



ENERGY + ENVIRONMENT

GOVERNMENT + POLITICS

As 2025 deadline for Chesapeake Bay cleanup looms, Virginia zeroes in on agriculture

BY: SARAH VOGELSONG - JUNE 8, 2021 12:02 AM



Cattle in Highland County. (Sarah Vogelsong/Virginia Mercury)

On Holt Farm, the grass may literally be greener on the other side of the fence.

Woody Ward wasn't expecting that. The farmer, who raises roughly 80 head of cattle as well as hay on his Albemarle County property, initially thought putting up fences around the three creeks that cut through his pastures would just control erosion and keep his herd healthier.

But as time passed and Ward began planting trees as buffers along the creek banks, he noticed that the new grass springing up beyond the fences was unusually lush – and it was beginning to creep inside his pastures to where his cattle browsed.

“It’s almost like I have this stock of grass that I’m not going to touch that will grow up and go to seed,” he said. Other benefits have emerged too: the streamside fencing laid the foundation for Ward to begin rotational grazing, which he said has improved the quality of his pasturage. Water quality in his creeks has improved dramatically; recently, he’s even seen four-inch-long freshwater clams. And the herd has faced fewer threats from bacteria-laden creek waters or falls on slippery slopes.

For Virginia environmental officials, though, the greatest beneficiary of Holt Farm’s fences isn’t Ward. It’s the Chesapeake Bay.

As the bay region draws closer to the federal 2025 deadline for cleaning up the nation’s largest estuary, agriculture is increasingly in the spotlight.

In Virginia, “far and away the largest portion of the remaining reductions are anticipated to be gained from the agricultural sector,” said James Davis-Martin, the Virginia Department of Environmental Quality’s Chesapeake Bay coordinator.

But with thousands of farms across the commonwealth, from the flat, sweeping row-crop operations of the Tidewater to the hilly, cattle-heavy enterprises of the Shenandoah region, the challenge is a daunting one. And while the General Assembly has in recent years devoted record levels of funding to programs that help farmers pay for the costs of agricultural practices that reduce polluted runoff from farms, doubts remain about whether Virginia will meet its 2025 agricultural targets at its current pace.

“What we’ve done up to this point will not get us to the finish line,” said Davis-Martin. “We need to redouble our efforts, no doubt.”

Thousands of farms, dozens of strategies

Since the 1980s, bay states have been working to clean up the Chesapeake Bay.

By that time, the estuary had become overwhelmingly polluted by sediment, nitrogen and phosphorus, causing large-scale die-offs of aquatic plants and the fish and shellfish that depended on them. “The Bay has suffered serious declines in quality and productivity,” a 1987 cleanup agreement between Virginia, Maryland, Pennsylvania, Washington, D.C. and the federal government concluded.

Numerous commitments over the years to stem the flow of pollution within the bay’s 64,000 square mile watershed had only variable success, however.

Then in 2010 came the Total Maximum Daily Load, an EPA-imposed “pollution diet” for the bay that required each of the six bay states and Washington, D.C. to craft detailed, three-phase cleanup plans. The end target of these efforts was 2025.

Officials quickly realized there was no single source of the pollution problem. Wastewater treatment plants were a big contributor, but septic systems and stormwater runoff from suburban and urban areas were too.

So was agriculture. During rainstorms, nitrogen and phosphorus from fertilizers and soil ran off fields in large quantities and were deposited into creeks and rivers that eventually emptied into the bay. Cattle and other grazing animals caused soil erosion; left to meander into creeks, their droppings significantly harmed water quality.

“You realize how much bacteria one cow dropping can do – an amazing amount of damage down the stream,” said Ward. “Some of these guys have 30, 40, 50 cattle up against and hanging all day in the creek.”

Virginia policymakers as well as the agricultural and environmental communities came up with a range of solutions to try to stem the tide. Streamside fencing was one. Forested buffers, which have proven one of the most effective strategies for capturing and filtering nutrients before they reach waterways, and nutrient management plans were others.

But while agricultural pollution reductions have been a part of every state cleanup plan, officials and environmentalists have long acknowledged the unusual difficulty of the task.

