

**REHABILITATION OF THE CHESAPEAKE BAY:
HEALING THE BAY THE VOLUNTARY WAY**

HEARING
BEFORE THE
SUBCOMMITTEE ON CONSERVATION AND FORESTRY
OF THE
COMMITTEE ON AGRICULTURE
HOUSE OF REPRESENTATIVES
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REHABILITATION OF THE CHESAPEAKE BAY: HEALING THE BAY THE VOLUNTARY WAY

THURSDAY, SEPTEMBER 22, 2016

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON CONSERVATION AND FORESTRY,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:00 a.m., in Room 1300, Longworth House Office Building, Hon. Glenn Thompson [Chairman of the Subcommittee] presiding.

Members present: Representatives Thompson, Allen, Lujan Grisham, Kuster, Nolan, and DelBene.

Staff present: Haley Graves, John Weber, Josh Maxwell, Patricia Straughn, Stephanie Addison, Faisal Siddiqui, John Konya, Anne Simmons, Evan Jurkovich, Nicole Scott, and Carly Reedholm.

OPENING STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

The CHAIRMAN. Good morning. This hearing of the Subcommittee on Conservation and Forestry, entitled, *Rehabilitation of the Chesapeake Bay: Healing the Bay the Voluntary Way*, will come to order. I am pleased to welcome our two witnesses today, two great champions for agriculture and rural Pennsylvania and rural America. I appreciate having them here as we explore today's topic.

Over the course of the 114th Congress, the Conservation and Forestry Subcommittee has held a series of hearings to highlight the success of voluntary conservation by our nation's farmers, ranchers, and foresters.

Today's discussion, *Healing the Bay the Voluntary Way*, takes a more focused approach to this discussion. The Chesapeake Bay, the largest estuary in the United States, is an incredibly complex ecosystem that includes important habitats and is a cherished part of our American heritage.

The Bay's watershed includes all types of land uses, from intensely urban areas, spread-out suburban development, and diverse agricultural practices. But, unquestionably, the Bay is in need and worthy of our attention and concern. I believe that everyone has a role to play in restoring it.

With the USDA's recent report on the improved health of the Chesapeake Bay, it is timely that the Committee should highlight the voluntary conservation efforts that are being implemented by producers. I want to be sure that the agriculture community receives the credit it deserves for engaging in voluntary practices and the reduced nutrient and sediment runoff.

However, it has become increasingly clear that some government agencies and environmental activist groups, organizations ignore or otherwise discount the commitment our farmers, ranchers, and foresters make to environmental stewardship. The critics forget that farmers and ranchers are the original and best stewards of the land. Farmers and ranchers continually find new and innovative ways to reduce energy usage, reduce emissions, and sequester carbon while still providing America with an abundant and affordable food and fiber supply. This is something that critics conveniently forget, especially when discussing restoration of the Chesapeake Bay. The goal for all involved is the same, the continued health and vitality of the Bay, while the road to that health and vitality is being strongly debated.

It is a clear choice: over-regulation and intrusion into the lives and livelihoods of those who choose to make the Bay's watershed their home or incentive-based programs that help restore and protect our natural resources.

EPA and other regulators fail to realize that fear and intimidation is no way to govern. No two producers face the same natural resource concerns. Voluntary conservation initiatives are the only way to respond to natural resource concerns because they can be tailored to best address each concern.

We have seen time and time again that top-down, one-size-fits-all is the least effective solution to a country as diverse as this, certainly as diverse a watershed as the Chesapeake watershed is. Whether the farms are 2 miles or 2,000 miles apart from each other, protecting our drinkable water supply, keeping nutrients in the soil for the next crop year, or maintaining a supply of forage for livestock, there is no shortage of reasons why we must continue to innovate when it comes to preserving our natural resources.

In addition to the great work being done at the state and county levels, I am proud that so many of the farmers and foresters in Pennsylvania have taken voluntary steps in order to do their part to assist in the recovery of the Chesapeake Bay. The environmental gains they have achieved are a testament to our producers. I would also like to highlight the trust built between those who deliver the conservation programs and farmers who depend on their technical assistance. These invaluable relationships are the core of the voluntary conservation model, and I would strongly caution any agency or organization who wishes to change this model for success.

