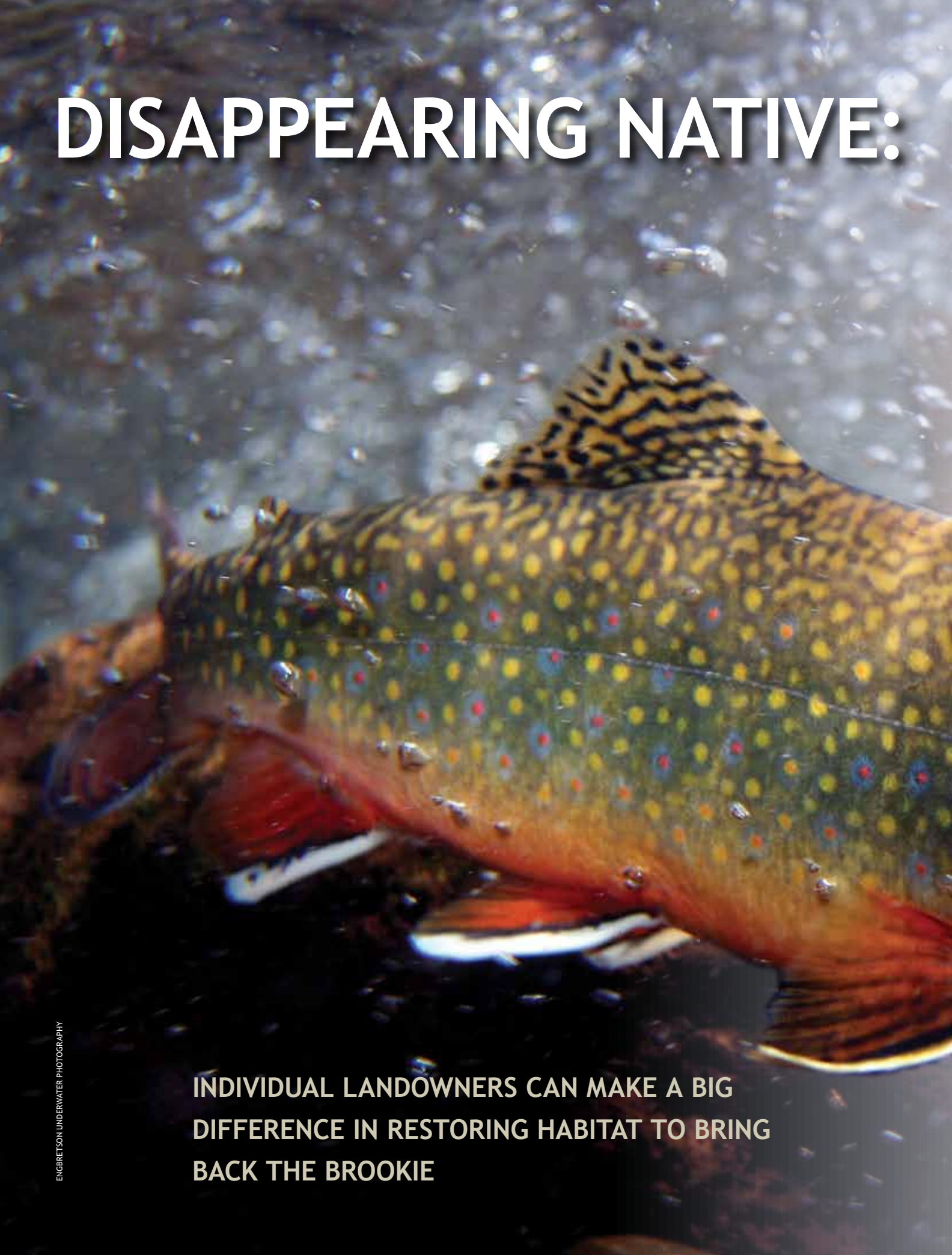
DISAPPEARING NATIVE:



ENGBRETSON UNDERWATER PHOTOGRAPHY

INDIVIDUAL LANDOWNERS CAN MAKE A BIG DIFFERENCE IN RESTORING HABITAT TO BRING BACK THE BROOKIE

THE BROOK TROUT

BY BRUCE INGRAM, FIELD EDITOR

Perhaps no American game fish epitomizes nature's beauty better than the brook trout, with its yellow splotches, blue halos encompassing red spots, olive green vermiculations (wavy lines) across its back, and pink fins tinged with white. Catching one of these resplendent creatures links us with the wild world like few other experiences can.

