CHESAPEAKE
BAY JOURNAL
October 2024 Volume 34 Number 7
Independent environmental news for the Chesapeake region

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After reviewing states' latest reports on Bay cleanup efforts, the U.S. Environmental Protection Agency said it might increase oversight of the states' stormwater programs. Read the article on page 13. (Dave Harp)

EDITOR'S NOTE

The invaluable art of asking good questions

Artificial intelligence, or AI, seems to be creeping forward in all forms of technology these days. I'm not entirely against it. But when I'm online, one thing bothers me tremendously: AI text bubbles popping up to suggest questions that I could ask.

We're in big trouble if we let AI take the lead and can't think of good questions on our own. Our questions show that we're alive, engaged and learning. It's how we grow and how we play a part in changing the world. We need to be asking questions — tough questions, curious questions — no matter our age or circumstance.

I joined the *Bay Journal* staff more 20 years ago not because I had answers but because I had questions. And this is where I can ask them. I care deeply about the complicated work involved with shaping healthy communities, and as a writer for the *Bay Journal* I could talk directly to scientists, policymakers, conservation advocates, farmers, business leaders and people of faith who had a wide range of perspectives and ideas about our shared challenge. Working at the *Bay Journal* is a way to ask questions for a living.

Now, as editor, I admire and value that quality in the entire *Bay Journal* team: These folks are devoted to questions. They are insatiably curious. And answers lead to more questions. The pursuit of reasons, the details, the what-ifs and multiple perspectives are a normal part of everyday work. And we question each other, too. All the time.

This is largely why we exist as an independent nonprofit and continue to produce top-notch environmental reporting for the Chesapeake region — with far more depth, context and continuous coverage than you find elsewhere. It's why this job is rewarding for me and why I am incredibly proud of my coworkers.

And we won't be letting AI ask questions for us any time soon.

— Lara Lutz

ON THE COVER

This blue catfish, an invasive species, was caught in Virginia's Rappahannock River. (Dave Harp)

Bottom photos: Left by Ad Crable, middle by Jeremy Cox, right by Jim Hudgins/U.S. Fish and Wildlife Service

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BY THE numbers

1,800
Local governments in the Chesapeake Bay watershed

4
Jurisdictions that signed on to the 1983 Bay cleanup agreement: Virginia, Maryland, Pennsylvania and the District of Columbia

7
Jurisdictions that signed on to the 2014 Bay cleanup agreement: the four from 1983 as well as Delaware, New York and West Virginia

500,000
Approximate number of Canada geese that winter around the Bay

60,000
Estimated combined black bear population in Maryland, New York, Pennsylvania, Virginia and West Virginia

70%
Amount of a black bear's diet that is made up of plants

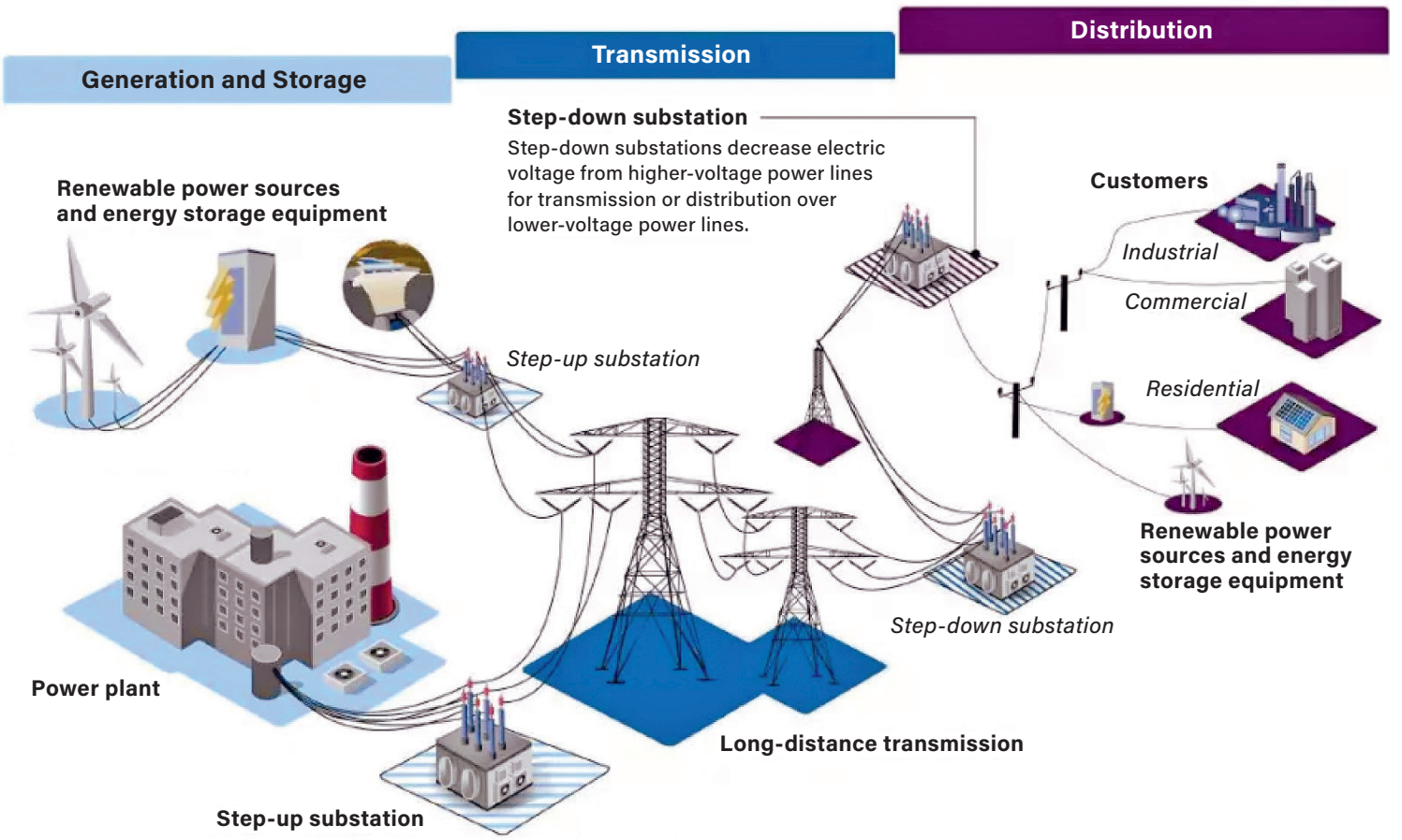
How does electricity flow?

Electricity comes from traditional sources like coal and renewable sources like solar fields and offshore wind. Central generation creates energy at a power plant. Distributed generation, like solar farms, creates energy near the site where it's used.

Towers with high-voltage transmission lines carry the electricity to a substation. Transformers at the substations convert the electricity to a lower voltage for consumer use. Smaller distribution lines carry the energy to its final destination.

There are efforts to modernize the grid by integrating more renewable energy and adding battery storage. Between 2001 and 2023, all Chesapeake Bay states switched from coal to natural gas as their top source of electricity.

Nationwide in 2023, about 22% of power was generated by wind, solar and hydroelectricity, according to the *New York Times*. New data centers in Virginia and Maryland are increasing energy demand in the Bay region.



Sources: GAO: Art Explosion (images). | GAO-19-332

A Passion for Oysters

All things oysters, brought to you in the latest *Bay Journal* film.

Watch it at **bayjournal.com/films**.

More news at bayjournal.com

In case you missed them, check out these recent articles available only on our website.

- $8.9 million in Chesapeake WILD grants awarded to improve wildlife habitat
- Air monitoring study by Pennsylvania gas driller finds fracking is safe
- Opinion: This is the moment — to think big for the Chesapeake Bay
- This fall, help gather seeds for future trees

ABOUT US

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BAY JOURNAL NOTEBOOK

Bay Journal writer Lauren Hines-Acosta collects images of commercial fishers harvesting blue catfish in Virginia. (Timothy B. Wheeler)

Working the waters, connecting the dots

Bay Journal staffers have been hitting the waves in more ways than one while producing our October issue.

Staff writer **Tim Wheeler** joined the board and staff of the Maryland Association of Environmental and Outdoor Education in September for a cruise around Baltimore's Inner Harbor on the *Sigsbee*, a skipjack now used by the Living Classroom Foundation. Forty years ago, Tim spent a day aboard the same ship while writing a story about its skipper, the first and only woman at the time to captain a working skipjack.

Staff writer **Lauren Hines-Acosta** joined Tim on a boat on the James River — at the crack of dawn — for a story in this issue about blue catfish. They rode with one of three permitted electrofishing crews in Virginia to see how they harvest the invasive fish by the boatload. Lauren took video that accompanies the article on our website and which will also appear on the *Bay Journal's* social media pages. You can find us on Instagram *@chesapeakebayjournal*, on X *@chesbayjournal* and on our Facebook page under *Chesapeake Bay Journal*.

Lauren also spoke recently at a retreat hosted by the Virginia Conservation Network in Pocahontas State Park. She helped lead a session that explored how environmental advocates can craft a narrative to connect with their members, the media, legislators and funders.

Fifty years ago, the James River in Virginia was the site of so much toxic contamination that it was closed to fishing for several years. But the disaster also led — through a judge's innovative decision — to the beginning of the Virginia Environmental Endowment. Staff writer **Whitney Pipkin** went to Hopewell, VA, a few years ago to learn about the long reach of that disaster. For this issue, she spoke with Gerald McCarthy about his new book on how the VEE he helmed for decades contributed to the state's environmental movement.

Staff writer **Jeremy Cox** has been all over the air waves this past month, appearing as a guest on the *I Hate Politics* podcast, a show about the work of local government, to talk about Chesapeake Bay cleanup goals. Jeremy and other staff writers also regularly appear on Delmarva Public Media radio stations as part of a weekly environmental series.

NEWS briefs

LOCAL
REGIONAL
NATIONAL

$23.8 million awarded for Bay watershed projects

The U.S. Environmental Protection Agency announced Sept. 4 that $23.8 million in grants has been awarded to 56 projects across the Chesapeake Bay region.

The grants are part of the Small Watershed Grants program, administered by the National Fish and Wildlife Foundation in partnership with the EPA and the Chesapeake Bay Program. The grants are focused on improving water quality, restoring habitat, protecting key species and encouraging community stewardship.

Funding for the grants includes $9.3 million already allocated in the annual congressional budget and $11.6 million from the Bipartisan Infrastructure Law.

Blue Water Baltimore received $1 million to mitigate stormwater runoff using green infrastructure like rain gardens and permeable pavement at more than a dozen sites across the city.

A grant of $936,800 went to the Pennsylvania chapter of Trout Unlimited, which plans to expand brook trout habitat by replacing culverts and improving dirt roads.

The Virginia Polytechnic Institute and State University will assist the Nansemond Indian Nation with a $150,000 grant that will help tribe use nature-based practices to develop storm resilience.

Across the Bay region, the Chesapeake Research Consortium will use a $150,000 grant to mentor college students who are entering the conservation field. The program will focus on students who are underrepresented in environmental research careers. *— L. Hines-Acosta*

Study confirms Baywide failure of osprey nests

Ospreys nesting at multiple sites around the Chesapeake Bay this year failed to produce enough young to sustain their numbers, new data shows. The scientists collecting the data say many chicks apparently starved in areas where the birds subsist mainly on Atlantic menhaden for food.

The finding may increase pressure on fisheries managers to curtail commercial harvests of menhaden in the Bay.

Scientists with the Center for Conservation Biology and the U.S. Geological Survey monitored 571 pairs of ospreys from March through August at 12 locations on both shores of the estuary.

Ten sites were in brackish areas bordering the Bay's mainstem where ospreys rely largely on menhaden for food. Those included the Lynnhaven, Elizabeth, York and Piankatank rivers in Virginia as well as Mobjack Bay, plus the Patuxent and lower Choptank rivers in Maryland.

Two other study areas were in freshwater far up the James and Rappahannock rivers where osprey tend to feed on catfish and gizzard shad.

Ospreys nesting in menhaden-dependent areas hatched and raised the fewest chicks on average, and many breeding pairs did not lay any eggs, reported Bryan Watts, director of the Center for Conservation Biology.

The overall reproductive rate for osprey pairs in the mainstem of the Bay was about half of what scientists believe is necessary to maintain the birds' population, he said.

"I've never seen nest failure like this in my entire career," said Barnett Rattner, a veteran scientist with the U.S. Geological Survey who participated in this year's study.

But Rattner said more research is needed to prove unequivocally that a food shortage is causing the problem. "Whatever is going on, it's widespread," he added. *— T. Wheeler*

Solar arrays may soon appear along PA Turnpike

The Pennsylvania Turnpike Commission is seeking bids to build and operate up to 15 solar arrays along rights of way adjacent to the 550-mile cross-state highway.

The commission, which operates what was the first superhighway in the U.S., said the arrays could generate enough electricity to power 45,000 homes.

A study found 7,900 acres of the highway's rights of way suitable for solar farms.

The turnpike commission would purchase the generated power for 20 years, using it to offset its electricity consumption and to sell some energy to the regional power grid. The agency also would retain solar energy credits for additional revenue.

The project is the latest part of the commission's plans to make the Pennsylvania Turnpike the first sustainable highway in the U.S. by 2040.

Other projects include the possible deployment of wind turbines, converting mowed areas to pollinator seeding and adding inductive, and adding wireless charging technology for electric vehicles as they are driven on the highway. *— A. Crable*

MD counties push Bay passenger ferry. Will funding follow?

Goal is to boost recreation, tourism

By Jeremy Cox

A new Chesapeake Bay passenger ferry service could attract tens of thousands of users in its first season but would run in the red while doing so, according to a study backed by a coalition of coastal Maryland counties.

The 114-page study, released Aug. 15, suggests that 50,000 passengers would take rides in its first year, operating over 26 weeks from mid-April to mid-October. That's based on boats traveling along six proposed routes between the Bay's Western and Eastern shores.

Under that scenario, the system is expected to generate $2.5 million in revenue during that season, according to study author Cambridge Systematics, a Massachusetts-based transportation consultant. But the expenses would add up to $5 million from paying off the vessels, operating the system, maintenance and other costs.

This catamaran ferry, similar to the style of ferries that have been proposed for the Chesapeake Bay, operated in the United Kingdom and went on to serve a port in Croatia. (R-P-M Flickr/CC BY-NC-ND 2.0)

The proposal's backers say the study underscores the need to develop a viable transportation alternative for crossing the Maryland portion of the Bay. The Chesapeake Bay Bridge, part of U.S. Routes 50/301, is the lone highway connection between the two shores, spanning the water between Kent Island and Annapolis.

"We are optimistic about the study results and the path forward, which could better connect our Chesapeake Bay destinations and create economic impact across the entire state," said Kristen Pironis, executive director of Visit Annapolis & Anne Arundel County, one of the counties supporting the effort. The others are Calvert, Queen Anne's, Somerset and St. Mary's.

The initial routes under consideration include six routes with a combined total of 14 stops. The system could expand to 21 stations in the future, according to the proposal.

The report envisions using a fleet of two 149-passenger catamarans and five 49-passenger catamarans, powered by diesel or diesel-electric hybrid engines. The average roundtrip fare would be $50.

The service likely wouldn't be feasible for most commuters, the authors say in the report. It would be open only to passengers and not their vehicles.

The focus is on recreation and tourism, advocates say. The service is projected to support 143 jobs and $14.5 million in economic effects.

The study identifies several things that need to happen before the first ferry sets sail. Among them: establishing an entity to oversee the system (likely a public-private partnership, it recommends), generating buy-in among host communities, developing more detailed plans and obtaining funding and environmental permits.

The last ferry operation in Maryland that transported vehicles across the Bay closed in 1952 with the opening of the first Bay Bridge span. ■

Advocates ask EPA to oppose air permit in Hopewell, VA

Concerns raised about lack of information and impacts on overburdened community

By Whitney Pipkin

The Southern Environmental Law Center (SELC) and environmental groups are asking the federal government to object to an air permit that Virginia recently issued to a chemical manufacturing plant.

AdvanSix Resins and Chemicals LLC, located south of Richmond in Hopewell, VA, has for years been seeking to renew its emissions permit under Title V of the U.S. Clean Air Act. The 482-acre facility along the James River is one of the largest manufacturing sites for the fertilizer ingredient ammonium sulfate and for caprolactam, which is used to make a nylon resin for carpets.

The federal air permit allows a facility to operate pollution-emitting machinery above federal thresholds but under certain limits and with monitoring. Most Title V permits are issued by state or local agencies, but the U.S. Environmental Protection Agency maintains oversight over the permits.

The Virginia Department of Environmental Quality received public comments on the AdvanSix permit earlier this year and approved the draft permit in May. SELC, the Chesapeake Bay Foundation, the Hopewell-Colonial Heights NAACP and other groups had urged DEQ in February to require the facility to include more information in its application and to hold a public hearing on the permit. In March, a DEQ spokesperson said the agency was still reviewing public comments and had not finalized a decision on holding a hearing.

Mark Sabath, a senior attorney with SELC, said advocacy groups and the public can't assess whether the permit is adequate because it doesn't include enough information about the types and amounts of air pollution each unit at the facility is projected to emit. Advocates also said the permit did not require enough monitoring or testing.

On July 19, SELC, on behalf of several regional environmental groups, petitioned the EPA to object to the Title V permit.

AdvanSix's 2023 Sustainability Report states that the company has reduced its emissions of criteria pollutants by more than half since 2015.

"We take great pride in our operations, and the health and safety of our employees and the communities in which we operate is paramount," AdvanSix spokesperson Janeen Lawlor wrote in an email. "[We have] made all emission data from the Hopewell facility available to the DEQ."

The AdvanSix plant was, under previous names and owners, the site of the infamous Kepone pesticide disaster 50 years ago, which sickened workers and polluted the James River. Today, the plant is the fourth largest emitter of nitrogen oxide in Virginia, according to the EPA.

The facility's last Title V permit was issued in 2014. Anderson said a lot has changed since then. For one, advocates in the state are more focused on environmental justice components of projects.

The percentage of people living in poverty in Hopewell is twice the state average, according to the latest census, and the city's population is 43% Black. One study found that Hopewell residents had an average life expectancy of 68.5, which is 9.6 years lower than the state average.

"Everyone should have clean air to breathe," said Regina Snow, communications director for Virginia Interfaith Power and Light, Advocates say this air permit, and the water discharge permit to follow, also merits additional scrutiny because the plant had a history of violations under its previous Title V permits. In 2013, the company, then operating under the name Honeywell Resins and Chemicals LLC, agreed to pay $3 million in civil penalties for alleged violations of the Clean Air Act at the Hopewell site.

In 2014 and 2017, the plant was also found responsible for chemical spills released into Gravelly Run, a tributary of the James River, that resulted in fish kills.

AdvanSix is also seeking to renew the plant's wastewater discharge permit. That permit would authorize continued discharges of cooling water, industrial wastewater and stormwater into the James River and its tributaries with oversight and limits. ■

Virginia pauses effort to reopen winter crab harvest

Spring vote by fishery commission favored it but committee recommended reversal

By Jeremy Cox

In 2008, Virginia responded to concerns about the blue crab population by closing the winter harvest. (Will Parson/Chesapeake Bay Program)

Virginia fishery managers have halted their effort to allow blue crabs to be dredged during the winter, reversing course in the face of withering criticism from conservationists and their Maryland counterparts.

The Virginia Marine Resources Commission (VMRC) voted 4–1 on Sept. 24 to keep the winter fishery closed. That came two months before it was set to open for the first time in 16 years. The board had voted 5–4 in June to lift the long-running prohibition.

The about-face came after the commission's Crab Management Advisory Committee recommended changing course on Aug. 20. The industry-dominated board voted 8–5 to urge the VMRC to keep the fishery closed until an ongoing species stock assessment is completed in March 2026.

"You don't want to change too much while you're doing a stock assessment," said VMRC member Will Bransom of Virginia Beach. "You would rather keep the status quo until you finish your research and analysis. Then you make fishery decisions after that."

Spencer Headley, a commercial fisherman in Reedville, was the commission's lone dissenter.

Dredging involves dragging a metal, rake-like apparatus along the bottom behind a boat to collect crabs from the mud. The practice, conducted in the winter when crabs tend to be half-buried in bottom sediment, has been banned in Virginia since 2008. That move was taken in response to the Chesapeake Bay's crab population being declared a federal disaster.

The proposal to reopen the winter season triggered criticism from conservationists and from Maryland officials who manage that state's crab population. They said it could undo years of cooperative management and warned that it could imperil the species.

