

2017 Upper Potomac River Smallmouth Bass Summary

Smallmouth bass are one of the most popular sportfish targeted by anglers on the upper Potomac River. Often considered one of the hardest fighting freshwater fish, smallmouth bass can be found throughout the river and its larger tributaries. The Maryland Department of Natural Resources, Freshwater Fisheries Program monitors the condition of the smallmouth bass fishery through a combination of juvenile, adult, and angler surveys.

Reproduction

Assessing the number of new fish entering the population is a key factor for the smallmouth bass fishery. Natural reproduction of smallmouth bass is monitored through summer shoreline seine surveys targeting juvenile fish. Monitoring stations from Paw Paw, WV downstream to Dam 2 (Seneca) have been sampled annually since 1975. The average number of young-of-year (YOY) smallmouth bass from these seine surveys are used as an index of recruitment for that particular year-class. Recruitment index scores have been down for both 2017 and 2016. The 2017 recruitment score of 0.4 juvenile smallmouth bass/seine haul was below the long-term (1975-2017) median score of 1.1 smallmouth bass/seine haul (Figure 1). High flow events in May have been linked to lower recruitment index scores. High river flows either during or shortly after smallmouth bass spawning will negatively impact that year's juvenile recruitment. Upper Potomac River flows for May 2017 were well above the long-term average and were probably a major cause of the low recruitment index score. Stronger year-classes observed in the 2015, 2012 and 2011 index scores have helped maintain a productive adult population in the river.

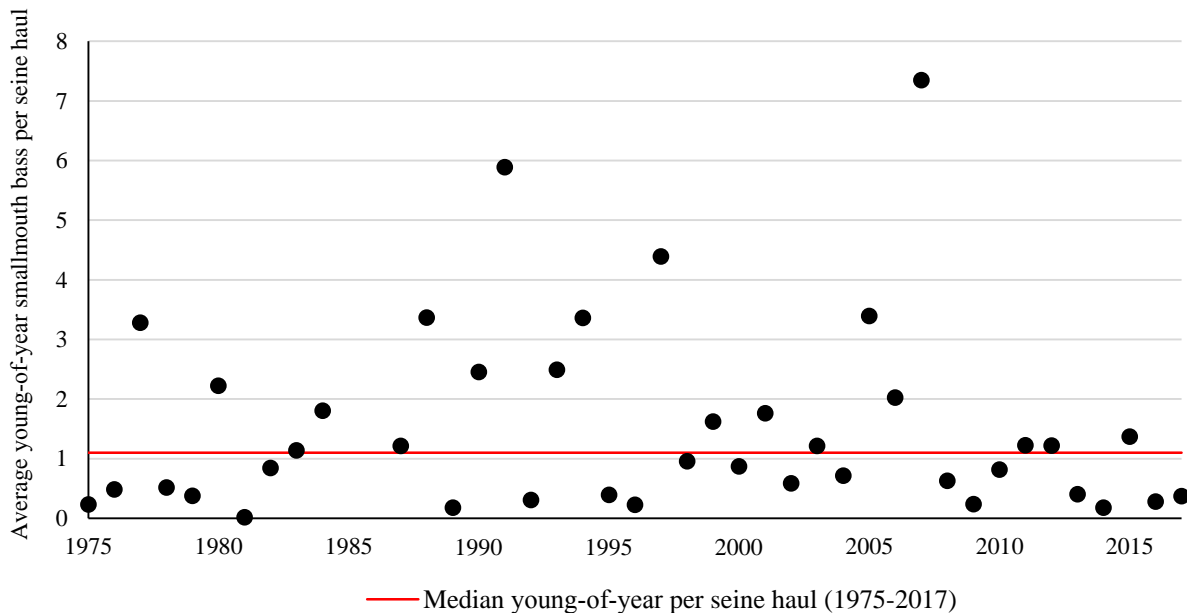


Figure 1. Average yearly smallmouth bass recruitment score (young-of-year/seine haul) for upper the Potomac River (1975-2017)



