

Susquehanna River and West Branch Susquehanna River

2016 Young-Of-Year Black Bass Survey

Young-of-year (YOY) or recently spawned and hatched black bass (*Micropterus* species) are surveyed annually by Division of Fisheries Management staff at major rivers statewide as an index of reproductive success. Since 2005, these collections have also been used to determine incidence and prevalence of disease affecting YOY Smallmouth Bass *Micropterus dolomieu* in the Susquehanna River system as well as for detection in areas where this condition has not been noted historically.

Division of Fisheries Management staff from Areas 3, 4, 6, and 7 surveyed YOY black bass (primarily Smallmouth Bass) at the West Branch Susquehanna River, upper Susquehanna (North Branch), lower Susquehanna (York Haven Dam to Holtwood), and middle Susquehanna River (Sunbury to York Haven Dam), respectively. Surveys were conducted using backpack electrofishing gear and targeted near-shore, gravel and cobble habitats favored by YOY Smallmouth Bass that, for the most part, have been sampled annually in the past.



Representative young-of-year Smallmouth Bass collected during 2016 surveys

Survey results varied by river reach during 2016. Surveys at the West Branch Susquehanna River yielded catch rates below long-term medians (Figure 1) while the upper Susquehanna River (North Branch), lower Susquehanna River and middle Susquehanna River yielded catch rates near the long-term median values (Figures 2 - 4, respectively).

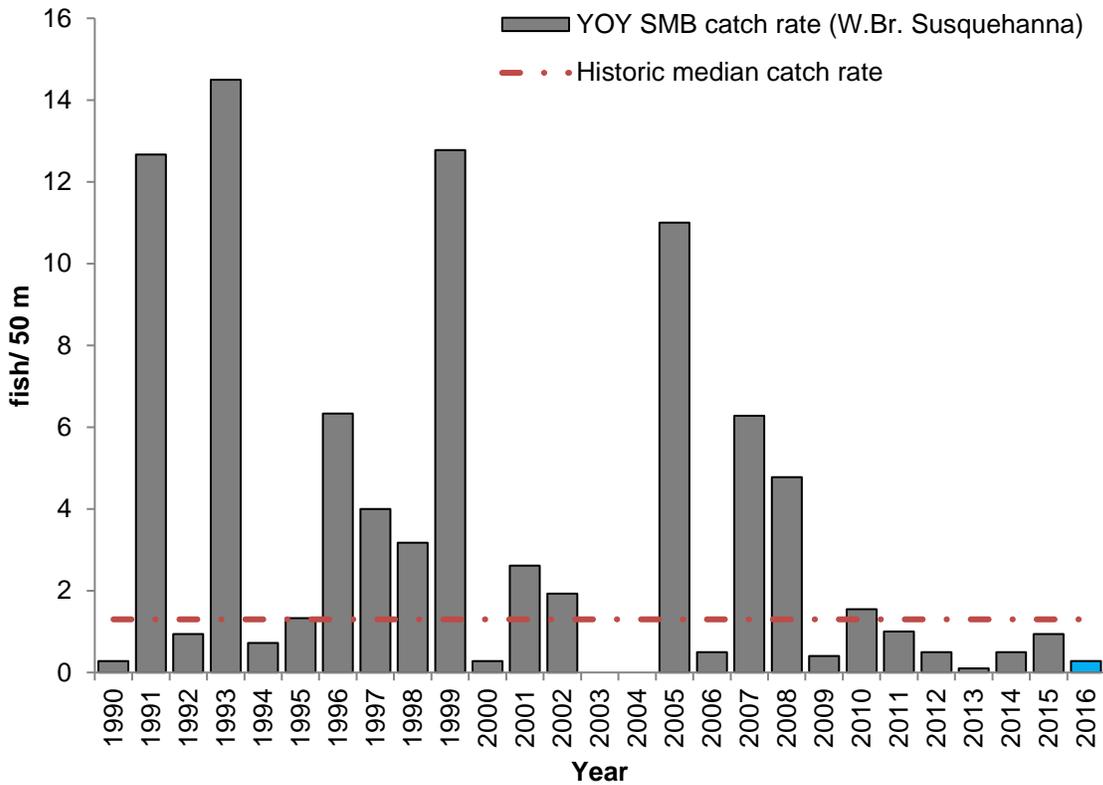


Figure 1: Catch rate of young-of-year Smallmouth Bass at the West Branch Susquehanna River. Blank values indicate years when surveys were not conducted not zero values.