Maryland, Virginia and the Potomac River Fisheries Commission pledged in 2008 to reduce the harvest of female crabs by 34%. In Virginia, one of the primary avenues toward reaching that goal was to prohibit watermen from dredging crabs in the winter, when migrating females typically account for 90% of the catch.

To maintain the 34% reduction while reopening the winter season, state scientists said managers would have to make cuts to the crab pot fishery. That fishery, which uses baited cages to trap crabs, represents about 97% of the state's annual harvest.

The shift in sentiment came after crab pot proponents made a case that more watermen would benefit from extending the pot season than reopening the dredge fishery. As part of its vote to postpone restarting the winter dredge season, the VMRC also set in motion a move to keep the pot season open longer this year and reopen it sooner in 2025. Staff will bring a proposal before the board at its October gathering. ■

Indigenous council sees conservation, sovereignty as one

VA tribal leaders establish council to help tribes with stewardship of ancestral lands

By Lauren Hines-Acosta

After a long day at the Sovereign Nations of Virginia Annual Conference in 2022, the federally recognized tribal chiefs grabbed dinner. All the buzz was about how the Rappahannock tribe finally obtained jurisdiction over its ancestral land along Fones Cliffs.

"That was the impetus," said Reggie Stewart, second assistant chief of the Chickahominy Indian Tribe.

As they considered their shared interests in restoring tribal lands, the chiefs established the Indigenous Conservation Council for the Chesapeake Bay region. It's designed to be a resource for tribes working to steward and reconnect to their ancestral lands. Now, it's up and running as the first of its kind in the Bay watershed.

"What we're looking to do with the ICC is figure out how we can partner with the tribes and find resources to allow them to exercise their sovereignty in more ways," said Stewart, who is also the ICC secretary.

The council membership represents each federally recognized tribe in the Bay watershed. For now, the council will focus on providing resources to those in Virginia. But council leaders hope to expand their services with time. Any policy must be supported by all members. The council's strategic plan outlines how it will help tribes restore sacred relationships with their ancestral lands and cultures — a process called "rematriation" by many Indigenous people. Gaining official stewardship over ancestral land allows tribes to have more independence. It offers avenues to self-governance, economic development and say-so in conservation efforts.

"The reason why [land rematriation is] an important component of enacting their own sovereignty is because there's so much overlap between the ability to govern your own lands, the ability to celebrate your own cultural traditions, and the preservation of those lands and waterways," said Katherine Sorrell, an attorney with Cultural Heritage Partners, which represents many Virginia tribes.

While land sovereignty is a major focus for the council, conservation is just as important — if not one and the same.

Stewart said that the general public may see conservation as putting land in an untouchable box, but he sees conservation as managing land sustainably.

"We've got a pretty good track record of conservation over time and utilizing property appropriately," Stewart said. "So, to exercise our sovereignty is letting us decide what's considered conservation on that particular property."

"When we see the health of the Bay at risk or as vulnerable, that Indigenous knowledge is key sometimes," said Michaela Pavlat, Indigenous program manager at the National Parks Conservation Association.

"The council has a deep-seated knowledge in protecting the Bay and their voice and their Indigenous knowledge can be an innovative solution to protect the Bay from vulnerabilities."

The ICC hosts open meetings for environmental directors from federally recognized tribes to request help or receive technical assistance. The group is working with another Native-led group, called Animikii, to scope out tribal needs. The council also plans to develop its own funding source, the Runapewek Peoples Fund, to offer tribes grants.

The path to federal recognition that culminated in 2016 for the Pamunkey Tribe and 2018 for the six other Virginia tribes was a long one — but it has begun to undo some of the damage done by the 1924 Virginia Racial Identity Act, which was designed to erase Native heritage.

"We've learned over the years that we have a lot more influence as a collective than we do as individual tribes," Stewart said.

Now, Virginia's federally recognized tribes are seeing a lot of momentum. Some are regaining their ancestral lands. The state is updating its codes to recognize tribes, and the General Assembly passed a bill earlier this year requiring state agencies to consult federally recognized tribes on lands that impact them. ■

PA factions spar over treating roads with drilling wastewater

Competing bills allow, disallow use of water from oil and gas wells

By Ad Crable

For more than a half-century, there has been a widespread and largely unmonitored practice of spreading wastewater from oil and conventional gas drilling, by the millions of gallons, onto dirt and gravel roads in rural Pennsylvania.

It's been a mutually beneficial arrangement between well operators and local governments. The former get a relatively cost-free way of disposing of the salty wastewater used in the extraction process, and often cash-strapped townships with unpaved roads — an estimated 25,000 miles statewide — get free dust control and safer roads in snowy or icy conditions. And they say it works.

But the practice has found itself awash in controversy in recent years as a number of scientific studies have found that the wastewater brine contains unhealthy levels of radiation from naturally occurring radium as well as toxic chemicals such as benzene, iron, manganese, strontium, barium, aluminum, zinc, lithium, copper and lead.

In addition to being a hazard to human health, runoff of the wastewater can harm nearby streams, killing aquatic life and over time making streams too salty for trout, the studies found.

A recent study by Penn State found the brine is no more effective than plain water for dust control and in some cases can damage roads.

The oil and gas industry has fought back, saying the brine is a free and effective tool for municipalities and does not cause any harm to people or the environment when spread in the right places and the right times.

The controversy has prompted a partial ban on the practice, as well as a lawsuit and an apparent investigation by the state attorney general's office into illegal spreading. Most recently, there are dueling bill proposals in the state legislature — one to ban all road spreading and one to allow it.

The rancor over the issue has escalated to finger pointing among legislators and public officials who charge geographical bias.

"This is just one more prime example of a policy made by a bunch of people who don't have any dirt roads but the idea of spreading something from [oil and gas wells] just sounds icky to them," said Sam Breene, a county commissioner in rural Venango County at a legislative hearing on the wastewater spreading.

This dirt road in rural Pennsylvania is part of an estimated 25,000 miles of unpaved roads in the state. The legality and environmental ramifications of using wastewater from oil and gas wells for dust control and de-icing has been debated for years. (Alicia/CC BY-NC 2.0)

"The environmental impact … is nil," added state Rep. Mike Armanini, a Republican from an area with a lot of unpaved roads, adding that it's just a "ploy" to undermine the oil and gas industry.

Representatives of the oil and gas industry scoff at the studies' findings, saying the public health threat from inhaling road dust is worse than any that come from the wastewater.

"It all comes down to risk assessment," Burt Waite, a retired geologist and former member of the board of the Pennsylvania Independent Oil & Gas Association, said at a hearing. "Most of us would agree that some environmental impact is acceptable and inevitable to have safe roads to drive on."

Rural townships — at least 84 are known to use road spreading — complain that there is little state money available for treating unpaved roads and avoiding that expense helps keep them solvent.

But scientists who have studied the wastewater say the evidence is now clear that spreading the liquid above ground is a bad idea for both humans and the environment.

"A total ban is the only way to prevent what has become the illegal dumping of millions of gallons of oil and gas wastewater on public roads," said David Hess, a former state Department of Environmental Protection secretary who has become a leading crusader against the practice, which he says continues illegally and surreptitiously.

Hess observed that while road-spreading advocates characterize wastewater as ocean water long stored underground, it is actually up to 10 times saltier than seawater and is regulated as waste by DEP.

In 2016, DEP banned the spreading of wastewater from hydraulic fracturing, or fracking, on roads.

Road spreading of wastewater from far more numerous conventional oil and gas wells was allowed to continue until an appeal brought by a Warren County woman in 2018, who said wastewater sprayed outside her home was making her sick.

Before her case could be reviewed by the Environmental Hearing Board, DEP surprised many by placing a moratorium on all wastewater road spreading.

But the practice continued, largely thanks to a regulatory loophole that exempts wastewater that is similar to a commercial dust-control product. Oil and gas drillers claim that well wastewater is in fact similar to a dust suppressant sold commercially.

Penn State researchers tested the product and found it was in fact the same as oil and gas drilling wastewater — because it was drilling wastewater, contaminants and all.

DEP says 86% of oil and gas waste producers, representing 33,505 wells in 2023, simply ignored requirements to report where their wastewater goes. DEP announced in May that it would be developing changes to the "co-product" loophole.

In recent years, more wastewater is being recycled into other wells for drilling, but spreading of the brine on roads remains considerable and "an open secret," experts say.

Frustrations over the continued practice led Rep. Greg Vitali, a Democrat from the Philadelphia area, to introduce a bill banning the spread of any oil and gas wastewater on public roads.

The same day, Rep. Martin Causer, a Republican from oil and gas country, announced his bill to legalize the spreading of brine, with some environmental controls.

Both bills will find it tough going in a divided legislature. DEP, meanwhile, has endorsed Vitali's anti-spreading bill.

William Burgos, a Penn State researcher who has been involved in several studies into the effects of road spreading of wastewater, said at a state Senate hearing that "there's no more research that needs to be done" to ban the practice. "It is all risk, no reward. The only beneficiaries are the oil and gas operators who choose this disposal option." ■

Salmon farm aims to operate along the Susquehanna River

Norwegian company chooses new site after withdrawing plans for the Eastern Shore

By Timothy B. Wheeler

Two years after abandoning controversial plans for a large indoor salmon farm on Maryland's Eastern Shore, a Norwegian aquaculture company is back with a new proposed location that it hopes avoids environmental concerns.

AquaCon Maryland LLC is planning to build its $320 million facility on the lower Susquehanna River. The company has obtained an option on 160 acres in Port Deposit, MD, at a former naval training center that is being redeveloped as an industrial park.

Henrik Tangen, AquaCon's executive chairman, said by email that the company is working with local officials to evaluate the suitability of the property for a land-based fish farm. Key needs, such as access to water, wastewater treatment and highways all look "very positive," he added.

Tangen said the company is finalizing the project design and pursuing permits. It plans to begin construction by the first half of 2025 and harvest its first crop of salmon in 2028. The facility would initially produce 10 million tons of Atlantic salmon annually and eventually reach 20 million. It would employ about 300 people.

Most of the salmon consumed in the U.S. is farmed, with the fish often spending part of their lives offshore in underwater pens. Such operations have drawn fire for their environmental impacts, including pollution produced by large quantities of fish feces and uneaten food released into surrounding water.

AquaCon says its salmon would be produced sustainably on land with a "recirculating aquaculture system." Hatchery spawned fish would be raised in 172 tanks under one sprawling roof, using treated fish waste to generate energy for the operation.

Even so, the Norwegian company stirred a furor four years ago when it pursued a site in Federalsburg in Caroline County. While most of the water used there would have been recycled, the facility would have discharged about 2 million gallons of "purge water" daily into Marshyhope Creek, the only Chesapeake Bay tributary in Maryland where endangered Atlantic sturgeon are known to spawn. Purge water comes from tanks where fully grown salmon are briefly held before being shipped to market.

AquaCon has secured an option to lease land at this industrial park in Port Deposit, MD, for its proposed indoor salmon farm. (Conlan Company)

The project drew mounting pushback from scientists, environmentalists and local residents worried about the potential impact on the creek and its fish, particularly sturgeon.

Though the Maryland Department of the Environment preliminarily approved AquaCon's discharge permit, the company responded to concerns by withdrawing its permit application in 2022. The company's lawyer said it intended to look for alternatives to discharging year-round into the Marshyhope.

AquaCon is the first potential tenant at the 1,200-acre site of the former naval training center in Cecil County, said Toni Sprenkle, executive director of the Bainbridge Development Corp. The company had considered building there when originally shopping for sites in Maryland, she said. But the complex had not proceeded far enough in its conversion from a military facility to accommodate the company at that time, she added.

The new location drew a thumbs-up from Dave Secor, a fisheries ecologist with the University of Maryland Center for Environmental Science. He had been outspoken in warning about the risks of building the salmon farm along the Marshyhope.

"Dilution of the discharge is the ultimate mitigation against ecological risk for AquaCon," Secor said by email. The salmon operation's proposed discharge of 1.9 million gallons a day would have constituted up to 25% of the Marshyhope's flow, he said, which is why he and others worried about how that could affect sturgeon and other fish there.

The Susquehanna is a much larger water body with a flow many times greater. The salmon facility's discharge would be diluted by more than 1,000-fold, Secor estimated.

"Now that the siting has been appropriately considered," Secor said, "the promise of a sustainable and domestic supply of seafood would seem important to support within the state."

Other critics of AquaCon's earlier location are not yet ready to endorse the new one. Alan Girard, Maryland advocacy director for the Chesapeake Bay Foundation, said the environmental nonprofit is still gathering information about AquaCon's plans.

While the foundation has not taken a position yet on the project, Girard said, "A lot of the same questions come up," such as how stormwater runoff would be controlled and whether the company would need to offset any nutrient pollution in its discharge.

AquaCon intends to get most of the water for its operation from the river rather than groundwater. Tangen, the company's chairman, said the water would be purified to raise salmon and the discharged water would be cleaner than when it was withdrawn.

Unlike Marshyhope Creek, the Susquehanna is not classified as critical habitat for Atlantic sturgeon. But Steve Lay, a Harford County waterman, said they still turn up in the upper Bay and its tributaries.

"When I was a kid, sturgeons were common here," he said. "They're still here. I caught one in the last five years."

Lay, who is chair of the Maryland Department of Natural Resources tidal fisheries advisory committee, noted that the lower Susquehanna also draws spawning American shad and river herring. He said he'd like to know if the salmon facility's discharge could disrupt those or other native fish species.

If the Maryland Department of the Environment decides to approve a preliminary discharge permit for the project, a public comment period will follow. ■

Protection sought in VA for a 'fish with a lot of fight'

Conservationists want to limit recreational catch of hickory shad

By Lauren Hines-Acosta

One day back in April, Dave Antos couldn't focus on work. His friends were blowing up his phone with pictures of their catches on the Occoquan River in Virginia. Within two hours, he was in the middle of the river, throwing long casts under high winds.

He stayed alert. Writhing hickory shad aren't afraid to smack their opponent.

"It's a fun fish," he said. "You get a lot of fight."

Now, a conservation group is hoping to maintain the hickory shad recreational fishery for people like Antos while giving the species more protection.

The Coastal Conservation Association Virginia in July submitted a petition to the Virginia Marine Resources Commission (VMRC) recommending that recreational anglers be allowed to keep only 10 hickory shad a day. The catch is currently not regulated in Virginia's portion of the Chesapeake Bay watershed.

Although the species seems to be doing better than its well-known cousin, the American shad, there is concern that its numbers in Virginia may have declined in recent years.

Wayne Young, hickory shad team coordinator with CCA Virginia, said the proposed limit is a good starting point.

"[The VMRC is] starting something new," Young said. "I hope more information will come down the road that will assist them in making informed decisions."

Public comments on the petition were accepted on the state's Regulatory Town Hall website through September 16.

Hickory shad act as an ecosystem bridge between the zooplankton they eat and the birds and fish that eat hickory shad. Historically, they were important for people as well. Spring spawning runs of hickory and American shad were a welcome food for colonists and Indigenous peoples after harsh winters.

"We have them as a great historical significance to our country and a key part of the food web. And just like any species that we have that exists, we don't want to ever see them go away," said Pat McGrath, a scientist at the Virginia Institute of Marine Science.

Hickory shad travel together as a school. (Ryan Hagerty/U.S. Fish & Wildlife Service)

Hickory shad have the least protection of the four *Alosa* species common in Virginia waters. Along with hickory shad and American shad, those also include blueback herring and alewife. They all start their lives in the rivers, migrate to the ocean, where they spend most of their lives, and return to their native rivers to spawn.

American shad used to be the largest commercial fishery on the East Coast. But they have struggled to return to their historical numbers because of overharvesting, pollution, dams blocking access to spawning grounds, and an influx of invasive species. The Atlantic States Marine Fisheries Commission, which manages migratory species along the East Coast, has classified the coastal population as depleted since 2007.

The Maryland Department of Natural Resources set a moratorium on both American and hickory shad in 1980. It's been stocking rivers with American shad since 1994 and hickory shad since 1996. Chuck Stence, DNR's warm water hatcheries manager, said they consider hickory shad populations as restored in the Patuxent and Choptank rivers. So now, the department is stocking both species in the Patapsco River and American shad in the Choptank River.

Virginia set a moratorium on only American shad in 1994. Their population is increasing in the Rappahannock River. But after more than 20 years of stocking American shad in the James River, there are almost none to be found there.

Recreational angler Dave Antos caught a hickory shad on the Occoquan River in Virginia. (Courtesy of Dave Antos)

The story is different for hickory shad in Virginia. Greg Garman, director of the Rice Rivers Center at Virginia Commonwealth University, remembers electrofishing in the James in the 1990s to monitor alosine species. After a few years, the researchers began seeing more hickory shad return to the river, even though they were never stocked.

"What has happened over the last 20 years or so is without any restoration effort … hickory shad came back," Garman said. "And the truth is, we don't really know why."

Some fish biologists across the Bay region say it could be tied to the differences in their diets, genetics or which predators they encounter in the ocean.

One leading theory is that hickory shad reach spawning age earlier than American shad. McGrath said it's helpful when a species can replace themselves quickly to maintain the population.

But there is some evidence that their numbers in Virginia are dropping.

Alan Weaver, fish passage coordinator at the Virginia Department of Wildlife Resources, works with his team to conduct electrofishing surveys of hickory shad passing through the James and Rappahannock rivers during spawning season. He's seen their catch rate decrease over the last four years.

According to their weekly spring surveys in the James River, they went from a seasonal catch rate of 60 hickory shad per hour in 2003 down to 10 per hour in 2023. There were similar results in the Rappahannock River, with 60 hickories per hour in 2003 down to 23 an hour in 2023.

Weaver said the proposed harvest limit, or creel limit, for Virginia's Chesapeake waters "has potential to help the situation."

Fish biologists think that, if they can learn more about hickory shad while enough are still present, they can find ways to help American shad.

Data is scarce for both species but particularly hickory shad. Most data across the Bay region is from surveys that are difficult to standardize, or are from recreational anglers' anecdotes. They are not being tracked in the ocean, and there is insufficient information to conduct a stock assessment.

Last year, U.S. Sen. Tim Kaine (D-VA) and several Virginia state congressmembers allocated funding for VCU and the U.S. Fish & Wildlife Service to create the Virginia Alosa Research Consortium. The consortium will study the *Alosa* species.

Garman, who is one of the consortium's principal investigators, has been collecting baseline data on the species. The researchers are leveraging existing research equipment throughout the East Coast from other studies to track where the fish are going.

The consortium also collaborates with some of Virginia's Indigenous tribes because many have cultural ties to these fish. The Upper Mattaponi Tribe in pre-colonial times relied on the fish to arrive in February during the full moon, or "starving moon."

"Creel limits would be a start," Upper Mattaponi Chief W. Frank Adams said. "As researchers do their job, we might have to adjust … we want those rivers teeming again."

Once the public comment period ends, the VMRC has 90 days to hear the petition and vote on whether to regulate the catch. ■

EPA may increase oversight of state stormwater programs

Bay cleanup reports show big shortfalls in reducing polluted runoff

By Karl Blankenship

The U.S. Environmental Protection Agency is warning states in the Chesapeake Bay watershed that they are "significantly off track" in meeting goals to reduce stormwater pollution and that the agency may exert greater oversight of those efforts.

The warning came in the EPA's most recent evaluation of state-written plans that will guide their actions through 2025, the region's voluntary deadline for meeting goals to reduce pollution in the Bay.

State and federal officials now acknowledge that the target, set in 2010, will be missed by a large margin, mostly because of shortfalls in the agricultural sector, the largest source of water-fouling nutrients to the Bay.

But runoff from developed lands also contributes a significant amount of nutrient pollution — which includes both nitrogen and phosphorus — to the Bay and its rivers. And, according to computer models, the load is increasing as more land is turned into buildings, roads and parking lots.

Although stormwater runoff has steadily increased since 2010, the evaluations released Aug. 14 mark the first time that the EPA issued a warning to all Bay states that their programs could be subject to greater scrutiny. The warning was not given to the District of Columbia, which has met its goals.

The reviews did not say exactly which actions the EPA might take. But Adam Ortiz, administrator of the agency's mid-Atlantic region, said he wanted to see "meaningful progress" from the states.

Ortiz said the agency had not warned of possible actions regarding stormwater programs in past reviews because of the need to focus on agricultural runoff, which states are counting on for the vast majority of future nutrient reductions.

But state and federal agencies have greatly ramped up spending for farm conservation efforts in recent years, he noted.

"Agriculture is now going in the right direction overall, and stormwater has been the stubborn one for a variety of reasons," Ortiz said. "It's the toughest and most expensive, and it's where we're seeing the most growth with our populations and impervious surfaces."

