

Initiative Under Way to Help Restore Maryland's Native Brook Trout

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When my dad was a boy, the stream in the woods on the backside of the family farm ran clear and cold even in the heat of summer. It flowed over a bed of gravel so clean that it sparkled when touched by the few rays of sunlight that penetrated the leafy canopy overhead.

It was not a big stream, yet it was too wide to jump across. And while it was deep enough in some places, it was much too cold for swimming. But it was a place where dad and his boyhood buddies from the neighboring farms went fishing. The stream was full of native brook trout; colorful fish with worm-like vermiculation on their backs and heads and small red spots on their flanks, each circled by a halo of pale blue.

That stream still flows on the backside of the farm, but it's no longer cold and its bed of gravel is now covered by layers of silt. The rocks embedded in the stream bank have a dull orange cast, the result of mine water that has entered the stream. The brook trout vanished, too, along with every other form of life that once inhabited the stream.

A slow, but certain, death

They went quietly. There was no protest; other concerns overshadowed their loss. Neighbors upstream, in need of money, cut the timber on their lands, opening the stream to sunlight and sediment. Farther upstream, a coal mine was opened, which in time began to release acid from its sulfur-laced coal into the stream.

The disappearance of the brook trout started with the runoff from the timber cutting that opened the stream to the sun, warming the water, and to silt that smothered the gravel needed for spawning. It became final when mine water began seeping into the stream, lowering the pH to a level unsuitable for brook trout and most other forms of aquatic life.

Brook trout are native only to the eastern portion of North America, from the Saskatchewan River to Labrador and from the Maritime Provinces southward along the Appalachians to Georgia and west to Iowa. But having been introduced widely beyond their native range by fish culturists, brook trout are found today in many western states

and a number of foreign countries. However, they are a poor copy of the true eastern brook trout.

Rather than an isolated happening, the disappearance of brook trout in my dad's time was an incremental event associated with the growth of the nation. From the early part of the 19th century on, streams in many parts of the historic range of the eastern brook trout were changed in ways that reduced or eliminated their native trout populations. Industrial development, evolving farming practices, and logging operations, even bark stripping to meet the needs of tanneries, contributed to the loss or impairment of these streams and habitat for brook trout.

Fishing for brook trout, which became popular around 1850, also played a major role in the reduction and loss of brook trout populations, especially in the larger brook trout streams of the Appalachians. Unlimited or excessive creel limits had a direct effect on brook trout abundance, but it was the introduction of brown trout and the emergence of fish hatcheries to compensate for the diminishing numbers of native trout that had a greater and more lasting impact.

Wild brookies

Now, after nearly two centuries of incremental habitat damage and competition from non-native and hatchery fish, the abundance and distribution of the eastern brook trout within its historic range have declined dramatically. Genetically distinct strains of wild eastern brook trout still exist, isolated in small tributary streams possessing suitable habitat and environmental conditions.

While they are not nearly so numerous or as widely dispersed, these wild brookies exist today over much of the same land area they inhabited when the first Europeans arrived in North America. That was revealed by a recent study of the abundance and distribution of brook trout populations within the Appalachian range from Maine to Georgia.

That study evaluated eastern brook trout populations in 1,374 subwatersheds within the species' historic range, each of the subwatersheds examined is about 22,000 acres in size. Stable populations of brook trout were found in only 5 percent of the subwatersheds. About 9 percent contained moderately reduced populations, while 27 percent harbor populations which are severely reduced from historic levels. Brook trout were absent from 5 percent of the watersheds.

The Eastern Brook Trout Joint Venture

Its history, its need for cold water and clean gravel, and its current status makes the eastern brook trout an icon and a potential role model for the National Fish Habitat Initiative, a broad-based partnership and cooperative effort to protect and restore fish habitat throughout the country. The first project established under the habitat initiative is the Eastern Brook Trout Joint Venture (EBTJV). The project's long-term goal is to

sustain healthy, fishable brook trout populations throughout the historic geographic range of the species .

The EBTJV is modeled after the highly-successful North American Waterfowl Management Plan of the 1980s , a partnership of federal, state and local agencies, private conservation organizations and individual citizens working together to restore and protect millions of acres of breeding areas for waterfowl. The brook trout joint venture will act as a forum to achieve that goal, using the strengths and expertise of its various partners.

The EBTJV has identified two range-wide threats to brook trout and a number of others that may affect only certain streams or watersheds. Climate changes affecting water temperature and acid deposition, which may lower the pH of certain streams or an entire watershed, are the two broad-scale threats.

Those that pose problems for brook trout streams at a local or watershed level include land use practices that result in elevated water temperatures, increased sediment loads, reduced infiltration and higher peak stream flows. Other potential threats at local and watershed levels are related to urbanization, increased turbidity, altered stream flow, introduction of invasive species, stream fragmentation and abandoned mines.

Maryland's opportunity

Maryland is one of the 17 states involved in the EBTJV. Native brookies are present in a number of small headwater streams in central and northern portions of Baltimore County, in the Catoctin Mountains in Frederick County and in the three western counties of the state. An initial meeting of people interested in developing a plan to restore and protect brook trout populations and their habitat in the state was held recently at Thorpewood, an environmental education center near Thurmont. Thorpewood is a brook trout joint venture partner.

Protecting what remains of wild brook trout populations and their habitat here and elsewhere in the country and restoring to the extent possible that which has been lost or damaged is a challenging task. While there is no quick fix, the collective interest evident at the Thorpewood meeting and the expertise and talent available through the brook trout joint venture is a promising beginning.

Information about the National Fish Habitat Initiative and the Eastern Brook Trout Joint Venture is available at www.fishhabitat.org. Information about Thorpewood is available at www.thorpewood.org.

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