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Flood Fund future uncertain as Youngkin pushes for carbon market withdrawal

State racks up $203 million for flood protection from RGGI revenues

BY: **CHARLIE PAULLIN** - SEPTEMBER 30, 2022 12:02 AM

Increased precipitation and sea level rise are leading to more frequent flooding in Virginia. (NBC12)

In January, strong winds led to high tides drowning parts of Hampton. Some roads were impassable, with water levels rising to near the top tread of the tires. Almost two years prior, stormwater had led to flooding severe enough to sweep parked cars down the roadways.

With climate change driving sea levels up and altering rainfall patterns, Hampton is certain to continue to be hit by flooding. What's less certain is where it will get funding to combat it.

Over the past two years, Virginia has accumulated over $200 million for flood protection from the state's participation in the Regional Greenhouse Gas Initiative. But the future of that funding pool is in doubt as Republican Gov. Glenn Youngkin has made it clear he wants to leave the initiative.

Gov. Glenn Youngkin. (Ned Oliver / Virginia Mercury)

“RGGI is a bad deal for Virginia,” said Travis Voyles, acting secretary of natural and historic resources, when he outlined the administration’s plans for withdrawing Virginia from RGGI at the end of last month.

RGGI is the 11-state cap-and-invest program in which energy producers must buy allowances at auction for the carbon they emit, and a cap is placed on overall carbon emissions.

The proceeds of those auctions are returned to the state. In Virginia, half is directed to low-income energy efficiency programs, while 45% goes toward the Community Flood Preparedness Fund, a pool of money that provides flood assistance to communities and local governments.

Including the latest sale of allowances on Sept. 7, Virginia has received some $452 million from RGGI, meaning $203 million will go toward flood resiliency efforts.

Local flood protection

Whether flooding occurs on Virginia’s coast from sea level rise or in its inland areas from rainfall increases, the impacts are real, said Skip Stiles, executive director of Wetlands Watch, a Norfolk-based nonprofit working to address sea level rise adaptation, floodplain management and other waterway impacts.

Prior to Virginia joining RGGI in 2020 — a Democratic priority during the party’s brief period in power — flood protection was left up to local and regional planning bodies, with no central pool of funds governments could draw from. Since the state joined, the Department of Conservation and Recreation, which administers the Flood Fund, has begun paying out grants from the revenues.

“Before Virginia joined RGGI there were ZERO state dollars going toward these resilience efforts,” said Stiles in an email.

Any state spending on these efforts through the Virginia Coastal Zone Management Program, Virginia Sea Grant or the Virginia Department of Emergency Management used money derived from federal agencies, he said.

“We have to assume that if we leave RGGI we will return to that low-priority status for this work,” Stiles said.

The Flood Fund has proved to be “absolutely helpful” to combat problems linked to climate change, particularly stormwater issues and sea level rise, said City of Hampton Resiliency Officer Carolyn Heaps-Pecaro.

“We have a lot of projects lined up,” she said. “We have a lot of ideas for how to fix the town. We need that money to actually make them a reality.”

Hampton was the largest recipient of the second round of grants announced in December from the proceeds, receiving about a third of the $24.5 million the Flood Fund paid out. The projects that were funded included plans for elevating a roadway, improving drainage canals and reducing nutrient pollution.

Millions in local funding is needed to complete the projects, but the state funds help cover design and engineering costs to begin them, Heaps-Pecaro said.

“Several of these projects probably would not have moved forward nearly as quickly as they did had we not received the grant funding,” she said.

Flood Fund dollars also go toward projects outside of coastal areas. In the first round of grants, announced in October 2021, $400,000 was awarded to Buchanan County.

An underpass in Big Rock, Buchanan County, on Aug. 31, 2021. (Sarah Vogelsong / Virginia Mercury)

The Southwestern Virginia locality had been slammed with devastating floods the prior August. The region also suffered severe flooding this July and, according to a Thursday morning update from the National Hurricane Center and Central Pacific Hurricane Center, could lie in the pathway of Hurricane Ian.

The Buchanan funding is intended to go toward an engineering analysis that would lead to a local flood resilience plan and training for a staff member to become a certified floodplain manager.