It is very coincidental that the day before this hearing that will highlight USDA's report on the improved health of the Bay and the importance of voluntary conservation efforts of farmers and ranchers that the Chesapeake Bay program would release a press release agreeing that the Bay water quality is improving. However, they have a slightly different narrative.

They begin the release with the following statement, "The amount of nutrient and sediment pollution entering the Chesapeake Bay fell significantly between 2014 and 2015, helping improve water quality in the nation's largest estuary. Experts attribute this drop in pollution loads to dry weather and below-normal river flow, but note local efforts to reduce pollution also played a role."

EPA is so blatantly tied to their agenda against agriculture that the agency will give more credence to climate change than they do to successful efforts by agricultural producers. The data in USDA's report clearly prove that it is the conservation efforts by farmers and ranchers improving the health of the Chesapeake Bay.

And, without objection, I would like to submit for the record the Chesapeake Bay press release that I noted on the Chesapeake Bay program, *Chesapeake Bay Water Quality Improving*, as well as an article that was in a *Farming* magazine, actually was shared with and given to me by some of the farmers in Pennsylvania. That is where you get your best information, from the folks who are on the farm doing the work. This is an article that says, *What is the Cause of the Bay's Problems?* This is by two farmers who are also biologists. And manure gets too much blame, farmer-biologists say.

And, without objection, I submit those for the record.

[The prepared statement of Mr. Thompson follows:]

PREPARED STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS
FROM PENNSYLVANIA

Good morning, and welcome to today's hearing. Over the course of the 114th Congress, the Conservation and Forestry Subcommittee has held a series of hearings to highlight the success of voluntary conservation by our nation's farmers, ranchers, and foresters.

Today's discussion, "Healing the Bay the Voluntary Way", takes a more focused approach to this discussion. The Chesapeake Bay, the largest estuary in the U.S., is an incredibly complex ecosystem that includes important habitats and is a cherished part of our American heritage.

The Bay's watershed includes all types of land uses, from intensely urban areas, spread out suburban development and diverse agricultural practices. But, unquestionably the Bay is in need and worthy of our attention and concern, and I believe everyone has a role to play in restoring it.

With USDA's recent report on the improved health of the Chesapeake Bay, it is timely that the Committee should highlight the voluntary conservation efforts that are being implemented by producers. I want be sure that the agriculture community receives the credit it deserves for engaging in voluntary practices that reduce nutrient and sediment runoff.

However, it has become increasingly clear that some government agencies and environmental activist organizations ignore or otherwise discount the commitment our farmers, ranchers and foresters make to environmental stewardship.

The critics forget that farmers and ranchers are the original and best stewards of the land. Farmer and ranchers continually find new and innovative ways to reduce energy usage, reduce emissions, and sequester carbon while still providing America with an abundant and affordable food and fiber supply. This is something the critics conveniently forget, especially when discussing restoration of the Chesapeake Bay.

The goal from all involved is the same, the continued health and vitality of the Bay, but the road to that health and vitality is being strongly debated. It is a clear choice, over-regulation and intrusion into the lives and livelihoods of those who chose to make the Bay's watershed their home, or incentive-based programs that help restore and protect our natural resources.

EPA and other regulators fail to realize that fear and intimidation is no way to govern.

No two producers face the same natural resource concerns. Voluntary conservation initiatives are the only way to respond to natural resource concerns because they can be tailored to best address each concern. We have seen time and again that top-down, one-size-fits-all is the least effective solution to a country as diverse as this. Whether the farms are 2 miles or 2,000 miles apart from each other—protecting our drinkable water supply, keeping nutrients in the soil for the next crop year, or maintaining a supply of forage for livestock, there is no shortage of reasons why we must continue to innovate when it comes to preserving our natural resources.

In addition to the great work being done at the state and county levels, I am proud that so many of the farmers and foresters in Pennsylvania have taken vol-

untary steps in order to do their part to assist in the recovery of the Chesapeake Bay. The environmental gains they have achieved are a testament to our producers.

