PROTECT CONSERVE ENHANCE

The Susquehanna River

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The Susquehanna River is a river that has been dammed, polluted, logged, mined, flooded, heated, used as a source for human consumption, used by industry, agriculture, recreation and just about any other use that one can possibly imagine. It is also the heart and soul, the essence, of a fishery that includes migratory American shad, smallmouth and largemouth bass, catfish, muskellunge, walleye, carp and an increasing number of invasive species such as flathead catfish. Recently, though, the focus of interest about the river has been the health of the smallmouth bass. More specifically, interest is focused on the bacterial disease columnaris *(Flavobacterium columnare)*. This disease is attributed to infecting or killing 22-68% of our young smallmouth bass in the Sunbury to York Haven section of the river during each of the past four years.

In late January, the Fish & Boat Commission, along with the U.S. Geological Survey (USGS), the Department of Environmental Protection (DEP) and the Susquehanna River Basin Commission (SRBC), held a public meeting on this important topic. Attended by nearly 200 people, this was an opportunity for the agencies to present the results of several studies and to answer questions and receive comments from the public. All of the material presented at the meeting is found on our website at **www.fishandboat.com**.

Anyone who spends time on any river, large or small, knows that rivers change. In fact, they are in a constant state of flux. Rivers move. They are in a never ending process of recreating themselves resulting in a depth of character unique to each river. Of course, this impacts the animals that live in the river. Smallmouth bass spawn in the late spring and build a nest that they guard against predators. A flood at the wrong time of year will wipe out an entire year class of fry. We know that occurrence of floods during the critical nesting and the black fry phase is much more important in impacting year class strength than the number of adult spawning bass. More sinister, though, have been the changes less visible and more difficult to measure. For example, the columnaris disease is, for the most part, impacting the middle section of the river and is far less prevalent in the West and North branches. It is only a minor factor in the river below York Haven. We also know that the columnaris bacterium is commonly found in soils and river bottoms statewide, but has not impacted fish in our other major rivers such as the Delaware and Allegheny. Columnaris is generally a secondary infection resulting when other stresses impact fish and make them more vulnerable. Why are the smallmouth bass in the middle section of the Susquehanna stressed in such a way that makes them susceptible to columnaris? What else

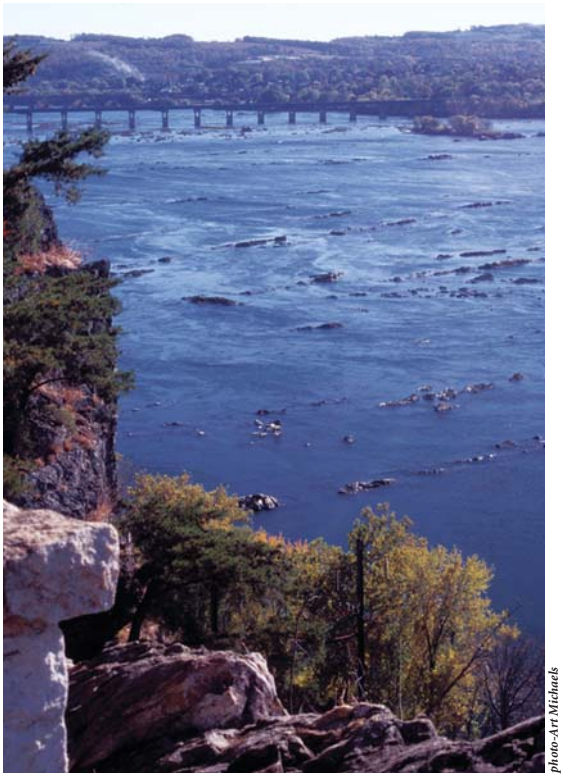


photo-Art Michaels

Chickies Rock, Susquehanna River

Susquehanna River

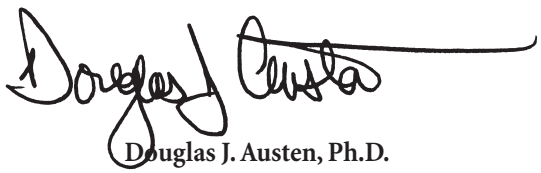
photo-Art Michaels

is happening in the river that can help us understand this situation?

It is probably fair to say that, while the general response of the public who attended the recent smallmouth symposium was very positive, it is true that an undercurrent of frustration pervaded both the audience and the staff making presentations because of the lack of answers to the why and what questions. Pollution loading has been measured and will continue to be tracked even more closely. There seems to be little doubt that there are fewer nutrients in the river now than there was 15 or 20 years ago, when bass were flourishing. Questions were asked about other trace chemicals such as hormones and other drugs that come through sewage treatment systems. In some river systems, such as the Potomac, these chemicals have led to alterations in fish physiology such as transgendered fish. These do not appear to be an issue in the Susquehanna River. Low dissolved oxygen in side channels and shallow waters, where young smallmouth bass spend time, is one factor in inducing stress. Is this unusual and linked to larger climate change problems? We don't know since we haven't been tracking temperatures in these areas until recently.

We'd all rather have a healthy Susquehanna River. Where do we go from here? To address these many questions, we need to conduct more studies. The Fish & Boat Commission has already allocated up to $200,000 for additional water quality studies to be done by the USGS. Our partners in DEP and SRBC will ramp up their efforts and our biologists have expanded the sampling of fish throughout the basin and in other rivers. We will continue to examine regulations to protect the fish, but creel survey results clearly show that harvest of smallmouth bass is a minor factor in influencing the population. Ninety-four percent (94%) of smallmouth bass that are caught are released. It is likely that catch-and-release hooking mortality kills more fish than people taking fish home for a meal.

We know our river is not well, but we don't know the cause of the illness. We are continuing to ensure cleaner water and reduce sources of pollution and helping ensure sufficient flows by protecting the river from being overused by industry and other extractive uses. We don't know if such actions will eliminate columnaris. However, these actions are logical and reasonable steps for a healthier river that will benefit all of us today, as well as future generations.



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