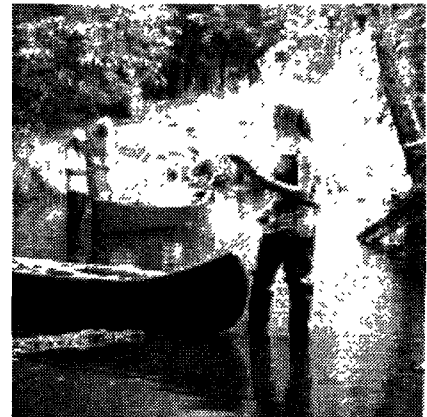


MARCH 2000

# Small Watershed Grants Program FY 1998 Final Report



Sponsored by the  
Chesapeake Bay Program

Administered by the  
Alliance for the Chesapeake Bay  
and the  
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FY 1998

Final Report

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*March 2000*

*To the Readers:*

*We are pleased to present this summary of the inaugural year of the Small Watershed Grants Program. The reports of each project demonstrate the powerful benefits of providing relatively small amounts of funding to communities.*

*We are grateful to Senator Sarbanes and other members of Congress for initiating this new program. We hope that readers will be inspired to duplicate these projects in your own communities, and to develop your own innovative partnerships and projects to protect and restore your local streams and the Chesapeake Bay.*

*Sincerely,*

*Frances H. Flanigan  
Executive Director  
Alliance for the Chesapeake Bay*

*Gary G. Allen  
Executive Director  
Center for Chesapeake Communities*

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# Introduction

*In 1998, the Chesapeake Bay Program initiated an innovative approach to implementing Chesapeake Bay restoration and protection goals at the community level. Called the Small Watershed Grants Program, this new effort was originally proposed by U.S. Senator Paul S. Sarbanes (D-Md.) in his Chesapeake Bay Restoration Act and supported by most of the region's House and Senate members. The Small Watershed Grants Program paired dollars from the Chesapeake Bay Program with worthy projects at the community and local government scale. The Small Watershed Grants Program provided the funding vehicle; the Bay Program set the funding parameters; local governments and citizens organizations provided ideas, partners and often a volunteer labor force. The results, documented in this report, demonstrate how this powerful combination of resources produced good results for the Bay and its rivers and creeks.*

*The Chesapeake Bay Program is a state-federal partnership. The states played an important role in the Small Watershed Grants Program because of their knowledge of local needs and their experience in managing other kinds of grants programs. Each state partner was represented on the selection committee and had the opportunity to evaluate project proposals against the priorities of the state.*

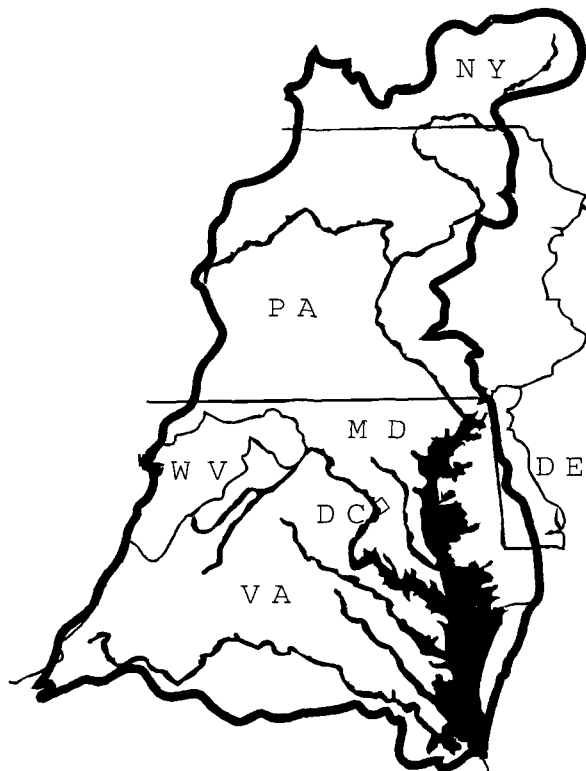
*A request for proposals was issued in February 1998. In response to the RFP, 160 proposals were submitted. All were reviewed by a selection committee and ranked against criteria approved by the Bay Program. The selection committee ultimately chose 37 proposals for funding, including 17 from local governments and 20 from community organizations.*

*The Small Watershed Grants Program was managed by the Center for Chesapeake Communities and the Alliance for the Chesapeake Bay. These organizations provided staff liaisons to the grantees, managed the disbursement of funds and the required grant paperwork, and reported to the Chesapeake Bay Program.*

## Why Local Governments?

*Local governments are critical partners in the effort to protect small watershed resources. Establishing zoning laws, designating land use, levying local property taxes, regulating storm water run-off, and bearing responsibility for waste water treatment falls under the authority*

The Chesapeake Bay Watershed



*of county councils, supervisors and commissioners, as well as municipal officials. These powerful local entities are also responsible for a broad range of quality of life services from transportation, social services, public works and economic development to local environmental resource protection.*

*The Bay watershed is experiencing significant growth. A local government's land use code provides the framework for balancing the needs and concerns of citizens with regional priorities. For these communities to restore and maintain the quality of local watersheds, they must seek a balance among private interests, quality of life goals and environmental benefits. The Small Watershed Grants Program provided a tool to help accomplish this.*

## Why Communities?

*Community organizations of all kinds are organizing at the small watershed level to address environmental problems. River organizations – often called “Friends of” – exist now on literally hundreds of tributaries in the Chesapeake watershed. In addition, service groups, schools, community associations, land trusts, preservation groups, fishing and recreation organizations and others are embracing the notion of participation at the local level. These organizations bring local knowledge and passion to the work of caring for streams, woods, community open spaces, and wildlife habitats. They also bring a remarkable ability to engage their neighbors, their elected officials, local businesses and others in the work of protecting valued places and resources.*

*The Bay Program's commitment to “move upstream” and to work at the small watershed scale is realized in part through the Small Watershed Grants Program. As this new program grows and matures, it has the potential to complement other funding sources and initiatives, led by state governments, private foundations, and communities themselves, in the collaborative work of protecting this region's natural resources.*

*Every project included in this report reflects a vision valued by the community and supported by local government. Projects demonstrate innovation, creativity, effective communication and partnerships.*

## Lessons Learned

*The Small Watershed Grants Program is new. The first year has been a learning experience, affirming things already known and revealing insights unique to its start-up. As the program grows, it will benefit from the lessons learned this first year.*

- Community groups and local governments can be very successful at putting together innovative partnerships. A number of projects included partners who had not previously been involved with an environmental project, including traditionally non-involved urban communities.*
- The administrative requirements of federally funded programs are daunting, especially to community groups, and require active engagement of a middleman who can assist these organizations with navigating the paperwork.*
- The one-year time frame proved difficult for some projects, especially those that were weather dependent. Better planning, timeliness in the decision and grant award process, and ability to start work immediately need to be considered. Extensions may be occasionally necessary.*
- Relatively small amounts of money often were successful in leveraging large*



*contributions of volunteer time and other resources. Documenting these contributions adds significant value to the program.*

- *Implementation problems occurred in a number of projects. Scopes of work had to be adjusted, time frames and budgets modified. These difficulties are to be expected, and the administrative structure needs to be ready to deal with them quickly.*
- *Some projects turned out to be more difficult to carry out than expected. Site visits, planning assistance, reference to training tools and other forms of support were provided and proved crucial in bringing those projects to a successful conclusion.*
- *State agency staff expressed some concerns that projects were not coordinated with state priorities. This is a potentially divisive issue which requires discussion and collaboration.*
- *Tangible, measurable results were achieved by all grantees. In some cases, work accomplished helps fulfill state goals for habitat restoration. The projects also resulted in other kinds of measurable contributions. These measurable results need to be captured in the Bay Program data base.*
- *Many projects included a public event of some sort and often generated good press coverage. These opportunities need to be conveyed to Bay Program partners ahead of time, and their participation encouraged.*
- *Bay Program partners would likely benefit from interaction with the Small Watershed Grants Program grantees as they implement their projects. Efforts should be made to keep appropriate people informed of activities as they are occurring.*
- *A network that allows for dialogue among grantees and with other like groups could be a useful tool. The Bay Program could establish such a tool as part of its web site.*
- *Opportunities for sharing within the Bay watershed and beyond abound. Efforts need to be made to publicize the Small Watershed Grants Program widely.*
- *Funding opportunities are often difficult to learn about and confusing to those not experienced in dealing with bureaucracies. Efforts to inform the public about available funding need to be improved, clearly delineating the difference among sources, requirements for eligibility, and application procedures. Within the Bay Program, a needed service could be provided if all partners would coordinate their grantmaking programs.*
- *The legal authority under which the Small Watershed Grants Program operates limits the kinds of projects that are eligible. The potential of the program to support good projects could be greatly expanded if this issue were addressed.*
- *Reviewing proposals and selecting projects is a very difficult task. Participation on the review team by representatives of Bay Program committees as well as state governments is essential to ensuring that projects are technically sound, consistent with Bay Program goals, and compatible with other projects.*

---

# Anacostia Watershed Society

Bladensburg, Maryland

*The Anacostia Watershed Society was formed in 1989 to restore and protect the Anacostia River and its tributaries. The watershed encompasses parts of Montgomery and Prince George's Counties in Maryland, plus half of the District of Columbia. It has suffered from intense urbanization and, as a result, the river's health has been severely compromised by lack of forest cover and substantial amounts of debris entering the waterways.*

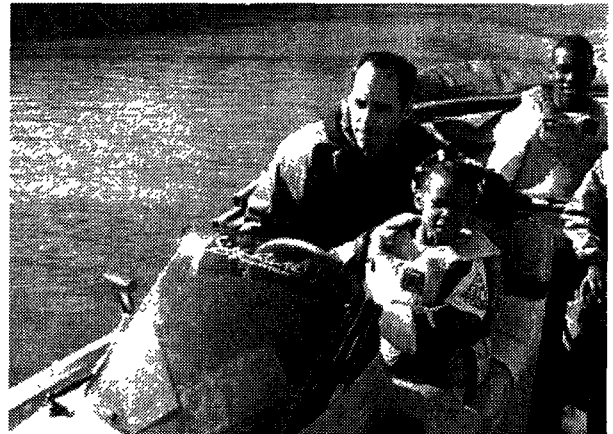
**THE PROJECT:** To mobilize volunteer efforts to remove trash and debris from the river and watershed, plant trees, and stencil stormdrains throughout the area.