I'd also like to highlight the trust built between those who deliver conservation programs and farmers who depend on their technical assistance. These invaluable relationships are the core of the voluntary conservation model, and I would strongly caution any agency or organization who wishes to change this model for success.

I am proud of the fact that farmers are taking real, on-the-ground, daily steps to improve water quality in the Chesapeake Bay region and across the country. With that, I thank our witnesses for being here today, and I recognize Ranking Member Lujan Grisham for any comments she would like to make.

SUBMITTED ARTICLES

Data Show Drop in Nutrient and Sediment Pollution, the Leading Causes of the Bay's Poor Health

[http://www.chesapeakebay.net/presscenter/release/chesapeake_bay_water_quality_improving]

Chesapeake Bay Program

Chesapeake Bay Water Quality Improving

Press Center

Annapolis, MD (September 21, 2016)

The amount of nutrient and sediment pollution entering the Chesapeake Bay fell significantly between 2014 and 2015, helping improve water quality in the nation's largest estuary. Experts attribute this drop in pollution loads to dry weather and below-normal river flow, but note local efforts to reduce pollution also played a role. Indeed, *related research* (http://www.chesapeakebay.net/presscenter/release/science_shows_restoration_efforts_can_improve_local_water_quality_in_the_ch) shows "best management practices"—including upgrading wastewater treatment plants, lowering vehicle and power plant emissions, and reducing runoff from farmland—have lowered nutrients and sediment in local waterways.

The Chesapeake Bay Program (CBP) tracks *pollution loads and trends* (<http://www.chesapeakeprogress.com/clean-water/water-quality/water-quality>) as it marks progress toward improving the health of the Bay. According to data from the CBP and the U.S. Geological Survey (USGS), nitrogen, phosphorus and sediment loads to the Bay were below the long-term average in 2015. Between 2014 and 2015, nitrogen loads fell 25 percent, from 290 million pounds to 217 million pounds. Phosphorus loads fell 44 percent, from 17.7 million pounds to 9.9 million pounds. Sediment loads fell 59 percent, from 7.2 billion pounds to 2.9 billion pounds. Below-average loads are considered positive because reductions in nitrogen, phosphorus and sediment pollution can improve water quality.

The most recent assessment of water quality—which examines dissolved oxygen, water clarity and chlorophyll *a* (a measure of algae growth) in the Bay and its tidal waters—makes these improvements clear: an *estimated* (<http://www.chesapeakeprogress.com/clean-water/water-quality/water-quality>) 37 percent of the tidal Chesapeake met water quality standards between 2013 and 2015. While this is far below the 100 percent attainment needed for clean water and a stable aquatic habitat, it marks an almost ten percent improvement from the previous assessment period.

A large portion of pollution loads enters the Bay from the rivers within its watershed. Accordingly, the USGS tracks annual pollution loads and trends in these loads at monitoring stations along nine of the biggest rivers that feed the Bay. In some cases, long-term pollution trends at these stations—which span from 1985 to 2015—reflect efforts to improve water quality. Long-term trends in nitrogen, for example, are improving at six of the nine monitoring stations, including those on the Susquehanna, Potomac, James and Rappahannock (the four largest rivers in the watershed). Long-term trends in phosphorus and sediment, however, are more variable: phosphorus is improving at three monitoring stations and degrading at five, while sediment is improving at three stations and degrading at four. Short-term pollution trends—which span the last decade—show less improvement.

In June, the U.S. Environmental Protection Agency released its 2 year milestone evaluations of Federal agencies' and watershed jurisdictions' work toward the *Chesapeake Bay Total Maximum Daily Load* (<https://www.epa.gov/chesapeake-bay-tmdl>) (Bay TMDL). This "pollution diet" calls for all needed pollution control measures to be in place by 2025, with measures that would achieve 60 percent of pollution load reductions in place by 2017. Computer simulations *show* (<http://www.chesapeakeprogress.com/clean-water/water-quality/watershed-implementation>)

plans) these measures are in place to achieve 31 percent of the nitrogen reductions, 81 percent of the phosphorus reductions and 48 percent of the sediment reductions necessary to reach our clean water goals. Evaluations from EPA indicate it is unlikely jurisdictions will meet the 2017 target for reducing nitrogen.

