

Blue Marsh Lake

Berks County

2021 Spring Trap Net Evaluation

[Blue Marsh Lake](#) is an 1,150-acre reservoir owned by the United States Army Corps of Engineers and is located near the city of Reading. The defined purpose of the reservoir is to provide flood control and for water supply, but also provides various recreational opportunities. Anglers and boaters can access the lake from 3 major boat ramps, which have ample parking for visitors. Blue Marsh Lake is divided into two sections: the upper section is a no-wake zone, and the lower section has no outboard motor restrictions. Biologists from the Pennsylvania Fish and Boat Commission's (PFBC) Area 6 fisheries management office routinely monitor the various sportfish populations in Blue Marsh Lake. This report details the results of a spring trap net survey conducted in 2021.



Aerial photo of Blue Marsh Lake, Berks County. Photo courtesy of USACE Philadelphia District.

Trap Net Survey

PFBC Area 6 biologists surveyed Blue Marsh Lake during April 6-14, 2021, using Pennsylvania-style trap nets. The 2021 trap net survey at Blue Marsh Lake marks the fifth year of a multi-year study designed to evaluate the effectiveness of tiger muskellunge stockings and to describe tiger muskellunge growth rates through tagging (with Passive Integrated Transponder [PIT] tags) and age estimation using pelvic fin rays. Additionally, Channel Catfish and Walleye populations were characterized since trap nets are effective at capturing these species.

Nets were set at sites throughout the reservoir to ensure all available habitats were sampled. Twenty nets were set in depths ranging from 5 to 16 ft and allowed to fish overnight for an average of 23.66 hrs. Sportfish were measured and released and forage species were counted and released (Table 1).

Table 1. Summary of fish species collected from Blue Marsh Lake between April 4 - 14, 2021.

Fish Species	Number Collected	Size Range (Inches)
Alewife	~4100	Not Measured
Black Crappie	72	4 - 14
Bluegill	444	2 - 7
Channel Catfish	354	8 - 30
Common Carp	17	Not Measured
Flathead Catfish	3	24 - 41
Golden Shiner	1	Not Measured
Green Sunfish	3	5 - 6
Hybrid Striped Bass	1	16
Hybrid Sunfish	1	6
Largemouth Bass	1	20
Muskellunge	2	29 - 31
Pumpkinseed	5	5 - 6
Rainbow Trout (Hatchery)	3	9 -13
Tiger Muskellunge	6	30 - 41
Tiger Trout (Hatchery)	1	20
Walleye	25	16 - 28
White Catfish	1	13
White Crappie	1	11
White Sucker	7	11 - 17
Wild Brown Trout	2	7
Yellow Perch	2	10 - 13

Tiger muskellunge

Tiger muskellunge are a popular sport fish at Blue Marsh Lake and the observed catch rate during the 2021 survey suggests that angling opportunities remain good. A total of 6 tiger muskellunge ranging from 30 to 41 in and weighing 7 to 18 lbs were captured (Figure 1). This equates to a catch rate of 0.013 fish/hr, which meets the [PFBC Muskellunge Management Plan](#) objective catch rate of 0.01 fish/hr and is comparable to catch rates observed during the previous surveys (Figure 2).

During the 2021 survey, biologists continued to PIT tag tiger muskellunge to understand growth and recapture rates. Therefore, all 6 fish were implanted with PIT tags and fin clipped, so they can be identified in future surveys. However, unlike at Lake Nockamixon where the encounter rate of tagged fish is high, recaptures of tiger muskellunge at Blue Marsh Lake is rare. Only 1 fish of the 32 collected during the 5-year evaluation was potentially recaptured. A fish with a missing pelvic fin was captured, but a PIT tag was not detected. Therefore, we cannot be certain that this fish was tagged previously, as damage to the fin could have occurred naturally or in the hatchery environment. Since no fish were recaptured, tracking growth rates of individual fish (change in fish size between initial marking and recapture) is not possible. Future trap net surveys will be conducted at Blue Marsh Lake to continue evaluating the yearling stocking program.