“Controlling pollution through agricultural practices is a less precise work than is controlling them from a wastewater plant,” said Peggy Sanner, Virginia executive director of the Chesapeake Bay Foundation.

The cost-share roller coaster

Chief among the hurdles Virginia faces in reducing agricultural pollution in the last four-year stretch of the cleanup is money.

While some strategies the state encourages farmers to adopt like nutrient management plans and the planting of cover crops to reduce erosion can easily be justified for the financial and soil benefits they yield, others are a harder sell. Fencing to keep animals out of streams is pricey and requires farmers to install another water source. Even if trees are supplied for free by organizations like the James River Association, forested buffers take land out of production.

“Those are the ones that we’re having to try to find ways to sweeten the pot,” said Davis-Martin.

Federal cost-share funding through the Conservation Reserve Enhancement Program is one way to make the strategies more attractive, but many farmers describe its requirements as cumbersome, preferring instead the Virginia Agricultural Cost-Share Program, which they say is more flexible.

In the state program, “you had guidelines of what you needed to do, but you weren’t told exactly you had to do this,” said Tony Pullaro, farm manager at Edgemont Farm, a historic

property designed by Thomas Jefferson in Albemarle. “They worked with you, not against you.”

For many farmers, then, how much funding is available through the state’s agricultural cost-share program is the deciding factor in whether they adopt pollution-reduction strategies.

“By and large, producers have responded to achieving the conservation goals when there’s funding available,” said Kyle Shreve, executive director of the Virginia Agribusiness Council. “I think the thing that gives producers pause is asking them to go it alone, because you fundamentally are asking them to change their business practices.”

Funding levels for Virginia’s cost-share program have been erratic, however, as has funding for technical assistance through the state’s soil and water conservation districts. Appropriations over the past decade have dipped as low as \$9.1 million for fiscal year 2014.

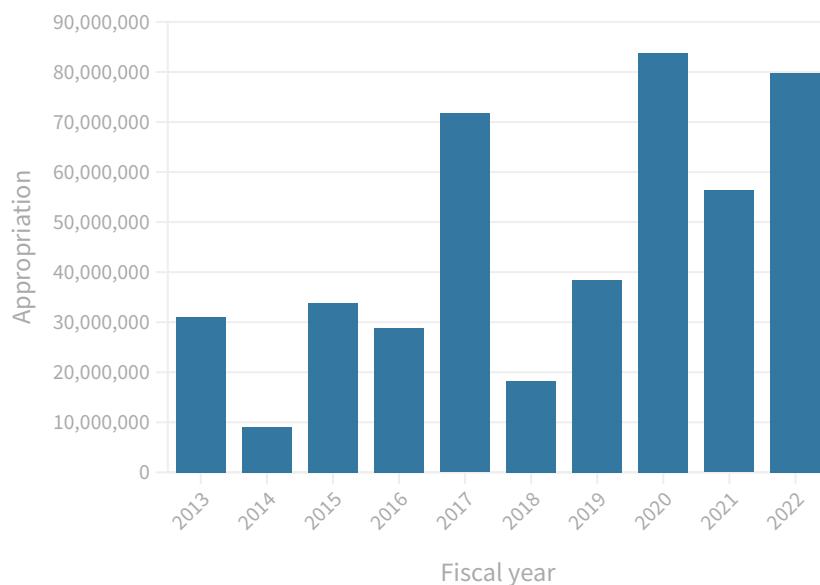
That’s hampered adoption of pollution reduction strategies.

“Producers respond when cost-share is available and they know it’s going to be there,” said Shreve. “We’ve had big years in the past, but when it’s not sustained ... it’s very difficult to depend on it.”

Davis-Martin described the “roller coaster ride of cost-share funding” as “not good.”

“It makes it hard for soil and water conservation districts to keep trained staff,” he said. “It’s not conducive to building capacity over time.”

Funding for Virginia agricultural cost-share and technical assistance



Source: Virginia Department of Conservation and Recreation

In recent years, and following a 2017 study ordered by the General Assembly, funding has increased and begun to stabilize. Cost-share and technical assistance received \$83.7 million for fiscal year 2020, \$56.3 million for FY2021 and \$79.8 million for FY2022, according to budget data provided by the Department of Conservation and Recreation.

