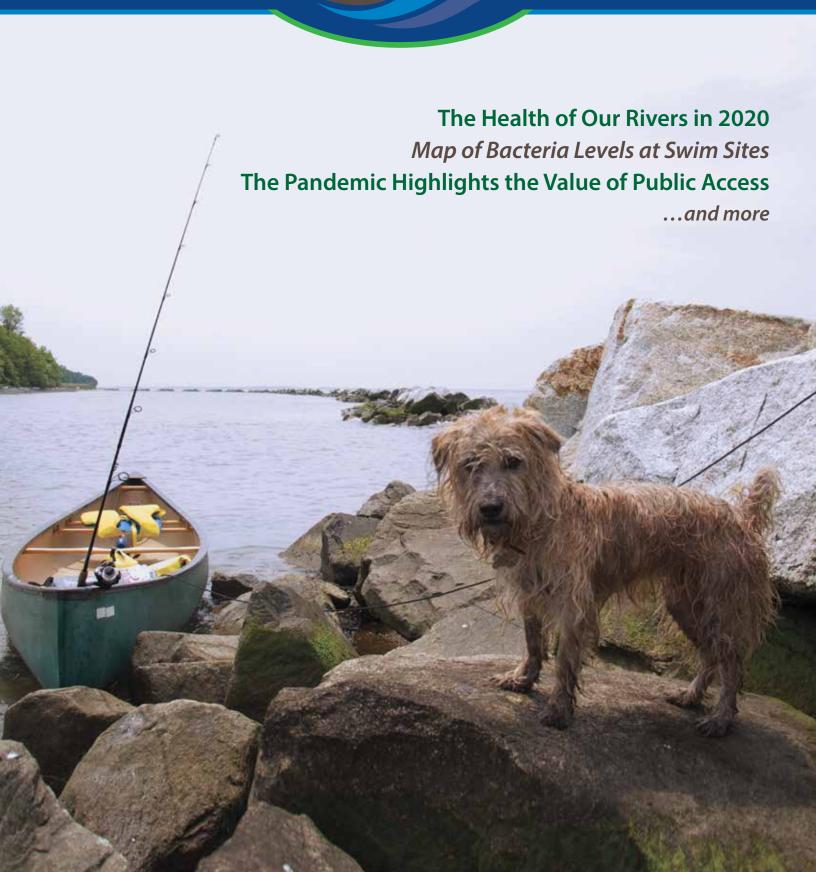
SPRING 2021



MESSAGE FROM THE DIRECTOR

Maps are critical to knowing where we are and where we're going. At ShoreRivers, we use science to pursue and apply knowledge based on logic and evidence. We also look to our communities and weigh humanist values to help map our course for conservation.

We have included a few different maps in this issue of the Advocate. Each one depicts a different lens through which we can see how our work at ShoreRivers affects our collective home on the Delmarva. When you look at each map independently,



they reveal relevant information about pollution, access, and restoration. But we like to go deeper and analyze them in combination. Are we monitoring bacteria at the sites where people are actually accessing the river? Are our advocacy and outreach messages reaching the communities with the greatest need? Are we installing restoration practices equitably across the region? With your help, we will continue to explore and respond to these issues.

Later this year, we will publish the ShoreRivers Report Card which will include the scientific data we use to guide our projects and our resources. But even before calculating the annual "grade," you'll read from your Riverkeepers that we know our local waterways are polluted by local sources. We also know solutions exist. The science tells us where to begin, and the community helps define our priorities.

The key to success is you: the people. The facing page acknowledges a small segment of community members who supported us recently. Business leaders and philanthropists, environmental stewards and scientific experts, educators and artists – and yet all consider our rivers an important point on their compass. We hope all who appreciate and support clean water efforts found inspiration in the Solstice Celebration this year as we continue our perennial expedition toward healthy, accessible, swimmable ShoreRivers.









WE ARE GRATEFUL FOR THE MANY WAYS OUR COMMUNITY SUPPORTS OUR WORK.

