

CHESAPEAKE

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Independent environmental news for the Chesapeake region

Dams give way to better habitat in Bay region

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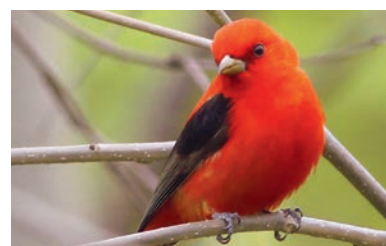


DATA CENTER PRESSURE



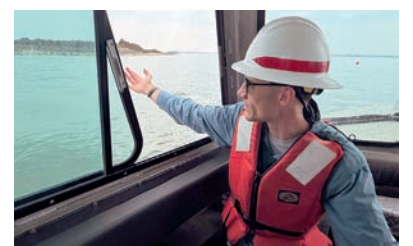
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THE SCARLET TANAGER



Bill proposes an official migratory bird for PA **PAGE 11**

AN ISLAND RISES (AGAIN)



Reconstruction begins at eroded James island **PAGE 21**

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Visitors approach the southwest edge of Fisherman Island, VA, with the Chesapeake Bay Bridge-Tunnel visible on the horizon. Read the article on page 24. (Dave Harp)

ON THE COVER

Corinne Griffith-Butler, associate director of river restoration for American Rivers, and Adam Schellhammer, the organization's Mid-Atlantic regional director, search for freshwater mussels after the 2025 removal of an obsolete dam on the Raystown Branch of the Juniata River in Bedford, PA. (Matt Otis)

Bottom photos: left courtesy of Melissa Emmal, center by Fishhawk/ CC BY-SA-NC 2.0, right by Jeremy Cox

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EDITOR'S NOTE



We want to hear from you!
The Bay Journal readers survey is open

It's that time of year again, and I couldn't be happier: The annual *Bay Journal* readers survey is underway. It's the best way for our team to hear directly from readers across the region and to assess what's working well and how we can improve. If you haven't participated yet, I urge you to take a just a few minutes to share your feedback. You can reply through the mailed survey or online at tinyurl.com/bayjournal2026. Last year, one of the most amazing findings was how much readers value the print edition of the *Bay Journal*. There were several hundred very specific replies explaining the reasons. They were many and varied, ranging from "enough screen time already" and "I still prefer paper" to the ways that the print edition helps people read more articles and focus more deeply on the content. It also seems to be the preferred way for many readers to save and share articles. That feedback was powerful, and we discussed it at staff meetings, board meetings and with grant-makers who support our work. It demonstrates why investing in print remains important. Replies to this year's survey are streaming in every day. It's too early for a comprehensive look at the findings, but there seem to be some themes emerging in recommendations for coverage. You continue to want data center news. You would welcome still more content on wildlife and fisheries. And there are many gaps in local environment news coverage, which you wish the *Bay Journal* could help fill. I also see requests to highlight more local heroes and success stories. And, as we work to expand our audience, I'm interested in how you first heard about the *Bay Journal* so that we can learn to spread the word effectively. So far, I'm seeing two leading replies: access to sample copies and word of mouth. This suggests that our current readers are our best assets! Thank you. Please keep sharing the *Bay Journal* — and please response to this year's survey! You'll find it at tinyurl.com/bayjournal2026.

— Lara Lutz



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BY THE
numbers

6,500

Approximate number of regulated dams in Maryland, Pennsylvania and Virginia (with many more unregulated)

4,648

In feet, the width of Conowingo Dam on the Susquehanna River, the largest dam in the Chesapeake Bay watershed

144

In cubic feet per second, the lowest flow rate recorded at Conowingo Dam (March 2, 1969)

1,130,000

In cubic feet per second, the highest flow rate recorded at Conowingo Dam (June 24, 1972)

40,670

In cubic feet per second, the long-term average flow rate at Conowingo Dam

How tiny phytoplankton make a big impact

Phytoplankton are the foundation of aquatic ecosystems — and a prime example of strength in numbers. These microscopic organisms are mostly single-cell plants, also known as microalgae.

Similar to land plants, they capture sunlight and consume carbon dioxide to release oxygen. They bloom in the spring in both freshwater and saltwater areas of the Chesapeake region, growing as temperatures rise. Phytoplankton are food for everything from tiny zooplankton to whales in the ocean. They are also helpful indicators of water quality. With so many phytoplankton species needing different conditions to thrive, any changes can alter species diversity.

These micro plants also need nutrients, such as nitrogen and phosphorous. But too many nutrients can cause explosive phytoplankton growth. Afterwards, they die and sink to the bottom. There, bacteria decompose the phytoplankton in a process that depletes the water of oxygen and creates “dead zones” in the Bay and its rivers.

— L. Hines-Acosta

Background image: This artwork merges photos of phytoplankton collected from Maryland's Choptank River. (Art by Julie Trommatter/University of Maryland Center for Environmental Science's Horn Point Laboratory & PhytoChop Coastal Observatory)



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Bay Journal reporter Jeremy Cox interviews Pam Cooper and Gary Allen about their concerns for the Belt Woods Natural Environment Area in Maryland. (Dave Harp)

Out and about, across the Bay watershed

Bay Journal reporter **Jeremy Cox** found himself in a variety of settings recently as he worked to produce recent articles and radio segments. Among them was the Belt Woods Natural Environment Area in Prince George's County, MD. The state-owned tract is considered so environmentally sensitive that no public visitation is allowed outside of guided hikes. But the Maryland Department of Natural Resources granted access to Jeremy, *Bay Journal* photographer **Dave Harp** and two local environmentalists for an article about the potential impacts of nearby development.

On the other shore of the Bay, Jeremy had a moment of *deja vu* while covering the U.S. Army Corps of Engineers' construction of a new island in the Bay. He noticed that the contractor's dredge boat, dubbed the *Lexington*, looked familiar. As he stepped onto it, he realized he had been on this vessel before — while writing about the use of dredge spoil to repair a marsh on Maryland's Eastern Shore in 2023.

In Virginia, *Bay Journal* reporters **Tim Wheeler** and **Lauren Hines-Acosta** accepted an invitation to talk to about 40 members of the Marine Trawler Owners Association at Coles Point Marina. The group also viewed our film, *Chesapeake Rhythms*, and asked thoughtful questions about environmental journalism.

It won't be long before new films are released, too. The *Bay Journal's* filmmaking team of **Dave Harp**, **Tom Horton** and **Sandy Cannon-Brown** are working on several short-format films. The first will debut this fall, highlighting the management challenges caused by resident Canada geese. A piece on sturgeon will follow, as Dave works energetically to capture some spectacular footage.

The team has also started work on a longer film, which recently roused Dave for a 3:30 a.m. departure on a crabbing boat with waterman Fred Pomeroy. The footage will be part of a documentary on the state of Bay blue crabs, a stunning follow-up to our 2016 film, *Beautiful Swimmers Revisited*. You can view all of the *Bay Journal* films on our YouTube channel or at bayjournal.com/films.

Rappahannock Tribe secures 700 more acres at Fones Cliffs

The Rappahannock Tribe on June 12 reclaimed 704 acres of its ancestral lands along its namesake river in Virginia.

The land is along what is known as Fones Cliffs, a stretch of nearly vertical banks that rise high above the north side of the river about 50 miles upstream from the Chesapeake Bay. The high ground gave the Rappahannock a strategic advantage when defending their land against the English in the 1600s. The area is home to three of the tribe's 14 ancestral towns:

Pissacoack, Matchopick and Wecuppom. The colonists took the land in the 1650s, forcing the tribe to relocate across the river on the Middle Peninsula.

Since 2017, the tribe has slowly secured nearly 2,400 acres around Fones Cliffs.

"For millennia, the power of this place has shaped tribal identity and connected the people to the land and to the river that bears our name," said Anne Richardson, chief of the Rappahannock Tribe. "It is very rewarding to be able to restore the lands of our ancestors to our citizens of today and for future generations."



The Rappahannock Tribe has recovered, or rematriated, about 2,400 acres of its ancestral land at Fones Cliffs since 2017. (Jeffrey Allenby/Chesapeake Conservancy)

The newest parcel to fall under the tribe's stewardship is mostly forest, laced with ravines. Most of the total 2,391 acres are under conservation easements, but about 38 acres are for tourism and tribal use.

The tribe bought the land from the Chesapeake Conservancy with funding from the federal government, the Virginia Land Conservation Foundation and the Conservation Alliance.

— L. Hines-Acosta

PA governor enacts strict regs for data centers

Pennsylvania is clamping down on AI data center development in what Democratic Gov. Josh Shapiro is touting as the "strictest guardrails" in the country.

"We have a long history in Pennsylvania of industry running roughshod over our communities to make a buck," Shapiro said during an Aug. 18 announcement. "That stops with me."

The new rules are contained in an executive order, a move Shapiro said he had to take after the Republican-controlled state Senate failed to pass legislation from the Democratic House that would have enacted those standards.

The order incorporates the Governor's Responsible Infrastructure Development (GRID) requirements, which were first announced in February as voluntary criteria to follow in exchange for fast-track permitting. The new order makes those standards mandatory.

Collectively, the new actions require developers to:

- Bring their own power sources for new data centers and pay all costs tied to that electricity. That energy must increasingly come from renewable sources, reaching up to 32% in 2035.
- Receive local approval for their projects before the state Department of Environmental Protection will review their permit applications, including those for water withdrawals and wastewater.
- Create community outreach plans that highlight public input in the approval process.
- Begin submitting annual energy and water consumption reports by July 2027.

See **BRIEFS**, page 6



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briefs

From page 5

The state will also be creating a database of projects currently under review and banning non-disclosure agreements. Fast-tracking is off the table, including projects already in the permitting pipeline.

Industry representatives have balked at the governor's rules, saying they threaten to undermine billions of dollars in planned investments throughout the state.

State officials say approximately 100 data center projects are in some form of development in the state right now.

— J. Cox

'Hundred Acre Wood' saved from bulldozers in MD

A Maryland version of Winnie-the-Pooh's fabled magical forest has been officially protected from development.

Informally known as the "Hundred Acre Wood," the forested tract was transferred by NASA to the U.S. Fish and Wildlife Service during a signing ceremony in July. The 105-acre property is now managed as part of the adjoining Patuxent Research Reserve, which is a publicly accessible national wildlife refuge.

"Through working with partners on the best use of land, as exemplified with this land transfer, we can continue to conserve America's natural beauty

and expand outdoor recreation opportunities for future generations," said U.S. Fish and Wildlife Service director Brian Nesvik.

The site, which sits near NASA's Goddard Space Flight Center in Greenbelt, MD, was formerly used for testing rocket fuels. But with the exception of a 2.5-acre cluster of buildings in its interior, the entire landscape was left covered with woods.

The federal Public Buildings Reform Board in 2021 declared the property, formally called Area 400, to be "underutilized" so that it could be sold. The board proposed transferring it to Fish and Wildlife, enabling it to be added to the refuge. But those officials decreed the deal could only move forward if the sister agency paid "fair market value." Otherwise, it would be sold to the highest bidder.

Under pressure from conservationists, the Biden administration rejected the move along with more than a dozen other potential sales of federal property, citing the need for additional information.

The interagency transfer was effective on Feb. 23 this year, and NASA subsequently demolished the buildings, roads and utilities on the property.

The Patuxent Research Reserve encompasses nearly 13,000 acres of mostly forested land, making it the largest unfragmented woodland between Washington and Baltimore. It is the nation's only refuge singularly dedicated to supporting wildlife research.

— J. Cox

Study lays out strategies for VA water supply

The Virginia Department of Environmental Quality (DEQ) released recommendations for lawmakers on how to address the dropping average water levels in the state's largest aquifer on July 24.

The recommendations are part of a study that evaluated groundwater supply east of Interstate 95. State lawmakers requested the study in 2024 through Senate Joint Resolution 25. DEQ shared the results earlier this year but waited to release the full report until Gov. Abigail Spanberger reviewed the analysis.

The study focused on a system of aquifers, or pockets of water between sediment, in the Eastern Virginia Groundwater Management Area and the Eastern Shore Groundwater Management Area. That is where the state has jurisdiction to limit groundwater withdrawals.

The study found that the overall rise in groundwater levels in the Potomac aquifer, the largest in the system, has been slowing since 2021. Water is flowing into the aquifer faster than people withdraw it, but the net rate of replenishment is slowing down.

"Under current conditions, groundwater levels throughout the Potomac aquifer are expected to enter a period of decline in the next five to ten years," the report said.

To address the dropping levels, DEQ recommended that Virginia lawmakers give the state explicit authority to deny groundwater withdrawal permits if alternative water sources are available or if the aquifer is dangerously low. The department recommended lawmakers prohibit the issuance of new permits for significant withdrawal permits in the management areas.

DEQ also suggested that lawmakers require localities to limit their planned growth based on groundwater availability.

The department asked the General Assembly for \$1.7 million over the next two years to continue its groundwater studies. The tasks it would fund include improving groundwater withdrawal permit compliance, conducting technical evaluations of the aquifers, buying real-time monitoring equipment to evaluate groundwater recharge methods and hiring a contractor to study other parts of Virginia that could benefit from groundwater recharge.

— L. Hines-Acosta

EPA launches new system to clean up PA superfund site

The U.S. Environmental Protection Agency began building a \$39 million thermal treatment system to clean contaminated groundwater at the Valmont TCE Superfund Site in Luzerne County, PA, on July 15.



Cedar Point Farm
on Maryland's Lower Eastern Shore



The Land Group

156 ACRE WATERFRONT PROPERTY WITH HISTORIC HOME



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briefs

The site is a former upholstery manufacturing plant. Chromotex Inc. leased the property from 1978 to 2001 and applied fluorocarbon stain repellants to fabrics. These repellants contained trichloroethene, or TCE. TCE is a nonflammable, colorless liquid that's used as a solvent to remove grease from metal or as an ingredient in adhesives and spot removers.

Groundwater contaminated with TCE was discovered around the Luzerne County site in October 1987 after samples were taken from private wells. Historical spills at the site have contaminated water 80 feet below the facility.

The EPA added the facility to the superfund program's National Priorities List in 2001. The agency created a remedy plan in 2011, which restricted the use of groundwater, switched impacted residents to a public water supply and used chemical oxidants to treat groundwater.

The EPA changed tactics in 2021 after three rounds of chemical oxidant treatments proved ineffective. The revised plan extracts groundwater and treats it for TCE and other toxic contaminants. The new thermal treatment system uses underground heating rods to vaporize the contaminants, and that gas reaches the surface through pipes.

The next five-year review of the remediation plan is due this year.

— L. Hines-Acosta

MD oyster farmer found guilty in tampering case

The manager of an oyster-farming operation on Maryland's Eastern Shore was found guilty July 6 of tampering with evidence amid a state investigation into allegations of widespread dumping of illegal oyster bed material into the Chesapeake Bay.

Daniel R. Webster Sr., 75, of Deal Island faces up to three years behind bars and up to a \$5,000 fine stemming from a misdemeanor charge of altering evidence. He also was charged with obstructing and hindering an investigation, another misdemeanor. Sentencing is scheduled for Sept. 14.

The episode represents a flash point in efforts to supply enough suitable bed material for Maryland's oyster-farming industry and publicly funded reef restoration projects. Watermen and state officials have struggled in recent years to find enough recycled shells to replenish oyster beds, forcing them to increasingly turn to alternative substrate, such as crushed concrete.

Maryland Natural Resources Police investigators are still looking into whether illegal substrate was dumped on oyster beds leased by Webster's boss, Phillip "Jamie" Harrington, a Dorchester County businessman. The trouble began in late April when NRP received a tip about boats dumping concrete

mixed with plastic onto privately leased oyster grounds off Deal Island. Hunks of plastic were washing up on the shoreline, littering boat ramps and lurking beneath the water's surface, said NRP Cpl. Zachary Ruark, who conducted the initial investigation. Harrington didn't return a message seeking comment.

Webster became the subject of a separate investigation after taking a boat on May 4 to one of Harrington's oyster farms and removing the buoys that marked the leased area. He also made two passes across the bottom with the boat's dredge down, potentially disturbing evidence, according to the written NRP account.

Webster told the court he was taking the buoys up to get them out of the way for crab potters. And as for the dredging, he said he was trying to make sure that workers hadn't missed any spots while placing the substrate.

— J. Cox

Could seabed mining in VA affect migratory fish?

The U.S. Bureau of Ocean and Energy Management (BOEM) began soliciting public comments and industry feedback on potentially leasing more than 2,500 square miles near the mouth of the Chesapeake Bay to seabed mining. The public comment ended Aug 22.

Minerals targeted for extraction from the ocean floor include manganese, nickel, cobalt and so-called rare earth minerals needed for smartphones, defense systems, medical devices, batteries and other technologies.

Environment Virginia, the Natural Resources Defense Council, the Southern Environmental Law Center, Citizens for a Better Eastern Shore and other groups are concerned this could disrupt marine life, commercial fishing and military operations. Dylan Mason, public policy manager with Lynnhaven River NOW, said he's worried that large sediment plumes from the mining could disrupt migratory species entering the Chesapeake Bay.

In early 2025, President Trump also pointed to environmental, military and fishery concerns in his executive order to pause or cancel offshore wind projects like Coastal Virginia Offshore Wind project near Virginia Beach.

BOEM started gauging interest in seabed mining after a company requested to mine the area last November. The lease area is between three and 63.5 miles off Virginia's Eastern Shore and larger than the state of Delaware. BOEM says the request for comments and feedback should not be interpreted as an indication that seabed mining will be allowed or that the whole lease area will be mined.

— L. Hines-Acosta

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Who helps local governments that want to help the Bay?

Availability of technical assistance varies widely across Chesapeake region, study finds

By Jeremy Cox

Local governments are widely seen as crucial to restoring the health of the Chesapeake Bay and its rivers. Many, though, lack the workforce and expertise to carry out the work.

A new report reveals that more than 120 “technical assistance” programs have sprouted across the Bay watershed trying to fill those gaps. But those efforts are themselves plagued by gaps — gaps in what type of services are provided and where help is available. Funding can also vary significantly from one year to the next.

The 175-page report was authored by the Environmental Policy Innovation Center, a nonprofit consultancy based in College Park, MD. It grew out of a recommendation made by the Chesapeake Bay Program’s local government advisory committee in 2023 to expand technical assistance throughout the watershed.

Local governments have had a formal role in the Baywide cleanup since 1987, with the

founding of the local government committee in that year’s Bay Agreement.

Counties, cities and towns undertake many Bay-related functions. Among other things, they make land-use decisions that reverberate beyond their borders, serve as the engines behind stormwater and wastewater upgrades and often act as real-world laboratories for innovative cleanup strategies.