**THE PARTNERS:** Anacostia Watershed Society, Americorps, Greater D.C. Cares, Port Towns Action Committee, University of Maryland, and several civic coalitions.

**THE RESOURCES:** \$20,000 from the Small Watershed Grants Program and the labor of more than 2,400 volunteers, valued at approximately \$140,000.

## **THE RESULTS:**

- *The Anacostia Watershed Society hosted 33 clean-up events that greatly exceeded original goals, both in the number of volunteers and the amount of restoration work completed.*
- *Organizers had hoped to involve 550 volunteers but instead recruited 2,400.*
- *The goal was to remove five tons of debris; instead, volunteers removed 29.44 tons of debris and 237 tires from the river.*
- *Five tree-planting events resulted in the installation of 185 trees.*
- *Fifty stormdrains were stenciled with drainage signs during three volunteer work days.*

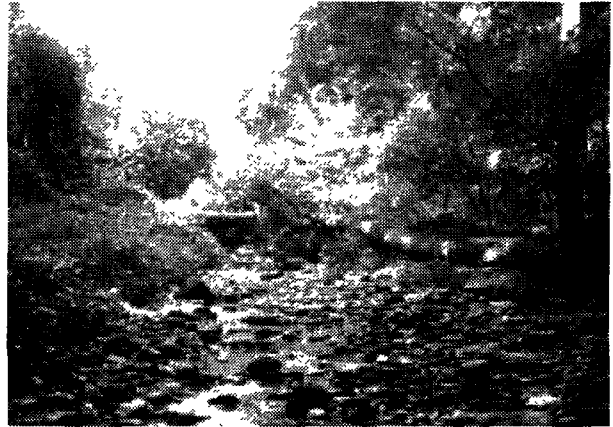


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# Arlingtonians for a Clean Environment

Arlington, Virginia

*Arlingtonians for a Clean Environment has been at work in the Four Mile Run watershed of Virginia for twenty-one years. The organization has led many stream cleanups with immediate benefits to Four Mile Run, but there has been little change in the litter and pollution problems that impact the stream. As a result, Arlingtonians for a Clean Environment wanted to reduce those problems by educating residents about their relationship to both Four Mile Run and the Chesapeake Bay.*



**THE PROJECT:** To design and install interpretive signage that would educate residents about their relationship to the Four Mile Run watershed and, ultimately, the Chesapeake Bay.

**THE PARTNERS:** Arlington County Cultural Affairs Division, Arlington County Parks Department, Arlingtonians for a Clean Environment, Arlington Mill Community Center, Barcroft Civic Association, Glencarlyn Civic Association, and area residents.

**THE RESOURCES:** \$8,831 from the Small Watershed Grants Program, and in-kind donations of personnel and office support from several departments of the Arlington County government, Arlingtonians for a Clean Environment, Barcroft School and Civic League, Friends of Four Mile Run, and the Glencarlyn Civic Association.

## **THE RESULTS:**

- The project expanded to include the creation of a new, passive recreation park that will be the permanent site of the interpretive signage. The park is located in an area that has no other green space and is home to one of Northern Virginia's most ethnically diverse communities. Residents and day users range from recent immigrants of many nationalities, to the homeless, and established working professionals. The park will feature low-impact landscaping that demonstrates the use of native plants to minimize erosion and runoff.
- Three interpretive signs were created to build awareness of the importance of Four Mile Run and the Chesapeake Bay. Signage was carefully designed so that it would communicate effectively to the park's diverse visitors. The messages include an orientation to the watershed, the human history of the area, and the importance of upstream stewardship. Because the park is currently under development, the interpretive signs will be temporarily installed in another park.
- By forming a broad-based steering committee, including representatives from the Hispanic and Asian communities, the development of this project created greater cohesion and interaction among very diverse Arlington constituencies.
- Outdoor artwork will also be installed in the park, providing an enhanced park resource to an under-served community.

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# Baltimore City Department of Recreation and Parks

Baltimore, Maryland

*The City of Baltimore wanted to strengthen stewardship of the local watershed and the Chesapeake Bay by presenting ecology lessons and field experiences to urban youth in a natural setting close to their own homes. The Gwynns Falls watershed within the city limits offers unique environmental education opportunities at Gwynns Falls/Leakin Park, the Carrie Murray Outdoor Education Center, and the Gwynns Falls Trail, but they are under-utilized by the city schools.*



**THE PROJECT:** To develop hands-on outdoor education opportunities at city facilities in parks in the Gwynns Falls watershed.

**THE PARTNERS:** City of Baltimore Department of Recreation and Parks, Department of Education, and Planning Department; and Baltimore City schools' personnel, teachers, and students.

**THE RESOURCES:** \$6,719 from the Small Watershed Grants Program and student volunteer labor valued at more than \$1,000.

## **THE RESULTS:**

- *Fliers were distributed to 36 schools promoting field trips to sites within the Gwynns Falls watershed, and a one day outdoor education workshop was held for teachers. Seven school field trips were scheduled as a result of these promotions.*
- *More than 215 students participated in water quality analysis studies, tree plantings, and stream clean-ups while learning about stream ecology and urban water quality and habitat problems.*
- *A partnership was established with the Sarah Roach Elementary School. Three times per year, third and fifth grade students will participate in ecology studies at the Carrie Murray Outdoor Education Center and then participate in local clean-up projects.*
- *A comprehensive report was compiled on environmental education opportunities in Baltimore City schools which is available to teachers and other environmental educators throughout the city. This report will be used to determine how the Baltimore City Department of Recreation and Parks can complement existing programs, and what additional programs are needed.*
- *The Baltimore City Department of Recreation and Parks will fund a part-time position to continue work with Baltimore City schools and expand this program to include schools in other city watersheds.*

---

# Bel Air High School

Bel Air, Maryland

*Bel Air High School is located in the Winters Run watershed in Harford County, Maryland. Students in the school's environmental club designed this project to be a school and community demonstration of the importance of habitat restoration using native plants. The goal was to reduce erosion and run-off into nearby Plumtree Run.*

**THE PROJECT:** To redesign and replant the marquee garden at the entrance to Bel Air High School.

**THE PARTNERS:** Bel Air High School Environmental Club, Bel Air High School Environmental Science Department, and students from the school.

**THE RESOURCES:** \$744 from the Small Watershed Grants Program and in-kind donations of volunteer labor, supplies, equipment, and services.

**THE RESULTS:**

- The marquee garden at Bel Air High School was redesigned and replanted with native plants.
- A small pond was designed and installed.
- Students gained new skills in plant taxonomy, habitat design, and project budgeting and management.
- A high-profile demonstration habitat project has been created that has the potential to influence the community as well as students.



---

# Bellevue Park Association

Harrisburg, Pennsylvania

*The Bellevue Park Association within the City of Harrisburg consists of more than 250 households with more than twelve acres of commonly held open space that includes springs, a stream and two ponds. The Association recognized that the watershed within its boundaries had problems with erosion, stormwater run-off, and an over-abundance of carp. The waters from these lands eventually drain into the Susquehanna River.*



**THE PROJECT:** To restore the ponds and feeder stream in the Bellevue Park open space lands.

**THE PARTNERS:** Bellevue Park Association, Bellevue Park resident volunteers, and the City of Harrisburg.

**THE RESOURCES:** \$10,000 from the Small Watershed Grants Program; more than \$300 from the Bellevue Park Association; and \$6,960 in volunteer labor from Bellevue Park residents and staff.

## **THE RESULTS:**

- The upper pond was drained and its banks were stabilized with biologs to form a bench. The bench was covered with fill dirt to prepare it for planting.
- In fall 1998, more than 40 residents removed trash, thick brush, and exotic plants along the pond and stream. They planted aquatic plants on the benches, and native grasses, sedges, trees and shrubs along the pond bank. A second work day that fall brought out 15 volunteers to plant additional trees and shrubs. Native grasses, perennials, and wildflowers were added in spring 1999 by 30 volunteers.
- Twenty-three different species and more than 700 individual plants have been installed.
- Bishop McDevitt High School, within walking distance of the park, is using the area as part of its environmental science classes, and the City of Harrisburg is monitoring the water quality of the ponds.
- The Bellevue Park Association plans to restore the lower pond and additional stream corridor on its own. It will use seeds from maturing plants at the upper pond to help restore the lower one.

---

# Borough of Lititz

Lancaster County, Pennsylvania

*Lititz Run in southeastern Pennsylvania flows directly into the Susquehanna River. The portion of the stream flowing through the Borough of Lititz was wide and shallow with eroding streambanks, and provided poor habitat for fish and wildlife. In addition, the stream picked up significant thermal and nutrient pollution from Mill Pond on the Millport Conservancy lands. Lititz Run's water quality was further degraded by Santo Domingo Creek in Warwick Township, which contributed the largest amounts of stormwater run-off and sediment to the stream. The Borough of Lititz, Warwick Township and the Lititz Run Watershed Alliance planned to address these watershed issues with three separate projects.*



**THE PROJECT:** To create new wetlands along Santo Domingo Creek to control sediment and pollutants; to restore Mill Pond and the section of Lititz Run which feeds the pond; and to restore the portion of Lititz Run which flows through the Borough of Lititz.

