

Tionesta Lake Forest County

Spring 2013 Trap Net and Night Boat Electrofishing Surveys

The Pennsylvania Fish and Boat Commission (PFBC) conducted a Muskellunge survey at Tionesta Lake during the weeks of April 29th and May 16th, 2013. Objectives of the survey were to: 1) evaluate the overall abundance and size structure of the Muskellunge population; 2) assess the overall success of our Muskellunge fingerling & yearling stocking program; and 3) determine if we are meeting the minimum criteria for producing a high-quality fishery outlined in the PFBC's [Muskellunge Management Plan](#). A routine reinventory of the other game and panfish species was also conducted during this survey. Pennsylvania-style trap nets were used to sample the lakes' Muskellunge, Channel Catfish and panfish populations. A night-time boat electrofishing survey was conducted to sample the black bass population.

[Tionesta Lake](#) is a US Army Corps of Engineers (USACOE) owned impoundment that spans 480 acres at normal summer pool and has a maximum depth of 46 feet. The lake can be accessed by traveling on Pennsylvania Route 36, located approximately one mile southeast of the borough of Tionesta. Constructed in 1940, its primary function has been to reduce downstream flooding as part of the Allegheny and upper Ohio Rivers flood control system. Recreational amenities include picnic facilities, hiking trails, sightseeing, and four camping areas, all managed by the USACOE. Tionesta Lake is popular among recreational boaters and jet skiers who take advantage of the lake's unlimited horsepower regulations. The lake features two boat launches – one public on the northern end and one fee based located on the southern end. The PFBC maintains one public launch at Nebraska Bridge which includes a large centralized off-street parking area that provides ample trailer parking. The other launch, located near the Dam Breast, is maintained by the USACOE and requires a \$3.00 launch fee. Shore fishing is best at the access areas and adjacent to the park area near the dam. Although very scenic, much of the main body of the reservoir is surrounded by steep and forested hillsides characterized by rocky shorelines, most of which can make shores fishing very difficult. For this reason, much of Tionesta Lake can be reached and fished most effectively by boat. The PFBC manages Tionesta's Lake's warmwater fishery under [Statewide Regulations for Commonwealth Inland Waters](#) and stocks it annually with Channel Catfish fingerlings and Muskellunge fingerlings & yearlings. The PFBC's Habitat Management Division advertises locations and latitude and longitude coordinates of all [fish habitat structures](#) installed within Tionesta Lake.

Tionesta Lake is one of three northwestern study lakes, along with Edinboro Lake and Lake Canadohta, where survival of fall stocked fingerling Muskellunge and spring stocked yearling Muskellunge are being measured. These measurements will allow us to most efficiently and cost effectively manage and maintain stocked musky populations. Since 2010, biologists have

inserted a small stainless steel piece of wire about the size of a pencil lead called a coded wire tag (CWT), into fingerling sized musky prior to being stocked. By using CWTs biologists will be able to differentiate between each of the two stocked life stages when subsequently recaptured. In the near term we will continue to intensively sample Tionesta Lake's musky population to document changes in abundance and size structure, and secure detailed age information to precisely evaluate survival.

For the past two years the PFBC has been the recipient of a grant provided by the [Hugh C. Becker Foundation \(Twin Muskies Inc.\)](#), which has covered the cost of the machines used to tag fingerlings at Linesville State Fish Hatchery. Tionesta Lake's stocked Muskellunge fingerlings and yearlings will continue to be coded wire tagged until 2015.

During the week of April 29th fisheries biologists from the Area 2 office in Tionesta set twenty Pennsylvania style trapnets overnight (24 hour period intervals) yielding an effort of 470.82 hours. A total catch of 3,160 fish representing 17 different species were captured (Table 1). Overall, the Muskellunge population continues to be good and is providing a fair number of legal-sized musky for anglers to catch. Trapnet catches of Yellow Perch, White Crappie and Black Crappie have dramatically increased and quality sized individuals have also dramatically increased in abundance since previous surveys. All other fish populations appear to be stable with catch rates and total abundance for most species being similar to surveys of years past.

Table 1. Abundance, CPUE and size distribution of fish collected during trapnet sampling at Tionesta Lake during the week of April 29th 2013.

