



# Delaware Watershed Conservation Fund

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## ABOUT NFWF

Chartered by Congress in 1984, the National Fish and Wildlife Foundation (NFWF) protects and restores the nation's fish, wildlife, plants and habitats. Working with federal, corporate and individual partners, NFWF has funded more than 5,000 organizations and generated a total conservation impact of \$6.1 billion.

Learn more at [www.nfwf.org](http://www.nfwf.org)

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Delaware River

## OVERVIEW

The National Fish and Wildlife Foundation (NFWF) and the U.S. Fish and Wildlife Service announced a 2021-year round of funding for Delaware Watershed Conservation Fund projects. Thirty-two new or continuing conservation and restoration grants totaling \$9.52 million were awarded. The thirty-two awards announced generated \$12 million in match from the grantees, providing a total conservation impact of more than \$21 million.

The Delaware Watershed Conservation Fund supports projects that conserve and restore natural areas, corridors, and waterways on public and private lands to support native migratory and resident wildlife and fish, and native plants; and to contribute to the social health and economic vitality of the communities in the Delaware River watershed. These grants address priorities in NFWF's Delaware River Watershed Business Plan.

The fund was launched in 2018 to bring together various stakeholders to deliver restoration and conservation efforts throughout the Delaware River Watershed to strategically improve fish and wildlife habitat, grow partner capacity, build networks, and improve project efficiency and focus on a basin-wide scale.

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**Dam Removal Planning for the Pequest River (NJ)**

Grantee: The Nature Conservancy

Grant Amount: .....\$307,368

Matching Funds: .....\$307,368

Total Project: .....\$614,735

Develop engineering designs and permitting for two dam removals on the Pequest River in New Jersey. Project will produce two shovel-ready projects to remove the first two blockages on the Pequest river, which will ultimately reduce local flooding and open the river for migratory fish passage.

**Connecting and Restoring Bog Turtle Habitat in Southern New Jersey (NJ)**

Grantee: New Jersey Audubon Society

Grant Amount: .....\$123,200

Matching Funds: .....\$124,000

Total Project: .....\$247,200

Restore and manage 60 acres of freshwater wetlands and 0.5 miles of stream to benefit the federally threatened bog turtle. Project will work alongside private landowners to improve declining habitat that bog turtles and other species rely on through invasive plant control, promotion of native plant species, connecting upland habitat, and agricultural best management practices.

**Dam Removal and Streambank Restoration in Durham Township (PA)**

Grantee: Wildlands Conservancy, Inc.

Grant Amount: .....\$105,000

Matching Funds: .....\$107,100

Total Project: .....\$212,100

Remove a dam and complete streambank replanting in Durham Township, Pennsylvania. Project will restore 3.5 miles of stream, mitigate streambank erosion, flooding and water quality issues while benefitting key species including American eel, freshwater mussels and native fish species such as brook trout.

**Developing a Water Trail and Recreational Programming in Camden (NJ)**

Grantee: Upstream Alliance

Grant Amount: .....\$500,000

Matching Funds: .....\$1,149,348

Total Project: .....\$1,649,348

Engage over 2,000 members of the Camden community through hands-on recreational programming, hiring of local youth and promotion of public access on the previously-inaccessible Cooper River in Camden, New Jersey. Project will also perform preliminary work to begin habitat restoration for migratory American shad and river herring.

**Improving Wildlife and Aquatic Habitat in Glenolden Community Park (PA)**

Grantee: Glenolden Borough

Grant Amount: .....\$175,000

Matching Funds: .....\$220,257

Total Project: .....\$395,257



Bog turtle

Stabilize 550 linear feet of streambank, establish a riparian buffer and redirect flows from a 48-foot stormwater pipe to a wetland in Glenolden Community Park, Philadelphia. Project will become a feature of the park that provides valuable water quality and habitat improvements in the area and is made possible through a robust partnership between the Borough and eight other municipalities as well as several nonprofit organizations and county agencies.