**THE PARTNERS:** Borough of Lititz, Lancaster County Conservation District, Lancaster County Planning Commission, Millport Conservancy, Warwick School, Warwick Township, and volunteer labor and assistance from various local nonprofit groups and citizens.

**THE RESOURCES:** \$40,000 from the Small Watershed Grants Program; more than \$80,000 from state, local government and private sources; and volunteer labor and in-kind support from municipal personnel valued at more than \$15,000.

## **THE RESULTS:**

- A 2.6-acre tract along Santo Domingo Creek was turned into a natural wetland filtration system. A rock-lined channel was constructed to direct water into an area where sediment can settle out. Construction was completed in September 1998.
- A community planting day brought out approximately 100 volunteers to install 4,000 plants in the new wetland area. The event was covered by the local press.
- The Santo Domingo water quality management area is located in Warwick Linear Park and can be viewed from the park trail. The facility is maintained by Warwick Township. A sign explains the wetland facility.
- The stream through Lititz Borough was deepened, the bank stabilized, and a riparian buffer planted along the bank. This project restored 2700 feet of stream and was completed in June 1999.
- The Mill Pond restoration began in fall 1999 due to drought and permitting delays. The existing dam on Mill Pond was breached to allow for a fish passage, new wetlands were created along the pond, the stream channel was deepened, and native trees and shrubs were planted along the stream bank.

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# Bradford County Conservation District

Bradford County, Pennsylvania

*Bradford County lies in northeastern Pennsylvania. The Towanda Creek watershed in the southwestern part of the county and the Sugar Creek watershed in the central western part, together drain more than 287,000 acres of largely forest and agricultural lands. Both watersheds empty into the Susquehanna River which bisects the county. Neither watershed has a formal management plan.*



**THE PROJECT:** To hold facilitated workshops for local landowners, government and agency officials in the Towanda and Sugar Creek watersheds, in order to reach consensus about important watershed issues and ways to address them.

**THE PARTNERS:** Bradford County Conservation District, Canaan Valley Institute, local stakeholders, and local and regional government and agency officials.

**THE RESOURCES:** \$10,000 from the Small Watershed Grants Program and in-kind contributions from the Bradford County Conservation District for staff time and office supplies valued at \$5,487.

## **THE RESULTS:**

- Thirty significant stakeholders plus government leaders and agency personnel from each watershed were invited to attend a facilitated workshop. Stakeholders were nominated by local government officials.
- A two-day workshop was held March 18-19, 1999 in Canton to address the needs of the Towanda Creek watershed. Thirty-eight people attended.
- Forty people participated in a one-day workshop held March 31, 1999 in Troy to discuss the needs of the Sugar Creek watershed.
- The workshops brought together diverse groups of people to solve community problems. The participants discussed resource issues, trends, short and long-term goals, and possible actions.
- Reports on the sessions were distributed to workshop participants, municipalities, and state and federal legislators. A follow-up meeting in each watershed was held to present the information from the workshops to the general public.
- The steering committees of both workgroups are now pursuing formation of an organized watershed effort and have planned future meetings.



---

# Brandywine Conservancy

Chadds Ford, Pennsylvania

*The Elk Creeks watershed includes portions of southeastern Pennsylvania and the neighboring northeast corner of Maryland. It is a largely agricultural region just beginning to experience residential development and growing pains. The Big and Little Elk Creeks form the headwaters of the Elk River, which is a tidal freshwater river at the head of the Chesapeake Bay. The Brandywine Conservancy, working with the Elk Creeks Watershed Association, conducted a series of events and lectures to educate and inspire residents in the Elk Creeks watershed to become more active conservationists.*



**THE PROJECT:** To work with the Elk Creeks Watershed Association to educate landowners about conservation practices, restore wetlands and riparian buffers, and encourage the adoption of ordinances that support sustainable development.

**THE PARTNERS:** Brandywine Conservancy and Elk Creeks Watershed Association.

**THE RESOURCES:** \$6,760 from the Small Watershed Grants Program and volunteer labor valued at approximately \$2,100.

## **THE RESULTS:**

- More than 30 residents and municipal officials attended a watershed Wise Zoning lecture in the fall 1998. In the spring, additional lectures were held on small lot management, natural landscaping, hydrology, and sewage issues. They were also well attended.
- Approximately 235 sixth-grade students attended a Stream Fair at Elk Ridge School.
- An "Art in Nature" program was held in June at Fair Hill Nature Center.
- A watershed-wide landowner database was created. Both Brandywine Conservancy and the Elk Creeks Watershed Association will use the list for future mailings and program promotions.
- Momentum continued with a program for farmers planned for the future, titled *Preserving Open Space and Farmland for Future Generations: An Estate Planning Workshop*.
- The Elk Creeks Watershed Association received several requests from area landowners to accept donations of land or easements and, as a result, has become certified as an organization that can accept these donations.

---

# Calvert County Department of Planning and Zoning

Calvert County, Maryland

*Calvert County is one of the fastest growing counties in Maryland. Its largest watershed, Hunting Creek, includes agricultural and urban areas and is experiencing both residential and commercial growth pressures. Hunting Creek flows directly into the Patuxent River which empties into the Chesapeake Bay. The county established a need for information on the water quality of the tidal portion of Hunting Creek to help it assess the impact of development on the watershed.*



**THE PROJECT:** *To collect baseline water quality data for the tidal portions of Hunting Creek and to map submerged aquatic vegetation (SAV) with the help of trained volunteers.*

**THE PARTNERS:** *Alliance for the Chesapeake Bay, Calvert County, Hunting Creek Watershed Task Force, and citizen volunteers.*

**THE RESOURCES:** *\$1,220 from the Small Watershed Grants Program and in-kind contributions of county staff time and volunteer labor valued at \$1,665.*

## **THE PROJECT:**

- *Volunteers were trained by the Alliance for the Chesapeake Bay on EPA-approved water sampling methods and SAV identification and mapping techniques.*
- *Ten volunteers sampled the tidal portion of Hunting Creek bi-weekly from June 7, 1998 through November 21, 1998, once in winter 1999, and then bi-weekly from March 1999 through October 1999. The samples were analyzed for nine parameters, including nitrates and phosphates.*
- *Four volunteers helped to sample, identify, and map the creek's SAV, the first information of this type ever collected for Hunting Creek.*
- *Data from this study will be used by the county and the Hunting Creek Watershed Task Force to support a watershed management plan for Hunting Creek. By involving citizens in measuring the health of their watershed, this project also broadened stewardship of Hunting Creek.*

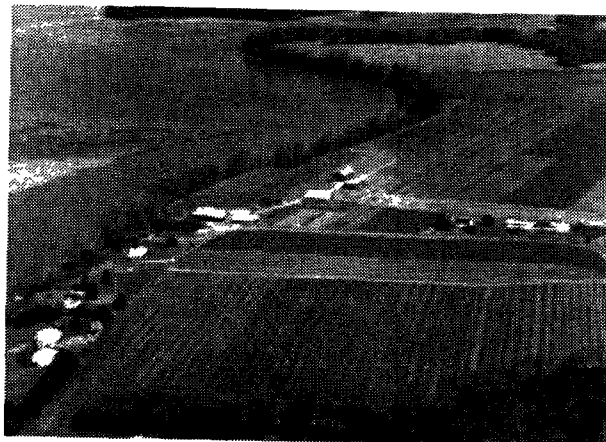
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# Calvert Soil Conservation District

Calvert County, Maryland

*Maryland's Patuxent River empties directly into the Chesapeake Bay. Its watershed drains portions of Anne Arundel, Charles, Howard, Montgomery, Prince George's, and St. Mary's Counties.*

*Riparian buffers along the Patuxent and throughout its watershed are being lost to erosion and poor management. Loss of these buffers result in increased amounts of sediment and pollutants entering the river from stormwater run-off.*



**THE PROJECT:** To educate the landowners in the Patuxent River watershed about the ecological importance of riparian buffers and how to restore and maintain them.

**THE PARTNERS:** Calvert County, Maryland Department of the Environment, Maryland Department of Natural Resources, Patuxent Tributary Team, Soil Conservation Districts of the seven counties encompassed by the Patuxent River watershed, USDA Natural Resources Conservation Service, and University of Maryland Cooperative Extension Service.

**THE RESOURCES:** \$31,500 from the Small Watershed Grants Program and in-kind contributions of local personnel time and office support valued at \$15,555.

## **THE RESULTS:**

- A comprehensive booklet was developed called *Stream Buffer and Restoration and Shoreline Stabilization Information Guide*. It includes information on riparian buffer restoration, best management practices, financial assistance programs, permitting requirements and procedures, and a list of landowners using best management practices who are willing to serve as a resource for other landowners. One thousand booklets were printed for distribution by soil conservation officers in their work with local landowners.
- A slide show and 15-minute video were produced that includes "before" and "after" restoration pictures.
- Five public workshops were held throughout the seven counties in the Patuxent River watershed to disseminate the information. A total of 268 farmers and other landowners attended. A highlight of the workshop was a question and answer session which addressed landowner's specific situations.
- More than 30 landowners—each having approximately 100 feet of river frontage—have installed buffers along their property as a direct or indirect result of this project.