Unfortunately, it is a rare experience for anglers today. The 20th century did not treat the brookie kindly. Unrestricted logging at the beginning of the century followed by urban and suburban development, agricultural runoff, and pollution damaged brook trout habitat across much of its original range, which extended from the Arctic Circle to the mountains of northern Georgia and west to Iowa and Minnesota.

The brookie's main bastions today are the highland rills in national forests and other public lands from Maine to Georgia. Even there, they face competition due to the imprudent stocking of rainbow and brown trout — two non-natives that out-compete brook trout for food. The larger problem for the brookie, however, is loss of habitat.

FAILING HABITAT

Brook trout (*Salvelinus fontinalis*) are the only trout native to most of the eastern United States. They can live in only the coldest and cleanest waters, which makes them a good indicator of water quality.

Brookies thrived in the cold waters of the Appalachians for millions of years. However, as agricultural, forestry, and industrial development grew, wild brook trout populations dramatically declined. Timber cuts and conversion of forested land to agricultural use created higher water temperatures and increased sedimentation, stream bank erosion, and the loss of riparian cover. Rising stream acidity and nutrient levels caused declines in brook trout and many other stream-dweller populations.

Despite the name, brook trout are actually part of the salmon family — a salmon subgroup called "char." Char generally have a dark base color with pale spots while trout have a light base color with dark spots.

According to a report by the Eastern Brook Trout Joint Venture,

- Intact stream populations of brook trout remain in only 5 percent of subwatersheds (land that drains into a small creek or river).
- Wild populations of brook trout have vanished or are greatly reduced in nearly half of subwatersheds in the brookie's historical range.
- The majority of large rivers no longer support self-reproducing populations of brook trout.
- Brook trout survive almost exclusively as fragmented populations in the extreme headwaters of streams.

