotsylvania County which was opened to public fishing in late 2007. The reservoir finally reached full pool in early 2009.

Access is limited to county-maintained boat ramp and park near the reservoir's upper end at 9701 Elys Ford Road (Route 610) 2.1 miles north of Route 3. There is ample parking, a fishing pier and a boat ramp. Anglers may launch canoes, jon boats and bass boats using electric motors only. Although there is currently no major concession; anglers may rent jon boat, electric motors and batteries. The lake was open in 2014 on weekends in March from 6 AM to dusk and on Thursdays-Sundays (including holiday Mondays) from April through mid-October. A similar strategy is likely in subsequent years. A minimal fee is required to use the access site.

The reservoir was impounded in 2002 and stocked in 2003 by the Virginia Department of Game and Inland Fisheries (VDGIF) with bluegill, redear sunfish, largemouth bass and channel catfish. Repeat sunfish stockings were made in 2005 (bluegill), and 2008 (redeer), while repeat channel catfish stockings were conducted in 2004 and 2005. Surplus walleye were stocked in 2006 and 2008. The current fishery is maintained entirely by natural reproduction (walleye were discontinued) and includes bluegill, black crappie, largemouth bass, redear sunfish, and channel catfish. Other species present in the lake from colonization (preexisting impounded waters or downstream transport) include American eel, chain pickerel, pumpkinseed sunfish, green sunfish, brown bullhead, yellow bullhead, creek chubsucker and golden shiner. Threadfin shad and gizzard shad were stocked several years between 2010 and 2014, but reproduction has not yet been documented. Hunting Run Reservoir has routinely been the recipient of any surplus hatchery forage (e.g., golden shiners, bluegill and redear sunfish) due to its predator-heavy community balance. Northern snakeheads were discovered by anglers in the lake in 2013 (at least two were reported and verified), and a juvenile (a 9" fish likely spawned during 2013) was collected while electrofishing in 2014. It seems apparent that this self-sustaining population was created via illegal, private stocking.

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" slot length limit since January 2008. Anglers are required to immediately release any bass between 16 and 22" (inclusive) and can creel only one bass per day over 22" and up to four bass per day under 16". Harvest of bass below the slot is beneficial to minimize stockpiling of small fish, increase growth and maintain an enhanced size structure.

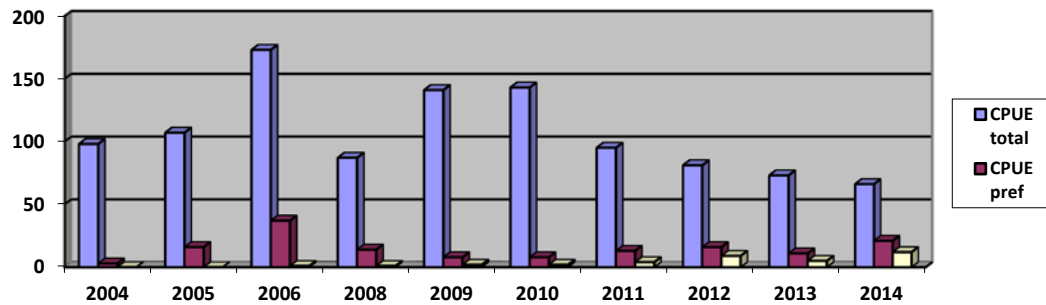
### ***Methods***

Fish sampling at Hunting Run Reservoir by VDGIF biologists has occurred annually since 2004 (except 2007) and provides a remarkable 10-year dataset. 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). Also, numerical descriptors of length-frequency data such as Proportional Stock Density (PSD) and Relative Stock Density (RSD) are used 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 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 (e.g., 8" for largemouth bass). RSD is simply the percentage of any designated length group found within a population. RSD 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 longer, while "memorable" fish are those 20" or longer.