While continued improvements in water quality will take time—due in large part to the lag (http://www.chesapeakebay.net/blog/post/lag_times_call_for_patience_in_awaiting_restoration_results) between the implementation of a conservation practice and the visible effect of that practice on a particular waterway—the ecosystem is beginning to respond to protection and restoration efforts. Last year, researchers observed (<http://www.chesapeakeprogress.com/abundant-life/vital-habitats/sav>) more than 91,000 acres of underwater grasses in the Bay, which surpassed the Chesapeake Bay Program's 2017 restoration target 2 years ahead of schedule and marked the highest amount ever recorded by the Virginia Institute of Marine Science aerial survey.

Facts

The U.S. Geological Survey (USGS) monitors nitrogen, phosphorus and sediment loads entering the Chesapeake Bay from the nine largest rivers in the watershed. Together, pollution loads computed at all nine River Input Monitoring (RIM) stations reflect pollution loads delivered to the Bay from 78 percent of its watershed. Additional monitoring and modeling information is used to estimate the total nitrogen, phosphorus and sediment loads delivered to the Bay in a given water year.

The amount of nitrogen, phosphorus and sediment entering the Bay can change dramatically from year to year and is influenced by changes in land use, land management and river flow. This complicates our efforts to determine trends in pollution loads over time. The USGS analyzes trends in flow-normalized pollution loads—which account for changes in weather and river flow—to better understand the changes in pollution that can result from changes in land use and management practices.

Last year's decline in pollution loads can, in large part, be attributed to favorable weather. While high precipitation can increase river flow (http://www.chesapeakebay.net/indicators/indicator/river_flow_into_chesapeake_bay) and push pollution into the Bay, river flow was below normal in 2015. However, 2015 was not a drought year. A related analysis (<http://ecoreportcard.org/report-cards/chesapeake-bay/publications/2015-chesapeake-bay-report-card/>) from the University of Maryland Center for Environmental Science highlights the significance of this fact: previously observed improvements in water quality have been linked to lower rates of river flow than those seen in 2015. The long-term decline in pollution loads can also be attributed to on-the-ground pollution-reducing practices, which jurisdictions put in place to meet first the 1983 *Chesapeake Bay Agreement* (http://www.chesapeakebay.net/content/publications/cbp_12512.pdf), then similar agreements signed in 1987 (http://www.chesapeakebay.net/content/publications/cbp_12510.pdf) and 2000 (http://www.chesapeakebay.net/content/publications/cbp_12081.pdf), and later the requirements of the *Chesapeake Bay Total Maximum Daily Load* (<https://www.epa.gov/chesapeake-bay-tmdl>) (Bay TMDL).

The Chesapeake Bay Program uses the following data to determine the total nitrogen, phosphorus and sediment loads entering the Bay:

- Nitrogen, phosphorus and sediment loads computed at nine RIM stations;
- Nitrogen and phosphorus levels in water samples collected at wastewater treatment plants downstream of RIM stations;
- Computer-simulated estimates of nitrogen and phosphorus loads from nonpoint pollution sources downstream of RIM stations; and
- Computer-simulated estimates of the atmospheric deposition of nitrogen to tidal waters.

Water quality in the Bay and its tidal tributaries is evaluated using three parameters: dissolved oxygen, water clarity or underwater grass abundance, and chlorophyll *a* (a measure of algae growth). These parameters are monitored by the Maryland Department of Natural Resources and the Virginia Department of Environmental Quality. The resulting data is used to develop an indicator of the estimated attainment of a set of water quality standards that can be monitored at this time. During the 2013 to 2015 assessment period, an estimated 37 percent of the Bay and its tidal waters met water quality standards. This marks an increase of almost ten percent from the previous assessment period, during which an estimated 34 percent of the Bay and its tidal waters met water quality standards. While this indicator does not represent a complete accounting of all of the water quality standards for the Bay and its tidal tributaries, it does reflect trends in water quality over time.

