



United States Department of Agriculture
Natural Resources Conservation Service

Conservation Beyond Boundaries

Chesapeake Bay 2011 Activities Report

March 2012



Jane Thomas, IAN Image Library (ian.images@magelibrary.com)

Forests and fields surround the Pocomoke River as it makes its way to the Chesapeake Bay. Here it forms the border between Worcester and Somerset counties in Maryland.

Decision Agriculture— Farmers Make the Right Choices in Conservation

Chesapeake Bay Watershed farmers and forest landowners are voluntarily implementing conservation practices to improve water quality on hundreds of thousands of acres annually as part of the Chesapeake Bay Watershed Initiative, and through financial and technical assistance provided by the USDA Natural Resources Conservation Service (NRCS). The benefits of this work expand beyond those private landowners and to local communities and the American public as a whole.

Investments in private lands conservation in the Chesapeake Bay Watershed are benefiting farmers and ranchers—reduced input costs directly help the bottom line, while improved soil and water quality help maintain and even enhance long-term productivity while minimizing regulatory pressures. These same investments in conservation are good for all Americans—a well-managed farm limits its nutrient and sediment runoff, produces food and fiber, helps sustain rural community economies, and contributes to the food security of our nation.

USDA believes that a thriving and sustainable agricultural sector is critical to restoring the Chesapeake. Agricultural land makes up nearly 30 percent of the area of the Chesapeake Bay Watershed. The 2007 Census of Agriculture reported that the 83,800 farms in the Chesapeake Bay Watershed, about 4 percent of the total number of farms in the United States, had sales of nearly \$10 billion.

Did You Know?

From May 12, 2010, to September 30, 2011, NRCS worked with farmers to apply at least one conservation practice to more than 650,000 acres of working lands in priority watersheds. In Fiscal Year (FY) 2011, NRCS implemented 60,846 conservation practices in the Chesapeake Bay Watershed. This total includes:

- 151,689 acres of nutrient (nitrogen and phosphorus) management to improve the rate, timing and method of nutrient application.
- 136,501 acres of cover crop to reduce nutrient losses.
- 23,848 acres of upland wildlife habitat management to provide optimal nesting and feeding habitat as well as protective cover.

Additionally, NRCS enrolled 2,529 acres in the Wetlands Reserve Program to provide habitat for migratory birds, fish, and other wildlife and improve water quality and groundwater recharge.

NRCS conservationists worked with producers to develop 3,120 new contracts to implement conservation practices in the Chesapeake Bay.

Helping People Help the Land

In FY 2011, the USDA's Natural Resources Conservation Service (NRCS) supported the voluntary actions of farmers and forest landowners to improve water quality throughout the Chesapeake Bay Watershed. Achieving a balance between economic goals and environmental benefits requires sound science and quality technical assistance. For over 75 years, farmers have been turning to NRCS for help in making decisions that protect natural resources while maintaining production and profitability.

The 2008 Farm Bill placed a stronger emphasis on improving the Chesapeake Bay's natural resources, especially water quality, through voluntary conservation efforts. The Farm Bill authorized a new program, the Chesapeake Bay Watershed Initiative (CBWI), a targeted effort to reduce nitrogen (N), phosphorus (P), and sediment loads coming from private lands. The program authorized \$188 million (2009-2012) to support improved nutrient management and sediment control in the Chesapeake Bay Watershed,

which includes the District of Columbia and parts of Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia.

Through CBWI and other Farm Bill programs, NRCS and its partners help private landowners and managers implement conservation practices that protect the watershed's soil and water resources while maintaining productive working 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.

Targeting Resources

NRCS Farm Bill conservation programs such as the Environmental Quality Incentives Program (EQIP), Wildlife Habitat Incentives Program (WHIP), and the Wetlands Reserve Program (WRP) are providing assistance to farmers to improve the Chesapeake Bay Watershed. NRCS is using CBWI to offer additional assistance above and beyond regular NRCS programs while fostering new approaches to better target and leverage NRCS funding.

NRCS uses CBWI to focus financial and technical assistance on the most critical areas to apply practices for reducing nutrient and sediment runoff. Working with local and state partners, NRCS identified priority watersheds based on a number of factors, including nutrient and sediment loads delivered to the Bay, partner resources, and ability to produce results.