SOLSTICE CELEBRATION SPONSORS









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STEVEN KANE KRISTA LAMOREAUX KATE LIVIE **ANDREW MCCOWN BOB & DAWN MILLER DEBORAH MIZEUR MATT PLUTA**

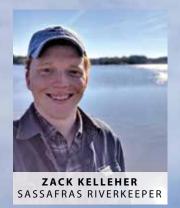
MARY PRITCHARD SAGE RAINDANCER **DAN SMALL BEN TILGHMAN DARRAN WHITE TILGHMAN HEIDI USILTON**

WATER QUALITY PROGRAM SPONSORS

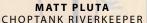
Morgan Stanley THE EASTON GROUP AT MORGAN STANLEY



MESSAGE FROM YOUR RIVERKEEPERS













ELLE BASSETT MILES-WYE RIVERKEEPER

The 2020 monitoring season was one of perseverance in the face of uncertainty. Our team was faced with difficult decisions at every turn as we navigated the world of COVID-19 regulations and precautions. Access to clean water is essential, and we are thankful we were still able to monitor water quality, bacteria, and harmful algae blooms across our watersheds in 2020 in order to provide you with a better understanding of the health of our rivers and potential human health risks.

We want to sincerely thank all of our dedicated water quality monitoring volunteers who navigated the pandemic restrictions with us. For the safety of our volunteers and staff we made the difficult decision to conduct a modified sampling program in 2020, which left us unable to activate many of our volunteer citizen scientists.

We took this truncated monitoring season as an opportunity to review our water quality monitoring program in its entirety—assessing our goals, how we use the data, and the resources needed to run the program. With fresh perspective, we are excited to enter the 2021 monitoring season with a streamlined water quality monitoring program that is standardized across our region and produces the data we need while efficiently utilizing resources. And we still need our volunteer citizen scientists contact your Riverkeeper for specifics.

SWIMMABLE SHORERIVERS: MONITORING HUMAN HEALTH RISKS IN 2020

Faced with quarantining at home and social distancing, public parks and water access points became essential for people's mental and physical well-being, and visitation rates increased dramatically. At the same time, data emerged revealing that coronavirus could potentially be found in wastewater discharges – posing a new health threat as people accessed the very places that were supposed to offer refuge and healing. For ShoreRivers, this only reinforced the necessity of our bacteria monitoring program.

Fortunately, we were still able to conduct this program at 32 popular access sites across our region in 2020. You can see the results of this monitoring on pages 8 and 9. Of the 32 sites, five had a 40% pass rate meaning, only 40% or fewer of the samples taken all summer passed EPA standards for safe water contact. In other words, for the majority of the summer these five sites were not safe for swimming!

Comparing these data year over year illuminates sites that might be experiencing chronic bacteria pollution issues. In 2021 we will conduct bacteria source tracking at specific sites in order to identify sources of chronic bacteria pollution and develop potential solutions.

Additionally, in 2020 the Sassafras River experienced one of the largest, longest, and most toxic algal blooms ever reported. Lasting roughly 10.5 weeks and stretching from Foxhole Landing to Turners Creek, this persistent algal bloom contained a species of algae called Microcystis, which produces toxins harmful to humans and pets. As a result, the State of Maryland and local health officials placed a Water Contact Advisory on the entire river for the majority of the summer and into the fall, severely impeding the public's ability to enjoy this resource.

Fueled in part by warming waters, we are exploring how these algal blooms will be impacted by the effects of climate change. However, as these blooms are primarily fueled by excess nutrients, it is heartening to know we have the power to mitigate them by reducing our nutrient pollution to waterways.

WATER OUALITY MONITORING: THE HEALTH **OF OUR RIVERS IN 2020**

In the late summer and fall our monitoring showed that our rivers, particularly the Choptank and Chester, experienced larger-than-normal dead zones. This was puzzling when compared with the smaller-than-normal dead zone in the mainstem of the Chesapeake Bay.

The discrepancy can be attributed to differences in regional precipitation levels. Northern regions of the Chesapeake Bay watershed (Pennsylvania and New York) provide the highest water volume to the Bay and therefore fuel the dead zones within the mainstem. In 2020 these regions were abnormally dry, resulting in less pollution washing into the Susquehanna River and a smaller dead zone in the Bay.