Increased precipitation is generating more stormwater runoff, laden with nutrients and other pollutants that degrade the Chesapeake Bay and its rivers. (Dave Harp)

Ortiz said Bay states need to be more timely in issuing stormwater permits and demonstrate that they have enough staffing and funding to oversee their programs.

Much of the stormwater runoff is addressed through state-issued permits, which cover densely developed urban and suburban lands. But a growing amount of runoff comes from development in rural and dispersed areas that aren't currently required to have stormwater permits.

Ortiz said the EPA could begin recommending that permit programs be expanded to such areas.

Kristin Reilly, director of the Choose Clean Water Coalition, which represents more than 300 organizations in the Bay watershed, said she welcomed the stormwater emphasis, noting that it is an area her members have highlighted for years.

"We're happy to see that it's finally being called out," she said, but added that the EPA had been unclear in its reviews about exactly what it would do to increase oversight.

She noted that states often have been late in issuing new permits and that those permits often don't contain the specific measures needed to reduce runoff.

"It's less about whether [the permit] was reissued," Reilly said, "It's more about what is in the permit. Is it a strong permit?"

The EPA's evaluations covered plans written by each Bay jurisdiction outlining the nutrient reduction actions they plan to take in 2024-25, and it also included a review of state progress toward targets set for 2022-23. The plans, or "milestones," are written in two-year increments as part of an effort to ensure that states are on track to meeting their goals.

If the EPA concludes that states are not showing adequate results, it can take a variety of actions to prod greater progress, such as withholding clean water grant money or forcing wastewater treatment plants to make up for shortfalls in other sectors, such as agriculture and stormwater.

The agency has historically been reluctant to take such actions, though.

In its reviews, the EPA said all Bay states need to demonstrate that they are accelerating efforts to reduce agricultural runoff.

Ortiz acknowledged there is "still a big gap" in meeting agricultural goals, but he said, "the bleeding has stopped, and we're moving in the right direction."

The EPA reviews also show that Delaware is particularly far off track. The state has achieved only 9% of the nitrogen reductions needed to meet its goals.

"We're in conversations with Delaware. The results have been concerning," Ortiz said, adding that there would be "more to come."

Among other jurisdictions, all but the District of Columbia and West Virginia were falling short of at least some targets they had set for 2023:

- Pennsylvania, Delaware and New York did not meet targets for nitrogen, phosphorus or sediment.
- Virginia did not achieve targets for nitrogen or phosphorus but it did for sediment.
- Maryland did not achieve targets for nitrogen but did for phosphorus and sediment.

The District of Columbia has met its nutrient and sediment goals, thanks to upgrades at the Blue Plains wastewater treatment plant. It also has undertaken massive upgrades to fix its combined sewer overflow system, which used to send untreated sewage into the Anacostia and Potomac rivers during heavy storms.

Most states are further off track than the EPA review indicates, though. The agency used an older version of a computer model to evaluate nutrient reduction progress. Had a newer version been used, states would have shown even less progress.

The EPA said it would begin using the newer model to evaluate state progress beginning next year. ■

Residents rally against gas plant in Chesterfield, VA

Citizens fear increased air pollution, while Dominion seeks ways to meet power demands

By Lauren Hines-Acosta

While data centers in northern Virginia help run the world's computers, small communities throughout the region worry they are paying with their health. Dominion Energy hopes to bring reliability to ratepayers as more data centers strain the power grid and climate change brings intense weather. As part of that effort, the utility plans to put a new gas natural plant in Chesterfield, VA. But the surrounding community, which lives with two existing gas plants and had a coal plant in its midst for 79 years, says enough is enough.

"Not only am I advocating for myself, I'm advocating for the citizens around those same zip codes," said Nicole Martin, a Chesterfield resident and president of NAACP Chesterfield County branch. "So, yeah, this is kind of personal."

Members of the Friends of Chesterfield attend the county Board of Supervisors meeting on June 26 to rally against plans for a new natural gas plant in Chesterfield, VA. (Chesapeake Climate Action Network)

A community's health concerns

Dominion wants to put the gas plant, officially called the Chesterfield Energy Reliability Center, at the existing Chesterfield Power Station. The site is within three miles of a school and near homes, parks, places of worship and the James River.

According to the U.S. Environmental Protection Agency's environmental justice screening tool, 50%–90% of residents in the surrounding community are people of color. While the EPA doesn't designate this community as disadvantaged, many communities of color in the U.S. see more pollution than their whiter counterparts.

The Chesterfield Power Station included a coal plant that was in use until the last two coal units were shut down in May 2023.

"The people that particularly live close to that coal plant have endured … almost 80 years of serious air pollution associated with a coal plant," said Glen Besa, chair and co-founder of the Friends of Chesterfield. "And don't they deserve a break?"

The largest decrease in carbon dioxide emissions from the power sector in the U.S. is from utilities closing their coal plants and switching to natural gas. Some see this as a step closer to broader clean energy goals, while others say it slows the transition.

Since 2000, Dominion has retired or converted to gas eight of eleven coal units in Virginia and the Carolinas. That has contributed to carbon emissions from its operations falling by 45% since 2005, according to Dominion's Integrated Resource Plan.

Producing energy from natural gas is cleaner than burning coal, but it still creates air pollution. According to Dominion, the new Chesterfield plant would emit toxins at high enough levels that an air permit from the Department of Environmental Quality (DEQ) is required. Those emissions would include fine particulate matter, carbon monoxide, and other greenhouse gases. According to the EPA, high levels of these pollutants can cause respiratory problems that aggravate heart and lung problems.

DEQ may not issue permits to facilities that exceed federal air quality standards.

Dominion Energy's Chesterfield Power Station sits on Coxendale Road in Chesterfield, VA. (Lauren Hines-Acosta).

In an email, the department said it can't evaluate whether the Chesterfield plant will exceed those levels until it receives a complete air permit application.

In the name of reliability

The growing presence of power-hungry data centers in Virginia is driving unprecedented energy demand in the region.

Virginia lawmakers introduced 17 bills during this past year's legislative session trying to regulate data centers. They all failed.

State Sen. Ghazala Hashmi (D-Chesterfield County) is pleased to see the revitalization of the Commission on Electric Utility Regulation and welcomes its efforts to assess potential guardrails for proposed data centers, as well as its evaluation of how large corporations such as Google and Amazon are contributing to energy demands.

"Because that's a burden on our citizens, and it needs to be more equitably shared by our corporate partners that are coming into Virginia," Hashmi said.

Hashmi was one of many Virginia Democrats who signed a letter in March opposing the Chesterfield plant. Their main argument was that the plant will impede progress in meeting the goals of the Virginia Clean Economy Act.

The act says the state expects Dominion Energy to deliver 100% of its electricity from renewable sources by 2045. Natural gas has lower emissions than coal, but it emits methane, which is also a source of global warming. Many environmental groups also point out that new gas plants are decades-long commitments that will last past the 2045 deadline.

Mason Manley, central Virginia organizer for the Chesapeake Climate Action Network, said that while natural gas releases less greenhouse gases than coal, "what is totally unacceptable at this point in time is new fossil fuel infrastructure and new gas."

Manley added that CCAN is looking for zero-carbon emission solutions, like solar energy and batteries to store power. According to Manley, these solutions can be 2.5 times cheaper than the gas plant proposed by Dominion Energy.

But the Clean Economy Act allows the company to use carbon-contributing energy sources beyond 2045 if Dominion can prove to the State Corporation Commission there is a risk to grid reliability.

The Friends of Chesterfield gather outside the Chesterfield County Government Complex on June 26, protesting a new natural gas plant in their community. (Chesapeake Climate Action Network)

"It's going to take all of the renewables, offshore wind, solar, battery storage and nuclear, and all of those things working hand-in-hand with natural gas to make sure we are providing a reliable grid for our customers," said Dominion Energy spokesperson Jeremy Slayton.

The concern for reliability in the face of increased energy demand is legitimate, according to PJM Interconnection. It operates a power grid serving 13 states, including Virginia and the District of Columbia. PJM expects annual energy use across its region to increase nearly 40% by 2039.

Dominion Energy in Virginia and FirstEnergy in Maryland are two of the Bay region's electric companies within the PJM grid that are expecting more demand — in both cases because of data centers.

Dominion considered energy demand in its 2023 Integrated Resource Plan. Slayton said 90% of all new energy will come from carbon free sources. This includes the Coastal Virginia Offshore Wind project near Virginia Beach, where Dominion installed its fiftieth wind turbine foundation on August 12.

According to Slayton, customers are using 5% more energy every year. By the 2030s, the utility expects ratepayers to use twice as much power as they do today.

To help address this growing demand, Dominion has designed the Chesterfield gas plant to be a "peaker plant." It will kick in when there's high demand from extreme weather. The utility expects it will operate 15% to 20% of the year but could operate up to 37% of the year. It will provide 1,000 megawatts of power annually.

Environmental groups like the Southern Environmental Law Center and Chesapeake Climate Action Network have created alternative plans, which they say are less expensive and use a combination of renewable sources to provide the same amount of energy.

Slayton said renewables aren't as reliable as gas plants because the wind can stop and the sun can be blocked.

The Chesapeake Climate Action Network pointed out that gas plants aren't always reliable, either. More than 100,000 megawatts generated by coal and gas plants were offline during the 2022 Winter Storm Elliot because the cold temperatures caused malfunctions and froze equipment. Wind power still operated, but not at a level needed to keep everyone's lights on.

Slayton said Dominion will ensure the gas plant is reliable by doing routine maintenance and keeping it regularly staffed.

When will the public get a say?

For more than a year, Dominion was debating between two sites for the gas plant.

The company originally planned to put the plant at Battery Brooke Parkway, which rests by the James River. But Dominion announced on August 21 that it wants to put the plant at the Chesterfield Power Station on Coxendale Road. The company said it chose the site because the existing infrastructure will minimize impacts to wetlands and limit construction.

Dominion held a public briefing about the project in August last year. Slayton said that it also held 18 community engagement events from June 2023 to March 2024. He said the community recommended the Coxendale site but declined to be more specific than "the community."

Dominion has a combined conditional-use permit for the multiple active sites that make up the Chesterfield Power Station — two of which are active natural gas plants. The permit allows the site to operate as an electric power generation plant.

But there is disagreement over whether that permit allows for the new gas plant.

According to Dominion's August 21 press release, Chesterfield County has confirmed that the new plant is covered by the conditional-use permit. That means the county will not have to hold a public hearing about the project. But lawyers representing the Friends of Chesterfield and NAACP Chesterfield County branch argue that the existing permit doesn't apply to the new plant and a hearing is required.

Also, as part of the air permit, Dominion needs a Local Government Body Certification. Usually, the county Board of Supervisors would evaluate the site and provide that document if they wanted to approve the project. But the board has deferred that decision to DEQ and other city employees. Whether approval from other city officials is legitimate is still being debated.

The Friends of Chesterfield have been rallying outside the county supervisors' monthly meetings since April, demanding a public hearing and vote on the plant proposal.

Chesterfield County supervisors contacted by the *Bay Journal* declined to comment.

The Friends of Chesterfield weren't the only ones at county meetings. Kevin Battle, business manager and secretary treasurer for the International Brotherhood of Boilermakers Local 45, attended the board's July meeting to advocate for the gas plant.

Battle knows the gas plant will provide his fellow boilermakers 500 jobs during construction, but only 35 permanent jobs. But he said sometimes workers only need a three-year construction job to get them to retirement.

"I just want to give us as many opportunities as we can possibly have here because people are counting on me to do that," Battle said. "I think that boilermakers make the world a better place, and we deserve these opportunities."

Slayton said Dominion expects to receive a draft permit from DEQ by the end of the year, which will be followed by a public comment period and public hearings early next year. It will file with the State Corporation Commission in early 2025, and that will also be accompanied by a public comment period and public hearings.

According to Slayton, Dominion will hold at least two more public meetings in the next few months to talk with the residents opposed to the project.

Martin, of the NAACP, said that community input matters. "Companies like Dominion have been operating in this same fashion for decades," she said, "so they don't think that it's a big deal because, 'Hey, Dominion's our only power source, so we have to go what they say,' when actually there's other options out there." ■

MD transmission line runs up against land preservation goals

Proposed routes across protected land raise alarm in Frederick, Baltimore, Carroll counties

By Jeremy Cox

A New Jersey-based electric company wants to run a 70-mile, high-voltage transmission line through three Central Maryland counties. But it will first have to contend with all the preserved lands that stand in the way.

The Public Service Enterprise Group (PSEG), the project's developer, plans to submit a permit application to the Maryland Public Service Commission by the end of the year. If built, the 500,000-volt overhead line is projected to start transporting electricity in June 2027.

PJM Interconnection, which operates the power grid in the Mid-Atlantic region, contracted with PSEG last December to build the $424 million transmission line. Its purpose is to connect an existing Baltimore Gas and Electric transmission line right-of-way in northern Baltimore Country with the Doubs substation in southern Frederick County.

PSEG has developed 10 possible routes between those two points for public review. The maps show potential paths tracking through farmland, wetlands, forests, preserved properties and other environmentally sensitive areas.

Among them: Gunpowder Falls State Park and the Prettyboy Reservoir, a major source of drinking water for the Baltimore area.

Conservation groups and other critics warn that allowing the project to move forward would undo hard-won and costly protections on thousands of acres of land and threaten the rural character of many communities.

"I cannot cut a tree down on my property because of forest conservation," said Joanne Frederick, who owns a 100-acre Baltimore County farm. Most of her land is protected from development by a constellation of easements, but it is nonetheless in the way of one proposed route. "The path they have chosen will take out old-growth forests that were baby trees when my father was born here."

The project is part of PJM's $5 billion push to expand transmission infrastructure across its territory, which covers all or parts of 13 states and the District of Columbia.

The Maryland transmission line is needed, according to PJM, to handle the nearly 40% increase in energy demand expected throughout the grid operator's multistate footprint by 2040 — much of it driven by data center growth in Northern Virginia. The grid operator also points to shifts in power generation, with solar and wind facilities replacing traditional fossil fuel plants.

Theaux Le Gardeur, the Gunpowder Riverkeeper, looks at a tree-shaded stream in Gunpowder Falls State Park in Maryland just yards downstream from where a new high-voltage transmission line might cross through the park. (Jeremy Cox)

"We're seeing for the first time in a very long time larger demand in electricity," said PJM spokeswoman Susan Buehler. "The current infrastructure in Maryland is not enough and can't support additional electricity."

Hostility toward the line, dubbed the Maryland Piedmont Reliability Project (MPRP), intensified over the summer.

Angry residents packed public informational meetings. The Maryland Farm Bureau denounced the project, saying it would threaten 1,300 acres of farmland. A new community opposition group, called Stop MPRP, began flooding inboxes and social media with anti-transmission line arguments. And elected officials from all three affected counties criticized the project.

The Frederick County Council voted unanimously Sept. 3 to send a letter of opposition to the Maryland Public Service Commission. "I'm very glad we were able to come together as a body and come to verbiage that works for all of us," Councilman Mason Carter said shortly before the vote, "because we ought to make a stand when someone walks into Frederick County and blatantly violates our property rights."

Baltimore County Executive Johnny Olszewski, in his own letter, questioned the need for a new line and pressed for a ban on employing eminent domain to get it built. He also suggested using existing rights-of-way as much as possible instead to "protect our environment by maintaining the integrity of our conservation easements and preserved lands."

And in Carroll County, the Board of County Commissioners published a "unified" statement condemning the project. An analysis conducted by the county's planning department in July found that between 30 and 45 farms with conservation easements would be impacted within the county.

State, local and private interests have invested millions of dollars over the years to protect such lands from just this kind of threat, said Christopher Heyn, who oversees Carroll's planning department.

"These particular farms that have easements on them have been determined to be valuable properties that support all these goals of these [conservation] programs," he added. "To negatively impact them goes contrary to the goals of those programs."

The counties have no authority to approve or deny the project. That power lies with the state Public Service Commission and the Federal Energy Regulatory Commission.

PJM officials say PSEG is responsible for developing and finalizing a route. PSEG declined to comment for this report. The company's project fact sheet acknowledges that the project will have "temporary and permanent impacts" on the environment but asserts that those will be offset by "mitigation measures" as required by law.

"PSEG is committed to environmental stewardship and will work to minimize and mitigate the environmental impacts to the greatest extent practical," the fact sheet states.

The company says it would only invoke eminent domain as a "last resort." As for farming, PSEG says that animal grazing and row crops likely can continue beneath the transmission line. But it cautions that taller vegetation, such as trees or nursery stock, may not allow for enough clearance in some situations.

More than two dozen conservation organizations have signed a letter raising concerns about the project's impacts to preserved lands. The alliance, led by the group Forever Maryland, argues that taking back the easements would diminish the public's confidence in land preservation programs.

Joanne Frederick worries what will become of her beloved farm if the transmission line crosses it. Her shock led her to help found Stop MPRP.

"This project is ruthless in its damage — businesses homes, water, forests, wetlands," she said. "It is equivalent to a foreign nation coming into Maryland with 150-foot-wide tanks and taking out a whole swath and walking away."

Theaux Le Gardeur, the Gunpowder Riverkeeper, struggles to fathom the effect the project would have on the 18,000-acre Gunpowder Falls State Park and its namesake river. His biggest worry is that vast felling of trees to make way for the line will lead to more sunlight reaching streams that are among the few remaining cold refuges for brook trout, an important recreational species.

"Look at how forested this is," he said as he hiked through a thicket of green shoots and towering trees just yards from where one of the proposed routes would run through the park. "I can tell you that not one route is going to be better than the others in terms of impact to natural resources." ■

Bay cleanup at a crossroads: new path or stay the course?

Many push for greater focus on results that help people and upstream natural resources

By Jeremy Cox

The post-2025 focus, some observers say, should be on the Bay's shallow areas, like these egret-friendly marshes on the Eastern Shore of Virginia. (Dave Harp)

As the Chesapeake Bay cleanup's leaders close in on a revised working agreement, many of the effort's most influential supporters are endorsing a major thematic shift: putting less emphasis on improving the estuary's seldom-seen deep waters and more on helping people and living resources in the Bay watershed.

"This is an opportunity for our movement to understand our successes and failures, and adjust accordingly," said Kate Fritz, CEO of the Alliance for the Chesapeake Bay, in a letter to the Chesapeake Bay Program, the multistate and federal partnership in charge of reviving the Bay. "This means … intentionally including people and living resources at the center of the partnership's work."

That closely aligns with the recommendations of the Bay Program team that was tasked with drafting an update of the 2014 Chesapeake Bay Agreement. A draft was released for public feedback on July 1.

The team urged the program to "better incentivize practices that maximize benefits to living resources and people." This, they argued, could be accomplished largely through actions that target water quality improvements — long the effort's central focus — but only if local community concerns take precedent.

Sounds like everyone is mostly on the same page, right? Not quite.

More than 80 people and organizations submitted comments on the draft agreement by the Aug. 30 deadline. The Chesapeake Executive Council — the governors of the six watershed states, mayor of the District of Columbia, chair of the Chesapeake Bay Commission and administrator of the Environmental Protection Agency — is set to vote on a final draft during its annual meeting in December.

The revised agreement is intended to present a top-line strategy for cleaning up the Bay and its 64,000-square-mile drainage basin beyond 2025, when the deadline for goals in the current agreement expires.

For decades, the partnership has centered its work on reducing nutrient and sediment pollution flowing into the Bay. The main goal has been to shrink the annual "dead zones," pockets of oxygen-starved water in the estuary's deepest waters where aquatic creatures struggle to survive.

Despite billions of dollars invested in the effort, pollution reductions have been modest and slow in coming, according to the Bay Program's own calculations. Some advocates and scientists fear that the cleanup risks falling out of favor with the public if it doesn't shift toward more visible quests, such as restoring shallow waters along the edge of the Bay and its tributaries.

"Without renewed attention to those things that matter the most to people, we run the risk of leaving potential living resource benefits unaddressed and potentially losing public support for our efforts," wrote Larry Sanford, chair of the Bay Program's Scientific and Technical Advisory Committee (STAC), on behalf of the panel.

But in remarks to STAC on Sept. 12, Sanford, a professor at the University of Maryland Center for Environmental Science, described the new draft agreement as a "compromise" between two factions: those seeking a pronounced change in direction and those who want to stay the course.

For his part, Sanford said the program needs to maintain much of its existing work but also "go back to the original reason for the Bay Program, and that was what was happening to the living resources."

If that recalibration is to move forward, it will have to survive a big test later this fall when the agreement goes before the Principals' Staff Committee — senior officials from the Bay states and DC, who sounded a note of caution about that approach when they met in March.