Universities, state and federal agencies, nonprofit organizations and regional partnerships have been tasked with helping them meet their environmental goals.

The report found 33 free programs and groups that offer assistance in two or more Bay states. Their ranks include the Oyster Recovery Partnership, Alliance for the Chesapeake Bay’s Delmarva circuit rider, Chesapeake Research Consortium and U.S. Environmental Protection Agency’s water technical assistance program.

But when researchers looked at programs operating only in one of the Bay states, the numbers varied widely, from three in West Virginia to 27 in Virginia. In general,

regions lying farther away from the Bay’s shoreline had fewer programs.

The portion of northeastern Pennsylvania within the Susquehanna River watershed, for instance, was singled out as having a thin inventory of technical assistance. “This is an area of additional future research because the Susquehanna watershed is a key contributor of freshwater and nutrients to the Bay,” the authors wrote.

There was also far more help available to the rural Eastern Shore of Maryland than to its Western Shore. The report questioned whether the Western Shore was comparatively underserved or simply had more of their own expertise and resources to pay for technical assistance.

Most technical assistance providers engaged with more than 20 local governments over the past five years, researchers found. But it was unclear whether this met the total demand for assistance.

The state-federal Bay cleanup encompasses several goals, and providers are addressing some far more than others, according to the

report. About 50 programs reported helping local governments with goals such as reducing nutrient pollution, planting trees and improving stream health. But only a dozen or so dealt with fisheries, blue crabs, brook trout and oysters.

It’s hard to say whether there is truly unmet demand for assistance or if some goals are less relevant in certain locations, the authors said. Coastal priorities, for example, may not be high in inland communities. But they noted that a 2019 Bay Program analysis identified 29 of its 31 restoration goals as “needing some level of local government engagement.”

The report offers several recommendations to improve technical assistance, such as encouraging programs to share information, prioritizing locations that need the most help, and compiling an inventory of private fee-based services for local governments. ■



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How much pollution is too much? VA asks public for input

State officials seek ways to prevent communities from being overburdened

By Lauren Hines-Acosta

Squeaks from a pump station near Vince Hodges's home in Norfolk, VA, routinely wakes him at 2 a.m. His Berkley neighbors live next to shipyards and passing coal trains. Alone, each piece of infrastructure complies with pollution regulations. But the cumulative impact has residents worried about noise, air quality and their quality of life.

The Virginia Department of Environmental Quality (DEQ) hosted three town halls in July and August for people, like Berkley residents, to suggest ways in which the state can prevent communities from being overburdened with pollution. DEQ must respond to public comments by Oct. 31 and publish final guidance Dec. 31. Comments can be sent to ejcomments@deq.virginia.gov.

Communities have been pushing the state to consider the cumulative impact of pollution when considering permit applications instead of evaluating each project individually. According to a 2024 report

by the Virginia Council on Environmental Justice, low-income areas, people of color and rural communities are most affected by cumulative impacts. They also face higher rates of asthma and cardiovascular disease.

DEQ drafted a guidance document in 2023, which outlined how the department would incorporate environmental justice into its permitting process. But the document was never finalized. Lawmakers passed HB1266 this past session requiring DEQ to update and finalize the document with public input.

Now, the department suggests honing its sights on "environmental justice focus communities," which considers environmental stressors in addition to income and race. With only three environmental justice staff members at the agency, Victoria De La Casas with DEQ believes the companies applying for permits "may be better positioned" to do the initial community outreach. DEQ also suggested companies should determine if their project is in an environmental justice community.

The state is considering making a screening



Environmental justice advocates gather to protest a planned compressor station in Virginia in July 2025. (Lauren Hines-Acosta)

tool for companies to evaluate cumulative impacts. The tool could set a score for each environmental stressor, such as fine particulate matter or ground-level ozone.

To mitigate pollution, companies could relocate parts of their projects, minimize emissions or compensate neighborhoods for excess pollution. Kim Sudderth, a Berkley resident and policy director for Virginia Interfaith Power and Light, called for DEQ

to mandate these mitigation methods or deny permits if they don't pass the cumulative impacts analysis.

"Until being a good neighbor is profitable, the DEQ needs to protect vulnerable communities like mine," Sudderth said.

But Andrea Wortzel, an attorney with Troutman Pepper Locke who represents permittees, said the department does not have the authority to deny permits based solely on that analysis.

In her comment to DEQ, Wortzel added that process should include an economic benefit analysis and that any extra public engagement should focus on the communities directly impacted.

Environmentalists and members of the public recommended that DEQ should first establish the environmental issues communities are already experiencing. Some stressed that DEQ should lead engagement with communities and that a third party should conduct the cumulative impact analysis. ■



Maryland Ornithological Society is seeking resident Land Manager Steward for its newest Sanctuary

The Sanctuary	The Position	Primary Responsibilities
Linganore Creek Sanctuary is a 125-acre property in Frederick County. Its woodlands, native meadows, grassland habitat, streams, trails, and buildings require active, year-round stewardship. As a MOS sanctuary, Linganore Creek presents a rare opportunity to help protect a diverse property while guiding its next chapter of habitat restoration and long-term care.	The Resident Land Manager will serve as the sanctuary's onsite steward. This hands-on leadership role combines habitat management, property and infrastructure care, equipment operation, planning, and coordination of volunteers. The selected candidate will work alongside the current steward during a structured transition before assuming full responsibility for the sanctuary's day-to-day management.	• Translate the sanctuary management plan into annual priorities and seasonal work. • Manage and enhance forests, meadows, woodlands, wetlands and streams. • Facilitate invasive-species control, planting, property maintenance, and field operations. If you are interested and qualified for this opportunity, call us at 301-898-3344.

Public input sought on possible cuts to Bay menhaden harvest

Commission eyes help for bait fishers and starving ospreys, but industry warns of layoffs

By Timothy B. Wheeler

The large-scale commercial harvest of Atlantic menhaden in the Chesapeake Bay could be slashed later this year. The move might help starving osprey chicks and other struggling fish but could also hurt a Virginia fishing village where hundreds of jobs rely on menhaden.

The Atlantic States Marine Fisheries Commission, which regulates near-shore fishing for migratory species, is seeking public comment on whether to cut the “reduction” fishery’s harvest of menhaden in the Bay by as much as 50%. They also want feedback on whether to set quota periods that would spread that harvest more evenly from spring through fall.

The commission approved a range of Bay harvest cuts for consideration at its Aug. 5 meeting in Crystal City, VA. It acted in response to complaints of plummeting catches by Maryland bait fishers and to reports of osprey reproduction declining drastically in the middle and lower Chesapeake and elsewhere along the mid-Atlantic coast — for lack of food, field research indicates.

Menhaden are a small, oily fish that range along the Atlantic coast. They are a vital link in the marine food chain, preyed upon by larger fish, marine mammals and birds — ospreys in particular.

They are harvested chiefly for “reducing,” or processing, them into animal feed and human food supplements. But they are also caught by individual fishers for use as bait in crabbing, lobstering and catching other finfish.

The Atlantic menhaden reduction fishery is based in Virginia. Using airplanes to spot schools of the fish, a six-vessel fleet operated by Ocean Harvesters pursues them in coastal waters and in Virginia’s portion of the Bay — Maryland does not permit it. The fleet’s catch is landed in Reedville, VA, for processing at a plant there owned by Omega Protein.

That reduction fishery has long been controversial, especially in the Bay, which is a prime nursery area for the coastal menhaden stock. Conservationists and sports anglers contend that the Ocean Harvesters fleet leaves too few fish in the water for striped bass and other creatures to sustain themselves.

The controversy has escalated in recent years amid evidence that ospreys around the



Menhaden from a pound net are offloaded at Kool Ice Seafood in Cambridge, MD. The fish will be used as crab pot bait. (Dave Harp)

Bay and elsewhere along the Mid-Atlantic coast are failing to produce enough young to sustain their population. Empty nests and dead, emaciated chicks have been found in waters where ospreys usually rely on catching menhaden for food, scientists say.

In 2025, Maryland fishery officials reported that catches of menhaden for bait in their waters have declined sharply. They asked the commission for help, suggesting that the Virginia fleet may be intercepting the fish as they migrate up the Chesapeake.

Ocean Harvesters and Omega counter that there is no evidence that their harvests are responsible for the struggles of ospreys, striped bass or bait fishermen.

A 2025 assessment by fisheries experts found that the coastwide menhaden population is not overfished, but it did not look

specifically at conditions in the Chesapeake. Sports anglers, environmentalists and some scientists contend that the reduction fishery may be causing or contributing to a localized depletion in the Bay.

After years of debate on that question, Congress earlier this year appropriated \$2.5 million to study menhaden abundance and harvests in the Bay. Virginia chipped in another \$2 million.

It may be several years, though, before that research yields answers. The Atlantic fisheries commission has already cut the ocean menhaden harvest by 20% this year, hoping it will leave more of the fish for struggling striped bass to feed on as they recover from being overfished. That coastal cut to 187,000 metric tons did not apply in the Bay, where the reduction fishery cap of

51,000 metric tons remains unchanged.

At its Aug. 5 meeting, the commission heard from both sides on whether to change the Bay harvest rules.

Virginia Del. Adele McClure, a member of the state’s delegation to the commission, urged managers to wait for the research to decide if changes are warranted.

“Without that complete picture, without the proper Bay-specific data, I feel like we are putting the cart before the horse instead of availing ourselves [of] the upcoming studies and data that could finally guide us,” she said. She argued that it would be premature to take actions that could harm an industry in her state before studies show it is necessary.

Ben Landry, spokesman for Ocean Harvesters, warned that significant harvest reductions could result in layoffs. The fishing fleet and processing plant in Reedville employ about 260 people, he said. Previous cuts the commission made in the Bay harvest cap have shrunk the payroll, he said, noting that 15 years ago the fleet had four more of the large seine net vessels.

But sports anglers and conservationists argued that the commission has a responsibility to curb catches as a precaution even if science hasn’t proved the large-scale harvest is responsible for the lack of menhaden in the Bay. The ospreys’ nesting failures are a warning sign of broader ecological disruption, they contend.

“The Chesapeake Bay cannot continue to wait for perfect information,” said Joanie Millward, executive director of the nonprofit Virginia Osprey Foundation.

The commission’s vote to put potential cuts out for public comment passed 16 to 2, with states from Maine to North Carolina in favor. Only Virginia and the Potomac River Fisheries Commission, a bistate body that regulates harvest in that Bay tributary, opposed moving ahead.

In the next couple of months, the commission plans to hold hearings, particularly in the most affected states of Maryland and Virginia. It also plans to seek public input via webinars, possibly an online survey and through email. Details on those outreach efforts are forthcoming.

The commission expects to make a final decision at its annual meeting in November in Newport, RI. ■

Scarlet tanager proposed as PA's official migratory bird

State's vast forestland favored as summer breeding grounds for a colorful 'indicator species'

By Carolyn Beans

For generations, grade school children across Pennsylvania have learned the official plant and animal symbols for the state, such as the mountain laurel (state flower), brook trout (state fish), and eastern hellbender (the comparatively new state amphibian).

Soon, they may have another critter to add to the list: the scarlet tanager. Last March, state Rep. Mandy Steele, representing part of Allegheny County, introduced a bill in the Pennsylvania General Assembly that would designate this species as the official migratory bird of the state.

Pennsylvania already has a state bird, the ruffed grouse. But the new bill aims to add the scarlet tanager in hopes of drawing attention to the critical role that Pennsylvania's mature woodlands play in supporting the migratory species' persistence. "Creating an opportunity to talk about our forests and why we have to protect them is really important," Steele said.

Male scarlet tanagers have bright red bodies and black wings and tails, while females are yellow-green. Despite the male's flashy plumage, these songbirds are easy to miss because they spend most of their time high in the canopy. And their song, which is often said to sound like a robin with a sore throat, easily disappears into the chorus of songbirds in forests, said Jeff Larkin, a conservation scientist at the Indiana University of Pennsylvania and a forest bird habitat advisor for the American Bird Conservancy.

Each spring, scarlet tanagers (*Piranga olivacea*) leave their winter homes in the forests of South America and travel thousands of miles north. The trip lasts about one month, with birds flying through the night and resting during the day in forests or smaller wooded patches. People in urban areas like Philadelphia may even see migrating scarlet tanagers in parks and other greenspaces, Larkin said.

When the journey ends at their chosen summer breeding grounds, these birds nest primarily in mature hardwood forests and remain there until their southward migration in the fall. Breeding scarlet tanagers can be found across the eastern half of North America, but an estimated 17% of the global breeding population of scarlet



A male scarlet tanager perches on a tree at Codorus State Park in York County, PA. (Henry T. McLin/CC BY-NC-ND 2.0)

tanagers settles in Pennsylvania woodlands — more than in any other state.

Pennsylvania hosts such a significant portion of the global scarlet tanager population largely because of the more than 16.6 million acres of forest that blanket about 60% of the state. Scarlet tanagers are especially dependent on mature oak and maple forests, which are found in many regions of Pennsylvania. "Oak forests host abundant insect prey, which so many of our songbirds, including the scarlet tanager, rely upon for their own diet and that of their nestlings and fledglings," Larkin said.

Steele drafted the scarlet tanager bill in close collaboration with the National Audubon Society's Mid-Atlantic office, which was the primary champion of adding a migratory bird to the list of state symbols. "She understood what this [bill] could mean for our shared values for Pennsylvania," said Jim Brown, policy director at Audubon Mid-Atlantic. "She did not take any convincing."

Audubon selected the scarlet tanager because of its outsized dependence on Pennsylvania forests, its charismatic coloring and the fact that Pennsylvanians throughout most of the state have a chance to spot one if they study the tree canopy carefully. Just as important, the bird is considered an "indicator species," meaning



In breeding season, the female scarlet tanager's yellow-green plumage makes her easily distinguishable from the scarlet red male. (Henry T. McLin/CC BY-NC-ND 2.0)

its presence signals a healthy ecosystem.

The scarlet tanager also became a leading contender because its preferred habitat complements that of the nonmigratory ruffed grouse. "The ruffed grouse is

dependent on young forest and edge forest," Brown said. "And the [scarlet] tanager is more dependent on interior forest, upper canopy and older forest."

The scarlet tanager is not currently threatened. But keeping forests healthy enough for the bird means protecting these landscapes from a slew of challenges, including development pressure, climate change, deer browse, forest fragmentation and invasive species encroachment, Brown said.

The scarlet tanager bill was referred to the House Game and Fisheries Committee in March. It has 26 co-sponsors, including 10 Republicans.

Steele anticipates that the bill will pass in 2027 because of the support she is receiving from other legislators and many constituents. "It's been just incredibly heartwarming to see this response," Steele said. "The birding community is big and strong." ■

Carolyn Beans is a freelance science writer based in Pennsylvania.



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Bill could allow harvests in future Bay oyster sanctuaries

MD lawmaker argues that federally funded projects should be open for commercial harvest

By Jeremy Cox

Environmentalists are decrying language added to a U.S. House spending bill that would open future federally supported oyster restoration projects around the Chesapeake Bay to commercial harvesting.

U.S. Rep. Andy Harris, Maryland's lone Republican member of Congress, inserted the provision into a bill funding the National Oceanic and Atmospheric Administration (NOAA). The House Appropriations Committee passed the bill on a 32-28 vote in May. It is expected to come up for a vote by the full House in the coming weeks.

The provision is likely to face stiff opposition if it reaches the Senate. A similar measure was stripped out of last year's funding package before it became law. But it is part of a growing number of efforts in Washington, Annapolis and Richmond aiming to soften or remove the protected status of restored reefs amid the bivalve's rebound in the estuary.

"It comes at a time when ideas like this maybe have more legs," said Ben Ford, the Miles-Wye Riverkeeper. "Everyone wants more oysters in the Bay. But people see the success of meeting the oyster restoration goals in the Bay Agreement and think the job's done."

The landmark 2014 Bay Agreement established 10 goals and 31 outcomes for cleaning up the estuary and its watershed. One of the most notable objectives called for Maryland and Virginia to restore oyster populations in 10 Bay tributaries by 2025.

Officials exceeded that goal by completing work in 11 waterways — one of a handful of bright spots in the Baywide ecological cleanup. The states have since pledged to conserve or restore another 2,000 acres of oyster habitat.

Environmentalists like Ford attribute much of the oyster program's success to sanctuaries being off-limits for harvesting. They say that research is on their side. A study led by the University of Maryland Center for Environmental Science and published in January, for example, shows that dredging oyster beds likely causes loss of shell volume beyond what is removed by watermen.

"We can't let up off the gas," Ford added. "We're not even close to having a restored Chesapeake Bay."



Maryland waterman Eric Wisner dredges oysters from his leased grounds on the Nanticoke River. (Dave Harp)

Harris's measure would prevent any of the bill's funds from going toward building new oyster reefs in the Bay unless those reefs are opened to commercial watermen three years after their creation. Echoing watermen's claims that dredging revitalizes reefs, Harris said the change promises to be a boon to the seafood industry as well as to the environment.

"I think there's evidence that commercial harvesting is actually good for an oyster bed, working the bottom," said Harris, who represents the Eastern Shore. "It removes the silt from some of the oysters, and there's evidence that it works."

The provision would almost certainly have wider impact if it applied to funding for the U.S. Army Corps of Engineers, which shoulders most of the federal cost of oyster restoration in the Bay.

NOAA's role is much more limited. The agency is mostly responsible for funding oyster production at the region's hatcheries, helping to select new sites and tracking the health of completed reefs.

Still, Harris said, the move would represent a step in the right direction. "We've got to start somewhere," he said.

Watermen say that the expansion of restrictions on where they can harvest oysters

underperforming" for five or more years after their initial federal investment.

Environmentalists worry that because the measure doesn't define what "underperforming" means, it could be used to shut down restoration at a wide variety of locations.

U.S. Sen. Chris Van Hollen, a Democrat from Maryland on the Senate's Appropriations Committee, was instrumental in removing the harvest-friendly language from the 2025 funding legislation. His office signaled that he's ready to do so again.

"We can balance sanctuary areas and harvest, but these riders miss the mark," Van Hollen's office said in a statement. "As [the senator has] in previous years, [he will] work to ensure our funding bills strike the right balance in prioritizing the long-term health of the Bay, its oyster population and the livelihoods it supports."

Environmentalists have long argued that harvest bans must stay in place on restored reefs because the overall bivalve population remains a fraction of its historic size.

"Sanctuaries were never intended to function as harvest bars," Ford said. "The purpose of a restored oyster reef is not a commercial one. It's to improve water quality, [create] habitat, sequester carbon, remove nutrients. They're a keystone species for a reason."

But recent actions suggest that lawmakers and regulators are trying to strike a balance between restoring oysters for their ecological benefits and supporting the Bay's traditional fishing industry.

