

Keystone Lake

Westmoreland County

April 2017 Trap Net and May 2017 Night Electrofishing Survey

Keystone Lake is a 78-acre impoundment located in [Keystone State Park](#) in Westmoreland County, just north of the town of Latrobe. The lake is a Stocked Trout Water Open to Year-Round Fishing and is also a Big Bass Lake. Statewide regulations are used to manage all other species.

Fisheries Management Personnel last surveyed Keystone Lake in April 2009. At that time, Gizzard Shad were documented in the lake for the first time. Gizzard Shad can provide an important component of the forage base for Largemouth Bass, but compete with panfish such as Bluegill and Yellow Perch. A corresponding decline in the size structure of the Bluegill and Yellow Perch populations was noted in 2009 after the introduction of Gizzard Shad to Keystone Lake. Upon completion of our 2009 survey, we resumed stocking Tiger Muskellunge to provide an additional component to the predator population at Keystone Lake.

Keystone Lake was surveyed again in April and May 2017. Nine trap nets were set in mid-April to assess the lake's panfish populations. A total of 1948 individuals representing 15 different species were captured in trap nets during 2017. Gizzard Shad were the most abundant species captured with a total of 828 individuals (Table 1).

Table 1. Length and frequency distribution of sampled fish from trap nets.

Species	Number caught	Size range (inches)	Comments
White Crappie	296	3 – 14"	34% over 9 inches
Black Crappie	154	3 – 14"	38% over 9 inches
Bluegill	521	2 – 8"	14% over 7 inches
Pumpkinseed	5	3 – 7"	
Green Sunfish	4	4 – 6"	
Yellow Perch	48	3 – 9"	4% over 9 inches
Brown Bullhead	39	6 – 15"	85% over 12 inches
Yellow Bullhead	4	7 – 11"	
Largemouth Bass	1	11"	
Hatchery Brook Trout	14	Not Measured	
Hatchery Brown Trout	1	Not Measured	
Hatchery Rainbow Trout	14	Not Measured	
Golden Rainbow Trout	6	Not Measured	
Gizzard Shad	828	Not Measured	
Golden Shiner	11	Not Measured	
White Sucker	2	Not Measured	

Bluegill were the most abundant panfish captured with 521 individuals sampled in trap nets. However, size structure of the Bluegill population continued to be poor with only 14% of the Bluegill over 7 inches. That said, the size structure of the Bluegill population did show an improvement from 2009 to 2017 (Figure 1). Less than 1% of the Bluegill captured in 2009 were over 7 inches in length. Catch rates of quality sized Bluegill over 7 inches did not meet Panfish Enhancement Guidelines in 2017.

