

**Testimony of Dave White, Chief
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Before the U.S. House Committee on Agriculture
Conservation, Energy and Forestry Subcommittee
Chesapeake Bay
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Good morning, Chairman Thompson, Ranking Member Holden, and other members of the Subcommittee. I am pleased that you have given me the opportunity to describe the impressive actions USDA and its customers are taking to improve water quality in the Chesapeake Bay and its tributaries. At USDA, our efforts are carried out with the understanding that how landowners manage their lands will help determine the fate of the Chesapeake Bay.

USDA's National Resources Inventory shows that in the Chesapeake Bay watershed, developed land increased by 67 percent between 1982 and 2007. While a majority of rural lands lost to development during this period came from forest land, 30 percent came from cropland. USDA's Conservation Effects Assessment Project shows that per-acre nutrient and sediment loadings are significantly higher from developed lands (point and nonpoint sources included) than from cultivated cropland.

USDA and other Federal agencies believe 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 84,000 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. Investments in private lands conservation are good for 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 work 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.

On May 12, 2009, President Obama's Executive Order 13508, Chesapeake Bay Protection and Restoration, recognized the Chesapeake Bay as a national treasure and called on federal agencies to work cooperatively to protect and restore the Chesapeake Bay watershed. The Executive Order also called for a comprehensive approach to Chesapeake Bay restoration, including goals for restoring water quality, habitat, living resources, and lands. This is consistent with the Administration's recently announced plan to conserve and preserve America's Great Outdoors. The America's Great Outdoors report announced by the President last month gave particular emphasis to protecting working lands through partnerships and incentives. The Administration's approach to conserving the Chesapeake Bay is an excellent example of what is called for in the report. USDA, in collaboration with the Environmental Protection Agency (EPA) and other Federal agencies, is targeting high-priority watersheds with high-impact practices and using the latest science to inform decision making.

Implementing the Chesapeake Bay Watershed Initiative

At USDA, we understand that the American people and the federal government are facing challenging economic and budgetary conditions. We are fortunate that the 2008 Farm Bill provided funding for USDA to work with producers in the Chesapeake Bay watershed. Since we began implementation of the Chesapeake Bay Watershed Initiative (CBWI) in 2009, USDA has worked to balance the program's objectives of (1) improving water quality and quantity, and (2) restoring, enhancing, and preserving soil, air, and related resources within the Chesapeake Bay watershed. CBWI authority, which was provided by members of this subcommittee, offers USDA an opportunity to leverage information and technology to help restore the Chesapeake Bay.

The additional funding provided by CBWI, over and above our base Farm Bill programs, has allowed NRCS to try some new approaches to better target and leverage our funding. In collaboration with EPA, the U.S. Geological Survey (USGS), the Fish and Wildlife Service (FWS), state governments, State Technical Committees, and conservation districts, NRCS used the best available science to identify watersheds with the highest nitrogen, phosphorus and sediment delivery to the Bay and its tributaries. NRCS continues to work with these partners, through a process of adaptive

management, to use the latest scientific information to inform our program delivery. For example, USGS will provide updated information in 2011 on areas delivering high sediment loads to the Bay to help prioritize conservation actions.

NRCS, in partnership with the states, will complete an evaluation of the Chesapeake Bay priority watersheds and identify any revisions to the priority list by October 2012, and every two years thereafter until 2025. The Strategy for implementing the Executive Order on Chesapeake Bay, published in May 2010, identifies the goal of working with producers to apply new conservation practices on four million acres of agricultural working lands in priority watersheds by 2025. While this goal is ambitious, NRCS believes that by focusing resources on priority watersheds and within those watersheds on priority lands, accelerating partnerships, and fully accounting for conservation practices, we can achieve a dramatic reduction of nitrogen, phosphorus and sediment.