A quarter of Flood Fund dollars need to go to low-income communities, a designation Buchanan qualifies for, with a median income that in 2019 was less than half of the state's average.

"Buchanan County and our neighbors in Southwest Virginia have experienced devastating recurrent flooding that has increased in recent years," the county's application stated. "Flooding is often thought of as a coastal problem, but we are pleased to see that DCR seeks to direct some of this fund to mountainous and disadvantaged communities such as ours."

An unclear future

While Youngkin has been adamant that he believes Virginia should withdraw from RGGI, the administration's plans for how the state will help local governments pay for the massive costs of flood protection are less clear.

Youngkin has been arguing for months that RGGI proceeds are being generated from an unfair "tax" on electric utility ratepayers. Virginia utilities, which are responsible for about three-quarters of the carbon emissions subject to RGGI, are allowed to pass on the cost of buying allowances to their customers, an approach Youngkin says is flawed.

"RGGI was sold to Commonwealth residents as a deal that returned the 'proceeds' to the ratepayers to offset the costs of the program, but that is not what is happening," a statement from the governor's office to the Mercury said. "We can provide funding for flood resiliency in a transparent way without using an RGGI tax on Virginians."

Youngkin's office said the administration intends to develop a plan to provide direct funding for flood resiliency with the General Assembly. That would require buy-in from Senate Democrats.

But when pressed for specifics of the plan, such as whether it will be crafted through legislation or the budget process, which can involve fluctuating revenues and regular competition among different interests competing for a piece of the pie, the governor's office didn't clarify beyond saying it will "provide direct funding and coordination for flood resiliency."

"We can do this in a way that is transparent and not a hidden tax that was misrepresented to Virginians," the governor's office stated. "This will ensure we have a long-term comprehensive strategy to sustain flood resilience efforts in Virginia."

Millions of dollars remain uncommitted

Even while the future of the Flood Fund remains uncertain, millions of dollars remain on its books.

Before leaving office, Gov. Ralph Northam's administration awarded two rounds of grants in the last three months of 2021 equal to $32.3 million.

A third round of $13.6 million was announced Wednesday, nine months into Youngkin's term.

Round 3 was initially advertised to award $40 million, but with applications requesting nearly $93 million, DCR said it has been authorized to release an additional $30 million. The agency is allowing 32 applicants to revise and resubmit their proposals and plans to make a decision on them by the end of the year.

If DCR awards all $70 million it's been authorized to grant during the third round, Virginia will have spent about 50% of its Flood Fund revenues to date, with just over $100 million left to be designated.

A DCR spokesperson said plans for that unused funding include "future grant rounds as well as loan opportunities going forward." A fourth application round is expected to be opened in early 2023, along with the first round of the newly created Resilient Virginia Revolving Loan Fund, which will provide loans or grants for resilience to not only local governments, but also residents.

Increasing climate impacts

Stiles pointed to data from Carnegie Mellon University, the Northeast Regional Climate Center at Cornell University and the RAND Corporation showing that rainfall intensity has increased an average of 18% since 2006.

Increased rainfall in the state has been documented for years, and the Virginia Coastal Resilience Master Plan projects that between 2020 and 2080, the number of residents living in homes exposed to major coastal flooding will grow from approximately 360,000 to 943,000, an increase of 160%. The report also found that more residential, public and commercial buildings will be exposed to extreme coastal flooding, while annualized flood damages will increase from $0.4 to $5.1 billion.

What's more, a recent Climate Central study found that rising water levels on land reduce the amount of property that local governments can tax.

"Climate change isn't going away," Heaps-Pecaro stated. "We have to accelerate" the fight against it.