Species	Number	Size Range (inches)	CPUE (fish / hour)
White Crappie	1,832	4 – 14	3.85
Black Crappie	154	4 – 13	0.32
Bluegill	24	5 – 8	0.05
Yellow Perch	332	4 -10	0.70
*Smallmouth Bass	9	7 – 10	0.02
Walleye	1	10	0.00
Rock Bass	14	5 – 8	0.03
Channel Catfish	4	22 - 30	0.01
Brown Bullhead	523	5 – 14	1.10
White Sucker	6	8 – 11	0.01
Golden Redhorse	150	6 – 23	0.31

Golden Shiner	43	4 – 10	0.09
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*Species not typically captured by trap nets. Other species captured but which occurred in low abundance were Green Sunfish, Common Carp and Northern Hog Sucker.



Biologists weighing an adult Muskellunge caught in one of our trap nets at Tionesta Lake.

A total of 6 Muskellunge (5 females, 1 male) were captured. Captured Muskellunge were enumerated, measured for total length and weighed. Additionally, a scale sample along with a small piece of the pelvic fin ray was retained for age and growth analysis. Finally, fish were scanned with a portable wand detector for the presence of a coded wire tag and then

released. Captured fish ranged in size from 30 to 46 inches and weighed 8.5 to 29.5 lbs (Table 2). Of the six captured adult Muskellunge, three were of legal size (> 40 inches) with two larger females just shy of 30 pounds. Total Muskellunge catch rate was 0.01 fish / hr or one Muskellunge for every four trapnets set. This total catch rate was higher than the 2005 survey but considerably less than the 2004 survey. The catch rate of 0.01 fish / hr was within the minimum statewide catch rate objective established for Pennsylvania lakes (0.01 fish/hr or one Muskellunge for every four trapnets set) indicating that Tionesta Lake continues to maintain a good Muskellunge population. No adult (> age 4) coded wire tagged Muskellunge were captured during this survey, however, this was to be expected since the size and age of these fish would have resulted in them being stocked prior to 2010, which was the start year of the coded wire tagging study.

Table 2. Length and weights of Muskellunge captured in trapnets at Tionesta Lake during the week of April 29th, 2013.

Size (in)	Weight (lbs)	Sex
30	8.5	M
35	16.5	F
38	18.8	F
42	25.1	F
45	29.0	F
46	29.5	F



US Army Corps of Engineers Park Rangers Luke Houston (left) and Jason Bowers (right) with some quality-sized White Crappie caught in our trapnets at Tionesta Lake.

Our trapnet catches for panfish were excellent. Panfish populations have significantly improved in both quantity and quality size of individuals since our last surveys (2004 & 2005). Specifically, trapnet catch rates and overall abundance of White Crappie, Black Crappie and Yellow Perch were the highest ever recorded. Of all the panfish caught White Crappie were the predominant species, and outnumbered the Black Crappie by a wide margin. Of the 1,832 White Crappie sampled by our nets, all but 7 fish (99.6%) were greater than 7 inches with the majority in the 7 - 9 inch range. Size of individuals was equally impressive with several fish in the 10 to 14 inch range. Good numbers of Black Crappie (154) were also caught with 97.4%

above 7 inches and 13 greater than 10 inches. The largest Black Crappie measured 13 inches. The Yellow Perch population continues to improve and is providing anglers with good opportunities to catch quality sized perch. Of the 332 Yellow Perch caught 149 (44.9%) were greater than 7 inches with several near 10 inches. The abundant brown bullhead population is providing excellent angling opportunities for harvestable size fish. Brown bullheads were caught in higher numbers than in previous surveys and most were of quality size (10 inches and larger). Other species observed during our trapnet sampling included Yellow Bullhead, White Sucker, Common Carp, and Golden Redhorse. Offspring from these species are providing an important forage base for the larger predatory fish that inhabit the lake. Also captured in our trapnets were six Smallmouth Bass, with the largest measuring 22 inches and weighed 6 pounds. Typically black bass are not captured in trapnets but rather are more vulnerable to other sampling gears such as night-time boat electrofishing.



Jimmy Siford (Fisheries Biologist Aid) with a trophy Channel Catfish caught in our trapnets at Tionesta Lake.

The PFBC began stocking Channel Catfish fingerlings in Tionesta Lake in 1974 with the primary goal to provide enhanced recreational fishing opportunities. Over that period, a total of 160,200 fish have been stocked. In 2005 a change in stocking strategy from alternate year stocking to annual stocking was adopted to enhance fish available to anglers. During our survey a total of four Channel Catfish were captured by trapnets. Although their numbers occur in low abundance, the sizes of individuals caught were impressive. All fish captured were greater than 20 inches in length with largest fish measuring 24.7 inches and weighed 6.9 pounds (pictured above). Continued stocking will be guided by statewide management plan criteria currently in preparation.

