

Experts disagree about the lasting impact of rebuilding waterways to clean up the Chesapeake Bay



BARBARA HADDOCK TAYLOR/BALTIMORE SUN

From left, volunteers Danny Foster, Janet Norman, Nina Fisher, Kyle Hinson and Ann Jackson work on stream restoration on an unnamed tributary of the Bacon Ridge stream in the Bacon Ridge natural area. They are planting ferns and shrubs near the water.

Stream restoration stirs debate over effectiveness

By **TIMOTHY B. WHEELER**
The Baltimore Sun

White Marsh Run looks a mess, more a construction site than a stream.

With its flow temporarily dammed and diverted, a track hoe is carving out a new, more sinuous channel for the badly degraded waterway running through a built-up patch of northeastern Baltimore County. New banks are being built, armored in places with granite boulders — all part of a \$13 million makeover that's

intended to help clean up the nearby Bird River and the Chesapeake Bay.

Bits of the 1½-mile long project that have been completed look like a tranquil country stream, its water sliding across stones placed along and in its channel. But some scientists and environmentalists question whether such feats of ecological engineering, by themselves, can really revive a dead stream, or even reduce pollution much.

"I can build a wiggly stream," said Martin W. Doyle, a professor of river

science and policy at Duke University who's studied and worked on restoration projects. "All over Baltimore County, all over North Carolina, there's lots of wiggly streams that don't do jack."

The debate over the merits of stream restoration has taken on significance as such projects have become a favored tool of local governments in the Baltimore area as they work to meet tough federal mandates to reduce sediment and nutrient pollution fouling the bay and its trib-

See **STREAMS**, page 12

Eight miles of express lanes on I-95 set to open Dec. 6

Commuters' tolls could run as high as \$3.50 a day

By **KEVIN RECTOR**
The Baltimore Sun

The controversial construction of express toll lanes up the center of a congested eight-mile stretch of Interstate 95 just north of Baltimore is set to conclude Dec. 6, when the lanes will open to traffic.

Their launch will bring to an end the bulk of construction on a larger, nearly \$11 billion project to reconstruct the entire section of the highway, its overpasses and interchanges, including with Interstate 695.

Aimed at relieving bottlenecks and improving safety, the work nonetheless added to commuter headaches for nearly a decade. An average of about 177,000 drivers a day use the corridor.

"It was a tremendous challenge," said Dave LaBella, the Maryland Transportation Authority's project manager since 2006, of completing the work while I-95 remained open to traffic. "It required coordinating work hours, lane closure schedules, mobilization, all the movement of equipment — and all the while maintaining that traffic, largely commuter traffic, on every weekday."

Some work, including on the I-695 interchange, will continue, LaBella said, but commuters should expect much of the roadside activity to subside.

Between Dec. 6 and Dec. 12, the toll lanes — two in each direction — will be free to use, the MdTA is expected to announce today. The toll-free week will See **EXPRESS LANES**, page 15



TIM ROBERTON

Doctors Without Borders maintain an Ebola treatment center in Gueckedou, Guinea. Enticing people to get treatment was difficult when the current outbreak began.

Public health experts stress the role of trust

Hopkins researchers look at how to avoid confusion in fighting Ebola in Africa

By **SCOTT DANCE**
The Baltimore Sun

When public health workers began canvassing West African villages this spring and summer warning of something called Ebola, they were met with fear — but not of the deadly virus.

One village locked itself down to keep relief workers out, while residents drove the workers out of another after being told they couldn't bury an Ebola victim according to their customs, said Timothy Robertson, a doctoral student at the Johns Hopkins University's Bloomberg School of

Public Health. Residents said the outbreak was a scheme to collect aid money, or even to collect body parts.

It wasn't until they saw Ebola's death toll that residents began to trust health workers. But if that trust had been in place when the virus first appeared, the outbreak, which has killed 5,000 people this year, might have gone differently, according to Robertson and Hopkins colleagues, who evaluated the outbreak response for the Red Cross.

The lesson will be a significant one going forward as Guinea, Liberia and Sierra Leone continue to fight the epidemic, and as public health officials work to prevent future epidemics. Though significant progress has been made in adopting protective gear and even hand-washing, relief workers and public health experts See **EBOLA**, page 15

State Dems' clout dims

Mikulski emerging as leader in effort to pull state party together

By **JOHN FRITZE**
The Baltimore Sun

WASHINGTON — Republican gains in the midterm elections mean Maryland's Democrat-heavy congressional delegation will have far less clout when lawmakers gavel in a new Congress next year, casting doubt on prospects for a long list of state priorities from federal employee pay to environmental regulations that could affect the Chesapeake Bay.

The state's federal lawmakers — and Sen. Barbara A. Mikulski in particular — are also asserting a more active role in politics at home as Democrats try to regroup after the party's losses in the gubernatorial election. That effort has exposed fractures in the usually cohesive party.