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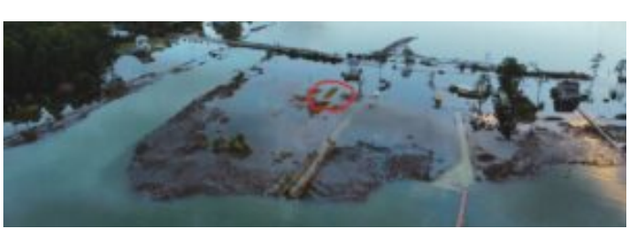

Amid climate change pressures, Virginia reexamines septic…

BY **CHARLIE PAULLIN**

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Amid climate change pressures, Virginia reexamines septic regulations

'It's been 20 years since we've revised the regulations'

BY: **CHARLIE PAULLIN** - OCTOBER 20, 2022 12:01 AM

A flooded property on Windmill Point in Lancaster County with a mound septic system, circled in red, in October 2021. (Photo courtesy of John Bateman via Wetlands Watch)

A photograph shows a stretch of residential properties at Windmill Point in Lancaster County that are completely flooded to the point of appearing to be marshlands. In the middle of one is a red circle.

"I think it pretty succinctly sums up the issue," Lance Gregory, director of the Virginia Department of Health's Division of Onsite Water and Wastewater Services, told members of the state's Joint Subcommittee on Recurrent Flooding earlier this month. "In that red circle you can see a nice mound where that homeowner's aboveground alternative system that probably cost them $30,000 to $40,000 dollars to install is sitting."

The system Gregory was referring to was a septic system, the regulation of which is a major focus for VDH.

The agency must issue a permit for a septic system if property owners don't have access to a public sewer or water system, and counties require septic permits to issue a building permit. Septic is particularly in demand among rural property owners, who tend to be located miles away from public sewer infrastructure, whether on the coastline or inland.

The increased availability of more alternative septic systems, along with greater flooding from sea level rise and intensifying rainfall linked to climate change, is leading the department to reexamine its sewage handling and disposal regulations following legislative changes.

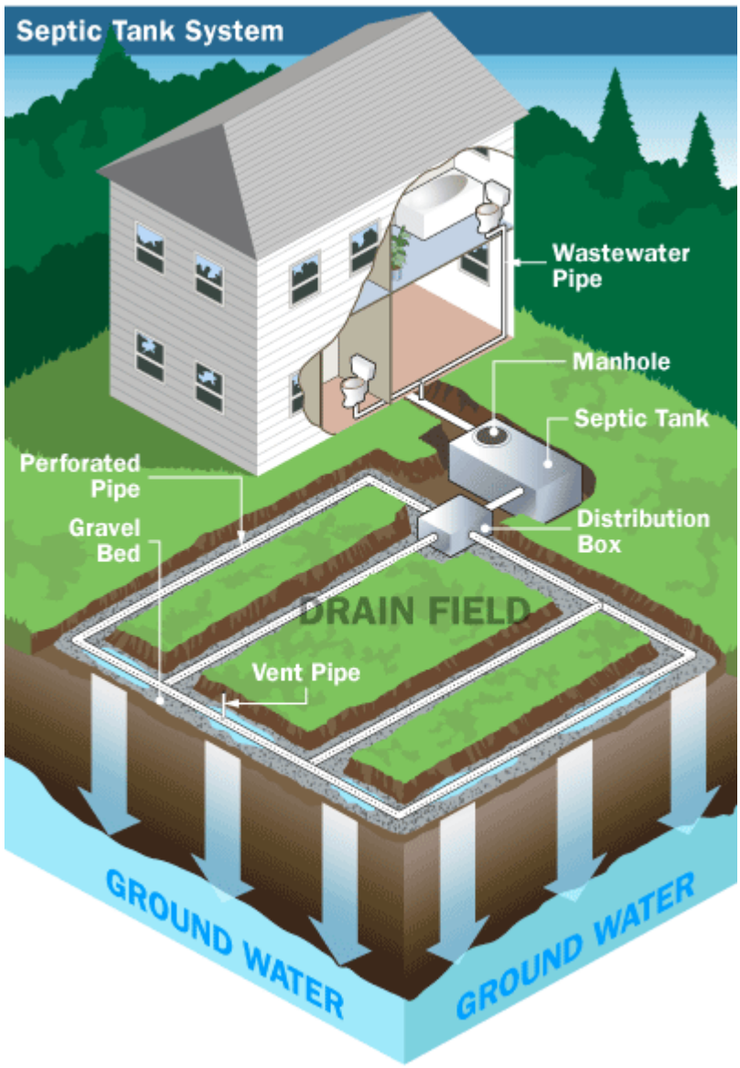
“It’s been 20 years since we’ve revised the regulations, so we’re opening them wide open,” Gregory told The Virginia Mercury.