Meanwhile, the southern and eastern portions of the watershed, including the Delmarva, experienced a wetter year, which produced intensified runoff from agricultural fields, impervious urban areas, and residential lawns. This contributed higher nutrient pollution to our local waterways and resulted in larger dead zones in our rivers. This regional difference in precipitation patterns emphasizes the importance of managing runoff within our own watersheds in order to protect our local rivers.

However, there were also signs of improving water quality and resilience across all our rivers: an encouraging resurgence of Submerged Aquatic Vegetation (SAV). The Sassafras experienced a bumper-crop of wild celery, which proved to be fruitful for our SAV seed harvesting activities with the State of Maryland. The Choptank River and its tributaries, including the Tred Avon River, Broad Creek, and Harris Creek, experienced incredible SAV growth: horned pondweed was observed growing bank to bank in many coves and creeks. And wild celery increased in acreage across the upper stretches of the Chester River as well as in Grays Inn Creek. Read about our on-going work to protect and restore underwater grasses on pages 12 and 13—and contact your Riverkeeper if you want to be an SAV Watcher and contribute to this important work.

Despite the uncertainty and challenges of 2020, we were able to persevere in our work to monitor the health of our rivers and respond to potential human health threats. Above all, we have been filled with gratitude for our incredible supporters—you make our work possible. We begin the 2021 monitoring season with hope and resilience, ready for another year well spent in service to our dynamic tributaries and worthy communities. See you on the river!

Photo by Isabel Hardesty



THE PANDEMIC HIGHLIGHTS THE VALUE OF PUBLIC ACCESS TO OUR RIVERS

Whether you're an angler, a wildlife photographer, an open-water swimmer, or a parent of toddlers on a hot summer day, access to our rivers is critical – offering sustenance, inspiration, health, and sanity. From boat ramps and fishing piers to waterfront parks and roadside pull-offs, public access sustains a special way of life for those of us on the Eastern Shore.

Over the past year, COVID-19 restrictions have shown that access to nature promotes mental and physical well-being. In fact, when it wasn't safe to be around each other, we turned to nature: visitation to Maryland state parks increased 45% in 2020 compared to 2019, according to the Maryland Department of Natural Resources.

Unfortunately, public access to waterways is not equitable, thereby denying some groups of people the joy and healing powers of our rivers. On the rural and sparsely populated Eastern Shore, access to rivers is often limited to people who can afford to live on the waterfront or have reliable transportation to public waterfront areas.

Waterfront parks and piers are increasingly reaching capacity limits: Maryland state parks were forced to close 260 times in 2020, a nearly 330% increase from the 10-year average of 79 closures per year. On the Choptank River, the Bill Burton Fishing Pier State Park is a local example of a park that closed often in 2020 due to capacity limits. For someone relying on fishing from this pier, a capacity closure plus the lack of other accessible options might mean a missed meal.

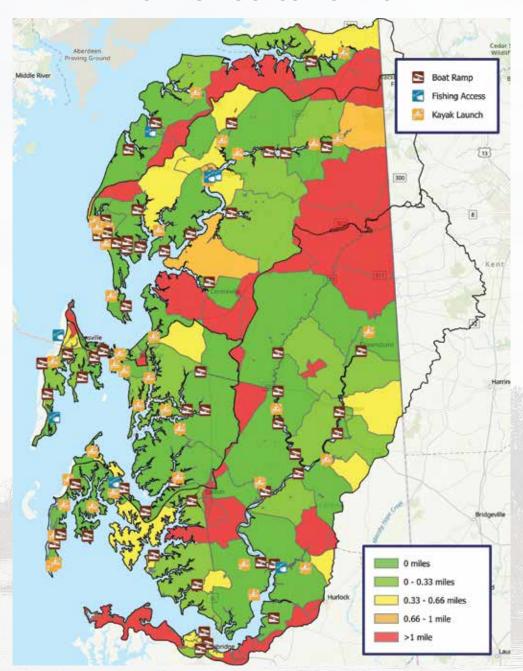
Public roadside kayak launch on Kate's Point Road. Photo by Dave Harp Additionally, increased visitation rates in 2020 generated conflicts with nearby landowners, resulting in attempts to close certain public access areas. For example, landowners adjacent to Gibson Grant Pier on the Chester River responded to increased fishing activity by petitioning Queen Anne's County to terminate the public's use of the pier. ShoreRivers provided testimony urging the commissioners to deny the petition and, instead, to find ways to enhance public fishing access throughout the county. The commissioners ultimately chose to prioritize public access and denied the petition.