**Hoffman's Mill Dam Removal (PA)**

Grantee: Brandywine Conservancy &amp; Museum of Art

Grant Amount: .....\$151,723

Matching Funds: .....\$151,723

Total Project: .....\$303,446

Complete removal of a minimally breached low-head dam along the Brandywine, resulting in improved aquatic habitat and the restoration of free-flowing waters across the full width of Brandywine Creek. Project will build upon dam removal efforts downstream in the State of Delaware and contribute to efforts to restore migratory shad to the Brandywine after a 200-year absence.

**Automated Acoustic Monitoring of Focal Bird Species in the Delaware River Watershed (PA)**

Grantee: University of Pittsburgh

Grant Amount: .....\$162,194

Matching Funds: .....\$167,375

Total Project: .....\$329,569

Deploy 600 automated acoustic recorders to monitor populations of golden-winged warbler, wood thrush, cerulean

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warbler, and four additional bird species in five dynamic forest restoration blocks located in the Delaware River watershed. Project will analyze the recordings with machine learning species classifiers and expert human listeners, estimate species occupancy and abundance at each site, and develop a handbook and new software interface for partners in the watershed.

#### **Development of a Targeted Watershed Assessment Report and Restoration Plan in Avondale Borough (PA)**

Grantee: White Clay Watershed Association

Grant Amount:..... \$75,000  
Matching Funds:..... \$152,587  
Total Project:..... \$227,587

Identify restoration opportunities that mitigate flooding in Avondale Borough, Pennsylvania while also improving water quality and habitat in the White Clay Creek National Wild and Scenic watershed. Project will complete a watershed assessment study and develop a comprehensive restoration plan to inform future restoration projects to benefit an at-risk environmental justice community.

#### **Sacred Grounds Program: Installing Pollinator Gardens and Engaging Communities of Faith (DE)**

Grantee: National Wildlife Federation

Grant Amount:..... \$237,426  
Matching Funds:..... \$237,426  
Total Project:..... \$474,852

Implement National Wildlife Federation's Sacred Grounds program in Wilmington, Delaware. Project will not only increase pollinator habitat and stormwater best management practices, but also engage the untapped faith community to connect with and recreate in nature, building an environmental stewardship ethic that is beneficial to fish, wildlife, and people.

#### **Development of a Neversink Watershed Management Plan (NY)**

Grantee: Sullivan County

Grant Amount:..... \$500,000  
Matching Funds:..... \$953,240  
Total Project:..... \$1,453,240

Develop a Neversink Watershed Management Plan, hold a citizen science event, and develop a walking trail along a section of the O&W Rail Trail in the Neversink Watershed, New York. Project will emphasize the community benefits of management, protection, and on-the-ground restoration projects to ensure the necessary broad support from elected officials, landowners, businesses, and other watershed stakeholders.

#### **Protecting Eastern Brook Trout Habitat through Invasive Management in the Beaverkill Valley (NY)**

Grantee: Catskill Mountainkeeper

Grant Amount:..... \$75,000  
Matching Funds:..... \$75,422  
Total Project:..... \$150,422

Leverage a unique partnership of state, local and academic



Freshwater mussels

stakeholders to employ research-based best management practices and implement novel eDNA tools to combat hemlock woolly adelgid forest pest and maintain trout habitat and recreation opportunities at a popular public access site in the Beaverkill Valley. Project will develop tools that represent a tremendous gain in the effort to control hemlock woolly adelgid and will be transferable to other terrestrial invasive species programs.

#### **Linking Up the Landscape: Connecting Recreation to Conservation in the Musconetcong Watershed (NJ)**

Grantee: Musconetcong Watershed Association

Grant Amount:..... \$362,149  
Matching Funds:..... \$523,129  
Total Project:..... \$885,278

Create an online map with the location of recreational access points, and the cultural and historic resources that give this part of the Delaware Watershed a unique regional identity. Project will complete a timely visitor readiness assessment, watershed-wide interpretive plan, and install access point signs with QR codes linked to the map for the new National Water Trail.