Technologies

There are about 1.1 million septic systems statewide, with the majority of them classified as conventional.

Conventional systems work by storing wastewater that leaves a building in a septic tank before sending it through a distribution box. The waste is then emptied into the ground before eventually trickling down into groundwater.

The idea is that the ground will absorb the waste, or effluent, and filter out bacteria or other pollutants before the wastewater enters the waterway.



A diagram of a conventional septic system. (Courtesy of cliftonpark.org via VDH)

But about 35% of Virginia’s systems are of a newer alternative style, which can include a mound or pressure disbursement, Gregory said.

The former elevates the area where the waste is released into the ground, creating more earth for it to travel through before reaching the groundwater, while the latter sends waste to a separate drain field. A third approach uses ultraviolet light to treat waste.

But while alternative systems effectively treat wastewater, they can be up to three times more expensive than conventional ones.

Under current regulations, all septic systems must be 70 feet or more from waters that contain shellfish. Now, however, with the emergence of systems more flexible than conventional designs, the department is considering reducing that requirement.

For smaller properties near waters where shellfish live, it can be challenging to install conventional systems within the 70-foot constraint. Gregory said alternative systems coupled with conventional ones located closer to shellfish waters can still effectively treat waste while creating flexibility for property owners.

“If you were able to move 60 feet away and put in some treated effluent, maybe you can get into a sandier soil that would be more accepting of the effluent and be able to actually disperse it,” Gregory said.

Because waste entering the ground can have environmental impacts, any change to setback requirements that is proposed will need to be backed by research, Gregory said.

Climate change

As more and more areas of Virginia’s shoreline are subjected to increased flooding from rising tides and increased rainfall, the new technologies provide some flexibility to property owners adapting to the evolving environment.

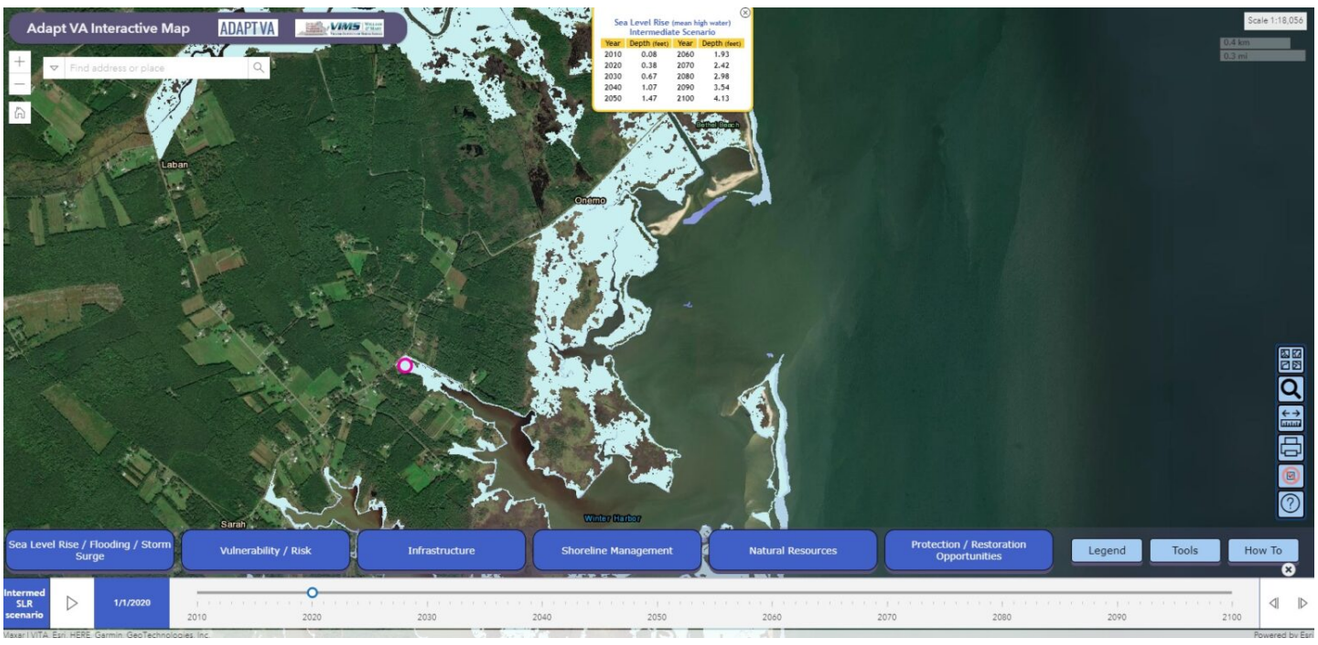
One 2018 report by the Virginia Coastal Policy Center warned that rising sea levels from climate change can submerge septic systems, causing backups that can pose environmental and health concerns.

