



NFWF



Chesapeake Bay Program
Science. Stewardship. Partnership.

CHESAPEAKE BAY STEWARDSHIP FUND 2021 ANNUAL REPORT





OUR PROGRAM

Celebrating 20 years of partnership working to restore polluted rivers and streams in the Chesapeake Bay region through cost-effective, innovative, and locally led solutions.



NFWF funds work where communities are directly and meaningfully engaged through activities like volunteer opportunities.

Through more than 20 years of support for local, on-the-ground conservation and restoration actions, NFWF, its funding partners, and local communities have contributed more than half a billion dollars toward a cleaner and more resilient Chesapeake Bay watershed.

These resources and NFWF's public-private funding model allow the Foundation to support local conservation and restoration actions through a combination of competitive grants programs, dedicated capacity building for watershed partners, and investments that help local partners identify and deliver more effective results for their communities and the natural resources that sustain them.

In 2021, NFWF provided ongoing, flexible support to the dynamic and evolving efforts of local conservation partners to deliver critical community engagement efforts and coordinated restoration actions in the face of global public health challenges. The creativity and ingenuity of these partners to ensure and accelerate restoration progress has been remarkable. They have demonstrated commitment and drive — keeping pace with ambitious regional goals — balanced with empathy and understanding in how to meet a variety of community needs in an unprecedented and challenging environment.

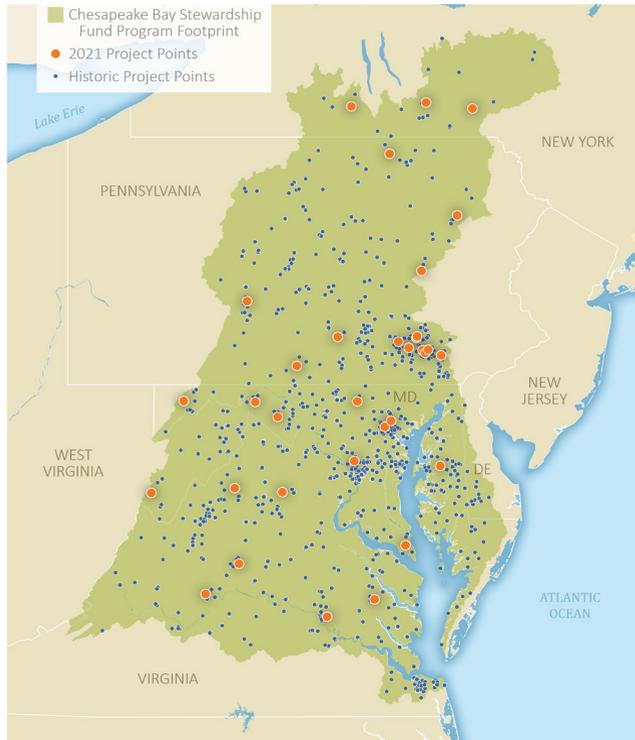
Working together, local communities and their conservation partners, supported by NFWF and its public and private funding partners, are showing what it takes to get the job done!

ON THE COVER Eastern Brook Trout by Jay Fleming Photography.
PREVIOUS PAGE Urban green infrastructure in Baltimore.

OUR INVESTMENTS

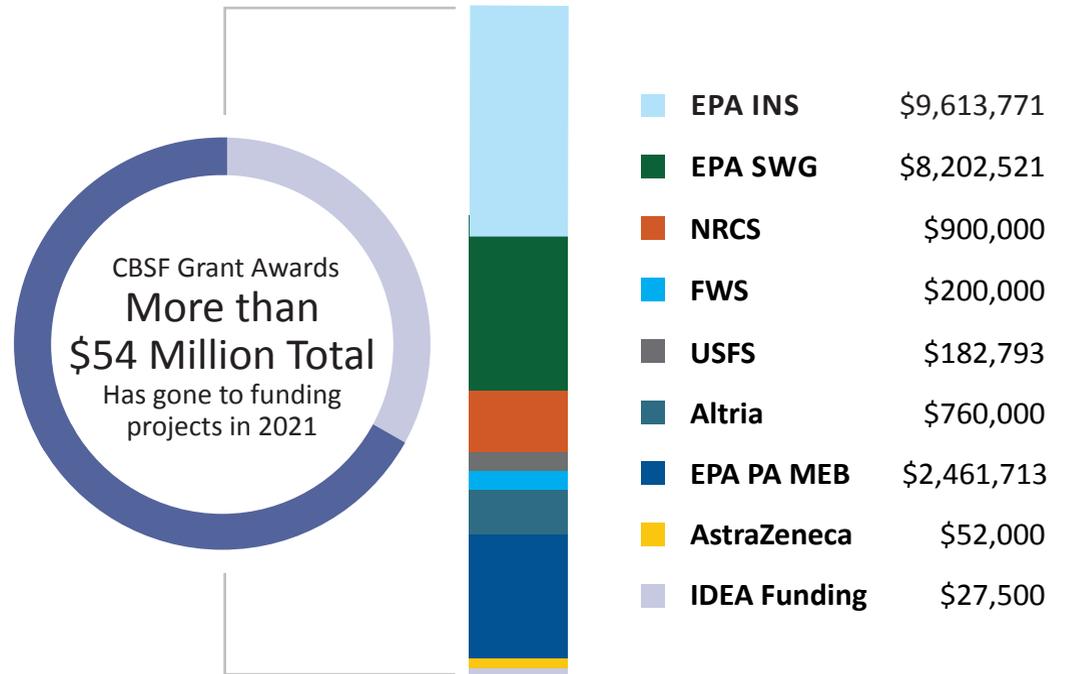
Through a partnership with the U.S. Environmental Protection Agency and the Chesapeake Bay Program, the Stewardship Fund advances cost-effective and creative restoration solutions.

Local Water Quality Investments



- Location of New 2021 Stewardship Fund Grants
- Location of Historic Stewardship Fund Grants

2021 Project Funding Snapshot



- Local Match — \$31.8 Million
- Stewardship Fund Grant Awards — \$22.4 Million * This chart reflects grant awards only.