Meeting water quality goals is a legal requirement, enforced by the EPA. The committee appeared concerned that de-stressing that goal could lead to potential lawsuits. Several members at the time also said they believed that those authoring the revised agreement had gone beyond what they had been authorized to do.

A group of agricultural industry groups in Virginia, including the Virginia Farm Bureau, signed on to a letter that said they "appreciate" the draft's call to better address climate change and public engagement. But they are concerned that such measures would "change the original intent and shared goals" of the 2014 agreement. The state in its current two-year budget has set aside a record $207 million to reduce farm-based pollution.

Meanwhile, several environmental groups touted how reorienting the program toward people and living creatures would support other important goals. Much could be achieved, for example, through tougher enforcement of state and federal water pollution control laws, according to a letter signed by Waterkeepers Chesapeake and several local waterkeepers.

"While the status quo elevates considerations of nutrient pollutants and the dissolved oxygen levels in the mainstem of the Bay, the path forward must elevate the role that enforcement of illegal pollution from point sources has on protecting humans and wildlife from toxic and carcinogenic substances," the waterkeepers said.

The needs of people and wildlife will be difficult to meet without more land conservation, said the Chesapeake Conservation Partnership, an alliance of land trusts and related organizations. Bay leaders, they added, should elevate land conservation to stand as a "key guiding pillar" along those already on that top tier: science, restoration and partnership.

The document being readied for the Executive Council's approval this December isn't the final revised agreement but rather a framework for a more detailed compact to be worked out in the future. The current draft doesn't call for a full revision of the agreement until the council meets in 2026.

Several commenters urged leadership to put the finalized agreement on a faster schedule. To wait until late 2026 could lead to a pause or slowdown in oyster restoration activities in key Bay tributaries, said Oyster Recovery Partnership Executive Director H. Ward Slacum. It should be ready by the end of 2025 instead, he said.

A group of about 40 retired Bay scientists and former public officials also weighed in. The coalition, calling itself "Chesapeake Bay Program Veterans," echoed the push to have the revisions in place in 2025.

And the program should look at the problems and benefits that arise from local, state and federal greenhouse gas reduction goals, they said. They suggested that the transition from fossil fuels to renewable energy, for example, is likely to reduce nitrogen pollution that enters Bay waters from the atmosphere. ■

'A juggling act': VA's dual approach to invasive blue catfish

State policies limit commercial catch to protect trophy-sized fish for anglers

By Timothy B. Wheeler

It's a little shocking, so to speak, to see how many blue catfish can be caught with an electric jolt instead of a net or baited hook.

Dozens of the smooth-skinned, silvery-blue fish floated to the surface of the James River in Virginia one late summer morning as George Trice steered his "shock boat," an aluminum skiff with a generator aboard, in a tight circle.

Momentarily stunned by the low-frequency electric current transmitted into the water from Trice's boat, the blue catfish floated motionless on their sides, white bellies exposed. Trice and his helper, Jerry Parks, scooped out as many as they could with long-handled dip nets. A larger second skiff trailed them, its two occupants hauling in more of the immobilized fish.

Within a minute, though, or two at most, the catfish still scattered across the water began to twitch and wriggle. Then, as quickly as they appeared, they recovered and vanished below the surface.

"When things are working right, it's like a Chinese fire drill," Trice said. "A lot of them go away before you can get them."

Chesapeake Bay fishery managers are trying to boost the harvest of blue catfish to limit the spread and ecological impact of the non-native species, which is gobbling up blue crabs and native fish in rivers throughout the estuary. Publicity campaigns in Maryland and Virginia are encouraging people to fish for and eat the invasive fish.

The electrofishing used by Trice and a handful of Virginia fishers offers arguably the most efficient way to catch them in large quantities. On that day, under less than favorable conditions, Trice and his crew landed 3,500 pounds worth. But they have regularly scooped up 6,000 pounds a day, at least in years past.

Only in Virginia

Virginia is the only jurisdiction in the Bay watershed to permit commercial electrofishing for blue catfish, though even there it's tightly circumscribed. The state has issued just three permits, one each for portions of the James, Rappahannock and Pamunkey rivers. Electrofishing is allowed from April 30 to mid-October, and for only 4 ½ days per week.

Jerry Parks, left, and George Trice cruise past a large blue catfish in Virginia's James River. The fish was temporarily stunned by electrofishing but exceeded the allowable length for commercial harvest. (Timothy B. Wheeler)

State regulations also prohibit electrofishers from taking most of the largest fish because recreational anglers like to catch them. So electrofishers may take only a dozen longer than 25 inches and none more than 28 inches. While that is the average size of an adult blue catfish, many can and do grow much larger, with some reaching 5 feet in length.

Even so, the three electrofishing permit holders account for around 11% of Virginia's overall blue catfish harvest, a disproportionate share of the record 3.2 million pounds landed in 2023 by a total of 114 commercial harvesters. Most commercial harvesters use various nets, fish pots or traps and hook and line, but that type of gear yields substantial bycatch of other fish that must be weeded out by hand. In electrofishing, the current is low enough to stun only fish without scales, so only catfish rise to the surface.

Virginia's watermen, anxious to counter the losses of crabs and native finfish to voracious blue catfish, want the Virginia Marine Resources Commission to relax its curbs on electrofishing. At a meeting of the commission's finfish advisory committee last winter, they asked for more electrofishing permits. They also voted overwhelmingly to recommend eliminating all size and season restrictions on the practice.

Blue catfish fill bins in one of the two boats George Trice and his crew use while electrofishing on Virginia's James River. (Timothy B. Wheeler)

Pat Geer, VMRC's fisheries management chief, said his agency is considering easing restrictions but wants to proceed cautiously.

"We don't want to do something that's going to hurt the world-class trophy fishery [for blue catfish] on the James," Geer said. He said he's discussing the issue with his counterpart at the Department of Wildlife Resources, or DWR, which oversees inland fishing. Together, he explained, they're trying to figure out "what's going to work for everybody."

"It's a juggling act," he concluded.

It was DWR — then named the Department of Game and Inland Fisheries — that decided in the 1970s to stock blue catfish in the James and Rappahannock rivers and then in the 1980s in the York River. They did so to give recreational anglers a new big fish to pursue at a time when the Bay's most popular finfish, Atlantic striped bass, was in even worse shape than it is now.

A valuable recreational fishery

Native to the Mississippi, Missouri, Ohio and Rio Grande river basins, blue catfish have now become a popular catch in Virginia, and anglers even come from out of state to try reeling in the biggest ones. It's frequently said that the recreational fishery pumps about $70 million a year into the state's economy — though no one seems to be able to cite the source of that estimate.

When blue catfish were introduced in Virginia, state fishery managers thought they would stay in the upper stretches of the three rivers where they'd been stocked. But the species proved surprisingly tolerant of the Bay's brackish water and over the years spread from one river to the next, from Virginia north to Maryland. They've even moved into the Delaware River, which is joined to the Chesapeake by a narrow shipping canal near the head of the Bay.

Concern about the ecological impacts of blue catfish has grown. One study by the Virginia Institute of Marine Science estimated that blue catfish in the lower James were eating more than 2 million juvenile crabs a year. Other studies have estimated invasive catfish are consuming vast quantities of other fish.

Maryland, which tried unsuccessfully to get a federal fisheries disaster declared in its waters, is seeking to deplete its invasive catfish population. It has no limits on the number or size that can be caught, and it has expanded the types of gear that can be used for commercial harvest — though it does not permit electrofishing. "Right now, the gear we have seems to be working," said Joseph Love, a biologist with the Department of Natural Resources.

The Potomac River Fisheries Commission does not allow electrofishing, either. Commercial fishers working the river are content with using baited trotlines, hoop nets and other traditional gear, said Ingrid Braun-Ricks, the commission's fisheries science

Hunter Davenport scoops blue catfish from the James River that have been stunned by electrofishing. (Timothy B. Wheeler)

chief. And the Potomac River harvest keeps going up.

Virginia, though, is pursuing a two-track strategy. In addition to allowing limited electrofishing, it has taken a modest step to incentivize conventional commercial harvesting by providing a $250,000 grant to one seafood wholesaler to increase its catfish processing capacity. Yet in addition to restricting electrofishing, the state also limits sports and commercial fishers to keeping one fish a day over 32 inches long. Managers say they want to reduce blue catfish impacts on traditional commercial fisheries while protecting the valuable and popular trophy fishery.

"We're not going to eradicate these fish. We can't do it," said Margi Whitmore, DWR's tidal rivers fisheries biologist. The aim now, she said, should be to reduce the number of intermediate-sized blue catfish, which she and others believe will reduce their consumption of crabs and other native fish while also helping sustain the really big blue catfish prized by sports anglers.

There is evidence that the number of trophy-sized fish has been declining for more than a decade, Whitmore said. That may be because the hordes of smaller blue catfish are consuming so much of the available food supply that the bigger ones can't get enough to eat. If enough of those smaller fish can be harvested, she suggested, managers can accomplish their twin goals.

Commercial blue catfish harvest (in lbs) 2023

Virginia	3,179,063
Potomac River	3,152,484
Maryland	478,069

Walking a fine line

"It's walking a fine line," Whitmore said, "but it's a win-win that we've landed on where we can meet all these competing demands."

Surveys of blue catfish in the James — also using electrofishing — are working to get a better handle on the population there. Preliminary indications are the overall biomass of blue catfish is declining, Whitmore said.

Meanwhile, Whitmore said, there are good reasons to keep guardrails on commercial electrofishing, including limiting it to certain stretches of river as a safety measure. Using it where sports anglers could be cruising at high speed from one fishing spot to another is "a recipe for disaster," she said.

Regulations aside, there are technical issues with electrofishing that limit its applicability. The low-frequency current doesn't conduct well in water temperatures below 70 degrees. Salinity and suspended sediment likewise impair its effectiveness. And it can't be done repeatedly in the same place, because catfish that have already been stunned become desensitized to electric jolts for weeks.

Stunned blue catfish float in the wake of a skiff as a generator aboard the commercially licensed boat transmits low-frequency electric current into the James River. Jerry Parks (center) and George Trice (right) wield dip nets to harvest temporarily immobilized fish. (Timothy B. Wheeler)

Sports anglers once opposed electrofishing for catfish, and some still resent it, complaining that it's depleting the stock or that it's illegally taking the big fish.

"Over the past 10 years on the James River, it's gotten more difficult to catch the trophy fish," said Christian Moore, owner of Reel Country guide service, which offers catfishing charters. Even so, he said he thinks there's room for sports anglers and electrofishers to coexist.

A lot is at stake for the North Carolina native, who said he moved to Virginia in 2018 to be a catfish guide. He said he's invested hundreds of thousands of dollars in the business, so he's hopeful the strategy Whitmore outlined can keep the trophy fishery viable. And the abundant smaller blue catfish are an easy-to-catch, low-cost staple for sports anglers of all ages and genders, he added.

Some miss what fishing was like before blue catfish took over, though.

"When I was a kid, you could catch pumpkinseed and yellow perch right here," said William Tyler, owner of the boat ramp at Sturgeon Point on the James, where Trice launched his boats. "Not anymore," said Tyler, great grandson of the 10th U.S. president, John Tyler. "Now it's a monoculture."

Scientific questions

Mary Fabrizio, a fisheries scientist at the Virginia Institute of Marine Science, said she doubts that increasing the commercial harvest of intermediate-sized fish will reduce the depredation of crabs and native finfish. In a 2020 paper, she and colleagues concluded that it may simply clear the way for surviving fish to grow big faster, eating more native species along the way.

"We can fish the heck out of it," she said. "We're probably going to be able to reduce the abundance if we have a big enough fishery, but the ecological impacts are going to be about the same."

Fabrizio said she understands that fishery managers are in a bind. But she said they and the public need to have a deeper, more philosophical conversation.

"What is our goal?" she asked. If people believe the best approach is to accept that the invasive fish are here to stay and manage them to maximize sport fishing, that's one approach, she said. But if the public values keeping native fish and the Bay ecosystem in some semblance of what it used to be, she added, "then I don't think we have a win-win situation."

While there haven't been many instances of successfully curtailing a non-native fish invasion, she suggested considering a targeted harvest not just of marketable medium-sized fish but of the juveniles before they can grow large enough to start feeding on other fish and reproducing. That might call for paying fishers to catch them, she said. But in any case it would take a major public investment at levels well beyond what Bay states are committing now.

George Trice said he's put about $100,000 into acquiring, maintaining and replacing generators and other electrofishing gear over the years since he started in 2014. He's getting about 50 cents per pound for the medium-sized fish between 3 and 8 pounds that they sell for processing into fillets. Smaller fish only yield about 25 cents a pound.

As things stand now, Trice said he's not optimistic that electrofishing, despite its efficiency, will substantially boost the commercial harvest unless the state lifts its catch restrictions. And he's leery of increasing the number of permits, fearing that it could dilute the harvest such that it would no longer be worth doing.

"They've got to let us get the spawners and everything if we're going to knock [the population] back any," he said. "We're just catching the ones they [spawn] every year. You can't have it both ways." ■

Video online at bayjournal.com

MD sues builder after years of Gunpowder River pollution

Long-running construction runoff called 'blatant disregard' of environmental laws

By Timothy B. Wheeler

Acting after years of complaints from residents, Maryland authorities have filed suit against the developer and builders of a Harford County housing project accusing them of polluting the Gunpowder River and one of its tributaries by failing to control muddy runoff from the construction site.

More than 30 inspections since May 2022 of the 388-home Ridgely's Reserve development and a related sewer line project in the Joppa area found numerous violations of state sediment pollution and nontidal wetlands laws, according to the 94-page complaint filed Sept. 6 in Harford County Circuit Court.

On behalf of the Maryland Department of the Environment (MDE), the state's attorney general is seeking penalties against Texas-based homebuilder D.R. Horton, its development subsidiary, Forestar Real Estate Group, and a Pennsylvania contractor, Kinsley Construction.

"The repeated violations at Ridgely's Reserve demonstrate a blatant disregard for our environmental laws and the welfare of Marylanders," said Attorney General Anthony Brown.

In addition to fines of up to $25,000 per day per violation, the state's complaint seeks a court order requiring the defendants to repair the damage done by the pollution to the Gunpowder and its tributary, Foster Branch.

Sediment pollution is a major threat to the ecological health of the Chesapeake Bay and its tributaries. Rainfall and snow melt can wash clay, silt and sand off exposed soil. The muddy runoff turns streams and rivers murky, smothering fish eggs and bottom-dwelling aquatic life. It also blocks sunlight that underwater grasses need to grow.

Aerial surveys have found marked declines in submerged aquatic vegetation in the Gunpowder the last two years, even as grass beds that provide critical habitat for fish and crabs have increased elsewhere in the Bay.

"Inspection after inspection has documented problems with this project, and this pollution has caused real harm to our waterways," MDE Secretary Serena McIlwain said in a release announcing the lawsuit. "It is past time for this pollution to stop. We are asking the court to not only impose a financial penalty but also require that the affected waterways be restored."

An August 2022 photo shows the sediment-clouded Gunpowder River, much of the silt coming from Foster Branch, just upstream (left) of the Amtrak rail bridge. (Submitted photo)

The three companies did not respond to emails seeking comment on the lawsuit.

The state's lawsuit comes a month after the Gunpowder Riverkeeper formally notified the same companies that it intended to file a federal lawsuit against them for "ongoing and continuous" Clean Water Act violations at the construction site in Joppa, MD. Residents have been complaining for more than two years about muddy runoff from the 121-acre development turning Foster Branch and the Gunpowder murky shades of orange and brown. They have collected nearly 1,000 signatures on a petition demanding action, posted on a website titled "Mad about Mud."

In the news release announcing the lawsuit, MDE acknowledged that it began inspecting Ridgely's Reserve and its sewer construction sites in response to complaints from residents and the riverkeeper. Each inspection found repeated violations, including failing silt fences, bare soil that during rainstorms could become muddy runoff into Foster Branch and the Gunpowder downstream.

Although the sewer line project is finished, the lawsuit says the construction site still needs to be stabilized to prevent muddy runoff. Work continues at the housing development, though most of the homes have been built and some sold, according to MDE's lawsuit.

A Harford County spokesman said county officials welcomed the state's lawsuit, noting that County Executive Bob Cassilly had toured the construction site with the MDE secretary. The county levied $20,000 in fines against the developer and stopped work at the site seven times over the past two years, requiring repairs to runoff controls. MDE inspections continued to find violations, most recently in July.

Gunpowder Riverkeeper Theaux Le Gardeur said he was encouraged by the state's legal action, but he and complaining residents would like to see the county go further than the state, by revoking permits that allow the developer to continue disturbing the soil.

Le Gardeur said he also hoped the state insists on restoration of the damaged waterways as the focus of any resolution of its lawsuit.

"That's low-hanging fruit," he said, noting that the county has a pre-existing watershed restoration plan for Foster Branch.

Jack Whisted, a retired engineer who lives along Foster Branch, said the state's action was too little too late.

"The Gunpowder has been brown all summer. I feel the damage is irreparable," he said by email.

"My disappointment over this has made me extremely sad," Whisted added, "and makes me want to move away to better water." ■

At PA church, a leap of faith settles on saving environment

Congregation, youth help solve challenges on church grounds and in the community

By Ad Crable

Members of the Bright Side Baptist Church in Lancaster, PA, believe they are following a Biblical imperative as the church becomes a community leader in protecting the environment.

"Very early in Genesis, God told Adam to care for the Earth. I would say we are fulfilling one of the original commandments to care for the Earth and protect what God deemed as good," is how Isiah Perry sees it.

Perry is a church member and co-chair of its Care for Creation team, also dubbed Green Team 24. He is also the program director of the church's youth education camps and programs, which often focus on environmental issues in the community.

Not long ago, the 600-member church was largely unaware of Lancaster County's outsized contribution to Chesapeake Bay pollution in the form of agricultural runoff. Now the church is a visible advocate and mentor for nuanced stewardship actions in the city.

On its two-block campus, the church has installed one rain garden and is preparing to add another by digging up four frequently flooded parking spaces that send all manner of pollutants directly into storm drains. That exacerbates problems in Lancaster and its suburbs caused by an antiquated combined sewer system that, when overwhelmed by rain, sends a mix of stormwater and untreated sewage into the Conestoga River.

To pay for the new rain garden, or "bioswale," the church cobbled together a $60,000 grant from supporters such as the Alliance for the Chesapeake Bay, Interfaith Partners for the Chesapeake and the Center for Watershed Protection.

Perry and Green Team 24 also have improved and taken over maintenance of an extensive rain garden originally installed by the city on a busy bordering street, hooked up rain barrels to nourish raised gardens for giveaway produce and torn out 33 attractive but invasive burning bushes. That uprooting saddened some in the congregation who had planted and maintained the bushes, but now winterberry and other native shrubs have taken their place in the hopes of attracting native pollinators.

The transformation has been enlightening. "Two years ago, I couldn't look outside a window and see bees," Perry said.

Members of a STEM summer camp at Bright Side Baptist Church in Lancaster, PA, sprinkle water on a model of a neighborhood to measure stormwater runoff. (Ad Crable)

The church collects leftover food items from local grocery stores, farm co-ops, social service agencies and others. These daily "community grabs" not only provide food that is distributed free to those who most need it but also keep an estimated 35,000 pounds of edible material a year from being sent needlessly to the county incinerator or landfill.

Sometimes, it seems like there is help from above. When Green Team 24 applied to have its wildlife habitat plantings certified by the National Wildlife Federation, it was initially turned down because there was no evidence the habitat had attracted any population-regulating predators.

Not long after, a church employee started spotting a hawk regularly hanging out on the church steeple, eying the ground below. The rabbit population declined. The church reapplied and got its certification.

The annual series of three free STEM summer camps for youth takes place at the church's Bright Side Opportunities Center, with Perry's guidance, and the camps are frequently rooted in community environmental projects.

For example, in a partnership with a national leader in lead poisoning research, who also taught at a local college, the youth took a deep dive into Lancaster city's lead problem. The per capita incidence of lead poisoning in the city is 14%, compared with a national average of 4%.

The young participants, called scholars, were able to have soil and paint from their homes tested for dangerous levels of lead on sophisticated equipment. Many urged their parents and siblings to be tested for lead in their blood and spread word of the dangers throughout their neighborhoods.

On a day this summer, one team gathered around a scale model of a neighborhood they had fashioned from foam, tape, cut-up sponges, felt, sand, mulch and tie-dye colors. The teens were tasked with using engineering skills to solve a stormwater runoff problem in the neighborhood.