“The basic problem is that an increasing number of properties will have their septic systems inundated as flooding increases, and we need to recognize that and have a plan and funding to address that,” said Elizabeth Andrews, director of the center.

Skip Stiles, executive director of the nonprofit Wetlands Watch, warned waste from failed septic systems could also impact the aquaculture industry.

“This is not just a public health problem, it’s an economic problem,” Stiles said.

Data from the Virginia Institute of Marine Science’s Adapt Virginia tool show that waters south of Onemo on the Middle Peninsula will see an average increase of 1.07 feet by 2040 and 2.98 feet in 2080 under an “intermediate” sea level rise scenario. Hog Island off the Eastern Shore will see an increase of 2.9 feet and 4.81 feet over the same periods.



A screengrab of the Adapt Virginia Map showing expected future sea level rise on part of the Middle Peninsula. (Courtesy of Adapt VA).

For regulators working to ensure that septic systems in areas facing flooding don’t cause widespread problems, “the issue that we’re talking about at least with climate change is timing,” Gregory said.

In Virginia, most septic permits don’t expire until the system fails, although alternative onsite sewage systems must get an annual maintenance inspection. For large alternative onsite

sewage systems, defined as those that disperse at least 1,000 gallons per day or serve three or more homes, permits must be renewed every five years.

A working group convened under a 2021 law that ordered VDH to incorporate climate change considerations into the septic regulations is considering requiring the state to evaluate permits every 10, 15 or 20 years.

“If things haven’t changed, you renew the permit and continue to use it. Or, if there is some setback and maybe the setback is reduced [because of sea level rise] maybe there’s a condition to add treatment to make sure that system is protective,” Gregory said.

Andrews proposed another way Virginia could ensure periodic inspections of systems in flood-prone areas: requiring a septic system inspection at the sale of a home to inform buyers of what they are getting.

Other states have adopted that approach, she said. But she cautioned that “you don’t want to penalize homeowners who can’t afford to repair their septic systems and make it so they cannot sell their homes and end up renting them instead. So funding assistance needs to be available for repair.”

Several funding programs to help homeowners are already managed by VDH. But they face rising demand: One well and septic repair program that was allocated $11.5 million in American Rescue Plan Act funds stopped accepting applications due to an “unprecedented level” of demand. Gregory said 35% of the applications were from the Northern Neck, Middle Peninsula and Eastern Shore.

Legislation

Septic systems have increasingly become a focus of legislation in Richmond.

In 2021, the General Assembly passed a bill from Sen. Ghazala Hashmi, D-Chesterfield, requiring state septic regulations to consider climate change. The law also allowed Virginia’s Onsite Sewage Indemnification Fund to provide grants and loans to property owners at or below 200% of the federal poverty level to repair failing septic systems.

“The catastrophic flooding that we are seeing in many parts of Virginia pose a serious threat to failing septic systems; these floods are a part of climate change, and we need to anticipate that these dangers will continue to accelerate over the next decade,” said Hashmi in an email. “Environmental and public health hazards will be severe if we do not address these concerns in advance.”