OUR IMPACT

Through grants awarded in 2021, the Stewardship Fund will make a significant impact toward towards a healthier Chesapeake Bay watershed by working to restore local rivers and streams.

2021 Highlights

- Awarded a record \$22.4 million in grant funding, leveraged by an additional \$31.8 million in local matching funds for a total conservation impact of more than \$54 million.
- Established a CBSF Diversity, Equity, Inclusion, and Justice Working Group composed of external grantees, practitioners, and experts working to advance equitable environmental grantmaking through NFWF's Chesapeake programs.
- Initiated a new partnership with the U.S. Fish and Wildlife Service in delivering the new Chesapeake Watershed Investments for Landscape Defense grants program.

Since 1999

25.5 Million
Pounds **of Nitrogen Avoided Annually**

5.28 Million
Pounds **of Phosphorus Avoided Annually**

1.2 Billion
Pounds **of Sediment Avoided Annually**

2,289
Miles **of Riparian Habitat Restored**

1.78 Million
Square Feet **Impervious Surface Removed**

828,066
Acres **Under BMPs* for Nutrient and Sediment Reduction**

*Best Management Practices (BMPs).

OUR PROJECTS

Restoring the Eastern Oyster in the Lynnhaven River

Lynnhaven River NOW creates artificial reef to help restore oyster populations in this prioritized Chesapeake Bay tributary.



On the shores of the Lynnhaven River in Virginia Beach, barge-loads of crushed cement are being swept by a water cannon into the riverbed below. All this concrete will eventually become a 3.5-acre alternative-substrate reef in the River, providing a home for potentially millions of oysters.

This project, the first of its kind in the Lynnhaven River, is using crushed concrete to develop the reef due to a shortage of oyster shells. Concrete and oyster shells have the same

base compound (calcium carbonate) that attracts free-swimming oyster larvae. Lynnhaven River NOW, which is spearheading this project, has conducted extensive research and experiments to determine that crushed concrete is the best substitute for developing an oyster reef.

“The oyster provides a filtering effect,” said Brent James, Lynnhaven River NOW’s oyster project coordinator. “They take nitrogen, phosphorus, and sediment out of the water. They also give habitat to other species on the reef — it creates a bloom of life.”

This project supports the benchmark in the Chesapeake Bay Agreement to create 152 acres of reef habitat in the Lynnhaven River by 2025. The Lynnhaven is one of 10 Chesapeake Bay tributaries targeted for oyster restoration.

As a keystone species in the Bay, oysters have a direct impact on both water quality and habitat. Unfortunately, due to decades of overharvesting, pollution, and disease, the region’s native oyster population is only a fraction of previous levels. Restoration projects like this one present the best chance to reverse this population decline.

Lynnhaven River NOW received a Small Watershed Grant in 2019 for a total amount of \$200,000 to fund the creation of this artificial reef. This project builds on previous NFWF-funded restoration in the Eastern Branch of the River.

“We know what needs to be done, but we have a limited number of resources financially to do that,” James said. “We would not have the wherewithal at all to do this if it wasn’t for NFWF.”

In the late spring and early summer, the Chesapeake Bay Foundation — Lynnhaven River NOW’s partner in this project — will seed four million spat (baby oysters) on the reef, helping to revitalize the oyster population in the River.

“In addition to that seeding, we hope and expect natural settlement of the reefs to add at least an equal amount of baby oysters over the first couple of years,” James said. “Potentially, these reefs could result in millions of adult oysters.”

PHOTO (NEXT PAGE) Oysters shells heap close up.



OUR PROJECTS

Combining Preservation and Conservation on Farms to Reduce Water Pollution

The Lancaster Farmland Trust is installing best management practices on preserved farmland to enhance the health of the Chesapeake Bay.



legal agreement with LFT, agreeing to give up their right to develop their farm in the future in exchange for LFT's guarantee to enforce the agreement forever. Thanks to a project funded by a \$490,000 Chesapeake Bay Innovative Nutrient and Sediment Reduction grant in 2017, more preserved farms also have Best Management Practices (BMPs) to reduce nutrient and sediment pollution into the Chesapeake Bay.

For the Lancaster Farmland Trust (LFT), preserving farms and installing conservation practices used to be two separate conversations. Now, thanks to a NFWF grant, the nonprofit considers the two as inextricably linked.

"The award from NFWF allowed us to merge these two elements of our mission together," said Jeb Musser, vice president of land protection at LFT. "Now, it's pretty rare for us to not be talking about both when we're talking to a farmer."

Preserving a farm means the owners enter into a

LFT analyzed farms on its preservation waiting list and created a list of strategic farms that, if preserved, would result in maximum nutrient and sediment reductions. During the project, five farms were officially preserved and completed BMP implementations on their properties, such as riparian buffers, stream bank fencing, engineered crossings, and improvements to manure storage.

Additionally, LFT coordinated the installment of BMP practices on several previously preserved farms.

"A lot of times, those conservation plans can call for practices that might be pretty significant in cost to a farmer," Musser said. "Being able to have funding right then and there

for farmers on our preservation waiting list was so helpful."

Overall, significant reductions in nutrient and sediment loads flowing into the Chesapeake Bay were achieved.

By partnering with farmers like these to protect and steward their land, LFT is helping reduce negative impacts on the environment, while also making farms and communities more resilient to weather extremes.

"We want to make sure that the farms we're preserving not only are achieving the preservation of land from a development standpoint, but also that the farms are reducing their pollution while yielding high-quality products," Musser said.



OUR PROJECTS

Investing in Community-centric Green Infrastructure for a Cleaner Bay

A congregation in Baltimore is improving water quality on their property through environmentally conscious designs.



In many cities and urban areas, flooding is a growing problem. With so many paved surfaces, rainwater overwhelms city infrastructure. When precipitation falls on roads, streets, and sidewalks, it can push harmful pollutants like fertilizer, pet waste, chemical contaminants, and litter into the nearest waterway. In the Chesapeake Bay Watershed, stormwater runoff is the fastest growing source of pollution. Fortunately, communities are looking for ways to rethink design and implement nature-based solutions to prevent both flooding and nutrient runoff.

