



Grass riparian buffers protect water quality by filtering runoff and stabilizing the streambanks on a farm in Carroll County, Maryland.

Caring for the Land, Protecting a Treasure

The Chesapeake Bay Watershed, the largest estuary in North America, covers 64,000 square miles and includes over 150 rivers and streams that drain into the bay. More than 300 species of fish, numerous shellfish and crab species—as well as other wildlife—call the Bay home.

While the health of the Chesapeake Bay has improved since the 1970s, excess nutrients and sediment continue to adversely affect water quality in local rivers and streams, which contributes to impaired water quality in the Bay. The U.S. Department of Agriculture (USDA) has a 75-year history of working with agricultural producers, forest landowners, urban and suburban residents and other conservation partners to help improve water

quality in the Bay Watershed. Working together, they help land owners restore wetlands, and enhance aquatic and other wildlife habitat on working agricultural land and private non-industrial forest land in the Bay watershed.

Through the 2008 Farm Bill, Congress directed the Secretary of Agriculture to place a stronger conservation emphasis on improving the Chesapeake Bay's natural resources, especially water quality. In addition, in 2010 the Obama Administration released its restoration strategy for the Chesapeake Bay. USDA's commitment to developing new approaches and technologies to accelerate private lands conservation in the Bay watershed is highlighted in the strategy.

USDA and the Chesapeake Bay

The 2008 Farm Bill authorized historic levels of funding for Chesapeake Bay watershed restoration through the Chesapeake Bay Watershed Program, which USDA is implementing through its Chesapeake Bay Watershed Initiative (CBWI). Through CBWI and other Farm Bill programs, USDA's Natural Resources Conservation Service (NRCS) and its partners are helping producers and other private landowners and managers to implement conservation practices that protect the watershed's soil and water resources and help maintain productive working agricultural lands. Farmers and forest landowners are planting stream buffers, restoring wetlands, properly managing manure and implementing other conservation practices as part of USDA's watershed restoration efforts.

2010 Milestones

In Fiscal Year 2010, USDA supported the voluntary actions of farmers, forest landowners, and others as they made progress in reducing nutrient and sediment losses in the Bay watershed, and improving habitat and related conservation values on non-federal lands. For example, USDA:

- Spent \$124 million through its private lands conservation programs to help reduce sediment loss and nitrogen and phosphorus leaching and runoff. Examples of USDA programs include the Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), Wildlife Habitat Incentive Program (WHIP), Conservation Reserve Program (CRP), Agricultural Management Assistance (AMA), Conservation Technical Assistance (CTA), Farm and Ranch Lands Protection Program (FRPP) and the Wetlands Reserve Program (WRP).

- Targeted \$43 million in Chesapeake Bay Watershed Initiative funding to implement highly effective conservation practices in priority watersheds to achieve the greatest reductions in nutrients and sediment loads in the Chesapeake Bay and its tributaries. Priority watersheds are areas with the highest potential for sediment loss and nitrogen and phosphorus leaching and runoff.
- Used \$2.2 million in EQIP's Conservation Innovation Grants to fund innovative projects, including the initial development of nutrient trading markets, nutrient and phosphorus reduction on poultry farms and an innovative, holistic approach to conservation on small dairies.
- Increased technical assistance in three selected watersheds—Upper Chester River in Maryland, Conewago Creek in Pennsylvania and Smith Creek in Virginia—to demonstrate what can be achieved by combining strong partnerships, sound science and funding to solve natural resource problems in a targeted area in a watershed.

Following are some examples of how USDA is delivering technical and financial assistance to help farmers and other landowners address natural resource concerns in the Chesapeake Bay Watershed:

Fiscal Year 2010 Funding Overview

State	CBWI Total	CSP 08 Total	EQIP Total	WHIP Total	AMA Total	CRP Total	FRPP Total	WRP Total	CTA Total
DELAWARE	\$2,504,000	\$171,000	\$4,358,000	\$12,000	\$17,000	\$12,000	\$952,000	\$818,000	\$573,000
MARYLAND	\$9,493,000	\$858,000	\$7,664,000	\$156,000	\$450,000	\$194,000	\$4,489,000	\$7,293,000	\$5,157,000
NEW YORK	\$2,281,000	\$500,000	\$2,808,000	\$533,000	\$30,000	\$24,000	\$0	\$670,000	\$1,224,000
PENNSYLVANIA	\$13,490,000	\$3,010,000	\$8,371,000	\$546,000	\$467,000	\$708,000	\$3,287,000	\$2,127,000	\$5,354,000
VIRGINIA	\$12,743,000	\$2,372,000	\$2,002,000	\$334,000	\$0	\$315,000	\$684,000	\$235,000	\$5,091,000
WEST VIRGINIA	\$2,536,000	\$276,000	\$1,863,000	\$390,000	\$259,000	\$14,000	\$3,986,000	\$207,000	\$1,012,000
Total	\$43,047,000	\$7,187,000	\$27,066,000	\$1,971,000	\$1,223,000	\$1,267,000	\$13,398,000	\$11,350,000	\$18,411,000
Fiscal Year 2010 Chesapeake Bay Funding Financial and Technical Assistance By Program									TOTAL \$124,920,000

Delaware

Carolyn Donald manages a family-operated organic free-range poultry and fruit and vegetable farm in Sussex County, Delaware. As she developed her 5-acre organic operation, Donald discovered her land was impaired due to improper drainage and overuse. To improve those conditions, Donald worked with NRCS to develop a conservation plan, which offered solutions for her drainage challenges, and approaches to restoring and enhancing her land.