Juvenile smallmouth bass (left); conducting a shoreline seine survey (right)

Fall Electrofishing Survey

The adult smallmouth bass population is assessed during annual fall boat electrofishing surveys. 10 stations were sampled from Little Orleans downstream to Edwards Ferry to gather data on smallmouth bass size distribution and abundances. A total of 618 smallmouth bass were collected during 7.1 hours electrofishing effort. The average length of adult smallmouth bass collected was 11.1 inches. Several fish greater than >18 inches were collected including a 22 inch smallmouth bass from the Shepherdstown section of the river (see photo below). This is one of the largest smallmouth bass sampled by the department during the course of these surveys. In general, upper river stations (Little Orleans to McCoys Ferry) had a high abundances of bass 8-12 inches in size (Figure 2). The middle river section (Williamsport to Harpers Ferry) had good numbers of smallmouth bass in the 10-14 inch range and the lower river section (Brunswick to Edwards Ferry) had bass with an average length of 11.2 inches and 10 percent of the sample >15 inches.



Twenty-two inch smallmouth bass collected in boat electrofishing sample from Shepherdstown section of upper Potomac River

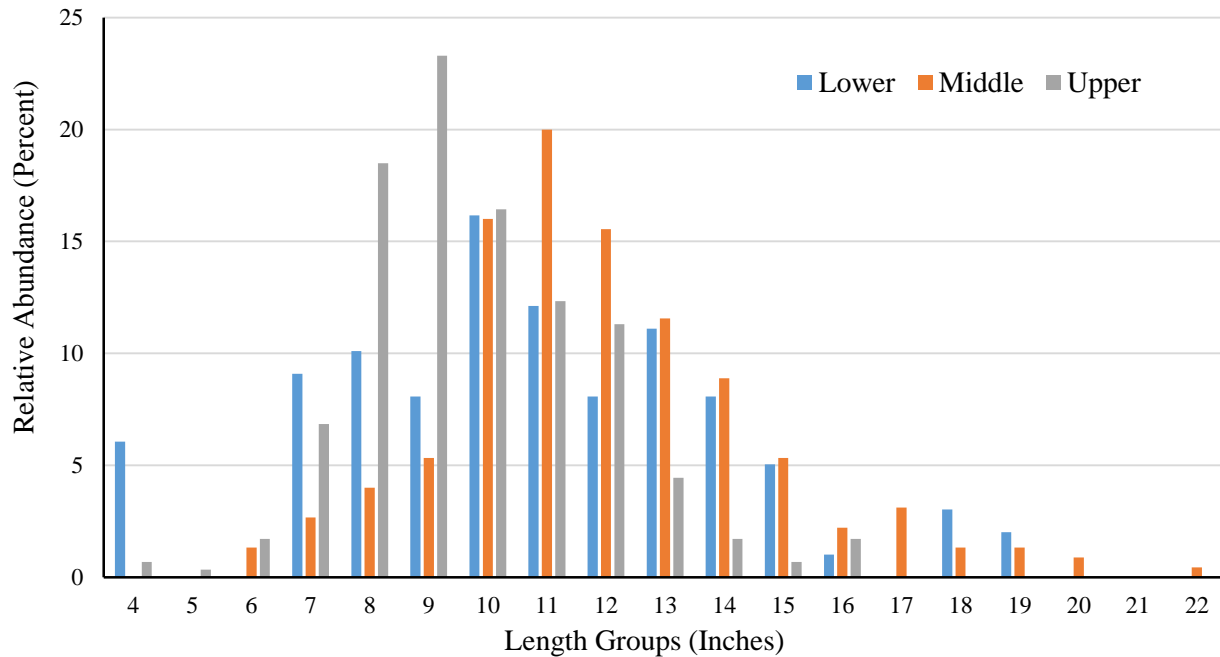


Figure 2. Size distribution of smallmouth bass from the lower, middle, and upper sections of Potomac River collected by fall boat electrofishing in 2017