Maryland, for instance, took the unprecedented step in 2024 of splitting state oyster restoration funding at one site, setting aside \$1 million a year at Eastern Bay for publicly harvested reefs and \$1 million for sanctuaries there. Meanwhile, a committee of the state's Oyster Advisory Commission is studying whether to open "underperforming sanctuaries" to rotational harvest or some other form of fishery management.

And in Virginia, the Army Corps plans to spend money for the first time in two decades on oyster reefs destined for harvest. More than 4,000 acres are set to receive a mixture of substrate and young oysters in Pocomoke and Tangier sounds, with the total split equally between sanctuaries and harvest reefs. ■



"Spat-on-shell" oysters are hosed from a boat to supplement a sanctuary on Maryland's Manokin River. (Dave Harp)

over the last decade and a half has made it harder for them to earn a living. They have lost access to historic oyster grounds on several fronts. Those include the creation of no-harvest sanctuary reefs and states leasing submerged land to aquaculture operations.

A second provision pushed by Harris would bar further money from being spent on oyster restoration sites "designated as

Data centers increasingly face bans, moratoriums

Localities close doors to data centers, at least temporarily, amidst public outcry

By Lauren Hines-Acosta

People spilled out of the Harford County, MD, council chambers and down the street in June. For more than 10 consecutive meetings, county residents had demanded that the council ban data center development. They got their wish.

Data centers, which enable the internet and AI, are proliferating across the nation. Now, a wave of data center pushback is sweeping the Chesapeake Bay region as distrust with the industry deepens and energy bills rise. But pauses and bans on data center development could mean some localities miss out on key financial opportunities.

“I’ve never seen a policy issue rise like this from relative obscurity to dominating the political landscape,” said Michael Sanderson, executive director of the Maryland Association of Counties.

Many communities are concerned about the centers using water to cool their servers, polluting the air with emergency diesel generators and straining the energy grid.

Data Center Watch, a research project by an AI intelligence company, found that the number of opposition groups nationwide more than doubled between October 2025 and March 2026. The company’s report also found that about \$130 billion worth of data center projects were rejected between January and March of this year — about the same amount as all of 2025.

Localities across the Chesapeake region have adopted moratoriums, or temporary pauses, on data center development to research the industry’s impacts and to draft restrictions. Seventeen localities have adopted some form of moratorium lasting up to two years, with most of them in Maryland.

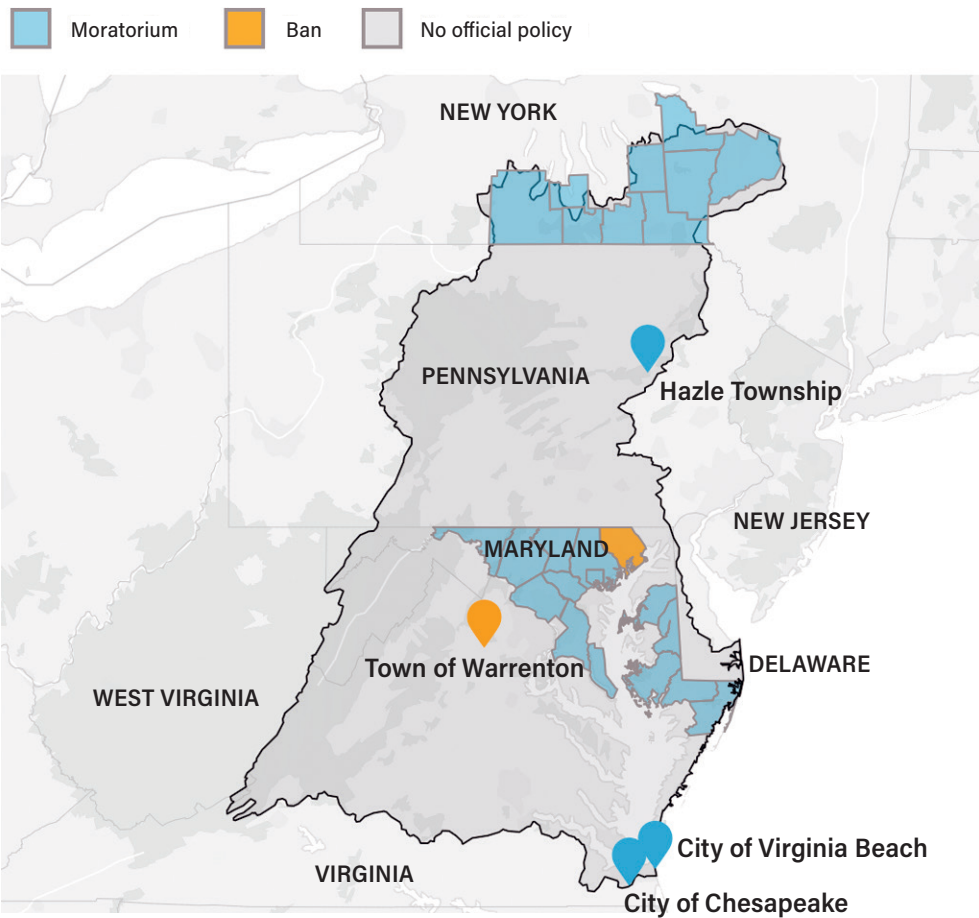
New York is the first in the country to adopt a statewide moratorium. West Virginia, meanwhile, went in the opposite direction, passing a law last year prohibiting counties from limiting data center development.

Communities have been protesting projects for years, but the recent vigor is driven partially by people connecting data centers to high energy bills, Sanderson said. PJM Interconnection, the mid-Atlantic grid operator, has found the industry is largely to blame for the significant rise in energy demand.

Brittany Baker, Maryland director with the Chesapeake Climate Action Network, said

Data center bans, moratoriums in the Chesapeake Bay watershed

Fourteen localities in Maryland have data center moratoriums. Harford County, MD, and Warrenton, VA, are the only places with bans. New York has a statewide moratorium, while West Virginia passed a law in 2025 prohibiting the ban of data centers.



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Map: Lauren Hines-Acosta • Created with Datawrapper

See this article at bayjournal.com for a more detailed map of Maryland.

localities have noted how Loudoun County, VA, has become “overrun” with the facilities. Plus, many people have come to distrust the industry due to backdoor deals and non-disclosure agreements with local leaders.

“It’s this vacuum of information that people felt really uncomfortable with, and so when the industry is operating in that way, it really makes people upset,” Baker said.

Many data center projects in the region have fallen through after developers circumvented community input. For example, the companies QTS and Compass planned to build the Digital Gateway campus in Prince William County, VA. If it had moved forward, Manassas National Battlefield Park would have been next to 37 data centers and 14 substations across 22 million square feet.

The Oak Valley Homeowners Association, American Battlefield Trust and Coalition to Protect Prince William County were concerned about impacts to the battlefield lands, the energy grid and the nearby Occoquan Reservoir.

The county board of supervisors agreed to the project before any application was submitted. County leaders skipped public notice procedures and rushed to rezone the land. The HOA and the American Battlefield Trust filed lawsuits, and on March 31 the Virginia Court of Appeals found that the county failed to follow public notice requirements.

“That’s the irony here,” said David Duncan, president of the battlefields group. “If they had done it the right way, I don’t know that

we could have stopped them.”

Melissa Emmal, a resident of Calvert County, MD, first heard about a data center coming to her community when she found Amazon Web Services job listings for her area. Emails show county staff had been talking with data center developers for years before any applications were submitted.

Emmal created a petition in March calling for a moratorium. By Aug. 18, three county commissioners lost their re-election, the Amazon project was rejected, a six-month pause was enacted, and Emmal’s petition reached 10,225 signatures.

Warrenton, VA, and Harford County, MD, are the only places in the Bay region that have outright banned data centers.

Warrenton Mayor Carter Nevill said the conversation around data centers needs to move away from an all-or-nothing mindset, away from vilifying neighbors who disagree and toward creating a stronger community. Now that the ban is in place, Nevill worries where the community will get tax revenue to fund deferred infrastructure maintenance.

“You have to look beyond the immediate outrage and look at your responsibilities to make decisions that may not be popular,” Nevill said.

Loudoun County, VA, has lowered its property tax rates and boosted public service funding over the last 10 years, according to a study funded by the tech industry. That county will vote on its own moratorium on Sept. 15.

“Moratoriums on data centers send a signal that an area is closed for business, both for data centers and for other significant economic development projects,” said Nicole Riley, director of Virginia government affairs for the Data Center Coalition.

Maryland is also facing a \$3 billion “budget crisis,” according to Sanderson, and must find a way to make up losses from federal job cuts.

But Bryan Cornell, co-founder of Our Harford, said the tax revenue “is just another promise of financial prosperity.”

Cornell and co-founder Krissy Flatau pushed for a ban because they believed a moratorium would just be a pathway to more data centers.

Cornell said, “I think the bigger question that needs to be asked is, ‘Do data centers need to be built in every single county in every state in the country?’” ■

Once rare, dam removals becoming common in Bay region

Thousands of structures remain, though, and some people want to pick up the pace

By Karl Blankenship

A few years ago, biologist Brian Watson was looking for endangered mussels in Virginia's Rock Island Creek when his assistant went around a bend and made a startling discovery. It wasn't a rare mussel.

"There's, like ... a stone wall," she shouted back to Watson. Then added, "That's a dam."

Standing 6 feet tall and stretching 55 feet across the creek, the dam was entirely unknown to them — appearing nowhere on maps or dam inventories.

But the dam wasn't irrelevant to their project: It was taking a toll on mussels, as so many dams do. The biologists found shells of dead James River spiny mussels, an endangered species, behind the structure.

"We assumed the mussels probably got washed down to the dam and then died as they got trapped," said Watson, a mussel specialist for the Virginia Department of Wildlife Resources, noting that the sandy substrate and water depth behind the structure was unsuitable habitat.

It was one of more than 6,500 dams that dot more than 200,000 miles of waterways draining the Chesapeake Bay watershed. That's an undercount. Many of them don't appear on dam inventories. Research was required to learn that the one on Rock Island Creek was called the Baber's Mill Dam, built in the early 1800s.

Large or small, dams create a host of problems. They alter habitat, block fish movement, change water temperatures, promote algal blooms and contribute to the decline of native species. Some are safety threats to people.

But the Baber's Mill dam no longer causes such problems.

By chance, an aquatic ecologist from the timber company Weyerhaeuser, which owned the property, contacted Watson about the dam a few months later. The state and company teamed up to remove the structure in April 2024.

Once unusual, such actions are becoming common. During the 1900s, only 56 dams were removed in the Chesapeake Bay watershed, according to Chesapeake Bay Program data — about one every two years. From 2000 through 2025, though, the pace reached about 10 per year, totaling more than 250 removals.



Baber's Mill Dam on Rock Island Creek, a James River tributary about 50 miles west of Richmond, is shown before it was demolished in early 2024. (Louise Finger/VA Dept. of Wildlife Resources)

Nationwide, the nonprofit organization American Rivers reported that 100 dams were demolished in 2025 — the fourth highest yearly count on record. But that's just a fraction of the 558,000 dams estimated to exist. So the organization, which works closely with states on projects, is calling for stepped-up efforts. It set a goal of quickening the pace by removing 30,000 by 2050, including 4,500 in the Mid-Atlantic.

"We feel really strongly that one of the fastest ways to restore a river and its ecology is by taking out these obsolete structures," said Adam Schellhammer, American Rivers' Mid-Atlantic regional director.

Indeed, within weeks of the Baber's Mill removal, fish that serve as temporary hosts for spiny mussel larvae — helping them move around the creek before detaching — were passing through the site. Soon, sea lamprey, a fish that migrates between the ocean and freshwater rivers, were moving by as well.

Migrating toward removals

Dams have been built in the Bay region since colonial days. Their impacts were recognized quickly.

In the 1730s, angry residents on Conestoga Creek in Pennsylvania ripped down a mill

dam, blaming it for blocking migrating shad from reaching their upstream nets.

It was a futile gesture. The pace of dam construction only accelerated. Dams powered gristmills and sawmills, and they helped operate canals. Later, they produced electricity, helped with flood control, provided drinking water, and created recreational opportunities.

Today, the Bay watershed averages one dam for about every 30 miles of waterways.

Those structures take a toll on fish, especially migratory species targeted by the Bay Program for restoration, such as shad, river herring and eels.

American shad and river herring once supported some of the region's largest fisheries. They live in the ocean but spawn in freshwater rivers — early settlers relied on spring spawning runs for food after long winters. Now, as much as 90% of East Coast migratory fish habitat is blocked and populations of those species are near historic lows.

Initially, efforts to help fish focused on building fish ladders. But ladders are often costly, ineffective and designed to benefit only a single species.

Even expensive, complex systems such as fish elevators built on the large hydroelectric dams on the Susquehanna River —

at the cost of tens of millions of dollars — have failed to move significant numbers upstream. This year, elevators only moved 4,057 American shad beyond Conowingo Dam on the Susquehanna River. The goal is to get 2 million upstream.

While many dams like Conowingo — a significant hydroelectric facility — still perform important functions, many others have outlasted their purpose.

Until recent decades, the idea of removing outdated dams was not seriously considered. Shannon Boyle, an aquatic biologist with the engineering firm McMillen and co-chair of the Chesapeake Bay Program's Fish Passage Workgroup, said the historic mindset was to fix aging dams rather than consider "end of life planning."

"Most of them are well beyond their design life," she said. "Usually, they're designed and constructed to be about 65 years old. The average age on the national inventory of dams is 65 right now. Many of them are 100 years old or more."

The modern era of dam removal is typically traced to 1999, when the 162-year-old Edwards Dam on the Kennebec River in Maine was demolished because of its impact on Atlantic salmon.

Dam removal was suddenly seen as a key tool to help restore river health and boost populations of migratory fish.

That emphasis was dramatically reinforced in the Bay watershed in February 2004. That's when the U.S. Army Corps of Engineers used 650 pounds of explosives to begin breaching the 770-foot-wide Embrey Dam on the Rappahannock River near Fredericksburg.

Until it was breached, there were no free-flowing rivers linking the Bay with its mountain headwaters. But within a few years, eel numbers surged in Shenandoah National Park, nearly 100 miles upstream in the river's watershed. Biologists also began finding American shad and river herring upstream of the dam site.

Today, the Rappahannock is the only Virginia river with an increasing population of shad found in surveys by the Virginia Institute of Marine Science.

"We're seeing the use of many miles of the upstream habitat that was reopened," said Alan Weaver, fish passage coordinator with the Virginia Department of Wildlife Resources.

Challenges ahead

Still, there are obstacles to removing the obstacles.

Ray Li, of the U.S. Fish and Wildlife Service and co-chair of the Fish Passage Workgroup, said many of the initial projects were ones with the greatest benefits and willing landowners.

“Those were the easy pickings to restore,” Li said. “Now we’re starting to come up against projects that might be more challenging.”

In many cases, removals can be a long and complicated process. It often takes two to five years to complete design and engineering work, conduct environmental reviews and secure permits. The physical removal, often completed in a few days, is the easiest part.

There is no dedicated state or federal funding for dam removals, and costs vary widely. The average is a few hundred thousand dollars.

Projects are more complex if they affect sewer lines, water lines or roads. Bloede Dam, 10 miles upstream of Baltimore on the Patapsco River, cost \$17 million to remove in 2018, in part because it required relocation of sewer lines and other infrastructure.

The cost can be tens of thousands of dollars less when those problems don’t exist, or when public agencies conduct some of the design work and, occasionally, the demolition itself. The removal of Baber’s Mill Dam, for instance, cost about \$60,000 because the state did much of the preliminary work.

The Bay cleanup itself can pose hurdles. If a project could release a significant amount of sediment, it can complicate state obligations to reduce nutrient and sediment pollution. And it can “balloon the cost” if the sediment has to be hauled off-site, Boyle said. “It can really stymie progress on a project.”

Some dams are so old that identifying owners is problematic, especially when there are different properties on each side. Some dams were deeded separately from properties, and the chain of ownership got lost.

“A lot of people don’t even know they own the dam,” said Jim Thompson, fish passage coordinator with the Maryland Department of Natural Resources. “They know it’s there, but they don’t really know it’s theirs, especially the smaller dams.”

Many owners want to keep their dam because they like the pool or “waterfall” it creates. “We can show them the benefits of removal and let them know that if it’s a high priority, we could probably get grant funding to remove it,” Thompson said. “But we can’t force them to take it out.”



A hydraulic breaker hammers away at the centuries-old Baber’s Mill Dam on Rock Island Creek in Buckingham County, VA, in 2024. (Louise Finger/VA Dept. of Wildlife Resources)

There are other headwinds. The proliferation of data centers — and their energy demands — have some people wondering whether old dams should be repurposed to generate electricity.

Building support

Perhaps no state illustrates the opportunities for accelerating dam removal better than Pennsylvania: It routinely leads the nation.

Last year, it accounted for 14 of the 100 dams removed nationwide. In 2024, it removed 27 — a quarter of all removals. (Not all were in the Bay watershed.)

“We have more dam owners that are interested in removal than we can feasibly get to,” said David Dippold, fish passage biologist with the Pennsylvania Fish and Boat Commission.

He said the state benefits from a

longstanding “culture of connectivity” between state agencies, nongovernmental organizations, county conservation districts and others who promote dam removals. That means more people identifying dams and talking to owners.

They also promote benefits beyond helping migratory fish, which are often unlikely to show up because of downstream blockages. Even non-migratory species like brook trout benefit, as they gain access to more food sources and areas that provide buffers from extreme temperatures. Studies show fish diversity often increases as dams are removed.

The state also has a streamlined permitting system, envied by many others, in which dam removals are treated differently than bridges or other developments that impact floodplains.

The permitting system, Dippold said, recognizes that removals help “fix” a

waterway, whereas doing nothing has its own impact: more maintenance, water quality degradation and problems for fish. “There’s a cost to inaction,” he said.

The state doesn’t have a designated funding source, but projects often secure money from its Growing Greener program.

American Rivers’ plan to accelerate removals in part mimics Pennsylvania’s approach by creating “communities of practice” in each state. Those will bring together state, local and federal government officials, as well as scientists and nonprofit organizations, to identify dams for potential removal.

One of the goals is to create a pool of potential projects and, when possible, conduct preliminary work so removals can start sooner when opportunities arise.

The effort will include outreach to dam owners, highlighting the costs of maintaining structures and the liability issues if something goes wrong.

There have been 1,243 recorded dam failures or emergency interventions in the country, according to American Rivers, 80% of which were in the last 20 years.

“These things are 100 years old,” Schellhammer said. “It’s not a matter of if it’s going to go; it’s when.”