Donald has used EQIP's Organic Initiative to implement conservation practices on grazing land for her poultry. These conservation practices have provided remarkable benefits for her operation. For instance, rotational grazing maintains forage health and productivity, organic pasture seeding increases forage diversity, year-round cover crops improve soil quality, and the installation of a well and a solar-powered pump watering system improves water efficiency.



A small farmer makes a big effort to address natural resource concerns in the Bay watershed

District of Columbia

The District of Columbia is using CBWI to restore and improve two miles of eroding streambanks of Watts Branch, a tributary of the Anacostia River. These conservation gains will enhance the aquatic habitat for the American Eel and American Shad, improve water quality, and decrease the potential for further streambank erosion. Restoring Watts Branch's streambanks will enhance the appearance of the popular urban park that the tributary runs through.

NRCS is providing technical assistance and technical engineering oversight for the project. Partners include the District of Columbia's Department of Parks and Recreation, the District of Columbia's Department of the Environment and the U.S. Fish and Wildlife Service. NRCS and its partners are taking steps to improve water quality and enhance aquatic habitat by re-grading and re-vegetating streambanks, installing grade-control structures, managing storm water flow, and eliminating sanitary sewer inputs. A 10-acre buffer of trees and native plants will be planted as part of the effort.

To help document the project's impact, the District of Columbia will monitor water quality in Watts Branch and sample storm water with a focus on nutrient and sediment levels.



Urban streambank restoration improves water quality and aquatic habitat



Maryland landowners use cover crops to keep soil in place

Maryland

Everyone needs clean water to survive and thrive. The Environmental Protection Agency has established a Total Maximum Daily Load (TMDL) for the Chesapeake Bay Watershed, which projects the level of nutrient and sediment reduction needed to improve water quality in the Chesapeake Bay and the region's streams, creeks and rivers. Farmers are doing their part to reduce pollution in the Chesapeake Bay by planting cover crops.

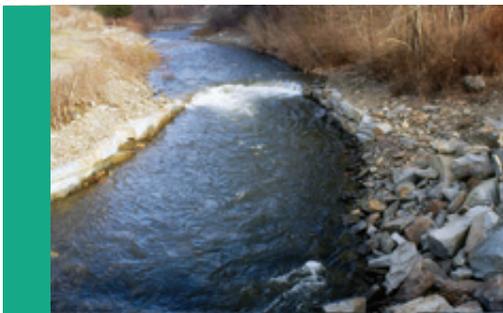
Maryland farmers voluntarily partnered with NRCS and other conservation organizations to plant 400,000 acres of cover crops. Planting cover crops every year at this rate can potentially achieve 20 percent of the nitrogen reductions necessary for Maryland to meet its TMDL goal. Through this effort, NRCS and farmers accomplished the following:

- Planted 625 square miles of cover crops, an area nearly the size of 400,000 football fields. Cover crops planted annually at this rate equals the pollution reduction of taking 250,000 people off septic systems.
- Prevented an estimated 2.4 million pounds of nitrogen from potentially impacting the Bay and its tributaries, which is equivalent to 25 million bags of fertilizer.
- Increased the commercial and recreational value of the Chesapeake Bay Watershed for its more than 17 million residents as well as millions of tourists.
- Improved soil health and productivity on approximately one-third of all cropland in the state, the foundation for an abundant and sustainable food supply.

New York

Critical brook trout habitat has been restored in Chenango County, New York's West Branch of Canasawacta Creek, thanks to funding made possible through NRCS' Wildlife Habitat Incentive Program (WHIP). The project has improved a five-mile stretch of stream habitat for brook trout, and has also reduced local flooding and erosion problems. Local volunteers planted trees, shrubs and grasses to create a riparian buffer along the stream for erosion control, improved wildlife habitat, and improved stream quality. These riparian plantings benefit brook trout by decreasing water temperature and increasing food and cover.

Thirty-five private landowners, including dairy and sheep farm operators, worked with NRCS, U.S. Fish and Wildlife Service, Chenango County Soil and Water Conservation District, New York State Department of Transportation, New York State Department of Environmental Conservation and the Canasawacta Watershed Association to complete this 3-year project. Fish sampling studies will be conducted in the future to monitor the project's impact on the brook trout population.



