

Potomac River Muskellunge

The non-tidal Potomac River currently supports Maryland's only "true" muskellunge population. This relatively new fishery is maintained entirely through natural reproduction. Favorable habitat conditions and natural reproduction have allowed the muskellunge population to slowly expand its range in the upper Potomac River. Muskie have been documented from White's Ferry (Montgomery County, MD) to Spring Gap (Allegheny County, MD), with the highest densities and most popular angling opportunities found throughout the Washington County section of the river (Dam 3 to Hancock).

History:

From 1989-2005, the Maryland Department of Natural Resources (MDNR) Freshwater Fisheries Program, stocked hybrid tiger muskies into the non-tidal Potomac to provide anglers additional sportfishing opportunities. Stocking efforts were reduced substantially from 2000–2004, and ceased in 2005 due to the expansion and stability of a "true" muskellunge population. Because they are sterile, current and future tiger muskie encounters in the Potomac River are unlikely.



Photo of tiger muskie (top) and a true muskellunge (bottom). This was the last verified tiger muskie collected by MDNR in the upper Potomac River (2012).

True muskies were first documented in 1996 when a 45", 27.8lb fish was caught and became the first state record muskie for Maryland. This muskie was estimated to be 10 years old by scale analysis. Later that year a single juvenile was collected during a fall electrofishing survey. By 2001, 28 true muskie had been collected representing multiple year classes, suggesting that this species was naturally reproducing in the upper Potomac River. The origin of upper Potomac River muskellunge population remains unknown. Muskellunge may have been inadvertently mixed in with some of the earlier stockings of tiger muskies. The age of the 1996 state record fish also suggests that anglers may have introduced muskellunge into the upper Potomac prior to that year. The most recent Maryland [state record muskie](#) was caught by Tessa Cosens fishing from the bank of the Potomac River near Clear Spring on May 6, 2017. Tessa's giant muskie measured 49 inches in length and weighed 32.5 pounds.



Angler Tessa Cosens with her current Maryland state record muskie

The Fishery:

Since its discovery in 1996, the Potomac River muskellunge population has developed into an impressive fishery. A 36” minimum size, 1 fish per day creel was enacted in 1997 to allow to allow muskie to spawn at least once before reaching a harvestable size. This regulation, combined with high angler volunteer release rates, has proven to be successful in protecting and enhancing the fishery. The current size distribution is one that should be very attractive to fisherman with 13% of the 2016 catch in the 42–50” size class and 31% in the 38–42” range (Figure 1).

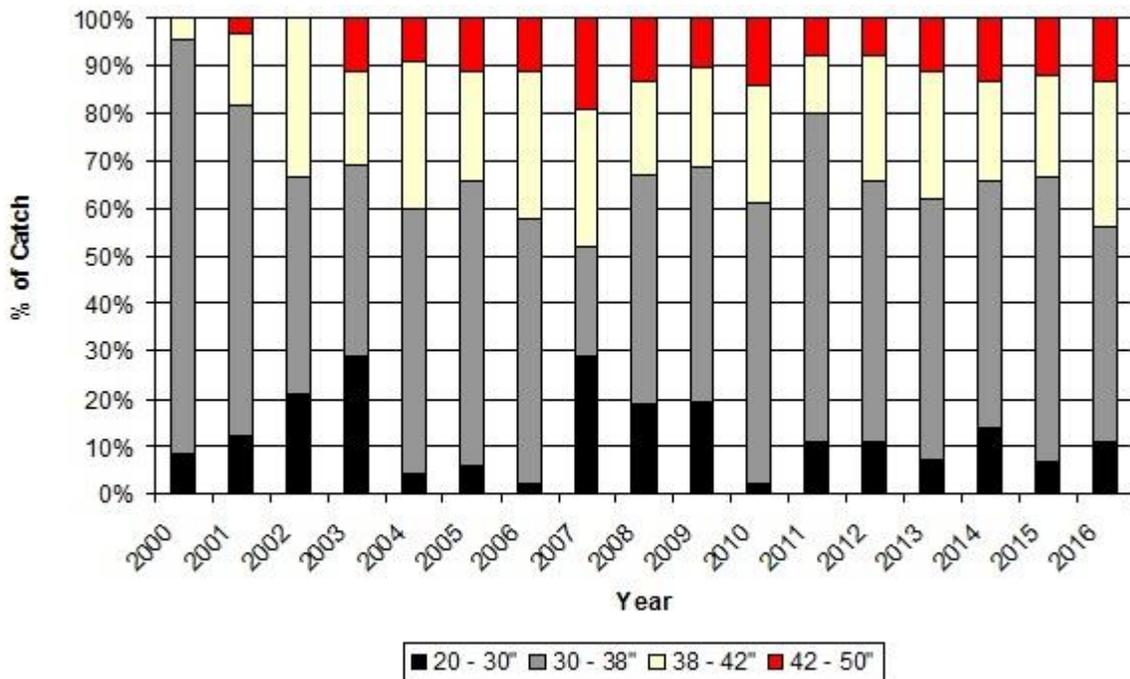


Figure 1. Incremental length-frequency distribution for upper Potomac River muskellunge (2000-2016).