Mikulski, who in 2016 will be the only statewide incumbent up for election, has called a meeting of Democratic leaders for today to discuss how the party will respond to Republican Gov.-elect Larry Hogan's defeat of Democratic Lt. Gov. Anthony G. Brown. The invitation was leaked and some Democrats quietly expressed frustration with the internal note.

A Mikulski aide declined to comment on the matter.

The Republican takeover of the Senate next year means Mikulski must relinquish the chair of the powerful Senate Appropriations Committee — a blow to the state's influence in Congress. Sen. Ben Cardin, meanwhile, will lose chairmanship of an environmental subcommittee focused on water quality, including in the bay.

Maryland will be one of 16 states with both senators serving in the minority in the new Congress. The state's senators will become top-ranking Democrats on their respective committees, but it is the Republican chairs who will wield control over schedules and legislation.

"Ranking members are only ranking members," said Donald F. Norris, chairman of the public policy department at the University of Maryland, Baltimore County. See **DEMOCRATS**, page 15



Mikulski



Cardin

SUMMARY OF THE NEWS

WORLD

Aid worker in Syria beheaded by Islamic State

Peter Kassig, 26, is the third U.S. citizen known to have been executed by Islamic State, the al-Qaida offshoot that controls territory in Syria and Iraq. He was captured last year while on a private humanitarian mission. **NEWS PG 8**

MARYLAND

BGF CASE: The last eight people indicted in connection with corruption at the Baltimore city jail go on trial today in federal court. Of the original 44 people charged, 35 pleaded guilty and one died. **NEWS PG 2**

TODAY'S WEATHER

RAIN
55 HIGH | **27** LOW

Sunny, colder Tuesday. **SPORTS PG 12**

Effectiveness of restoring streams stirs debate

STREAMS, From page 1
utaries.

Nearly 3,700 miles of streams across Maryland are targeted for restoration work by 2025, nearly all of them in urban areas, according to a panel of experts who studied the issue. Baltimore County expects to spend about \$13 million a year on restoration projects, according to Vincent J. Gardina, the county's director of environmental protection and sustainability.

Much of the money for projects in Baltimore County and other large jurisdictions comes from stormwater remediation fees paid by property owners — fees that have become political fodder and derided by some as the “rain tax.” The fees are mandated by the state for Maryland's 10 most populous jurisdictions.

County officials counter critics of such efforts, saying they've been doing it for 25 years and have had some of their 65 projects to date held up as models by state and federal environmental agencies.

“We are nationally recognized leaders in stream restoration,” said Robert R. Ryan, the county's watershed restoration manager.

Urban and suburban streams often suffer severe erosion as the land that drains into them becomes covered with pavement and buildings. Rainfall that used to soak into the ground runs to the stream, where even a modest downpour can turn a quiet stream into a raging flood.

Proponents say restoration efforts reduce stream bank erosion, which studies show is the major source of sediment pollution in the bay and its tributaries.

Restoration also curbs nutrient pollution that feeds the bay's algae blooms and its “dead zone,” proponents say. Phosphorus, one of the problem nutrients, typically clings to soil particles — so when erosion is curtailed, there's less phosphorus getting into the water.

But some scientists say controlling erosion is only one facet of restoring a waterway. They say its benefits don't last if nothing else is done to reduce runoff from development before it pours into the stream.

“You can't ask a stream to do everything an entire watershed should do,” said Margaret A. Palmer, a University of Maryland scientist who's researched restoration ecology. She's published studies finding “no consistent evidence” that restored streams reduce nitrogen, another key pollutant fouling the bay.

And while stabilizing stream channels may reduce erosion at first, she said, the benefit is likely to decrease over time.

“Show me that the water quality is better after restoration than before,” agreed Doyle, who's also published research questioning the ecological benefits of restoration.



CASSIDY JOHNSON/BALTIMORE SUN

Operator Richard Fogle moves rocks during a stream restoration with Bryan Janney and Thomas De La Cruz, right, at White Marsh Run off White Marsh Road.

Baltimore County officials and other restoration proponents point to published research finding significant reductions in sediment, phosphorus and nitrogen from projects that have been monitored for at least a few years after completion.

Gardina said his staff works to reduce runoff where they can in tandem with stream restorations. Steven Stewart, who oversees stream monitoring for the county, said his office lacks the money to track water-quality after all restoration projects, but in selected cases reductions in sediment and nutrients have been measured.

Minebank Run, a restored county stream, is one of those that's been held up as a success.

But it illustrates how complicated the issue is, and how intractable the debate. A stretch flowing through Cromwell Valley Park north of the Beltway shows signs of erosion, with tree roots dangling four feet above the water. A rock weir put in the channel and a rock wall built along its banks, seen in a photograph taken shortly after the \$4 million project was completed in 2005, are no longer there.