“The project has led to the annual treatment of over one million gallons of stormwater runoff and a congregation and community that are more knowledgeable about local environmental issues and are empowered to take action,” said Rev. David Ware, Rector at Church of the Redeemer. “The community is also inspired to be environmental stewards, taking concrete steps to benefit the community that lives and works downstream. We expect that the greatest learning around this project is yet to come... Our hope is that this will lead to a much greater awareness of nature’s capacity to recover — illustrating how healthy, vibrant landscapes are essential parts of healthy, resilient communities.”

The project has brought broader benefits to the community: It not only serves to beautify a space on the Church grounds, but also educates the community on the benefits of green infrastructure by providing an example of stormwater BMPs.

“Projects like this are so important because they can clean such a large amount of stormwater for decades to come,” said Laurel Peltier, Church of the Redeemer congregation member. “It provides a beautiful template of success. The project gives everyone at our church and community a constant visual reminder to think creatively and about the future.”

In North Baltimore, the Church of the Redeemer received a Small Watershed Grants Implementation award of over \$169,000 in 2019 from NFWF to reimagine the utility of the parking lot behind their place of worship.

By implementing micro-bioretenion facilities, pervious paving, and new planting areas through the project, the Church has helped treat runoff and bolstered urban wildlife and pollinator habitats. These improvements are estimated to capture and treat over one million gallons of stormwater runoff annually, resulting in a reduction in sediment and nutrients carried into the Bay.

The Church is a centrally located in North Baltimore, with hundreds of people visiting each week for services, elementary school, volunteer opportunities, and other events.

PHOTO (NEXT PAGE) Photos from the Church of the Redeemer Project.

WATER IS ESSENTIAL TO ALL LIFE.

Redeemer is protecting our local streams and the Chesapeake Bay.

The Church of the Redeemer continues to make our campus environmentally friendly. We take seriously our mandate to care for creation. The renovation of this North Parking lot will, through stormwater management and native landscaping, help to improve the health of Stony Run, the Jones Falls Watershed, the Chesapeake Bay, and our community. With this project, we hope to inspire our parishioners, our day school students, other institutions, and our neighbors to consider projects, large or small, that they might undertake in the care of our environment.

 the church of the REDEEMER

This parking lot is designed to direct the stormwater runoff from the pavement to the micro-bioremediation areas in the parking islands and the larger bioretention areas to the north of the lot, where the water is absorbed and filtered by special soil media and native plantings before it is released into Stony Run. Permeable paving along the northern edge of the lot also helps to reduce stormwater pollutants and increase infiltration.

In addition to filtering stormwater, a layered palette of native plantings helps create and restore natural habitat for birds, pollinator species such as butterflies and bees, and numerous other insects. Deciduous trees provide shade in summer months and shrubs and herbaceous plantings provide seasonal interest throughout the year with their texture, structure, and color. The carbon footprint of the lot is further reduced by utilizing energy efficient lighting and recycling aggregates from the old parking lot for use in the new asphalt pavement.

Through the collaborative efforts of a wide network of partners and sponsors that this project has become a reality. Though environmental benefits of the new North Parking Lot are numerous, it is our hope that its outreach extends beyond the Redeemer campus to our neighbors and the broader community. This site, along with many of its kind throughout Baltimore, work collectively to create a better environment for all of us.



RUNOFF REDUCTION



CONSERVATION

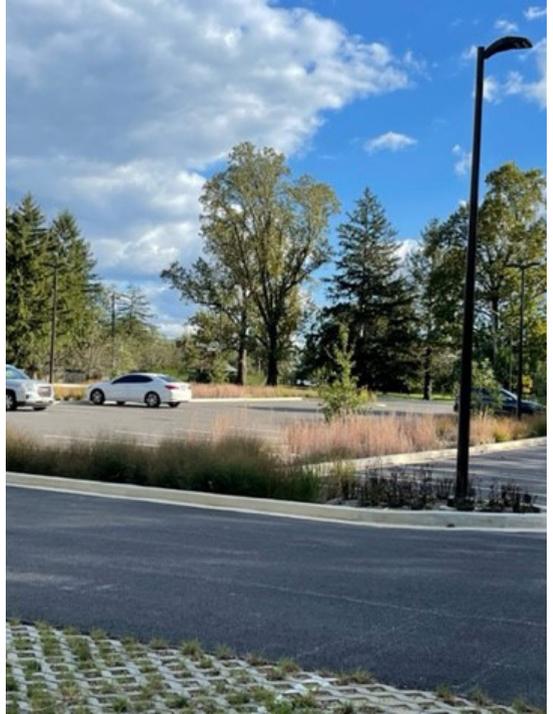


COMMUNITY PARTICIPATION



SPONSORED BY: 

You can help our environment, too! Visit www.redeemberaltimore.org for more information.



OUR GRANTS

Maryland

Alliance for the Chesapeake Bay, Inc.

Maintaining Best Management Practices in the Anacostia Watershed (MD, DC)

Promote successful, long-term best management practice maintenance and water quality improvement through a virtual maintenance resource center, inspections, cost-share maintenance services, and a neighborhood volunteer program. Project will increase the functionality of at least 300 installed best management practices and document improvement in the abilities of 200 property owners to maintain their practices over time.

\$500,000

American Forests

Leveraging Urban Forests for Climate, Health, and Tree Equity Scores (MD, VA, DC)

Build a deep-dive Tree Equity Score Analyzer tool for use across the greater Washington metropolitan region. Project will provide a way to set urban forestry narratives, plan strategies and focus resources on communities of highest need to improve tree canopy where its benefits are most needed.

\$49,911

Audubon Naturalist Society of the Central Atlantic States

Designing a Training Program to Expand the Community of Green Infrastructure Professionals (MD)

Design a conservation landscape and rain garden for Audubon Naturalist Society's Woodend Nature

Sanctuary in Chevy Chase, Maryland and create a program to train the owners and employees of small and underrepresented landscape contracting companies in the construction of conservation landscapes and rain gardens. Project will provide a path forward for promoting increased use of green infrastructure to manage stormwater and improve water quality within the Anacostia and Rock Creek watersheds.