Through CBWI, in FY2011 NRCS implemented more than 11,500 new conservation practices in priority watersheds including:

- 124 new waste storage facilities to help farmers manage manure.
- 1,132 acres of access control, successfully excluding livestock from streams on 102 farms.
- 18,560 acres of no-till to reduce soil erosion and improve soil quality.
- 38,352 feet of terraces to control soil erosion.

In addition, NRCS funded 1,716 new CBWI contracts for \$60 million in FY 2011. Over 92 percent of these contracts were in priority watersheds.

Fiscal Year 2011 Chesapeake Bay Watershed Funding—NRCS Financial and Technical Assistance

	Chesapeake Bay Watershed Initiative (CBWI)	Conservation Stewardship Program (CSP)	Environmental Quality Incentives Program (EQIP)	Wildlife Habitat Incentives Program (WHIP)	Agricultural Management Assistance Program (AMA)	Conservation Reserve Program (CRP)*
Delaware	\$4,227,129	\$92,499	\$3,164,738	\$36,248	\$28,180	\$34,564
Maryland	\$14,546,497	\$338,082	\$8,005,766	\$200,710	\$84,476	\$671,480
New York	\$3,761,370	\$46,910	\$2,795,747	\$345,894	\$30,864	\$45,223
Pennsylvania	\$22,845,845	\$583,335	\$8,387,017	\$734,255	\$1,350,664	\$639,847
Virginia	\$19,246,244	\$526,087	\$3,372,654	\$374,255	\$0	\$460,615
West Virginia	\$5,893,969	\$259,118	\$1,386,088	\$341,442	\$84,170	\$16,385
Total	\$70,521,055	\$1,846,031	\$27,112,011	\$2,032,956	\$1,578,354	\$1,868,114

*CRP is administered by the Farm Service Agency. NRCS contributes technical assistance only.

Fiscal Year 2011 Chesapeake Bay Watershed Funding—NRCS Financial and Technical Assistance

Fiscal Year 2011 Chesapeake Bay Watershed Initiative (CBWI) Funding

	Farm and Ranch Lands Protection Program (FRPP)	Wetlands Reserve Program (WRP)	Conservation Technical Assistance (CTA)*	Number of Contracts	Financial Assistance Obligated
Delaware	\$1,824,630	\$150,937	\$718,366	120	\$3,379,943
Maryland	\$2,353,917	\$7,203,554	\$4,836,009	521	\$12,554,860
New York	\$751,555	\$613,447	\$1,336,140	53	\$3,436,333
Pennsylvania	\$2,172,298	\$4,445,597	\$5,173,597	348	\$19,281,370
Virginia	\$529,519	\$662,581	\$5,018,630	544	\$16,547,757
West Virginia	\$338,123	\$115,907	\$872,157	130	\$4,872,732
Total	\$8,020,042	\$13,192,023	\$17,954,900	1,716	\$60,072,995

*CTA provides technical assistance only.

Voluntary Conservation Works

In 2011, USDA released the Conservation Effects Assessment Project (CEAP) study on cultivated cropland in the Chesapeake Bay Watershed. This extensive study involved more than 800 cropland sample points with farmer surveys on 2003-2006 crop production practices for each sample point. This report assessed the effects of conservation practices commonly used on cultivated cropland in the watershed; evaluated the need for additional conservation treatment; and estimated potential gains from additional conservation treatment.

The study shows:

- The voluntary, incentive-based approach to conservation is working. Farmers have made good progress in reducing sediment, nutrient, and pesticide losses from farm fields by adopting conservation practices throughout the Chesapeake Bay Watershed. For example, 88 percent of the cropland acres have a conservation tillage system in use, including no-till (48

percent) or mulch till (40 percent).

- Opportunities exist to further reduce sediment and nutrient losses from cropland. The study identifies opportunities to contribute to improved water quality in the Bay. The greatest conservation need in the watershed is complete and consistent use of nutrient management.
- Targeting enhances effectiveness and efficiency. Use of additional conservation practices on acres most prone to runoff or leaching and with low levels of conservation practice use can reduce per-acre sediment and nutrient losses by more than twice that of treatment of acres with less treatment needs.
- Comprehensive conservation planning and implementation are essential. Suites of conservation practices that include soil erosion and comprehensive nutrient management are required to address soil erosion and nutrient losses simultaneously.