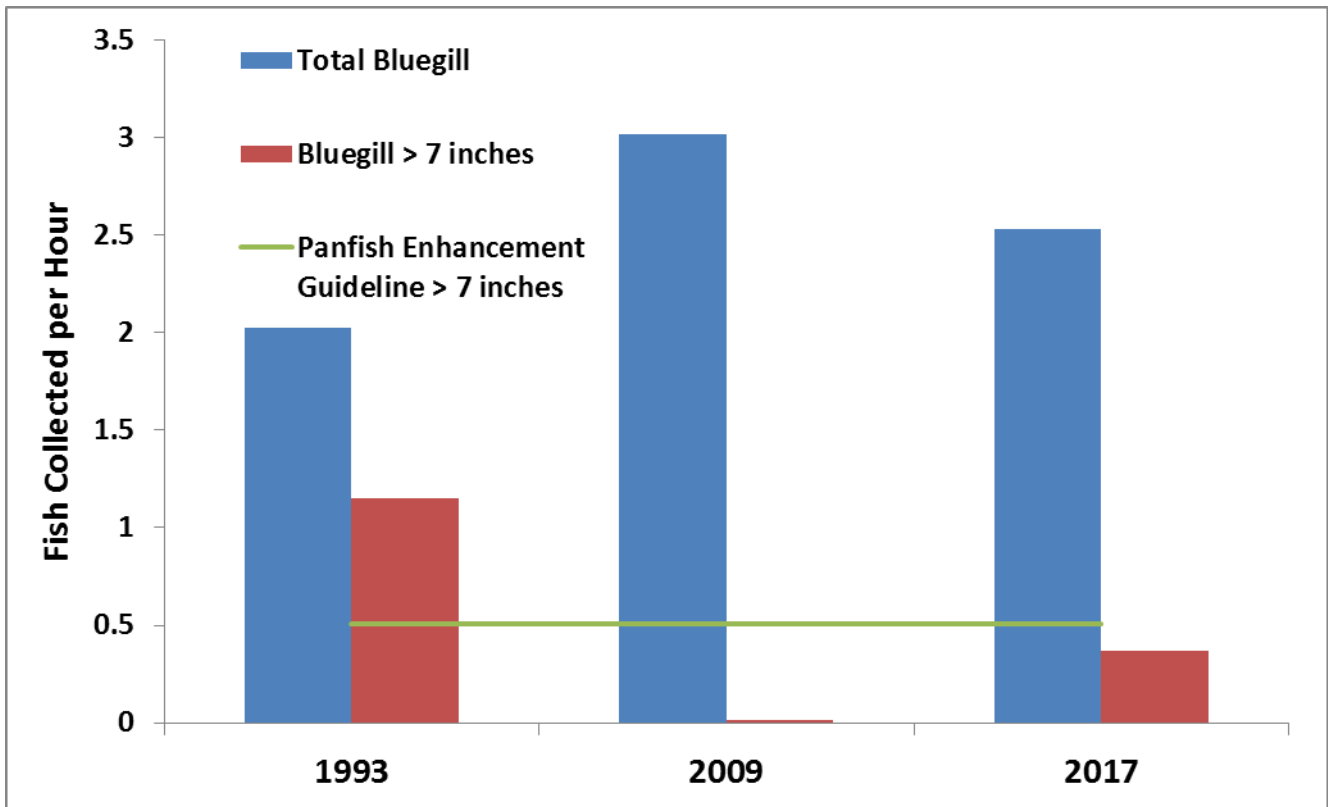


Figure 1. Catch of Bluegill in trap nets at Keystone Lake.

White Crappie and Black Crappie were also very abundant in trap nets with a total catch of 450 individuals combined. Unlike the Bluegill population, crappie sizes were excellent with good numbers of both Black Crappie and White Crappie over 9 inches in length (Figure 2). Some very nice crappies were captured with a fair number of fish in the 11 to 13 inch size range. Keystone Lake would be an excellent place for anglers to target crappie.



Fourteen-inch White Crappie (right hand) and Black Crappie (left hand)