#### **Stream Restoration in the Mud Run Watershed (PA)**

Grantee: Wildlands Conservancy, Inc.

Grant Amount:..... \$75,113  
Matching Funds:..... \$75,240  
Total Project:..... \$150,353

Remove an obsolete dam, stabilize the streambanks, and establish new riparian buffer areas at two critical locations in the Mud Run Watershed, Pennsylvania. Project will restore free-flowing conditions, improve habitat and water quality for native trout populations, and filter pollutants and nutrients from stormwater runoff from roadways adjacent to the stream through installation of riparian buffer plantings.

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**Assessment of Northern Snakehead Feeding in the Delaware River Estuary (NJ, PA)**

Grantee: Academy of Natural Sciences of Drexel University  
Grant Amount:..... \$75,046  
Matching Funds:..... \$75,049  
Total Project: ..... \$150,095  
Assess the feeding impacts of Northern Snakehead on alosines and species of management concern in the Delaware River Estuary through site surveys by boat electrofishing. Project will guide future management and predict potential impacts for species of management concern such as striped bass, American eel, American shad and herring species.

**Developing Wild Trout Conservation Portfolio for New Jersey's Delaware Basin (NJ)**

Grantee: Trout Unlimited, Inc.  
Grant Amount:..... \$ 75,564  
Matching Funds:..... \$75,848  
Total Project: ..... \$151,412  
Produce wild trout conservation plans for the Delaware Basin in northwestern New Jersey following Trout Unlimited's fine-scale Conservation Portfolio approach. Project will identify explicit protection and habitat restoration priorities needed to maintain and expand wild trout populations in New Jersey and will showcase novel, transferable methods that increase the efficiency and accuracy of baseline data collection for fine-scale portfolio development in other brook trout priority areas.

**The Philadelphia Pollinator Project: Working at the Intersection of Community and Conservation (PA)**

Grantee: National Audubon Society, Inc.  
Grant Amount:..... \$460,809  
Matching Funds:..... \$460,809  
Total Project: ..... \$921,618  
Improve urban habitat conditions for year-round and migratory pollinators and birds, improve access to and condition of open spaces for underserved Philadelphia neighborhoods, and support monitoring and data collection efforts in Philadelphia County, Pennsylvania. Project will create a framework for a community-led pollinator habitat network in Philadelphia, deepening community engagement, sparking community action through volunteerism and creating employment opportunities for local youth.

**Restoration of American Shad and Fish Passage on the Brandywine River (DE)**

Grantee: Brandywine Shad 2020  
Grant Amount:..... \$445,000  
Matching Funds:..... \$455,000  
Total Project: ..... \$900,000  
Restore American shad and improve ecological function to the Brandywine River through the removal of two fish passage barriers, restoration of ten acres of impounded habitat, and development of fish passage designs at two other dams. Project will build on previous success to reduce water levels



Horseshoe crabs, Slaughter Beach, Delaware Bay

that lead to flooding and help reduce risk to public safety while increasing in aquatic habitat diversity and water quality.

**Kimble Beach Restoration and Shoreline Stabilization (NJ)**

Grantee: American Littoral Society  
Grant Amount:..... \$560,800  
Matching Funds:..... \$561,849  
Total Project: ..... \$1,122,649  
Continue restoration of Kimble Beach shorebird and horseshoe crab habitat in Cape May County, New Jersey. Project will advance the comprehensive conservation and restoration of highly vulnerable and valuable Bayshore beach habitat critical for horseshoe crabs and shorebirds by using strategies that will further reduce erosion and increase resilience to storms and climate change.

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### Developing a Watershed Restoration Plan for the Lower West Branch Red Clay Creek Watershed (PA)

Grantee: Brandywine Red Clay Alliance

Grant Amount: ..... \$78,502

Matching Funds: ..... \$88,286

Total Project: ..... \$166,788

Develop a watershed restoration plan for the Lower West Branch Red Clay Creek Watershed in Chester County, Pennsylvania. Project will address impairments to the stream and riparian habitats to improve water quality and restore aquatic and riparian buffer habitats, acting as a road map to prioritize and aggregate best management practices including floodplain reconstructions, stream restoration projects, and stormwater management retrofits.