The approach also aims to appeal to broader audiences. While the initial wave of removals focused on fish passage, new efforts recognize that many people have other motivations. They may want to remove a safety hazard, avoid a portage on a water trail or improve the looks of a waterway.

The Bloede Dam near Baltimore, for instance, helped migratory river herring and eels, but a major reason for the project was that nine people had drowned there since the 1980s. Dock Street Dam on the Susquehanna River in Harrisburg, now eyed for possible removal, is even deadlier. In the last century, 29 people have perished.

Or people may want to improve their communities. Last year, two dams across the Juniata River in Bedford, PA, were removed in large part because a member of the town council wanted to revitalize the riverfront. The project included shoreline enhancements, tree plantings and other amenities.

Whatever the reason, making the region’s — and the nation’s — rivers run mostly free is a daunting task. “We’re in it for the long haul,” said Jessie Thomas-Blate, American Rivers Mid-Atlantic director of restoration. “The reality is [that] there are just tons of dams out there not being used for the purpose they were built for. No one knows why many were built in the first place.” ■



Rock breakers work to remove an obsolete dam across the Raystown Branch of the Juniata River in Bedford, PA, in August 2025. (Matt Otis)

Plans for old Six Flags site reignite concerns for Belt Woods

Proposed residential and commercial development seen as threat to MD old-growth forest

By Jeremy Cox

A development partnership backed by an A-list sports celebrity is looking to transform a former amusement park in Maryland into an entertainment and shopping hotbed accompanied by a broad spectrum of housing types.

“Our goal is to deliver several different uses that kind of work together in a generative way to create a real ecosystem,” said Adam Rashid of TPA Group during a community meeting about the project in June.

But what about the natural ecosystem right next door? That’s what some conservationists have been asking since Six Flags announced plans in April to sell its 515-acre property in Prince George’s County for an undisclosed amount.

The amusement park shuttered last November. It had been branded as Six Flags America since 1999 but operated under several other names as an attraction dating back to 1974.

The property shares a long border with the Belt Woods Natural Environment Area, which owes its existence to a years-long environmental battle that sparked national attention. The 624-acre state-owned preserve is home to one of the last stands of old-growth forest in the Atlantic Coastal Plain. Part of the forest has been designated a National Natural Landmark for more than five decades.

The purchaser of the Six Flags parcel is a joint venture between TPA, an Atlanta-based private real estate developer, and 35V, an investment firm co-founded by NBA star and Prince George’s native son Kevin Durant. Their plans for the property are still under development, and they have partnered with the county government to seek public input.

The developers have stated no intention publicly of encroaching into Belt Woods. But environmentalists like Janet Gingold say that simply building too close to the natural area could upend its fragile balance.

“There needs to be a substantial buffer between any new development and the old-growth forest area,” said Gingold of the Prince George’s County Sierra Club. “I just am very concerned about this attitude of trying to maximize the economic opportunities and the county tax revenues at the expense of other priorities, including our climate goals and the protections of these important natural places nearby.”



Gary Allen and Pam Cooper lead a tour of the old-growth forest in the Belt Woods Natural Environment Area near Bowie, MD, in August. (Dave Harp)

Representatives of TPA and 35V couldn’t be reached for comment. But at the town hall in June, hosted by County Executive Aisha Braveboy, TPA’s Rashid told the audience that about 80 acres of the site is off-limits to development due to the presence of “woodlands and wetlands.”

“We can’t truly disturb those,” he said — adding, though, that his firm might be open to developing walking trails within them as a recreational amenity.

Braveboy added, “Having green space is a huge amenity because most places you go don’t have that. You just have sidewalks, asphalt and concrete.”

She emphasized that the county is looking to get a hefty economic return from the property’s redevelopment. National Harbor, a 350-acre resort along the Potomac River in Prince George’s, regularly generates about \$80 million in annual revenue for the county, she said. Meanwhile, Six Flags had only brought in up to \$3.5 million a year.

Braveboy, a Democrat, attributed the amusement park’s lower proceeds to its

practice of closing during cooler months and only operating on about a quarter of the property’s acreage. She will judge the development’s success, she said, by whether it is able to send more tax revenue to the county than the geographically smaller National Harbor.

“We can do a lot with [515 acres],” she said at the town hall. “There can be multiple uses. We have to give our children something positive to do ... I think this is an opportunity for us to do that all year round, not just for a season.”

County spokesman Brian Fischer clarified in an interview that Braveboy wants the redevelopment to be “sensitive” to the natural area next door. “We are not going to hurt the Belt Woods nature center in any way,” he said. “Period.”

Belt Woods lies less than 20 miles east of the White House. Surrounded by leafy subdivisions, it very nearly became one itself.

Only through the foresight of its owner, a banker named Seton Belt, did the expanse of tulip trees and white oaks stay untouched

as development closed in. When Belt died in 1959, he willed his beloved acreage to the Episcopal Diocese of Washington and his local parish, and he included in the document a ban on large-scale timber harvests.

The new owners, though, got a local judge to overturn the prohibition and in 1981 succeeded in cutting down about 50 acres on the north side of the property. (The National Natural Landmark designation only applied to 45 acres on the south side.)

The state purchased 109 acres of the property in 1984 for preservation, but more than 500 acres remained unprotected. When the church later proposed building 649 housing units there, it triggered a national outcry and widespread media attention. An ensuing fundraising campaign led to a \$4.5 million sale of the remaining acreage in 1997, with the state taking ownership of the now-combined public parcels.

The Belt Woods ecosystem is so sensitive that no public visitation is allowed aside from occasional guided hikes and hunting to control the deer population. Maryland has designated most of the property as a wildland, the state equivalent of a federal wilderness area. It is considered important nesting habitat for neotropical songbirds.

So, Pam Cooper, who founded the Western Shore Conservancy in the 1990s to help save Belt Woods, was disappointed when one of the county’s first actions after disclosing the pending sale was to announce a naming contest.

“That’s not what’s important here,” she said. “What’s important is, how do you develop next to one of the most precious ecosystems in the county, in the state, in the country? I think there needs to be a roundtable of experts that can talk about what’s important.”

Gary Allen was the mayor of nearby Bowie in the 1990s when the rest of Belt Woods was preserved, and he helped direct some of the city’s funds toward the purchase. Many of the site’s birds rely on the forested buffer along the Six Flags property, he said. Without it, they would almost certainly leave for greener pastures.

“There’s a capacity,” Allen said. “There’s only going to be so many hooded warblers and so many wood thrushes, and then they’re going to get run off. We are marginal [in size] with the 624 acres that we’ve protected.” ■

Pollution from MD development persists after lawsuit

Following \$4 million settlement in May, construction site runoff violations continue into August

By Timothy B. Wheeler

The plume of muddy water in the Gunpowder River, once so vast it could be seen from space, has receded somewhat. But Foster Branch, the creek that flows into that Chesapeake Bay tributary, still looks like it's brimming with creamed coffee.

Muddy runoff from Ridgely's Reserve, a large housing development in Joppa, MD, continues to foul the Gunpowder River and Foster Branch months after the developers agreed to pay a record \$4.1 million in penalties and compensation to settle a four-year run of alleged pollution violations.

The Maryland Department of the Environment (MDE) and the nonprofit Gunpowder Riverkeeper had sued the developers — national homebuilder D.R. Horton, its subsidiary Forestar Real Estate Group and a Pennsylvania building contractor — accusing them of repeatedly failing to keep mud from washing off the 121-acre construction site.

Since the settlement was announced May 19, MDE inspectors have found sediment and erosion control violations on seven separate visits, most recently on Aug. 19. On Aug. 12, inspectors reported seeing eroding soil, exposed soil vulnerable to washing off in a rainstorm and improperly installed “silt fences” meant to keep mud from running off the site. Worst of all, they saw sediment in the stream bed downhill from the development.

Harford County inspectors, meanwhile, have issued a series of stop-work orders and “correction notices” for multiple infractions, including more of the same ones cited by MDE.

Neither D.R. Horton nor Forestar responded to repeated requests for comment. While most of the nearly 400 single-family houses and townhomes planned there have been built, construction continues on the remainder — as does mud pollution.

Residents who welcomed the consent decree in May now question its value.

“We go from mud to morass,” said Bill Temmink, a Joppatowne resident who over the years has repeatedly complained to officials about development runoff fouling Foster Branch and the river.

“They're still running orange,” he said of the waterways.

This wasn't supposed to keep happening.



Bill Temmink of Joppatowne, MD, looks out on the murky water at Mariner Point Park, downstream from where Foster Branch joins the Gunpowder River. (Timothy B. Wheeler)

State officials had said the resolution of the Ridgely's Reserve lawsuit would halt the long-running pollution and set the stage for rehabilitating Foster Branch and the Gunpowder.

“This settlement holds these companies accountable, stops the damage and directs meaningful resources back into the communities and waterways that were impacted,” MDE Secretary Serena McIlwain said in a May press release.

Texas-based homebuilder D.R. Horton and its partners paid a \$2 million penalty, the largest fine MDE ever collected for sediment and erosion violations. As compensation, the companies also put up \$2.1 million for community-driven remediation projects to restore water quality and aquatic habitat in Foster Branch and the Gunpowder.

Residents hope the remediation fund can help bring back the once-thriving beds of underwater grasses and the fish that virtually disappeared after the development work began. But they're worried that restoration may be stymied if muddy runoff continues.

And they're wondering why the county and state haven't done more to crack down on the continuing violations at Ridgely's Reserve.

Under the settlement, Horton and Forestar agreed to automatically pay stipulated



Muddy water stands in a yet unbuilt section of the Ridgely's Reserve housing development in Harford County, MD. (Timothy B. Wheeler)

penalties of \$1,000 to \$6,000 per day for each violation identified by state inspectors. Yet, at the time this story went to press, no penalties had been levied.

Matthew Button, Harford's public information officer, noted that the consent decree is managed by the state, not the county. The county did fine the developers a total of \$45,000 from 2023 through January 2026, which he said was “up to the limit allowed by law.” But as violations continued, the county negotiated stricter

mud controls and has issued more than a dozen stop-work orders, freezing construction for one to several days until problems cited were corrected.

“The county continues to inspect the site weekly and after major storms, requires corrections and reinspects to ensure compliance,” Button said by email.

Gunpowder Riverkeeper Theaux Le Gardeur said MDE has notified him that it intends to levy at least two stipulated penalties for violations that state inspectors identified over the last few months. MDE spokesman Jay Apperson said only that the agency will penalize violations of the consent decree “on a regular basis.”

Le Gardeur called the county's seeming unwillingness to levy its own fines “a missed opportunity.” At the least, he said, the money collected could be applied toward protecting and restoring local waterways.

Before the state filed suit in 2024, residents on both shores of the Gunpowder had become so frustrated with the runoff pollution that they formed a group called Mad About Mud to press for enforcement action.

Lindsay Crone, who helped organize Mad About Mud before becoming executive director of the Gunpowder Valley Conservancy, emailed recently that the water on the south side of the Gunpowder is not as murky as it was last year.

“We swam in the river this past weekend,” she emailed recently, “and the bottom was not as sandy as it was years ago, but not as muddy as it was last year.”

“That is not to say that the site is still not a problem and remediation is not needed,” she added. But she said she is “overjoyed” to see wild celery grass and even some less desirable watermilfoil growing on the bottom in places previously mudded over.

Kathy Martin, who grew up in Oliver Beach on the south side of the Gunpowder, said “the catastrophe is a bit less visible, except for those looking for it and who recreate or live along Foster Branch.”

But Jack Whisted, a retired bass tournament fisherman, said the signs of recovery he saw in the spring are gone now.

“The water is full of debris, scum and mud,” he said. “All the small areas of grass regeneration are now choked and breaking off.” The bass he used to fish for every weekend aren't there anymore.

“It's breaking my heart,” he said. ■

Cost to fix deteriorating landfill falls on VA taxpayers

State aims to avoid 'environmental disaster' after owners declare bankruptcy

By Lauren Hines-Acosta

Born and raised in Chesterfield County, VA, Phil Lohr knows what life was like before the Shoosmith Landfill moved into the neighborhood in 1976. His days were free of chemical odors tickling his nose, and nearby Swift Creek offered good fishing. Over the years, though, he's seen neighbors keep their kids inside due to the stench, and he worries if the "black juice" percolating out of the landfill will reach the creek every time it rains.

"It's been a whole lot of smells over the years," said Lohr, a member of Chesterfield Citizens for Responsible Government.

Shoosmith Landfill, just 12 miles south of Richmond, has a documented history of neglect and permit violations. After the landfill stopped accepting trash in 2022, the owners stopped investing in long-term maintenance and ultimately filed for bankruptcy in 2025. Now, the state has stepped in with enough money to keep most environmental threats at bay until the money runs out next summer.

"Eventually, the cost of this remediation is going to fall on all state residents," said Landon Edwards, another member of the Chesterfield citizens group.

'A muddy cesspool'

Jack Shoosmith opened the landfill in 1976. In 2008, he sold it to a Texas-based investment group owned by Fred Nichols and Larry McGee, who until 2022 ran Shoosmith Bros Inc., under the parent company VWS Holdco Inc. The landfill collected municipal and industrial waste.

The "black juice" that Lohr worries about is known as leachate, produced by the decomposition of buried organic matter, liquified by rainwater soaking into the landfill. Industrial waste can add toxins, such as mercury, to the leachate. By law, the leachate must be pumped out and treated. But it can leak out of a landfill and enter waterways or groundwater if the liners break down and collection systems overflow.

Even though Shoosmith is now shut down, the state is treating its leachate, and management is a continuing challenge.

Richmond attorney Lynn Tavenner, the court-appointed trustee of the landfill, said in her declaration to the bankruptcy court that the facility is "a muddy cesspool."



The earthen mound at the top of this photo is the Shoosmith Landfill near Richmond. The landfill sought unsuccessfully to expand into the quarry in the foreground. (Courtesy of Chesterfield County, VA)

Pumps that still work need to be replaced, pump trucks aren't operational, holding tanks are dilapidated and the power stations are broken, she told the court.

"While many acknowledge that there are serious issues that need immediate attention, in my humble opinion, few truly appreciate the severity of the situation and what will be required to prevent a future environmental disaster," Tavenner said.

Two creeks run along each side of the landfill, Swift Creek and Piney Branch, both tributaries of the Appomattox River and ultimately the James River. Inspection reports from the Virginia Department of Environmental Quality (DEQ) going back to at least 2023 show severe erosion, litter in stormwater channels and leachate leaks.

The latest DEQ violation notice from February 2026 includes a Dec. 29, 2025, inspection report that notes a "dark liquid with the appearance of leachate" in two "sediment basins," one discharging into Swift Creek and one into Piney Branch.

Mike Rolband, director of DEQ, said there were differing interpretations within the agency of the inspection report. "As far as we know," he said, "it does not say that [the leachate was reaching the creeks]."

An October 2024 report by La Bella, an environmental testing company, showed that levels of mercury, cobalt and benzene at monitoring wells near the site were above groundwater safety limits, but it's unclear whether the landfill was the source.

When asked if people should be concerned about their health because of the leachate, Rolband said "there are no human receptors that are being exposed to these chemicals."

DEQ contractors are transporting 20,000 to 100,000 gallons of leachate per day for off-site treatment, keeping it from entering the creeks. As this issue of the *Bay Journal* went to press, there were no fish or recreation advisories for the creeks.

Jamie Brunkow, director of advocacy and river ecology at the James River Association, said pumping and hauling away the leachate will prevent the situation from escalating.

"There is risk at this site, but that risk only really comes if we don't take the needed management actions to continue treating the leachate," he said.

How did the landfill fall into disrepair?

The Shoosmith Landfill owners started running into problems in 2018 when the Chesterfield Board of Supervisors denied their request to expand into a nearby rock

quarry. The supervisors denied it due to concerns about waste being stored below the water table.

At a presentation on July 22, Rolband told the supervisors they had "avoided a much bigger problem," like the one DEQ faced with a quarry landfill in the city of Bristol, VA. Because that landfill was below the water table, it collected groundwater, which led to accelerated decomposition, severe odors and air quality issues.

The denial meant that Shoosmith lost about 17 million tons of future capacity, according to Bondoro, a service that publishes summaries of bankruptcy cases. The landfill eventually had to stop accepting trash in 2022, ultimately losing its main source of revenue. The owners entered into an agreement with Swift Creek Renewables in 2021 to treat and sell the gas that builds up from decomposition in the landfill. The gas can be sold to make energy, but the royalties were lower than the owners expected, according to the Bondoro summary.

As the landfill lost money, the heap of trash became a caldron with internal temperatures climbing above permitted limits. One gas well reached 202 degrees in October 2023. Higher temperatures accelerate leachate production and can make the natural gas worthless.

To help the two DEQ inspectors that supervise 80 facilities in the region, Chesterfield County asked the Virginia Attorney General to give the county authority to inspect the landfill in 2023. But the office denied the request, saying that authority would have to come from the state legislature. Some Chesterfield residents are frustrated that county leaders didn't do more.

"When that denial came through," Edwards said, "Chesterfield just basically shrugged its shoulders and said, 'Okay, there's nothing we can do about it.'"

In July 2024, the county suspended the landfill's permit to send leachate to the public wastewater treatment plant after officials came to believe that landfill operators had falsified their records. Instead of pretreating the liquid, the landfill sent highly toxic leachate directly to the wastewater plant, which was killing the cleansing bacteria in the treatment system. The landfill had to instead haul and treat its leachate elsewhere in Virginia, increasing its costs more than tenfold, according to Bondoro.

The landfill contested the county's accusations. Andrea Wortzel, an attorney representing the landfill, said in a letter to the county that discharging untreated leachate was allowed during emergency conditions and there was no "unanticipated bypass" of leachate. According to the county, the landfill operators told officials they were using a pretreatment system.

"Because there is no pretreatment at the landfill, there was no treatment system that was bypassed," Wortzel said in a response letter.

Monitors installed by Swift Creek Renewables found that leachate levels had reached more than 12 inches in four sections of the site in August 2024. SCS Engineers, a California-based environmental consulting firm hired by the landfill owners, said losing the county permit led to the buildup of leachate despite treating the leachate offsite as much as possible.

Emails between landfill managers, environmental consultants and DEQ from 2023 and 2024, acquired through a Freedom of Information Act request, show the landfill had chronic leachate issues — one of those being that rain kept washing away berms that contained leachate oozing from the landfill's western edge. Landfill managers said staff had replaced soil contaminated with leachate, removed litter from sediment basins and vacuumed pooled leachate.

DEQ sent warning letters and violation notices and has fined the company \$138,170 since 2010. Emails show that the company undertook remediation efforts and provided records that DEQ requested, but the leachate issues returned. A violation letter from June 2024 also shows that gas was leaking and not being burnt off between August 2022 and December 2023.

