

Sweet Arrow Lake

Schuylkill County

Channel Catfish Evaluation

The 100-acre Sweet Arrow Lake, located in Schuylkill County, approximately one mile northeast of the Borough of Pine Grove, is owned and administrated by Schuylkill County Parks and Recreation. Sweet Arrow Lake has a wide variety of fish species that offer diverse year-round angling opportunities. The lake has one boat launch, a mooring area, an ADA accessible fishing pier as well as ample vehicle parking. Motorized boats permitted for use are those powered by electric motors only. For additional information regarding Sweet Arrow Lake, visit the [Schuylkill County Parks and Recreation Website](#).

The warm-water fisheries of Sweet Arrow Lake are sustained through natural reproduction, excluding Tiger Muskellunge and Channel Catfish which are stocked annually by the Pennsylvania Fish and Boat Commission (PFBC). Additionally, the PFBC provides anglers with seasonal opportunities to fish for adult trout stocked in the spring. Fishing seasons and fish harvest are regulated with [Commonwealth Inland Waters angling regulations](#) and the lake is designated as [Stocked Trout Water Open to Year-Round Fishing](#).



Channel Catfish captured in Sweet Arrow Lake

The PFBC's Fisheries Management Division conducted spring trap net as well as fall baited hoop net surveys targeting Channel Catfish in 2014 and 2015. These surveys were conducted to gather baseline information about Channel Catfish abundance in Sweet Arrow Lake as part of a larger statewide study of selected lakes stocked with Channel Catfish. This multiyear study (2014 – 2020) was designed to evaluate and guide future improvements in angling opportunities at impoundments currently stocked with Channel Catfish. The improvement is intended to be accomplished, in part, by reducing the need to stock Channel Catfish across the state by bolstering natural reproduction through addition of Channel Catfish spawning structures in the lake. Channel catfish are “cavity spawners” and make use of sunken hollow logs or similar bottom structures to spawn and rear their brood. At the onset of the study, stocking Channel Catfish fingerlings will cease, in order to determine if channel catfish abundance can be maintained or improved through natural reproduction.

The recent 2014 and 2015 surveys, reported herein are intended to describe Channel Catfish population abundance in the lake prior to placement of the spawning structures or cavities. All Channel Catfish captured were counted, measured and weighed. The number captured by one-inch length

groups are summarized in Figure 1. Additionally, a summary of the Channel Catfish captured by year and specific sampling gear is provided in Tables 1 and 2.



Channel Catfish captured In Sweet Arrow Lake

Channel Catfish captured in Sweet Arrow Lake 2014 and 2015.