### Evaluating Outcomes of Coastal Salt Marsh Intervention Efforts (DE, NJ, PA)

Grantee: Partnership for the Delaware Estuary, Inc.

Grant Amount: ..... \$300,000

Matching Funds: ..... \$341,032

Total Project: ..... \$641,032

Develop the Marsh Futures Ecological Mapper system to provide landscape-level evaluation of changes to key salt marsh ecosystem services of proposed habitat-specific restoration efforts. Project will fill a vital evaluation gap in protecting coastal marshes by providing a mechanism to understand how specific intervention efforts can either support or diminish landscape-level ecosystem services of salt marshes with applicability across the Atlantic Coast.

### Supawna Meadows National Wildlife Refuge Tidal Marsh Restoration (NJ)

Grantee: Ducks Unlimited, Inc.

Grant Amount: ..... \$750,000



Delaware River

Matching Funds: ..... \$892,600

Total Project: ..... \$1,642,600

Restore, enhance and recreate 430 acres of existing and lost critical tidal freshwater marsh habitat at Supawna Meadows National Wildlife Refuge, New Jersey. Project will facilitate natural hydrologic regime through removal of excess rock in key channels, enhance marsh resilience via enhancing existing breakwaters along the Refuge border, and conduct marsh elevation enhancement via dredge material placement.

### John Heinz National Wildlife Refuge Henderson Marsh Restoration (PA)

Grantee: Ducks Unlimited, Inc.

Grant Amount: ..... \$750,000

Matching Funds: ..... \$761,200

Total Project: ..... \$1,511,200

Restore the hydrology of 150 acres of tidal marsh habitat in the U.S. Fish and Wildlife Service's tidally restricted Henderson Marsh at John Heinz National Wildlife Refuge. Project will improve marsh function to reduce flooding in local underserved communities, enhance and expand recreational opportunities for kayaking and fishing, and increase public access for environmental education of diverse audiences.

### Water Management Studies to Inform Basin-wide Resource Planning (DE, NJ, NY, PA)

Grantee: Delaware River Basin Commission

Grant Amount: ..... \$499,126

Matching Funds: ..... \$1,151,390

Total Project: ..... \$1,151,390

Advance research in water management through completion of three studies focusing on water quality, contaminants of emerging concern, and future water availability. Project will be used for planning efforts including consideration of future water supply projects, wastewater assimilative capacity, evaluation of pass-by flows, conservation releases, consumptive use mitigation triggers, freshwater flow needs to address sea level rise, and potential flow targets.

### Streambank Stabilization in the Upper Musconetcong River Watershed (NJ)

Grantee: Lake Hopatcong Commission

Grant Amount: ..... \$480,650

Matching Funds: ..... \$489,378

Total Project: ..... \$970,028

Design, permit, construct, and monitor three streambank stabilization projects, identified as priority projects in the 2021 Upper Musconetcong River Watershed Implementation Plan. Project will enhance local wildlife habitat, reduce nutrient loads, provide volunteer activities, and increase public access.

### Improving Public Access and Recreation in the Pennsylvania Portion of the Delaware River - II

Grantee: The Pennsylvania Fish and Boat Commission

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Red knots

Grant Amount:..... \$400,000  
 Matching Funds:..... \$400,000  
 Total Project: ..... \$800,000  
 Improve public fishing and boating access and recreation by providing grants to public entities, including townships, boroughs, municipal and county governments as well as to nonprofit groups for the planning, acquisition, development, expansion and rehabilitation of public boating facilities located in the Pennsylvania portion of the Delaware River Watershed. Project will ensure that boaters and anglers in the Delaware River watershed have safe, clean, and updated boating facilities.