Trends in smallmouth bass abundance are assessed using boat electrofishing catch rates (number of bass/hour). An estimate of relative population abundance, a high electrofishing catch rate indicates a large population size. A low electrofishing catch rate indicates a small population size. The average catch rate for smallmouth bass >11 inches in the upper Potomac River for 2017 was 39 fish/hr (Figure 2). This is above the long-term median (1988-2017) catch rate of 23 fish/hr. The average catch rate for smallmouth bass >14 inches was 14 fish/hr, well above the long-term median value of 6 fish/hr. When examined by river section, the highest smallmouth bass electrofishing catch rates (fish >11 inches/hr) were in the middle section (Williamsport to Harpers Ferry) with an average of 54 fish/hr. The upper river section (Little Orleans to McCoys Ferry) had an average catch rate of 40 fish/hr and the lower river section (Brunswick to Edwards Ferry) had an average catch rate of 21 fish/hr.



Nineteen inch smallmouth bass collected from Edwards Ferry section of upper Potomac River

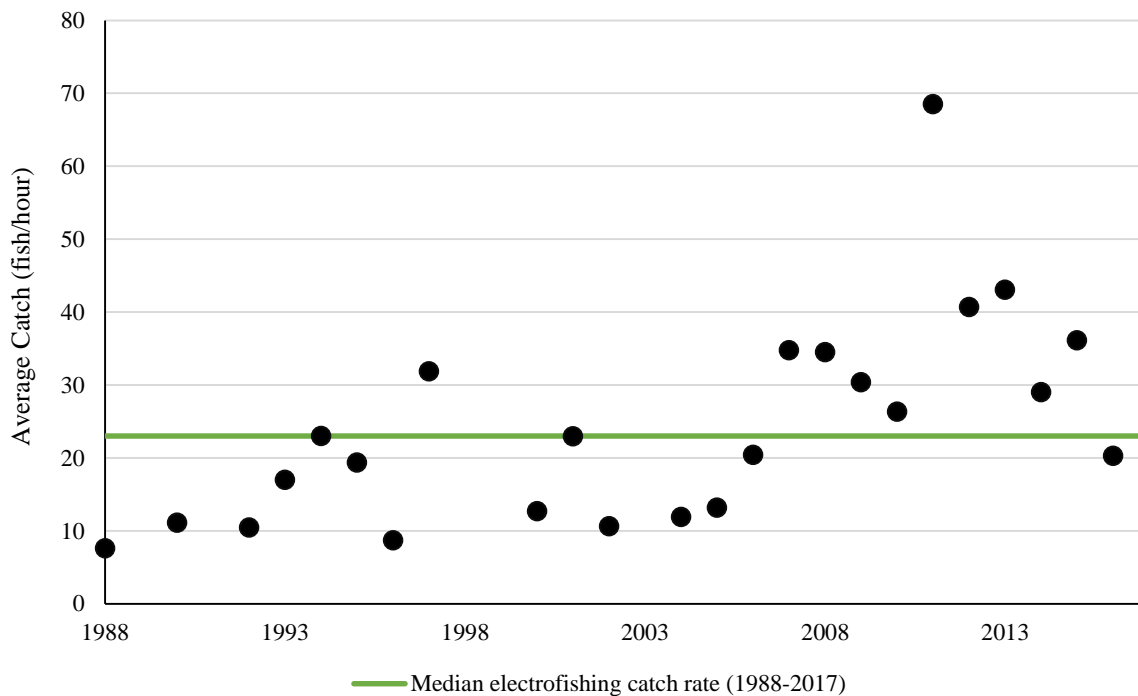


Figure 3. Average annual fall electrofishing catch rate of smallmouth bass >11 inches in the upper Potomac River (1988-2017)

Another useful measure of smallmouth bass abundance comes from catch data submitted from bass tournaments conducted on the upper Potomac River. As part of the tournament permitting process, organizers are required to submit information such as total number of bass caught, number of participants, and hours on the water to the department. This information can be used to generate tournament angler catch rates. For 2017, 11 bass tournaments were conducted on the upper Potomac River with an average catch rate of 0.16 bass >12 inches/hr. This exactly matches the long-term (2010-2017) bass tournament catch rate of 0.16 bass >12 inches/hr. It is interesting to note that when average annual bass tournament catch rates are plotted with department fall boat electrofishing catch rates, they have similar patterns over time (Figure 4). An increase or decrease in bass tournament catch rate (bass >12 inches/hr) for a given year is matched by the same response in department fall boat electrofishing catch rate (bass >12 inches/hr).