\$25,011

Arundel Rivers Federation

Camp Woodlands Stream and Outfall Restoration (MD)

Retrofit the existing stormwater outfall at Camp Woodlands by restoring an eroding gully and 1,350 feet of stream. Project will provide safe conveyance of storm flows and increase the ecological habitat and functions on the site to improve water quality in Broad Creek.

\$199,587

Baltimore Municipal Golf Corp

Developing an Environmental Master Plan for the Forest Park Golf Course (MD)

Develop an environmental master plan for the Forest Park Golf Course in Baltimore City, Maryland. Project will identify the highest priority stormwater management project to proceed to final design, permitting and plans review in order to produce a shovel-ready set of construction documents for implementation.

\$49,935

Blue Water Baltimore, Inc.

Restoring Model Watersheds to Improve Urban Water Quality in Baltimore County (MD)

Continue watershed restoration implementation that improves urban water quality in Baltimore County on private property. Project will install priority restoration projects that can be used as model projects, reduce watershed pollution to help Baltimore County meet its watershed improvement plan goals, motivate homeowners to change behavior and plant a tree in their yard, and engage residents in pollution detection and stream learning opportunities.

\$268,871

Carroll County Government, Bureau of Resource Management

Assessing and Prioritizing Restoration Opportunities in Little Pipe Creek (MD)

Develop a comprehensive watershed assessment and prioritization process evaluating the needs and opportunities for restoration projects to improve the water quality in the Little Pipe Creek sub-watershed in Carroll County. Project will identify and rank high priority areas to be targeted for potential restoration opportunities.

\$49,998

OUR GRANTS

Chesapeake Bay Foundation, Inc.

Farm Stewardship and Regenerative Agriculture Education in the Upper Potomac Watershed (MD)

Implement agricultural conservation practices in the Upper Potomac Watershed. Project will provide “whole farm” technical assistance and financial incentives to farmers, engage volunteers in tree plantings and buffer maintenance, and educate consumers about local regenerative agriculture to inform their purchasing decisions.

\$379,430

Defensores de la Cuenca

Promoting Watershed Stewardship Through Spanish-Language Stormwater Education (MD)

Create “La Academia de Defensores de la Cuenca” based on existing Watershed Stewards Academy models. Project will pair workshops with hands-on experiences to train primarily Spanish-speaking participants on watershed issues, culminating in the completion of a stormwater project by each participant.

\$167,807

Future Harvest, Inc.

Improving Soil Health and Water Quality through Purposeful, Site-Specific Cover Crop Planning and Management (MD)

Demonstrate the agronomic and environmental benefits of purposeful, site specific cover crop planning at the farm scale on 12 collaborating grain farms on Maryland’s Eastern Shore MD with the goal of catalyzing and accelerating adoption of innovative

cover cropping strategies across the region. Project will support 12 row crop farmers in implementing site-specific plans for cover crop planting and measuring agronomic and environmental benefits of the practices over time.

\$301,660

Greater Grace World Outreach, Inc.

Implementing a Green Infrastructure Master Plan for Greater Grace (MD)

Install components of Greater Grace World Outreach’s green infrastructure master plan and plant 100 community trees. Project will install two micro-bioretenion areas and one bioretention system as well as remove 7,014 square feet of impervious surface, which will result in the annual treatment of 1.3 acres of impervious surface.

\$200,785

Gunpowder Valley Conservancy, Inc.

Cultivating Stronger Partnerships for Clean Water in the Gunpowder Watershed (MD)

Expand restoration project implementation by working with old and new partners and by engaging businesses in implementing rain gardens or micro-bioretenion practices. Project will implement stormwater best management practices, plant native trees, and increase community engagement in stormwater restoration in the Gunpowder Watershed.

\$364,586

Interfaith Partners for the Chesapeake

One Water Partnership: Innovative Network for Scaled Conservation (MD)

Extend engagement of private land-owner congregations to address fragmented non-source pollution issues through implementation and stormwater management, diversify communities and partners engaged, and adaptively manage practices and partnerships through a uniquely-developed hub benchmarking system. Project will accelerate water quality outcomes across targeted geographies in the Chesapeake Bay through an integrated conservation value chain across private landowners, implementers and funders.

\$882,750

Shorerivers, Inc.

Activating Restoration in Three Underrepresented Communities in the Choptank Watershed (MD)

Engage three underrepresented communities from across Maryland’s Choptank watershed in implementing restoration projects prioritized by each community that will improve water quality, address resource concerns such as stormwater flooding, and enhance private lands and shared spaces. Project will build on existing engagement to activate a diverse community of stewards through a power- and resource-sharing implementation model.

\$79,886

OUR GRANTS

The Sixth Branch

Creating a Tree Nursery to Increase Urban Canopy Coverage in the Broadway East Neighborhood (MD)

Build “One Green Acre,” a tree nursery and community hub in the Broadway East neighborhood, which will be the capstone to the Montford Avenue Green Corridor project. Project will create a unique tree farm, nursery, community hub, and center for workforce development that will return native-tree production to Baltimore City.

\$59,374

St. Mary’s River Watershed Association Inc.

Engaging the Community in Oyster Habitat Restoration in St. Mary’s River (MD)

Restore vibrant oyster habitat in prioritized shellfish sanctuary areas of St. Mary’s River. Project will engage partners and volunteers to make habitat structures, improve bottom substrate, grow spat, plant seed, and conduct monitoring within targeted areas of the St. Mary’s River Shellfish Sanctuary.

\$125,173

Trout Unlimited Inc.

Protecting and Restoring Brook Trout Habitat in the Savage River Watershed (MD)

Permanently protect a high-quality riparian corridor and restore riparian buffers, in-stream habitat, and aquatic organism passage within the Savage River Watershed eastern brook trout stronghold. Project will increase habitat integrity and reduce sediment and nutrient runoff destined for the Chesapeake Bay

while improving productivity for local agricultural producers, enhancing a native fishery, and engaging community members and students in a shared vision for watershed health.