Similarly, on the Choptank River in Talbot County along Kate's Point Road, increased use of a public roadside launch area caused the adjacent landowner to petition the county to transfer the road to private ownership, effectively eliminating the only kayak access point to Raccoon Creek. ShoreRivers, along with dozens of other citizens, urged the county council to vote against the private land-grab. The council ultimately tabled the vote, thereby upholding public access.

In the 2021 Maryland Legislative Session, ShoreRivers testified in support of a bill to establish a workgroup on public access to waterways, on which ShoreRivers would have a seat. The bill requires a comprehensive review of the state's public water access network while considering the benefits to public health and environmental justice.

The pandemic has served to underscore what we have always known: our rivers are a public treasure and access to them is valuable but not equitable. We must prioritize inclusive access, particularly during this pandemic when we all can benefit from the inspiration of nature to help us through it.

PUBLIC ACCESS POINTS



Public access to our rivers can take many forms as illustrated here with symbols for kayaking, boating, and fishing. A scale of red to green indicates distance to a public access point. On the Sassafras River, for instance, there is only one public access point per 15 miles of shoreline—

the fewest by far in our region. ShoreRivers believes that access to rivers and streams fuels environmental stewardship. Your Riverkeepers are advocating for better access to all our waterways and defending against attempts to close public access areas.

SWIMMABLE SHORERIVERS: BACTERIA POLLUTION

2020 RATE OF PASSING SAMPLE SITES



PRIORITIZING HUMAN HEALTH

At ShoreRivers we believe people should know whether their waterways are safe for them and their loved ones to access. This has been a driving force behind the creation of our Swimmable ShoreRivers program. Toxic algae and fecal bacteria found in our waterways pose threats to both water quality and public health. People who come in contact with bacteria- or toxin-laden water can contract eye, ear, and respiratory diseases, skin rashes, gastrointestinal issues, or brain or liver damage. ShoreRivers regularly monitors bacteria pollution at sites throughout the mid and upper Eastern Shore and works closely with government agencies to track toxic algal blooms.

TRACKING TOXIC ALGAL BLOOMS

Algal blooms occur naturally, but increased levels of nutrient pollution in our waterways from fertilizers, septic systems, and wastewater plants fuel more harmful blooms. Additionally, as the climate continues to change, we are seeing the frequency and intensity of these blooms increase.

In fact, this past summer we faced the largest, longest-lasting, and most-toxic algal bloom ever recorded on the Sassafras. The bloom lasted ten weeks, covered over 75% of the river, and resulted in a water contact advisory for the entire Sassafras. The bloom greatly diminished the public's ability to swim, fish, boat, and generally enjoy this beautiful river.

This is unacceptable, and ShoreRivers is committed to implementing solutions to this growing threat to human and ecological health.

MONITORING BACTERIA

ShoreRivers regularly monitors bacteria levels at 32 sites, following the Environmental Protection Agency's standard protocols for collecting and analyzing samples and using a pass/fail system to determine if bacteria levels are safe or unsafe for swimming.

This spring, we are excited to announce the ShoreRivers SwimTesters, a new team of volunteer citizen scientists who will sample for bacteria weekly from Memorial Day to Labor Day, providing us with consistent, reliable data so the public can make informed decisions when recreating in our rivers.

Additionally, ShoreRivers has gathered sufficient data over the past few years of sampling to identify potential hot spots worthy of further investigation. While some pulses of high bacteria levels can be the result of natural causes or short-term human impacts, some sampling sites are showing more consistently high levels of bacteria, indicating a chronic pollution source. This summer we will use DNA source tracking to start identifying these potential bacteria sources and developing solutions.

