Sharon Boies tours a stream restoration project in her Columbia neighborhood that removed or killed all mature trees, she said, contributing to flooding, flourishing invasive species and stream degradation over the last six years while requiring multiple repairs.
KARL HILLE/STAFF

$500M stream restorations draw environmental backlash

Critics say practices intended to protect Chesapeake lead to erosion, pollution

By Karl Hille

Sharon Boies grew up learning about nature in Columbia's outdoor "living classrooms." So when the State Highway Administration rebuilt Longfellow Creek behind her home in 2020, she began documenting the changes.

"The stream remains biologically impaired today, in year six of the restoration," Boies wrote in her notes shared with The Baltimore Sun. "The stream didn't overflow its banks prior to the restoration. The dark, moist forest had leaf litter, rich soil, and was home to many native woodland and wetland species."

The controversy over Longfellow Creek and other stream restorations reflects a growing challenge to one of Maryland's largest environmental programs. State and local governments spend nearly $500 million each year on stream restoration and related projects intended to help meet Clean Water Act requirements and Chesapeake Bay pollution-reduction goals.

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The Longfellow Creek project helps meet the state's obligation to control runoff from roads and prevent downstream erosion, but critics argue the stream is being destroyed.

Roads, parking lots and buildings send rainwater downstream faster than natural landscapes can absorb it. The runoff carries pollutants and sediment into streams, damaging habitat and threatening the Chesapeake Bay. The damage can leave streams warmer, harming trout and smaller fish that feed birds and other predators.

Maryland's nine largest counties and Baltimore City account for almost 174,000 acres of paved surfaces that generate runoff.

Maryland Department of Environment reports that 73 square miles of impervious surfaces were restored from 2019 to 2024. That doesn't mean parking lots were removed and replaced with trees. The state counts a range of stormwater projects — from street sweeping and stormwater ponds to stream restorations — toward its goal of reducing runoff from hard surfaces.

Critics say the program rewards pollution credits over ecological improvements, allowing projects that damage habitat without solving erosion problems and leaving taxpayers to pay for repairs. The government uses the credits to measure the amount of pollutants a project keeps out of waterways to demonstrate progress toward Chesapeake Bay cleanup requirements.

An educational panel describing a stream restoration project on Beaver Creek in Parole highlights restoration efforts. Anne Arundel County watershed protection and restoration chief Erik Michelsen said he is pleased with the final result. KARL HILLE/STAFF

Protesting against restoration

The number of trees cut across the state is hard to pin down, but the most visible source of homeowner anger has been the tree cutting, said Rob Schnabel, restoration scientist for the Chesapeake Bay Foundation.

"We're clearing forests ... during construction. This has people super duper angry, and I totally get it. I'd be angry too," Schnabel said.

"Those trees are part of the solution. Every [oak] tree reduces stormwater runoff by as much as 13,000 gallons of water," Schnabel said, "so every time you move that, you're actually increasing stormwater runoff."

A few dozen people gathered to protest two other Columbia stream restoration projects in June. They were upset at what some called "demolition, not restoration." And a $27 million stream and utility project by the University of Maryland, Baltimore County, angered Catonsville residents after contractors bulldozed three acres of streambed forest, prompting community members to plant hundreds of trees hoping to create a grassroots Spring Grove Arboretum.

Stream restoration should be a last resort, once upland solutions have been exhausted to ease the stormwater burden on streams, Schnabel said.

Municipalities are spending enormous amounts of money, he said. "It's expensive and projects are failing," because it's not addressing the source of the problem, which is impervious areas and water volume issues, Schnabel said at a spring forum hosted by the Maryland Native Plant Society. "We have to go in and fix them over and over again."

Do stream restorations undermine healthy forests?

According to MDE data, the 10 largest jurisdictions tackled 69 stream restoration projects in 2025 affecting 11 miles of streambed, but critics say Maryland's stormwater program measures what is easiest to quantify — pollution reductions — while overlooking harder-to-measure ecological damage.

Ecological improvement can be difficult to define and reward through the legal world of storm permits, said Matt Stegman, the Chesapeake Bay Foundation's Maryland staff attorney. Silt and nutrients are easier to add up.

The bigger question, he said, is whether the program over-emphasizes stream restoration, compared to other best practices.

"Stream restoration has got a time and a place, but the incentives that currently exist tend to value it probably more than it's worth," Stegman said.

In 2024, Maryland passed the Whole Watershed Act, with the Chesapeake Bay Foundation's help. The act emphasizes science-based solutions across restoration programs and includes a new section to regulate stream and floodplain restorations.

"The program intended to clarify that projects are only supposed to impact forested areas to the minimum extent possible, ensure adequate public notice and minimize the removal of tree cover," Stegman said.

Only a handful of projects have been approved since those new rules came into force in July of 2025, he said. The state is working on updated stormwater design manuals to guide the industry carrying out these projects.

Evidence-based solutions

Erik Michelsen, deputy director of Anne Arundel County's Department of Public Works, oversees the county's watershed protection and restoration bureau, said they have receipts that show how much nitrogen, phosphate and silt pollution their projects prevent from washing into the bay.

The county scans its stream valleys with airborne, laser-ranging lidar equipment every few years, providing exact measurements of erosion over time. Testing the soil in problem areas shows how much nitrogen, phosphorus and silt erodes into the bay, guiding future projects.

"It can look like a war zone when we've finished," Michelsen told The Sun.

Anne Arundel's lowland streams once slowly drained vast wetlands, filtering rainwater and trapping nutrients that feed marsh grasses, which anchored and fed an ecosystem, he said. Their remains still lie beneath, sometimes deep beneath, streambeds filled in by hundreds of years of upland erosion. In some areas, deep channels had cut through floodplain valleys, drying the wetlands and allowing oaks and maples to thrive.

The results validate the loss of some trees, he said.

"We're fortunate in Anne Arundel County that we've got a lot of beaver moving back into the landscape," he said, "and that's sort of the functional goal that we're aiming for with these systems, a restored site."

Solange Filoso, associate professor of ecology and biogeochemistry at the University of Maryland Center for Environmental Studies, said the dream is always to restore streams to a pristine condition, but that requires more attention to the ecosystem that depends on them.

Stream restorations in general are effective at reducing nitrogen, phosphorous and silt, she said, but that does not translate to better water quality.

Removing trees to reconnect a stream to its floodplain removes shade, heating up streams and creating oxygen-free dead zones under the heat of the summer sun. This also destroys an ecosystem that can take 30 to 80 years to grow back.

"We need to find a way to incentivize ecological recovery," Filoso said.

'What are minnows worth?

By 2022, Boies said a heavy rainstorm overwhelmed her recently "restored" stream valley. Silt and debris clogged a nearby bridge, requiring portions of the stream to be rebuilt. It wouldn't be the last time bulldozers returned to fix Longfellow Creek. By 2025, she said, the last remaining mature oak trees in their stream valley had died: their roots crushed by heavy equipment from the original restoration. Crews then came in early 2026 to plant 700 more trees where an earlier stand had failed to thrive.

On a tour of Longfellow Creek this spring, she showed The Sun fields being overrun by invasive plants and flowers, and warm pools in the stream losing oxygen in the sun. What she didn't find were the squirrels, deer, kingfishers and fish that once thrived in the stream forest.

Maryland must do better, she said, because the current regulations encourage spending tax money in ways that degrade the environment for residents across the state.

"What are minnows worth? What is a population of box tortoises worth? How many holes can we put in a net before we fall through those holes?" she asked.

Have a news tip? Contact Karl Hille at 443-900-7891 or khille@baltsun.com.