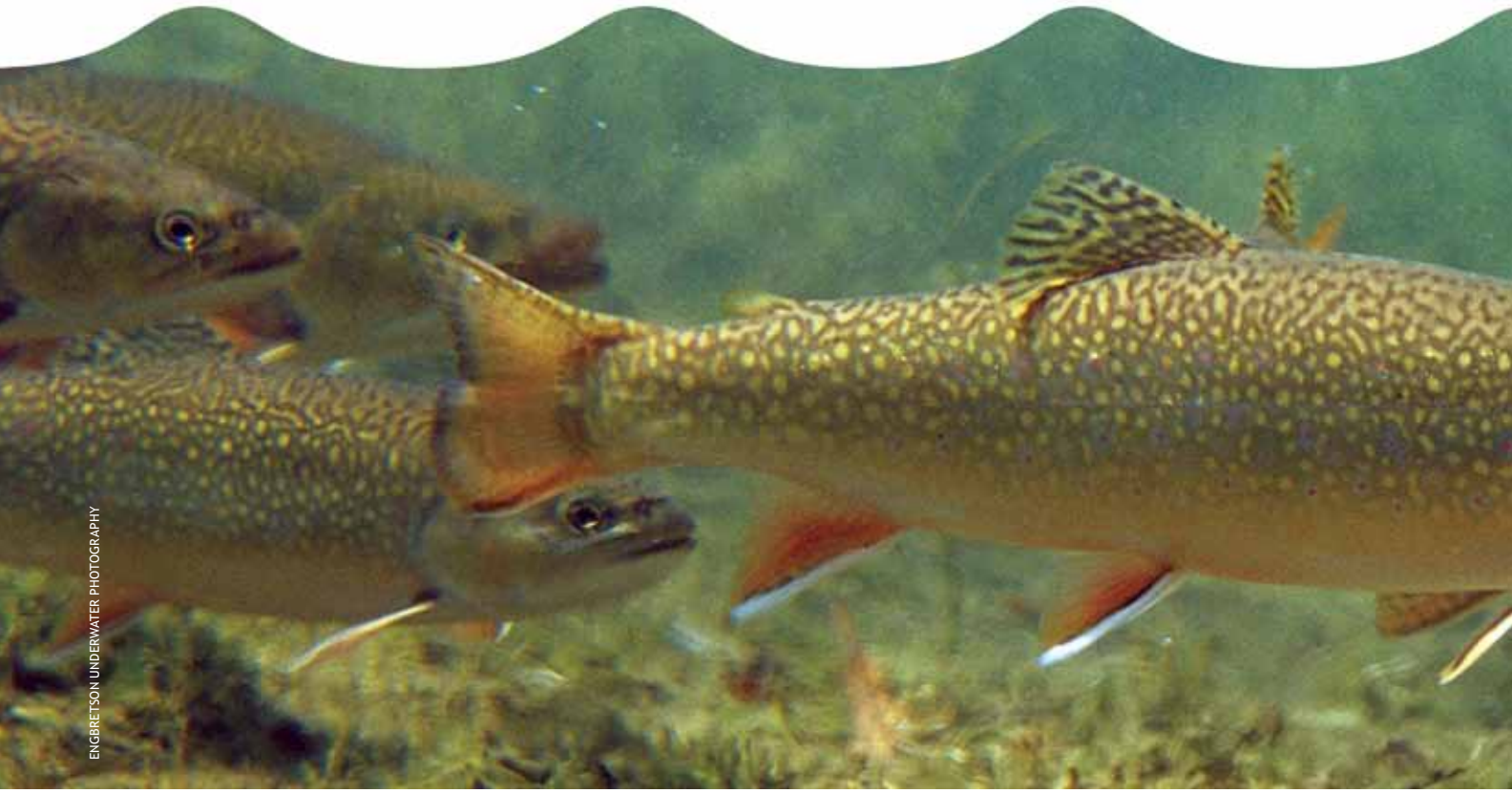
In fact, brook trout populations are so low that most anglers release any of these "little pieces of gold" that they catch today.

Brook trout are the "canaries in the coal mine" of our waterways — they serve as indicators of the health of a watershed, says Alan Heft of the Maryland Department of Natural Resources. Declines in brook trout populations may indicate that an entire watershed is in trouble.

PROTECTING MARYLAND'S LAST BROOKIES

The only trout species native to Maryland, brook trout have been eliminated entirely from 62 percent of their historic habitat in the state. Of the remaining brook trout populations, more than 80 percent are classified as "greatly reduced," occupying 10 percent or less of historically inhabited areas.

One of the few intact brook trout populations is in the headwaters of the Savage River, located in the northwestern tip of the state. Given the importance of this watershed to sustaining Maryland's brook trout numbers, the Izaak Walton League targeted this area for a pilot project geared toward restoring water quality and habitat.



ENGBRETSON UNDERWATER PHOTOGRAPHY

The League received a grant to engage community volunteer groups in a comprehensive assessment of the Savage River and all of its tributaries. Staff from the League worked with the Savage River Watershed Association, Canaan Valley Institute, Maryland Department of Natural Resources, local League members, and other groups to assess factors on the ground that could affect brook trout populations. League staff, university researchers, state biologists, and volunteers studied land-use maps, collected water quality and temperature data, and walked stream-side to identify areas lacking forest buffers, areas of erosion, fish barriers, trash dumping, and other problems — a daunting task given the 74,000 acres and hundreds of miles of tributaries that constitute the watershed.