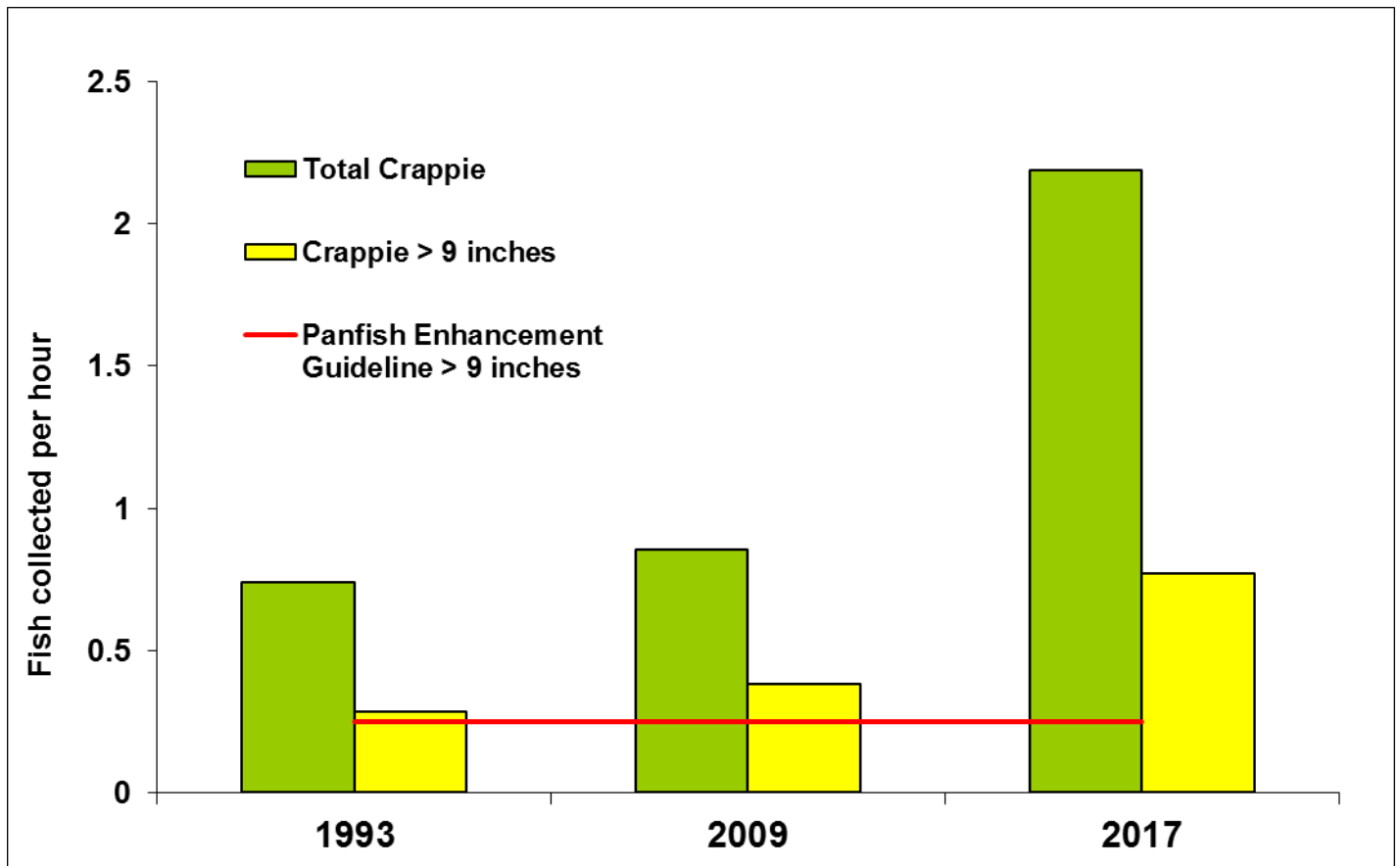


Figure 2. Catch of crappie in trap nets at Keystone Lake.

Total catch of Yellow Perch declined since the previous survey and the catch rate of quality sized fish remained poor (Figure 3). The poor numbers and size structure of the perch population are likely due to competition with Gizzard Shad as well as the dense crappie population.