The CEAP study identifies opportunities to contribute to improved water quality in the Bay, and NRCS will incorporate the findings into 2012

conservation programs to more efficiently reduce nutrient and sediment losses from cropland throughout the Chesapeake Bay Watershed.

In an effort to update and refine the CEAP Chesapeake Bay cropland report in 2012, NRCS will increase the number of farmer surveys and gather data on 2009-2011 agricultural and conservation activities.

Partnering for Conservation Success

The success of NRCS and Chesapeake Bay producers in reducing nutrient and sediment losses would not be possible without the many partners that leverage the Federal investment in Bay conservation. In FY2011, NRCS selected six partnership proposals to install soil erosion-control practices, manage grazing lands, improve forestlands, establish cover crops, and reduce on-farm energy usage in the Chesapeake Bay Watershed. Funded through the Cooperative Conservation Partnership Initiative (CCPI), the projects leverage nearly \$3.5 million in NRCS financial and technical assistance with partners'

resources to address nitrogen and phosphorus losses in agricultural runoff. The six projects emphasize a systems approach; benefitting agricultural producers by helping them implement multiple conservation practices and management techniques that work together on their land.

Also in 2011, NRCS provided over \$3.7 million to partners through its Conservation Innovation Grants program (CIG). CIG stimulates the development and adoption of promising conservation technologies and approaches. Prior CIG grants in the Bay watershed have funded projects exploring the development of environmental markets, dairy feed management, manure management technologies, and sociological components of conservation incentives.

New for 2011, NRCS entered into partnerships with state agencies, conservation districts, and nongovernmental organizations to deploy four teams of technical experts in Chesapeake Bay priority areas. These Strategic Watershed Action Teams (SWATs) are helping individual agricultural producers plan and implement conservation practices needed to address priority natural resource concerns.

This approach leverages additional resources and expertise from participating partners. NRCS has committed \$3 million to SWATs in the Chesapeake Bay Watershed and partners provided approximately \$1.6 million for the effort. Altogether, SWATs make the equivalent of 46 staff years of technical expertise available over a three-year period to help accelerate outreach, conservation planning, practice implementation, and producer follow-up in priority watersheds.

Showcasing Locally-Led Conservation

In FY2011, NRCS built upon the showcase watershed projects initiated in 2010: Conewago Creek, PA; Upper

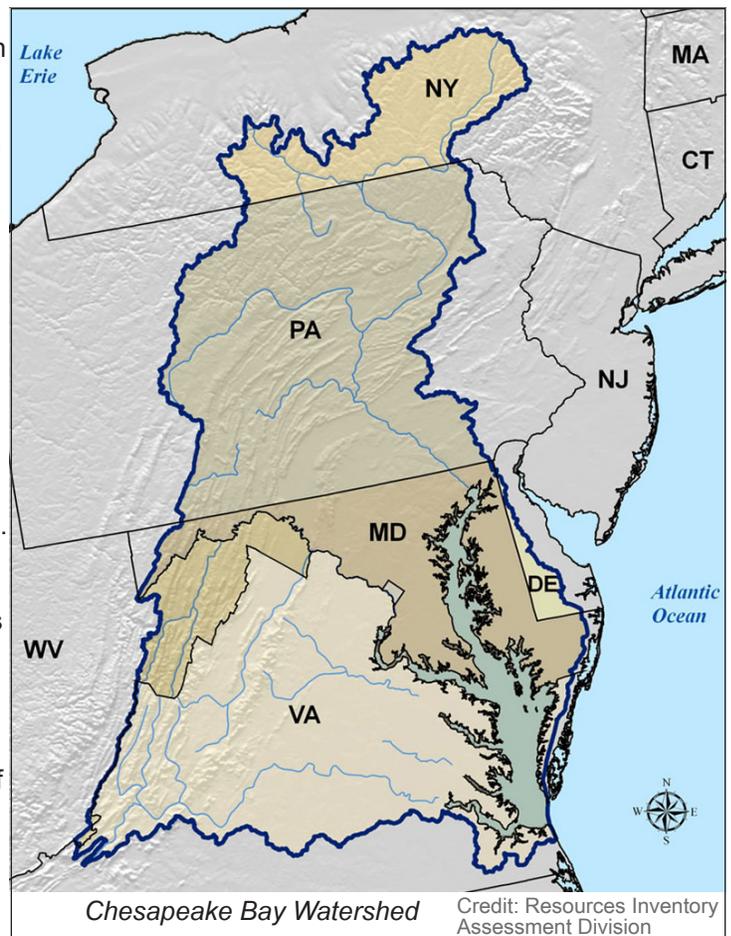
Chester River, MD; and Smith Creek, VA. The objective of the projects is to focus financial and technical assistance on a small scale to demonstrate results through strong partnerships, sound science, and targeted funding.