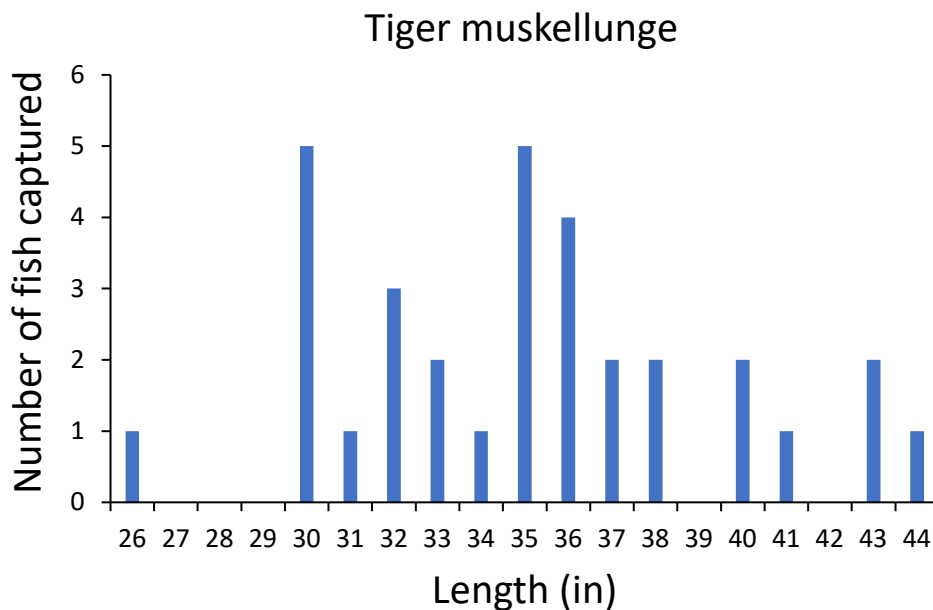


Figure 1. Length frequency distribution of tiger muskellunge from Blue Marsh Lake during the five-year evaluation (2013-2021).

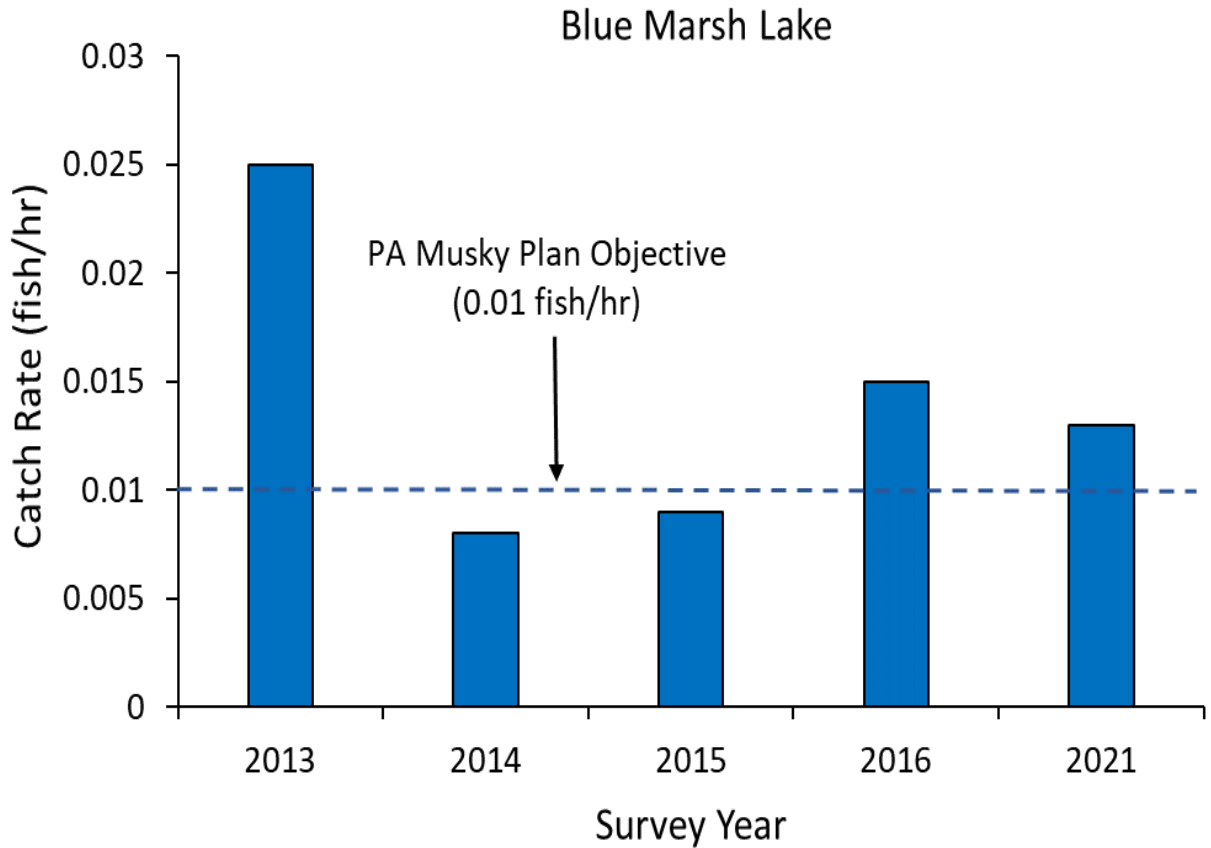


Figure 2. Catch rates of tiger muskellunge from Blue Marsh Lake during the five-year evaluation (2013-2021).

Channel Catfish

The Channel Catfish population at Blue Marsh Lake represents one of the best naturally reproducing reservoir populations in southeastern Pennsylvania. A total of 354 Channel Catfish were collected, measuring 8 to 30 in (Figure 3). The catch rate of 0.75 fish/hr (18 fish/net night) in 2021 was the highest observed Channel Catfish catch rate during the five-year evaluation. Our results suggest that anglers have tremendous Channel Catfish fishing opportunities at Blue Marsh Lake.