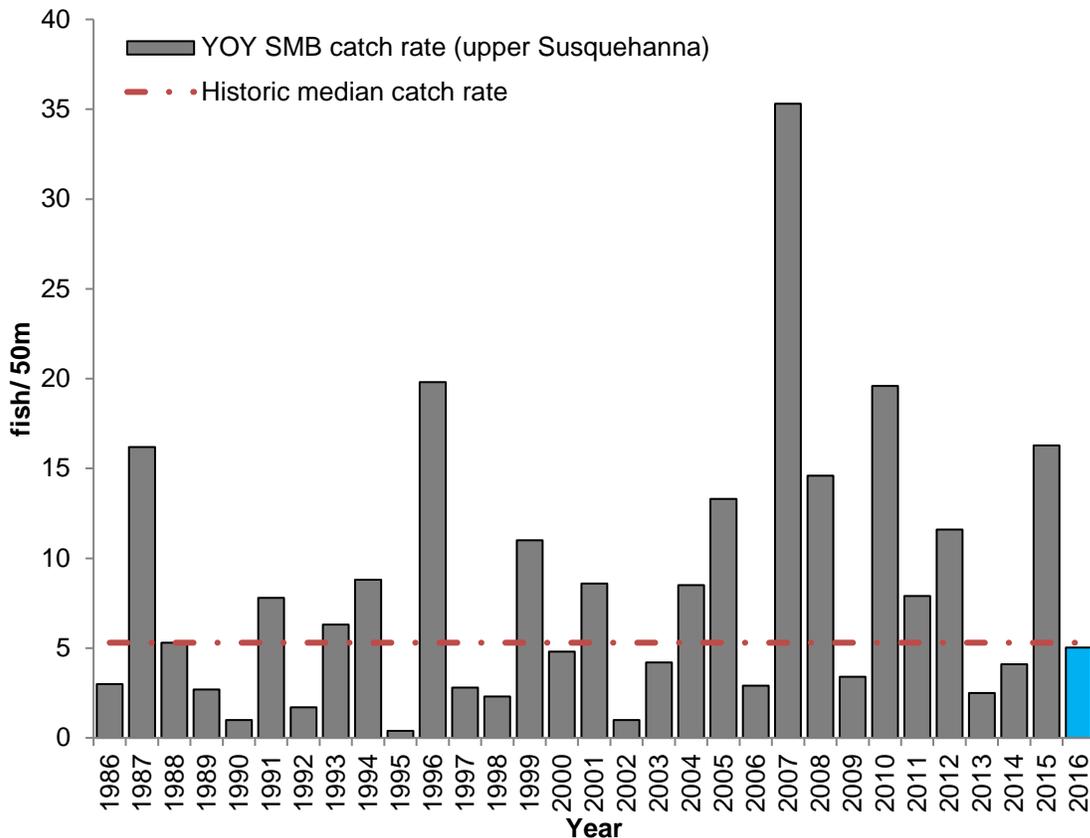


Figure 2: Catch rate of young-of-year Smallmouth Bass at the upper Susquehanna River (North Branch). Note difference in scale among graphics.