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# Central Pennsylvania Conservancy

Harrisburg, Pennsylvania

*Trindle Spring Run is a small perennial creek that flows into the Conodoguinet Creek and then the Susquehanna River. It is part of a larger riparian area that is quickly being transformed into residential development. Along Trindle Run is a ten-acre conservation area, adjacent to and visible from several Mechanicsburg subdivisions. The Central Pennsylvania Conservancy is using the site to improve and showcase wildlife habitat.*

**THE PROJECT:** To create a riparian buffer and nature trail on ten acres along Trindle Spring Run, which is surrounded by new development. This goal was to demonstrate the successful coexistence of residential development and wildlife areas.

**THE PARTNERS:** Central Pennsylvania Conservancy, Howard-Hanna Detweiler Realty, community and student volunteers.

**THE RESOURCES:** \$20,000 from the Small Watershed Grants Program; land access provided by Howard-Hanna Detweiler Realty; and volunteer labor of students and nearby residents.

## **THE RESULTS:**

- More than 500 hardwood trees were planted on the site, including black willow, black locust, and chestnut oak. The trees enjoyed a 75% survival rate, with help from neighbors who volunteered to water the trees during the drought.
- A trail with benches has been established along the creek as a walking path for the public.
- Blue bird boxes were installed along the trail and are currently in use.
- Public information signage will be installed in spring 2000.



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# Chesapeake Wildlife Heritage

Chester, Maryland

*Water quality is an important issue for the Chester River, located on Maryland's upper Eastern Shore. For this project, volunteers sampled stream macroinvertebrates to determine water quality and target streams for restoration. The project was designed to reduce run-off in targeted streams through a combination of education, wetland restoration, and riparian buffer plantings.*



**THE PROJECT:** To train up to fifteen volunteers to monitor stream quality and to restore ten acres of wetlands, ten acres of warm season grass riparian buffer, and ten acres of forested riparian buffer.

**THE PARTNERS:** Chesapeake Wildlife Heritage, Elburn Farm, Oakleigh Farm, and community volunteers.

**THE RESOURCES:** \$8,830 from the Small Watershed Grants Program; \$26,250 from the Abell Foundation, Chesapeake Wildlife Heritage, Norcross Wildlife Foundation, Olin Foundation, and Wildlife Forever.

## **THE RESULTS:**

- Chesapeake Wildlife Heritage held three training workshops to train thirteen volunteers in the use of aquatic macroinvertebrate techniques to assess stream quality.
- More than twenty-one acres of wetlands were restored.
- More than eighteen acres of riparian buffer (mixture of warm season grasses, trees and shrubs) will be restored along the Unicorn Branch on the Elburn Farm in spring 2000.
- An added matching contribution to the project, not originally included in the proposal, was the installation of 10,000 feet of fencing to keep cows out of the stream.
- The macroinvertebrate training provides the Chesapeake Wildlife Heritage with a tool that will improve their future efforts to target stream reaches most in need of restoration.

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# City of Annapolis

Annapolis, Maryland

*The College Creek watershed, within the Annapolis city limits, flows through urban and residential areas before reaching the Severn River which empties into the Bay. The city and the Friends of College Creek (a watershed association of residents, neighborhood associations, and representatives from the US Naval Academy, St. Johns College, government officials, and other private and public organizations) wanted to control pollutants washing off of city streets into College Creek and to educate local residents about watershed protection and preservation.*



**THE PROJECT:** To create and restore tidal wetlands along College Creek to act as a natural filter for pollutants, and to use the area as an environmental demonstration project for city youth.

**THE PARTNERS:** Chesapeake Bay Foundation, City of Annapolis, Friends of College Creek, Maryland Department of Natural Resources, and community volunteers.



**THE RESOURCES:** \$35,426 from the Small Watershed Grants Program and more than \$30,000 in matching funds and in-kind services from the City of Annapolis, Maryland Department of Natural Resources, and volunteers.

## **THE RESULTS:**

- This project created a marsh area near the headwaters of College Creek. Eroding shorelines were stabilized and phragmites, an exotic plant, was removed.
- The project area was expanded from 800 square feet to 8,700 square feet. The project was delayed until after the start of the 1999 fiscal year so that the city could secure additional funds for the expanded project.
- The Chesapeake Bay Foundation (CBF) will oversee the planting of marsh grasses in the wetlands during spring 2000. Local elementary school children, participants in the CBF BaySaver program, and members of the Friends of College Creek and local community will help with the plantings.

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# City of Bowie

Bowie, Maryland

*The Chesapeake Bay watershed contains more than 100,000 miles of connected streams and rivers and one of these, the Patuxent River, touches Bowie. By using less lawn and garden chemicals and practicing water conservation, Bowie residents can help protect the watershed. With its grant, the city wanted to demonstrate and promote an environmentally sound landscaping technique called BayScapes. BayScapes emphasize native, low maintenance, and heat tolerant plants, plant diversity, water conservation, and the minimal use of fertilizers and pesticides in residential settings.*



**THE PROJECT:** To create and promote a series of BayScapes designs at City Hall as a model for city residents.

**THE PARTNERS:** Chesapeake Bay Trust, City of Bowie, US Fish and Wildlife Service, and resident and student volunteers.

**THE RESOURCES:** \$9,750 from the Small Watershed Grants Program; \$9,477 through in-kind services from the City of Bowie staff; and \$1,050 from the Chesapeake Bay Trust.

## **THE RESULTS:**

- City staff and volunteers from the City's Tree Preservation/Beautification Committee were trained by the US Fish and Wildlife Service in BayScapes techniques. A series of BayScapes mini-gardens was designed and created for a 125 x 122 foot space behind City Hall.
- Residents and 30 students from Bowie High School's environmental science classes turned out for a Volunteer Planting Day in October 1998. A second planting day in May 1999 brought out 30 volunteers, including students and the Maryland Conservation Corps.
- In late spring 1999, the gardens were open for self-guided tours. Along with trees, shrubs, ferns, wildflowers, and other native plants, the area includes a small wetland and butterfly garden. The city newsletter, American Planning Association magazine, and local newspapers publicized the opening of the gardens. A video about the project was shown on Bowie Cable Television.
- Tours of the BayScapes gardens were given to five classes from the local elementary school. The school's PTA is researching ways to incorporate BayScapes techniques into the school's landscaping.
- Staff and volunteers are available to assist residents who want to use BayScapes for landscaping their homes. City staff will use their knowledge of BayScapes to landscape a site for a new senior center and community gymnasium planned for 2000.
- In April 1999, the Bowie City Council endorsed the BayScapes program city-wide in its "Bowie Development Review Guidelines."

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# Countryside Conservancy

Waverly, Pennsylvania

*The Tunkhannock Creek in northeastern Pennsylvania drains directly into the Susquehanna River. Dairy farms have a strong presence in the area, and water quality in the creek is most affected by nutrients that drain from animal waste in area pastures.*

**THE PROJECT:** To develop a greenways plan for the Tunkhannock Creek watershed.

**THE PARTNERS:** Countryside Conservancy and 31 municipalities in the watershed.

**THE RESOURCES:** \$20,000 from the Small Watershed Grants Program and \$20,000 from the Willary Foundation.

**THE RESULTS:**

- A comprehensive greenways plan was developed for the area, including a watershed natural resources inventory and analysis, a vision statement, and a work plan.
- The Conservancy conducted thorough public outreach and information gathering. The group appointed steering and community resource committees with wide representation; visited 31 of the 32 municipalities in the watershed; sought more information through mailings and surveys; held three public meetings in the watershed to solicit additional comments and information; and made a final public presentation on the draft plan and its potential greenway corridors
- A "special places" list, provided by the community residents and officials, identified 100 sites that would benefit from greenways protection. The list is included in the final plan and helped to influence the siting of potential greenway corridors.





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# Elizabeth River Project

Norfolk, Virginia

*Habitat loss is an important issue in the Elizabeth River watershed. Much of its watershed is located in Norfolk, Virginia. Approximately 90% of the land is developed, and the river is listed as a Chesapeake Bay Program Region of Concern. This project improved wildlife habitat, reduced the impact of storm water run-off, and improved community awareness about the problems facing the Elizabeth River.*

**THE PROJECT:** To create a wetland in a low income neighborhood and help several businesses to design and implement habitat restoration projects.

**THE PARTNERS:** City of Norfolk, Elizabeth River Project, numerous area businesses, and more than 200 volunteers, including residents of a low-income neighborhood.

**THE RESOURCES:** \$20,000 from the Small Watershed Grants Program; more than \$18,000 from six organizations and businesses; and in-kind contributions of volunteer labor valued at approximately \$15,000.

## **THE RESULTS:**

- A wetland was restored as an environmental justice project on Pescara Creek, a tributary to the Eastern Branch of the Elizabeth River. Invasive plants and more than four truck-loads of debris were removed along 700 linear feet of shoreline. Native marsh grasses and shrubs were added with the help of more than 80 volunteers during "Save Pescara Creek Day," with dignitaries and media attention. Storm water drainage features were also improved.
- The Elizabeth River Project assisted seven "River Star" businesses with the design and completion of wildlife habitat enhancement projects, including one wetland, three native plant gardens, and three large naturalized landscapes.
- The award-winning Birdsong Wetland was completed. More than 1,200 plants and a small intertidal oyster reef were added using volunteer labor.



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# Eyes of Paint Branch

Silver Spring, Maryland

*The goal of the Paint Branch Watershed Community Stewardship Program is to inform and educate watershed residents and the general public about the importance of the Paint Branch, its surrounding forests and wetlands, their relation to the health of the Anacostia River, and ultimately the Chesapeake Bay. The Paint Branch watershed lies in Montgomery and Prince George's counties, Maryland, and contains metropolitan Washington's last wild trout population. The Eyes of Paint Branch is a nonprofit, grass-roots organization of volunteer citizens devoted to preserving, protecting, and restoring the Paint Branch watershed.*

**THE PROJECT:** To produce educational materials for distribution throughout the community, promoting awareness about the importance of Paint Branch, its surrounding forests and wetlands, and its ultimate relation to the health of the Chesapeake Bay.