McGee and Nichols, the landfill's owners, filed for bankruptcy on July 31, 2025, with 26 acres left for the state to properly seal at the facility. SCS Engineers estimates that it will cost \$172 million to close the landfill, but the owners' bond fund only has \$19 million.

Tavener, the court-appointed trustee of the site, said in her declaration to the bankruptcy court that McGee and Nichols sold the quarry for \$25 million in 2024 and kept most of the money themselves instead of paying for maintenance. Later that year, according to Tavener, they received \$3 million from their collateral account to pay for an onsite treatment facility — which was never built. And, she said, they sold 21 acres for \$15 million and kept part of that money too.

McGee and Nichols could be facing criminal charges for abandoning a landfill



Leachate can be seen percolating to the surface at the Shoosmith Landfill in this April 2026 photo provided by the Virginia Department of Environmental Quality.

without providing the proper funds to close it, according to Chesterfield County's lawyers.

"They clearly, in my opinion, committed some acts that I believe they should be prosecuted for," county supervisor Jim Ingle said at a public meeting.

Neither McGee nor Nichols responded to multiple requests for comment from the *Bay Journal*.

"Faced with the reality that [McGee and Nichols] left the landfill with insufficient capital to meet its needs and to be properly closed," said DEQ lawyers in a bankruptcy court filing, "the debtors set into motion a plan whereby they would seek to make the landfill someone else's problem to resolve and simultaneously would attempt to limit their liability for the same."



A worker at the at the Shoosmith Landfill uses an excavator to replace riprap around a stormwater "drop inlet" in March 2024. (Bruce Coble)

Plans for fixing the landfill

During the final days of Virginia's special 2026 session to pass the state budget, lawmakers allocated about \$10 million to help DEQ treat leachate from Shoosmith offsite and close the landfill. Rolband said the money will only last until June 30, 2027.

To secure more funding, Rolband plans on using \$3 million from the department's emergency fund. DEQ can also gain \$1.6 million for monitoring with the governor's approval.

Rolband said DEQ's priority is to cover the landfill, so that no additional water enters the system. The department, county and trustee also hope to build an onsite treatment plant, so leachate doesn't have to

be hauled offsite. In the meantime, DEQ is testing toxicity in the leachate from a certain section of the landfill to determine whether levels are low enough to be treated at the county wastewater plant.

Myles Bartos, on-scene coordinator with the U.S. Environmental Protection Agency, said the federal department is currently only providing supervision and technical assistance at Shoosmith.

Meanwhile, DEQ is taking steps to prevent similar problems from escalating elsewhere, producing a guidance document to help identify deteriorating landfills sooner. It outlines ways the department can detect high landfill temperatures early on, to head off the potential worsening of leachate problems.

DEQ also released a Notice of Intended Regulatory Action, which suggests regulation amendments that will ensure landfills will have enough money, or financial assurance, to cover costs for leachate treatment, site closure and any corrective action if owners walk away. Rolband said this could slightly increase the cost of trash but would save people money in the long run by avoiding the need to bail out failed landfills. The agency accepted public comment through Aug. 12.

"The systems currently are set up for [landfill owners] to be good people that want to do the right thing and follow the rules," Rolband said. "It didn't happen [in this case]. So ... we want to have some financial assurances that make it too expensive for people to do this."

Other states in the Chesapeake Bay region that have landfills out of compliance handle it differently. Maryland requires landfills to post a bond of \$10,000 per acre, which would amount to about \$3 million for Shoosmith's 335 acres. While Maryland has not issued any violation notices for repeated leachate at landfills in the last five years, the state's Department of the Environment is addressing leaks at Quarantine Road Landfill in southeast Baltimore and the Beulah Landfill in Dorchester County.

Pennsylvania requires landfills to post bonds with enough funds to properly close facilities. That calculation is based on a 30-year time frame, inflation, ground and surface water monitoring, cap placement and leachate management. Pennsylvania has three landfills with repeated leachate violations in the last five years, but the state's Department of Environmental Protection said leachate has not bled beyond property boundaries at any of the facilities. ■

First land-based wind farm in VA nears completion

Thirteen-turbine project will help state meet clean energy goals but could harm golden eagles

By Lauren Hines-Acosta

Virginia's first commercial land-based wind farm will soon rise from oak-heath woodlands along a ridgeline in Botetourt County, about 30 miles north of Roanoke. The project, Rocky Forge Wind, is in the final stages of construction.

The wind farm will help Virginia reach its clean energy goals and bolster in-state power generation in the face of growing energy demand. But environmentalists and local landowners are worried about the project's impact on the mountain ecosystem.

Apex Clean Energy, based in Charlottesville, VA, will install 13 turbines along a 3,264-foot ridge at the northern end of the county. Each will be nearly 700 feet tall. The company expects the project will generate almost 80 megawatts annually, enough to power up to 21,000 homes, for the Appalachian Power Co. The turbines should begin transmitting electricity to the grid by the end of this year.

"As a homegrown Virginia company, we're definitely proud to be the ones to bring Virginia's first wind farm across the finish line," said Brian O'Shea, director of public engagement for Apex.

In the Appalachian Mountains at the western edge of the Chesapeake Bay watershed, wind farms are a common sight in West Virginia, Maryland and Pennsylvania. But the U.S. Geological Survey's U.S. Wind Turbine Database, up to date through June, shows only the Apex project in Virginia's portion of Appalachia.

The elevations in Virginia are prime territory for wind energy, according to Nino Ripepi, director of Virginia Tech's Center for Coal and Energy Research — though extensive federal parkland in the Blue Ridge Mountains would restrict siting of turbines and transmission lines.

The 120 acres of mountaintop in Botetourt County is private land, and owners have leased their properties to Apex. Jerry Fraley, owner of the largest tract, has been hoping to host the state's first land-based wind farm since 2007.

"I'm the third generation from my family to be in the energy business," Fraley said in a press release. "In that time, I've moved from mining the coal beneath our feet to harvesting the wind from the skies above our heads."



The Rocky Forge wind project in Botetourt County, VA, will be the state's first commercial, land-based wind farm. (Rendering courtesy of Apex Clean Energy)

Apex expects to add about \$20 million in state and county taxes and seven permanent jobs to the region. Unlike fluctuating gas prices, the cost of wind energy will remain the same until its purchase agreement ends.

Rocky Forge Wind's 79.3 megawatts are quite small in comparison to its big sister off the coast of Virginia Beach, which will generate 2,600 megawatts, or 2.6 gigawatts, annually. But energy demand is putting the state's clean energy goals even farther out of reach as internet-enabling data centers are waiting on 70 gigawatts of power in Dominion Energy's territory alone. In 2024, Google agreed to buy the wind power from Apex and hopes to build three data centers in the county.

"[Rocky Forge] will be helpful, but in all honesty, with the amount of data centers going in Northern Virginia, they are pulling a lot of electricity," Ripepi said. "So, this is helpful. It doesn't hurt by any means, but it's not going to solve the problem."

Thomas Turner, Virginia director of Conservatives for Clean Energy, supports the project for its economic contributions and to help the state achieve energy independence. Virginia imports more energy than it generates. He said the organization wants as many new energy sources as possible to be renewable but said that nonrenewables can't be entirely ruled out. "We can't leave anything on the table," he said.

Apex received its wind permit from the Virginia Department of Environmental Quality in 2017, but lawsuits and the pandemic bogged down the process over the last decade. Virginians for Responsible Energy filed suits over zoning and impacts to property beginning in 2021. The Virginia



Jerry Fraley, one of the Virginia landowners leasing property for the Rocky Forge wind project, signs a turbine blade to celebrate the start of construction in June. (Apex Clean Energy)

Court of Appeals dismissed all the suits, the last one in September 2024, ruling that the property owners with the group had no standing.

Local landowners and some environmental groups are concerned, though, that the project will disrupt the rural landscape, harm wildlife and impair Mill Creek near the project site.

Eric Claunch, owner of a property nearby, documented two instances of heavy sedimentation in Mill Creek in July 2025. After Claunch presented these concerns to the Botetourt County Board of Supervisors that same month, supervisors Amy White and Brandon Nicely said they visited the site and found that Apex was using stormwater controls like silt fences, erosion monitoring teams and brush barriers.

To minimize impacts on federally endangered Indiana bats and northern long-eared

bats, Apex must turn off turbines at night from May to November. The company must also monitor bat mortalities from collisions and report results to the state during the first year of operation. But Michael Parr, president of the American Bird Conservancy, said nighttime pauses at those times won't protect golden eagles.

Golden eagles are better known in western North America, but an eastern population migrates from far northern Quebec to spend winter along the central Appalachian Mountains, including the range in Virginia. Locals have spotted golden eagles in the vicinity, but part of the project site lies in the U.S. Fish and Wildlife Service's low exposure zone (considered a low fatality risk) for golden eagles.

In 2015, Apex funded studies by an environmental consulting firm to evaluate bird activity around the project site. Technicians spotted bald and golden eagles 11 times over a year, but none in the path of the turbine blades.

Parr said the eastern golden eagle population is small, and they have a low reproductive rate. "Even a few eagles per year would be a real loss to the population," he said.

Apex redesigned the project in 2020 due to advancements in technology that allow fewer, larger turbines to produce the same amount of energy. The number of turbines decreased from 25 to 13, but the blades became larger, stretching to 680 feet.

Jeff Cooper, non-game project coordinator with the Virginia Department of Wildlife Resources said, "obviously increased rotor height could potentially increase the probability of bird strikes," but he pointed out that now there are 12 fewer turbine towers. He added that the threat of a wind facility is site specific, and that visual surveys are "ineffective" in the Appalachians.

Community members pushed the company to update its bird studies, but the state decided the original studies were sufficient.

Apex has secured a "take" permit from the U.S. Fish and Wildlife Service under the Bald and Golden Eagle Protection Act. The permit requires Apex to pay into a compensation fund that protects golden eagles elsewhere based on how many eagles the project is estimated to kill.

The company expects to complete Rocky Forge Wind this winter. ■

A new beginning: Construction underway at MD's James Island

Rebuilding the drowned island will provide habitat and keep shipping channels safe

By Jeremy Cox

Barely three months ago, there was nothing here but open water — about 12 vertical feet of it from the gray-green surface to the silty bottom.

Now, there stands a brand-new dot of land. It's small but has room for multi-ton construction vehicles to roam hither and yon on a 12-acre plain interspersed with dunes. Everywhere is sand, and there's more of it with each passing minute.

"From nothing, we're creating something," said Devon Carlock of the dredging firm Cottrell Contracting Corp., based in Chesapeake, VA. "You can see it building every single day."

"It" is James Island. Nearly two decades after the project was first conceived, the new island is taking shape in the mouth of the Little Choptank River on Maryland's Eastern Shore. Construction began in June.

The *Lexington*, a 200-foot dredge vessel, is moored in the river where it meets the Chesapeake Bay. Crews work around the clock siphoning millions of cubic yards of sand from the river's bottom. The silt is mixed with water, creating a gritty broth. A pipeline carries the solution to the island, where it gushes out onto the landscape.

When the island's outer walls are finished, sand for the interior will be sourced from the shipping channels outside the Port of Baltimore and the Chesapeake and Delaware Canal.

The work will continue until around 2058. By then, the island will be shaped something like a croissant, with its longer side facing the Bay. Its highest point will be 20 feet above sea level.

As the project planners see it, they aren't just making new land; they're making history.

"It's very exciting," said Alex Baldowski, a civil engineer for the U.S. Army Corps of Engineers, which is overseeing the work. "We're taking material that would normally have gone out into the Bay or the ocean to just be dumped. Thankfully, this is now an alternative."

The Army Corps partners with the Maryland Port Administration to dredge more than 2 million cubic yards of silt annually from the upper Bay shipping channels, keeping them passable for cargo vessels. Maryland banned the disposal of dredge



Jeremy Todd of the U.S. Army Corps of Engineers photographs James Island in August. The island is being rebuilt near the mouth of the Little Choptank River in Maryland. (Jeremy Cox)

spoils in the open Bay in the 1990s, so that muck has to go somewhere else.

Since early 2001, that "somewhere" has been Poplar Island, which sits about 10 miles south of the Bay Bridge along the Eastern Shore. Around 200 years ago, Poplar measured more than 1,000 acres and supported a population of about 100 residents. But erosion and rising water scoured away all but a handful of acres by the time the Army Corps got to it.

Today, Poplar is nearing its planned build-out of 1,715 acres of new land. It has become a magnet for guided tours. Its first bald eagle hatchlings have been recorded. And its salt marshes are proving to be rich, resilient habitat.

But Poplar Island will reach capacity

within five to eight years, said Katie Perkins, the Army Corps' lead engineer for the James Island project. "That's why we're really pushing to get the construction started [at James Island] and keep our momentum going to make sure there's no disruption to the maintenance-dredging cycle," she said.

The Army Corps analyzed dozens of potential sites before selecting James Island in 2009. Like Poplar, it's also on the Eastern Shore, about a dozen miles farther south. It also was much bigger, around 1,350 acres in the 1660s, before getting whittled down to almost nothing: a tiny sandbar just south of the new island, visible only at low tide.

Poplar Island holds the title as the East Coast's largest "beneficial reuse" project for dredged sediment. But James Island will

be even bigger, spreading across more than 2,000 acres — about 1,570 football fields' worth — of formerly submerged earth.

Over its lifetime, the effort is expected to cost about \$3.5 billion.

James Island is intended to be more than just a storehouse for excess Bay sediment. As with Poplar, the landscape will be designed to encourage migratory bird nesting. During an Army Corps-led boat tour around the emerging island in August, hundreds of brown pelicans and royal terns were already foraging along the shoreline.

"The bulldozer is kind of pushing that sand up into piles to allow it to dry," said Joe Bieberich, another project leader for the Army Corps. "And what you're seeing here is, our birds love the material that gets dredged up. There's lots of little benthics [bottom-dwelling creatures] in there, lots of little snacks for these types of birds. So, they're always hanging out here whenever that thing is operating."

The new land mass is also expected to help slow erosion at nearby, low-lying communities, such as Taylors Island and Madison. "It's going to help to act as a buffer to higher wind and higher waves that you might get from a nor'easter or from a tropical storm or a hurricane," Baldowski said.

In the late 1800s, James Island was substantial enough to support about 20 families, dirt roads, a Methodist church and a school. As it has eroded, many residents of Taylors Island worry that their community could be next.

"Without a barrier island there, that puts the island in jeopardy," said Aidan Enders, the dockmaster at Slaughter Creek Marina near Taylors Island.

Fred Pomeroy, a longtime crab potter and conservationist, has a special connection to James Island. He proposed to his wife there more than two decades ago during a camping trip. The marriage has lasted; the island did not.

He said the island's loss hurt crabbing in the area. Crabs tend to congregate near the shoreline. When the island disappeared, so did the crabs. He looks forward to fish being more plentiful as well. They tend to be drawn to underwater structures, and that's been the case with Poplar Island and its protective, rocky perimeter, he said.

"I think it's a net plus for Maryland and the Bay," Pomeroy said. ■



Royal terns and brown pelicans hunt for sustenance as sand is pumped onto James Island in August, recreating a nearly lost island off Maryland's Eastern Shore. (U.S. Army Corps of Engineers)

Data centers and nondisclosure agreements

Staff report

Data centers have become one of the fastest-growing land uses in the Chesapeake Bay watershed. Northern Virginia alone, often called “Data Center Alley,” is home to the largest concentration of data centers in the world, with an estimated 70% of global internet traffic passing through the area. Now Maryland and Pennsylvania are seeing a surge in data center development, too.

This growth is reshaping the landscape, and many people are concerned about impacts on energy production and water use. Many data centers rely on evaporative cooling systems that withdraw millions of gallons of water a day from rivers and aquifers, often the same ones that supply public drinking water. Yet, there is no consistent regulation across the region that requires data centers to publicly share how much energy and water they use.

Residents living closest to these projects often know the least about them, largely because of nondisclosure agreements, or NDAs, that shield basic details — including how much water and energy a facility will use — from public view. The *Bay Journal* talked with the Chesapeake Legal Alliance to learn about these agreements, the information they protect and what residents can do about it.

Question: What is a nondisclosure agreement?

Answer: An NDA is a contract in which one or more parties agree to keep certain information confidential. In the private sector, they’re a routine way for companies

to protect trade secrets. But in data center development, NDAs are increasingly signed between developers and public entities, such as local governments, economic development authorities and water or electric utilities, before a project is announced. Developers say the agreements are necessary to protect competitive information while they shop for sites and negotiate incentives. Local officials often [agree to sign] them because they fear losing a deal, and the jobs or tax revenue that come with it, to a neighboring jurisdiction willing to sign an NDA.

Q: What environmental information does an NDA typically conceal?

A: The specifics vary by state and by contract, but the categories of withheld information tend to be similar: projected water withdrawals and discharge volumes, the source of that water (river, aquifer or municipal supply), energy demand and the power infrastructure needed to serve it. They often protect the identity of the company itself before a project is announced and sometimes the site plans that would show wetlands, floodplains or stream buffers on the property. Yet without information about projected water use, it’s difficult for residents, local officials or even state regulators to evaluate whether the local water supply can support a new facility on top of existing agricultural, residential and ecological demands, or whether a proposed discharge could affect local water quality. For a region already struggling to meet its water quality goals, closing the information gap around one of its fastest-growing industries may be as important as controlling pollution.

Q: Are NDAs even legal, given public records laws?

A: Most of the public entities entering into NDAs with data center developers are still bound by state open-records laws, which generally treat government records as public unless a specific exemption applies. Virginia’s Freedom of Information Act (FOIA), Maryland’s Public Information Act (PIA) and Pennsylvania’s Right-To-Know-Law (RTK) generally require governments to disclose records unless a narrow, specific exemption applies. Any exemption allowing public records to be withheld is supposed to be interpreted narrowly in favor of disclosure. Some Bay states have exemptions for trade secrets or proprietary business information, and agencies sometimes argue that water-use figures or infrastructure details qualify, too. But simply signing an NDA doesn’t automatically make the information in it exempt. The underlying law still has to support withholding it. That gap between what NDAs promise and what public records laws actually allow is increasingly being tested in court.

Q: What can the public do to encourage greater transparency?

A: Residents can do several things to find out more about a proposed data center project.

File public records requests early.

Request correspondence, permit applications, water or wastewater service agreements, and NDAs themselves from local governments and utilities. Even redacted documents can reveal the scope of what’s being concealed.

Show up at the local level. Zoning and utility board meetings are often the only

point at which the public can weigh in before a project and its water and power arrangements are finalized. Once an NDA is signed, it’s much harder to unwind.