A snapshot of CBWI implementation during fiscal year 2010 shows that Chesapeake Bay watershed producers expressed strong interest in conservation. NRCS obligated more than \$33 million in CBWI financial assistance. NRCS entered into 953 contracts with producers to help apply conservation treatment on more than 156,000 acres across the watershed. For example, NRCS worked with Pennsylvania producers to implement more than 60 square miles of new conservation tillage practices on cropland. That's an area equivalent to the size of Pittsburgh, Pennsylvania. Forested riparian buffers were planted on the equivalent of 714 football fields to help keep soil from entering adjacent streams.

For fiscal year 2011, the Farm Bill authorized \$72 million for CBWI. Pending outcome of the Congressional budget negotiations, this funding, combined with our other mandatory and discretionary accounts, would represent a high-water mark for USDA funding in the Chesapeake Bay watershed. We have a real opportunity to show that a voluntary, site-specific approach to conservation can work in the Chesapeake region, coupled with efforts underway across the Federal family.

Leveraging Funding

CBWI is just one of many USDA activities in the Bay watershed. Consistent with the Executive Order on Chesapeake Bay Protection and Restoration, USDA is committed to leveraging funding in its watershed restoration activities. We are fulfilling this commitment in a number of ways:

The ***Conservation Innovation Grants (CIG)*** program funds the development of new conservation approaches and technologies. Recipients must fund at least 50 percent of the cost of each project. In September 2010, NRCS joined EPA at an event in Maryland to announce the latest recipients of CIG awards in the Chesapeake Bay watershed. NRCS provided \$2.8 million in CIG grants, while EPA provided \$2.7 million for its Nutrient and Sediment Reduction grant program. USDA and EPA work together in administering these grant programs to reduce duplication and to ensure that funding is going to the most meritorious projects. 2010 CIG projects funded by NRCS are listed below.

- Chester River Association was granted \$300,000 to demonstrate new approaches to reducing nitrogen loads from cropland in the Upper Chester River Watershed of Maryland's Eastern Shore by engaging 20 producers.
- University of Maryland Eastern Shore was granted just under \$1 million to implement and demonstrate the effectiveness of gypsum curtains for reducing soluble phosphorus on farms in Somerset County, Maryland and to develop a practice standard for installation of gypsum curtains.
- World Resources Institute was granted \$600,000 to build an online multistate platform for water quality trading that builds on existing state trading platforms and will include a registry; marketplace; interactive map; calculation tool to estimate on-farm nitrogen, phosphorous and sediment losses as well as carbon sequestration rates; and a farm profit calculator to help farmers and aggregators understand potential cost and benefits associated with generating credits in the water quality trading market.
- Manure Energy Research Corp. was granted \$400,000 to demonstrate the installation and operation of two commercial poultry litter pyrolyzation units, one in the Shenandoah Valley and one in the Delmarva Peninsula.

The ***Cooperative Conservation Partnership Initiative (CCPI)*** is an initiative that enables NRCS and partners to assist producers in implementing conservation practices on agricultural and nonindustrial private forest lands. NRCS leverages financial and technical assistance with partners' resources to install soil erosion practices, manage grazing lands, improve forestlands, establish cover crops, reduce on-farm energy usage and undertake other conservation measures. CCPI is open to federally recognized Tribes, state and local units of government, producer associations, farmer cooperatives, institutions of higher education and nongovernmental organizations that work with producers. Nationwide, 26 projects in 14 states were approved for CCPI in fiscal year 2010. Four of these 14 projects were part of the Chesapeake Bay Watershed Initiative (CBWI-CCPI) and were funded at more than \$1.3 million.

In fiscal year 2011, NRCS will build on the ***showcase watershed projects*** identified and initiated in 2010: Conewago Creek PA, Upper Chester River MD, and Smith Creek VA. The objective of the Showcase Watershed Projects is to focus financial and technical assistance on a small scale in an effort to demonstrate results through enhanced partnerships and targeted water quality monitoring. A key component of these work plans is an outreach strategy that reaches all or nearly all of the agriculture producers in each watershed and provides an inventory of conservation needs. An annual work plan is currently being developed for each of these showcase watersheds. As a part of that process, NRCS is working with other federal, state, and non-governmental partners to identify additional resources to invest in the showcase watersheds. Another critical component of the showcase watershed is development and implementation of a water quality monitoring strategy to measure impacts of our activities. Pending appropriations, USGS will provide guidance to develop monitoring strategies, as well as equipment and staff time to assist in the implementation.