An on-going tagging project was initiated in 1997 to gain insight on harvest, movement, and growth. To date, a total of 776 muskies have been tagged and 231 recaptured for a total recapture rate of 30%. Numbered yellow anchor tags are visible on the leading edge of the dorsal fin of the fish's left side. Anglers are strongly encouraged to report tagged catches by making a quick note of the four digit number illustrated on the tag and measuring the fish to the nearest 1/2".

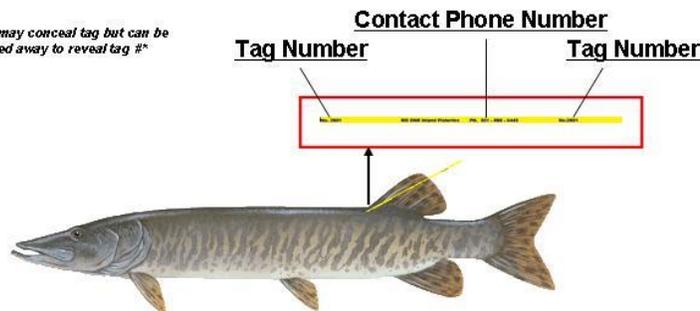
ATTENTION ANGLERS

Muskellunge in the Potomac River are currently part of an on-going research project. If you catch a fish with a single or double tag, we ask that you report it by calling **301-898-5443**.

Do not remove the tag from the fish, but please record the following information:

- 1) Tag Number
- 2) Date Caught
- 3) Location of capture
- 4) Length, to the nearest 1/2 inch
- 5) Kept or Released

"Vegetation may conceal tag but can be easily scraped away to reveal tag #"



Muskellunge movement is variable with some fish being rather sedentary, while others move great distances. The furthest movement documented has been roughly 75 miles. Harvest of tagged fish is extremely low (1%) indicating the muskie fishery is regulated by voluntary catch and release. However both recapture rate and harvest are likely underestimated due to non-reporting and/or delayed mortality of angled fish. In order to minimize delayed mortality of angled fish a few critical guidelines are strongly recommended:

1) Resist the urge to target muskies during stressful conditions

Muskellunge are considered a "coolwater" fish, making them more sensitive to warmer water temperatures. During summer months when water temperatures reach or exceed 80°F, muskies often seek cooler water in order to successfully extract oxygen from the water. Muskies caught near the upper end of their temperature range can experience physical stress that they may not be able to recover from.

2) Use appropriate release tools and handling

Hooking a muskie is quite an accomplishment, since they are considered "a fish of 1,000 casts" for a reason. But dealing with a large and powerful fish that has a mouth full of hooks and teeth can be a daunting task. There are several essential tools that will protect both the angler and the fish.

- a) **A large landing net** – as the fish tires and approaches the boat or bank, the first course of action should be to lead the fish, head first, into the net. The net should be kept in the water until hook(s) are removed. After successfully removing hooks, the fish can be lifted out of the net for a quick photograph and release. When handling, make certain to support the weight of the fish with both hands and **NOT** vertically by the gills.
- b) **Long needle nose pliers** – keeping hands away from a muskie’s razor sharp teeth and likely razor sharp hooks can be accomplished by using long handled pliers to remove hook(s).
- c) **Scissors** – occasionally, muskies will roll and tangle themselves up in both the line and leader. Scissors can be used to cut the line, leaving just the leader and lure for a less cumbersome removal.
- d) **Hook Cutters** – there are some occasions when hooks are too difficult to remove with pliers; either because they are lodged in a bony portion of the fish’s mouth or they have found their way deep into the throat. A small but stout pair of bolt cutters can be used to cut the shank of the hook for a quick and safe removal.



Recommended handling practice supports weight of fish with two hands. Tag location on leading edge of dorsal fin of fish’s left side.

Volunteer Angler Diary Program:

Angling has proven to be an efficient way to obtain population data on Potomac River muskies, since very few muskies are captured during routine MDNR sampling. In 2009 the Freshwater Fisheries Program established a volunteer angler diary program that uses data from angler-caught fish to help manage the fishery. These data have been used to monitor changes in the size distribution and relative abundance, estimate length-at-age, and determine annual mortality. Muskie anglers are some of the most dedicated and persistent anglers out there. The volunteer angler diary allows anglers to be actively involved in the management of this fishery. To participate, print a copy of the [creel sheet](#) and return the completed sheet at the end of the fishing season or calendar year. It is equally as important to record trips where no fish were caught as it

is to report successful trips. Participating anglers are entered into a prize lottery, provided with a summary report of each year's results, and given a complimentary Maryland Muskie hat.

Summary of Potomac River Muskellunge Angler Catch Data (2010-2016)

	2010	2011	2012	2013	2014	2015	2016
Total Catch	94	205	226	168	212	180	119
Angler Hours	545	1413	2988	2633	2839	1771	1480
Total Catch/Hour	0.17	0.15	0.08	0.06	0.07	0.10	0.08
# Trips	67	172	295	321	378	332	286
Hours/Fish	5.9	6.7	12.5	15.7	13.5	9.8	12.4
# Participants	5	10	15	16	15	13	12
Recaptures	14	19	15	12	20	14	6
% Recapture	14.9	9.3	6.6	7.1	9.4	7.8	5
Mean Length	36.4	35.4	36	36.8	36	36.1	37.1

For more information or questions about the upper Potomac River muskellunge fishery, please contact Josh Henesy (Josh.Henesy@maryland.gov).