On May 16th, Area 2 personnel returned to Tionesta Lake to sample the black bass population *via* night boat electrofishing. Results from these surveys indicate that Tionesta Lake contains a dense smallmouth bass population, however most fish were less than the legal size of 12 inches. A total of three runs lasting 30 minutes each were performed, for a total of 1.5 hours of effort. Tionesta Lake smallmouth bass electrofishing catch rates were excellent in 2013. A total of 165 smallmouth bass were caught and fish ranged in size from 3 - 15 inches yielding an impressive catch rate of 110 fish per hour. Bass over 12 inches yielded a catch rate 2.7 fish per hour and over 15 inches at 1.3 fish per hour, respectively. Catch rates for smallmouth bass were similar to historical averages (see Figure 2) with the exception of bass greater than 15 inches which was the highest on record.

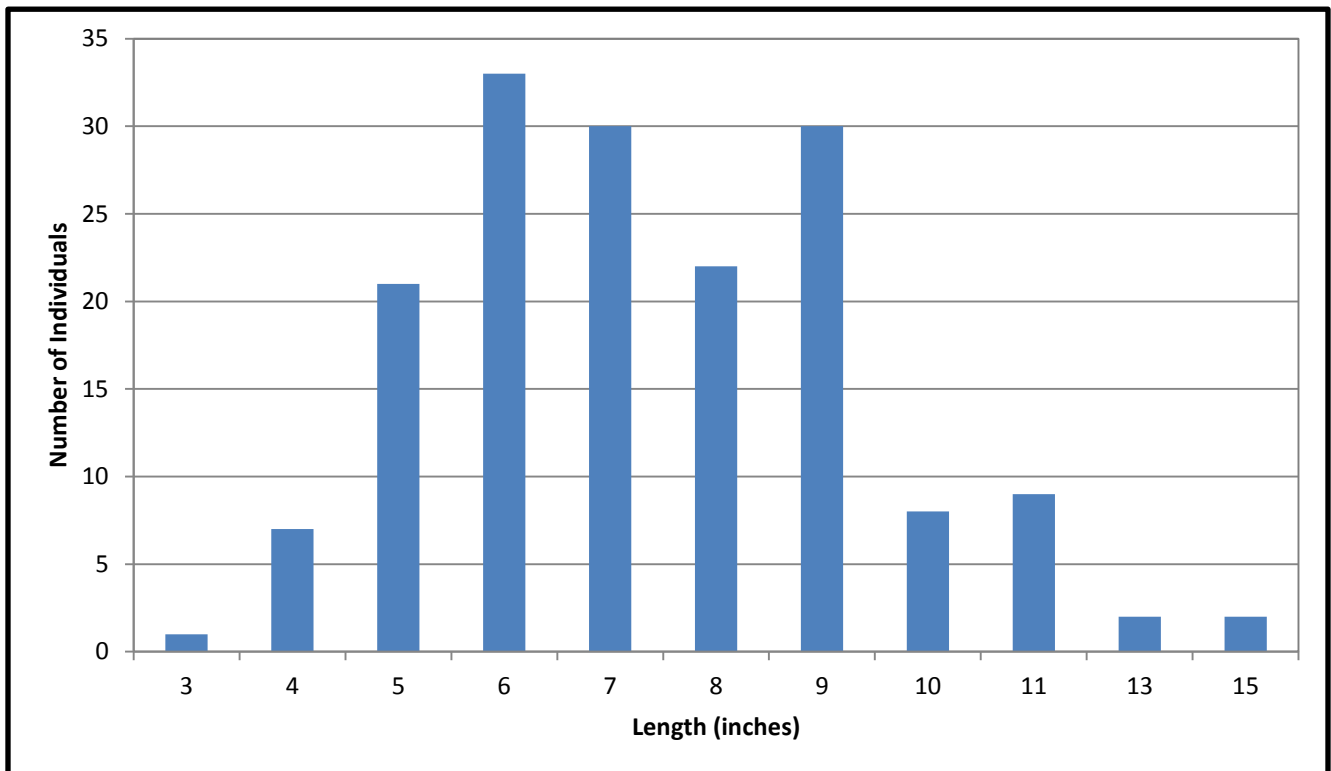


Figure 1. Length frequency distribution for smallmouth bass captured during night-time boat electrofishing surveys at Tionesta Lake.