USDA also supports voluntary Chesapeake Bay restoration efforts under the Farm Service Agency's **Conservation Reserve Program (CRP)**. Under CRP's Conservation Reserve Enhancement Program, FSA has also negotiated federal/state partnership agreements with all Chesapeake Bay area states, which provide targeted assistance to address water quality, soil erosion, and wildlife issues.

Within the Chesapeake Bay Basin, there are about 302,000 acres enrolled in the CRP of which about 107,000 acres are devoted to buffers. CRP is a voluntary program that helps agricultural producers use environmentally-sensitive land for conservation benefits. Producers enrolled in CRP plant long-term, resource-conserving covers to control soil erosion, improve water and air quality and develop wildlife habitat. In return, FSA provides participants with rental payments and cost-share assistance. Contract duration is between 10 and 15 years.

New Approaches to Conservation Delivery

USDA recognized the President's Executive Order on the Chesapeake Bay to be in part a call for new approaches and new ideas to Bay watershed restoration. Below are several examples of how USDA is exploring new ways to engage producers and help them have a positive impact on Chesapeake Bay water quality.

Strategic Watershed Action Teams

In fiscal year 2011, NRCS will deploy Strategic Watershed Action Teams (SWATs) to work intensively on several landscape conservation initiatives, including the Chesapeake Bay. Developing and strategically deploying teams with needed expertise will improve the environmental cost effectiveness of NRCS technical and financial assistance programs by focusing on priority resource concerns within concentrated areas.

The goal in deploying SWATs is to accelerate conservation adoption within a focus area. A concentrated number of additional technical specialists delivering technical assistance within landscape initiatives will increase the number and extent of conservation practices installed through financial assistance programs and private landowner investment. Improved outreach and follow-up will also accelerate the adoption of conservation practices, which in turn will produce faster natural resource improvement.

In the Chesapeake Bay watershed, SWAT members will work with producers in target locations to accelerate conservation implementation to improve water quality and simultaneously help achieve the ambitious CBWI goal of implementing new conservation

practices on four million acres in priority watersheds by 2025. SWATs will not only help achieve USDA goals, but will also support State Watershed Implementation Plan (WIP) goals for best management practice (BMP) implementation, as determined through the EPA total maximum daily load (TMDL) process. Below is a brief outline of how the SWAT approach will work:

- Four teams will accelerate conservation activities through outreach, conservation planning, practice implementation, and follow-up in priority watersheds. Specific needs include development of comprehensive nutrient management plans, design and installation of nutrient management practices, design and installation of livestock-related practices, and establishment of riparian buffers.
- NRCS will provide overall coordination and technical direction. Local partners will supervise the teams, which will work closely with NRCS staff to address Executive Order Strategy goals and EPA TMDL allocations.
- Teams will be located in the Delmarva area (covering Delaware and Maryland), Piedmont area (Pennsylvania), Shenandoah Valley (Virginia), and West Virginia.

NRCS will invest \$3 million in mandatory Farm Bill funding for the SWAT teams and local partners will contribute matching funds.

Certainty

For a number of months, senior officials from USDA and EPA have been working with Chesapeake Bay states to discuss a framework to provide certainty to farmers who implement practices that protect water quality in the Chesapeake Bay watershed.

Certainty programs that States develop consistent with the framework could serve as a tool for engaging producers in conservation activities while providing some certainty to producers who have concerns about how they might be impacted by the TMDL.

Nutrient Management Pilot

In fiscal year 2011, NRCS is targeting producers who have not adopted nutrient management techniques with a new Nutrient Management Pilot effort in Maryland and Pennsylvania. NRCS will provide funding to producers to work with certified Technical Service Providers (TSPs) to develop nutrient management plans and implement water

quality and monitoring practices on crop acreage in select watersheds in the Chesapeake Bay watershed in Pennsylvania and Maryland. Participating producers will establish test strips to demonstrate net income results from nutrient management, and obtain additional management guidance from their TSP. NRCS will develop ranking criteria that provide preference to late-adopting applicants in high priority locations. NRCS will use the results from the pilot efforts in Maryland and Pennsylvania to inform future iterations of the program.