“When they're first done, they're amazing projects, they're really beautiful,” said Richard Klein, an environmental consultant who frequently represents community groups seeking to limit impacts of development. But as the years pass, Klein said, he's seen a number of completed projects that have begun eroding again.

Klein, president of Community & Environmental Defense Services in Owings Mills, said there are some other county streams restored even longer ago that appear to be holding up, such as Spring Branch.

“The \$64 million question is why is that surviving so well, and why is this one failing?” he said, referring to Minebank Run. “Until we can answer that question we may be wasting our money.”

Critics say more money and effort needs to be put into reducing runoff to complement stream restoration.

Klein says in Baltimore County's case, it could reduce sediment and nutrient pollution by strictly enforcing laws requiring state-of-the-art runoff controls at construction sites and in new developments. He pointed out an 83-acre, partially developed commercial site near White Marsh Run where he said a large area of soil has been bare of grass or other vegetation for years, making it more vulnerable to erosion.

Gardina said Minebank Run was a special case. The stream starts out in the Towson area before flowing to the Gunpowder River, he said, so there's not much open land where runoff could be captured. The eroding section is slated for repairs, he said, and likely would get heavier stones.

“On any stream restoration project you may get some blowouts and things of that nature,” said Ryan, the county restoration manager.

Officials in Baltimore County and other area local governments note that the Environmental Protection Agency accepts stream restoration as a means of reducing sediment and nutrient pollution for cleaning up the bay. They say credits given for restorations are based on monitoring of finished projects and a review of available research by a panel of experts, many of them local officials and private environmental consultants.

“The yardstick that scientists use for determining a project's success is different than what government managers use,” said William P. Stack, deputy director of the Center for Watershed Protection, a non-profit think tank. Stack, who was co-chairman of the panel reviewing restoration projects, worked for decades for Baltimore city's public works department where he oversaw work on Stony Run, a degraded tributary of the Jones Falls.

“We're doing the best we can with a broken watershed,” he said. “We might not be successful at restoring trout or other living resources, but one thing we're pretty successful at is stabilizing the stream and preventing erosion.”

Stack said that in built-up urban and suburban landscapes, it could take decades to get enough property owners to put in rain gardens, green roofs and other projects.

“That's a long-term effort,” he said, “but you have to put out the fire first.”

Stack acknowledged many early restoration projects were built without careful enough assessment of what was wrong with the stream, and claims for the benefits of some projects were overstated. But he said government managers and consultants have improved their techniques, and tried to address criticisms from scientists.

“I think restoration science is still at a pretty early stage, and we have an obligation to learn as much as we can from it and recognize we don't have all the answers,” said Erik Michelsen, who manages stormwater control efforts for Anne Arundel County. That county projects spending \$450 million on stream restoration by 2025.

Michelsen said the pressure is on local governments to do their part to meet the bay “pollution diet” imposed by EPA, which requires an increasing number of pollution reductions over the next 11 years.

That pressure was among factors that prompted the state to mandate that Maryland's most populous jurisdictions impose a stormwater remediation fee — the “rain tax” — to pay for the projects.

“Because of the obligations we've got, we have to move ahead in a time frame that doesn't allow us the luxury of having all the answers,” he said. “We have to do something now.”

tim.wheeler@baltsun.com

TRUSTED SINCE 1957 • OVER 1,000 STORES

Going On Now!

SLEEPY'S
The **only** **Mattress Professionals**
BLACKFRIDAYDEALS
1/2 OFF
Every Mattress In The Store!
Excludes Tempur-Pedic, Serta Perfect Sleeper & Classic Foam.

1-800-SLEEPYS (753-3797) or visit sleepys.com

GLIDE UPSTAIRS On A Stannah Stairlift

NEW LIFETIME WARRANTY

Make climbing stairs easy again with the world's top selling stairlift in your home. Stannah is simply the best solution for any straight, curved or spiral stairway. Call For A Free Home Survey

BEDCO MOBILITY
410-825-1440
6300 Falls Road, Baltimore, MD 21209
800-825-1440 • bedcomobility.com

baltimoresunstore.com

get Sun photos!

LOVE DRAMA?
OPEN THAT ATTACHMENT.

HATE DRAMA?
GO TO CARS.COM

Where you can find helpful reviews of car dealerships near you. Research. Price. Find. Only Cars.com helps you get the right car without all the drama.

RESEARCH PRICE FIND

cars.com

ALL DRIVE. No drama.

Moveable Feast
www.mfeast.org

Feed PEOPLE
Fight DISEASE
Foster HOPE

Find out how you can volunteer or make a donation: Please call Tom Patrick at 410-327-3420, Ext. 31 or visit us online at www.mfeast.org