Other legislation from Del. Keith Hodges, R-Urbanna, transferred authority for regulating septic pumpouts, which remove sludge from the bottom of a septic tank to ensure the system can work properly, from local commonwealth’s attorney offices to the Virginia Department of Health.

The agency can work with property owners to correct issues before dropping the hammer on them, Hodges explained.

Both delegates stopped short of saying septic permits should be outright denied because of climate change.

“[We’ve got to] drill down to the problem and solve what’s in front of you,” Hodges said. “Let’s get down and get an actual system that’s going to work in those areas.” If people are denied septic permits to live in climate change-impacted areas, he said property values will plummet, hurting local tax revenues.

Hashmi said local governments and VDH “will need to develop policies for issues that develop from increased flooding.”

But Jay Ford of the Chesapeake Bay Foundation said the state should start denying septic permits for areas that are subject to known flooding linked to sea level rise.

“We clearly have areas that will be unusable in any reasonable sense of the word,” Ford said, adding that failed systems have a direct impact on waterways and the Bay.

Stiles said that while permit denial would be contentious, it should be part of the discussion alongside more frequent inspections.

“The big challenge,” he said, is crafting regulations that are forward-thinking when it comes to climate change impacts.

There are also environmental justice concerns related to African American communities living on land that has historically tended to be of poorer draining quality, Stiles noted.

According to Gregory, VDH will unveil proposed new regulations next year as part of a Notice of Intended Regulatory Action review, which includes public comment.

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Environmental groups using digital tech to bolster data collection

Apps, internet maps leading to localized environmental understanding, engagement

BY: **CHARLIE PAULLIN** - NOVEMBER 18, 2022 12:05 AM

Mussels being collected for monitoring in Virginia's Clinch River. (Sarah Vogelsong / Virginia Mercury)

Digital technology has become an integral part of everyday life, whether through the use of phones, smart watches, drones or more obscure apps found in the depths of the internet.

And while some movements are pushing for decreased screen time, environmental groups are increasingly tapping into technology to collect data on issues important to them.

From pinpointing areas flooded by rising sea levels and intense rainfall in real time to identifying habitats and monitoring water quality, digital technology is increasingly being leveraged to gather information from members of communities directly being impacted by climate change.

"It brings the abstract of climate change to a concrete example," said Skip Stiles, executive director of Norfolk-based nonprofit Wetlands Watch.

The approach has been adopted by the state as well as independent groups: The Virginia Department of Conservation and Recreation has ConserveVirginia, a vast compilation of different datasets used to identify the best areas where land can be conserved.

Given limited resources for conservation efforts, the tool is “more than beneficial, it’s necessary,” said Jason Bulluck, director of the Natural Heritage Program at DCR.

Not only is the advent of widespread community data collection providing the scientific backing that lets policymakers and researchers quantify environmental trends, it’s making the public more engaged with such issues.

The information is “civically legitimate data,” said Jeremy Hoffman, a climate scientist at the Science Museum of Virginia who has used mobile thermometers to identify heat trends in urban environments.

What that means is community members know how data were collected and how to interpret the data.

Sea level rise

Wetlands Watch has been using maps to document environmental changes for years.

But in 2012, when Hurricane Sandy hit and social media was widely used to share reports of flooding, “it got me thinking, ‘What if you were able to use social media to do the same thing we’re doing in church basements?’” Stiles said.

At a cost of about $20,000 and after hiring a developer, the group launched an app in 2015 that allows users to take a photo of a flooded area and mark it on a map with a pin.

Users primarily came from the Norfolk region at first but have grown to include residents of the Northern Neck, students and Girl Scouts seeking to earn their environmental awareness badge. An annual “Catch the King” event is held each fall to document the results of significantly larger high tides that result from solar and lunar alignments at that time of year.

“We’re now developing a network we didn’t have before,” Stiles said.

The group has been sharing the data to inform decision making by regional planning districts and the Virginia Institute of Marine Science, where researchers had found compiling individual instances of flooding from local police reports to be laborious, Stiles said.

The challenge is keeping people involved long enough to collect data over time and better visualize what’s going on.

On the other side of the state, nonprofit Appalachian Voices uses the app Epicollect to gather water monitoring data in mines instead of forcing researchers to collect information by hand on site and then return to offices to enter it into computers.