Environmental Markets

The Executive Order Strategy on Restoring the Chesapeake Bay identified environmental markets as an emerging innovative tool for facilitating restoration of the Chesapeake Bay and its watershed. While still in their infancy, environmental markets show promise for encouraging innovation and investment in conservation, improving accountability, reducing costs of restoration, and expanding economic opportunities for landowners.

As directed by the Strategy, USDA has formed and is leading an interagency Environmental Markets Team to coordinate among federal agencies and with stakeholders in the development and implementation of offsetting and trading provisions for the Bay TMDL as well as facilitating work on other market-based approaches in habitat, wetland, stream and shoreline restoration, marine markets and other applications. We look forward to developing guidance and products that can assist Chesapeake Bay states as they look to develop markets or build on those already in place.

State-of-the-Art Science

In June 2010, Secretary Vilsack rolled out the first Conservation Effects Assessment Project (CEAP) cropland report, covering the Upper Mississippi River watershed. CEAP is a multi-agency effort to quantify the environmental effects of conservation practices and develop the science base for managing the agricultural landscape for environmental

quality. In simple terms, CEAP provides both an assessment of the impacts of conservation on the landscape and a path forward on how to improve implementation of USDA conservation programs and policies.

Just this week, NRCS released the second CEAP cropland report, this one focused on the Chesapeake Bay. The report quantifies the effects of conservation practices commonly used on cultivated cropland in the Chesapeake Bay watershed, evaluates the need for additional cropland conservation treatment in the region, and estimates the potential gains that could be attained with additional treatment.

The CEAP cropland reports are based on a unique methodology—first, farmer surveys are used to obtain data on actual farming activities and conservation practices. In the case of the Chesapeake Bay watershed, the surveys were conducted from 2003 through 2006. The survey information is correlated with soils information on National Resources Inventory survey sites and statistically expanded to represent all cropland in the watershed. The farming and conservation activities and soils information are fed into a plant growth assessment model and then eventually into a watershed model to simulate downstream outcomes of producers' activities. This methodology allows USDA to evaluate the cumulative effect of conservation practices in terms of the following:

- reductions in losses of sediment, nutrients, and pesticides from fields;
- enhancement of soil quality through increases in soil organic carbon; and
- reductions in instream delivery of sediment, nutrients, and pesticides to the watershed's rivers and streams, and to the Bay itself.

The assessment includes all conservation practices undertaken in the basin. It is not restricted to only those practices associated with federal conservation programs; the assessment also includes the conservation efforts supported by the states, non-governmental organizations, and independent actions of individual landowners and farm operators.

The Chesapeake Bay CEAP cropland report included the following major findings:

1. Agricultural conservation practices deliver benefits for the Bay.

In the Chesapeake Bay watershed, most cropland acres have either structural and management practices in place to control erosion. Nearly half the cropland acres are protected by one or more structural practices, such as terraces. Reduced tillage is used in some form on 88 percent of the cropland. Adoption of conservation practices has reduced edge-of-field sediment loss by 55 percent, surface nitrogen losses by 42 percent, and subsurface nitrogen losses by 31 percent, and phosphorus losses by 41 percent, compared to a situation where no practices were applied.

2. Inherent soil vulnerabilities in the Chesapeake Bay watershed create a complex environment for agriculture.

Inherent vulnerability factors such as soils prone to leaching or runoff and high precipitation levels amplify potential for nutrients and sediment to move from farm fields. At least 44 percent of the cropped acres in the watershed are highly erodible land. By comparison, only 18 percent of the cropped acres in the Upper Mississippi River Basin are highly erodible.

3. Nitrogen loss in subsurface flow is the most critical conservation concern.

More can be done to reduce nitrogen losses through complete and consistent nutrient management (proper rate, form, timing, *and* method of application). About 65 percent of cropped acres need some additional nutrient management to address losses of nitrogen through subsurface pathways.