Push for disclosure conditions in local ordinances. Some counties have now required reports on water and energy use as a condition of rezoning or special use permits. This builds transparency into local laws rather than relying on a developer’s goodwill.

Support state disclosure legislation.

Bills that require public reporting of water and energy use, like those introduced in Virginia during the 2026 legislative session, would remove the guesswork that NDAs create, regardless of what a private contract might say.

Connect with regional advocacy groups. Organizations across the Bay region, including the Chesapeake Legal Alliance, Marylanders for Data Center Reform, Piedmont Environmental Council and National Parks Conservation Association, track data center proposals across the watershed and can help the public understand what information they’re entitled to and how to request it. ■

The Chesapeake Legal Alliance is a nonprofit organization that uses the power of the law to protect and restore clean water and to promote healthy, resilient ecosystems for communities.

Photo: A data center in Loudoun County, VA. (Dave Harp)

CHESAPEAKE CHALLENGE

— Kathleen A. Gaskell



The 'nerdy' words of science

Loves me

If you are reading this column, it is likely that you are an epistomophile: someone who loves to investigate and acquire knowledge. The suffix *-phile* is derived from the Greek word *philia*, which means love or fondness.

If you love to learn about scientific subjects related to Chesapeake Bay, perhaps you are "philed" under one or more of these categories: anthophile (flowers), astrophile (stars and astronomy), batrachophile (amphibians, especially frogs and salamanders), chionophile (snow and cold weather), leporiphile (rabbits and hares), melissophile (bees and stinging insects), nephophile (clouds), pluviophile (rain), thalassophile (deep or vast waterbodies), ursophile (wild bears, not to be confused with an arctophile, who loves teddy bears), and vulpophile (foxes).

Loves me not

And some of us would love nothing better than to avoid certain creatures or situations. *Phobia* is derived from the Greek word *phobos*, which at first meant flight or panic and is now used to describe fear or strong aversion.

Here are some phobias that you may or may not relate to: anatidaephobia (ducks), arachnophobia (spiders), bacillophobia (microbes), bufonophobia (toads), chilopodophobia (centipedes), chiroptophobia (bats), equinophobia (horses), gephyrophobia (bridges, tunnels), kabourophobia (crabs), musophobia (mice and rats), mottephobia (moths), myrmecophobia (ants), naviphobia (boats), ophidiophobia (snakes), ostracophobia (shellfish and crustaceans), scoleciphobia (worms), and selachophobia (sharks).

Title image: Yes, fear of ducks is a thing. *Anatidaephobes* would steer clear of this hyphenate ring-necked duck on Centennial Lake in Ellicott

City, MD. (Howard Patterson/CC BY-NC-SA 2.0.)

A The Chesapeake Bay Bridge is a big no-thanks for many gephyrophobes — people with an aversion to bridges and tunnels. (T. F. Sayles)

B If this picture gives you the willies, you are kabouraphobic — not a fan of crabs. (Dave Harp)

C If you love foxes, you can be accurately described as a vulpophile. (U.S. Fish and Wildlife Service)

D Love of flowers, like this black-eyed Susan, makes you an anthophile. (David Illig/CC BY-NC-SA 2.0)

E Batrachophiles have a soft spot in their hearts for amphibians, like this eastern hellbender. (Brian Gratwicke/CC BY 2.0)

Are you a quick study when it comes to these sciences?

Students of the Chesapeake, this quiz is for you. Here are species or specimens found in the Bay and its watershed. Match each group with the branch of science that studies it. Answers are on page 32.

Botany
Carcinology
Cnidariology
Dendrology
Entomology
Geology
Herpetology
Ichthyology
Lepidopterology
Limnology
Malacology
Mycology
Ornithology

1. Chicken of the woods, witch's butter, stinkhorn
2. American halfbeak, hogchoker, stickleback
3. White turtlehead, dutchman's breeches, Virginia creeper
4. Ghost anemone, moon jellyfish, whip coral
5. Northern red-bellied scooter, broad-headed skink, spring peeper
6. Backswimmers, katydids, fireflies
7. Rough-back nudibranch, brief squid, stout razor clam
8. Otsego Lake, Lake Drummond, Trap Pond
9. Fiddler crab, common grass shrimp, white-fingered mud crab
10. Bufflehead, eastern phoebe, dickcissel
11. Serpentine, dolomite, gabbro
12. Paw paw, hophornbeam, persimmon
13. Baltimore checkerspot, fritillaries, viceroys

Columnist Kathleen A. Gaskell served as the Bay Journal copy editor for more than 30 years until her retirement.



A unique Chesapeake Bay island that's by permission only

Top photo: Naturalist Paul Tiffany, a volunteer tour guide, discusses the flora and fauna of Fisherman Island, VA, and talks about its military history. (Dave Harp)

Inset photo: This marker on Fisherman Island is now waist high but was once even with the ground, showing the changing nature of barrier islands. (Dave Harp)

By Jeremy Cox

There's a story that park rangers tell about Fisherman Island — a tale that underscores the landscape's propensity for change.

"In the very early 1600s, Captain John Smith was exploring the Eastern Shore [of Virginia]," Lydia Hansen recounted in February as the tour group I had joined prepared to visit the island. "He started at the southernmost island and liked it so much, he named it after himself."

Yep, that scrubby wisp of land is still known as Smith Island, and it does indeed lie just below the southern tip of the Delmarva Peninsula at the entrance to the Chesapeake Bay. But anyone with eyes and a compass, Hansen pointed out, can easily tell that Fisherman Island is even farther south.

Which begs the question: How did Smith miss it? Hansen asked her audience. No response. "It's a very simple answer," she said, "and the answer is that it did not exist at that time."

Not until around 1815 had enough sand collected here to give birth to the most modest of landforms: a sandbar. Over time, currents

continued working their magic until, at last, Fisherman Island was born.

"It's grown and become the flourishing island we see today," said Hansen, a park ranger with the U.S. Fish and Wildlife Service, which manages the island.

The definition of "flourishing" depends on the eye of the beholder. You won't find condos or beach resorts on the 2,000-acre island. No restaurants. Not even one of the Royal Farms gas stations that are otherwise ubiquitous in this part of Virginia.

And that's the point, Fish and Wildlife officials say. The island became Fisherman Island National Wildlife Refuge in 1973, making it a haven for birds and other wildlife.

In fact, the agency is concerned enough about human interference in this sensitive habitat that it strictly prohibits public visitation on all but a handful of days per year.

Most people encounter the island only through their car windows, as a brief landfall on the 17-mile Chesapeake Bay Bridge-Tunnel. It's the only terra firma along the span, which connects the Eastern Shore of Virginia with Virginia Beach



across the mouth of the Bay. As for getting out of your car and exploring the island, you can forget that. It's banned, and there's nowhere for unauthorized vehicles to pull off anyway. Visiting by boat is also forbidden.

Nope, there's only one legal way to truly visit Fisherman Island: tour groups like the one led by Hansen. They require advance registration and are limited to 20 or so days per year — Saturday mornings from October through February.



A tour group explores a beach on Virginia's Fisherman Island. (Dave Harp)

The visitation ban for the rest of the year is primarily intended to protect birds that are migrating and breeding, Hansen said. Designated as an Important Bird Area by the Fish and Wildlife Service, the island is a crucial stopover for birds making the perilous journey from north to south and back again.

"The Eastern Shore is a natural funnel for the fall migration," Hansen said. Birds traveling south, she explained, follow the Delmarva Peninsula to its tip, where they encounter the Bay's mouth. "That is a large distance of water that they don't want to cross. So, they use this area to rest and refuel and wait for a strong tailwind to carry them across the Bay."

My visit took place in February. The last Saturday of the month, in fact. The last tour of the season. The next wouldn't happen until October. So, Hansen found herself greeted that morning by an unusually large turnout of a couple dozen or so visitors.

The tours begin at the visitor center of the Eastern Shore of Virginia National Wildlife Refuge, at Cape Charles on the mainland. This refuge is only a half mile across open water from Fisherman Island, so both refuge units are managed by the same office.

Hansen advised carpooling for the short drive to Fisherman Island. Part of the reason is economic: Each car has to pass through the Bay Bridge-Tunnel toll plaza to reach the island. The good news is that the refuge provides tour participants with vouchers, saving them a \$16 toll.

The other reason for carpooling is pragmatic: There is only room for a few cars to park at the island's pull-off. (To call it a parking lot would be an overstatement.)

Look, I'm aware of the overused phrase "best-kept secret" in travelogues such as this. I'm hesitant to apply it here. But I'll say this: I had zipped across the Bay Bridge-Tunnel dozens of times over the years and not once had it occurred to me there might be a way to tour Fisherman Island.

"We're not trying to keep it a hidden gem, but that's kind of what it is," Hansen said.

Hansen calls herself a "second-generation" Fish and Wildlife employee. She grew up on a national wildlife refuge in the Midwest where her father worked on the law enforcement side of the agency. "He was teaching me, since birth really, about nature and about wildlife and why it's important to protect what we have," she told me.

She also wanted to live next to the sea. So, when an opportunity opened up a couple of years ago on Virginia's Eastern Shore, she jumped at it.

The walking tour takes you about a mile out and a mile back, across sand of varying degrees of compaction. Despite the relatively short distance, you end up spying a surprising number of different habitats. Among them: sandy beaches, salt marshes, grasslands, shrubby thickets and maritime forests.

Forget the Mason-Dixon Line. Botanically speaking, this is the real boundary between North and South. The lower Chesapeake region is one of the few areas where the growing ranges of southern and northern shrubs and trees overlap.

The northern wax myrtle and its southern variety, for example, both thrive here. And it's a good thing they do, said Paul Tiffany, a retired firefighter and naturalist who helps lead the tours.



The marsh on Fisherman Island nearly masks the Route 13 bridge in the background. (Dave Harp)

"Their importance to the island is that they are nitrogen fixers," he told the group. "They're a plant that takes nitrogen out of the air and puts it into the roots. When they die, you have a nitrogen source for all the other plants. Without that, this would be a desert island."

From March through September, the island abounds with migratory and breeding birds. The two most critical species, from a conservation perspective, are American oystercatchers and piping plovers.

Oystercatchers, which have white bellies, dark wings and pointy, orange beaks, are listed as a species of concern in Virginia because their beach habitats are being threatened by human development and sea level rise. Piping plovers, smaller shorebirds with gray plumage, are federally listed as threatened because of similar concerns.

Visitors are not allowed on the island while those birds are present because any kind of disturbance — something as trivial as a wayward step on the beach or a barking dog — can ruin a nest, Hansen said.

"They are very vulnerable," she added. "They'll just nest in the sand on the beach, and their nests are camouflaged by all the shells surrounding them."

Observers have documented more than 260 different bird species on the island, according to eBird, the online citizen science monitoring project run by the Cornell Lab of Ornithology. By design, there tends to be less diversity during the tour season. A participant on that February tour logged just nine different species, but that included a pod of about 40 brant, a type of sea goose that looks like a smaller, cuddlier version of a Canada goose.

Hansen was awestruck at the sight. "That is really cool," she said. "We never see brant out here."

Fisherman Island can also be appreciated through a historical lens. The federal government purchased the island in the 1880s as a quarantine station. But during World War I, it was a coastal defense outpost. Amid World War II, it became Fort John Custis, which housed 200 soldiers and observation towers. Some of the military buildings are still visible in various states of decay.

If you happen to visit, you can bet on Fisherman Island being bigger than it was during my trip. It's still growing, officials say. You can't miss it.



IF YOU GO

Fisherman Island National Wildlife Refuge is open by reservation only on Saturdays from October through February. The experience is free, and the toll on the Chesapeake Bay Bridge-Tunnel is waived. Tours begin at the Eastern Shore of Virginia National Wildlife Refuge at 32205 Seaside Road, Cape Charles, VA. For reservations, call 757-331-2760 and leave a message with your name, phone number, email address, number in your group and the date you'd like to visit.

Photo: A sand dollar lies on a beach at Fisherman Island, VA. (Dave Harp)

It's time to face the hard truth: Our grass is not green



By Tom Horton

How would you want your obituary to read? “His/her life was like a lawn: monotonous, sterile, polluting, indifferent to birds and bees; forever off key in the choir of life?”

Or: “His/her life was like a forest, melded with meadows and marshes: nurturing life in all its diversity, never a dull moment, conjuring enchantments with the rhythms of light and the wind and the seasons.”

I used that “obit” prompt with nature writing students as a prelude to essays that explored humans’ role in nature, the fate of the Chesapeake Bay and the planet.

Now I’m focusing through a smaller lens, no less important: backyards and front yards, campuses and cemeteries and subdivisions, highway medians and farm field edges ... How can we begin seriously converting all that grass to more natural vegetation?

Less lawn, more life — the potential’s huge. Grass covers close to a tenth of the Bay watershed, nearly 4 million acres, which is more than corn, soybeans and wheat combined.

I was inspired, perversely, by artificial intelligence to examine the need for lawn-conversion therapy. Fed up with reading about all the human work AI may eliminate, I began thinking about jobs we need that it could never do.

We need to create a corps of landscape professionals who could advise, assist, educate and inspire in restoring freedom of speech to the millions of acres we’ve taught to speak only in the monotone drone of grass.

It’ll be a slog, resisted by the powerful lawn-care industry and, maybe just as powerfully, by people’s unthinking allegiance to putting-green yards.



A crew with Howard EcoWorks creates a conservation landscape in Ellicott City, MD, to benefit humans and wildlife. (Courtesy of Howard EcoWorks)

I recall a Pennsylvania farmer who had switched from conventional plowing to no-till or conservation tillage. No-till is more common now, but he said that at the time he felt like he’d “walked into town with no clothes on.”

But momentum is with us anti-grassers, as it eventually was with plowless farming. Science is showing the huge ecological benefits of native plants and groundcover for pollinators and wildlife. Natural landscapes are well-linked to improved water quality and stormwater control. Enhanced tree canopies conclusively give us cleaner air and more livable cities. The demand for native plants is burgeoning.

So how can we translate that into widespread, systemic progress? In the last decade or so, many hopeful templates have emerged.

One of them is Homegrown National Parks, a movement based on University of Delaware researcher Doug Tallamy’s work on the importance of native plants. It has enrolled tens of thousands of yards whose owners are forsaking grass — at least 170,00 acres to date. Nationwide, if half of all lawns were converted, it would create a “park” of 20 million acres, nine times the size of Yosemite National Park, according to the organization’s website.

A most promising model is Howard EcoWorks, an environmental nonprofit in Howard County, MD, that offers everything from planning to planting to maintaining

for central Marylanders wanting less lawn. Founder Lori Lilly in 2016 built on an existing program that employed county youth in conservation work, funded by taxes on stormwater controls.

With an annual budget of around \$2.1 million, EcoWorks trains and employs dozens of summer workers and has a year-round crew of seven. For the last three years, it has drawn workers from Maryland Gov. Wes Moore’s “service year” program that pays post-high-schoolers a living wage and health benefits for 10 months.

They seek partnerships with homeowner associations, churches and property management companies, and they have contracts from county agencies, community colleges and individual homeowners, Lilly says.

She and others I spoke to in the lawn-conversion business said that a large obstacle for typical yard owners is just getting started: what to plant, how to plant, watering and weeding, deer control. Ready sources of such basics need to be more widely available.

More progress is also needed with sourcing trees and shrubs that are truly native to the local landscape and climate. Using readily available, one-size-fits-all nursery cultivars is better than nothing, but it limits genetic diversity. Soils in a lot of subdivisions can need work, as developers have stripped topsoil and compacted what’s left.

And while there’s a lot of momentum

from the ecological side of lawn conversion, “the business side, the economics, are not there yet,” says Concetta Gibson, who runs Leaf & Bed from her home in Denton, MD. She offers “coaching sessions” to clients wanting to go greener and says she has all the work she can handle, with about 50 clients as far off as Kentucky and Illinois.

“We know the [ecological] benefits of what individual plants do well beyond their yard, like supporting migrating monarchs and purifying air and water, but putting [an economic] value to that is not developed,” Gibson says, adding that a large retailer like Walmart could make a difference by selling locally grown native plants.

There are more good lawn-conversion efforts that I can mention here: The Chesapeake Bay Trust has a youth conservation corps, and Pennsylvania has done a lot of good work on enhancing natural habitats. The Chesapeake Conservation Landscaping Council in Maryland certifies landscapers to work with Bay-friendly plantings and holds an annual conference, Turning a New Leaf.

I suspect a lot of efforts around the Bay region are still preaching to the choir, but how do you reach beyond the believers? What if every community were periodically visited, literally door to door, by trained volunteers or paid staff who would engage lawn owners with the deeper possibilities within their patch of the watershed?

The choices aren’t either-or. On a website called Nuts for Natives, hosted by former Maryland Department of Environment director Shari Wilson, one yard owner’s blog showed off a lovely pairing of wildlife habitat with a six-hole putting green.

Watershed-wide, we rightly put massive amounts of energy and money into making farms more Bay-friendly. It’s time to put a similar focus on the even greater expanses of grass. ■

Tom Horton has written about the Chesapeake Bay for more than 50 years, including eight books. He is a professor emeritus at Salisbury University and lives in Salisbury, MD.

In 'eco-genomics,' we should charge the battery and accelerate

By Donald Boesch

When I led the University of Maryland Center for Environmental Science (UMCES), I appeared each year before appropriations committees of the Maryland General Assembly. During the 1990s, I was asked by a savvy committee chair to differentiate UMCES research from that done at the Center of Marine Biotechnology or COMB, then a component of the University of Maryland Biotechnology Institute.

Knowing that I shouldn't get into the weeds with a group of layperson legislators, I simply said, "Our scientists wear jeans, while their scientists sequence genes." My quip got a chuckle while serving to contrast our environmental research with that largely driven by advances in molecular biology within an institution uniquely armed with new and emerging research technologies.

Soon, the capacity for genetic sequencing and related biotechnologies rapidly spread through medical schools, academic departments and institutes. UMCES was no exception. It became indispensable for our research in microbial ecology, aquaculture and other fields. This proliferation rendered a specialized biotechnology institute unnecessary, so in 2009 the University System of Maryland dispersed its components among its other institutions. A significant part of COMB ended up in UMCES within the Baltimore-based Institute of Marine and Environmental Technology (IMET).

In the UMCES 2012 strategic plan, we amended our tagline "from mountains to the sea" to include "and from genes to ecosystems." We developed an initiative connecting diversity and function focusing on genomes within populations, communities and ecosystems. Collaborative research among scientists at IMET and our Appalachian Laboratory in the mountains, historic Chesapeake Biological Laboratory on Solomons Island, and Horn Point Laboratory on the Eastern Shore has since truly blossomed.