One of several trophy Goldens captured during our trap net survey

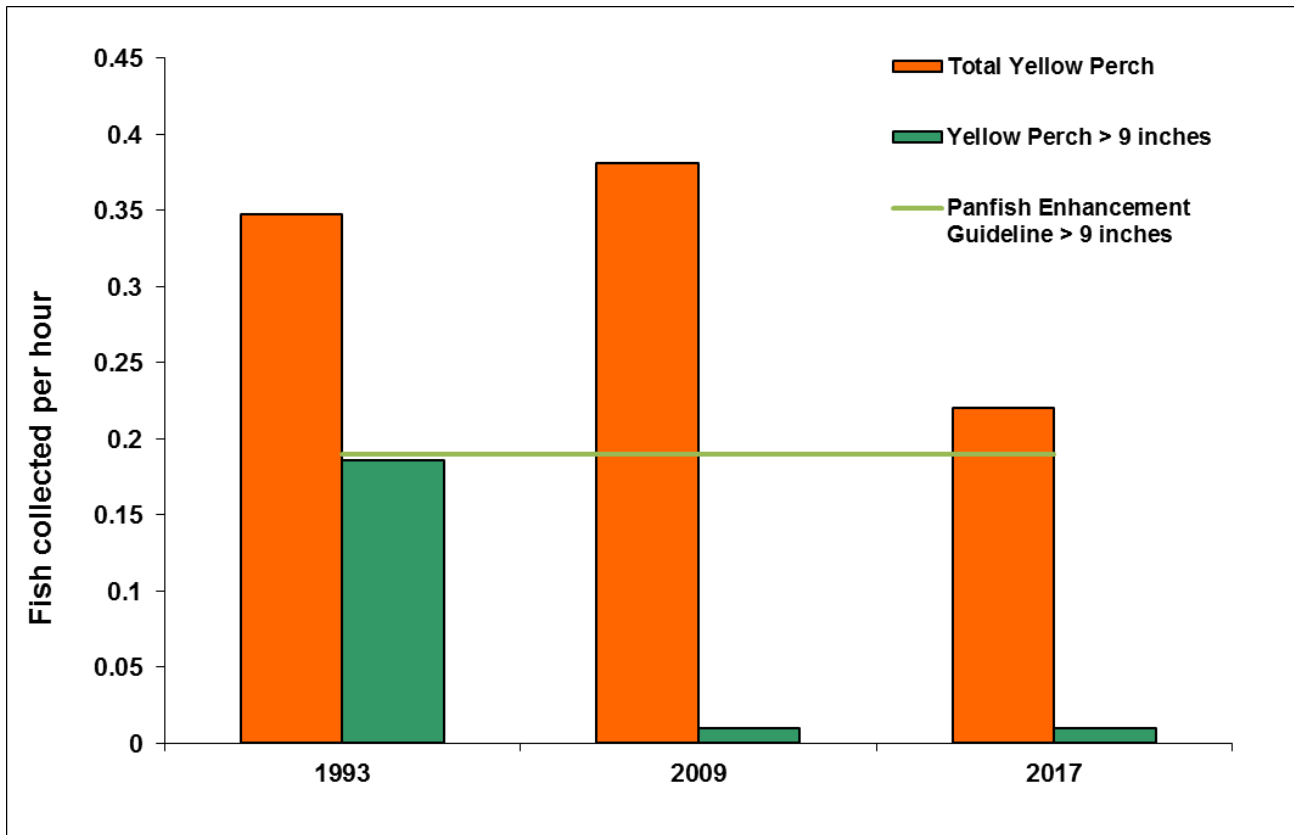


Figure 3. Catch of Yellow Perch in trap nets at Keystone Lake.

Other species captured during the trap net survey included Pumpkinseed, Brown Bullhead, Yellow Bullhead, White Sucker, Rainbow Trout, and Golden Rainbow Trout, Brook Trout, Brown Trout, Gizzard Shad, Green Sunfish, Common Carp, Largemouth Bass, and Golden Shiner. No Tiger Muskellunge were captured during the trap net survey, as water temperatures were unseasonably warm ($> 60^{\circ}\text{F}$) during the survey.

Night electrofishing for Largemouth Bass was conducted on May 2nd, 2017. Three night electrofishing runs encompassing the entire shoreline of the lake collected a total of 220 Largemouth Bass ranging from 3 to 20 inches (Table 2). The size structure of the bass population has improved since previous surveys, with over 28% of the fish reaching 12 inches in length. Mean Catch Per Unit Effort (CPUE) of bass over 12 inches increased from 11 fish per hour in 2009 to over 43 fish per hour in 2017 and CPUE of bass over 15 inches increased from just under 2 fish per hour in 2009 to over 9 fish per hour in 2017 (Figure 4). Catch rates in 2017 well exceeded all catch rates for Big Bass Guidelines (Total CPUE of 35 fish/hr, CPUE \geq 12 inches of 7 fish/hr, and CPUE \geq 15 inches of 2 fish/hr) for the first time in 2017. In addition to Largemouth Bass, a number of juvenile Tiger Muskellunge were encountered during the survey. These fish were stocked last fall as part of an effort to introduce more predators to the lake to help control the Gizzard Shad population.

Table 2. Length and frequency distribution of species captured from night electrofishing.

Species	Number caught	Size range (inches)	Comments
Largemouth Bass	220	3 - 20"	28% over 12 inches 6% over 15 inches
Tiger Muskellunge	11	10 - 12"	