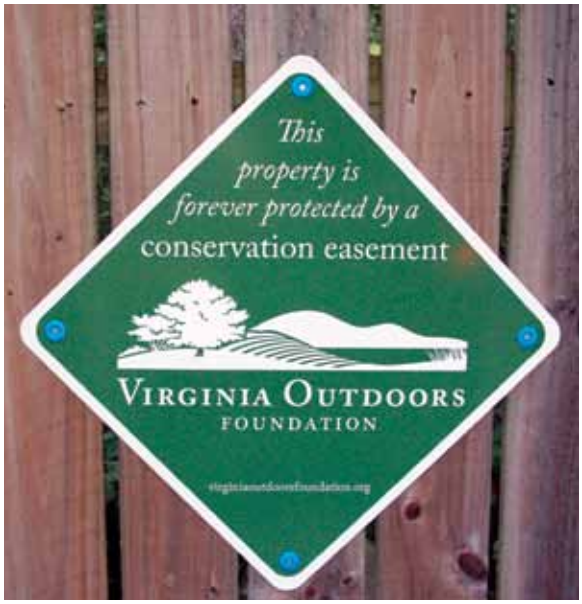
The project ended with a watershed restoration plan for the Savage River that would protect brook trout populations and reduce nutrient and sediment pollution to the Savage River, Potomac River, and (ultimately) the Chesapeake Bay.

The results of this project will not only improve the Savage River watershed but also inform a protocol that conservation groups can follow in other areas of the country, says Leah Miller, IWLA Clean Water Program Director. "This project served as a case study for smart stream restoration. Sometimes, people will pick a stream restoration project based on an obvious problem without knowing what's going on upstream or downstream. This brook trout restoration project allowed us to refine our stream assessment methods and document them for others."

One of the potential roadblocks to restoration is that much of the brookie's native habitat now runs through private land. In Maryland, for example, only 11 percent of brook trout stream miles are fully within state lands. The rest are on private lands or a mix of private and public lands. That was a limiting factor in the League's work on the Savage River watershed — only about half the private land owners permitted access to their properties.

The good news, however, is that individual landowners can and are making a significant difference in restoring brook trout habitat.

Above: Scot Sutherland collecting water quality data.



BRUCE INGRAM (6)

Such steps improve water quality for other uses as well, including fish and wildlife management, outdoor recreation, and drinking water supplies. An important tool in the effort to conserve habitat is the conservation easement.

BOOST FOR BROOKIES ON PRIVATE LANDS

A conservation easement is a voluntary legal agreement between a landowner and a land trust, government agency, or other organization to permanently protect the scenic and natural qualities of a piece of land. The landowner retains all ownership rights to the land. The role of the land trust or other agency is simply to ensure the landowner follows through with his or her commitment to protect the land. In return, the landowner may receive tax credits or other benefits. All future landowners — whether they inherit or purchase the property — must follow the restrictions set to protect the land.

Securing a conservation easement is not without its own costs. Most conservation easements are donated. However, it's often a surprise to landowners that funds are needed to pay for the donation process and to cover future monitoring by the land trust, says Kevin Anderson, Chesapeake Bay land protection coordinator for Trout Unlimited (TU). Those transaction costs can add up to thousands of dollars per parcel — enough to make even the most conservation-minded landowner reconsider an easement.

Trout Unlimited's Coldwater Land Conservancy Fund (CLCF) provides matching grants to land trusts to cover land and transaction costs — including boundary surveys, appraisals, and legal fees — for easements protecting native trout habitat in the Chesapeake Bay watershed. Funding for this effort comes from a National Fish and Wildlife Foundation grant, the U.S. Forest Service, and the U.S. Fish and Wildlife Service. In 2012, the first grant year, TU awarded more than $85,000 to protect brook trout habitat, including areas of the Savage River in Maryland where League work was taking place. In 2013, an additional $43,000 was awarded, including a grant to help conserve land owned by an Izaak Walton League chapter.

The Virginia Outdoors Foundation acquired a conservation easement on property owned by the League's Warren County Chapter in Virginia. The 155-acre chapter property shares a half-mile boundary with Shenandoah National Park, and much of the property is visible from Skyline Drive and parts of the Appalachian Trail. A $8,000 CLCF grant paid for the property appraisal and legal fees associated with creating the easement. "Thanks to stiff restrictions on disturbance to water resources and streamside land, the conservation easement now permanently protects Gooney Run, a pristine brook-trout-occupied stream flowing through the League's property," says Anderson. The chapter can continue to use its property for conservation and outdoor recreation activities, including hunting, fishing, and shooting sports as well as a variety of activities for youth.