\$360,124

Washington College

Establishing Native Grass Buffers and Restoring Wetlands in the Lower Shore (MD)

Extend the successful Natural Lands Project to the lower Eastern Shore of Maryland. Project will work with landowners to establish native grass buffers and restore wetlands primarily targeting riparian zones of marginal agricultural land on Maryland’s lower Eastern Shore.

\$400,000

New York

Tioga County Soil and Water Conservation District of New York

Expanding Nutrient Management Across the Headwaters of the Chesapeake Bay (NY, PA)

Expand Nutrient Management Planning efforts to improve water quality across agricultural and urban landscapes within the Headwaters of the Chesapeake Bay watershed in New York and Pennsylvania. Project will develop agricultural nutrient management plans to improve nitrogen and phosphorous management on farmland and urban nutrient management plans to minimize adverse environmental effects on high-risk and priority urban areas.

\$500,000

Tioga County Soil and Water Conservation District of New York

Expanding Partnerships and Building Capacity in the Chemung River Subbasin (NY)

Work with partners to build capacity to accelerate implementation of water improvement projects in the Upper Susquehanna River Watershed. Project will build partnership capacity by supporting partners’ work and assisting them with the development of a strategic plan to expand their focus to the protection of the watershed.

\$50,000

Tioga County Soil and Water Conservation District of New York

Watershed Approach to Stream Corridor Restoration in the Headwaters of the Chesapeake Bay (NY, PA)

Assess and implement improvements to address water quality, stormwater retention, habitat restoration, and watershed resiliency on a small subwatershed scale. Project will provide citizen stewardship opportunities and result in 57,439 pounds of sediment, 28 pounds of phosphorus, and 177 pounds of nitrogen being avoided annually within the Upper Susquehanna and Chemung River Watersheds.

\$500,000

PHOTO (NEXT PAGE) Nanticoke River Wetlands.



OUR GRANTS

Trout Unlimited, Inc.

Replacing an Undersized Culvert to Reopen Brook Trout Habitat in Wylie Brook Watershed (NY)

Replace an undersized culvert in the Town of Coventry, New York that is blocking trout passage. Project will open 2.8 miles of high quality habitat, expanding the brook trout stronghold.

\$140,566

Pennsylvania

Accelerated Agricultural Riparian Forest Buffer Implementation

Boosting Implementation of Agricultural Best Management Practices (PA)

Implement BMPs on farms in Pennsylvania's Lancaster, Union, and Chester Counties. Project will leverage existing partnerships and corporate resources to provide cost-share programs and direct implementation support for targeted water quality and conservation improvements on participating farms.

\$915,000

Alliance for the Chesapeake Bay, Inc.

Leveraging New Corporate Clean Water Partnerships in Lancaster and Lebanon Counties (PA)

Engage corporate partners to install agricultural best management practices on farms within Lancaster and Lebanon Counties, Pennsylvania. Project will support dairy farmers in reducing nutrient and sediment pollution from their work.

\$500,000

American Rivers, Inc.

Assessing Opportunities for Mill Creek Riparian, Floodplain, and Stream Restoration (PA)

Identify viable opportunities for riparian and floodplain restoration and dam removal in Mill Creek in Lancaster, Pennsylvania. Project will look at the causes of impairment and sources of sedimentation to identify how dam removal and floodplain restoration work could align with current stormwater management practices in order to holistically restore watersheds and reduce sediment pollution to the Chesapeake Bay and its tributary rivers and streams.

\$49,955

Blair County Conservation District

Connecting Urban and Agricultural Sectors for Accelerated Water Quality Improvements (PA)

Install stream restoration projects, riparian buffers, and green infrastructure through municipality partnerships and partner with farmers to stabilize farm lanes and in-field erosion/scouring sites, and host workshops to encourage the adoption of these practices. Project will accelerate water quality improvements by networking with existing and new partners to install sound water quality improvements in Blair County — the Beaverdam, Frankstown, and Little Juniata Watersheds.

\$664,428

Bradford County Conservation District ***Bradford County Accelerated Watershed Implementation Plan Development - II (PA)***

Accelerate planning of Bradford County's Watershed Implementation Plan in the areas of stream rehabilitation, agricultural management, stream crossing replacement, and forestry. Project will address water quality impacts in the County by creating designs for stream rehabilitation and crossings, comprehensive nutrient management, riparian buffer installation, and reforestation.

\$49,995

The C. Good Project: Collaborative Water Quality Improvement in the Upper Conestoga River Watershed

Collaborative Water Quality Improvement in the Upper Conestoga River Watershed (PA)

Implement agricultural best management practices including cattle walkways, stabilized access roads, and a roofed manure stacking structure on a farm in East Earl, Pennsylvania. Project will reduce nitrogen, phosphorus, and sediment pollution flowing to the Chesapeake Bay.

\$241,754

Clay Township Agricultural BMPs

Addressing Polluted Runoff Through Agricultural Best Management Practices in Clay Township (PA)

Install barnyard runoff control best management practices to control stormwater and treat polluted

OUR GRANTS

runoff on a farm in Lititz, Pennsylvania. Project will reduce polluted runoff from dairy and feed bunks that discharge into Middle Creek.

\$249,700

Clay Township Farms' Agriculture Conservation Plans Developing Conservation Plans to Address Water Quality on Farms in Clay Township (PA)

Develop manure management and conservation plans for farms in Clay Township, in Lancaster County, Pennsylvania. Project will identify water quality concerns on 12 farms and begin the process of addressing these concerns.

\$48,400

Conservation Foundation of Lancaster County Lancaster Clean Water Partners Collaborating and Scaling Up Stormwater Management (PA)

Coordinate stormwater management projects in priority catchments where Lancaster County's agriculture and stormwater land uses intersect in unique ways. Project will accelerate efforts to implement the Countywide Action Plan, advancing conservation education, sustaining outreach, delisting up to half-mile segments of stream in priority catchments, and extend the impact of the Lancaster Clean Water Partners' collaborative effort.