A rain garden grows along the street at Bright Side Baptist Church in Lancaster, PA. (Ad Crable)

Initially, they placed "green roofs" of live plants on rooftops to soak up rainwater but had to abandon the plan after research showed the city's older townhouses could not support the weight. Instead, they built a cistern to collect runoff coming from multiple rooftops. They poured water onto the roofs, collected it and then extrapolated the ounces into real-life gallons.

"They are solving community issues, and it's so beautiful for the kids to feel like they are a solution," Perry said. "It's amazing to see."

The church's green team is now sought out by other church congregations and community groups wanting to start their own programs, an initiative facilitated by the Interfaith Partners for the Chesapeake.

The church's green mission began quite modestly. During COVID, when church service attendance was comparatively sparse, member Francine Harley thought it would be nice to have several planters with brightly colored flowers to greet those entering the sanctuary.

Soon, Harley, Perry and others were urging the church board to expand its green footprint outdoors and even beyond the campus. Harley devoured books about wildlife habitat. "I just went a little nutty," she said.

The group became affectionately known to the church board as "the crazy plant people."

It was Harley who firmed up funding for a second rain garden by researching and finding out that, if properly installed, it would significantly reduce the church's stormwater runoff fee from the city.

"God asked us in the beginning to care for His creation," said Harley, describing her mission.

The church's evolution as a green leader is inspiring, said Katie Ruth, who has worked with the church on projects with both Interfaith Partners for the Chesapeake and now as executive director of Pennsylvania Interfaith Power & Light.

"Bright Side gives us a glimpse into how weaving community, faith and care for the environment is ultimately a powerful force for good. Their story is inspirational and a model that I hope other congregations will learn from," she said. "We all have a role to play in healing our sacred Earth." ■

Solar industry electrifies pushback in rural areas

Loss of pastoral views, property value common themes in resistance to large-scale solar

By Jeremy Cox and Ad Crable

Solar may be the cheapest and easiest-to-install energy source driving the nation's push for renewable power. But in rural hamlets across the Mid-Atlantic, efforts to unleash widespread sun-based power are encountering pushback from local officials and residents.

Solar developers often look to the rural U.S. to host their sprawling arrays because that's where the open land is. And the potential new neighbors of those projects say it puts a disproportionate burden on their communities — such as the loss of prime farmland, disruption of bucolic views and increased stormwater runoff.

To the frustration of solar developers and environmental groups, local leaders are rejecting many solar farms. The opposition is slowing the solar industry's rollout in Maryland and Virginia and has kept Pennsylvania among the lowest-ranking states in solar adoption.

Renewable energy projects in general are facing more friction nationwide. An analysis by *USA Today* found that in 2023, for the first time, more solar and wind projects were blocked by local governments than approved.

Robert Bryce, a Texas-based journalist and author of several books critical of the renewable energy transition, frames it as a "David vs. Goliath" story.

"This isn't about climate change," he said. "It's about money. And who's getting the money? It's big banks, big businesses, big law firms and big [nongovernmental organizations]. And who are the losers? It's rural landowners and rural homeowners."

'Not in my backyard'

Bryce maintains a running nationwide database of locally enacted wind and solar project rejections and restrictions. The list has grown to more than 700 cases since its 2015 inception.

Since early 2023, according to Bryce's database, eight medium to large solar farms in Pennsylvania have been shot down by activists and public officials based on local zoning and land use laws — although one of those denials was overturned by a county court and allowed to proceed.

A dozen more were turned down in Virginia during that span. Maryland, which prohibits local governments from outright denying renewable energy proposals, had no such instances.

John Quigley, former Pennsylvania Department of Environmental Protection secretary, stands next to a solar array in Lower Allen Township near Harrisburg. Quigley thinks some townships resist solar projects partly because developers aren't engaging enough with the public to allay fears. (Ad Crable)

In virtually all of the denials, staunch opposition from local residents surfaced. The most frequently cited concerns included declines in property values, damaging of pastoral views, glare, harm to wildlife, noise pollution, stormwater runoff and uncertainty over the fate of the panels after operations cease.

Some of the fears voiced at the often-heated and extended public hearings have been far-fetched. One Pennsylvania resident worried that migrating geese would mistake the shine from solar panels for a lake and come crashing down.

And this statement, from a woman opposing a 40-acre solar farm in Nanticoke, PA, is not unusual: "I am 100% for solar power but not in my backyard."

Local sentiment sometimes holds that suitable locations for larger solar projects should be restricted to brownfield sites, abandoned coal land, landfills or the roofs of large warehouses. Solar developers say those sites are never off the table, but they would not alone provide the vast acreage needed to meet renewable energy goals.

In some cases, several observers have said, opposition has been fanned by outside groups backed by fossil fuel interests or organizations opposed to renewable energy for political reasons.

But permeating the resistance is the simple fact that people don't like changes to their communities, suggested John Quigley, a senior fellow at the University of Pennsylvania's Kleinman Center for Energy Policy.

"Many aren't prepared for those things that alter the character of the community in some ways. It's a jolt," he said. "At the end of the day, folks are concerned that the community is going to change somehow."

"I grew up in rural northern Pennsylvania," added Sharon Pillar, executive director of the nonprofit Pennsylvania Solar Center. "[Solar farms look] different, and I think that is often the case for people living next to a different use of the land they've never seen."

Pennsylvania struggles

Pennsylvania has been well behind Virginia and Maryland in the effort to develop its solar industry.

As of late 2023, according to the U.S. Solar Photovoltaic Database, there were 70 ground-mounted solar projects of at least 1 megawatt capacity in Maryland for a total of 440 MW. In Virginia, there were 69 projects producing 2,926 MW.

Pennsylvania only had 34 solar projects, representing 221 MW of energy.

Some observers say opposition to solar farms there has been more widespread than the resistence to hydraulic fracturing for natural gas, which arrived in Pennsylvania in the late 2000s. The arrival of large-scale solar, though, has touched off the same scramble to update zoning and land use regulations.

Although groups such as the Pennsylvania State Association of Township Supervisors and the Penn State Extension Energy Team have been handing out model ordinances to help municipalities, "it's still kind of the wild, wild West in Pennsylvania when it comes to solar development," Quigley said.

"For the most part, communities don't think that much about it until it's there," observed Daniel Brockett, assistant state program leader for the Penn State team.

The supervisors association has nearly a dozen different model zoning ordinances with variations on such things as setback distances, screening, lighting, percentage of a property that can be covered by panels and decommissioning the site.

One town's plight

Perhaps the greatest tension within Pennsylvania communities dealing with solar build-out is that between financially strapped dairy farmers who wish to lease their land temporarily for a solar farm and their neighbors who would prefer to look out on pasture and crop land.

In Lebanon County's North Annville Township, a solar developer wanted to build an 858-acre solar farm on land owned by 12 different farmers who said revenue from the leases would help them keep their farms. In 30 years or so, the solar panels would be removed and the land returned to its original state.

But at a standing-room-only zoning hearing, most township residents who spoke opposed the project. One reason was that it would impair their scenic views.

That angered a farmer in the township who was not part of the project. "It's always hard seeing neighbors against neighbors. And I don't like seeing farmland disappear. But you ought to be able to do what you want to do with your land within reason," said Zach Alger in an interview.

In April 2022, the township supervisors denied a conditional-use permit for Lebanon Solar's project. The case was appealed to county court.

There, Judge Bradford Charles upheld the denial on two narrow grounds of incomplete information, while throwing out other reasons that stopped the project.

On the key matter of landowner versus neighbor rights, he was clear, writing, "We cannot and will not depreciate the importance of the landowners' fundamental right to pursue such a project on their own land."

The project's developer has appealed the decision to Commonwealth Court.

Part of the blame for high solar denials in Pennsylvania rests with solar developers themselves, analysts said. Too often, developers submit broad, undetailed applications to municipal officials, then sit back and wait for an answer without interacting with the residents, Quigley suggested.

"There seems to be a lack of engagement with local communities to address their concerns and give them a voice, to create a win-win," he said.

Dave Sanko, executive director of the township supervisors association, agrees. "I think people will find the middle ground for what works in their community. That cooperation and communication is a huge first step."

Meeting climate goals

Under the Virginia Clean Economy Act (VCEA) of 2020, the state has mandated a transition to 100% renewable energy by 2050. Local opposition to solar farms threatens to derail that goal, said Ronald Meyers, director of the Renewable Energy Facilities Siting Project at Virginia Tech.

The solar industry has faced a learning curve in Virginia, he explained. The earliest developers were mainly from the West and not accustomed to designing projects on steep slopes or in a region that experiences frequent heavy bouts of rain.

The Virginia Department of Environmental Quality issued a $245,000 fine after a newly constructed 200-acre solar panel project in Essex County sent brownish water gushing into Muddy Gut Creek, a tributary to the Rappahannock River. The incident helped spur action by Gov. Glenn Youngkin's administration to toughen rules for how solar developments must handle their stormwater.

Last year, Meyers' colleagues at Virginia Tech were awarded a $3.4 million DEQ grant to analyze the stormwater implications of solar farms over six years.

The VCEA directs Dominion Energy to propose 16,100 MW of onshore wind and solar installations by 2035. Those projects would require at least 161,000 acres of open land. A task force last year estimated that the state has nearly 9 million suitable acres — seemingly more than enough to meet that demand.

Farmer Rich Walbert leased 100 acres in Queen Anne's County, MD, to accommodate a 15-acre solar farm. (Dave Harp)

But Meyers believes the state will end up needing to generate far more energy from renewables than what current projections estimate, largely because of skyrocketing electricity demands from data centers, electric vehicles and ongoing conversions from gas furnaces to HVAC systems. He suspects 2 to 4 million acres will be required.

And that will put an even greater emphasis on how solar developers and local communities get along, he said. Lately, many counties have been unwilling to put out the welcome mat. An analysis by Energy Right, a Virginia-based conservative pro-solar group, found that about one-third of counties have banned or severely restricted solar installations in recent years.

Skyler Zunk, Energy Right's CEO and co-founder, said much of his work focuses on undoing misperceptions about solar projects in rural areas. "We're working in a lot of counties that have never been home to any power generating facilities of any kind," he said. "Each project deserves to be considered on its merits. Bad projects should be denied."

Clean energy advocates tried to get around the problem in this year's legislative session in Richmond. One bill sought to bar local governments from outright prohibiting solar developments. The legislation was later watered down to restrict localities only from limiting the total amount, density or size of projects in most instances. A second bill would have allowed projects blocked locally to appeal to the State Corporation Commission. Neither passed.

"I think it mislabels the problem," Virginia Tech's Meyers said of the failed bills. "I think developers need to change their ways."

Who decides?

In Maryland, the final say over whether a renewable energy project goes forward belongs to the state Public Service Commission (PSC). As more solar projects have been proposed, that arrangement has triggered a power struggle between the state regulators and some local governments.

The Maryland Supreme Court at least temporarily settled the legal question by upholding the PSC's superseding status in 2019 after a challenge led by Washington County. But the political battle rages on.

"Cheerleading on climate change at the expense of Maryland's communities and agricultural sector is shortsighted and irresponsible, especially when future food production becomes increasingly important on an ever-growing planet," said Jay Falstad, executive director of the Queen Anne's Conservation Association, in a February editorial. "Right now, energy siting policies in Maryland are a chaotic mess in desperate need of leadership and a smart, balanced plan."

Many opponents of solar arrays on farmland say developers should first build on parking lots or roofs, as with this rooftop array at Eastern Mennonite University in Harrisonburg, VA. (Dyoder/CC BY-SA 3.0)

Solar panels stand on a farm field in West Friendship, MD. (Will Parson/Chesapeake Bay Program)

Rich Walbert, 63, began negotiating with Nexamp four years ago after the solar developer approached him about installing panels on 15 acres of his 100-acre leased farm in northern Queen Anne's County on the Eastern Shore. In mid-September, the two sides finally reached an agreement. Walbert said other landowners should take a similarly measured approach toward leasing their land — to protect their own interests as well those of their neighbors.

"As a landowner, you have the advantage, and if you don't like what you hear, you can tell [the developer] to go away," Walbert said. "In my personal belief, solar is agriculture. You're using a natural resource. The sun has been there from the beginning. Let's utilize it."

Solar advocates say more willingness to accept projects at the local level is crucial because time is of the essence. Cleaner energy sources need to come online as soon as possible — for the sake of a warming planet and to have enough power on hand with increasing demands from data centers, cryptocurrency and extreme weather.

"State and national governments might be setting climate and energy targets, but most project-specific decisions are made at the local level," concluded a survey of attitudes of Pennsylvania policymakers that was published in August in the journal *Nature Energy*.

"Solar is the cheapest form of energy, period," said Sharon Pillar of the Pennsylvania Solar Center. "It scares me to think what we need to do and how quickly we need to do it." ■

For a young Native advocate, public lands hold the key

Mattaponi tribal citizen tackles conservation, parkland issues in the Chesapeake region

By Jeremy Cox

Editor's note: This interview is part of a series highlighting young professionals at work in the Chesapeake Bay arena. Listen to the full interviews in our Chesapeake Uncharted podcast.

A new law in Virginia opens a new chapter between the state and its seven federally recognized tribes.

The measure, signed into law in April, requires state agencies, including the Department of Environmental Quality, to consult with the tribes on projects that might impact their cultural, environmental and historic resources. The tribes can't veto projects or change deadlines, but they can give input on permits that concern them.

Connor Tupponce is ready to have those conversations.

Tupponce, a citizen of the Upper Mattaponi Tribe of King William, VA, has a considerable environmental résumé for a 24-year-old. He is the Mid-Atlantic Indigenous Engagement Fellow with the National Parks Conservation Association, a nonpartisan organization that advocates for the nation's parkland. Before that, he interned with the National Park Service through the Ancestral Lands Conservation Corps, where he consulted on the planning of Werowocomoco.

That's the 260-acre landscape along the York River in Virginia, recently confirmed as the seat of the Powhatan confederacy. The National Park Service owns the property and is developing a plan for its use through collaboration with seven tribes in the region.

Tupponce is studying political science at Virginia Commonwealth University with an eye toward a career in advancing native stewardship. He says that Virginia's Native people should have been brought into policy discussions a long time ago. That role, he and other advocates say, is rooted in a 1677 treaty between England and Virginia's "tributary tribes," which recognized those tribes' claims to property as well as to hunting and fishing rights.

"We have a treaty-given right to hunt and fish and gather in this area through the Treaty of 1677, which I derive my rights from," Tupponce said. "And we want to make sure that treaty is honored by making sure that the fisheries are protected here."

Connor Tupponce, Mid-Atlantic Indigenous Engagement Fellow with the National Parks Conservation Association, visits Herring Creek in Virginia. The area around the creek in the Zoar State Forest used to be a Mattaponi village. (Lauren Hines-Acosta)

Tupponce talked to the *Bay Journal* about what Native voices can bring to environmental discussions, including the Chesapeake Bay cleanup. This interview has been edited for length and clarity.

Question: How do you identify? Do you say, "I'm a Native American? I'm an American Indian?"

Answer: I really don't. I know the federal government calls us American Indians, and a lot of other people tend to call us Native Americans. My preference is really just to identify by my tribal identification.

Q: Why are you studying political science?

A: I feel like it's my best way to get my foot in the door when it comes to working with federal Indian policy and trying to do what I can for my people to protect [our] sovereignty.

Q: What are you doing for the National Parks Conservation Association?

A: I'm really helping to strengthen relationships between NPCA and tribes in the Mid-Atlantic region and the National Park Service. I'm currently working on a couple of different projects, one of them being the new Chesapeake National Recreation Area and starting to have these conversations with tribes to make sure that they have what they need.

Q: Why is tribal consultation so close to your heart?

A: A lot of national parks are in Indigenous homelands. They're places that we've lived for thousands of years. It's where our ancestors are [buried]. It's where our resources lay in the ground. We work to protect those cultural resources because we don't see a need to take them out of the ground unless they are either in danger of being eroded away and lost, or there's a specific research question we're trying to answer.

It's also important for us to have that seat at the table and have our Indigenous knowledge taken into consideration on what parks are going to look like and the narrative of the history [being told].

Q: Where does your passion for the environment come from?

A: I'd like to say it really comes from my cultural teachings and my traditional upbringing. But what has really inspired me to do more in ways of conservation and environmental protection is that I'm a huge outdoorsman. I have been an avid hunter and a fisherman since I was a really young child. My dad made me [understand] when I was learning how to hunt and fish that we have a different connection to these types of things. We're doing the same things that our ancestors have done for thousands of years.

Q: During your internship at Werowocomoco, what was the most important thing you communicated?

A: My capstone project [focused on the questions]: "If you were the manager, how would you facilitate the build-out? And what would it look like?" I was actually able to take a lot of perspectives from the Virginia tribal community. What came out through my final project was that the tribes weren't really happy with any of the options that the Park Service put out.

My dad was speaking on behalf of our tribe, and he said, "Well, what if we don't want to do any of these options?" And they were like, "Well, then we can look into some other ones. What did you have in mind for the build-out?" And my dad was like, "Nothing."

Q: What did that mean?

A: Really just focusing on site protection and making sure Indigenous access is fixed for ceremonial purposes and for cultural activities.

Another huge thing I did was that I was trying to change the narrative of the park. When [the Park Service] first acquired it, the goal was to use it as a place to tell Indigenous stories, of course, but to sort of fill the gap of where John Smith went in his travels [in the 1600s]. We feel that, yeah, John Smith is a part of the history, but it shouldn't be a part of the first narrative told here.

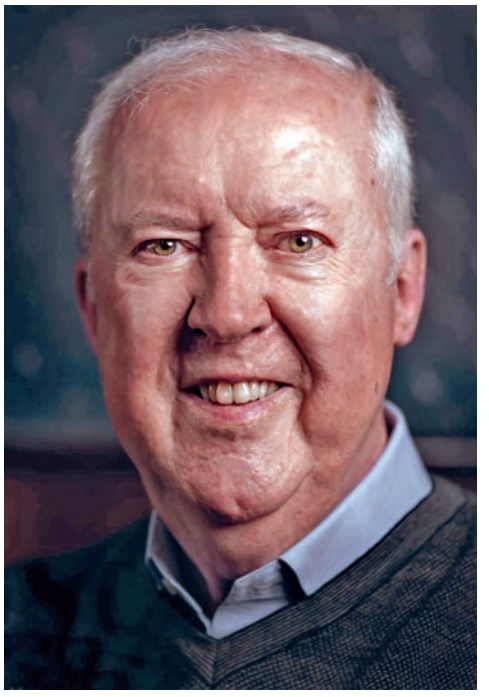
Q: Do you have any thoughts about the way that the Bay cleanup has been conducted?

A: A lot of my feelings reside with the fisheries, the striped bass, the cobia, the red drum, speckled trout, stuff like that. It's stuff where you can really see the change over decades. I would love to see more defense of the menhaden population because all the different game fish here, they've got to eat something. ■

Laying the groundwork for VA's environmental movement

Book reflects on the storied history of the Virginia Environmental Endowment

By Whitney Pipkin



Gerald "Jerry" McCarthy led the Virginia Environmental Endowment for 36 years. (Grant Burchill)

"The idea of turning a fine for pollution into a creative way of helping to address environmental problems was unprecedented," McCarthy wrote in his book, Blueprint for Going Green: How a Small Foundation Changed the Model for Environmental Conservation. (Whitney Pipkin)

Fifty years ago, the environmental movement was just getting started in Virginia. And Gerald "Jerry" McCarthy ended up in a front-row seat.

In 1970, not long after the U.S. had celebrated its first Earth Day, then-Gov. Linwood Holton tapped McCarthy to lead his new Council on the Environment. Five years later, Virginia's environmental reputation was reeling after regulators discovered a toxic chemical called Kepone had been leaching from a plant in Hopewell, VA, into the James River and the bloodstreams of workers for years.

The Kepone disaster, as it came to be known, seized national attention and fueled budding environmental activism in Virginia. It also led to the creation of the Virginia Environmental Endowment (VEE) after a federal judge decided that $8 million of the company's $13 million fine would go to a privately managed fund focused on improving the local environment. The fine was the largest of its kind at the time, and the concept of such a fund was brand new.

McCarthy became the endowment's executive director at its inception in 1977 and led it for 36 years until his retirement in 2013.

"The idea of turning a fine for pollution into a creative way of helping to address environmental problems was unprecedented," McCarthy wrote in his book, *Blueprint for Going Green: How a Small Foundation Changed the Model for Environmental Conservation* (University of Virginia Press, 2024). "In essence, VEE acted as venture capital for environmental improvement in Virginia."

By pairing its grants with matching funds, the endowment has invested more than $120 million in environmental efforts since 1977, according to its 2023 annual report. VEE provided the initial seed money to help several environmental organizations get off the ground, including the Virginia Conservation Network, James River Association, Elizabeth River Project and the Environment Virginia conference. The endowment also helped organizations like the Chesapeake Bay Foundation and Southern Environmental Law Center establish dedicated offices in Virginia.