Darryl Glover, director of DCR's Division of Soil and Water Conservation, said that if state and federal funding remains at FY2022 levels every year through 2025, that will "give the agricultural sector a solid chance to meet the pollution reduction goals."

Others are more skeptical. Years of shortfalls in funding have never been made up, Shreve said.

"If every year you don't hit the target set by the needs assessment, that leftover total gets rolled into the next year, so it really becomes a compounding problem," he said. "It really does need to be a full-fledged, full-court press in order to get it done."



 Cows crossing a stream on a farm. (U.S. Environmental Protection Agency)

Voluntary or mandatory?

Getting Virginia to its 2025 goals isn't just a matter of dollars, say people working on the state's agricultural cleanup. It will also require continued buy-in from farmers.

Many of Virginia's most heated agricultural debates in recent years have centered on a fundamental question: Should pollution reduction practices like stream fencing and nutrient management plans be voluntary, something the state incentivizes farmers to do, or should they be mandatory?

After hours of hearings in 2020, Virginia settled on the voluntary course – for now. A law that would have made both fencing and nutrient management plans mandatory was amended to allow the practices to remain a choice until 2025, when they become a requirement if reduction targets haven't been met.

Shreve said that was the right course: "You are going to get more participation and industry buy-in by continuing to incentivize rather than the opposite, in which you are mandating things," he said.

Not everyone agrees.

"There is a riparian right the state could enforce, and I think that's where this needs to go," said Ward. "Why isn't it the law to keep your cows out of the creek?" Pullaro said he urges other farmers in Albemarle to institute the reduction practices now, "while funding is available, because one day in the future it might come out of your pocket and be mandatory."

In the meantime, Virginia is tweaking its cost-share program to make it more appealing to farmers.

Over the past three years more than 100 changes have been made to the program "to significantly increase the available options and flexibility of many best management practices in order to encourage as many farmers and ranchers to participate ... as possible," wrote Glover in an email.

One particularly notable effort has been a "whole farm approach" pilot in the Three Rivers Soil and Water Conservation District at the western edge of the Middle Peninsula. Instead of requiring farmers to apply for reimbursement for each pollution reduction strategy they used, the pilot let them combine different practices under one cost-share application. The reduction in paperwork "has been very appealing to farmers," said Glover, and his agency has seen "a very significant increase in the number of acres participating" in the cost-share program in the district.

Many farmers suggest the state's preferred management practices are actually far more widespread than officially recognized. They aren't alone: Glover said his agency "believes that

certain agricultural nutrient reduction practices are underreported, especially cover crops and transport of poultry litter out of Virginia's Chesapeake Bay watershed."

Depending on how extensive the underreporting is, it could have a big impact on the state's pollution reduction calculations – and how close it gets to its 2025 targets.

To ferret out the problem, the Department of Conservation and Recreation teamed up this spring with groups including Virginia Cooperative Extension and Virginia Farm Bureau to survey farmers on their practices. Results are likely to come out this fall.

Still, the state can't force reporting: "Farmers have certain rights to privacy, as we all do, and if they don't want to report, that's a position they can take," said Sanner.

In Ward's view, many of the challenges facing Virginia as it approaches the 2025 cleanup deadline can be met head-on by spreading the word.

"Information and getting it out to those guys, the landowners and farmers, that's the trick," he said. "All of us tend to stay in our shells."



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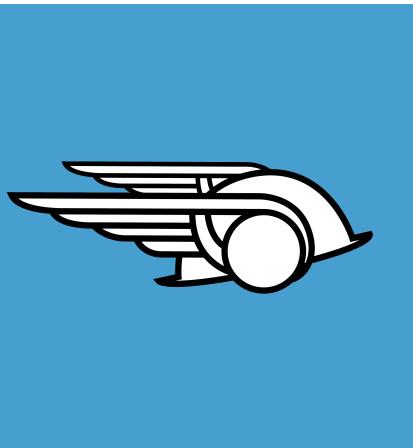
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BY SARAH VOGELSONG

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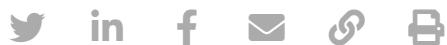




ENERGY + ENVIRONMENT

Policymakers are banking on trees to cut carbon. Forest experts say Virginia needs more seedlings.