\$969,326

Cumberland County Commissioners

Clean Water Cumberland Scaling Up Implementation in Cumberland County (PA)

Provide infrastructure to bundle contracting of agricultural best management practices across several priority farms. Project will formalize and enhance capacity of Clean Water Cumberland, and create impactful improvements to water quality in Cumberland County and downstream.

\$500,000

Fishing Creek Nutrient Reduction project

Reducing Nutrient Loss from Manure in Fishing Creek

Install conservation practices on a farm in Benton Township. Project will prevent the leaching of manure nutrients and sediment into local waterways through the construction of a heavy use area, manure storage, and other best management practices.

\$216,203

Franklin County Conservation District

Developing a Watershed Action Plan for Franklin County (PA)

Develop a Priority Watershed Action Plan for Franklin County to determine sources of nutrients and sediment in seven subwatersheds in Franklin County, Pennsylvania. Project will identify best management practices for implementation to assist with the pollution reduction targets and water quality improvement goals identified in Franklin's Countywide Action Plan.

\$50,000

J. Snook Dairy Farm BMPs Project

Reducing Nutrient Loss Through Manure Management in Snyder County (PA)

Decrease nitrogen leaching and runoff by installing best management practices on a farm in Snyder County, Pennsylvania. Project will implement changes to allow the farmer to store manure longer, apply it at correct times, and reduce runoff.

\$250,000

Lancaster Farmland Trust

Restoring Floodplain by Addressing Legacy Sediment in Pequea Creek (PA)

Restore floodplain along approximately 1,427 linear feet of an unnamed tributary to Pequea Creek in Salisbury Township, Lancaster, Pennsylvania. Project will provide water quality benefits, flood reduction, native habitat creation and enhancements, and additional ecosystem services to the Pequea Creek Watershed, other downstream waters and, ultimately, the Chesapeake Bay.

\$500,000

Lititz Borough

Designing a Stormwater Treatment Plan in Lititz Borough (PA)

Design a stormwater treatment plan for the Lititz Borough Regional Stormwater Facility to assist in managing existing stormwater runoff. Project will determine the best method for achieving large stormwater treatment, volume control, and water quality benefits in the project area and in the catchment.

\$20,000

OUR GRANTS

Lititz Run Watershed Alliance

Designing Floodplain Restoration in Santo Domingo Creek (PA)

Conduct site assessments and design for a floodplain restoration project along 2,500 feet of the Santo Domingo Creek within the Lititz Run priority subwatershed in Lancaster, Pennsylvania. Project will include a geomorphic site assessment, detailed topographic survey, and evaluation of bank erosion rates, culminating in a design including a report and detailed design drawings.

\$50,000

The Little Conestoga Creek Foundation

Restoring Floodplain to Improve Water Quality in Little Conestoga Creek (PA)

Implement best management practices to restore floodplain and address nitrogen, phosphorous, and sediment in Little Conestoga Creek in Pennsylvania. Project will restore floodplain, reduce flooding, provide habitat creation, and restore biodiversity.

\$440,000

Manheim Township

Restoring Priority Stream in Manheim Township (PA)

Restore and improve the overall stream health and function of local and regional waterbodies in Manheim Township. Project will restore the degraded stream channel along approximately 1,507 linear feet of an unnamed tributary to the Conestoga River, 1,172 linear

feet of Landis Run, and 1,567 linear feet of Bachman Run; providing pollutant load reductions of approximately 1,056,604 pounds of sediment, 497 pounds of nitrogen, and 294 pounds of phosphorus annually.

\$457,500

Pasa Sustainable Agriculture

Creating a Regenerative Organic Dairy Industry (PA)

Integrate dairy farms to an education and peer-to-peer learning network, coordinate regenerative farm business plan processes for dairy farms to regenerate soil and set the farms on a sustainable and profitable pathway, certify dairy farms in the Regenerative Organic Certified standard. Project will work with project partners TeamAg and the Origin Milk Company to pioneer a model of 100% grass-fed dairy that grows soil health, improves water quality, and sustains family farms.

\$997,350

Pennsylvania Department of Conservation and Natural Resources

Creating Healthy Watersheds Through Partnerships and Implementation in Flourishing Landscapes (PA)

Accelerate implementation pace of watershed forestry best management practices like riparian forest buffer, urban forest planting, and conservation landscaping implementation through partner-funded outreach, large contract plantings, investments in professional development, and creation of

experiential learning labs. Project will galvanize Pennsylvania's existing riparian forest buffer and lawn conversion partnerships to elevate their ability to outreach and implement.

\$1,000,000

Schuylkill Conservation District

Little Mahanoy Creek Headwaters Restoration Plan Development (PA)

Develop a detailed watershed restoration plan for the headwaters of Little Mahanoy Creek Watershed. Project will provide a blueprint for managing stormwater in the watershed, restoring habitat in the headwaters, and improving water quality to protect the unimpaired downstream sections where trout are reproducing naturally.

\$50,000

Sustainable Chesapeake

Reducing Nutrient Loss from Manure in Lancaster through Expanded Adoption of Manure Injection (PA)

Work with partners to expand the adoption of low-disturbance manure injection on a range of farms. Project will improve water quality by reducing nitrogen and phosphorus loss from land-applied manure in most-effective basins in Lancaster County, Pennsylvania.

\$249,174

PHOTO (NEXT PAGE) Blue Crab.



OUR GRANTS

Snyder County Middle Creek Watershed Agricultural Plan Development and Cover Cropping Programs

Developing Agricultural Plans and Cover Cropping Programs in the Middle Creek Watershed (PA)

Develop agricultural plans for farmers in the Middle Creek watershed of Snyder County and incentivize cover cropping through incentive payments. Project will reduce nutrient and sediment contributions reaching local streams and watersheds of the Chesapeake Bay watershed and increase the number of cover crop acres planted within the Middle Creek watershed.

\$20,719

Somerset County's Chesapeake Bay Watershed Agricultural Improvements 2021

Implementing Best Management Practices to Address Runoff at Dividing Ridge Farm (PA)

Plant cover crops to reduce soil loss and utilize the nutrients from applied manure on a farm in Somerset County. Project will plant cover crops on land where corn silage has been harvested, preventing manure nutrients from entering the Chesapeake Bay Watershed.