We talked to McCarthy, 81, about his reflections on this unique time period in Virginia's environmental movement. The following has been edited for clarity and length.

Question: Have you always wanted to write this book or was there a specific impetus?

Answer: It was the 50th anniversary of the Kepone disaster earlier this year. My book is not about the disaster but about what happened after it, the rest of the story.

After I retired [from VEE] in 2013, I decided one of the main things I wanted to do was write a book about all this, because I felt it was a great story and it hadn't been written.

It's a legacy project and I had so much fun doing it — calling up former colleagues and interviewing them, hearing how they felt about the progress over the years. It's not a dry academic treatise.

Q: The endowment was started by Judge Robert R. Merhige Jr.'s decision to create a local-focused fund from pollution fines rather than just sending them to the national treasury. Have others followed suit since then to establish similar funds?

A: As far as I know, the endowment remains unique. There was an effort to try to persuade the [U.S. Environmental Protection Agency] and the feds that more judges should do this kind of thing. And they came up instead with Supplemental Environmental Projects. It's more remedial in nature. Whereas VEE is preventative in nature.

[VEE] is a private nonprofit and has nothing to do with the government whatsoever. It's an independent grantmaking foundation. Judge Merhige said he didn't want the government to have anything to do with it. They had blood on their hands for letting all this happen in the first place. He said, "You can use your own tax revenue to do [remediation]."

Q: You write in the book that "Nothing illustrates the gap between the promise of an environmental law and the realities of implementation better than the Clean Water Act's National Pollution Discharge Elimination System." Can you elaborate on that?

A: Here is [my] view of what's really wrong: The [Clean Water Act] has never been implemented correctly in my view. It says to eliminate [pollution] — and they even call the system "elimination." But they give thousands of permits out that instead put a *limit* on pollutants. It doesn't necessarily solve the problem. It just says, "How much can the water stand?"

Q: What is your big hope for the book?

A: When I started at VEE, there was practically nobody doing this kind of work. A lot of the groups you see today didn't exist at all. There were some new laws, but they were brand new and nobody knew what to do with them — especially with the citizens suit provisions in the Clean Air and Clean Water acts. We had to build up the nonprofit infrastructure because the government one was vastly more powerful.

I wanted to document the remarkable history of the last five decades or so to show that we have made progress [and] to inform and inspire the next generation of environmental leaders to say, "Wow, if those people can do it, perhaps we can do some things."

Almost everyone has said, "I didn't know that," about some aspect of the book. It helps to educate people, and then one hopes you don't repeat the mistakes of the past.

And finally, I wanted to give long overdue recognition to all these groups we've given money to. They've done a terrific job. They need to be applauded and, frankly, I hope the book helps them raise some money — a lot of money — so they can continue to do what they do so well. We've left a hell of a foundation for the next generation to build on. ■

Big trees, important trees: a Chesapeake sampler

By Jeremy Cox, Ad Crable & Lauren Hines-Acosta

Some trees are spectacular to behold. Some are imbued with history. And some are both.

Why not pay them a visit? The Chesapeake Bay watershed has no shortage of strong candidates. Here are some individual trees to consider adding to your travel itinerary.

Living history: As is typical of a southern live oak tree, the Emancipation Oak in Hampton, VA, is not especially tall, but it's the very definition of the word "sprawling." The tree's long, thick, gnarled branches reach impossibly outward, some of them dipping nearly to the ground, covering 100 feet of lawn at the edge of Hampton University. In the early 1860s, as the Civil War was raging and the centuries-old tree was comparatively young, there was no school here — or rather the tree *was* the school.

The Emancipation Oak gets its name from what happened under its branches in 1863. Free and formerly enslaved Blacks gathered there to hear one of the first official readings of the Emancipation Proclamation in Confederate territory. But the tree by then had already become a symbol of freedom, a place where free Blacks and fugitives from slavery defied Virginia law and learned to read and write.

During the Civil War, Hampton was a comparatively safe place for people fleeing slavery, largely because of Union-occupied Fort Monroe, just a mile and a half away at Old Point Comfort. There, in the spring of 1861, the fort's commander, Gen. Benjamin Butler, had made the fort and its surroundings a magnet for thousands of fugitives by declaring that he would not return escapees to their "owners." He argued that since enslaved Blacks were considered property in Virginia, they were essentially "contraband" and should not be turned over to a hostile power that might use them, even indirectly, to wage war.

Later in 1861, Mary Smith Kelsey Peake, a free Black woman living in Hampton, was hired by the American Missionary Association to hold classes for Black children and adults in the area. There was no building for that purpose, so she held classes under the now famous live oak tree. Peake died of tuberculosis in early 1862, but the Missionary Association kept the work going and soon built a schoolhouse there. After the war, the school expanded and became the Hampton Normal and Agricultural Institute, then the Hampton Institute in the 1930s and, finally, in 1984, Hampton University.

A Virginia champion: Tucked away in Maymont Park, a green sanctuary in Virginia's capital city, a national champion Darlington oak tree provides vital relief from the noon sun.

Maymont Park was originally the estate of a wealthy Richmond couple, James and Sallie Dooley, built on the heights along the James River in the late 1880s and early 1890s. When the couple died — James in 1922 and Sallie in 1925 — they left the estate to the city of Richmond. Now, the park features many historical buildings set in the Dooleys' Gilded Age, a nature center and more.

Maymont's Darlington oak — a species also known as a sand laurel oak or laurel-leaf oak — isn't Virginia's only national champion tree, but it's the only one in Richmond. On the National Register of Champion Trees since 2018, the tree stands 82 feet tall with a crown spread of 108 feet and a trunk circumference of 269 inches (22.4 feet). The tree is believed to be around 200 years old, dating back to when the Maymont property was a dairy farm. Look closely under the tree's canopy and you can still spot an old path used by horse-drawn carts.

Top left photo: The Emancipation Oak stands near the entrance of Hampton University in Hampton, VA. (Dave Harp)

Top right photo: An example of the giant sequoia, the largest living tree species, can be found on the grounds of the U.S. Capitol. (Architect of the Capitol)

Bottom photo: Maryland's largest tree is an American sycamore growing along the banks of the Potomac River in Montgomery County. (Maryland Big Tree Program)

This Darlington oak, a national champion tree, grows in Richmond's Maymont Park. (Lauren Hines-Acosta)

To find the tree, go down the hill from the Robins Nature Center and cross the first bridge you come to. Then turn right. The massive oak will be on the left near an intersection of four paths. Admission to the park is free, and it is open daily from 10 a.m. to 7 p.m.

Maryland's biggest of the big: It's time to go big with the largest known tree in Maryland. That title belongs to an American sycamore nestled in a steep embankment along the Potomac River.

"Sometimes you can only get to it when the Potomac is lower in water level," said Joli McCathran, co-leader of the Maryland Big Tree Program, a volunteer-led state initiative that serves as the official authority on which trees are, in fact, the largest.

Trees are rated on a point system that accounts for trunk circumference, height, and canopy width. At an unmatched 499 points, the sycamore, rooted in Montgomery County's Dickerson Conservation Park, has held the Maryland crown since 2012.

Growing conditions along the river are nearly ideal for the moisture-loving species, said Colter Burkes, an urban forester for Montgomery's Park system. "There are a lot of other large sycamores growing in the area," he said. But this one "definitely sticks out."

The majestic tree measures 326 inches (27 feet) around its massive, bulbous trunk. It's 145 feet tall with a crown spread of more than 111 feet.

The Maj. Gen. Winfield Scott Hancock Witness Tree, a chestnut oak with forked trunk, was an 8-inch tree during the Battle of Gettysburg. (Peter Lukacs)

It can be accessed by following a walking trail from Dickerson Park's parking lot toward the river. After crossing the Chesapeake & Ohio Canal's towpath, turn right onto an unmarked dirt track that parallels the river's course. A few hundred yards down that path you'll see a rocky outcropping on the river's opposite bank. The sycamore stands directly across from those rocks on the right side of the trail.

Witness to war: Peter Lukacs thinks the chestnut oak sentinel standing in a grove of trees in a field outside Gettysburg, PA, should be among the most famous trees in America, only after the world's two largest giant sequoia trees in California — the General Sherman and the General Grant, as they're known.

This sugar maple in Pennsylvania's Sinnemahoning State Park is believed to be an Indian marker tree, bent while still a sapling by Native Americans to mark a spot. (Wandering Out Yonder blog)

After all, the Pennsylvania tree with the distinctive forked trunk witnessed two crucial events during the Battle of Gettysburg, which was a turning point of the Civil War. The tree stood in the midst of Pickett's Charge, the desperate push whose reversal dashed Confederate hopes of victory after three days of bloody fighting. It also was in the middle of the horrific fight along Cemetery Ridge.

Lukacs, a former engineer, has been on a several-year quest to find all the "witness" trees at Gettysburg National Military Park. He has dubbed the chestnut oak the Maj. Gen. Winfield Scott Hancock Witness Tree, after the Pennsylvania-born Union general whose tactics contributed greatly to the Union victory.

The Hancock Witness Tree is part of the famous "Copse of Trees" now marked by the High Water Mark of the Rebellion Monument off Hancock Avenue. As you view the monument, the tree is the largest one on the left, with its two stems jutting forward over the iron fence.

The tree has been identified as a witness tree by comparing modern-day photos with old photos of the Copse of Trees as far back as the late 1800s.

For Lukacs and others, witness trees hold deep meaning. "As the only surviving living links to the greatest battle ever fought on American soil, these trees touch many Americans deeply and personally," he has written.

Marking the spot: It's long been documented that Native American tribes across the U.S. bent trees into distinctive shapes to mark certain spots or show the way to important sites. These might have been hunting or fishing grounds, springs, trails, sacred sites, stream crossings and even rattlesnake dens.

One of the best remaining Indian marker trees, called the Arch Tree, is a sugar maple at Sinnemahoning State Park in north-central Pennsylvania.

Like all marker trees, this one was likely bent as a sapling by weighing the main trunk down with rocks or dirt, or by tying it down with rawhide, bark or vines.

There is no definitive proof that the Arch Tree is an Indian marker tree, but its age seems to fit. There also appear to be scars at the bends of the tree, showing where it was lashed.

At any rate, the tree is quite popular, has its own trail and is occasionally a backdrop for weddings.

Sinnemahoning State Park is along PA Route 872 about 12 miles south of the town of Austin. The Arch Tree is along a trail just a few hundred feet south of the park's visitor center.

Planted for posterity: Giant sequoia trees are not often found growing in the District of Columbia or anywhere east of their native range in California's Sierra Nevada mountains.

Nevertheless, you'll find three of them on the U.S. Capitol Grounds, though they are veritable pipsqueaks compared with the 200-foot-plus giants out West. The most notable of the Capitol trees is the "Chief Sequoyah," planted in 1966 by members of the Cherokee Nation to commemorate the 200th anniversary of the birth of the famous Cherokee polymath, Sequoyah — the 19th-century creator of the written version of the Cherokee language.

There are more than 4,800 trees on the Capitol Grounds' 274 acres, but the Chief Sequoyah (also the name of a 228-foot behemoth in California's Giant Forest) is part of a special subset of trees planted to memorialize historical figures or events.

Sequoias typically prefer cool summers along with moist but well drained soil. That's basically the opposite of the growing conditions found in the DC region, so the trees require special care.

The Chief Sequoyah occupies a starring location on the east side of First Street NW, between Constitution Ave. and the Peace Monument. It bears a small plaque on its trunk for identification. ■

CHESAPEAKE CHALLENGE

— Kathleen A. Gaskell

Not lions or tigers, but bears

A

D

Black bears are one of the largest animals in the Chesapeake Bay watershed. How sizable is your knowledge about these imposing creatures? Answers: page 36.

1. Match each of these areas with its estimated black bear population. Note: These figures are for the entire jurisdiction and include areas outside the Bay watershed.
   - DC 16,000
   - DE 7,000
   - MD 0 (but occasionally seen passing through from a nearby state)
   - NY 19,000
   - PA 13,000
   - VA 2,000
   - WV 0 (extirpated)

2. Black bears are adaptable and live in a variety of habitats — wherever there is enough food, water and shelter. Which of these components is most important in these habitats?
   A. Caves B. Rocks C. Trees

3. How many calories per day does the average black bear consume in spring and summer?
   A. 2,500 B. 5,000
   C. 7,500 D. 10,000

4. How many calories per day does a black bear typically consume in the fall to build up enough fat reserves to survive the winter?
   A. 7,500 C. 10,000
   B. 15,000 D. 20,000

5. What do black bears eat?
   A. Grasses, herbs, berries
   B. Seeds, acorns, fruit, nuts, honey
   C. Insects, fish, reptiles, birds, amphibians, carrion
   D. All of the above and anything else that smells good

6. A bear can smell food in a sealed garbage bag from how many miles away?
   A. Half mile B. 1 mile
   C. 1.5 miles D. 2 miles

7. A black bear weighs about 8 ounces when born. How much does an average adult male black bear weigh? A female black bear? (One answer for each.)
   A. 90–300 pounds B. 125–500 pounds

Title image: *A black bear forages in a dumpster in northern Pennsylvania. (Jim Mullhaupt/CC BY-NC-ND 2.0)*

A *A black bear munches on a dandelion. (Sunshinedave/CC BY-SA 4.0)*

B *A black bear cub clings to a tree in northern Pennsylvania. (Jim Mullhaupt/CC BY-NC-ND 2.0)*

C *A black bear shows its formidable teeth. (Warren Bielenberg/National Park Service)*

D *A black bear fishes for its dinner in a creek. (Gillfoto/CC BY-SA 4.0)*

Bruin facts to bear in mind

Encounters between bears and humans are increasing as development spreads across the animals' habitat and more hikers take to trails. Here are some tips to help make a black bear sighting an awesome, not paw-some, experience.

No surprises! Typically, black bears are passive and just want to be left alone and will retreat unless they are startled or believe they are threatened. The best way to see a bear is at a distance where both bears and humans feel safe. Staying on trails reduces your chance of getting lost and possibly getting too close to a bear in tall or thick vegetation.

They know you're there: A black bear is usually aware of your presence before you are aware of a bear. Its sense of smell is 2,100 times better than ours. Its hearing is twice as sensitive as ours. And eyesight? While black bears can see colors and have good night vision, their eyesight is poor beyond 30 yards.

Safety in numbers: Black bears rarely attack groups of three or more people. Talk in low, calm tones and periodically clap to let a bear know you are approaching. Groups also provide more eyes to look for tracks, scat and claw marks or scratches on trees — signs that a bear is in the area.

You've been warned! Keep your ears attuned for low growls, huffing or jaw-popping: That is a black bear's warning that you are too close. Figure out where it is coming from and slowly back away. If you see the bear, don't look it in the eyes; it sees this as an act of aggression.

Running makes you fast food: You can't outrun a black bear, which can sprint up to 35 miles per hour. For comparison, Noah Lyles, who won the 100-meter dash in the 2024 Olympics, ran 27.09 mph. And running (or screaming) just makes you seem more like prey.

Now you're really out on a limb: Climbing a tree is not a recommended escape route. Black bear cubs are taught to climb trees to avoid danger. Thanks to its sharp claws, a bear can climb 100 feet up a tree in 30 seconds.

Water won't save you: Cubs are taught to swim at an early age to hunt for fish and other food. They have powerful legs that propel them swiftly.

This myth is dead wrong: In the very rare event you are attacked by a black bear, do not play dead! Fight with everything you've got or can grab hold of — like hiking gear, sticks and rocks.

The bare necessity on bear spray: This is a last resort! To work effectively, the spray must be accessible. Also be aware that it can affect your own sight and breathing.

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

Bringing back the longleaf pine, perhaps once a Bay native

By Tom Horton

A controlled burn consumes the grass near a longleaf pine sapling, which is adapted to survive and thrive in frequent natural fires. (Dave Harp)

It has always been things marine and estuarine that have brought me down to Virginia's Old Dominion University (ODU), near the mouth of the Chesapeake Bay in Norfolk.

It was the school's oceanographic research, for instance, that revealed a major reason blue crab numbers fluctuate so capriciously: Their larvae, all hatched where the Chesapeake meets the Atlantic Ocean, depend on the vagaries of summer winds to blow them back up the estuary before they wash terminally to sea.

But this day it was about pine trees. We were heading inland to ODU's sole major landholding, some 320 acres of a unique and hopeful forest known as the Blackwater Ecological Preserve — just outside the Bay watershed, with its waters flowing into North Carolina and the Albemarle Sound. With Nick Flanders, a rangy young ecologist who manages the preserve, we entered an ecosystem that seemed almost parklike, with tall pines widely spaced, allowing sunlight to flood the low, ferny, shrubby understory. We could see for hundreds of yards, and the walking was easy.

This is typical for a stand of longleaf pine (*Pinus palustris)*, and this is the northernmost natural stand in the U.S., a glimpse of an ecosystem that once dominated the coastal plain from Virginia to Texas but is now reduced to a few percent of its historical abundance.

The thick-barked trunks here are charred, and the sandy soil shows through a thin layer of pine needles. Frequent burning is as essential to the longleaf forest as rainfall is to the tropical forest, ecologists have learned.

Fire, Flanders says, allows these pines to outcompete faster-growing but less "pyrophytic" (fire-resistant) species. It also exposes the soil for seed germination. The Blackwater forest is young, a work in progress, a researcher's bonanza that will yield its secrets over decades, even centuries.

ODU acquired it in 1985 from the Union Camp paper and timber empire, which had logged the older, larger pines. What that longleaf forest was like, and perhaps can be again, was described in a U.S. Forest Service historical report: "[It is] where a horseman might ride with little hindrance for days on end … The massive trees dotted the rolling plain in a sea of grass: gentle breezes, laden with a resinous perfume, rippled the crowns and generated music ... the sweetest south of the Mason-Dixon line."

A mature longleaf can soar to 150 feet and live for 500 years. The resinous wood is rot– and disease-resistant and so hard as to be more like oak or teak than its many softer pine cousins.

The tree is so remarkable that, to the uninitiated, it draws attention from the longleaf understory, which the Nature Conservancy has called "the most biologically diverse habitat in the contiguous United States." At its best, it features hundreds of species of sedges and grasses and orchids, along with dozens of types of mammals, reptiles, birds and amphibians.

The understory is also a fire-adapted landscape. ODU has been using prescribed burns to mimic the frequent natural fires that historically swept through the forest. The frequency — as much as every two years — keeps fuel from building up, so the fires are low intensity. They pass harmlessly over tiny, seedling longleafs, their terminal buds tightly shielded from the heat by a dense bundle of needles. The bark of a mature longleaf easily tolerates flames that would kill thinner-skinned competitors.

It may take many more years of burns to get back to something resembling the fullest possible diversity, Flanders says. He points out sand-loving species like grass pink orchid, sandy-woods chaffhead, pixie moss and spurge nettle, "which makes us think we're on the right track."

Botanist Lytton Musselman, a professor emeritus at ODU, said the seeds of some plants can remain viable in the soil for a century. It's an advantage that the preserve was never "deep-plowed" for crops or tree farms, thus preserving a variety of seeds.

The preserve, he says, is more than a grand experiment in "recovered botany." Culturally, longleaf was "the forest that built Tidewater Virginia." A whole industry from the wood and the resinous sap grew up around longleaf. The seeds there, he says, can be used to plant new longleaf communities elsewhere in Virginia.

Interest in restoring the longleaf forest and its splendid array of plants and creatures is finally growing, Musselman says. The original forest was destroyed by overharvest and a huge "naval stores" industry that harvested longleaf sap for tar, resins and oils essential to the nation's sailing vessels.

Commercial forestry in more recent decades was not much interested in planting longleafs because young trees stay small for years, first putting down a robust root system. Other pines, like loblolly, grow more quickly and can be harvested much sooner for pulpwood.

Researching restoration, I happened on some exciting news. All my life I'd heard that longleaf pine was never native north of the Bay's mouth. But that notion has been challenged by new research by Philip Sheridan and his colleagues at the Meadowview Biological Research Station outside of Fredericksburg, VA. Sheridan, whose paper on this will be published soon, says "with a high degree of confidence" that Meadowview, using genetics and other tools, can prove longleaf ranged into Accomack County on Virginia's Eastern Shore and likely into the Nassawango Creek region of Maryland's Worcester County.

The Nature Conservancy in Maryland has been planting longleafs along a tributary of the Nanticoke River near Sharptown, anticipating a northward shift in its range as the climate warms. And more have been planted in Maryland's Idylwild Wildlife Management Area north of Federalsburg in Caroline County. Virginia is planting longleaf saplings on nearly 1,000 acres adjacent to the Blackwater Preserve.