**Dam Removal in the White Clay Creek (DE)**

Grantee: New Castle Conservation District  
 Grant Amount: .....\$179,520  
 Matching Funds: .....\$184,520  
 Total Project: .....\$364,040  
 Remove a highly visible stone dam on the White Clay Creek in New Castle County, Delaware, restoring the indigenous ecosystem and habitat for aquatic animals and wildlife. Project will restore 1 mile of river hydrology and stream habitat and reconnect 9.2 miles of streambed, enabling shad and herring to spawn in the future while restoring riparian habitat essential to benthic organisms and neotropical warblers.

**Paper Mill Dam Removal and Restoration (PA)**

Grantee: American Rivers, Inc.  
 Grant Amount:..... \$154,314  
 Matching Funds:..... \$300,000  
 Total Project: ..... \$454,314  
 Remove the Paper Mill Dam and restore the adjacent riparian corridor in Reading, Pennsylvania. Project will restore river

flows and natural processes in Cacoosing Creek, benefit local fisheries, improve recreation, eliminate outdated infrastructure, remove a public safety hazard, and restore native riparian vegetation.

**Developing a Forest Stewardship Plan for the White Lake Natural Resource Area (NJ)**

Grantee: New Jersey Audubon Society  
 Grant Amount:..... \$77,640  
 Matching Funds:..... \$227,815  
 Total Project: ..... \$305,455  
 Develop a State Approved Forest Stewardship Plan for the White Lake Natural Resource Area, located in Warren County, New Jersey. Project will enable the county to effectively and efficiently manage invasive species, improve wildlife habitat, and ensure forest and watershed health at this preserved property.

**Willowemoc Trout Habitat Improvement (NY)**

Grantee: Trout Unlimited, Inc.  
 Grant Amount:..... \$221,692  
 Matching Funds:..... \$224,000  
 Total Project: ..... \$445,692  
 Implement larger scale stream restoration projects to enhance fish and wildlife habitat, improve water quality, help with flood mitigation, and contribute to the health of the fisheries in the watershed. Project will complement ongoing and focused efforts to expand and secure native and wild trout strongholds, completing restoration activities targeting channel instability, loss of floodplain connectivity, and degradation of instream habitat in these important trout waters.





Golden-winged warbler

**A Riverfront Classroom on the Schuylkill: Community Engagement in Southwest Philadelphia (PA)**

Grantee: John Bartram Association  
 Grant Amount:..... \$250,000  
 Matching Funds:..... \$450,000  
 Total Project: ..... \$700,000  
 Construct a new watershed education facility to complement the forthcoming freshwater mussel hatchery at Bartram’s Garden with the Partnership for the Delaware Estuary in Philadelphia, Pennsylvania. Project will provide unparalleled hands-on opportunities for public and K-12 watershed education, focusing on community access and youth-driven, collaborative stewardship.

**Developing Propagation and Rearing Methods for Freshwater Mussels in the Lower Delaware River Basin**

Grantee: Partnership for the Delaware Estuary, Inc.  
 Grant Amount:..... \$164,002  
 Matching Funds:..... \$165,000  
 Total Project: ..... \$329,002  
 Develop propagation and rearing methods for three rare species of freshwater mussels that inhabit the tidal freshwater zone of the Delaware River Basin. Project will address a key bottleneck in the restoration and damage mitigation for these species, and will also contribute to immediate and future water quality goals as progeny produced by the study will be planted into pilot living shoreline projects where they can deliver ecosystem services.

**Restoring Dynamic Forest Structure for Priority Birds in the Delaware River Watershed: Phase V (PA)**

Grantee: American Bird Conservancy  
 Grant Amount:..... \$749,999  
 Matching Funds:..... \$750,500  
 Total Project: ..... \$1,500,499  
 Develop and implement a comprehensive forest management strategy targeting long-term availability of diverse forest age classes and structural complexity benefiting the entire reproductive cycle of golden-winged warbler, cerulean warbler, and wood thrush. Project will draft comprehensive plans for three new Dynamic Forest Restoration Blocks and will continue to implement previously-planned management and avian-response monitoring activities.