BY: SARAH VOGELSONG - JUNE 1, 2021 12:01 AM



Jake Good, a nursery technician at Virginia's Augusta Forestry Center, looks for pin oak acorns that have germinated. (Sarah Vogelsong/Virginia Mercury)

CRIMORA – In nine neat fields tucked between a bend of the South River and a Norfolk Southern line, a key piece of Virginia's carbon-free future is taking shape.

Here, in many places appearing as little more than a green haze floating above the soil, some 50 varieties of trees are slowly poking shoots up toward the sun. Dozens are hardwoods, slower growing than Virginia's inexhaustible stands of pine but especially prized for their ecological value — their long lives, the nuts and fruits they furnish wildlife, the pollution filtration and soil stability their roots provide — and, of course, the climate change-causing carbon dioxide they remove from the air.

Policymakers and companies both nationwide and in Virginia are banking on trees as a vital component of achieving net-zero emissions. Forests, with their carbon sequestration possibilities, are one of the most powerful ways officials have to offset the carbon that will continue to be pumped out as fossil fuels linger and in some industries like steelmaking remain a fixture.

But every tree starts with a seed. And as plans to sequester carbon in millions of acres of forest proliferate, many forestry experts say the existing supply of seedlings falls short of what will be needed to meet ambitious climate change goals.

"What's become painfully obvious is there's just not enough hardwood seedling capacity out there," said Chandler Van Voorhis, co-founder and managing partner of ACRE Investment Management, a conservation finance investment firm headquartered in The Plains, Va. "There's plenty of pine, but pine's not what people are looking for."

In Virginia, supply pressures are set to be even further stretched by Chesapeake Bay cleanup. As the region nears its 2025 deadline for major pollution reductions in the nation's largest estuary, an increased push to plant forested buffers as a way to filter out excess nutrients from runoff before it reaches waterways will also compete with reforestation projects for what may soon be a limited supply of seedlings.

If half of all the carbon and water quality projects planned come to fruition, "there's going to be a significant need for more seedlings," said Ed Zimmer, deputy state forester for the Virginia Department of Forestry. "Where are they coming from?"

A cradle of carbon capture

Today in Virginia, most of those seedlings come from one place: the state-run Augusta Forestry Center in Crimora, just north of Waynesboro.

Opened in 1967, the 189-acre Crimora facility is one of a host of tree nurseries operated by states. Unlike commercial nurseries, Crimora specializes in one- to two-year-old seedlings, of which roughly 70 percent go to conservation projects encouraged by the state.

"The vast majority of buffer plantings in Virginia are things coming from here," said Zimmer. Alongside "usual suspects" like oaks, black walnut, flowering dogwood and redbud, every year the nursery also experiments with a few less regionally common species, like basswood (also called linden), black gum and the once-widespread but nearly eradicated American chestnut.



A pin oak acorn that has begun germinating at the Augusta Forestry Center. (Sarah Vogelsong/Virginia Mercury)

“It waxes and wanes,” said nursery manager Josh McLaughlin, who is one of only two full-time employees who today works in the field at Crimora.

Facilities like the Augusta Forestry Center once flourished nationwide, but recent years have seen a [rash of closures](#) due to constrained budgets in the wake of the 2008-09 recession and reluctance in some places to compete with private enterprise. [West Virginia closed its last state-run tree nursery](#) this spring.

Virginia too has struggled at times to keep its nurseries, which are supported by seedling sales revenues, afloat.

“Several years ago there was discussion of whether we were going to keep Augusta open,” said Josh McLaughlin, manager of the Crimora nursery. Not only were recession-era finances tight, but ongoing slowdowns in coal production had also dampened some of the market for restoration of former mine sites, a job that uses trees extensively for reforestation.

The acceleration of carbon markets helped ease the nursery’s straits, McLaughlin said.

“It was the perfect offset,” he said. If it hadn’t been for that, “that probably would have been the year we shut down.”

Today not only is the Augusta nursery still in operation, but 2020 saw its orders double over the prior year. Altogether the facility produced 4.2 million seedlings, more than a quarter of them hardwoods. The Garland Gray Forestry Center in Sussex County, which predominantly turns out loblolly pine, grew 30 million seedlings.