"These grants are enabling some conservation easements to move forward that wouldn't have due to their transaction costs," says Anderson. "They're also giving our partners cause to go out and cultivate projects that protect brook trout habitat." The CLCF is the only funding resource specifically tasked with driving land conservation efforts on private land in the Chesapeake Bay watershed.

TWO DAYS AFIELD

To get a close-up look at conservation easements in action and brook trout restoration projects, Kevin Anderson and I spent two days visiting streams in the James, New, and Potomac River watersheds. We invited the leaders of our local groups to join us: Scot Sutherland, now past president of the Izaak Walton League's Roanoke Valley Chapter, and Bill Bainter, now past president of Trout Unlimited's Roanoke Valley Chapter.

Our first stop was at my 94-acre tract in Gap Mills, West Virginia, where Back Creek — a headwater stream that is part of the New River watershed — has not held wild brook trout for 40 years. Several years ago, I purchased the land from a farmer who had frequently let his livestock wallow in the stream. I was thrilled and amazed when Sutherland took several water samples and found that even in mid-July, the pH, water temperature, dissolved oxygen, and conductivity were all conducive for brookies. Sculpins, crawfish, dace, stoneflies, caddisflies, and other aquatic insects flourished.

"A limiting factor may be your lack of pool habitat because of the sedimentation that has occurred over the years," Anderson told me. "You could create pool habitat by placing some of your nearby rocks and woody debris in the stream so that they scour out new pools." I have let the riparian zone recover from the livestock that denuded it and planted seedlings nearby to add some additional cover. Unfortunately, I have not done more work to restore the creek due to lack of available local partners, but I haven't given up. Looking at this creek, you could just see brook trout living there!

Next we stopped by the home of Ken and Betsy Kayser in Roanoke County, Virginia, which features Trout Creek, a native brook trout stream. The Kaysers were among the landowners who benefitted from the first year of CLCF funds, which helped them place a conservation easement on Trout Creek and the surrounding property.

Below: A variety of stream dwellers that tell the story of a water's health.

Sculpins

Crawfish

Dace

Stonefly and Caddisfly

Left: Betsy Kayser and Kevin Anderson at Trout Creek in Roanoke County, Virginia.

Middle: Native Brook Trout

Right: Bill Bainter, Kevin Anderson, and Scot Sutherland collecting aquatic insects.

Ken and Betsy are exactly the type of landowners that brook trout need to recover. They were aware that the brook trout are struggling and knew they had something very special on their land. They knew Trout Creek was a headwater creek for the James River, which eventually drains into the Chesapeake Bay. Ken and Betsy felt they had a responsibility as landowners to be good stewards of that property and the waters that run through it.

The creek and the land around it were in good shape, so the Kaysers donated a conservation easement to protect it in perpetuity. The creek flows through a mature forest. A strict conservation easement on the land will prevent degradation of the creek and the canopy cover.

While touring the Kaysers' property, our group also checked the creek's water quality by looking for macroinvertebrates and checked its temperature. As we expected, the water quality was very good — and it will remain good due to the conservation easement.

On day two, we visited another waterway that benefitted from CLCF funds — the Jackson River in Bath County, Virginia. There we met Jason McGarvey, a former Izaak Walton League staffer who is now the community and outreach manager for the Virginia Outdoors Foundation, which holds the conservation easement on this property. "If you are going to try to protect a river, it's best to protect the headwaters first, as is the case here," said McGarvey, "then work on downstream improvements. It's hard to restore the downstream portion when the headwater has issues."

The Virginia Outdoors Foundation has helped protect 95 miles of Virginia trout streams through conservation easements, 64 miles of which are classified by the Virginia Department of Game and Inland Fisheries as "high quality wild trout streams," including 61 streams with documented populations of native brook trout. The Jackson River property owners, Richard and Ruth Mansfield, have also begun restoring the riparian zone along the river by planting native trees and grasses.