If the Bay and its tidal tributaries are to function as a healthy ecosystem, all water quality parameters for all aquatic habitats must be met.

Issues

Excess *nutrients* (<http://www.chesapeakebay.net/issues/issue/nutrients>) and *sediment* (<http://www.chesapeakebay.net/issues/issue/sediment>) are among the leading causes of the Bay's poor health. Nitrogen and phosphorus can fuel the growth of algae blooms that lead to long-duration, low-oxygen "dead zones" in deep water and short-duration "mortality moments" in shallow water. Sediment can block sunlight from reaching underwater grasses and suffocate shellfish. By tracking pollution loads into rivers and streams, the Chesapeake Bay Program can ensure our partners are on track to meet our clean water goals. By measuring the achievement of water quality standards, we can observe changes in Bay health over time. By reporting on these environmental indicators together, we gain a better picture of how pollution from the watershed can affect the health of the Chesapeake Bay.

Quotes

"It is critical that we track our pollution control efforts and assess the ecosystem response that result from those efforts. The ecosystem of the Chesapeake Bay watershed is large and complex and can be affected by a variety of different factors. We are witnessing improvement in a number of our indicators—bay grasses, water clarity and water quality standards attainment, as well as a number of our fisheries such as blue crab population. But we must stay focused and ramp up our pollution reduction efforts if we are to be successful over the long-term."

NICK DIPASQUALE, *Director*, Chesapeake Bay Program.

"While our job is not done, our determined efforts to date give us great hope for further improvements in water quality in the Bay and its tributaries and the living resources that depend on healthy aquatic habitats."

MOLLY JOSEPH WARD, *Virginia Secretary of Natural Resources*, and *Chair*, Chesapeake Bay Program Principals' Staff Committee.

"While the lowered amount of pollution entering the Chesapeake Bay in 2015 is encouraging, the trends of nutrients and sediment over the last decade in the major rivers flowing into the Bay show mixed results. There will need to be improving trends in all of these rivers to support improvement in the Bay's health."

SCOTT PHILLIPS, *Chesapeake Bay Coordinator*, U.S. Geological Survey.

Related

Water quality improves, pollution falls in the Chesapeake Bay (http://www.chesapeakebay.net/blog/post/water_quality_improves_pollution_falls_in_the_chesapeake_bay) (September 21, 2016).

FARMING, September 2016

What is the Cause of the Bay's Problems?

Manure Gets Too Much Blame, Farmer-Biologists Say

By Curt Harler



The reproductive cycle of fish in the Chesapeake Bay is unusual. The U.S. Geological Survey (USGS) has found male fish in the Susquehanna carrying eggs. And intersex fish have been found. That is simply wrong.

The USGS is monitoring the Juniata River, Swatara Creek (which is a river-size stream) and other watersheds in the mid-Atlantic area. All show male fish with female sex features. Interestingly, the females do not show male attributes.

Farmers have shouldered most of the blame for pollution problems in the Chesapeake Bay. Conventional wisdom said it was manure runoff and chemical fertilizer in the Bay watershed that was destroying fisheries. Nutrients were pouring down the Susquehanna from New York, Pennsylvania, Delaware and Maryland into the watershed.

Many felt that farmers had to be stopped. This mantra, based on some solid scientific research, has been repeated for over ¼ century. To agriculture's credit, much has been done about the situation.

Now comes Cleon S. Cassel, owner of Cassel Vineyards of Hershey in Hummelstown, Pennsylvania, to say that manure is not the deep cause of the problem. Yes, he concedes, manure and fertilizer runoff caused problems in the past. But what is hurting the fishing industry—and will hurt it even more in the future—is the runoff of drug store medicines like estrogen from birth control pills, diabetes medications and other legitimate pharmaceuticals. Road salts are not helping. Neither are waste products from hospitals and pharmaceutical plants.

Cleon and his sons, Chris and Craig, all hold master's degrees and all taught biology. Chris got his master's degree studying stream runoff at mine sites, so he knows about sampling procedure and research in watersheds.