“The evidence would suggest that Virginia grows 20 percent of all seedlings in state-run nurseries” nationwide, said Zimmer.

The carbon markets are only set to expand. Virginia’s General Assembly last legislative session signed off on a proposal to form a task force to [explore the potential of carbon sequestration](#). President Joseph Biden’s administration has included “carbon sinks” linked to forests and agriculture as part of its plans for reducing U.S. greenhouse gas emissions by at least 50 percent from their 2005 baseline by 2035. And this spring, freshman U.S. Rep. Cliff Bentz, R-Ore., proposed the [Solving Our Shortages for Seedlings Act](#), which would create a “national seedling strategy” for reforestation and put \$1 billion toward a loan program for federal, state and tribal nurseries.

Big businesses have been particularly eager to jump into carbon markets. One of ACRE Investment’s companies, Green Trees, annually sells credits for over a million metric tons of carbon sequestered from 130,000 acres of hardwood forest in the Mississippi Delta to companies including Norfolk Southern, Duke Energy, Microsoft, Shell and Bank of America.

“What’s fundamentally changing is that these big companies are realizing that as they make these net-zero commitments ... there’s two ways that you get there, and really you need to employ both of them,” said Van Voorhis. One is to decrease actual emissions. The other is to offset them.

“Think of nature as a technology. Think of trees as a technology,” he said. Then it’s just a matter of scaling up the technology – planting more trees – to absorb more and more carbon.

Expansion

The foresters who work at Augusta are keenly aware of what’s coming down the pike.

“Folks engaged in (the carbon) market have told us that east of the Mississippi in the U.S., they see the availability of these types of seedlings in the 20 million per year range, which is a very, very small number,” said Zimmer. “We’d need a lot more seedlings than that just for the initiatives folks have in Virginia.”

Already expansion is under way at Crimora. The biennial budget passed by the General Assembly and signed by Gov. Ralph Northam this spring allocated an extra \$290,000 to the Department of Forestry to expand operations at the nursery. McLaughlin said the plan is to increase the number of planted acres at Crimora from 18 to 20 this year, with another leap to 25 next year. A facility at New Kent where the agency conducts research and propagates seeds also could serve as space for more fields if needed.



■ Augusta Forestry Center manager Josh McLaughlin talks about tree seedlings. (Sarah Vogelsong /Virginia Mercury)

“We do have the potential to bring currently fallow fields at New Kent into seedling production again,” Zimmer said. “It would take a fair amount of capital investment to do that, but given that we have the land and we have the infrastructure already, it would probably be the cheapest way to do that.”

Virginia isn’t alone in the potential it sees for the tree seedling industry. One joint study by American Forests and the Nature Conservancy identified [133 million acres that would be suitable for reforestation for carbon capture](#). Many of those are in the Southeast, where soil and weather combine to produce hothouse conditions for many trees and where most land is privately owned, allowing more rapid industry growth.

“It doesn’t mean there’s not going to be activity out in California and Oregon and Washington. Absolutely, there’s going to be pockets of things,” said Van Voorhis. “But when you’re talking about massive (expansion), where the numbers are going to roll up, it’s going to be in the Southeast.”

Without the seedling nurseries that will fuel that growth, “everything is for naught,” he added.

“This is where the rubber meets the road, because someone has to actually start growing the material so that companies like us can go out and plant the material.”

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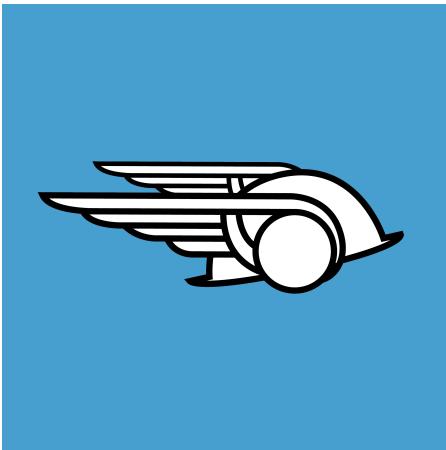
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ENERGY + ENVIRONMENT

VIRGINIA WILDLIFE

'Slow the spread' has been a COVID rallying cry. Va. officials have done it for a deadly deer disease for years.