CHESTER RIVER FEDERALLY DESIGNATED AS A NO DISCHARGE ZONE

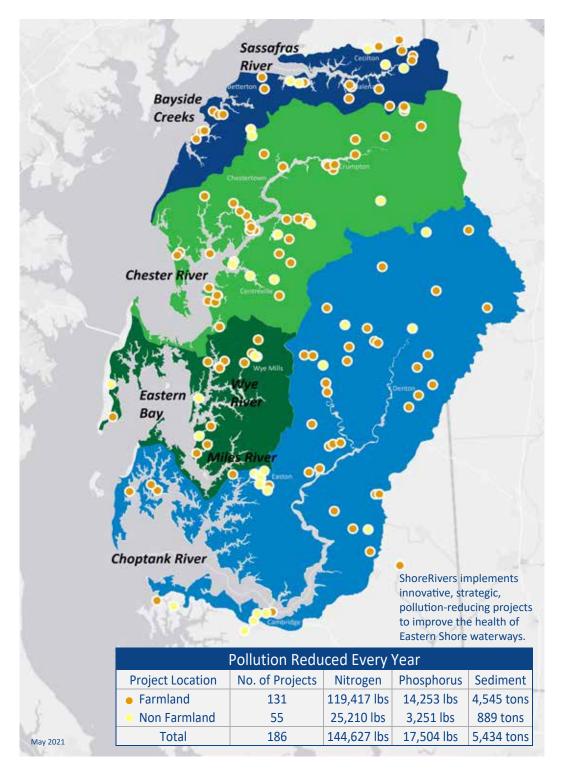
In effect now, all vessels operating on the Chester River are required to dispose of their waste at a pumpout station.

The NDZ application, prepared by ShoreRivers on behalf of and with the support of the Maryland Department of Natural Resources, was approved early 2021 by the United States Environmental Protection Agency. Search "No Discharge Zones" on dnr.maryland.gov for more information.

FOR PUBLIC HEALTH INFORMATION ABOUT OUR **RIVERS**:

follow #SwimmableShoreRivers on social media and check out SwimGuide.org for an interactive map of bacteria results.

REDUCING POLLUTION ON THE EASTERN SHORE



ShoreRivers is a leader in designing, funding, and managing major restoration projects to reduce the sediments and nutrients that pollute our waterways. We work with our community to install projects on county-owned properties, private lands, school campuses, town properties, and church lands.

Certified by the National Fish and Wildlife Foundation as a Technical Service Provider, we have an inhouse engineer, staff with training in geospatial technologies, and the technical expertise to manage these projects.

If you are interested in implementing a restoration project at your home or business, please contact Whitley Gray, Landowner Assistance Coordinator (wgray@shorerivers.org) or your Riverkeeper.

SHORERIVERS LUMINARIES RECOGNIZED WITH STATE AND REGIONAL AWARDS



On May 7, W. R. "NICK" CARTER, III became the second recipient of the **ShoreRivers Award for Environmental Stewardship** during our State of the Rivers presentation.

The award recognized his transformational accomplishments during 35 years at Maryland Department of Natural Resources and lifelong commitment to conservation. Ann Swanson, Executive Director of the Chesapeake Bay Commission and the first recipient of the award, presented it with touching remarks.

"Nick is brilliant. He is a synthesizer—a complex thinker. His friends and colleagues liken him to E.O. Wilson; some even refer to him as the David Attenborough of the Chesapeake."

You can watch the full State of the Rivers event including Nick's acceptance speech on our website at shorerivers.org/2021-sotr-qa. The ShoreRivers Award for Environmental Stewardship is presented annually to an individual or entity in the Chesapeake Bay watershed in recognition of their transformational accomplishment as a steward of the environment.

Photo of Nick Carter by Dave Harp



On May 11, **JEFFREY HORSTMAN**, former executive director of ShoreRivers, was named an **Ambassador of the Chesapeake Bay** by Governor Larry Hogan. Maryland Secretary of Natural Resources Jeannie Haddaway-Riccio and Maryland Secretary of the Environment Ben Grumbles presented the award.

The commendation recognized Jeff's leadership within many environmental organizations including ShoreRivers, mentorship of the next generation of stewards, and inspiration to others to further the health of the Chesapeake Bay and its tributaries.