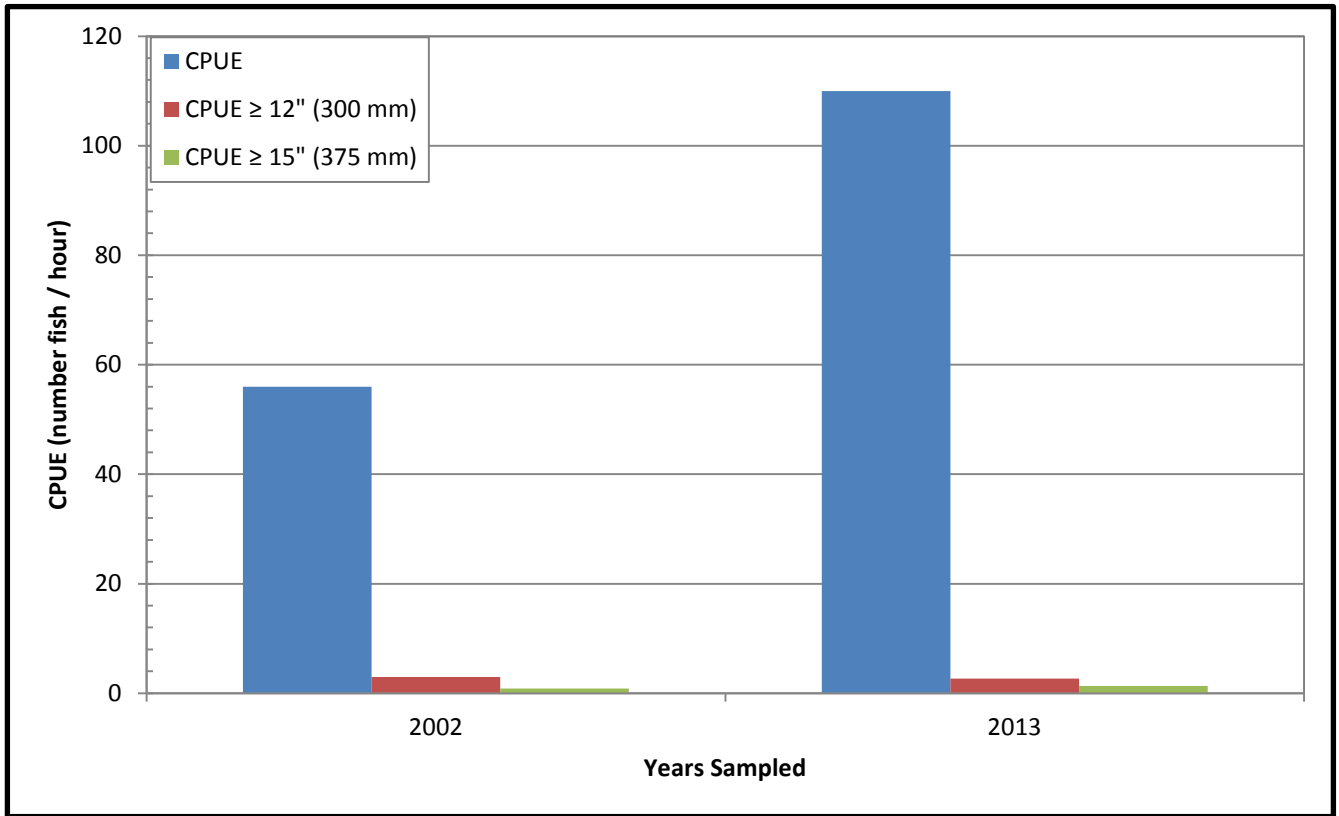


Figure 2. Catch rates for smallmouth bass captured during night-time boat electrofishing surveys at Tionesta Lake.



Area 2 Fisheries Biologist Brian Ensign with a quality-sized Smallmouth Bass captured during night-time boat electrofishing survey of Tionesta Lake.

In conclusion, Tionesta Lake offers great angling opportunities for legal size Muskellunge. Panfish abundance and size has improved in each successive survey especially for White Crappie, and Black Crappie. Fair numbers of Bluegill and Yellow Perch are also available to anglers. The Brown Bullhead population is sustaining nice size structure. The Channel Catfish population, although presently low in abundance is providing a fishable and harvestable population. For those anglers wanting to avoid crowds and enjoy nature's scenic outdoors give Tionesta Lake a try. The PFBC Area 2 personnel would like to extend our thanks to the

Tionesta Lake USACOE staff for their assistance in conducting these surveys.

Brian Ensign, Area 2 Fisheries Biologist