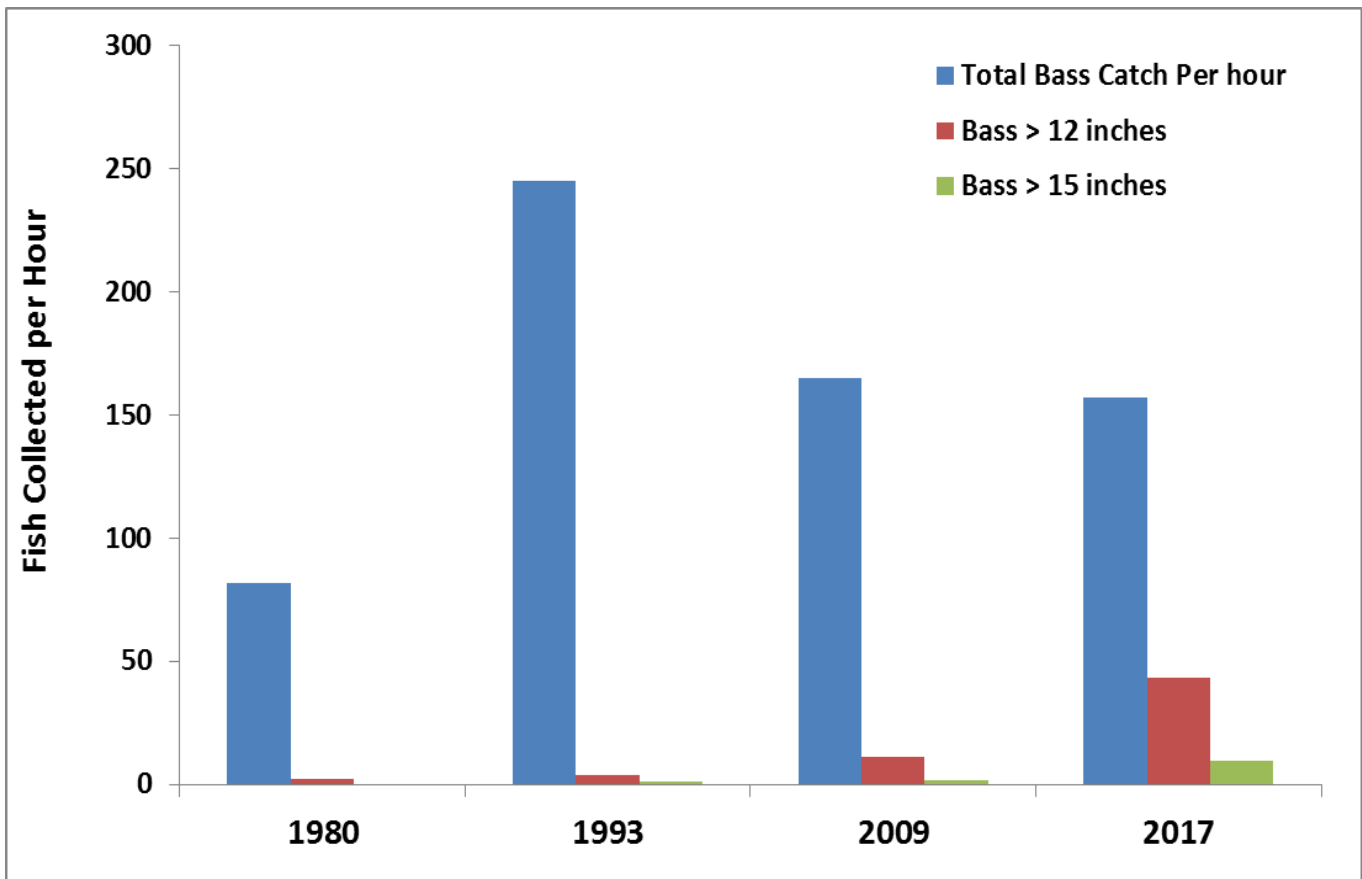
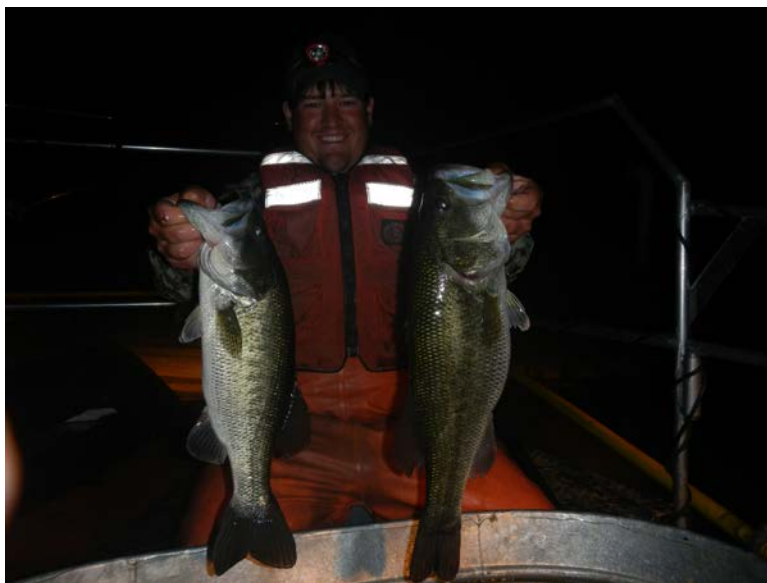


Figure 4. Catch of Largemouth Bass during night electrofishing at Keystone Lake.



A pair of nice bass from Keystone Lake

Overall, Keystone Lake provides good angling opportunities for a variety of coldwater and warmwater species including stocked trout, Largemouth Bass, and Black Crappie and White Crappie. Stockings of Tiger Muskellunge provide the chance to capture an occasional trophy fish. Fair fishing opportunities exist for Bluegill and Yellow Perch, as well as Brown Bullhead and Yellow Bullhead.

*Mike Depew
Area 8 Fisheries Biologist*