BY: SARAH VOGELSONG - APRIL 14, 2021 12:05 AM



A white-tailed deer. (Style Weekly)

The descriptions sound like a scene from a hunter's horror movie. A deer staggers across a lawn, with unseeing eyes and drunken gait. Or maybe it is standing in a stream, drinking and drinking until it urinates but still will not stop, as if compelled to keep taking in water. Or it stands frozen in front of a house, staring, unable to fathom how to turn and go around its walls.

Basically: zombies, but make them deer.

Now imagine that before this final episode, the deer has seemed completely normal for more than a year, even though it is infected with the disease that will ultimately spell its doom.

The scenario isn't hypothetical, although in Virginia it still remains fairly rare. For just over a decade, chronic wasting disease has been slowly penetrating white-tailed deer populations in the state's northwestern counties, worrying wildlife officials who know the disease has no cure but hope to contain it as much as possible.

"There is not a known magic bullet that you can put into play and eradicate this disease or really significantly decrease transmission or spread," said Megan Kirchgessner, the Virginia Department of Wildlife Resources' wildlife veterinarian.

Since the first case of CWD was detected in Frederick County in 2009, [state officials have recorded 108 positive cases](#) in nine counties stretching as far south as Culpeper and from Shenandoah east to Loudoun. There likely have been more: because the symptoms of chronic wasting disease don't appear until the final weeks of its progress, it's difficult for researchers to identify possible carriers.

"Visibly a lot of these deer, they could look completely fine and still test positive," said Ali Woodfolk of Hidden Pines Meat Processing in Madison. "Most hunters aren't going to pull a deer out of the woods that looks bad."

Hidden Pines is one of more than a dozen businesses and community groups that have been working with state wildlife officials in parts of Virginia where CWD has been detected to track its spread. In addition to conducting some sampling of carcasses, the processor collects and transfers deer heads to the wildlife department for testing. Last year, the Department of Wildlife Resources was able to collect 257 deer heads from voluntary dropoff sites throughout the CWD management areas, many of them just a refrigerator tucked at the rear of a country store.

"It at least gives them a baseline of what's out there," said Cyrus Baird, manager of government relations for Safari Club International and a Virginia hunter. Still, he fretted that 257 heads is "staggeringly low" in the context of all the deer hunted in Virginia annually.

"We're pretty lucky here in Virginia that it's pretty much relegated to four or five counties up in the northwest," he said. "The main concern is it keeps creeping. It's one county away from where I hunt."

The slow march of prions

Outside of hunting communities, chronic wasting disease isn't widely known. But the condition is part of a broader family of maladies known as prion diseases or transmissible spongiform encephalopathies.



Hunters bring a deer to a checkpoint to be sampled and tested for chronic wasting disease. (Virginia Department of Wildlife Resources)

The latter may be a mouthful, but it hits on the key features of these diseases. They can be transmitted from individual to individual. And they operate by attacking the brain; “spongiform,” according to the National Institute of Neurological Disorders and Stroke, “refers to the characteristic appearance of infected brains, which become filled with holes, until they resemble sponges when examined under a microscope.”

Prion diseases, which occur when a type of protein called a prion causes other proteins in the brain to fold abnormally, all cause neurological degeneration and eventually are fatal. Among humans they are also rare: Johns Hopkins University and NINDS estimate that only between 300 and 350 cases occur in the U.S. each year.

In humans, the most prevalent prion disease is Creutzfeldt-Jakob disease. A form that affects sheep and goats is known as scrapie. Elk, deer and moose can contract chronic wasting disease.

But by far the most widely recognized of the prion diseases is bovine spongiform encephalopathy – the “mad cow” disease that sparked such fear in the United Kingdom in the 1990s.

Much of the alarm over mad cow disease stemmed from its special ability to be transmitted to humans: scientists have mapped a link between the consumption of infected meat and the development of a variant of Creutzfeldt-Jakob disease. As of 2019, 232 human deaths worldwide had been linked to mad cow disease, most of them in the United Kingdom, according to the U.S. Food and Drug Administration.