**THE PARTNERS:** Eyes of Paint Branch, Montgomery County Department of Environmental Protection, Montgomery County Parks Department, and the Potomac-Patuxent Chapter of Trout Unlimited.

**THE RESOURCES:** \$8,988 from the Small Watershed Grants Program; \$3,770 from Trout Unlimited; and \$6,420 from the Maryland Department of Natural Resources and the Maryland National Capital Parks and Planning Commission.

## THE RESULTS:

- Eyes of Paint Branch published two issues of their newsletter, called *My Backyard*, and four issues of the *Backyard Bulletin*.
- The brochure *Restoring Paint Branch* was updated and 5,000 copies were printed.
- Ten copies of the book *Flute's Journey: The Life of the Wood Thrush*, by Lynne Cherry, were purchased for distribution to elementary schools and libraries in the watershed.
- Publications were distributed to approximately 3,300 people and organizations, including members, officials, staff of local, state, and federal agencies, and politicians at all levels of government. They were also shared with the public at local fairs and festivals.



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# Fallston High School

Fallston, Maryland

*Fallston High School, in Harford County, Maryland, is adjacent to Cougar Run, which flows into Elbow Creek and then Winters Run. Nonpoint source pollution related to development has been an issue in this fast-growing county. The Environmental Club and Fallston High School identified an opportunity to create a buffer between the school's athletic fields and Cougar Run. The initiative became a year-long project.*

**THE PROJECT:** To plant buffers adjacent to the school's football and field hockey fields to reduce stormwater run-off.

**THE PARTNERS:** Fallston High School Administration, Fallston High School Environmental Club, and Fallston High School newspaper.

**THE RESOURCES:** \$9,338 from the Small Watershed Grants Program and in-kind contributions of student volunteer labor.

## **THE RESULTS:**

- Students planted white pines and pin oaks in the fall 1998 and ornamental grasses and shrubs in the spring 1999.
- An additional planting was planned for the fall 1999 with a new class.
- The school procured water testing kits, field guides, soil bores, maps, and reference books for use in the classroom.
- The club and its faculty advisor created experimental ponds behind school for future use by biology classes.
- A large publicity spread was produced for the centerfold of the high school newspaper.

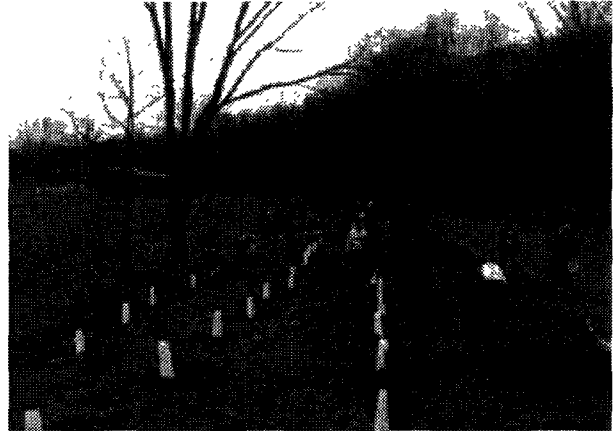


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# Girl Scouts & Boy Scouts of Sinking Valley

Tyrone, Pennsylvania

*Scouts from this central Pennsylvania town aimed to curb a problem along Sinking Creek, a tributary to the Juniata River, which joins the Susquehanna north of Harrisburg. At this site on Sinking Creek, a nearby bridge structure has caused heavy erosion and sedimentation. Community support swelled as the project moved forward. Initially conceived of as a scout project, the effort grew to include approximately one hundred adult volunteers and received considerable assistance from the township, an added benefit that will help ensure the site's future maintenance.*



**THE PROJECT:** To create a riparian buffer along a portion of Sinking Creek and involve area youth in a hands-on project that would teach them conservation principles.

**THE PARTNERS:** Approximately 200 children and adult volunteers, including two Girl Scout troops and one Boy Scout troop, their parents, a church youth group, and members of the Juniata Chapter of the National Audubon Society.



**THE RESOURCES:** \$482 from the Small Watershed Grants Program and in-kind donations of materials and volunteer labor valued at approximately \$11,250.

## **THE RESULTS:**

- Seventy-five native trees were planted along Sinking Creek during a one-day planting event in April 1999. A shrub buffer was also installed, along with a butterfly garden, wildflower patches, and bluebird boxes.
- The scouts did most of the work themselves, earning badges and preparing a time capsule that was planted that same day.
- Maintenance has consisted of weekly watering to help the new trees weather the drought, a commitment by the township to refrain from mowing the wildflower areas, several bluebirds nesting in the boxes.
- More than 1,000 butterflies were counted in the garden area.
- The project received prominent local TV coverage.

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# Gunpowder Valley Conservancy

Kingsville, Maryland

*The Gunpowder watershed provides drinking water, recreational fishing, and historic and economic resources to the Baltimore region. The Gunpowder River runs through Baltimore and Harford counties, skirting densely populated metropolitan areas. The reservoirs on the river are the major source of drinking water for the Baltimore region. The river is a Class I trout stream.*

**THE PROJECT:** To increase citizen awareness of the watershed's resources by establishing a broad-based coalition that would work to protect the river.

**THE PARTNERS:** Twenty-one organizations joined with the Conservancy to plan the conference that was the focal point of this project. Local governments, farm organizations, community groups, education institutions, and conservation organizations joined with the Conservancy to plan a highly successful one-day conference.

**THE RESOURCES:** \$7,200 from the Small Watershed Grants Program, plus in-kind donations and 1,827 hours of volunteer labor valued at \$22,080 from Baltimore County Department of Environmental Protection and Resource Management, Maryland Department of the Environment, and the Salvation Army/Camp Puh'tok.

## **THE RESULTS:**

- More than 100 people attended the Gunpowder Watershed Conference on March 20, 1999. Topics included the history of the river, environmental problems, protection plans, and challenges. The conference energized attendees, who spent the afternoon brainstorming on ways to enhance the Gunpowder. Attendees represented a huge cross section of interests, many of whom had never talked together about the river.
- A Gunpowder Watershed Clearinghouse was created at [www.mde.state.md.us/gw/](http://www.mde.state.md.us/gw/). The web site contains information about events, data about the watershed, resources for teachers, and a discussion board where interested citizens can connect with one another.
- A Gunpowder coalition is in the formative stages, with leaders from the conference meeting monthly to map out next steps in an ongoing effort to increase public awareness of the river, its watershed, and its resources.



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# Headwaters Charitable Trust

DuBois, Pennsylvania

*The Headwaters Charitable Trust, working out of the north-central coal region of Pennsylvania, is guiding the establishment of a greenway throughout the Moshannon Valley. This grant furthered the greenway project by developing a model to organize all levels of governments and all types of nonprofit groups into cooperative roles for the creation of the greenway. Once the greenway is established, potential benefits to the Chesapeake Bay include riparian buffers along a six-mile stretch of the Black Moshannon Creek and other smaller riparian zones throughout the valley.*



**THE PROJECT:** To produce a model agreement that can be adopted by nonprofits and local governments in the Moshannon Valley to organize themselves for the creation of a greenways plan.

**THE PARTNERS:** Headwaters Charitable Trust and municipal governments within the watershed.

**THE RESOURCES:** \$10,000 from the Small Watershed Grants Program.



## **THE RESULTS:**

- *The Trust produced a model Cooperative Agreement that outlines roles for all levels of government and different types of nonprofit groups in developing a greenway. It provides legal guidance and a mock "agreement" that can serve as a template for various conservation activities.*
- *The agreement has been distributed widely through the valley to numerous organizations and all thirteen townships in the Moshannon Valley Council of Governments.*
- *Area nonprofit groups have expressed enthusiasm for the model and the local Rails to Trails chapter intends to use it in their efforts to build the greenway. The Trust anticipates that many of the valley's municipalities, currently developing master plans, may incorporate some aspects of the agreement through this effort.*

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# James River Association

Richmond, Virginia

*The James River Association is dedicated to the conservation and responsible stewardship of the natural and historic resources of the James River watershed. This project supported the development of Chesapeake Bay Program Tributary Strategies, by developing and conducting watershed planning and public outreach activities that will help reduce nutrients and sediments in the James River watershed.*



**THE PROJECT:** To coordinate a series of public involvement activities focused on developing strategies for nutrient reductions in the James River basin, to produce Geographical Information System (GIS) maps, and to assist willing landowners with developing riparian easements and other riparian protection measures.

**THE PARTNERS:** James River Association, James River Council, James River Technical Review Committee, and Virginia Institute of Marine Science. Several hundred people have been involved in workshops, meetings, conference, and receipt of information. Partnerships were also formed with several stakeholder groups, including academics, landowners, local officials, and soil and water conservation district representatives. Many volunteers will be involved with buffer plantings.

**THE RESOURCES:** This is a large, multi-year project with numerous funding sources. Funds for 1999 included \$38,000 from the Small Watershed Grants Program and \$103,000 in matching funds.