Black-eyed Susan photo by Elle Bassett

IMPROVING RIVER HEALTH BY RESTORING UNDERWATER GRASSES Enjoying crystal clear water over an SAV bed on the upper Chester River. Photo by Tim Trumbauer Underwater grasses are a critical component to the Bay's ecosystem. Boat or kayak over any underwater bed in the summer and, chances are, you can see to the bottom. Underwater grasses, or submerged aquatic vegetation (SAV), provide habitat and food for crabs and fish, oxygenate the water, trap sediment, sequester carbon, absorb excess nutrients, and protect our shorelines from wave action – essentially, we must have vibrant grass beds in order to have a healthy Chesapeake Bay. 12 | SHORERIVERS ADVOCATE • Spring 2021

ShoreRivers is dedicated to assisting the state in reaching its goal of 130,000 acres of grass beds Bay-wide by 2025. The most recent report from 2019 showed 66,684 acres of grasses, an unfortunate 37% decline from 2018. This decline is primarily a reflection of the significant loss of widgeon grass in the mainstem of the Bay, which Bay scientists theorize is a result of higher rainfall washing more sediments into the Bay and smothering grass beds (this is just one reason why ShoreRivers, along with many partners state-wide, is advocating for stronger stormwater laws).

While the 2019 report was discouraging from a Baywide perspective, the ShoreRivers region actually experienced an increase in underwater grasses from 2018-2019 (see the graph below). In fact, the Sassafras River saw 243 more acres of grasses from 2018-2019, the Chester saw 535 more acres, and Eastern Bay and the Miles and Wye rivers saw an increase of 172 acres. Although the Choptank River saw a decrease of 28 acres, we did receive reports of new thriving beds in this region in 2020.

ShoreRivers uses a multi-pronged approach to restore underwater grass beds in our rivers: engaging citizen scientists to monitor beds, working with partners to harvest and plant grass seeds, and advocating for stronger laws to protect SAV.

MONITORING GRASS BEDS

ShoreRivers utilizes a fleet of SAV Watcher citizen scientist volunteers to help record and maintain accurate data on the extent and diversity of grass **beds in our rivers.** The information collected informs harvesting and planting efforts with the Maryland Department of Natural Resources (DNR), groundtruths information gathered from aerial surveys, and helps us understand our progress toward meeting Chesapeake Bay Program goals for acres restored.

PLANTING UNDERWATER GRASSES

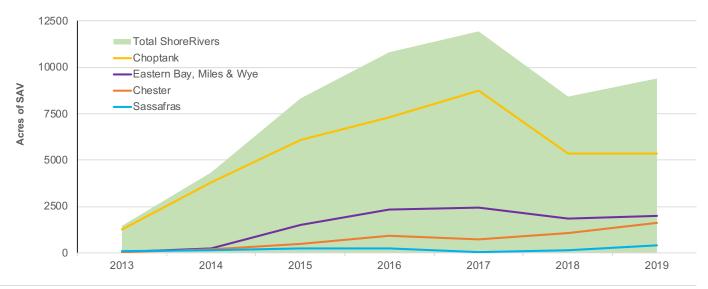
ShoreRivers partners with DNR to sustainably harvest seeds from thriving grass beds in our rivers and replant them in bare areas. Data collected from SAV Watchers helps determine if these efforts are working and where we should concentrate next. Restoration plantings like these are an effective strategy to increase total grass bed acreage.

ShoreRivers was recently awarded a Chesapeake Bay Trust grant to establish the first seed processing operation on the Eastern Shore, to be housed at the new Washington College Semans-Griswold Environmental Hall on the banks of the Chester River. This equipment will double the state's ability to process underwater grass seeds for restoration purposes.

ADVOCATING FOR STRONGER **PROTECTION**

ShoreRivers is advocating at the Maryland General Assembly for stronger protections of underwater grass beds from the hydraulic escalator dredge, including updating SAV Protection Zones annually instead of every three years and requiring a 150foot set back of fishery activities around grass beds. Restoring underwater grasses is a key strategy to achieving a healthier Bay; therefore we must protect our efforts and investments to do so.