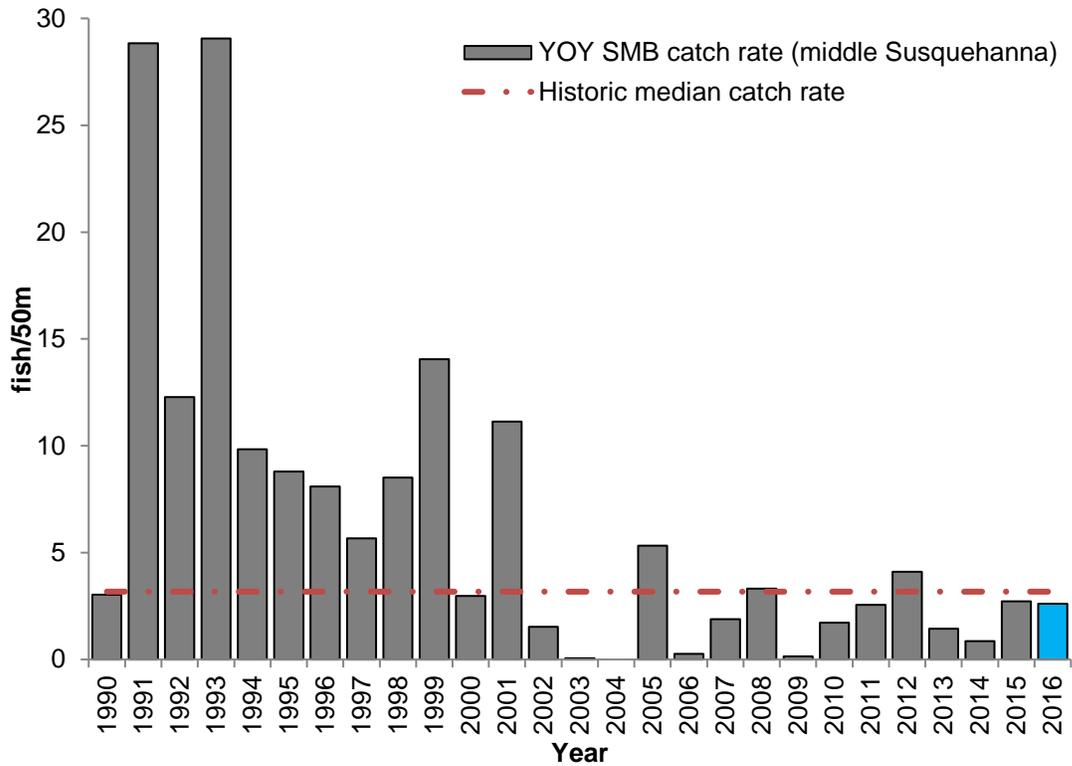


Figure 3: Catch rate of young-of-year Smallmouth Bass at the middle Susquehanna River (Sunbury to York Haven Dam). Blank values indicate years when surveys were not conducted not zero values. Note differences in scale among graphics.

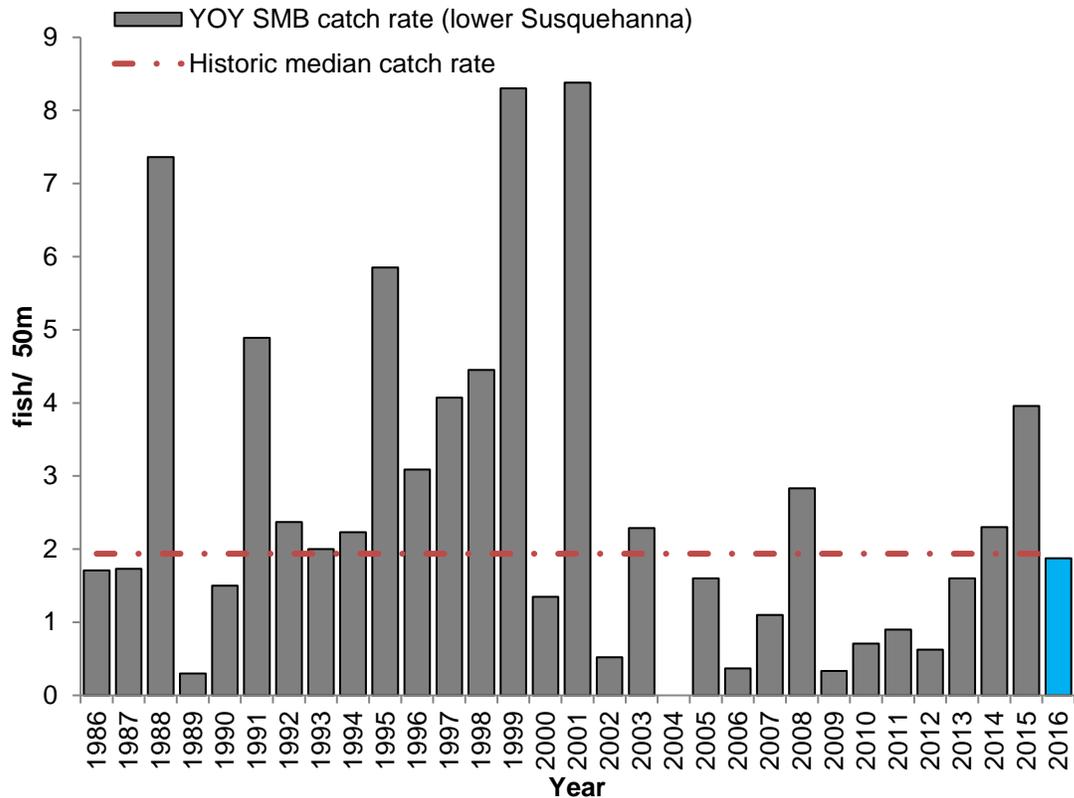


Figure 4: Catch rate of young-of-year Smallmouth Bass at the lower Susquehanna River (York Haven Dam to Holtwood Dam). Blank values indicate years when surveys were not conducted not zero values. Note differences in scale among graphics.