“At this time there (are) no confirmed reports of chronic wasting disease being able to infect humans,” said Kirchgessner. But the ability of the bovine prion disease to leap species has led to an influx of research on chronic wasting disease, which like all prion diseases isn’t well understood.

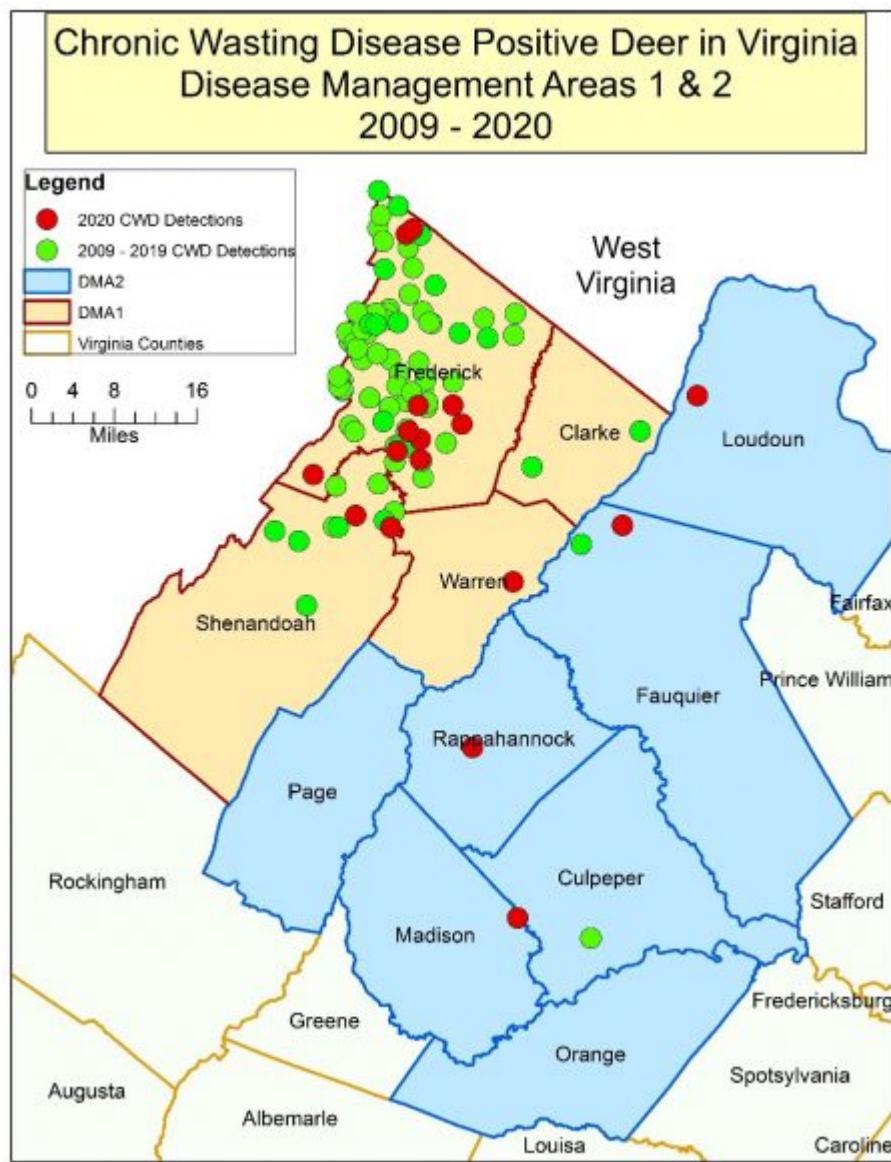
Chronic wasting disease is also spreading and unlike other prion diseases is particularly difficult to contain because it impacts free-ranging wildlife rather than captive domestic animals. While scientists believe CWD can be spread through animals’ urine, feces and saliva, the proteins that cause the disease can also persist for long periods of time in soils and plants.

Today, CWD is found in at least 26 states, and infection prevalence in parts of Wyoming, Colorado and Wisconsin could be more than 40 percent, according to the National Wildlife Health Center within the U.S. Geological Survey.

In Virginia, the leading hypothesis for CWD’s appearance is that it spread from West Virginia.

