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## **Brook trout the perfect diplomat for negotiating route to cleaner waters**

**Forum / By Nat Gillespie**

Let's make the brook trout a high-profile ambassador for clean water that helps to restore our region's streams, rivers and tidewater.

The state fish for New York, Pennsylvania, Virginia and West Virginia, the brook trout has all the right credentials for the job and a cadre of committed scientists and advocates in its corner. If we are able to meet its standards, the benefits will flow downstream.

The brook trout will not tolerate degraded conditions. It stubbornly demands cool and clean water free of excess nutrients and sediment. It wants to live where trees shade streams and springs and prevent erosion as well as where stream bottoms are paved with silt-free gravel that supports successful spawning and a diverse banquet of aquatic insects.

Brook trout in a stream indicate that water quality is near drinking water standards and that surrounding communities create minimal environmental damage to the stream's watershed. If we can restore our streams so they become comfortable homes for brook trout, then the Chesapeake Bay way downstream will be a healthier place for striped bass and oysters.

Once, brook trout were a common inhabitant of streams throughout the Chesapeake Bay watershed. This is no longer the case. The Eastern Brook Trout Joint Venture, a collaborative effort among 17 states, six federal agencies, six nongovernmental organizations and two universities, in 2005 completed the most comprehensive assessment of the native trout's population ever done. The assessment found that the brook trout had either vanished or nearly vanished from approximately half of the study areas, meaning that the water quality there is not up to its standards.

Within the Chesapeake Bay watershed, the numbers were comparatively worse. More than 61 percent of its subwatersheds have lost all of their brook trout or contain greatly reduced populations. Only 44 out of 1,266 areas were identified as supporting brook trout populations at their historical levels.

Alan Heft, Maryland DNR coldwater fisheries biologist, noted, "Brook trout are rare in Maryland because they are so sensitive to disturbances to their watershed. If we examine the Bay from 40,000 feet, we begin to understand that these mountain and valley streams are roots that nurture the core of the estuary. It becomes clear how crucial brook trout restoration is to the Chesapeake's recovery."

The joint venture study, one of six pilot partnerships in a broader effort called the National Fish Habitat Action Plan, provides a detailed look at how poor land management, livestock grazing and deforestation contribute to heavy sedimentation

and warmer water temperatures, which dramatically alter streams that originally were home to the brook trout.

The fish were forced to retreat from the rich valley streams for small, mountain headwaters, where water quality remained relatively pristine under the cloak of forests. Today's populations of trout are, in a sense, refugees living in fragmented communities, often surviving on federal land where waters again run clear and cold after a long recovery from the widespread timbering a century ago.

But man and brook trout can coexist—if streams are protected. The headwaters of the Potomac River in West Virginia present an example of how that is done. There, brook trout survive in streams draining the ridges that line the valley, but in the streams along the valley floor, warm, muddy water has driven them away.

Brian Moore, director of Trout Unlimited's Potomac Headwaters Home River Project, has partnered with Dominion Power, the National Resource Conservation Service, West Virginia Department of Natural Resources, U.S. Forest Service and a variety of landowners to plant trees and other streamside vegetation; fence livestock away from streams and springs; and develop manure storage and watering spots. Within a year, these simple measures stabilized—and then reduced—the sediment and nutrients going into springs and creeks, he said.

"Once people in the community see the trees we've planted, and then realize the connection between healthy riparian areas, brook trout and water quality, they've said to me, 'I need to get with that program,'" Moore said.

A little regulatory coercion doesn't hurt, either. Moore said many farmers recognize that more requirements will be on the way if efforts to clean up the Bay miss their 2010 deadline.

"We're getting ahead of the curve by acting now to mitigate for future limits on sediment, nitrogen and phosphorus," Moore said.

Could we connect the distant headwaters of central New York, Pennsylvania and West Virginia to the tidewater country with a string of healthy streams and rivers? Absolutely. The brook trout, a native jewel of the Bay watershed's ridges and valleys, can help show us the way.

Starting small, along manageable scales such as those in the mountains of West Virginia, is the best way to solve a problem as daunting and complex as reducing the amount of dirt and manure that washes to the Bay itself.

Given the chance with healthy water, we might be surprised at how brook trout retake their home territory.

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