Channel Catfish

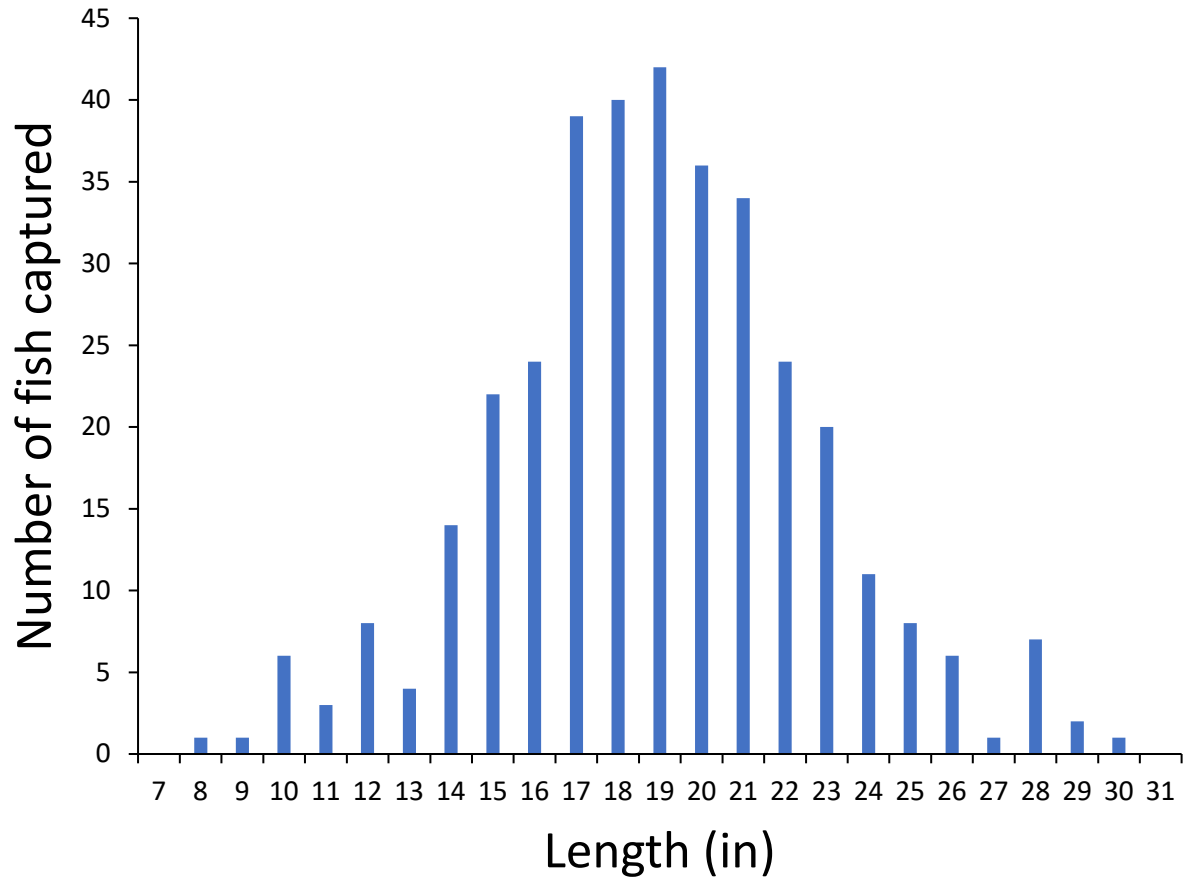


Figure 3. Length frequency distribution of Channel Catfish captured during April 4 - 14, 2021 at Blue Marsh Lake.

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Walleye

Blue Marsh Lake continues to support a fair to good Walleye population. During this survey, a total of 25 Walleyes were captured measuring 16 to 28 in. Although this is the lowest catch rate observed during the five-year evaluation, it is the likely result of not stocking Walleyes between 2015 and 2017 due to low hatchery production. However, hatchery production of Walleye fingerlings has met or exceeded requested numbers in recent years, so Walleyes have consistently been stocked. Anglers should target Walleyes on rocky points and rip-rap shorelines, especially in early spring (see page 10 in the [Summary Book](#) for Walleye regulations). As the season progresses, Walleye move to deeper, cooler water on sharp contours near schools of Alewife, which is the primary forage in Blue Marsh Lake. Additionally, anglers can expect fair numbers of Walleye in the tailrace below the dam at Blue Marsh Lake, especially following reservoir release events.



Area 6 Fisheries Biologist Tyler Grabowski holding a 28 in, 9lb Walleye

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Blue Marsh Lake has historically supported robust Black Crappie and White Crappie populations. The 2021 survey captured 73 crappies. This is a substantial reduction compared to the total crappie catch from the previous four surveys (catch ranged from 450 to 999 crappies/survey). However, the size distribution was similar across surveys (fish measured 4 to 14 in). Biologists plan to evaluate these populations soon to determine if this observation was an anomaly or if crappie abundances are currently low. Crappie populations often fluctuate naturally as a result of variability in annual year class strength.

Blue Marsh Lake supports one of the most diverse sport fisheries in southeast Pennsylvania, which should put it high on angler's lists as a place to visit because of these tremendous opportunities.

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