Annual Acres of SAV in the ShoreRivers Region





Homecoming: The exciting arrival of the first Kent Attainable House. Photo by Darran Tilghman

A new partnership this year makes clear the connection between the basic human right to safe shelter and the care we must all take of our shared home, Earth. Kent Attainable Housing is a Kent County nonprofit breaking the generational cycle of poverty by building or renovating affordable houses and partnering with low income, working families to prepare for and buy a home. ShoreRivers' **River-Friendly Yards** program empowers residents on properties of any size to become stewards of our waterways. A River-Friendly Yard mimics the natural environment, using the deep roots of beautiful, resilient native plants to absorb nutrients before they reach our rivers and become pollution.

This collaborative project directly benefits waterways, creating a first home for a young Chestertown family as well as habitat for birds and pollinators.

"Working with ShoreRivers on the landscaping concept for our first home has been an especially rewarding experience," says Lani Seikaly, President of the Kent Attainable Housing Board. "The property was a vacant gravel lot for many years. We're transforming it into a beautiful property to be enjoyed not only by the homeowners but also by the neighbors."

As ShoreRivers collaborated with the family who would be living in the home to make selections of native plants and trees, we learned that the father had loved gardening with his grandmother as a child, and now his own young children are excited to join the tradition. "There'll be blueberry bushes the kids can pick off and eat, and wildlife for them to study," he mused. The family welcomes the opportunity to learn how to maintain a home and care for a yard after years of renting.

At ShoreRivers, we believe every member of our community deserves the dignity and joy of **stewardship.** That's why we are working to make River-Friendly Yards a truly inclusive program. With partners like Kent Attainable Housing, we can help our rivers and our communities thrive.

Thanks to the Robert F. Schumann Foundation, Unity Church Hill Nursery, and Wye Gardens for making this wonderful project possible!



Some of the native plants that will bloom in this attainable River-Friendly Yard: Virginia Sweetspire

STUDENTS EMPOWERED BY EXPERIENCE





Demetrio Gutierrez Finley

ShoreRivers' Education Programs Manager, Demetrio Gutierrez Finley, can trace his enthusiasm to his 7th grade teacher, Larry Zoller. Though funding was scarce, Mr. Zoller's class created a bioswale planted with native species to capture and treat stormwater on their Anne Arundel County school campus.

"His passion was infectious: it was the first time in school where I felt like I was doing a real project, like my existence had an impact on the world. It has stuck with me," says Demetrio.

Now Demetrio is passionate about helping teachers throughout the Eastern Shore create these igniting experiences with students. Hemalatha Bhaskaran, Wicomico Teacher of the Year 2020-2021 and recipient of a Presidential Award for Excellence in Mathematics and Science Teaching, is one such inspiring partner.

"The minute you start doing a Meaningful Watershed Educational Experience [an education requirement], you see a change in the students. They are working in their local environment, exploring under bridges they drive their car over, discovering hiking trails...

One student actually discovered a creek and caught a turtle near his home," affirms Ms. Bhaskaran, known to collaborators as Hema. "Creating a Meaningful Experience is the only time I get students to care."

Hema helps James M. Bennett High School students transform their new understanding of local environmental problems into hope and action. "Once students know what is happening, they ask themselves, 'What can I do about it?""

At the annual Youth Environmental Action Summit. Lower Shore students advocate for change by presenting original project ideas to community leaders. In 2020, Hema was an Action Summit mentor, and she wanted to showcase her courageous new English Language Learner students. She invited the students to present in their native languages, with fluent English-speaking students translating in real time. One student spoke in Hindi, two in Spanish, and one in Haitian Creole. The group won funding for their proposal: an English Language Learner Community Garden, which will be both a social gathering space and a tribute to their native cultures. "It was such a heartwarming experience, and the English-speaking students were so supportive of their classmates," Hema reflects. "That was my amazing experience."

Meaningful interaction with our world is a shared language of wonder and purpose. For Hema's students, the pathway to a lifetime of stewardship and to innovative careers in conservation is now visible. We look forward to seeing how these young people decide to walk their paths, solve problems, and shape our future. Maybe, like Demetrio, some will become impassioned educators of our next young watershed stewards.





Eastern Shore Conservation Center 114 S. Washington St., Suite 301 Easton, MD 21601

Photo by Connor Liu