## **THE RESULTS:**

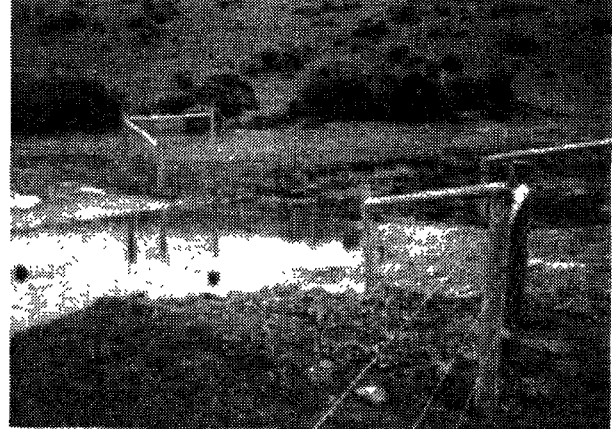
- The James River Watershed Council was formed to exchange information about tributary strategies and watershed planning. The council sponsored a 1998 James River Watershed Conference and held two public meetings in the spring 1999 to educate citizens about the tributary strategy process and options.
- The James River Association worked closely with a variety of stakeholders on the James River Technical Review Committee to develop the goals and strategies for nutrient and sediment reduction.
- GIS maps were produced for the entire James River watershed. They were distributed to local governments, planning district commissions, and soil and water conservation districts.
- The James River Association initiated a Riparian Lands Restoration Program. Two workshops were held for landowners, several dozen of whom are now involved with specific actions to protect and restore their buffers. An extensive planting was held in fall 1999.
- A future workshop is planned on Watershed Planning and Site Design, to be conducted by the Center for Watershed Protection and targeting local government representatives and developers.

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# Juniata County Conservation District

Juniata County, Pennsylvania

*The Juniata River in western Pennsylvania is a major tributary to the Susquehanna River, draining a largely agricultural area with many dairy and beef livestock operations. Sediment pollution from streambank erosion and nutrient pollution, both caused by livestock entering streams, was a problem in the watershed. The Juniata County Conservation District wanted to establish a local streambank fencing program to supplement minimal funding available from the state.*



**THE PROJECT:** To engage landowners in stream fencing and forested riparian buffer habitat restoration programs.

**THE PARTNERS:** Chesapeake Bay Foundation, Chesapeake Bay Program, Ducks Unlimited, Juniata County, Juniata County Conservation District, and USDA Natural Resource Conservation Service's Wildlife Habitat Incentives Program.

**THE RESOURCES:** \$37,500 from the Small Watershed Grants Program, and \$33,586 in matching funds from the project partners.

## **THE RESULTS:**

- Over 27,000 feet of fencing was installed along five miles of stream.
- Seventeen livestock stream crossings and five drinking accesses were installed.
- Nine property owners participated in the project, and at least ten are on a waiting list for future fencing programs.
- Participants voluntarily agreed to allow a forested riparian buffer to reestablish itself along the stream, and agreed to maintain the fencing for ten years.



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# Lancaster County Conservation District

Lancaster County, Pennsylvania

*The Pequea and Mill Creek watershed drains more than 135,000 acres or 22% of the land in Lancaster County, eventually dumping its waters into the Susquehanna River. This heavily farmed area lies in the heart of Pennsylvania's Amish farm community and supports the highest density of dairy cows in the state. Nutrient and sediment pollution caused by livestock is a significant problem in the watershed. This project builds on the success of a larger initiative, the Pequea Mill Creek Hydrologic Project, which improved water quality in Pequea and Mill Creeks by fencing streams and planting riparian buffers along the streams' tributary headwaters.*

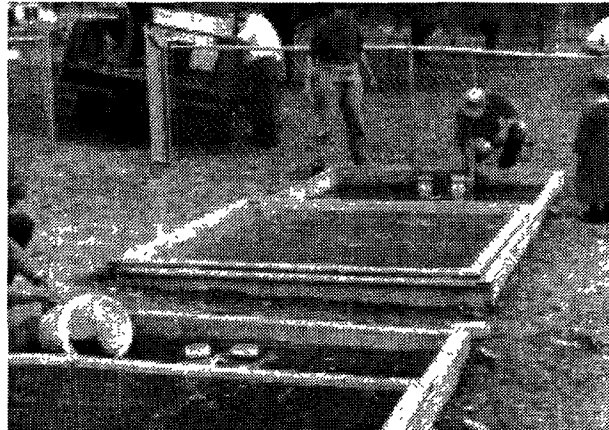
**THE PROJECT:** To construct a trout nursery raceway with the goal of reintroducing trout to a once-degraded tributary of Mill Creek, demonstrating the benefits of best management practices and convincing other landowners to participate in stream fencing.

**THE PARTNERS:** Lancaster County Conservation District, Pequea Mill Creek Project Office, US Fish and Wildlife Service, local Amish landowners and volunteers.

**THE RESOURCES:** \$9,800 from the Small Watershed Grants Program and in-kind contributions of services, materials, and office supplies valued at \$18,139.

## THE RESULTS:

- A trout nursery raceway was constructed adjacent to an unnamed tributary of Mill Creek. It consists of two check dams and a sediment trap in the upper end of the stream, piping to divert water into two holding tanks, a pipe to return water to the creek, and fencing to enclose the raceway area. Fingerling trout were purchased and the Amish landowner raised them in the raceway until they were large enough to be released. The first batch of trout died because of low water conditions during summer 1998. Survival of a second group was much improved.
- On the day 70 trout were released into the stream, a Field Day was held that was well attended by the local community and covered in the local Amish newspaper.
- This project demonstrated the importance of good conservation practices that have restored the trout fishing potential of Mill Creek. Property owners are encouraged to copy the conservation practices on their own lands. Subsequent to this project, at least seven additional nearby landowners have fenced their stream properties.



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# Lord Fairfax Planning District Commission

Front Royal, Virginia

*The Town of Strasburg, in western Virginia, is an older community of mixed uses. The Strasburg High School Agricultural Department owns nine acres along the North Fork of the Shenandoah River. The land is prone to flooding, erosion, and had poor wildlife habitat. Expanding existing wetlands, creating forested riparian buffers, and developing an environmental educational resource for the community were the goals of this project.*



**THE PROJECT:** To develop a nine-acre riparian wetland for land management and ecology education adjacent to Strasburg High School.

**THE PARTNERS:** Columbia Gas and Transmission, Lord Fairfax Planning District, Massanutten Garden Club, National Wild Turkey Federation, Strasburg High School Agricultural Department, USDA Natural Resources Conservation Service, Virginia Department of Game and Inland Fisheries, Wal-Mart, and 110 student volunteers.

**THE RESOURCES:** \$33,800 from the Small Watershed Grants Program and \$26,340 in matching funds and in-kind contributions, including approximately 2,420 hours of volunteer labor valued at \$24,200.

## **THE RESULTS:**

- Wildlife viewing areas were created by sculpting the land to form a shallow pond, expanded wetlands, and seven "islands" of higher ground. A trail winds through the area where walkers can view wetlands, wooded areas and open fields. Observation decks, plank bridges, bird habitat and informational signposts were installed.
- Mixed grasses were planted in the wetlands and open areas to provide feed for wildlife during different seasons of the year, and extensive forest edge habitat, created along the natural edges of the "islands" provided improved wildlife habitat.
- Native trees and shrubs were planted along the river and a river access to the area was formed to accommodate boaters.
- In 1999, Strasburg High School offered its first ecology class in conjunction with the management area.
- In total, 110 Future Farmers of America (FFA) students donated approximately 2,420 hours of labor to the project. FFA and general ecology students will help maintain the trails and plantings. As students apply the riparian land management lessons they learn to their own lands and farms, the project's water quality impacts will be multiplied.

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# Mattaponi & Pamunkey Rivers Association

Manquin, Virginia

*The Mattaponi and Pamunkey Rivers Association works to protect the two rivers that join to form the York River. Synoptic stream surveys were conducted along three distinct York basin subwatersheds: agricultural, forested, and urban. The selected streams were designated as "water quality limited" in a 1998 report issued by the state of Virginia. Since many of the streams' impairment sources are unknown, this project gathered information that will be useful for future restoration strategies. The project also asserted that citizens can contribute to watershed planning.*



**THE PROJECT:** To train volunteers to conduct rapid stream assessments and develop management recommendations in three targeted subwatersheds of the York River.

**THE PARTNERS:** Chesapeake Bay Foundation (York Chapter), Chesapeake Bay Local Assistance Department, Lake Anna Advisory Committee, Lake Anna Property Association, Mattaponi and Pamunkey Rivers Association, Virginia Institute of Marine Science (the Center for Coastal Management and Policy and the Comprehensive Coastal Inventory), and the seven soil and water conservation districts covering the York River watershed.



**THE RESOURCES:** \$38,000 from the Small Watershed Grants Program and contributions of supplies, staff time, and volunteer labor, valued at approximately \$30,000.

## **THE RESULTS:**

- Four workshops were conducted, during which 30 volunteers were trained in Maryland Department of Natural Resources protocol for rapid stream assessments; 40 additional volunteers were recruited for future stream assessments.
- Approximately 15 miles of three impaired stream segments (TMDL priority waterbodies) were assessed and photographed. The assessment took approximately 25 full days and allowed volunteer teams to observe and describe physical conditions, habitat elements, flow velocity, and adjacent land use.
- The Association convened three community landowner meetings and presented information gathered during the assessments. The attendees provided specific recommendations and plan to form ad-hoc citizen committees to seek funding to implement the recommendations.
- The project also raised awareness in communities located near the impaired streams.

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# Midshore Regional Recycling Program

Caroline, Kent, Queen Anne, and Talbot Counties, Maryland

*Maryland's Midshore Region extends from the Sassafras to the Choptank River on the Eastern Shore. Its 1,300 square miles encompass Caroline, Kent, Queen Anne, and Talbot Counties and include more than 3,100 miles of shoreline along the Chesapeake and Eastern Bays, six rivers, and numerous streams and creeks. The Midshore Regional Recycling Program, a partnership of the four midshore county governments, provides recycling programs to the 117,000 residents of this region of mostly small towns and rural lands.*



**THE PROJECT:** To fund two household hazardous waste collections, the first ones ever for the residents of Maryland's midshore counties.