At the Chesapeake Community Research Symposium this June, I made a point to attend a session called Molecular Approaches



An illustration of multiple strands of DNA. (Gerd Altmann/Public domain)

for Chesapeake Bay Ecology and Biogeochemical Functions. I was gratified to see the rapid evolution of genomics and its synergy with Chesapeake Bay ecosystem science.

Genes have been completely sequenced for several important organisms, ranging from the blue crab to toxin-producing microalgae. The latter have far more genes than humans, and we know which genes trigger toxin formation. We can use genetic markers to track the dispersal of oyster strains used in restoration, helping scientists determine how those with greater tolerance of low salinity or diseases persist and spread.

Particularly exciting are analyses such as eDNA and metagenomics, which go beyond a specific species to reflect all the organisms in a sample of water, sediment or marsh soil. Genetic evidence of an astounding 90,000 species of microbes, algae and animals has been found in water samples taken during all seasons throughout the length of the Bay. Automated observations from the Choptank River are tracking seasonal cycles of phytoplankton and bacteria and the roles they play. Sampling of streams chronicles the fish that live there or have passed through. Genomic analyses of animal stomach contents or feces reveal the identity of their prey.

Scientists are unraveling the ways microorganisms transform critical elements such as carbon, nitrogen, phosphorus, sulfur and iron. These processes affect the Bay's recovery from nutrient pollution and

influence emissions of greenhouse gases such as methane and nitrous oxide.

I couldn't have imagined these advances 50 years ago while staring through the microscope for endless hours in my first research on the lower James River. Phenomenal progress has been driven by international collaboration, building of vast genetic databases, advances in sequencing technology, and increasingly powerful bioinformatic and computational tools, including AI.

Within the Bay region, progress required forward-looking investments by universities to provide facilities and hire talented scientists who secured highly competitive research grants. Very little support for environmental genomics research — indeed for any Bay research — comes from the EPA's Chesapeake Bay Program office, which necessarily focuses on environmental monitoring and modeling. Instead, important advances through research have depended on federal support from the National Science Foundation, National Institutes of Health, Department of Energy, National Oceanic and Atmospheric Administration, and Smithsonian Institution.

These are the very agencies slated for deep cuts or redirection of research funding by the Trump administration, particularly targeting anything mentioning climate, diversity (including biodiversity) or even just the environment. While Congress has appropriated continued funding, the

administration has nearly stopped making new research grants. While a few private foundations are doing their best to provide support, the paucity of federal funds is stymieing transformative advances in environmental genomics, as well as most other Bay research.

To make matters worse, the federal Office of Management and Budget recently proposed new constraints for federal financial assistance, which would have devastating consequences for the research and development model that has made the United States the world's innovation leader for the past 80 years. They would shift grant decisions away from merit-based peer review to political priorities and allow awards to be terminated without cause. They would also prohibit or severely restrict diversity, equity and inclusion activities, international collaboration, conference attendance and publication costs.

To an extent I have never witnessed, scientific organizations and research institutions are rising up to object. Please join us by asking your members of Congress to keep American science great and ensure that its appropriations are used to support excellent research and innovation that benefits society, ensuring the services and resilience of our Bay. ■

Donald Boesch is president emeritus of the University of Maryland Center for Environmental Science and a former member of the Chesapeake Bay Journal Board of Directors.

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The *Bay Journal* welcomes comments on environmental issues in the Chesapeake Bay region. Letters to the editor should be 300 words or less. Submit your letter online at bayjournal.com by following a link in the Opinion section or use the email address below. Opinion columns are typically a maximum of 900 words and must be arranged in advance. Deadlines and space availability vary. Text may be edited for clarity or length or to conform to *Bay Journal* style rules.

Contact T.F. Sayles at 410-746-0519 or tsayles@bayjournal.com.



A black skimmer exhibits its prize dinner in the 1980s on a piece of land near Fox Island, VA, that is now underwater. (Dave Harp)

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Milkweed pods split open in the fall to release seeds to the vagaries of the wind. The milkweed flower is a favorite food of the monarch butterfly, an important pollinator. (Dave Harp)

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A kite surfer enjoys a windy day off Mayo Beach Park at the mouth of Maryland's South River. (Michele Danoff)

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PENNSYLVANIA

York County Pawpaw Festival

9 am–5 pm, Sept. 19; Horn Farm Center, York. Come celebrate the Chesapeake Bay region's largest edible native fruit, featuring fresh pawpaw and other uncommon local fruits to taste, alongside pawpaw trees and products for sale. Experience over 40 eco-friendly vendors, educational programs and pawpaw orchard tours, live music, activities for the whole family. Tickets MUST be purchased in advance. Info/tickets: hornfarmcenter.org/pawpawfest.

Building Biodiversity in Our Community

6–8 pm, Sept. 24; Lancaster. Join other curious conservation peers for this introduction to designing, building and stewarding native habitats. This is the introductory class for the series and is required for most of the other classes as well as for completion of a Habitat Advocate Certification. Students receive a binder of compiled native habitat resources (\$30 value). Ages 16+. \$44.52. Registration: lancasterconservancy.org/events.

Forest Garden and Wetlands Guided Hike

9–11:30 am, Sept. 18; Falmouth Boat Launch, Bainbridge. Hike the Falmouth Forest Garden, a demonstration of regenerative agroforestry techniques, and then learn about the value of wetlands at Conoy Wetlands. \$7.18. Registration: lancasterconservancy.org/events.

Native Garden Design for Stormwater Management

9 am–12 pm, Sept. 12; Lancaster. Learn how to calculate the rain runoff volume of impervious surfaces (roof, driveway, etc.) and how to transform your stormwater chaos into a creative conservation landscaping project. \$65.97. Ages 16+. Registration: lancasterconservancy.org/events.

Forest Garden Design Intensive

Oct. 16–25, Horn Farm Center, York. Ecological designer, educator, author Dave Jacke will lead this 9-day program. Forest gardening takes inspiration from natural forests to grow edible ecosystems at any scale. Learn the process from goal-setting and design to implementation, digging deep into land observation, plant selection and placement, mapping and more. No experience required. \$2,150 with sliding scale pricing and scholarships available. All meals included. Registration (closes Oct. 1): hornfarmcenter.org/fgdi.

Mushroom Walk

12–3 pm, Sept. 12; Penn-Roosevelt State Park, Boalsburg. Join the Central PA Mushroom Club for an introduction to fungi. The program will include a short orientation on mushrooms and how they grow followed by a walk to forage. No registration required. Free. Info: events.dcnr.pa.gov/event/mushroom-walk-6206.

All About Pawpaws: Guided Hike

5:30–7:30 pm, Sept. 17; Turkey Hill Nature Preserve, Conestoga. A 2.2-mile strenuous hike up the hillside above the Enola Low-grade Rail Trail on a rocky trail. Along the way, learn about pawpaw history, pollinators, and tree ID. \$7.18. Registration: lancasterconservancy.org/events.

National Public Lands Day Hike

4:30–7 pm, Sept. 26; Welsh Mountain Nature Preserve, New Holland. \$12.51. During our 2.7-mile guided hike, we'll talk about the local ecosystem, including its rare wildflowers, the history of the preserve, and how the mix of living and dead trees indicates a healthy habitat. Ages 10+. \$12.51. Registration: lancasterconservancy.org/events.

Birding Along the Migratory Pathway

9:30–11:30 am, Oct. 3; Clark Nature Preserve, Pequea. The Susquehanna River valley is an important location along the migratory pathway. Songbirds, shorebirds, waterfowl, and raptors can be seen and heard in the fall months on most of the trails and preserves. Explore the world of Pennsylvania's migratory visitors and sharpen your birding observation skills. Ages 10+. \$12.51. Registration: lancasterconservancy.org/events.

Susquehanna Floating Classrooms

10–11 am, Williamsport; Sept. 15: Building better buffers. The benefits of riparian buffers for protecting waterways from erosion and pollution concerns. Sept. 29: Voice for the vulnerable. Discussion of species that are endangered, threatened or otherwise more vulnerable in our watershed and what led to that status. Oct. 6: Salinity concerns freshwater mussels. How road salt has impacted waterways and what can be done to change the trends. On the other level, the PA Fish and Boat Commission will offer a program on the importance of freshwater mussels as waterway filters, issues they are facing and the part played by the American eel. Registration: middlesusquehannariverkeeper.org/floating-classroom.html.

VIRGINIA

National Public Lands Day, Virginia State Parks

Sept. 26. Within the 44 Virginia state parks there are 80,000 acres of public lands for Virginians to enjoy. Standard parking fees are waived for you on National Public Lands Day so that there's no barrier for you to explore and volunteer. Find Public Lands Day events at VirginiaStateParks.dcr.virginia.gov/state-parks/events (enter Sept. 26).

James River Association's EcoFest

11 am–3 pm, Sept. 12; James A. Buzzard River Education Center, Richmond. Enjoy a day of environmental celebration and education. Free paddle tours, educational booths from partner organizations and environmentally-conscious vendors, local food trucks, rain barrel workshop & raffle. Info: thejamesriver.org/event/james-river-associations-ecofest.

Virginia Buffer Summit and Celebration

9 am–4 pm, Oct. 14; Hungry Mother State Park, Marion. Hosted by the Upper & Middle James Riparian Consortium, Clinch River Soil & Water Conservation District, Crater Planning District Commission, Rappahannock River Roundtable, Shenandoah Valley Conservation Collaborative, Virginia Department of Forestry. An exciting line-up of speakers, activities, and networking opportunities showcasing unique approaches to buffer restoration and how to create healthy streamside ecosystems for clean water. \$15. Registration: thejamesriver.org/event/2026-buffer-summit.

Coastal Virginia Birdathon

September 26. A fun and friendly team birding competition. Teams compete to identify the greatest number of bird species in a single day. Open to anyone. Participants can form their own team, individuals can be placed on an existing team. Raises funds for the Coastal Virginia Wildlife Observatory. Info: vawildliferesearch.org/coastal-va-birdathon.

Fall Native Plant Sale

9 am–2 pm, Sept. 12; Morven Park, Leesburg. Flowers, vines, trees, shrubs and ferns from five local nurseries. Expert talks offered on topics like transitioning to a native garden, managing invasive species. Learn about Loudoun Wildlife programs and how to get involved in local conservation. Info: loudounwildlife.org/event/fall-native-plant-sale-at-morven-park.

Fall Festival at Leopold's Preserve

10 am–2 pm, Sept. 19; Leopold's Preserve, Broad Run. Free, family-friendly celebration of conservation and the beauty of fall, featuring booths hosted by dozens of environmental organizations, food vendors and local artisans. Raffle with nature-themed prizes. Info: leopoldspreserve.com (select "Calendar").

Shenandoah River Cleanup

12–3 pm, Sept. 26; Shenandoah River State Park, Bentonville. As part of National Public Lands Day help keep our public land trash-free by participating in a river cleanup. Paddle two miles of shoreline picking up trash in canoes or kayaks. Life jackets and boats provided. Ages 10+. Registration: megan.goin@dcr.virginia.gov.

Oysters 101: Basic Oyster Gardening

10:30 am–12 pm, Sept. 26; Deltaville Maritime Museum Library, Deltaville. Learn how to start your own oyster garden and what devices and tools you will need. Signing up in advance is highly recommended. Registration: Richard Siciliano 240-270-1439, or richs@togaboard.org.

MARYLAND

St. Mary's River RiverFest

10 am–3 pm, Sept. 26; Historic St. Mary's City. A lively, family-friendly day packed with free activities like kayaking, oyster tonging demos, fish seining, wildlife encounters, live music and more. Info: smrwa.org/riverfest.



Submission Guidelines

SUBMISSIONS

Because of space limitations, the *Bay Journal* is not always able to print every submission. Priority goes to events or programs that most closely relate to the environmental health and resources of the Bay region.

DEADLINES

The *Bulletin Board* contains events that take place (or have registration deadlines) on or after the 11th of the month in which the item is published through the 11th of the next issue. Deadlines are posted at least two months in advance. October issue: September 11 November issue: October 11

FORMAT

Submissions to *Bulletin Board* must be sent as a Word or Pages document or as text in an e-mail. Other formats, including pdfs, Mailchimp or Constant Contact, *will only be considered if space allows* and type can be easily extracted.

CONTENT

You must include the title, time, date and place of the event or program, and a phone number (with area code) or e-mail address of a contact person. State if the program is free or has a fee; has an age requirement or other restrictions; or has a registration deadline or welcomes drop-ins.

CONTACT

Email your submission to bboard@bayjournal.com. Items sent to other addresses are not always forwarded before the deadline.

Answers to CHESAPEAKE CHALLENGE on page 23

1. Mycology; 2. Ichthyology;
3. Botany; 4. Cnidariology;
5. Herpetology; 6. Entomology;
7. Malacology; 8. Limnology;
9. Carcinology; 10. Ornithology;
11. Geology; 12. Dendrology;
13. Lepidopterology



BULLETIN BOARD

Annapolis Bay Grass Music Festival

11 am–10 pm, Sept. 19-20; Sandy Point State Park, Annapolis. A music festival that brings entertainment while educating, funding and advocating for the protection of the Chesapeake Bay and supporting mental wellness. Craft food and drinks, beach yoga, music, educational workshops. Info/tickets: baygrassfestival.com.

Jug Bay Citizen Science/Kayak Experience

8 am–1 pm, Sept. 19; Emory Waters Nature Preserve, Lothian. Start with a seine net survey to capture low tide fish, then launch kayaks from the farm pier to observe wildlife and plants. Paddle along the shore and marsh edges of the Patuxent River, looking for beavers, muskrats, osprey, bald eagles, red-winged black birds, ducks. Return to Emory Waters for the high tide survey. \$25. Ages 13+. Registration: jugbay.org.

Hawk & Monarch Migration at Hawk Mountain

Sept. 12 to 20, Oct. 9; Kempton. Hawk Mountain Sanctuary is a raptor observation, research and education facility. Migration events at the sanctuary include: Enjoying Neotropical Migrant Birds on the Move, Discovering Hawk Mountain Wildlife Lecture, Junior Hawk Watch, Fall Native Plant Sale and Monarch Day. Info: hawkmountain.org/events.

American Eel Exploration

10–10:30 am, Sept. 8, 15, 22, 29 and Oct. 6, 10, 13; Eden Mill Nature Center, Pylesville. Join park naturalists collecting data from Eden Mills very own eel ladder. Collect eels from the ladder, weigh and document, release them upstream. Learn why eels are considered a scientific mystery. Registration: edenmill.org/series/american-eel-exploration.

Antietam Watershed Fall Tree & Plant Sale

9 am–2 pm, Oct. 3; Antietam-Conococheague Watershed Alliance Nursery, Hagerstown. Trees, shrubs, herbaceous plants ranging from \$7–\$30 each. Sizes range from quart-size up to 10 gallons. Info: acwamaryland.org/events.

Aquatic Life of Pickering Creek

10 am–12 pm, Sept. 13; Pickering Creek Audubon Center, Easton. Learn how to ID many of the common creatures and aquatic plants that call this brackish ecosystem home. Sample for aquatic wildlife using seine nets, and learn to evaluate the health of an aquatic ecosystem by conducting various water tests. \$10/pp. Registration: pickeringcreek.org/programs/upcoming-programs.

Herb Garden Seminar

10–11 am, Sept. 12; University of Maryland Extension, Cockeysville. Herbs will thrive in containers on your patio or balcony. Learn how to grow companion herbs for your favorite recipes or try different varieties of a favorite herb in one container. Free. Registration: extension.umd.edu/news-events/events.

Seed Saving Workshop

10 am–1 pm, Sept. 26; Dublin. Join University of Maryland Extension for a morning of seed saving at the Harford County Extension Office. Master gardeners will show you how to save seeds from vegetables, flowers, herbs. Free. Registration: extension.umd.edu/news-events/events.

Pollinator Garden Seminar

10–11 am, Sept. 26; BCMG Demo Gardens, Cockeysville. Join the University of Maryland Extension to learn about the large variety of pollinators that visit the garden. See the plants and flowers they prefer and learn to create a pollinator friendly yard. Free. Registration: extension.umd.edu/news-events/events.

Fall Bird Hike

9–11 am, Oct. 10; Eden Mill Nature Center, Pylesville. An easy to moderate hike through Eden Mill Park in search of fall bird species, including those migrating for the winter. Birders of all experience levels. Free. Ages 18+. Preregistration (closes Oct. 9): edenmill.org/event/fall-bird-hike.

Migration Madness Kayak

9–11:30 am, Sept. 26; Anita C. Leight Estuary Center, Abingdon. Explore the marsh by kayak to see who is visiting. Under 18 w/adult. \$15/pp. Registration: otterpointcreek.org/event/migration-madness-kayak.

Patuxent Research Refuge

Patuxent Research Refuge offers free public programs and activities. Register (if required) online: fws.gov/refuge/patuxent-research/events (note special accommodation needs).

South Tract, visitor center: Wed.-Sat., 10 am–4 pm, (301) 497-5772. Grounds open daily. North Tract: Sundays 8 am–4 pm.

■ *Bike Ride*: 8:30–10:30 am, Sept. 13, North Tract. Ages 8+. Meet at visitor center for a family-friendly, relaxed-pace road ride. Observe wildlife, ask questions, learn about the refuge. Bring bike, helmet, water. Info: (301) 875-5839, mtomassoni770@gmail.com.

■ *Pollinator Festival*: 10 am–2:30 pm, rain/shine Sept. 26. All ages. Free. Live monarch butterfly tagging and releases, live birds, insect zoo, free native plants and seeds, family arts and crafts, nature walks, presentation on bees/other pollinators/birds/amphibians, native plants, free film “The Extraordinary Caterpillar,” live music. Shade-grown Bird Friendly® coffees. Food available for purchase. The Friends’ bookstore and nature shop will also be open.

■ *Hollingsworth Wildlife Art Gallery*: 10 am–4 pm Wed.-Sat. Sept.: The Imagine Earth Collective’s “Meet Your Neighbors” exhibit features artworks inspired by flora and fauna of the DC/MD area. Oct.: Bird photographer Wade Stephen presents his stunning wild bird photographs.

VOLUNTEER OPPORTUNITIES

WATERSHEDWIDE

Potomac River Watershed Cleanups

Learn about shoreline cleanups in the Potomac River watershed. Info: fergusonfoundation.org (“Cleanups”).

Become a Water Quality Monitor

Become a certified Save Our Streams water quality monitor through the Izaak Walton League, collecting macroinvertebrates to determine the health of your local stream. Visit iwla.org/saveourstreams. Info: vasos@iwla.org or 301-548-0150.

PENNSYLVANIA

Middle Susquehanna Volunteers

Monitor local waterways, provide online updates: web search “Susquehanna sentinels.” Individuals, families, scouts, church groups welcome. Info: MiddleSusquehannaRiverkeeper.org/watershed-opportunities.