That’s in addition to using satellite imagery to understand mine recovery or Google Earth Engine to see the status of vegetation on surface mines, said Matt Hepler, an environmental scientist with the group.

Maps for mussels

On the wildlife front, mapping is now being incorporated into assessments of Virginia mussels, mollusks that are beneficial in improving water quality but have been severely depleted over the years.

The Chesapeake Bay Foundation is using grant funds to build a map that will let viewers identify habitats where mussels can live. Data collected from the map will then be incorporated into a plan that is being devised with the James River Association to strategically guide decision making about habitat creation.

“The technology has advanced a lot. Now we can make these investments at a large scale that make a difference,” said Erin Reilly, senior staff scientist for the James River Association.

The map tool, which is expected to be operational within a year, will compile observed habitat data from several agencies to identify possible new habitats for species, explained Joe Wood, senior scientist with CBF.

"There's so much work to do, and obviously we have very limited resources," said Wood. However, he said, these efforts, coupled with $400,000 the General Assembly allocated during the last session for the crafting of a statewide mussel restoration plan and collaboration with other agencies like the U.S. Fish and Wildlife Service's Harrison Lake National Fish Hatchery, can help guide decisions.

"We're really starting to move the needle," said Rachel Mair, project lead at the Harrison Lake hatchery.

State endeavors

When Margaret Smigo, water-borne hazards program coordinator at the Virginia Department of Health, was brought on in 2016, the agency's algal bloom map was being used similar to a beach monitoring map that was used to document bacteria concerns.

The algal bloom map allows people from any area of the state to report blooms to VDH. A harmful algal bloom task force, co-led by VDH and the Department of Environmental Quality, is then deployed to collect samples to verify the report. Once it's confirmed and an advisory is issued for the body of water, the designation is added to VDH's map, which is based off a free Google Map interface, for public viewing.

Prior Bloom – No Advisory or Alert in Effect – *Investigations which have no further information associated with the event, typically early season or late season sites where algal activity was but is likely no longer occurring; or, when the end of the response season requires discontinuation of alerts or advisories.*

Algae – No Advisory in Effect – *algae species, algae concentrations, and algal toxins are not at levels which are harmful to humans or pets, but may be harmful to aquatic life such as fish.*

Crowd-Sourced Reports - Lake Anna Only - *public reports of visible blooms (scum, discolored water) in a waterbody known to have harmful blooms or which has an active advisory in place. These reports are not verified by sampling or analysis. Humans and pets should avoid scum or discolored water.*

Algae Concentrations at Unsafe Levels – Advisory in Effect – *algae species, concentrations, and toxins are at levels which may be harmful to humans, pets, livestock, and aquatic life such as fish.*

Algal Mat Alert in Effect – *potentially toxic algal mats observed in this area were widespread and possibly unavoidable. If contact with mats cannot be avoided in a given area, do not attempt recreational use. Avoid contact with mats and do not allow people, pets, or livestock to consume. Consumption of mats may cause severe illness or be fatal.*

Algae is absent or present but below alert and/or advisory thresholds – No Algae Advisory or Mat Alert in Effect - *While sample results and observations may not have indicated the need for an advisory or alert on sample date, environmental conditions may change quickly. If water is discolored, has a foul odor, if mats or scums are unavoidable, or if there are dead or dying animals present, avoid those water areas! When in Doubt, Stay Out!*

A screenshot of the Virginia Department of Health harmful algal bloom map. (Courtesy of VDH)

The crowdsourcing approach is helpful to the agency, which has an HAB program for the Tidewater region but doesn't have a comprehensive approach to monitoring sites in fresh waters, Smigo said. That's particularly useful for areas like Lake Anna, which has about 200 miles of shoreline encompassing numerous "micro-climates" that have different characteristics despite close proximity to each other.

"There are a lot of different situations" where data collection can be helpful, Smigo said. The work is regularly carried out by groups like the Friends of the Shenandoah River and the

Intercoastal Potomac River Basin, who organize local collection efforts to monitor the different areas of the state.

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