### ***Bass***

Largemouth bass catch rate and population size structure fluctuated since the fishery's creation, and the community became predator heavy in the mid-2000s. Forage was quickly reduced, and intense competition likely resulted in slow bass growth and stockpiling of fish below 13". However, full inundation of the reservoir's pool area in 2009, multiple years of a diversity of forage species stocking and several years of

removal of bass less than 12” (for hatchery use) may have begun to shift abundance and size structure of this population towards the desired endpoint of a trophy fishery.

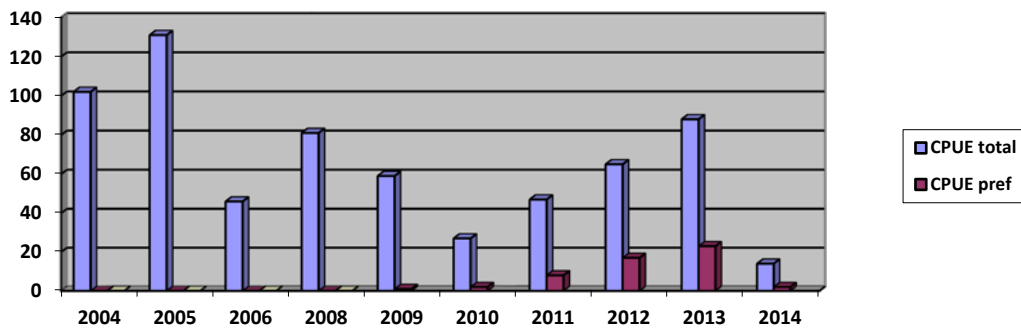


Catch rate (CPUE) of “preferred” size bass peaked in 2006 at 37 fish/hour which ranked this reservoir (at the time) in 2<sup>nd</sup> place out of 18 managed impoundments in the Northern Virginia District. The second highest value for CPUE-P (21 – ranked in 10<sup>th</sup> place) occurred in 2014 after a long, slow climb back from 2006. Overall bass abundance (all sizes combined) peaked in 2006 when total catch (CPUE-T) was 173 fish/hour which was very high. This value was a much more sustainable 66 fish/hour in 2014 which reflected the lowest total catch in the reservoir’s history. Commensurate with the lower abundance was a much improved CPUE of “memorable” bass. These large bass were caught at the extraordinary rate of 12 fish/hour ranking it in 1<sup>st</sup> place in the District in 2014 and among the highest ever documented at any lake at any time.

### ***Panfish***

Size structures of bluegill and redear sunfish populations were excellent in 2014, but abundances were low (72 bluegill/hour and 13 redear/hour of which 25% were 8” or larger). These findings have not varied over time and are consistent with a predator-heavy scenario, as most bluegill and redear are eaten, but surviving fish grow quickly due to reduced competition and attain preferred (>8”) size beyond gape limitations of most predators. The size structure of this bluegill population was one of the best in the District among larger reservoirs and can be considered a benefit of a predator heavy community.

Black crappie CPUE in 2014 was the lowest ever documented in the reservoir (14 fish/hour), and catch of preferred fish (those 10” and larger) declined from a recent peak. Crappie populations are notorious for fluctuating 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.



### ***Management Outlook***

The vision by many of a trophy bass fishery at Hunting Run Reservoir appears to be inching closer to reality. The improvement in bass size structure and an extraordinary catch rate of large fish suggests full pool inundation, copious forage stockings and small bass removals in concert with the large slot limit over time have begun to achieve a desired outcome. Due to a continued paucity of bass over 14”, the slot limit will be expanded in 2015 to include fish from 14-22”. Anglers are still encouraged to harvest bass under the slot (especially those below 12”) and black crappie (up to 25 per day). Northern snakehead infestation could be problematic given the already predator heavy community balance, but given substantial historical data; the opportunity to monitor this new addition to the fishery in an “outdoor laboratory” is intriguing. If no gizzard shad are observed during 2015 sampling, additional stockings will be conducted. Monitoring will continue with annual spring electrofishing.

For more information on Hunting Run Reservoir, please contact:

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