Nixon County Park

Front desk greeter: Ages 18+ can work alone, families as a team. Habitat Action Team: locate, map, monitor, eradicate invasive species; install native plants, monitor hiking trails. Info: NixonCountyPark@YorkCountyPA.gov, 717-428-1961 or supportyourparks.org (Select “Volunteer”).

VIRGINIA

Friends of the Rivers of Virginia

Volunteer projects include river access, dam removals, water quality work, blueways, fisheries, river-related legislative issues. Info: forva.org.

Virginia Living Museum

VLM needs volunteers ages 11+ (11–14 w/adult) to work with staff. Educate guests, propagate native plants, install exhibits. Info: thevlm.org/support/volunteer.

Prince William Soil & Water Conservation

Manassas district provides supplies, support for stream cleanups. Groups receive an Adopt-a-Stream sign recognizing their efforts. For info/to adopt a stream/get a proposed site: waterquality@pwsacd.org.

Friends of Dragon Run Land Trust

Assisting with kayak trips, hikes, property monitoring, citizen science surveys, maintenance, educational and community engagement projects. Info: DragonRun.org or vicepresidentdragonrun@gmail.com. **Leopold’s Preserve Friday Volunteering** 8:30 am–12 pm, every Friday. Volunteers can stay as long as they’d like. Volunteer activities are outdoors, involving basic physical labor. Suitable for ages 13+, under 18 w/adult. Free. Info: leopoldspreserve.com (“Calendar”).

Mariners’ Museum and Park

Be a part of the team that restores the natural beauty of Mariners’ Park by removing invasive species. Weekday/weekends; morning and afternoon shifts. Ages 15+. Info: Beth Heaton at bheaton@marinersmuseum.org.

MARYLAND

Chesapeake Bay Environmental Center

Help with educational programs; guide kayak trips and hikes; staff the front desk; maintain trails, pollinator garden; care for captive birds of prey; monitor wood duck boxes. Participate in fundraising, website development, writing for newsletters, photo archiving, supporting office staff. Info: bayrestoration.org/volunteer.

Maryland State Parks

Search for volunteer opportunities at ec.samaritan.com/custom/1528 (“Search Opportunities”).

Patapsco Valley State Park

Opportunities include daily operations, leading hikes and nature crafts, mounted patrols, trail maintenance, photography, nature center docents, graphic designers, marketing specialists, carpenters, plumbers, stone masons, seamstresses. Info: 410-461-5005 or dnr.maryland.gov/publiclands/Pages/central/patapsco.aspx (“Volunteer Opportunities”).

National Wildlife Refuge at Patuxent

To ask about helping in the Kids Discovery Center, Monarch Center, gardens and for general volunteer training call 301-497-5772, Wed.-Sat. 10 am–4 pm. To help in the Friends’ Wildlife Images bookstore and nature shop, email Ann: wibookstore@friendsofpatuxent.org. To help with Friends of Patuxent’s programs/events, other volunteering, email: friendspr@friendsofpatuxent.org.

Lower Shore Land Trust

LSLT in Snow Hill needs help with garden cleanups, administrative support, beehive docents, native plant sales, pollinator garden tour, community events. Info: infor@lslt.org, 443-234-5587.

Rethink, repair: Finding contentment without new clothes



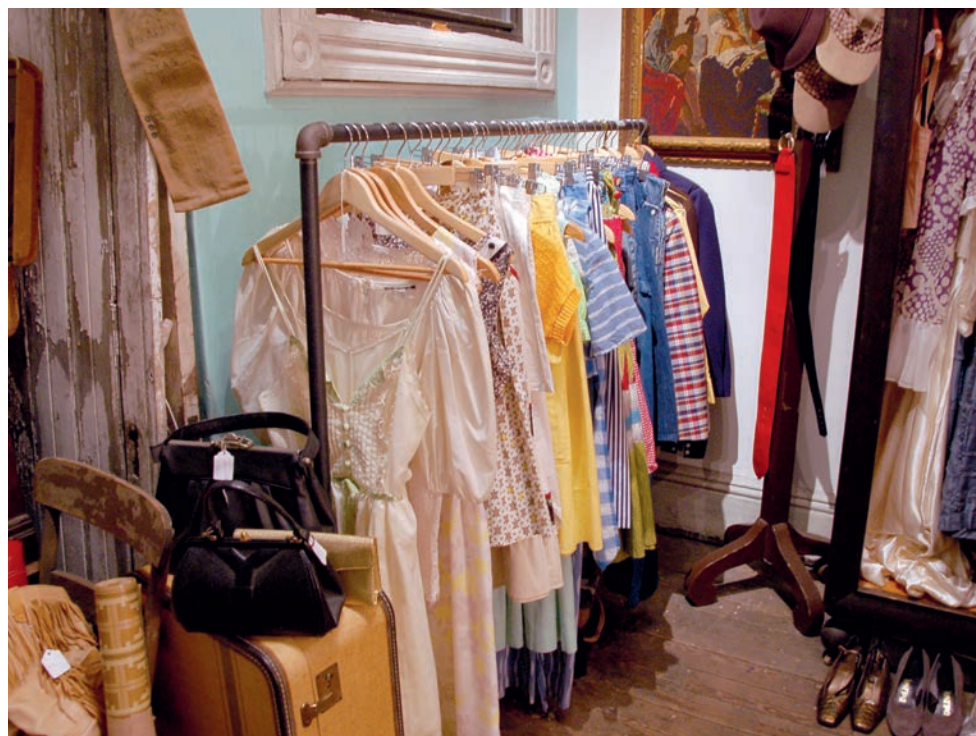
By Cathleen Mastrilli

Like many folks, I started 2026 with some goals to improve my life. Chief among them was to not buy any new clothing for a full year. This is not a new idea — folks have been pursuing no-buy challenges for a long time. I had many reasons to undertake this. I already owned everything I needed, and I wanted to appreciate what I had. I also wanted to reduce my environmental impact, and it wouldn't hurt if my laundry got less complicated. And, because I have a weak spot for shiny things, I extended the moratorium to new jewelry and hair accessories.

Full disclosure: I've violated this rule a few times so far and justified it to myself each time. It turned out to be harder than I expected to resist buying a new, exciting thing. Violating the no-buy rule a couple times early in the year led me to my first breakthrough in the journey.

Identifying my purchase motivations: I came to realize that seeing something I wanted was not really about the item itself. It was the idea of a lifestyle — the feeling that if I owned those earrings, or that shirt, I would become the me I wanted to be, because I now had the “right” item. This is what a lot of marketing tries to sell. I didn't want that to be a reason for buying things anymore.

Upcycling my style: Without something new, I started to look more contemplatively at what I already owned and to consider how various styles made me feel. I love whimsy, nature-inspired artwork and bright colors. Connected to that, I've enjoyed dabbling in hobbies and crafts, especially crochet, beading and embroidery. I've pulled aside clothing that is sentimental to me but in questionable condition, and I have a plan for fun ways to upcycle and personalize my wardrobe. This includes embroidery to patch holes and crochet cutouts for things that no longer fit. I've also been following



Secondhand and vintage clothing stores are virtually everywhere, but the vast majority of discarded clothing still ends up in landfills and incinerators. (Curious Expeditions/CC BY-NC-SA 2.0)

a talented artist on a similar journey who posts as Y Street Studio on Instagram. This person is one of many sharing their ideas online. Does this mean all my crafting experiments will be successful? Probably not, but I'm excited to try and be the source of creating something I like.

Appreciation and downsizing: After a couple months of limiting purchases, it was

easy to tell that I hadn't worn some items in a long time. Some were nice quality, but something about them just never clicked for me, so I found them new homes. I dismantled pieces that were too beat up to be worn again and made them part of my fabric and craft supplies, especially for jewelry — beads are easily repurposed. By reducing the quantity of what I own,



Fabric scissors, a darning loom and embroidery patches are among the supplies needed to repair and upcycle clothing. (Cathleen Mastrilli)

I started looking more at the quality of what was left. I also became aware of items I owned only because they had been trendy at the time. I expect that awareness will affect my future buying decisions. Overall, I've come to realize that respecting, mending and simply taking care of your favorite items feeds the soul and imbues them with more personal value. The more time I put into something I already own, the more valuable it becomes to me.

Environmental and societal impact:

The ever-increasing pace of apparel production and style cycles, known as “fast fashion,” has a large environmental impact. While we don't have well-known garment manufacturers in the Chesapeake Bay region, fast fashion can still impact our waterways. Airborne emissions from the apparel industry are huge and cross state boundaries. Millions upon millions of tons of discarded clothing ends up in our landfills. And we can't ignore the awful conditions for apparel workers in places like Bangladesh. As I stepped back from my own consumerism, the issue came into sharper focus. I want to limit owning clothing that has come into existence through the exploitation of the environment and other people.

Future purchases: I confess. I've been keeping a running list of things I'd like to buy when this year is up. But they are all “wants,” not needs, and it's been good to take a breather from the impulse to buy non-necessities in the moment. Delaying purchases has added clarity to my buying mindset. Many, many things have come off the “wants” list when I see them a second time. This is a well-known technique used to wrangle a budget. Delayed buying leads to less spending because your decision-making process tends to win out over the initial impulse as time passes.

We often reference the advice to “reduce, reuse, recycle,” but less well known is “refuse, rethink, and repair.” My no-buy pursuit has focused on the latter. Loving the Chesapeake Bay and this planet means more than picking up litter and planting trees. Stewardship also means small, everyday lifestyle choices made by you and me. ■

Cathleen Mastrilli is the Pennsylvania projects coordinator for the Alliance for the Chesapeake Bay.

Look and listen for the threatened piping plover



By Alonso Abugattas

If you spend enough time on our nearest ocean beaches, you might be lucky enough to spot a piping plover making short dashes at the water's edge, pecking so quickly at the sand that you can't tell if it caught a tasty invertebrate (it probably did). But you'll need a sharp eye to see one for a few reasons. The piping plover, *Charadrius melodus*, is one of the smallest members of the plover/lapwing family, about the size of a house sparrow but somewhat heftier with much longer legs. Its sand-colored plumage is very effective camouflage, and it tends to stay clear of humans.

Perhaps the main reason piping plovers are hard to spot is that there are just not many of them anymore. They're one of more than 100 North American bird species whose population has plummeted by half since the mid-1970s. And even before that, their numbers had been greatly reduced by the feather-happy hat fashions of the late 1800s and early 1900s. Now they contend with habitat loss, sea level rise, extreme storms, flooding and human-crowded beaches.

There are two species of piping plovers, in three distinct breeding populations, and all are listed as threatened under the federal Endangered Species Act. That includes the breeding population of the Great Plains, from Nebraska into Canada (*C. melodus circumcinctus*), the contingent that summers in the western Great Lakes region (also *circumcinctus*), and the group that breeds along the Atlantic Coast from North Carolina to Canada's Maritime Provinces (*C. melodus melodus*).

These birds are stocky, with rounded heads on top of a thick, short neck. They normally stand in a horizontal posture that is somewhat distinctive. They have large eyes and short, thick bills. They are white underneath, and their backs are a pale grayish brown that matches well with sand.



In breeding season, the female piping plover, shown here with multiple ID bands, differs from her mate only in having an incomplete neck ring and a slightly less prominent forehead bar. (Jim Hudgins/U.S. Fish and Wildlife Service)

During the summer breeding season, both sexes have bright orange legs, orange bills with a black tip, and black tail tips. Breeding males have a black neck ring and a prominent black bar across the forehead. The females have similar black markings when breeding, though the forehead bar is less prominent and the neck ring is usually incomplete. In winter, the black markings mostly fade away for both sexes, the beaks turn all black and the legs fade to pale orange.

For the East Coast population, breeding begins in mid-March when males arrive at their nesting territories, favoring sparsely vegetated beaches and dunes. They show remarkable nest fidelity, often returning to within 50 yards of the previous year's nest site. Male courtship displays consist of repeated dives and aerial figure-eights, all while issuing a high-pitched piping call. On the ground, a male tosses stones while extending its neck, holding its head high, puffing its feathers and stomping its feet, often while spreading its wings and circling the female.

The male then makes scrapes in the sand in multiple spots. The female chooses one as the nest, often decorating it with shells and pebbles. She then lays her eggs, typically four of them, that are gray to buff-colored with dark spots, one egg about every other day. Both parents incubate the eggs for about four weeks. After the precocial chicks hatch,

they can walk within minutes, and most are capable of short flights after just a month. While the young can feed themselves, both parents continue to shelter them. They often tuck the chicks under their bodies, giving the impression of a bird with four or more legs. Both parents defend the young from predators with distraction displays and sometimes outright counterattacks. They normally only have one brood per year and are monogamous for at least the season, sometimes staying with the same mate for 2-3 years. The female often leaves the last few days of caretaking to the male alone.

Food consists of crustaceans, marine worms, mollusks, fly larvae and invertebrate eggs. The plovers run and pause in short, quick spurts, usually near the waterline and taking advantage of low tide. They use what some call a "foot tremble" — rapidly drumming the sand with one foot — to bring prey closer to the surface.

They migrate south in August through September, in pairs or occasionally in large groups that can number 100. The Atlantic population heads straight down the coast to winter anywhere from the Carolinas to Florida, as well as the Bahamas and Cuba's northern barrier islands. They tend to return to the same wintering locations each year. It's during this and the spring migration period that you're most likely to spot them around the mouth of the Chesapeake Bay.



Female piping plovers often decorate their nests. (Nichole Ouellette/CC BY 4.0)

While stronger storms and sea level rise pose a threat, piping plovers are paradoxically "disturbance dependent," needing at least occasional storm damage and flooding to keep vegetation sparse enough for ideal nesting conditions. Predators of both nests and adults include rats, weasels, skunks, dogs, cats, possums, raccoons, coyotes, gulls, falcons, owls, ravens and red foxes.

Conservation efforts over the last few decades have included increased exclusion zones for humans and predator controls such as protective caging, which keeps eggs safe but allows the adults and young to come and go. Partners in Flight estimates that there are only 8,400 individual piping plovers left across all the populations. According to the North American Bird Conservation Initiative's 2025 State of the Birds Report, piping plovers remain one of 112 "tipping point" species — those that have lost over 50% of their populations in the past 50 years and are most in need of focused conservation plans. ■

Alonso Abugattas, a storyteller and blogger known as the Capital Naturalist, is the natural resources manager for Arlington County (VA) Parks and Recreation. You can follow him on the Capital Naturalist Facebook page and read his blog at capitalnaturalist.blogspot.com.

Give yourself (and wildlife) a break: Put down the rake



BAY NATURALIST

By Kathy Reshetiloff

It may still be hot and humid outside, but the drier, cooler days of autumn are just around the corner. Glimpses of fall colors emerge as trees begin their leaf shedding process, known as abscission.

Cells at the spot where a leaf is attached to a branch toughen and form a waterproof barrier. This inhibits the flow of moisture and nutrients into the leaf, reducing the production of chlorophyll, the pigment that gives leaves their green color.

Leaves contain other pigments, but they are hidden most of the year by the abundance of chlorophyll. Absent chlorophyll, the other colors are unmasked, revealing fiery yellow, orange and red leaves throughout the fall.

The abscission is complete when the bond between leaf and branch weakens enough that gravity — often aided by wind — causes the leaf to separate and fall to the ground.

Many communities encourage residents to rake and bag leaves to be composted with other yard waste, like grass and shrubbery clippings or fallen branches. This is great and saves landfill space. But if, like me, you detest the laborious task of raking and bagging leaves, consider a few alternatives.

One of the most ecological and economical ways to manage fallen leaves is to simply leave them on the ground where they will decompose, releasing nutrients back into the soil. Mowing leaves — ideally with a mulching mower — breaks them into smaller pieces so they decompose faster. Leaves can also be gathered and placed in flower beds and under bushes and trees, insulating roots and dormant underground plant life from damage in the coldest weather.

But another even more important reason to leave leaves where they fall (or keep small leaf piles in your yard) is to support wildlife. Many of our native invertebrates, insects, amphibians and reptiles depend on leaves as food or habitat to survive the



Background photo: The vivid red of its autumn leaves gives the scarlet oak its name. (ShebaAlso/CC BY SA 2.0)

Inset photos clockwise from left: Red-banded hairstreak butterflies lay their eggs on oak or sumac leaves, which become meals for the emerging caterpillars. (Judy Gallagher/CC BY 2.0); A marbled salamander hunts in leaf litter for a variety of prey. (Ohio Dept. of Natural Resources/CC BY 2.0.jpg); A tufted titmouse forages in fallen leaves. (Mike Carlo/U.S. Fish and Wildlife Service)

winter. Invertebrates like earthworms, snails and millipedes consume decomposed leaves and are, in turn, food for many of our wintering birds like robins, chickadees, titmice, wrens, nuthatches and jays.

A variety of butterflies and moths overwinter in leaves as eggs, caterpillars, chrysalises (hard pupal stage of a butterfly), cocoons (soft pupal stage of a moth) or adults. Some types of hairstreak butterflies lay their eggs on fallen oak leaves. Luna moths and swallowtail butterflies disguise their cocoons and chrysalises, making them look like real dried leaves — a camouflage strategy that protects them from predators. Morning cloak butterfly adults hibernate under dry fallen leaves. Fireflies also lay their eggs in fallen leaves.

Many of our native bee species like leaf cutter, mason, sweat and carpenter bees are

tunnel nesters needing tiny spaces in dead wood, hollow stems or brush piles. A layer of leaves provides added protection for them. Bumblebees create their nests in underground cavities. At the end of summer, a mated queen bumblebee will burrow an inch or two into the ground to hibernate for the winter. A layer of leaves provides extra protection from freezing temperatures.

Leaves and leaf piles that remain after winter has passed are a critical source of food for migratory birds in the spring. The different forms of insects and other invertebrates still under leaves provide food for ground foraging birds. As temperature warms, caterpillars and other insect larvae emerge and become food for songbirds and their chicks, from warblers, tanagers and swallows to sparrows, orioles and bluebirds.

Larger animals such as snakes, salamanders,

turtles and toads may take cover in the ground during the winter with leaves providing extra insulation. During the warmer months, these animals will also turn to decomposing leaves for food. A damp leaf layer not only provides them with shelter but also much-needed moisture.

Even just a small area of fallen leaves or tiny leaf piles provide the overwintering habitat that so much wildlife requires. If you still want to remove leaves but still support the natural cycle, consider simply waiting until spring once daytime temperatures reach 50 degrees or warmer for at least one week. This gives the many beneficial insects time to emerge, complete their lifecycles and support other wildlife. ■

Kathy Reshetiloff is with the U.S. Fish and Wildlife Service's Chesapeake Bay Field Office.