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# Essex County Museum and Historical Society Bulletin



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TAPPAHANNOCK, VIRGINIA

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## HOPE ON THE HALF SHELL

By Richard Moncure

So, what does it take to grow an oyster that restores a river, revitalizes an economy and reinvigorates a culture? Simply put, it takes a healthy watershed. Like grapes, oysters are known to take on the *flavor* of the regions they are produced in, with each region offering its own unique taste. The Rappahannock River oyster today is gaining national attention for its flavor, but it didn't happen overnight.

It was not until the late '90s that the U. S. Army Corps of Engineers began to explore the possibility of jumpstarting native oyster restoration efforts in the lower Rappahannock River. The Rappahannock River had long been known for its generous-sized oysters with a smooth, buttery taste that is less salty than oysters found along the Eastern Shore and further up and down the East Coast. This flavor is shaped by the river's abundant supply of minerals flowing down from the Blue Ridge Mountains. Like most places in the Chesapeake Bay, by this time Rappahannock River oysters were showing the impact of decades of overharvesting. This impact on oyster populations in the Rappahannock River would be magnified by a pair of diseases, commonly known in the oyster industry as "MSX" and "Dermo," that would threaten to wipeout our native species entirely.

As oysters disappeared, the Chesapeake Bay began to reflect the loss of a keystone species. Even the bountiful Rappahannock River became a mere shadow of her former robust self. The river that had provided for the great chieftom of Powhatan and his compassionate daughter, Pocahontas, as well as the expeditions of John Smith and the birth of our nation, would find herself on the brink of disaster.



The Rappahannock was losing her internal filters, and at the same time, her external, protective skin. With increased agricultural, residential and commercial development in the Rappahannock River watershed, wetlands and riparian buffers also began to disappear. In addition to providing habitat for

river "critters," wetlands and riparian buffers filter trash and take up harmful nutrient pollutants, like nitrogen and phosphorus. Many of the Rappahannock River watershed's property developers and farmers, eager to increase productivity, had not considered the ecological value of these lands along the water's edge. Generations of clearcutting buffers and filling wetlands would be repeated by later developers and homeowner's, unaware of their impact downstream.

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Excess nutrients, entering the river unchecked, fuel massive algae blooms that grow so large they can't support themselves. When these algae blooms decompose, they take up the dissolved oxygen in the river system, leaving behind large "Dead Zones," or stretches of river without enough dissolved oxygen to support aquatic life. At the confluence of the Rappahannock River and the Chesapeake Bay, there is a steep sill that causes water in the lower parts of the water column to oscillate upriver and downriver with



winds and tide, but these waters have a difficult time completely flushing and re-oxygenating at such depths. During the summer months this causes the Rappahannock River "Dead Zone" to stretch from Tappahannock to Windmill Point in the lower depths of the water column, stressing the few remaining oysters and their reef communities in the Rappahannock.

Scientists and the seafood industry began to grasp for solutions. The first oyster restoration efforts by the Corps of Engineers in the lower Rappahannock River were designed to improve commercial oyster harvests by simply placing shell, seeded with oyster larvae, on the few remaining beds in the Rappahannock River. This strategy did not consider the need to develop self-sustaining oyster populations, and the greater need to restore the river's ecology. While Rappahannock River "spat on shell" projects were showing signs of hope, scientists had concerns about future spawns and the continuing impacts of sedimentation. Because Rappahannock River oysters were often under significant stress from "Dead Zones," many older oysters quickly became susceptible to disease. Army Corps Engineers even considered introducing the

non-native Asian oyster as a disease-resistant alternative to our native *Crassostrea virginica*.

As scientists debated the pros and cons of non-native species introduction, the native oyster industry all but collapsed. Many of the region's larger oyster-producing companies, such as W. E. Kellum Seafood, Cowart Seafood Corp. and Bevans Oyster Co., imported oyster supplies from Louisiana and the Gulf Coast to try and maintain a dwindling demand in a community that was quickly losing its oyster heritage and culture.

Rather than introduce a new species, scientists and the industry began modifying native oysters to be less susceptible to disease. Introducing a third chromosome rendered the native oyster sterile, allowing the oyster to focus on growth throughout the year, rather than reproduction. Because the triploid oysters grew to market-size more quickly, they could be removed from the river system before becoming prone to "MX" and "Dermo." While the introduction of the triploid oyster helped improve the commercial fishery, it did not answer the many concerns about the need for self-sustaining oyster populations and the restoration of the river's ecology.

Introducing the triploid oyster also took pressure off native oyster beds in the Rappahannock. Recognizing the benefits of a shorter growing period, many Rappahannock River watermen took advantage of cost-share programs that introduced oystermen to aquaculture. For the first time, many of our river's watermen were able to think beyond a "hunter-gatherer" mentality. Oyster growers could plant oyster "seeds," predict growth and mortality rates, and open new doors for marketing and branding.



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The recent branding of our local oyster has generated more of a demand than many in the industry had anticipated. From Topping, Va., the Rappahannock River Oyster Co. has taken our river's name world-wide. The swelling enthusiasm for our local oyster has had a ripple effect on our river economy. In 2014, the state of Virginia reported a commercial oyster harvest of over a half-million bushels. This isn't much when considering historic harvest numbers that were once over seven million bushels, but it is certainly hopeful in the dim light of our last few decades of oyster production. What is more important is that it has revitalized our oyster culture. Understanding the opportunity, many watermen are now beginning to get into seed and larvae production. And the economic spinoffs don't stop there. Just this winter Virginia Gov. Terry McAuliffe announced his support for Virginia's Oyster Trail to connect travelers to a true Virginia oyster experience.



While oyster production is up, celebrations should be tempered and we should seriously consider the tasks ahead. Water quality and habitat conditions in the Rappahannock River have not returned to levels that will support robust populations of our fisheries. In

fact, Ross's Rock, the river's first site of natural spat, located just below the Downing Bridge and one of our river's most historic reefs, remains closed for harvest by the Va. Department of Shellfish Sanitation, until water quality conditions improve. And while a rotational harvest system enforced by the Virginia

Marine Resources Commission has allowed for slight improvements in native stocks, we have yet to provide a self-sustaining solution to native populations. It will take an entire watershed to solve these issues, but with the Rappahannock River oyster, we have hope on the half-shell. And maybe that is just the flavor to keep us coming back for more!

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*About the Author*



**Richard Moncure** is Friends of the Rappahannock's Tidal Rappahannock River Steward. He is currently involved in community education and advocacy relating to the Taylorsville Basin Fracking issue, and he is leading a number of restoration projects relating to living shorelines and oyster reefs.

Richard has spent a lifetime on the Northern Neck and Middle Peninsula. The former owner of the Seafood Market at The Happy Clam and licensed waterman understands the value of the Rappahannock River from "fisherman to fork", and beyond. Richard is a graduate of Woodberry Forest School and Hampden-Sydney College. After college, Richard completed his service in Peace Corps Zambia, working on rural aquaculture projects before returning home to join his family in the seafood business.

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*Photos: Courtesy of Bill Croxton and David Broad*

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**In Memoriam  
Jean Garver**

The Essex County and Historical Society lost a friend and benefactor with the passing of Jean Garver on July 9, 2015. Jean is well remembered as an accomplished portrait artist whose portraits are treasured by all who own them. Her generosity benefited many including the ECMHS where she made available funds from a trust to endow the museum's Essex Gallery.

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***Museum Hours***

***Monday, Tuesday, Thursday, Friday and Saturday 10 a.m. until 3 p.m.***

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