All of the information collected and gathered by the Freshwater Fisheries Program is used to help assess and manage the multiple fisheries on the upper Potomac River. Based on 2017 results, smallmouth bass fishing for 2018 should remain good with catchable size fish being plentiful throughout the river.

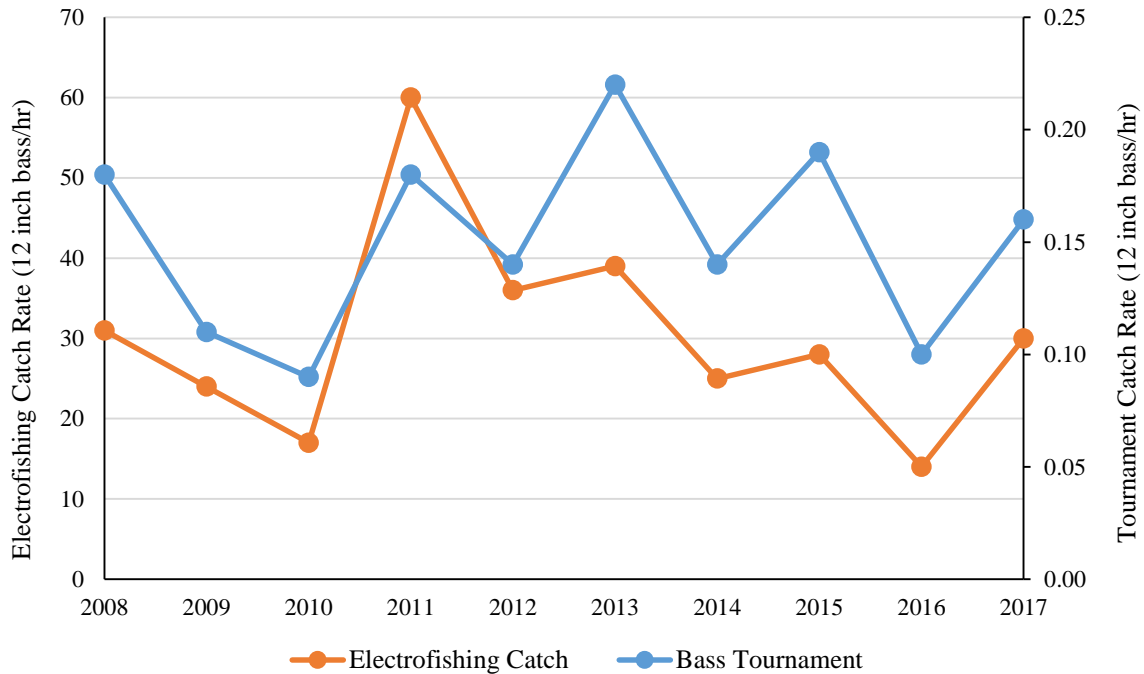


Figure 4. Maryland Department of Natural Resources boat electrofishing and upper Potomac River bass tournament catch rates for bass >12 inches (2008-2017)

Smallmouth bass regulations in Maryland

- Minimum Size – 12 inches
- Season – Closed March 1–June 15 (Catch and Release is permitted at all times)
- Creel Limit – 5
- Catch-and-Return Bass Fishing Area – Dam 2 (Seneca Breaks) upstream to mouth of the Monocacy River

For more information of question regarding the upper Potomac River fisheries, please contact Michael Kashiwagi (Michael.kashiwagi@maryland.gov).