"This has become a terrible PR problem for farmers," Cleon said. He would like to see groups like Farm Bureau expend more effort defending farmers and less bragging about crop yields increasing a few percentage points.

This spring, Chris took his biology classes from the Milton Hershey School out to sample every tributary to the Swatara near Hershey. His findings point to drugs and female hormones in the water. That, he said, is why the males show female attributes but not *vice versa*.

Others concur. The U.S. Fish and Wildlife Service (FWS) and the (USGS) published work in 2009 based on the Potomac and other area watersheds that showed that at least 82 percent of male smallmouth bass and 23 percent of the largemouth bass had immature female germ cells (oocytes) in their reproductive organs.

"Our findings suggest that intersex is both more widespread than previously known, and, at least in the sampled streams, is not related to a single chemical or source," said Vicki Blazer, a USGS scientist at the Leesville experimental stream lab in Kearneysville, West Virginia.

This condition, a type of intersex, is a disturbance in the fish's hormonal system and is an indicator of exposure to estrogens or chemicals that mimic the activity of natural hormones. Several other abnormalities were also noted by the researchers from the National Fish Health Research Laboratory, some affecting female bass.

Blazer has looked at why so many male smallmouth bass in area watersheds have immature female egg cells in their testes. Recent research by the USGS points to myriad sources including wastewater treatment plant effluent, agricultural and stormwater runoff. Any or all may contribute to reproductive endocrine disruption, as well as the immunosuppression they found.

Working with the Maryland Department of Natural Resources Fisheries Service, two scientific papers were published by the researchers. (Later, Blazer got the American Fisheries Society's 2010 Publications Award for her article investigating fish mortality.) Based on the results of these studies, no single chemical or source could be identified as causing the intersex abnormalities. Scientists point out that multiple chemicals not solely associated with agriculture or wastewater treatment plant effluents may be responsible.

Maryland Department of Natural Resource (DNR) surveys have documented strong reproduction and abundance of smallmouth bass in recent years. "The Potomac River main stem, Monocacy River and Conococheague Creek remain premier smallmouth bass fishing destinations for anglers," said John Mullican from Maryland DNR.

White sucker fish also showed a tendency to react to hormones. This surely is a bad portent for the Chesapeake Bay.

Biology Background

In addition to being a farmer, Cleon taught biology at Lower Dauphin High School. His son teaches biology at Hershey School. They know biology. Their thoughts are backed up by scientists ranging from the Pennsylvania Department of Environmental Protection to the National Geographic Society. Their land has been cultivated by the Cassel family since 1903. The Swatara is about a mile from the home farm. Craig and Chris, along with and their wives, Becky and Jody, are the fifth generation to work the farm and are part of the three generations of family that currently work the land near Hershey. Cleon is looking to the future—and the sixth generation is at the rabbit-showing stage in their career.

To date, just two percent of the population—farmers, and sometimes golf courses, cemeteries or other green areas—have been asked to bear the onus of the Bay's problems, the Cassels said.

Chris said Blazer's collection sites are in an area of minimal agricultural runoff. However, he noted there are numerous wastewater plants, institutions like the Milton Hershey Hospital and pharmaceutical plants in the watershed.

Hormones are killing the Chesapeake Bay for fishermen, the father and sons said. "We have regulations for 20 percent cuts in nutrients. We ought to demand 20 percent cuts on estrogen and road salts," Cleon said.

The Pennsylvania Department of Agriculture is aware of the issue but has taken no action to date. The Cassels want the government and other researchers to expend more effort researching hormones and road salts as killers of fish. It is not that they deny manure is part of the problem. They freely admit that it is. However, after 30 years of work with farmers, environmental conditions in the Bay are barely holding their own despite huge improvements in reducing ag runoff.

A Look at Manure

Chris noted that the fish gathered for study outside Hershey were netted near the Hershey Medical Center. No mention of the medical center is made in the research, although he said every male bass taken in that area showed female organs.