Riparian buffer, a conservation practice, improves fish habitat, reduces flooding and prevents erosion

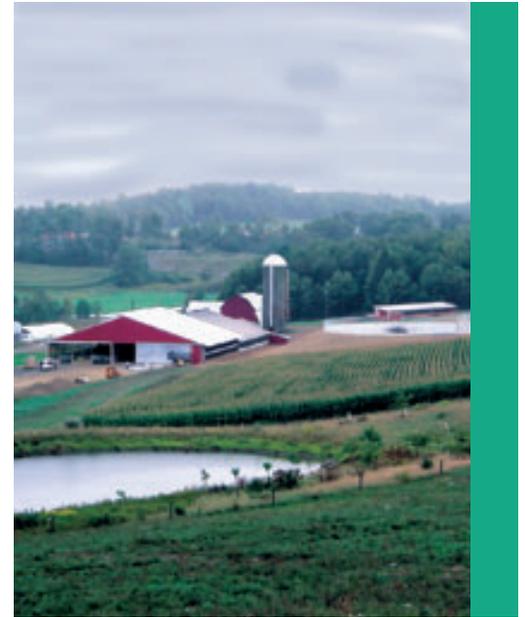
Pennsylvania

Conservation practices play an integral role in the daily operation of this Bradford County farm. A few years ago, the producer faced several resource concerns: a lack of manure storage required daily hauling and spreading of manure; erosion was occurring along the stream that runs through the property and empties into Wysox Creek, a tributary of the Susquehanna River; and large gullies formed throughout his crop fields. Determined to improve these conditions, the producer began working with NRCS and the Bradford County Conservation District. The producer developed a comprehensive nutrient management plan to identify and address challenges with storing and spreading his manure. The producer also implemented conservation practices to improve soil and water quality throughout the farm.

A new waste storage facility, cost-shared through EQIP, was designed and constructed to eliminate the need to haul and spread manure daily. By spreading manure only during ideal times and in line with crop requirements, this Bradford County producer may eliminate the need for commercial fertilizer, thus reducing operating costs. In addition, runoff of excess nutrients and sediment into nearby Wysox Creek is significantly reduced, improving water quality.

Using assistance from the Conservation Reserve Enhancement Program (CREP), 15 acres of riparian buffers were planted along the stream that runs through this producer's farm. This is equivalent to a streamside buffer 35 feet wide and 9,335 feet long on both sides of the stream. The buffers will stabilize streambanks to prevent erosion and filter runoff, thereby improving water quality. Buffers also provide abundant habitat for wildlife.

Finally, water diversions were installed on 43 acres to help carry runoff safely away from the crop fields to prevent erosion and gully formation.



Improving water quality using conservation practices

Virginia

The Chesapeake Bay, once one of the most productive estuaries in the world, is showing encouraging signs of rebounding, but it is still in critical condition as a result of pollution. Virginia agriculture is an active player in efforts to clean up local rivers and creeks in the Bay watershed, benefitting the environment, human health, and the state's tourism and seafood industries.

NRCS in Virginia and its conservation partners worked with farmers to achieve the following in 2010:

- Excluded livestock from 150 miles of streams, reducing manure, nutrients and pathogens to protect water quality and human health.
- Re-established native Eastern Brook Trout in the headwaters of the Shenandoah River through collaborative projects with the U.S. Forest Service, Trout Unlimited and local farmers.



Working to make the Chesapeake Bay productive again

- Prevented more than one-quarter million pounds of nitrogen from reaching Virginia waterways by installing nearly 100,000 acres of cover crops and conservation tillage practices.
- Educated farm communities on benefits of implementing nutrient management plans on 65,000 acres to make their farms more profitable and the Bay more productive.

West Virginia

A conservation plan developed with NRCS Conservation Technical Assistance and implemented with the help of Earth Team volunteers resulted in a two-acre riparian buffer in a Chesapeake Bay headwaters creek.

NRCS foresters and conservationists developed a riparian forest buffer planting that provides shade and a source of woody debris to improve trout habitat and protect the eroding streambank. Undaunted by persistent rain, 70 FFA students signed up as Earth Team volunteers and planted more than 300 trees and shrubs to create the buffer.

“The landowner is very pleased with the outcome and hopes to encourage his neighbors to install buffers on their own properties, which will improve water quality and create wildlife habitat in the area,” says NRCS Soil Conservationist Christi Hicks.



Earth Team volunteers to plant trees for a riparian forest buffer

Did You Know...

NRCS uses the following programs to carry out its Chesapeake Bay Watershed Program:

- Agricultural Management Assistance
- Agricultural Water Enhancement Program
- Conservation Stewardship Program
- Environmental Quality Incentives Program
- Farm and Ranch Lands Protection Program
- Grassland Reserve Program
- Healthy Forests Reserve Program
- Wetlands Reserve Program
- Wildlife Habitat Incentive Program

Note: Not all programs are used by every state.