\$47,720

South Londonderry Township

Stream Stabilization and Riparian Forest Buffer Installation in Killinger Creek (PA)

Improve water quality and stream health in Killinger Creek by reducing the pollutant loading rates that contribute to existing stream impairments and

increasing in-stream and forested habitat for wildlife species. Project will stabilize and restore 1,600 feet of Killinger Creek, plant a 35 foot riparian forest buffer on both streambanks, and educate the community on why these projects are important for clean water.

\$220,000

Stroud Water Research Center

Accelerating Best Management Practice Implementation in Lancaster and Chester Counties (PA)

Develop comprehensive nutrient management plans for farms in Lancaster and Chester Counties. Project will support farmers interested in agricultural best management practices by removing a barrier to implementation and incentivizing the installation of forest buffers.

\$499,797

Western Pennsylvania Conservancy

Assessing and Prioritizing Restoration Actions in the First Fork Sinnemahoning Creek Watershed (PA)

Complete a comprehensive assessment of the First Fork Sinnemahoning Creek watershed to develop prioritized restoration projects for collaborative implementation. Project will develop a framework to implement best management practices aimed toward reducing nutrient and sediment contributions and improving eastern brook trout habitat.

\$49,559

Whole Farm Conservation Practice Implementation in the Chiques Creek Watershed

Implementing Whole Farm Conservation Practices in the Chiques Creek Watershed (PA)

Implement whole-farm conservation on a beef, poultry, and crop farm in the headwaters of the Back Run. Project will install a variety of nitrogen reduction practices including riparian buffers, grassed waterways, and roofed manure storage to improve water quality in the Little Chiques Creek watershed.

\$223,044

Wyoming Valley Sanitary Authority

Accelerating Green Infrastructure Implementation in Wyoming Valley (PA)

Implement green infrastructure demonstration projects, form a stormwater steering committee, recommend updates to municipal codes and policies to remove implementation barriers, provide education and training for design, and assess areas for further opportunities. Project will scale up green infrastructure implementation, build broader public and private sector acceptance, accelerate the rate of water quality improvements, and cultivate and enhance partnership and network growth.

\$848,440

OUR GRANTS

Virginia

Alliance for the Chesapeake Bay, Inc.

Accelerating Conservation Action Through Clean Water Partnerships (VA)

Assist farmers with developing conservation plans that prioritize installing agricultural best management practices on dairy farms such as: livestock exclusion from streams, riparian forest buffers, rooftop runoff controls, manure management, and nutrient management plans. Project will leverage existing partnerships to engage the corporate community in incentivizing their dairy producers to implement these practices and promote sustainably sourced dairy products.

\$1,000,000

Alliance for the Chesapeake Bay, Inc.

Creating a Green Corridor in the Fulton Business District

Create an accessible, park-like corridor in the Fulton Hill Business District in Richmond, Virginia. Project will improve water quality in this urban area by implementing green stormwater infrastructure practices to treat and capture stormwater runoff and reduce urban heat island impacts while improving Fulton's climate resiliency and implementing the Launch Fulton Green Jobs Initiative.

\$500,000

Center for Natural Capital

Planning to Improve a Barrier to Fish Passage Near Orange, Virginia

Complete planning and assessment work necessary to improve the function of the Town of Orange Water Treatment Plan diversion barrier near Orange, Virginia, which is currently a partial obstruction to species such as shad, American eel, sea lamprey and blueback herring. Project will address data collection including fish assemblage studies, engineering preliminary planning, initial sediment analysis, and community concerns in order to support the work needed to promote fish passage.

\$49,627

City of Manassas, VA

Developing a Watershed Resources Master Plan for the City of Manassas (VA)

Complete a Watershed Resources Master Plan to consolidate management approaches and guide implementation of water quality improvement strategies. Project will survey citizens regarding water resources, inform elected officials and professional staff on strategies to improve water quality, inventory improvement opportunities, and produce a long-term implementation plan to guide future decision making.

\$50,000

College of William and Mary, Virginia Institute of Marine Science

Living Shoreline Design on Monroe Bay (VA)

Design a living shoreline for a critical area of erosion along 1,500 feet of shoreline in Monroe Bay in the Town of Colonial Beach, Virginia. Project will create a design to protect the town's infrastructure, including a main road and utilities; provide a main road and utilities, provide habitat through marsh restoration, reduce sedimentation by stopping erosion of the upland bank, and reduce nutrient runoff to the Bay by creating a buffer along the shore.

\$39,000

Conservation Innovation Fund

Accelerating Agricultural Conservation in Virginia through Pay-for-Performance Procurement Systems

Develop a pay-for-performance, outcomes-based approach to agricultural conservation in the Commonwealth of Virginia. The project will focus on the Shenandoah valley and position the state to accelerate and expand pay-for-performance approaches to agricultural conservation in order to address the immediate objectives of The Commonwealth under its Chesapeake Bay Watershed Implementation Plan.

\$50,000

OUR GRANTS

Greene County

Developing a Green Infrastructure Master Plan for the Greene County Visitor Center (VA)

Develop a green infrastructure master plan to address water quality concerns at the Green County visitor center in Ruckersville, Virginia. Project will lay the groundwork for addressing impervious surfaces at the Center, improving water quality in the upper Rapidan River, and providing a high-quality stormwater demonstration site.

\$23,500

James River Association

Stewarding Riparian Buffers and Conservation Workforce Through a Resilient Collaborative Model (VA)

Restore riparian habitats through forested buffers and explore streambank erosion solutions in the Middle and Upper James River watershed. Project will develop innovative solutions toward the following goals: 1) build a resilient collaborative model to sustain consortium, 2) accelerate riparian buffer implementation in the James River Watershed, and 3) increase local competency in streambank erosion and stabilization.

\$1,000,000

The Piedmont Environmental Council, Inc.