**THE PARTNERS:** Caroline, Kent, Queen Anne, and Talbot Counties; Chesapeake Bay Trust; Maryland Department of the Environment, Maryland Environmental Services, Midshore Regional Recycling Program; local newspapers, libraries, solid waste facilities, and recycling stations; and hundreds of residents who participated in the program.

**THE RESOURCES:** \$38,000 from the Small Watershed Grants Program; \$600 from the Chesapeake Bay Trust; and in-kind contributions of county and state staff time valued at \$18,456.

## **THE RESULTS:**

- The first-ever household hazardous waste collection day for midshore residents was held September 26, 1998, at the Midshore Regional Solid Waste Facility near Easton, Maryland. Two-hundred sixty-one people dropped off more than twelve tons of materials.
- A second collection day was held June 12, 1999, at the Nicholson Waste Transfer Station near Chestertown, where 205 residents brought in 4.5 tons of household hazardous waste.
- Household hazardous waste such as fuels, paints, solvents, pesticides, and lawn and garden chemicals were collected, sorted, and packaged for disposal at sites designed and regulated for hazardous materials. In addition, non-household hazardous waste materials such as motor oil, automobile lead-acid batteries, propane tanks, and latex paint were accepted for disposal or recycling through existing outlets.
- Three storage shelters were purchased to house household hazardous waste that can be dropped off by residents unable to make collection days, or to safely store waste left at county recycling facilities.
- Building on the success of the project, all four midshore counties approved funds to continue the collection program in 2000, and are committed to a spring and fall collection day each year at varying locations. They are also considering a battery recycling program, lawn and garden product exchange, and building materials exchange.

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# The Nature Conservancy

Chevy Chase, Maryland

*The Nature Conservancy is a nonprofit organization that seeks to purchase and maintain sensitive environmental areas for the purpose of preservation and education. The watershed of Sidling Hill Creek in Allegany County, Maryland, a tributary to the Potomac River, has suffered from illegal dumping, exotic/invasive species, and general erosion due to human activities. However, this stream has never been dammed, ditched, or otherwise had its channel altered. The Nature Conservancy conducted a restoration project to return part of Sidling Hill Creek watershed to a more pristine condition.*



**THE PROJECT:** To mobilize volunteers for clean-ups and building demolition, weed control, riparian forest buffer plantings, and trail construction to ease foot traffic impacts.

**THE PARTNERS:** Chesapeake Bay Trust, Curtis and Edith Munson Foundation, and the Nature Conservancy.

**THE RESOURCES:** \$22,721 from the Small Watershed Grants Program; \$10,000 from the Chesapeake Bay Trust; \$2,000 from the Curtis and Edith Munson Foundation; and in-kind, volunteer contributions valued at \$11,700.



## THE RESULTS:

- The Nature Conservancy hosted more than a dozen volunteer days consisting of weed control and monitoring on the Bellegrove Shale Barren.
- In September 1998, the Nature Conservancy worked with Environmental Quality and Standards of Cumberland, Maryland, to demolish buildings that were environmentally hazardous due to asbestos-lined walls. They also salvaged and recycled scrap glass, metal or wood, hauled the larger trash items to the dump, and regraded the area to a near-natural contour in order to support native vegetation.
- A two-mile trail loop was created on the floodplain and through the hills of the preserve.
- Thirty-one volunteers planted more than 1,100 trees to create a riparian buffer.

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# Richmond County Board of Supervisors

Richmond County, Virginia

*Lancaster and Morattico Creeks drain more than twenty square miles in Richmond and Lancaster Counties and empty into the Rappahannock River, an important shellfish growing area. The watershed, which is largely forested and 20% farmed, has significant residential development close to the mouths of the two creeks. Basic data on the water quality of Lancaster and Morattico Creeks is needed to help in overall watershed planning efforts and to assess the impact of the creeks' waters on the shellfish fishery.*



**THE PROJECT:** To monitor water quality and survey submerged aquatic vegetation in Lancaster and Morattico Creeks, and to provide community outreach on watershed protection.

**THE PARTNERS:** Lancaster/Morattico Creek Watershed Partnership, Richmond County Board of Supervisors, US Fish and Wildlife Service, and community volunteers.

**THE RESOURCES:** \$9,660 from the Small Watershed Grants Program and in-kind contributions of volunteer labor, Richmond County staff time and office supplies valued at \$9,725.

**THE RESULTS:**

- Ten sites in the Lancaster/Morattico Creek watershed were sampled every two months for one year by the Rappahannock River Resource Council. An additional three sites were sampled weekly by volunteers.
- In July 1998, members of the Lancaster/Morattico Creek Watershed Partnership surveyed submerged aquatic vegetation along the entire navigable sections of Morattico and Lancaster Creeks.
- Brochures providing information on watershed protection were printed and distributed to permit applicants and others through the Richmond County Building and Zoning Offices.
- The Watershed Partnership conducted a clean-up effort over two weekends in spring 1999. Forty-five volunteers collected more than 20,000 pounds of trash, including the removal of pieces of seven old boats and motors.
- The Lancaster/Morattico Creek Watershed Partnership holds regular meetings that are open to landowners in the watershed. The Partnership plans to use the baseline data from this project to make specific recommendations to landowners and policy makers in the months ahead.

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# Richmond Recreation and Parks Foundation

**Richmond, Virginia**

*Bryan Park, Cheswick Park, and Spring Park are part of the Chickahominy watershed in urban areas of Richmond, Virginia. Park advocates decided to develop master plans for environmental stewardship. They wanted to demonstrate that balancing conservation with recreation improves overall park quality, reduces maintenance costs, and delivers benefits to both local and regional water quality.*



**THE PROJECT:** To develop model environmental maintenance guidelines and staff training for Bryan Park, Cheswick Park, and Spring Park, and to produce a guidebook for use by other groups and municipalities.

**THE PARTNERS:** City of Richmond, Henrico County, Richmond Recreation and Parks Foundation, and several volunteer groups from the community.

**THE RESOURCES:** \$39,800 from the Small Watershed Grants Program; \$13,000 through an Elmwood Foundation grant to the Friends of Bryan Park; additional funds and in-kind contributions from Richmond Recreation and Parks Foundation, volunteers, and others, valued at \$53,750.

## **THE RESULTS:**

- A maintenance guidebook was produced and used to train staff on identifying sensitive resources, setting goals and objectives, and developing individual park plans to protect natural resources and water quality.
- Park staff established three Public Park Master Plans, which serve as models for other parks.
- Seven demonstration projects were created with the help of volunteers, showcasing streambank stabilization, erosion control, riparian buffer restoration, improved water access, and environmental education.
- Bryan Park staff is now demonstrating 21st-century resource protection and water quality improvement strategies to local governments, volunteer groups, and the general public.
- Best management practices for parks and recreation maintenance departments of Richmond and Henrico County were revised to incorporate natural resource protection, improvement of water quality, and reduction of maintenance costs.
- A training workshop was held for Richmond and Henrico County parks and recreation personnel on watersheds, erosion and sedimentation, stormwater management and pond maintenance, wildlife habitat, and funding sources.

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# Severn River Land Trust

Annapolis, Maryland

*The Severn River is a state-designated Scenic River that flows directly into the Chesapeake Bay near Annapolis, Maryland. To balance development pressures, the Severn River Land Trust encourages voluntary techniques by private landowners to preserve land in the watershed. Their goal is to ensure that current and future generations may enjoy the benefits of private land ownership while employing protective stewardship practices.*



**THE PROJECT:** To involve private landowners in stewardship practices that protect riparian forest and reduce run-off in two targeted subwatersheds of the Severn River.

**THE PARTNERS:** Anne Arundel County, Maryland Department of Agriculture, Maryland Department of Natural Resources, Maryland Office of Planning, Natural Resource Conservation Service, Severn River Association, Severn River Land Trust, and Trust for Public Land.

**THE RESOURCES:** \$4,500 from the Small Watershed Grants Program and \$18,750 from the Chesapeake Bay Trust.

## **THE RESULTS:**

- A list of 300 landowners was completed and merged with property data and information on current easement activity. The landowners were added to the Trust's mailing list, through which they receive information on stewardship options, conservation easements, and profiles of neighbors engaged in those activities.
- The Trust improved outreach tools targeting private landowners. They hosted a field trip, launched a web site, redesigned their newsletter and increased publication from twice yearly to quarterly.
- The Trust advanced protection strategies for two key areas of the watershed by developing detailed, targeted GIS maps and working with landowners to apply for federal funds through the Forest Legacy program.
- Stronger ties with the local media helped to enhance community awareness. The Trust received coverage for two key projects and for its tenth anniversary.
- A series of five landowner stewardship guides were created and distributed. Topics included controlling erosion, attracting birds, restoring and improving riparian forest buffers, reducing run-off, and alternatives to pesticides.



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# Shenandoah Valley

## Pure Water 2000 Forum

Bridgewater, Virginia

*The Shenandoah Valley Pure Water 2000 Forum works to improve water quality and to promote riparian restoration activities and environmental education throughout the Shenandoah Valley of Virginia. For this project, the Forum planted riparian buffers at two sites: on the North River, a tributary to the Shenandoah, where a 1996 flood had destroyed the underbrush and left exposed soil along the river's banks, and at Cook's Creek, a tributary to the North River.*

**THE PROJECT:** To implement BayScaping and streambank stabilization at two sites: the North River in Wildwood Park and Cook's Creek in Cook's Creek Arboretum.