Whether it is the quality of wood, the beauty or biodiversity, there never was a forest community to surpass longleaf pine. How exciting and hopeful to think of expanding it throughout Tidewater Virginia and the Delmarva Peninsula. ■

Tom Horton has written about the Chesapeake Bay for more than 40 years, including eight books. He lives in Salisbury, where he is also a professor of Environmental Studies at Salisbury University.

Bay restoration collapsing on altar of political expediency

By Gerald Winegrad

I've just turned 80, and I've never been more pessimistic about the future of the Chesapeake Bay.

Forty years of formal efforts to restore the water quality and living resources of the Chesapeake Bay have failed, despite the expenditure of more than $12 billion. After repeated solemn voluntary agreements to do so and the imposition in 2010 of mandates to reduce nutrient and sediment pollution (the total maximum daily load, or TMDL), the most critical and damning evidence of the failure comes from the Chesapeake Bay Program itself.

The federal-state partnership's website notes that the Clean Water Act and the TMDL require that the Bay and its tributaries — all of it, 100% — be removed from the CWA's list of impaired waters. But the U.S. Environmental Protection Agency found in 2022 that only 28.1% of the Bay is unimpaired. This is just a 1.6% improvement since 1985, when 26.5% of Bay waters were unimpaired. There is no better measurement of the failure than this. A 1.6% improvement is deeply worrisome, as Bay fisheries have collapsed or are collapsing, and critical Bay grasses are far from recovery goals.

In 2023, Maryland's Gov. Moore sought federal disaster money because of an "ongoing commercial fishery disaster." He detailed the abysmal state of fisheries: Since 2012, landings of seven of Maryland's marquee commercial fishery species declined between 27% and 91%. The species named in the request for federal monies included blue crabs, rockfish (striped bass), and white and yellow perch. The request was denied.

The 2000 Chesapeake Bay Agreement called for the Bay's critically important underwater grasses to be restored to a total of 185,000 acres by 2010. That did not happen, and the most recent Baywide survey in 2023 showed a total of 82,937 acres — less than 45% of the goal set a quarter century ago.

Further evidence of faltering restoration is the proliferation of toxins in our water — E. coli, blue-green algae and, worst of all, the flesh-eating (literally) bacteria vibrio. Those dangers, I fear, are being down-played by authorities or perhaps even hidden outright.

An algal bloom plagues warm shallow water in Maryland's Choptank River. (Dave Harp)

In a May 2023 comprehensive report, 50 top Bay scientists on the Bay Program's scientific advisory committee concluded that the best that can be said is at least the Bay has not gotten worse. The report also detailed how paying farmers for voluntary best management practices (BMPs) has not and will not work to meaningfully reduce nutrients. This admonition is being ignored.

Greatly reducing nutrients from wastewater treatment plants is rightly noted as a success, but polluted runoff from agricultural and developed land continues to prevent attainment of CWA requirements. Progress in reducing nitrogen and phosphorus pollution has been grossly overstated, especially from farms. Recent EPA data tells us the climb to recovery is only getting steeper: increasing farm fertilizer use, more farm animals and their excrement, ineffectiveness of farm BMPs despite $2 billion in grants since 2010, increasing nutrient flows from the filled Conowingo Dam reservoir and the headwinds of global warming.

Despite being given 15 years to implement measures to meet the TMDL reductions by 2025, most states are failing badly. The EPA Inspector General's July 2023 report castgated the agency for failing to steer states in their efforts to reduce nonpoint pollution — since the EPA knew how far off track Bay restoration was in 2018.

The EPA and Bay state governors, serving as the Chesapeake Executive Council, decided at their annual meetings in 2022 and 2023 to avoid any new initiatives to meet the 2025 goals and recalibrate. A Beyond 2025 committee was to take two years to produce a new "plan."

On July 1, the committee issued a draft report. Continuing the outright greenwashing that is smothering the Bay program's restoration efforts, the chairs of the committee, Anna Killius and Martha Shimkin, spun the report in a July *Bay Journal* commentary.

This report was a nothing-burger, ignoring the dictates of the TMDL and containing no new initiatives to meet nutrient and sediment reductions. Instead, the authors touted some of the 18 goals that were met or would be met by 2025. There was no mention of the 13 goals that would not be met, some of them critical — restoring or creating wetlands, planting stream buffers and increasing forest canopy.

Remarkably, the report chose to skip the 2014 agreement's overriding core commitment: restoring the Bay's waters by having all practices/controls installed by 2025 to meet the TMDL to move Bay waters from the impaired list.

Instead, the co-chair authors cherry-picked modest gains. An example: "And for the first time in more than 50 years, you might find folks going for a leap into the Anacostia, a river on the rebound with help from DC's stormwater achievements." As the *Bay Journal* reported soon after, the planned July 13 swim event was cancelled for the fourth time in a year because of the threat of elevated E. coli levels jeopardizing human health.

The EPA and the states seem only interested in pacifying agribusiness, developers and other polluters, and keeping the money flowing to prevent any political outcries. The easy way out is being taken.

Here, put as succinctly as possible, are the two things that must happen beyond 2025: First, the states should be given until 2029 to implement all measures necessary to meet the TMDL caps for nitrogen, phosphorus and sediment or face serious sanctions. And second, also with a deadline of 2029, all of the 31 goals set forth in the 2014 watershed agreement must be met. Period.

A tragic reality is setting in. Future generations will be lucky if the Chesapeake is no worse than today. ■

Gerald Winegrad witnessed the signing of the first Bay Agreement on Dec. 9, 1983, as a Maryland state senator serving on the Chesapeake Bay Commission. He has worked on Bay conservation and restoration for 54 years.

A healthy Chesapeake Bay begins with local governments

By Daniel Chao

What is with this tax hike? Why is that new apartment building taller than the rest of my block? Why is my water bill so expensive? Why is my storm drain clogged with litter? Why did you cut down that beautiful old tree on my street? Where can I find a good job or receive career training?

As elected local officials from Virginia, Maryland, Pennsylvania, New York, Delaware, West Virginia and the District of Columbia appointed to the Chesapeake Bay Local Government Advisory Committee (LGAC), we field all these questions, and so many more, about how we maintain our Chesapeake Bay watershed — from green jobs training to reducing water pollution and containing our carbon footprint.

Created by the 1987 Chesapeake Bay Agreement, LGAC works with state and federal decision makers to communicate what local governments are seeing on the ground and the resources we need to keep our Bay watershed clean and healthy. Appointed by the governors of the watershed states and the mayor of the District of Columbia, our 24 LGAC members represent counties, towns, cities, boroughs and townships. Our communities range from urban areas with millions of constituents to large swaths of rural lands with scenic hills, rivers and small historic towns.

The Chesapeake Bay Program is a unique state-federal partnership dedicated to restoring and protecting the Bay, its tributaries and the lands that surround them, with the aim of improving water quality and living resources for our residents. In 2022, the Bay Program was charged with preparing recommendations that "prioritize and outline the next steps for meeting the goals and outcomes of the Chesapeake Bay Watershed Agreement leading up to and beyond 2025."

As the partnership looks "beyond 2025" and maps out the future of the watershed restoration effort, the support of local governments is critical for advancing those goals. As the voice of local governments, LGAC wants to be clear about what local governments need to be effective partners now and into the future.

This rain garden at the base of a hill in Berkeley Springs, WV, was featured in a tour of the town's green infrastructure last summer, hosted by the Chesapeake Bay Program's Local Government Committee as part of a series of peer-to-peer learning excursions. (Ethan Weston/Chesapeake Bay Program)

First, while local governments are ready and willing to support watershed protection and restoration, we need the technical and administrative resources to be true partners in these efforts. LGAC strongly supports the Beyond 2025 Steering Committee's recommendation to expand local government technical assistance. Small, under-resourced local governments continue to have the greatest technical and administrative capacity needs. LGAC has long championed the opportunity to expand technical assistance by prioritizing relationships with local governments through existing trusted networks. Regardless of the term used for this technical assistance provider, we want to emphasize a key element: It should be a connected individual who possesses a wide range of knowledge and skills related to water resources planning.

Second, as local officials, we value consistency. When state and federal leaders suddenly change directions, it pulls the rug out from under local governments whose budget and staffing restraints make it difficult to redirect their efforts. A recommitment to the Chesapeake Bay Watershed Agreement, as proposed by the Beyond 2025 Steering Committee, would ensure local officials have clear and consistent direction around water resources management. It would also offer peace of mind that the time and money local governments have already invested will not be wasted.

Lastly, we need the partnership to celebrate the significant progress that local governments have achieved. Towns, cities and counties around the watershed have invested hundreds of millions of local tax dollars in wastewater treatment upgrades, green stormwater infrastructure, urban tree canopy, streamside buffers, living shorelines and more. Local officials throughout the watershed have worked hand in hand with businesses, farmers, city planners, nonprofits and community organizations to inform, educate and inspire our constituents.

LGAC remains committed to sharing best practices with our fellow local elected officials and spurring additional on-the-ground action. Our members have hosted peer-to-peer learning exchange tours, facilitated roundtable discussions and moderated panels at local government association conferences. Over the last 5 years, we have worked tirelessly to engage more than 2,500 local officials from around the watershed. This effort continues in the District of Columbia with an upcoming peer-to-peer tour that will convene Advisory Neighborhood Commissioners from across the district for dialogue and for learning about building healthy communities and facilitating equitable access to green spaces.

These on-the-ground events allow us to hear from our fellow local leaders about the opportunities and challenges facing the Bay and to communicate these insights and concerns to state and federal partners. As local officials, we make critical decisions on where and how to target watershed cleanup efforts. We partner with our constituents to help ensure their tax dollars are going to clean waterways, healthy housing, abundant crabs and seafood stock, a thriving green jobs sector and beautiful local parks.

As residents and neighbors in the Bay watershed, you can have your voice heard too. Like our LGAC members, your voice is pivotal to protecting and restoring our lands and waterways. We urge you to engage with your mayors, council members, county commissioners, governors and state and federal representatives. Believe me, we are accustomed to colorful comments and don't mind creative questions. The more the better for the sake of a clean and healthy Chesapeake Bay. ■

Daniel Chao is chairperson of the Local Government Advisory Committee (lgac@allianceforthebay.org) to the Chesapeake Bay Executive Council. He also serves as an advisory neighborhood commissioner (ANC-2E07) in the District of Columbia.

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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.

Contact T. F. Sayles at 410-746-0519, *tsayles@bayjournal.com* or P.O. Box 300, Mayo, MD 21106. Please include your phone number and/or email address.

Bill Boicourt, professor emeritus at the University of Maryland's Center for Environmental Science, paddles among the bald cypress trees on a fall morning at Delaware's Trap Pond State Park. (Dave Harp)

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The splash of color on a red-winged blackbird mimics the colors of fall, perching atop a red maple in October on Robbins Creek, a tributary of Maryland's Choptank River. (Dave Harp)

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BULLETIN BOARD

BULLETIN BOARD GETS NEW ADDRESS

The new address for submitting items to Bulletin Board is: bboard@bayjournal.com

EVENTS / PROGRAMS

PENNSYLVANIA

Fall Foliage Exploration
9 am–12 pm Oct. 12. Robert A. Kinsley Nature Preserve, York. Learn to identify tree species by leaf pattern, bark texture, fall color. Examine the complex forest community from fungal partners to mighty oaks and learn how to become a good steward of the forest. Moderate-to-difficult 2-3 mile hike. Ages 8+ (under 18 w/adult); $5. Registration: lancasterconservancy.org/events (click on "learn more and register").

Mushroom Walk
1–3 pm Oct. 19. Raymond B. Winter State Park, Mifflinburg. Join mushroom expert and author Bill Russell to learn about PA native species and scout out some fungi in the park. Meet at Environmental Learning Center for brief indoor presentation before hike. Wear durable shoes and bring water. Free. Info: events.dcnr.pa.gov/event/mushroom-walk-with-bill-russell-814.

VIRGINIA

Fall Foliage Festival
11 am–4 pm Oct. 19, 20. Sky Meadows State Park, Delaplane. Enjoy changing leaves, wagon rides, scenic hikes through vibrant forests. Family-fun activities, community partners, live music, delicious fall treats. Free and open to all ages. Info: dcr.virginia.gov/state-parks/sky-meadows.

Naturalist Walk: Fall Ecology
10 am–12 pm Oct 27. Leopold's Preserve, Broad Run. Marvel at the fall colors and learn about the life cycles of trees. Free. Register at leopoldspreserve.com/calendar. Guided naturalist hike also available 10 am-12 pm Nov. 6.

Poisonous and Palatable
11 am–12 pm Oct. 19. Machicomoco State Park, Hayes. Learn how to identify edible and poisonous plants found at the park. Recommended for ages 10+. Free. Info: dcr.virginia.gov/state-parks/machicomoco.

Halloween Safari
7–8:30 pm Oct. 18 and 25. Leopold's Preserve, Broad Run. This non-scary night hike is presented by the Bull Run Mountains Conservancy and the White House Farm Foundation. Explore trails after dark and meet native wildlife actors performing educational skits. Bonfire and live music afterward. Timed entry passes every 6 minutes, from 7 through 8 pm. $10/pp, tickets at: brmconservancy.org/calendar-of-events.

Habitat Connectivity Talk
2–4 pm Oct. 19. Broad Run. Learn about Wild Virginia's Habitat Connectivity Program's efforts to create more wildlife road crossings and protected habitat corridors by engaging diverse stakeholders. Registration: brmconservancy.org/calendar-of-events.

MARYLAND

Eden Mill Fall Fest
11 am–3 pm Nov. Pylesville. Fun, free event for the whole family. Nature Center scavenger hunt, gourd hunt, corn grinding, live animals, games, prizes. Displays by local organizations, master gardeners. Bring cash for food trucks and pumpkin chuckin'. Info: edenmill.org.

Blackwater Guided Birding Tours
8 am–12 pm: Oct. 13 with Terry Allen, Oct. 20 with Ron Ketter, Nov. 17 with Terry Allen. Blackwater National Wildlife Refuge, Cambridge. Meet at Visitor Center then travel Wildlife Drive (in your vehicle), meeting with guide at various hotspots. Info: fws.gov/refuge/blackwater/events.

Autumn Amphibian Exploration
7–9 pm Oct. 18. Pickering Creek Audubon, Easton. Join staff for a nocturnal exploration of the center's freshwater wetlands in search of amphibians, reptiles, other nocturnal wildlife. Bring flashlight or headlamp, boots/waders. $7/pp. Registration: pickeringcreek.org/programs/upcoming-programs.

Young Forest Explorers
9–11 am Oct. 24. Anita C. Leight Estuary Center, Abingdon. The forest, shoreline and ponds are for fun and learning. Guided by trained staff. Must pre-register. This is a drop-off program; ages 4-7, $15/child. Info/registration: otterpointcreek.org/events.

Horn Point Lab Open House
11 am–4 pm Oct. 12. Cambridge. Celebrate, explore and learn about the Bay. Tour the East Coast's largest oyster hatchery, crafts, scavenger hunt, free T-shirts for kids, interactive science displays. Free and open to all ages. Rain or shine. Info: umces.edu/events/annual-open-house.

Eden Mill Preschool Nature Series
10–11 am; Nov. 5 or 6 *Rock On*; Nov. 12 or 13 *Be-Leaf It*; Nov. 19 or 20 *Turkey Tails*. Pylesville. Programs include nature games, activities, story, craft, short hikes. Ages 2-5 w/adult. $11/class. Pre-registration required. Info: edenmill.org.

Patuxent Research Refuge
Patuxent Research Refuge offers free public programs on its North [N] and South [S] Tracts in Laurel. No preregistration required except where noted. List special accommodation needs when registering. Info and registration: 301-497-5772 (9 am–4:30 pm, Tues.-Sat.), fws.gov/refuge/patuxent-research/events. Join PRR listserve: michael_cangelosi@fws.gov.

- *Kids' Discovery Center:* 9 am–12 pm (35-minute time slots, on hour) Tues.-Sat. Ages 3-10, w/adult. Crafts, puzzles, games, nature exploration; free booklet. October, *Spiders: Not as Creepy as You Think!* November, *Beavers: Master Builders/Watershed Sustainers*. Group arrangements possible. Registration strongly urged: 301-497-5760 (this program only).
- *"Wingspan" Game Days:* 10 am–1 pm Oct. 11 & 26, Nov. 8. No experience needed. Come play the award-winning board game. Games provided, personal sets welcome. Register at Front Desk.
- *Pollinator-Habitat Pots & Gardens Planting:* 2–3 pm Oct 19 & 26. Adults/ages 12-17 w/adult. Free native plants; pots provided. Learn how to grow perennials for pollinators on your property.
- *Family Fun:* 9 am–4:30 pm, Tuesdays-Saturdays for drop-in/independent exploration. Staffed, 10 am–1 pm Oct. 25 & 26. All ages. Theme: bird migration. Hands-on learning activities, games, crafts.
- *Birding at North Tract:* 8–11 am Oct. 26. Ages 12+. Beginner and advanced birders. Some driving; short, easy walks. Meet at North Tract Visitor Info Station w/water, sunscreen, bug spray, snack, binoculars, camera, if desired. Registration required.

Eden Mill Owl Prowl
5–6:30 pm Nov. 9. Pylesville. Search the woods after dark for native owls. Learn about their incredible adaptations and see if you can call them in. Ages 8+; $14. Pre-registration required at edenmill.org.

VOLUNTEER OPPORTUNITIES

WATERSHEDWIDE

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

Potomac River watershed cleanups
Learn about shoreline cleanups in the Potomac River watershed. Info: fergusonfoundation.org. Click on "cleanups."

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.
November issue: October 11
December issue: November 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 28

1. DC: 0 (occasionally seen passing through from nearby states)
   DE: 0 (extirpated)
   MD: 2,000
   NY: 7,000
   PA: 16,000
   VA: 19,000
   WV: 13,000
2. C
3. B
4. D
5. D
6. B
7. Male: 125–500 pounds; Female: 90–300 pounds

BULLETIN BOARD

PENNSYLVANIA

Middle Susquehanna volunteers
The Middle Susquehanna Riverkeeper needs volunteers in these areas.
- *Sentinels:* Keep an eye on local waterways, provide monthly online updates. Web search "Susquehanna sentinels."
- *Water Sampling:* Web search "Susquehanna Riverkeeper survey."
- *The Next Generation:* Many watershed organizations are aging out. Younger people are needed for stream restoration work, litter cleanups. Individuals, families, Scouts, church groups welcome.

Info: MiddleSusquehannaRiverkeeper.org/watershed-opportunities.

Nixon County Park
Volunteer at Nixon Park in Jacobus.
- *Front Desk Greeter:* Ages 18+ can work alone. Families can work as a team.
- *Habitat Action Team:* Volunteers locate, map, monitor, eradicate invasive species; install native plants; monitor hiking trail improvements.

Info: supportyourparks.org, select "volunteer."
Info: 717-428-1961, NixonCountyPark@YorkCountyPA.gov.

PA Parks & Forests Foundation
The Pennsylvania Parks and Forests Foundation, a Department of Conservation and Natural Resources partner, helps citizens get involved in parks, forests. Learn about needs, then join or start a friends group. Info: PAparksandforests.org.

State park, forest projects
Help with Department of Conservation and Natural Resources projects at state parks and forests: clear & create trails, habitat; repair & install plants, bridges, signs; campground hosts; interpretation programs & hikes; technical engineering, database assistance; forest fire prevention programs; research projects.
Web search "PA DCNR conservation volunteers."

VIRGINIA

Leopold's Preserve
The White House Farm Foundation needs help with its conservation corp 8:30–11:30 am Fridays. Ages 13+. Maintain trails, restore habitat, remove invasive plants, clean up trash. Register: leopoldspreserve.com/calendar, click on date. Info: WHfarmfoundation.org.

Virginia Living Museum
Virginia Living Museum in Newport News needs volunteers ages 11+ (11–14 w/adult) to work alongside staff. Educate guests, propagate native plants, install exhibits. Some positions have age requirements. Adults must complete background check ($12.50). Financial aid applications available. Info: volunteer@theVLM.org.

Pond cleanup programs
Join a Prince William Soil & Water Conservation District One-Time Pond Cleanup in fall or spring. Kayaks needed. Info: waterquality@PWswcd.org.

Cleanup support & supplies
The Prince William Soil & Water Conservation District in Manassas 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@pwswcd.org. Register for an event: trashnetwork.fergusonfoundation.org.

