

Historic catch rates of adult smallmouth bass at the middle and lower reaches of the Susquehanna River



Figure 1. Area 7 fisheries biologist John Frederick with a smallmouth bass from the middle Susquehanna River near Highspire, PA. (photo: PFBC)

Adult smallmouth bass have been sampled annually since 1990 by the Division of Fisheries Management in the major rivers and streams of the Commonwealth as index of the catchable smallmouth bass population. This index is then used to gain insight about overall population dynamics of smallmouth bass including the distribution of the different age and size classes.

Since 2005, high flow conditions following the spawn (2006 and 2009) and disease incidence (2005, 2007, and 2008) have led to five consecutive year classes with below average reproductive success in the middle and lower Susquehanna River and to a lesser extent on the West Branch Susquehanna and upper Susquehanna rivers. It appears that years of repeated poor recruitment have led to a decrease in the overall population of smallmouth bass in the middle and lower Susquehanna River. However, catch rates of legal-length smallmouth bass (≥ 15 inches) have remained at or near historic average in the middle Susquehanna River (figure 4) and above the historic average in the lower Susquehanna River (figure 5).

Even though recent years have been outstanding for anglers in regards to catching quality-sized smallmouth bass, the lack of younger age classes in the population is cause for concern. The younger age classes are necessary to replace older fish as they exit the population either through harvest or natural mortality. Scientific studies show that a single, strong year class can support a fishery for many years. Without one or more strong year classes in coming years, the reduction of the existing aging population through natural mortality and harvest may result in smallmouth bass population that does not meet the expectations that anglers have come to rely on from the Susquehanna River.

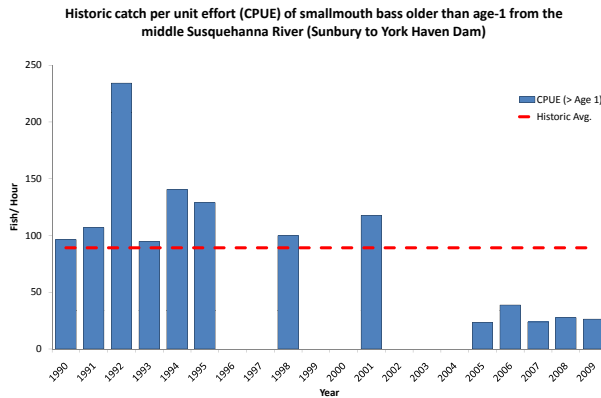


Figure 2. Historic catch rates of adult smallmouth bass at the Susquehanna River between Sunbury and York Haven Dam. Blank values indicate years when no surveys were conducted, not zero values. Note differences in scale between graphics.

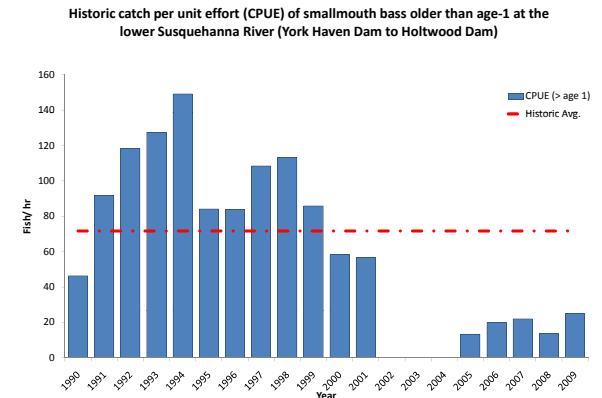


Figure 3. Historic catch rates of adult smallmouth bass at the Susquehanna River. Between York Haven and Holtwood dams. Blank values indicate years when no surveys were conducted, not zero values. Note differences in scale between graphics.

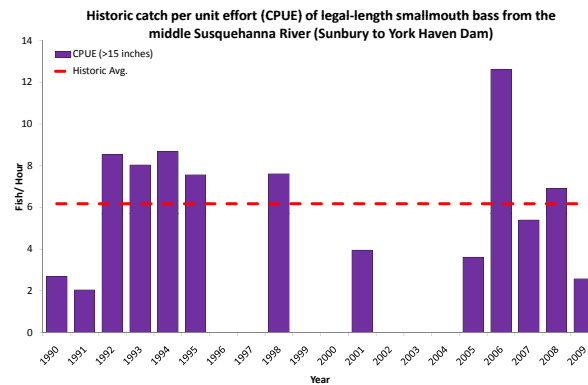


Figure 4. Historical catch rate of legal-length smallmouth bass (≥ 15 in., 375mm) at the Susquehanna River between Sunbury and York Haven Dam. Blank values indicate years when no surveys were conducted, not zero values. Note differences in scale between graphics.

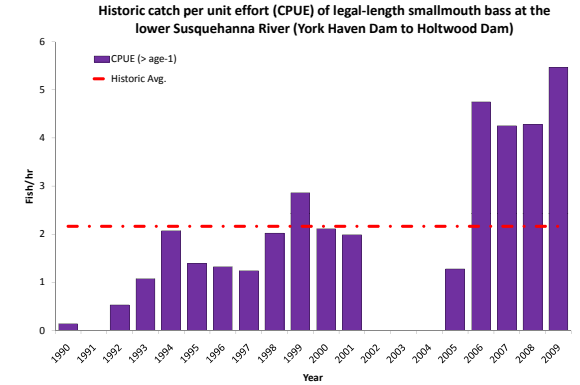


Figure 5. Historical catch rate of legal-length smallmouth bass (≥ 15 in., 375mm) at the Susquehanna River between York Haven and Holtwood dams. Blank values indicate years when no surveys were conducted, not zero values. Note differences in scale between graphics.



Figure 6. Area 7 fisheries manager Kris Kuhn (r) and biologist John Frederick (l) process smallmouth bass from the middle Susquehanna River. (Photo: PFBC)

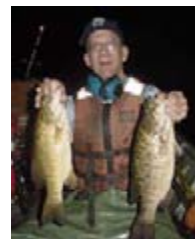


Figure 7. Area 5 fisheries manager Mike Kaufmann with two smallmouth bass from the lower Susquehanna River. (Photo: PFBC)



Figure 8. Division of Fish Production Services Chief Andy Shiels with a fly-rod-caught smallmouth bass from the middle Susquehanna River (Photo: M. Hendricks)



Figure 9. Adult smallmouth bass being released after being caught by an angler (Photo: A. Shiels)