Disease was documented at three of the four river reaches during 2016 surveys (Figure 5). Prevalence of disease among YOY Smallmouth Bass collected during 2016 was highest at the upper Susquehanna River (20%) while prevalence at the middle Susquehanna River and lower Susquehanna River were 1% and 9%, respectively (Figure 5). Initial surveys at the West Branch Susquehanna River did not document diseased YOY Smallmouth Bass but subsequent collections during early August documented diseased YOY Smallmouth Bass. Prevalence could not be quantified with these collections as the capture efficiency of healthy YOY Smallmouth Bass decreases as they grow to larger size. As such, follow-up collections tend to catch diseased fish only or at a higher proportion than they actually exist in the population.

River conditions during late spring and early summer 2016 were optimal for Smallmouth Bass reproduction and recruitment at the Susquehanna River. Future boat electrofishing surveys targeting adult Smallmouth Bass will provide further insight into the survival and contribution of the 2016 year class to the catchable bass population in the West Branch Susquehanna River and various reaches of the main-stem Susquehanna River.

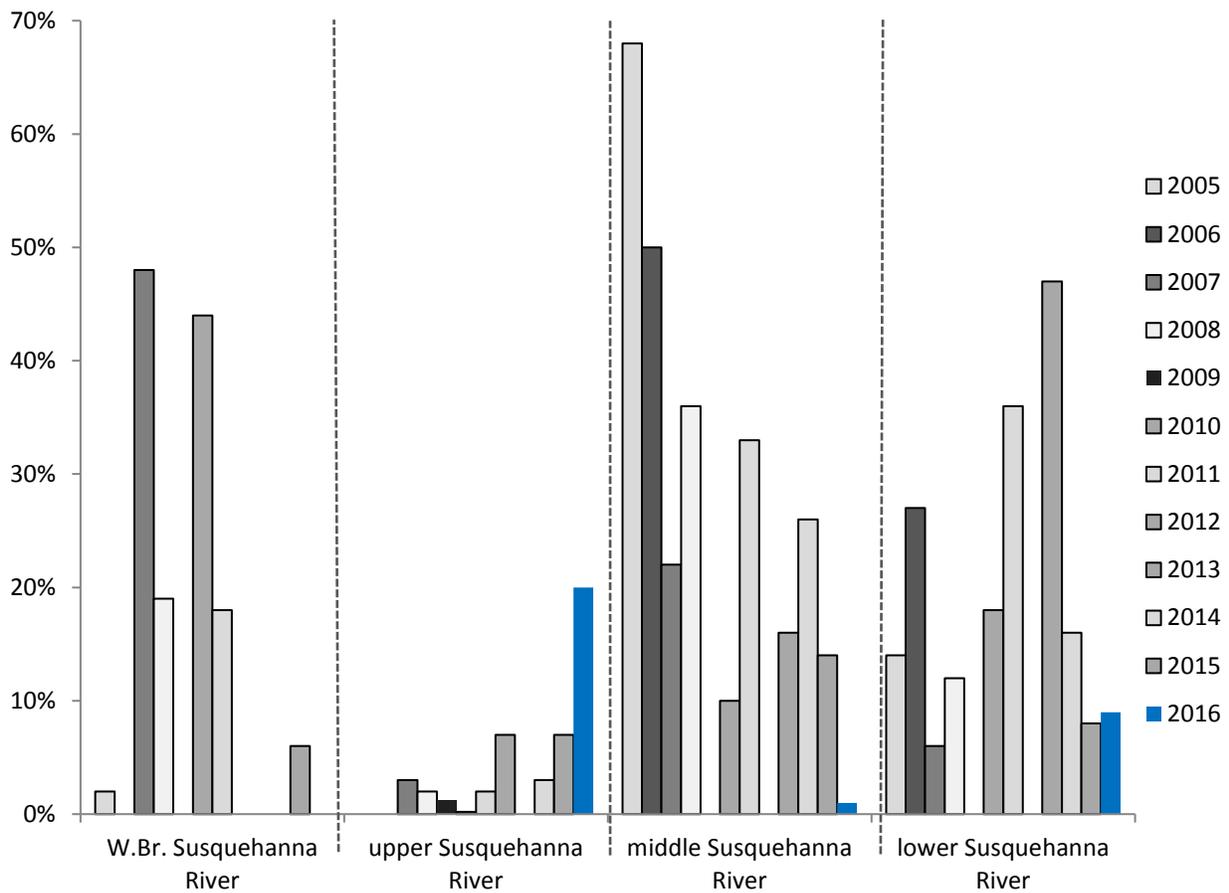


Figure 5: Prevalence of disease among YOY Smallmouth Bass captured since discovery of the condition in 2005. Results depict disease prevalence from collections at the West Branch Susquehanna River and various reaches of the Susquehanna River. Due to small sample sizes during some years, prevalence values reported are considered site-specific and cannot be extrapolated to be representative of the entire population.