4. Suites of conservation practices are needed to manage complex loss pathways.

A system of conservation practices that includes soil erosion control and consistent nutrient management is required to address soil erosion and loss of nitrogen through leaching via the numerous potential loss pathways.

5. Targeting the most critical acres delivers the largest benefits.

Targeting the most critical acres delivers significantly more benefit. Treating the cropped acres with high need for treatment can have twice the impact of treating the acres with low or moderate need for treatment. In some areas, the conservation benefits are even greater.

Significant progress in conservation adoption has been made since the last phase of the CEAP farmer survey was completed in 2006, particularly with respect to cover crop use. Since 2006, implementation of cover crops in the watershed has increased significantly, particularly where state programs have supported the use of cover crops. When used properly, cover crops protect the soil from erosion during the winter months, take up nutrients remaining in the soil, and release plant-available nutrients slowly over the subsequent cropping period, thereby reducing nutrient leaching and runoff during the non-growing season.

The CEAP results also reaffirm the importance of maintaining working lands in the Bay watershed. That is, working lands develop less sediment and nutrients, on average, than developed lands. So while NRCS, states, farmers and other landowners work to reduce run-off into the Bay, we must also ensure that agriculture and forestry are maintained as economically viable land uses.

Beyond establishing a baseline of conservation programs and highlighting continued areas for improvement for the agricultural sector, CEAP has the potential to be a key tool supporting our programs and policies moving forward. We are incorporating CEAP findings into agency standards, program approaches and delivery, and policies.

The findings confirm that targeting the most vulnerable and least protected landscapes is the most effective and efficient path to conservation progress. At the same time, we will be on guard to maintain gains made in other areas. USDA is also working to incorporate soil vulnerability information into more of our targeting efforts. The CEAP findings also confirm the wisdom of using systems of practices, instead of individual practices, in our planning methodology. And we have turned some of our best technical minds toward addressing the persistent problem of nitrogen loss through subsurface pathways.

CEAP and the Chesapeake Bay Program Watershed Model

USDA developed the CEAP model in response to a directive, included in the 2002 Farm Bill manager's report, to evaluate the impact of conservation practices on the landscape. CEAP was developed to estimate, at a large basin scale, the effectiveness

of conservation activities across the Nation to help inform USDA conservation policies and programs.

The Chesapeake Bay Program Partnership's Watershed Model (CBP Model) is part of a suite of models designed to account for all nutrient and sediment loading sources to the Chesapeake Bay in the context of the Bay TMDL and focuses specifically on describing how actions on the land from all sources affect nutrient and sediment loadings to the Bay and the associated Bay water quality.

While the CBP Model and CEAP have both been extensively peer-reviewed and represent state-of-the-art modeling approaches, they were developed for different purposes.

Even though the models serve different purposes, there are advantages to be gained from improving and coordinating the input data used by the two models, and USDA and EPA will continue to work together to that end. Most importantly, both models show that the agricultural sector has done much to reduce nutrient and sediment loadings in the Bay watershed, and also that there is more to do.

Summary

There is a sense among the agricultural community that these are uncertain times for farmers in the Bay watershed. The Chesapeake Bay TMDL and state WIPs have introduced a new dynamic to Bay restoration. At USDA, we are taking advantage of the good fortune that the CBWI has bestowed upon us to provide Bay watershed producers with historic levels of technical and financial assistance. Our CEAP effort will help us target those dollars to the places and the practices that have the greatest impact on nutrient and sediment loadings. With assistance from key partners in the Bay watershed, we have developed new approaches, such as SWATs, that we believe will engage additional producers to accelerate conservation adoption on private lands. In addition, USDA is actively working with EPA and the states to explore a framework for engaging producers in conservation activities while providing certainty to producers who have concerns about how they might be impacted by the TMDL. With our resources, the

resources of our partners, and the resources of producers themselves all leveraged toward improving water quality in the Bay watershed, USDA sees the agricultural community as part of the solution, not just part of the problem.

I appreciate the invitation to be here today and I am happy to answer any questions.