"It had been detected for the first time just over the border in West Virginia in 2005," said Kirchgessner. "We really increased our surveillance efforts."

Four years later, the first Virginia case appeared in Frederick County. To date, the county remains [the epicenter of the disease in the commonwealth](#), accounting for 80 percent of all cases detected.



Positive cases of chronic wasting disease in Virginia's two disease management areas. (Virginia Department of Wildlife Resources)

Holding the line

Since then, state wildlife officials have attempted to slow the spread.

In the wake of positive cases, Virginia created disease management areas in which CWD had been detected or was suspected. The Board of Wildlife Resources forbid hunters from transporting whole carcasses or any deer's brain and spinal cord – particularly dangerous vectors for transmission – outside their borders. Feeding of deer, which Kirchgessner

compared to “pouring gasoline on a fire” during a 2019 public meeting in Culpeper, was prohibited in these areas as well.

“You are encouraging deer to come together, you’re encouraging healthy deer to mix with sick deer, and you’re really speeding up or amplifying … the transmission of disease from sick to healthy deer,” she told hunters.

The Department of Wildlife Resources also [banned the use of natural deer lures](#) made using animal secretions that could potentially transmit the disease. And it instituted certain mandatory testing days while amping up campaigns to encourage hunters to voluntarily test animals they killed and discard leftover parts in landfills where they would be less likely to act as a vector.

Testing has remained the heart of officials’ efforts. [Regulatory changes sent out for public comment](#) by the Board of Wildlife Resources this spring aim to further extend hunting seasons in management areas to not only reduce potentially infected populations, but also increase testing opportunities.

“We’re putting the best possible science to the actions that are being put before you,” Gray Anderson, chief of the department’s Wildlife Resources Division, told hunters in Culpeper in 2019. “Paramount” to the state’s efforts, he said, “is the persistence of a healthy deer herd and also the persistence of a tradition of deer hunting.”

“It’s literally just about containment and understanding where it’s from,” said Woodfolk. Still, she added, processors like Hidden Pines don’t have much guidance about what to do if a deer they process tests positive for the disease given the risks of prions being transmitted via contact with an infected carcass.

“From a business perspective, if we process a deer that’s positive, what’s our obligation? It’s pretty indeterminate,” she said. On an ethical level, she said Hidden Pines would feel obligated to notify other clients of the disease’s detection, but no state laws or regulations require them to do so.

As wildlife officials prepare to see the disease continue to push beyond its current borders, Baird is expecting an increase in another consequence that has complicated public health officials seeking to stem COVID-19’s spread: denial.

“There’s a not small portion of hunters out there who think it’s a conspiracy, who think it was made up by the insurance agencies or made up by game departments across the country,” he said. It’s an attitude that strikes fear in him: “I don’t want the collective hunting community or the deer herds in these states to be a fraction of whatever they are now because people didn’t take it seriously.”

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Sarah is the Mercury's environment and energy reporter, covering everything from utility regulation to sea level rise. Originally from McLean, she has spent over a decade in journalism and academic publishing and previously worked as a staff reporter for Chesapeake Bay Journal, the Progress-Index and the Caroline Progress. She is the recipient of a first place award for explanatory reporting from the Society of Environmental Journalists and has twice been honored by the Virginia Press Association as "Best in Show" for online writing. She was chosen for the 2020 cohort of the Columbia Energy Journalism Initiative and is a graduate of the College of William and Mary. Contact her at svogelsong@virginiamercury.com

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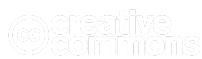
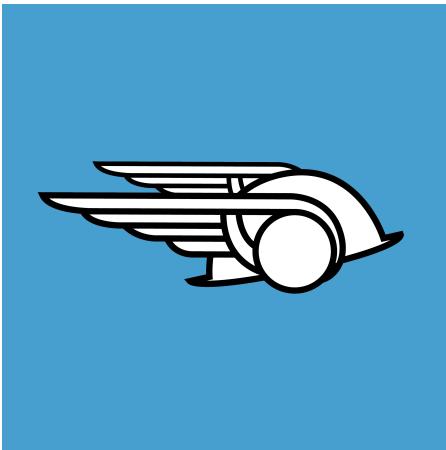
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