One of the most enlightening aspects of this two-day trip was spending time discussing potential partnerships between League and TU chapters. "Networking and identifying joint projects that we could work on locally would be very beneficial to both organizations," Bainter said. "There are folks in our chapter that would be willing to participate with Ikes on things like stream monitoring, for example. We don't have a brook trout project at present and we should have one."

"Our two organizations share common values as conservationists," Sutherland added. "We could share databases that we have or compile for certain streams and could schedule joint monitoring of these waters. We could even have joint meetings where a new project had been

selected beforehand and then decide how to approach that project at that joint meeting."

After my quartet finished touring the Mansfield property with McGarvey, we invited him to join us for an excursion that many Ikes and TU members relish: Fishing for native brook trout high in the eastern mountains. We didn't catch any brookies — it was a dry summer and the water was low. But I never regret not catching any natives. The experience is what counts.

Izaak Walton League life member Bruce Ingram has written five books on river smallmouth fishing, his latest on the upper Potomac River. For more information about these books, and to read his weekly blog, visit www.bruceingramoutdoors.com.

Right: Bill Bainter trout fishing.

Below: Jason McGarvey surveying the Jackson River in Bath County, Virginia.

FOR MORE INFORMATION

Eastern Brook Trout Joint Venture:
www.easternbrooktrout.org

Foothills Land Conservancy:
www.foothillsland.org

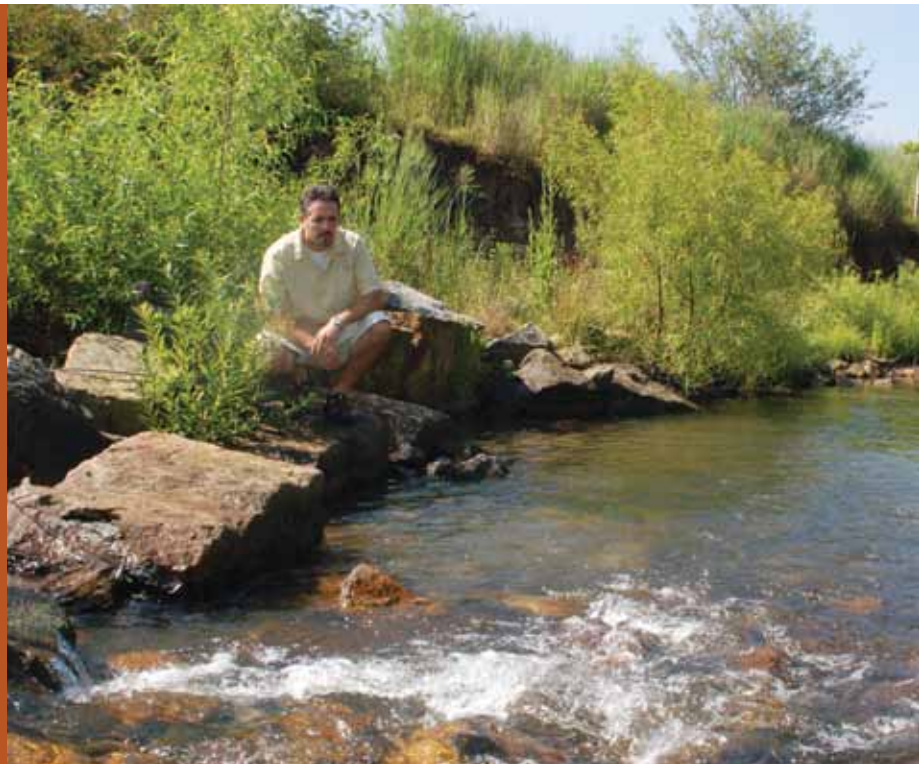
Land Trust Alliance:
www.landtrustalliance.org

Trout Unlimited, Coldwater Land Conservancy Fund:
www.tu.org/easternlandprotection/clcf

Trout Unlimited, Eastern Land Protection Project:
www.tu.org/easternlandprotection

Virginia Outdoors Foundation:
www.virginiaoutdoorsfoundation.org

Warren County Chapter, IWLA:
www.iwla.org/warrencountyva



BRUCE INGRAM (5)