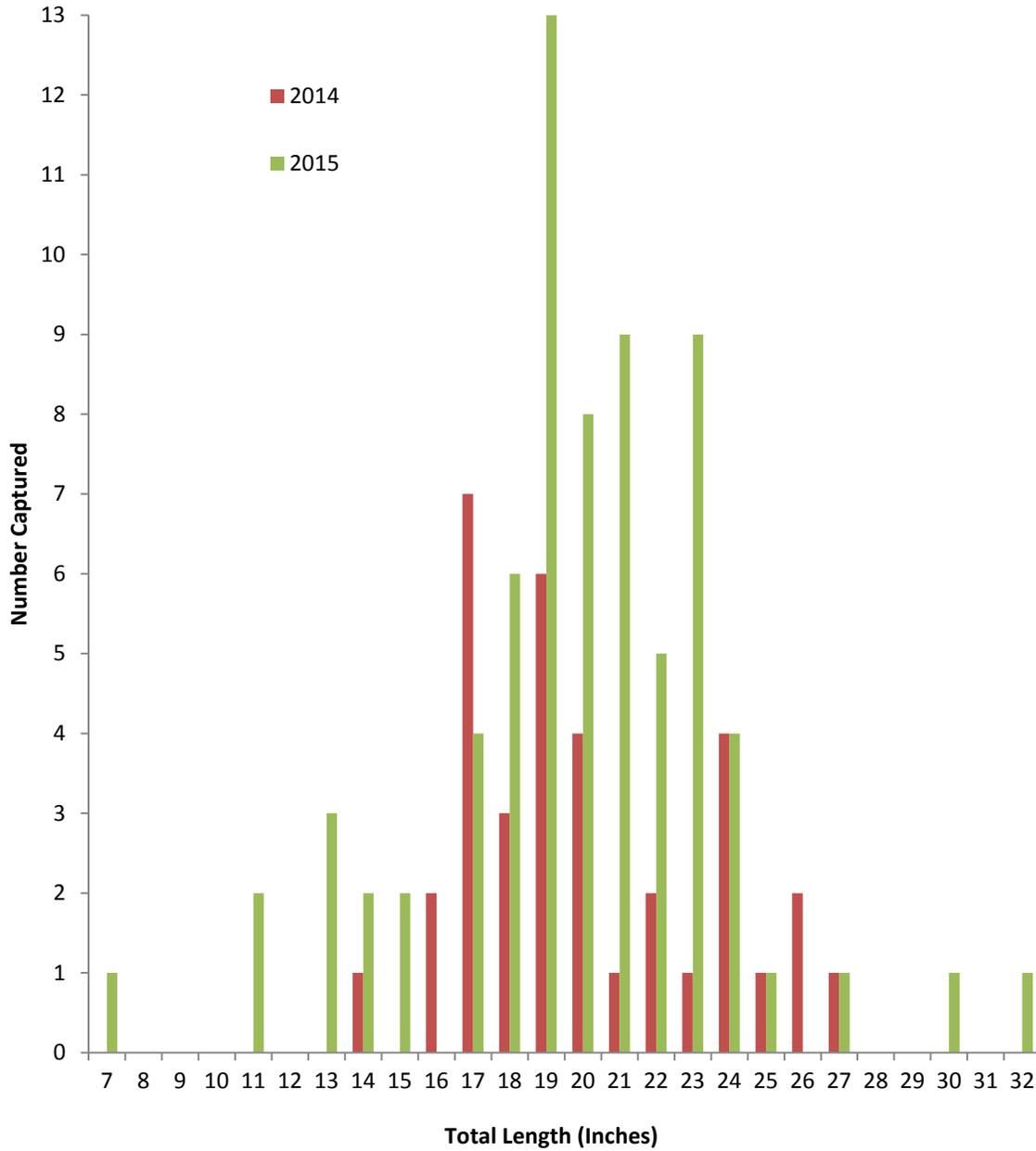


Figure 1. Summary of length frequency distribution of Channel Catfish captured in trap nets and baited hoop nets during 2014 and 2015.

Table 1. Summary of Channel Catfish hoop net catches in 2014 and 2015.

Year	Total Catch	Total Catch Per Hour	Total Hours
2014	8	0.03	282.22
2015	0	0	283.92

Table 2. Summary of Channel Catfish trap net catches in 2014 and 2015.

Year	Total Catch	Total Catch Per Hour	Total Hours
2014	28	0.08	327.17
2015	72	0.22	329.27

Sixteen other fish species were captured during the Channel Catfish evaluation; however, the timing and capture methods utilized were not intended to effectively index abundance of some of these species. Good numbers of White Crappie and Black Crappies were caught with several individuals up to 16 inches in length. The catch of White Suckers and Common Carp were good with 95% of individuals being of quality size (e.g. greater or equal to 10 inches and 16 inches, respectively). Moderate numbers of Bluegills, Yellow Bullheads, Brown Bullheads, and Yellow Perch were also captured with some individuals of desirable size. A few large stocked trout were also captured during this evaluation.

Following these evaluations, PFBC's Habitat Management Division placed 33 individual spawning boxes throughout the lake during April of 2016. These spawning boxes are intended to provide artificial spawning habitat for adult Channel Catfish. Initial assessment of the Channel Catfish spawning boxes was completed in early June of 2016 and approximately seventy-five percent of the spawning boxes were found to have Channel Catfish egg masses or adult Channel Catfish present. Channel Catfish fry, newly hatched fish, were also observed along shoreline areas by the PFBC's Habitat Management Division near the end of June. The spawning boxes will continue to be monitored for use by Channel Catfish through 2018.



Artificial spawning box



Channel Catfish inside an artificial spawning box



Channel Catfish fry observed along the shoreline

Follow up sampling targeting Channel Catfish is planned for 2019 and 2020 to determine if Channel Catfish spawned in the lake since placement of the spawning boxes in 2016 have recruited to the adult population in numbers equal to or greater than that recorded prior to spawning box placement. Ultimately, the objective of this study is to maintain or increase Channel Catfish population levels documented prior to the stocking cessation and placement of the spawning structures, while eliminating the need for channel catfish supplemental stocking to provide high quality angling opportunities for this species.

***John Frederick, Fisheries Biologist
Fisheries Management Area 7***