NRCS and partners provided technical and financial assistance in the Conewago Creek Showcase Watershed in Pennsylvania for the application of 116 new conservation practices in 2011, including more than 1,000 feet of access roads (to provide a stable surface for farm equipment to operate), 120 feet of stream bank protection, three stream crossings, more than 2,000 feet of diversions (to channel runoff away from areas with concentrated pollutants), almost 20,000 feet of terraces, and almost 5,000 feet of fencing.

In Virginia's Shenandoah Valley, NRCS and partners reached out to every producer in the Smith Creek Showcase Watershed through mailings, workshops, and 150 personal visits. In addition, Smith Creek landowners entered into 22 CBWI contracts totaling \$763,369, which included the planning of 11 waste storage facilities, 39,000 feet of fencing, and 152 acres of prescribed grazing. A total of 241 new agricultural conservation practices were applied in 2011, including 1,666 acres of nutrient management, 9,700 feet of fencing, 733 acres of cover crops, and 11 watering facilities.

Partners in the Upper Chester River Showcase Watershed in Maryland conducted a comprehensive inventory of all farming conservation practices that existed in the watershed to gain a better understanding of what additional opportunities existed for further conservation implementation. The Farm Assessment shows that 85 percent of agricultural land is managed under a current conservation plan, but also that each farm has a unique set of challenges that influence farmers' decisions to adopt specific practices, underscoring the importance of locally-led conservation and addressing natural resource concerns at the farm level.

In 2012, NRCS and partners in each Showcase Watershed will continue to strengthen partnerships, advance technical resources, and target funding to accelerate water quality improvement.



Decision Agriculture– Chesapeake Bay Watershed Farmers Making the Right Conservation Choices

NRCS provides technical assistance based on sound science to help producers meet their economic and environmental goals. In many cases, implementing conservation practices (such as improving soil quality or being more precise with nutrient application) can be good for the environment and for a producer's bottom line. Following are stories of producers who take pride in the economic and environmental success they have achieved with NRCS assistance.

Delaware

Poultry and grain farmer, Dave Smith, signed up for USDA's Wetlands Reserve Program (WRP) when a NRCS conservationist explained that his degraded wooded wetlands could be restored to improve water quality and provide habitat to native wildlife. Now that land, once drained for timber production, is being restored to its original state through WRP in partnership with the U.S. Fish and Wildlife Service.

Smith enrolled 83 acres of his woodlands into a 30-year conservation easement. The restored wetlands and an associated buffer trap excess nutrient runoff coming from his surrounding farmland. It is estimated that Smith's WRP easement will reduce about 70 percent of the excess nutrients traveling through the site from entering nearby streams and eventually the Chesapeake Bay.

In addition to providing crucial wildlife habitat, riparian forested wetlands are excellent sinks for nutrients and sediments, and prevent these pollutants from reaching waterways.



Ditch plugs and barriers help retain water in the wetlands and reduce runoff.

District of Columbia

NRCS provided Conservation Technical Assistance and engineering oversight to the District of Columbia and environmental partners during the restoration and improvement of two miles of eroding streambanks along the Anacostia River. Partners with NRCS in the \$3 million restoration project include the District of Columbia's Department of Parks and Recreation and Department of the Environment, and the U.S. Fish and Wildlife Service. Using conservation practices along the streambanks will improve water quality, decrease the potential for further streambank erosion, and enhance the aquatic habitat for the American eel and American shad.

NRCS provided the contract supervision during the re-grading and re-vegetating of the streambanks, the installation of grade control structures, the management of stormwater flow, and the elimination of sanitary sewer inputs. A 10-acre buffer of trees and native grasses was planted as part of the restoration project. The District of Columbia will monitor water quality in Watts Branch and sample storm water with a focus on nutrient and sediment levels as an evaluation of the project's environmental impact.



Rocks deliberately placed in the stream slow water movement and decrease erosion along the reshaped streambanks.