**THE PARTNERS:** Bridgewater College, John Wayland Elementary School, Shenandoah Valley Pure Water 2000 Forum, Town of Bridgewater, Turner Ashby High School, and Virginia Native Plants Society.

**THE RESOURCES:** \$7,484 from the Small Watershed Grants Program; \$6,458 in financial and in-kind support from the town of Bridgewater; \$7,250 in volunteer labor; and a \$2,500 in-kind match from Bridgewater College and Turner Ashby High School.

### THE RESULTS:

- Three workdays were held at Wildwood park. The Forum planted a total of 700 native plants along a 600 foot riparian buffer that ranged from 30 to 100 feet wide along the North River. The Forum also planted a corridor from the riparian area into the upland area of the park.
- One of the Wildwood Park work days included an Environmental Fair. During the fair, students installed plants and learned about a variety of environmental topics, including erosion and native plants.
- At Cook's Creek Arboretum, high school students supplemented previous plantings with more than forty native trees and shrubs along the eroding stream bank.
- An education brochure on the stream restoration and plantings at Cook's Creek was printed and is now available to Arboretum visitors.



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# Thomas Jefferson High School for Science and Technology

Alexandria, Virginia

*This project is part of a larger undertaking at the Thomas Jefferson High School for Science and Technology, called Constructing Connections. The goal is to teach secondary school students how to protect the local streams and water that affect the Potomac River and the Chesapeake Bay. This particular project focused on wetland construction. It took place in Greenland Spring Gardens Park, an area that has suffered from the intense development of the area surrounding it. The students' work directly affects Turkey Cock Run, a tributary to the Potomac.*



**THE PROJECT:** To design and build, with the help of students, rain gardens to act as bioretention facilities on the school campus, and to provide training on the use of environmental projects for team-teaching across disciplines.

**THE PARTNERS:** Environmental Concern, Fairfax County Public Schools, Greenspring Farms Park (Fairfax County Parks Department), Mt. Vernon High School, Northern Virginia Soil and Water Conservation District, Thomas Jefferson High School for Science and Technology and US Coast Guard.



**THE RESOURCES:** \$10,000 from the Small Watershed Grants Program and volunteer labor and other matches valued at \$208,250.

## **THE RESULTS:**

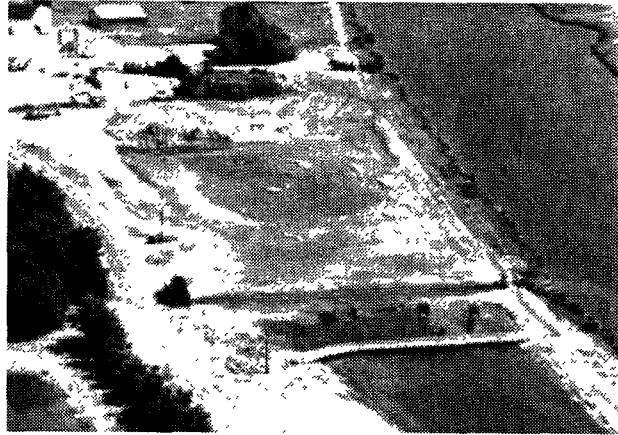
- Students and teachers worked together on the design and construction of a wetland in the neighboring park and four ponds on school grounds.
- Teachers received training in wetland functions, ecology, and remediation. They incorporated this into a curriculum for the students.
- Teachers created an interdisciplinary approach through which biology, English, and technology instructors collaborated to form the curriculum.
- 150 students and teachers collaborated with professionals who manage nearby wetlands. Students conducted wetland monitoring.

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# Town of Federalsburg

Federalsburg, Maryland

*The Marshyhope Creek flows through the Town of Federalsburg in southern Caroline County on its way to the Nanticoke River. The creek bed through the town was channelized in the 1960's and the wetland area was filled and maintained as an open mowed field. In 1995, the town began work on a recreational trail and shoreline stabilization project along the northern section of Marshyhope Creek. This is a multi-year project with funding from many different sources. For the southern section, the town wanted to return the creek to its natural state. Restoring the wetlands along Marshyhope Creek would help to control nutrient and sediment pollution from stormwater run-off.*



**THE PROJECT:** To restore wetlands along Marshyhope Creek and create a nature trail through the restored area, and to connect this area to the northern part of the creek to form the Marshyhope Creek Greenway.

**THE PARTNERS:** Caroline County Board of Education, Chesapeake Bay Trust, Town of Federalsburg, State Highway Administration through the Symms National Trail Act, and many federal, state, and local agencies and private groups who contributed funds, materials, and/or personnel to the wetland construction project.

**THE RESOURCES:** Funding from the sources above totaling more than \$200,000, including \$38,000 from the Small Watershed Grants Program.

## **THE RESULTS:**

- 12.32 acres of wetlands were restored along Marshyhope Creek by excavating three sites in the previously filled area. Approximately 45,000 cubic yards of fill material was removed to create the wetlands.
- A nature trail with interpretive signs, footbridges, and a boardwalk was built to connect the three sites.
- A boardwalk will be built in 2000 to connect the nature trail, which lies to the south of town, with a recreational trail along the channelized stream in the north. This will form one integrated trail called the Marshyhope Creek Greenway. People will be able to compare the impact of stream channelization in the north and the restored creek's natural elements to the south.
- The Caroline County Board of Education developed curriculum utilizing the restored wetlands for teaching children about the importance of wetlands in the local ecology and their importance to the Chesapeake Bay.
- Established 3,000 feet of forested riparian buffers along Marshyhope Creek.

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# Town of North East

North East, Maryland

*The Town of North East lies along the North East River near the northern edge of the Chesapeake Bay. Ford's Run flows through the town and into the North East River, which empties its waters directly into the Chesapeake Bay. The town wanted to reduce the amount of sediment entering Ford's Run from streambank erosion and stormwater run-off, and to improve the stream's fish and wildlife habitat.*



**THE PROJECT:** To educate local landowners about the importance of riparian buffers and to engage their help in planting trees and shrubs along Ford's Run.

**THE PARTNERS:** Maryland Critical Areas Commission, Maryland Office of Planning, Town of North East, and local landowners, .

**THE RESOURCES:** \$10,000 from the Small Watershed Grants Program; \$23,545 in matching funds from the Town of North East; in-kind contributions of office supplies valued at \$2,154; and donations of volunteer labor and state resource personnel time.

## **THE RESULTS:**

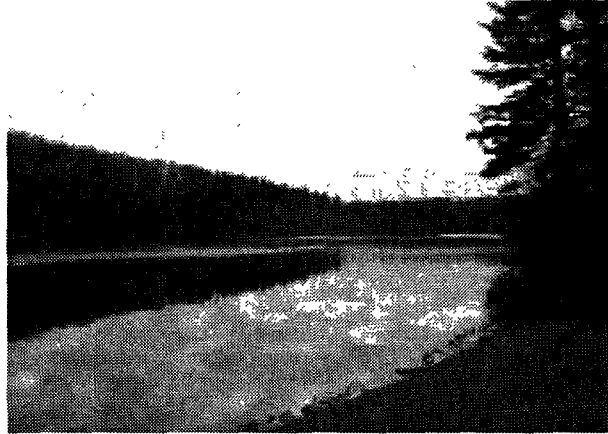
- A workshop was held to educate landowners about the ecological importance of riparian buffers, and to solicit their help in planting trees and shrubs along Ford's Run.
- Seven landowners took part in the project. Before any plantings took place, they removed trash and removed or controlled multiflora rose along the streambank. They planted a total of 158 native trees and shrubs during late spring, or due to delays caused by the drought, fall 1999. The landowners will continue to monitor and maintain the plantings.
- Along with the direct benefit of new riparian buffers, this project promoted stewardship values and activities by giving local landowners the opportunity to participate in improving the health of a local waterway, and implement best management practices on their properties as a model for other landowners.
- In conjunction with this project, the town installed a stormwater outfall on Ford's Run.

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# York Township

York County, Pennsylvania

*York Township is a 26-square mile community lying outside the City of York in south central Pennsylvania. It has a population of more than 22,000 people living in older and newer subdivisions along the primary travel corridors. Two major roads, I-83 and Route 74, bisect the township. Although York Township is growing, there still exist large tracts of woodlands and agricultural open space. Mill Creek, Tyler Run, and Lake Redman watersheds flow through the area into Codorus Creek, which in turn empties into the Susquehanna River. The Township wants to manage development pressures to preserve open space and protect the health of its watersheds.*



**THE PROJECT:** To inventory York Township's open space and develop a greenway plan for the community.

**THE PARTNERS:** Dallastown Area High School, York Township, York Water Company, and student volunteers.

**THE RESOURCES:** \$10,000 from the Small Watershed Grants Program; \$20,640 in matching funds from York Township; and in-kind contributions from the York Water Company and student volunteers.

## **THE RESULTS:**

- The township was surveyed using aerial photography. This information was plotted and then mapped using digitized GIS technology.
- A preliminary greenway plan linking parks, wetlands, agricultural and forested lands, and other open space areas was developed and is under review by the York County Planning Commission. At the same time a review of the township's open space and development ordinances is taking place.
- In the months ahead the township will work to officially adopt the greenway plan as part of the township's official plan, and will work to revise zoning ordinances and to adopt an open space/conservation ordinance. Changing the township ordinances is critical to preserving open space areas.
- More than 20 meetings have taken place to discuss the future growth of York Township, including public forums to discuss farmland preservation, neighborhood commercial areas, and alternative land development methods.
- In August 1998, February 1999, and summer 1999, 22 students from Dallastown Area High School's Environmental Club collected water samples from ten locations within the watersheds to begin a database of water quality information. The York Water Company conducted the analyses. This monitoring program will continue in the future.



For more information, contact:

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