Goose Creek Association
The Goose Creek Association in Middleburg needs volunteers for stream monitoring & restoration, educational outreach, events, zoning & preservation projects, river cleanups. Info: Holly Geary at 540-687-3073, info@goosecreek.org, goosecreek.org/volunteer.

Borrow cleanup supplies
Hampton public libraries have cleanup kits that can be checked out year-round, then returned after a cleanup. Call your local library for details.

MARYLAND

National Wildlife Refuge at Patuxent
Call 301-497-5772 during staffed hours (9 am–4:30 pm, Tues.-Sat.). Opportunities include:
- *Kids' Discovery Center:* Help develop curriculum activities/become a docent. Ask for Barrie; specify "KDC."
- *Monarch Magic:* Adults & ages 16-17 w/adult registration on file. Learn about helping on the Monarch Magic Butterfly Team: attend a Monarch Butterfly Team Overview. Ask for Barrie; specify "Butterfly Team."
- *Pollinator-Habitat gardening and/or trail maintenance on South and/or North Tracts:* Free training (required). Ask for Diana Ogilvie, or email diana_ogilvie@fws.gov.
- *Wildlife Images Bookstore & Nature Shop:* Help a few hours a week, half day, all day: 10 am–4 pm Sat.; 11 am–4 pm Tues.-Fri. Run register; assist customers. Ages 18+ (15-17 w/adult). Visit the shop in the National Wildlife Visitor Center; ask for Ann, or email wibookstore@friendsofpatuxent.org.
- *Friends of Patuxent Research Refuge:* Help support the refuge and Eastern Ecological Science Center: Volunteer with events, hospitality, service hours and public conservation/education program development, grant proposals, fundraisers/5k's/outreach. Email friendsprr@friendsofpatuxent.org.

Maryland State Parks
Search for volunteer opportunities in state parks at ec.samaritan.com/custom/1528. Click on "search opportunities."

Eastern Neck Refuge
Volunteer with Friends of Eastern Neck Wildlife Refuge in Rock Hall:
- *Visitor Contact Station & Gift Shop/Bookstore:* Answer questions, handle sales.
- *Butterfly Garden:* Pairs of volunteers are assigned a plot to plant, weed, maintain spring through fall.
- *Outreach:* Staff information booth at community events.

Info: Contact page at friendsofeasternneck.org.

Bay safety hotline
Call the Maryland Department of Natural Resources' Chesapeake Bay Safety and Environmental Hotline at 877-224-7229 to report fish kills, algal blooms; floating debris posing a navigational hazard; illegal fishing activity; public sewer leak or overflow; oil or hazardous material spill; critical area or wetlands violations.

Chesapeake Bay Environmental Center
Volunteer at CBEC in Grasonville a few times a month or more often. Help with educational programs; guide kayak trips & hikes; staff the front desk; maintain trails, landscapes, pollinator garden; feed or handle captive birds of prey; maintain birds' living quarters; monitor wood duck boxes; join wildlife initiatives. Participate in fundraising, website development, writing for newsletters, events, developing photo archives, supporting office staff. Info: volunteercoordinator@bayrestoration.org.

Chesapeake Biological Laboratory
Help the Lab's Visitor Center on Solomons Island. Volunteers, ages 16+, must commit to at least two 3- to 4-hour shifts each month in spring, summer, fall. Training required. Info: brzezins@umces.edu.

Severn River Association
Volunteer at the Severn River Association. Visit severnriver.org/get-involved to fill out "volunteer interest" form.

Annapolis Maritime Museum
Volunteer at the Annapolis Maritime Museum & Park. Info: Ryan Linthicum at museum@amaritime.org.

Lower Shore Land Trust
The Lower Shore Land Trust in Snow Hill needs help with garden cleanups, administrative support, beehive docents, native plant sale, pollinator garden tour, community events. Info: 410-632-0090, fdeuter@lowershorelandtrust.org.

Patapsco Valley State Park
Volunteer opportunities include daily operations, leading hikes & nature crafts, mounted patrols, trail maintenance, photographers, nature center docents, graphic designers, marketing specialists, artists, carpenters, plumbers, stone masons, seamstresses. Info: 410-461-5005, volunteerpatapsco.DNR@maryland.gov.

RESOURCES

WATERSHEDWIDE

Salt & nitrate test kits
The Izaak Walton League is offering a free kit for testing your drinking water or a local waterway for chloride pollution from road salt at saltwatch.org and nitrate pollution at nitratewatch.org.

MARYLAND

Report marine mammal, turtle sightings & strandings
Anyone who sees a marine mammal or sea turtle (especially if stranded, dead, sick, injured or entangled) in Maryland waters is encouraged to report it via the MD Natural Resources Police Hotline, 800-628-9944. Use an online form to report deceased marine mammals or sea turtles: news.maryland.gov/dnr (enter "strandings" in the search field).

Fishing report
The Department of Natural Resources' weekly Fishing Report includes fishing conditions across the state, species data, weather, techniques. Read it online or web search "MD DNR fishing report" to sign up for a weekly email report.

Free pumpout adapter kits
The Department of Natural Resources is offering state boat owners and marinas free adapter kits to help empty holding tanks securely at area pumpout stations. The kit has a plastic adapter that screws into the existing waste discharge deck fitting, instructions, protective gloves, storage tube, QR code to a list of pumpout stations in Maryland. Info: Web search "MD DNR free pumpout kit" or contact Jennifer Jackson at 410-260-8772, pumpouts.dnr@maryland.gov. DNR also offers an online map of pumpout stations (web search "MD online pumpout map") and clean boating tip sheet (web search "MD clean boating").

VIRGINIA

Apply for runoff assistance
The Prince William Soil & Water Conservation District no longer requires application periods for the Virginia Conservation Assistance Program, which helps HOAs, homeowners, schools, places of worship and others with urban soil erosion & water runoff. Interested parties can go to pwswcd.org to fill out a request form or contact the district at 571-379-7514, pwswcd.org/vcap, or Nicole Slazinski at nicoleethier@pwswcd.org.

Visual media has a key role in saving the Chesapeake

By Will Parson

Nonliteral photographs, juxtaposition and visual metaphors sometimes suggest a certain feeling around complex ideas. From a story about Turner Station in Dundalk, MD — a community that is navigating equitable remediation of a Superfund site — this photo of a literal tug-of-war called to mind other tensions. (Ethan Weston/Chesapeake Bay Program)

Before the summer of 2014, I had hardly ever set foot in the Chesapeake Bay watershed. Then I started a job that would take me all across its 64,000 square miles.

As a photojournalist, I document the region — its people, places and wildlife — for stories published on the Chesapeake Bay Program's website. As a photo editor and archivist, I maintain a library of about 17,000 photographs, which are made freely available (with written permission) to support the restoration of the Bay watershed.

Every year, I field hundreds of requests to publish photos from the Chesapeake Bay Program archive. They appear in media outlets (including the *Bay Journal*), as well as reports, museum exhibits, interpretive signs, websites, field guides and countless PowerPoint presentations. The popularity of our archive tells me that my work occupies an important niche. However, it also shows me that many organizations and outlets need staff photographers and visual editors.

If an organization wants to grow and increase its impact, its storytelling capacity must grow as well. Strong photography is necessary if you want to engage donors, decision makers, community members or anyone else who has a hand in restoring the Bay. I have some recommendations for organizations and individuals who want to see better visual stories in the environmental realm.

Show the "why": Photography is particularly well suited to answer the question, "Why should I care?" If you want people to care about water quality, don't show test tubes, latex gloves and Secchi disks. Show people enjoying clean water in your community.

And if you're announcing a new report or initiative, people really don't care to see officials and dignitaries standing at lecterns. They also don't care for visual cliches, so maybe it's time to retire that photo of a great blue heron at sunset — unless you want to tell people there's nothing new to see. Instead, show how people stand to benefit and use fresh, authentic and local examples.

Sometimes it makes sense to show the hard work behind environmental progress: the scientists in the field and the trees getting planted. But you shouldn't always lead with those images. Whether you're asking someone to read your newsletter, hit the donation button or look at your social media post, it's usually more engaging to frame your message around the end goal you're hoping to rally people around.

Train staff and invest in professionals: Even at smaller organizations, I recommend at least a basic training in visual storytelling. This goes beyond just a basic knowledge of how to use a camera and compose a photograph. It's even more important to learn how to use photography on the page (for both print and digital pages), whether or not you ever touch a camera. Learning photo publishing ethics is also essential to ensure you are treating both the people in your photos and the facts of the scene with respect.

Training and familiarity with the issues and subject matter helps both photographers and the people assigning them recognize the opportunities that lead to more compelling pictures. Success begins with a thoughtful assignment, and the best situations to photograph usually involve people's real lived experiences. Even a Pulitzer winner isn't going to return with interesting photos if you hire them to photograph a funding announcement. But if you work with them to identify a neighborhood that benefits from that funding, they might gather a compelling series of portraits and testimonials from people in the community.

Partner with local media: It used to be that nonprofits could depend on local media to communicate environmental issues. But environmental reporting, including visual storytelling, is an increasingly rare commodity. Their loss is a one-two punch against keeping residents engaged.

Some organizations attempt to fill the media void with more sophisticated storytelling in their in-house publications, producing high-quality features fit for magazines and film festivals. But these outlets often struggle to reach large audiences.

This leaves the possibility of direct partnerships between nonprofits and media. Seek out publications that already have the capacity to reach the people you care about. They will have trained journalists who are good at turning important but wonky issues into engaging, human-oriented stories. Perhaps you can offer a small journalism grant that supports coverage of an important issue. Maybe a hypothetical agreement would enable you to republish excerpts in your organization's annual appeal.

Seek the highest power of photography: At a basic level, photography has descriptive power. It can provide visual evidence of, say, pollution entering a stream, or it can show you what a species of fish looks like. It also has emotional power, especially when the photo shows a person expressing a genuine emotion.

At the highest level, photography has the power of empathy. It transports you to a place you've never been, and it makes you feel connected to someone you've never met. A caption and an accompanying story add layers that further your understanding — but often it's the photo that first makes you look more deeply and imagine what's beyond the plainly visible. A good photo is eye-stopping.

Truly great photos are hard to come by. It takes work and planning to put yourself in front of something interesting to photograph. And it takes professional training to come away with an authentic, compelling image, regardless of how challenging or sensitive the topic.

Photographers of any caliber have value, so I encourage everyone to make more pictures. But great photographs don't happen by accident. Successful photography deserves an investment to match its central role in reaching people. ■

Will Parson is the multimedia manager for the Chesapeake Bay Program, staffed by the Alliance for the Chesapeake Bay.

Roosting or flying, the chimney swift lives up to its name

By Alonso Abugattas

The twittering, darting flight of the chimney swift is a common sight in the skies of cities and towns in the Chesapeake Bay region during the warmer months. These birds are often best identified by their peculiar silhouettes even when they are high up in the air — looking like a "cigar with wings," to borrow the description given to them by famed birding writer Roger Tory Peterson.

Male and female chimney swifts are identical in coloration, though the males may be slightly larger. These 5.5-inch birds are dark brownish gray with pale throats, short necks and round heads. Their tails are short, usually tucked to a point when in flight but sometimes spread out and squared. Their curved, scimitar-like wings extend far from the cigar-shaped body, giving them a wingspan more than twice their head-to-tail length. Surprisingly, swifts are not closely related to swallows, appearances notwithstanding.

Chimney swifts are true to their name, being very fast in the air, and their flight is fairly distinctive with rapid wing beats followed by a short glide. They are built to be aerial acrobats, rarely touching down except to nest and roost. They do everything else airborne. They feed, mate, drink, bathe and even snooze on the wing. Feeding is easy, because 95% of their diet is flying insects, using their short but wide bills to capture prey. They skim across water to drink and sometimes scoop up aquatic bugs the same way.

To bathe, they plunge the front of their bodies repeatedly and shake off the excess water as they bounce off the surface. Life on the wing takes them places, and they are said to travel up to 500 miles a day. Chimney swifts have been observed over a mile up in the air, and their summer range is essentially the entire eastern U.S., from the Rockies to the Atlantic, and even into southern Canada.

Chimney swifts gather over a chimney at dusk, ready to bed down for the night. (Lawrence G. Miller/ CC BY-NC 2.0)

The chimney swift (*Chaetura pelagica*) is part of the swift family Apodidae, meaning "without feet." They do have feet, of course, but very short and inept ones, making them clumsy on land and unable to land adroitly on branches. They are built to hang vertically inside hollow trees, chimneys and confined walls (sometimes even upside down, giving them the nickname "chimney bat").

There are 113 swift species worldwide, including a few notable ones — cave-dwelling "swiftlets" that can echolocate in the dark, Alpine swifts that can fly for 200 days in a single flight, and common swifts that winter as far north as Norway and summer as far south as Botswana and northern South Africa.

Before brick and stone chimneys began sprouting from human settlements, chimney swifts likely roosted inside the large hollow trees of old growth forests. But they adapted to human infrastructure, mostly chimneys. The first documented instance of the birds roosting in chimneys was in 1672, though they continued to use hollow trees. In 1840, John James Audubon noted that he found an old hollow sycamore that housed more than 9,000 swifts.

A chimney swift in flight, clearly showing where it got the nickname "cigar with wings." (Daniel Burke/CC BY-NC 2.0)

A wildlife rescue volunteer holds a chimney swift in Houston, TX. (Ed Schipul/CC BY-SA 2.0)

Autumn is the best time to observe one of the true wonders of nature — when chimney swifts assemble in impressive roosts. Up to 10,000 of them can gather in a single large chimney. About 45 minutes before dusk, they form a giant, manic flock over the chosen chimney and then funnel, tornado-like, into it. By packing themselves in densely, they increase the temperature inside the chimney.

Chimney swifts are not as tolerant of one another in the summer, when each nesting location is occupied by a mated pair and occasionally an unmated extra helper. Usually, the male starts building the nest, and the female joins in soon after. They use their salivary glands, which double in size for breeding season, to glue together a nest of mostly twigs onto the chimney wall. They lay 3–5 white eggs, which both parents incubate and which hatch 19–21 days later. The young outgrow the nest at about 20 days old and fledge about 10 days later. The monogamous pair mates for life and shows nest fidelity, usually reusing the same nest each year. Banding has shown that chimney swifts can live up to 14 years.

By the fall, the swifts are in migration. For years, it was a mystery where they went — until 1943, when 13 leg bands were turned in by Indigenous people in eastern Peru, with eight of them having been banded in Tennessee. Since then, they have been found to overwinter in parts of Ecuador, Chile, Brazil and recently in Colombia.

Chimney swifts have benefitted from using chimneys, but the birds are in decline, with an estimated population of 8.8 million, a drop of 2.5% per year since 1966 and a total decline of 72%. It may be that brick and stone chimneys are far less common in modern buildings, and many of those that remain are capped off. Loss of insect prey, dating as far back as the DDT era, may also have contributed to the birds' decline. It's estimated that an individual swift can consume 5,000–12,000 insects daily, amounting to a third of its body weight. While people are now more conscientious of the need for insects and are putting up artificial swift towers to replace defunct chimneys, the losses continue, and one-time catastrophes can be huge. Take for example, Hurricane Wilma. Over three days, the October 2005 storm swept huge numbers of chimney swifts into the sea, affecting up to half their population. ■

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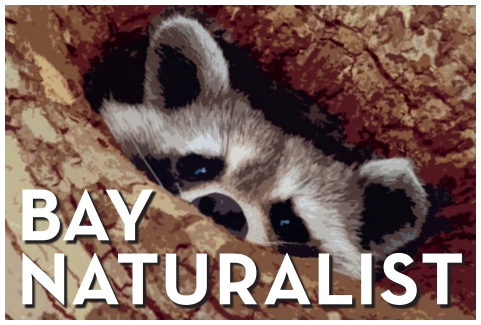
Hard times for the hard-traveling monarch butterfly



By Kathy Reshetiloff

Purple coneflowers are among the many flowering plants that sustain monarch butterflies on their multigenerational migration in the spring and summer. (Jim Hudgins/U.S. Fish and Wildlife Service)

The flowers of common milkweed provide nectar to adult monarchs, while caterpillars feed and grow exclusively on the plant's leaves. (Courtney Celley/U.S. Fish and Wildlife Service)

With summer winding down and fall on the way, many wildlife species are on the move, migrating to warmer areas to overwinter. One of these is a large butterfly with bright orange wings surrounded by a black border and covered with black veins.

That would be the monarch butterfly, endlessly fascinating because of its multigenerational migration in the spring and summer. No single generation makes the journey, which is often 1,000 miles or more. Rather, the trip is made by four or five successive generations. Equally fascinating: In the fall, monarchs of the final generation in this annual cycle do not reproduce. Not yet. They make the entire journey back to the wintering grounds by themselves.

The monarchs we may see flitting through the Chesapeake Bay region this fall — the eastern North American population — are on their way to mountainous central Mexico. Despite the elevation there, it's warm enough for them to survive the winter. They will roost mostly in oyamel fir trees, putting their metabolism and reproductive machinery on pause until spring, when the whole round trip will start again. It's much the same for monarchs living west of the Rocky Mountains, except they overwinter in Southern California, roosting in eucalyptus, Monterey pines and Monterey cypress trees along the coast.

Traveling monarchs subsist on nectar from a variety of flowering plants and must time their spring and fall migrations to coincide with optimal habitat conditions. Their caterpillars need milkweed to survive. If there's no milkweed, there are no monarchs — it's that simple. If nectar sources and milkweed go away, the population declines.

After the adults lay their eggs on milkweed leaves, it takes two to five days for the larvae (caterpillars) to emerge. As elsewhere in nature, the caterpillar's brilliant colors — yellow, white and black stripes — are thought to warn potential predators that it might be toxic. And it is. Milkweed plants contain toxic cardenolides, which the caterpillar can tolerate but birds cannot.

The caterpillars progress through five stages, or instars, over the next two weeks. When the caterpillar is fully grown, it attaches itself to a leaf or a twig and sheds its skin to reveal a harder new skin called a chrysalis. One to two weeks later, an adult monarch will emerge.

As you may have read here and elsewhere, the monarch population has decreased significantly over the last 20 years. The primary drivers affecting monarchs are loss of habitat and/or sustenance in all phases of their lives. Open land once full of flowering plants and milkweed has been developed or converted to agriculture. Overwintering groves are disappearing in California, and illegal logging and development have encroached on Mexico's oyamel fir forests.

Monarch conservation groups for decades have monitored the size of Mexico's overwintering colony, and this year's numbers are unsettling. While the colony size often fluctuates markedly from one winter to the next, measured by acreage (hectares to be exact), the 2023–2024 winter population required just 2.2 acres of fir trees (0.09 hectares), less than half of the previous year's colony size and the second lowest survey count in 30 years, according to Monarch Watch. The survey average for the first half of that period was almost 19 acres, but just 6.27 acres over the following 15 years — a decline of two-thirds of the winter population.

The bright colors of a monarch caterpillar are thought to be a toxicity warning to potential predators. (Joanna Gilkeson/ U.S. Fish and Wildlife Service)

Responding to a petition from conservation groups, the U.S. Fish and Wildlife Service in 2020 conducted a "species status assessment" of monarchs, identifying their needs (at an individual, population and species level), threats and conservation efforts that might reduce threats. In December of that year, the USFWS determined that listing monarchs as threatened or endangered under the Endangered Species Act was warranted but was "precluded" at the time by work on higher-priority listing actions. With this finding, monarchs became a candidate for listing. A final determination as to whether they will be proposed for listing as threatened or endangered is expected this December.

But monarch conservation efforts have long been underway. Conservation organizations and government agencies in the U.S., Mexico and Canada have been collaborating to do whatever is necessary to halt the decline. Efforts include increasing food sources and protecting or restoring habitat along migration routes; data collection and monitoring; and, in California and Mexico, protecting the trees needed for overwintering.

Here in the Chesapeake region, we can do our part by planting milkweed and nectar-producing native flowers. Fields, wetlands, suburban yards, urban gardens and even apartment balconies can be way stations for the monarchs throughout their life cycle. Several species of milkweed (*Asclepias* genus) grow well here and provide caterpillars with the food they need. Common native flowers that provide nectar for adult monarchs include species of aster, blazing star, goldenrod and sunflower, as well as wild bergamot, purple coneflower, New York ironweed and beebalm.

For more plant recommendations, check out the Xerces Society's Monarch Nectar Plants Guide for the Mid-Atlantic. Go to *xerces.org* and search for "monarch nectar plants." There's also a lot of valuable information at the Monarch Joint Venture's website (*monarchjointventure.org*). On the home page in the Resources section, in "downloads and links," there are two particularly helpful PDFs: "Gardening for Monarchs" and "Plant Milkweed for Monarchs." ■

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