Installing and Restoring Riparian Buffers in the Upper Rappahannock and Potomac Watersheds (VA)

Restore 80 acres of riparian buffers on private land in the Upper Rappahannock and Upper Potomac watersheds in Virginia. Project will plant and maintain

native tree buffers on stream-side properties, expedite implementation of livestock exclusion fencing and other agriculture best management practices, and assist landowners in completing 10 new conservation easements with protected riparian buffers.

\$263,802

Richmond Hill, Inc.

Designing Green Stormwater Infrastructure in Richmond Hill (VA)

Develop a site assessment and concept plan for green stormwater infrastructure improvements to be developed for Richmond Hill and the City of Richmond's downslope Taylor's Hill Park. Project will engage a workforce development program to design and develop a plan to guide implementation of future stormwater improvements at Richmond Hill aimed at increasing onsite filtration and diminishing the impact of stormwater in the area.

\$38,803

Rivanna Conservation Alliance, Inc.

Designing Rivanna River Restoration in Riverview Park

Conduct engineering design and outreach for stream, outfall, and riparian buffer restoration within Riverview Park in Charlottesville, Virginia. Project will accelerate on-the-ground restoration to improve the health and function of the urban corridor of the Rivanna River through capacity building, public engagement, and engineering design.

\$50,000

Upper Mattaponi Indian Tribe

Synthesizing Data from the Middle York River Watershed for Region-Wide Planning (VA)

Explore and prioritize end-user needs in the middle York River Watershed to inform the most relevant development of a regional data synthesis and the creation of an integrated watershed-wide report on watershed management. Project will create a comprehensive regional report that can be integrated into a future watershed product, focusing on information such as water quality, flooding, land use, habitat vulnerability, social vulnerability, cultural resources, and community science monitoring.

\$50,000

Virginia Association of Soil and Water Conservation Districts

Providing Cost-Share Funding to Implement Chesapeake Bay Water Quality Improvements (VA)

Guide individual stormwater best management practice implementation by providing cost-share funds in targeted sub-watersheds of Virginia. Project will review and vet applications to maximize impact of funds.

\$500,000

PHOTO (NEXT PAGE) Susquehanna River in Pennsylvania.



OUR GRANTS

Virginia Dept of Conservation and Recreation *Accelerating the Scale and Rate of Living Shoreline Implementation in Rural Coastal Virginia*

Develop a cache of shovel-ready projects with engineering designs, provide financial incentives to construct new living shorelines, and document installation of recently implemented shoreline management projects. Project will grow and enhance existing partnerships and measurably accelerate both the geographic scale and the rate of implementation of living shorelines across Rural Coastal Virginia, a priority best management practice in Virginia's Phase III Watershed Implementation Plan.

\$1,000,000

West Virginia

Canaan Valley Institute *Berkeley County Green Infrastructure Implementation and Workforce Development Partnership (WV)*

Combine implementation of stream restoration and green infrastructure projects with hands-on training to create the region's first green collar workforce. Project will combine design, installation and maintenance of best management practices for water quality improvements with training, improve local understanding and appreciation for sediment and nutrient removal methods, and create a workforce pipeline for local governments and nonprofits to pull from for future implementation.

\$751,476

The Potomac Conservancy, Inc. *Establishing and Protecting Riparian Forest Buffers in the Eastern Panhandle of West Virginia*

Reduce nitrogen, phosphorous, and sediment pollution and restore riparian habitat while addressing clean drinking water goals in the eastern panhandle of West Virginia. Project will accelerate implementation of riparian forest buffers to reduce polluted runoff and improve water quality, conserve existing high-value riparian buffers with perpetual conservation easements, and conduct targeted outreach to enhance the implementation and long-term protection of riparian forest buffers.

\$357,792

University of Maryland Environmental Finance Center *Integrating Water Quality Improvement with Hazard Mitigation in West Virginia's Eastern Panhandle*

Tailor the Environmental Finance Center's blended learning model for improving local water quality to the Eastern Panhandle of West Virginia and integrate it with ongoing hazard mitigation planning. Project will expand the capacity of governments to take action on water quality improvements and hazard mitigation needs in a coordinated way that creates efficiencies and reduces implementation costs.

\$49,998

Multiple States

Ridge to Reefs, Inc *Implementing a Spring Bioreactor and Creating and Enhancing Wetlands (VA, MD)*

Construct a denitrifying bioreactor on a spring in Lacey Springs, Virginia, design a second spring bioreactor on a springhead draining into a tributary of Smith Creek, and construct wetlands on a farm in Worton, Maryland. Project will reduce nitrogen and benefit in-stream conditions for brook trout and provide habitat for American Black Duck.

\$246,142

Trout Unlimited, Inc. *Restoring and Reconnecting Brook Trout Strongholds in the North Fork South Branch Potomac (WV, VA)*

Mitigate a large barrier to fish migration on the North Fork of the South Branch of the Potomac River, reconnecting and restoring two of the largest brook trout strongholds in the Chesapeake Bay. Project will reconnect 150 miles of headwater sources, improve water quality and habitat through agricultural best management practices, and help to create a 239-square-mile brook trout stronghold super patch.

\$492,619

PHOTO (NEXT PAGE) Sunset with a bird.





FOR ADDITIONAL INFORMATION about the Chesapeake Bay Stewardship Fund, please call us at: 202-857-0166 or visit our website at: www.nfwf.org/chesapeake

NATIONAL FISH AND WILDLIFE FOUNDATION

1133 Fifteenth Street NW, Suite 1000
Washington, DC 20005
Tel: (202) 857-0166
www.nfwf.org/chesapeake

CHESAPEAKE BAY PROGRAM

410 Severn Avenue, Suite 112
Annapolis, Maryland 21403
Tel: (800) YOUR-BAY
Fax: (410) 267-5777
www.chesapeakebay.net

PHOTOGRAPHY: FRONT COVER, JAY FLEMING PHOTOGRAPHY;
PAGES 2, 3, 15, 19, CHESAPEAKE BAY PROGRAM

*The views and conclusions contained in this document are those of the National Fish and Wildlife Foundation and should not be interpreted as representing the opinions or policies of the U.S. Government. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government.