Maryland

Chad and Vivian McCuller, Maryland dairy farmers, have converted 90 acres of cropland to pasture on their farm with help from a NRCS Conservation Innovation Grant. The conversion saves about 180 tons of soil from eroding each year and saves the family time and money due to lower or no costs for inputs such as fertilizer, fuel, pesticides, and machinery.

Through a Chesapeake Bay Watershed Initiative (CBWI) contract, they have installed heavy use areas to stop erosion in the cattle travel lanes between pastures. Five water troughs and pipelines were installed to ensure cows have access to clean water in each paddock. Finally, cattle were excluded from stream corridors to prevent erosion and nutrient runoff.

The decisions the McCullers made with NRCS assistance will save an estimated 990 lbs. of nitrogen and 2,160 lbs. of phosphorus from running into the stream adjacent to their property.



Solid travel lanes prevent erosion in areas the McCullers' cattle use often.

New York

Cheshire Valley Farms in Oxford, New York, grows corn silage for their 65 dairy cows, and as a cash crop sold to local dairies. The farm plants about 750 acres of corn silage and nearly 80 percent of that land is located next to the Chenango River. In 2011, the owners entered into a three-year CBWI contract for cover crops on 200 acres.

This year's corn silage harvest was later than usual due to heavy rains from Tropical Storm Lee and Hurricane Irene. Within a few days after harvest, a rye cover crop was planted with a no-till seeder into the corn silage stubble. Within a month, the rye was 2 to 4 inches high and filling in nicely. With spring tillage usually occurring in mid-May, the rye should reach a height of 12 to 18 inches before being plowed down as green manure for the 2012 corn silage crop. Cover crops can reduce soil erosion by as much as 50 percent and reduce nitrogen polluted runoff for cleaner waterways.



Rye planted as a cover crop into corn silage stubble with a no-till seeder at Cheshire Valley Farms, New York.

Pennsylvania

Brett and Henry Stehr operate a 350-acre vegetable, fruit, and row crop farm located within one of Pennsylvania's Chesapeake Bay priority watersheds in Schuylkill County. NRCS conservation professionals worked with the Stehrs to construct an agrichemical handling facility and implement pest management practices on the farm with the help of funding through the Agricultural Management Assistance Program.

The new facility includes an area to safely store chemicals in an organized and protected manner and a roofed loading pad with curbs that provides an environmentally safe area to mix on-farm chemicals such as pesticides and fertilizers. Wash water from rinsing out the multiple sprayers after use is now able to be easily collected and reused, conserving about 3,000 gallons of rinse water and reducing the risk of runoff.



An agrichemical handling facility has helped the Stehr brothers conserve an estimated 3,000 gallons of rinse water.

Virginia

John and Sun Tong "Sue" Sanns live on a 60-acre farm near Bloxom, Virginia, on the Bayside of northern Accomack County. Sue operates a four-house broiler poultry facility that grows out more than one million birds a year. The Sanns applied to NRCS for EQIP funding to build an animal mortality facility in 2009. They also worked with the Eastern Shore Soil and Water Conservation District to construct two waste stacking sheds under Virginia's Agricultural Best Management Practice Cost-Share program.

Since then they have received assistance from CBWI to install heavy use area pads on the buildings and the sheds for better clean up and management of poultry litter. They have also planted vegetated environmental buffers around the poultry houses to intercept particulate matter containing nitrogen from the cooling fans. The Sanns recently conducted an energy audit and plan to install solar panels on the poultry houses as well as new tunnel fans.



Vegetated buffers help capture air emissions from poultry houses and absorb nutrients in the soil and water.

West Virginia

The 2008 Farm Bill increased the emphasis on providing both technical and financial assistance to address forest and wildlife related issues. To meet an increased demand for forestry technical expertise in NRCS field offices, a contribution agreement between NRCS and West Virginia Division of Forestry (WVDOF) was developed.

WVDOF hired several foresters who work out of NRCS offices. This partnership accelerates forestland technical assistance to customers in West Virginia's part of the Bay watershed. A second agreement with the West Virginia Division of Natural Resources provides wildlife technical assistance to the West Virginia Chesapeake Bay counties. The agreements provide additional staff to help producers implement forest conservation practices that help control runoff, remove soil sediment, reduce flood damage, and improve water quality in the Chesapeake Bay Watershed.



Emma Pemberton, a forester, worked on a tree planting assessment project in Hampshire County.