"We've been beating up farmers about manure ruining every watershed," noted Sheila Miller who, with her husband, Mike, runs Deitchland Farm near Womelsdorf, Pennsylvania. "Even the kids in school think farmers are to blame."

Cleon agreed. "The Amish are the easiest people to blame. They never go to court. They never fight back. Farmers are second easiest."

While Miller is adamant that farmers should not be putting manure into streams, she noted the amount of work that has been done—starting with the decades-old practice of contour farming and continuing to today's BMPs (best management practices).

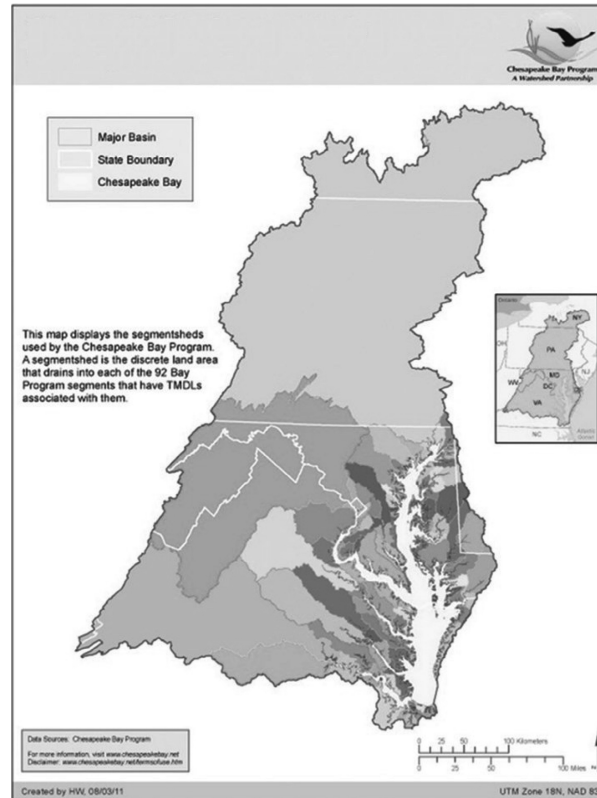
The Conservation Effects Assessment Project (CEAP) agrees that farmers have done well. "Farmers have made good progress in reducing sediment, nutrient and pesticide losses from farm fields through conservation practice adoption throughout the Chesapeake Bay region," CEAP stated.

Most cropland acres have structural or management practices—or both—in place to control erosion. Nearly $\frac{1}{2}$ of the cropland acres are protected by one or more structural practices, such as buffers or 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, losses of nitrogen with surface runoff by 42 percent, losses of nitrogen in subsurface flows by 31 percent, and losses of phosphorus (sediment attached and soluble) by 41 percent.

Producers have reduced N by over 45 percent of 2025 targets, phosphates by 32 percent and sediments by 30 percent. Even watchdog agencies concede that ag has done a lot. Farmers have accomplished 50 percent of what they were asked to do

to get the Bay to a level of nutrients and sediments where it can start to regenerate itself.

Chesapeake Bay Segmentsheds with Major Basins



Even critics agree that it is likely more has been done by farmers than has been counted. This is primarily because projects that are not cost-shared fly under the government's radar.

Since it is easy to document cost-share projects—state and Federal agencies do a good job of that—those projects are well known. However, improvements producers do on their own are harder to track.

The problem is that the success story is not uniform. CEAP said, “Opportunities exist to further reduce sediment and nutrient losses.” But, as Chris said, that is only part of the problem. And the big, low-hanging fruit is in drugs, not manure.

Historic Record

The USGS got involved long ago. In the summer and fall months of 1996 and 1997, an unusually high prevalence of skin lesions in fishes from tributaries of the Chesapeake Bay surprised the fishing community and scientists. These skin lesions ranged from small petechial hemorrhages to abrasions to deep ulcers penetrating underlying muscle and visceral organs. A variety of fish species were involved as indicated by results of surveys conducted by several state and Federal agencies during this time period.

In addition, two fish kills involving primarily juvenile Atlantic menhaden occurred in August 1997. The fish kills as well as the variety of fish lesions were attributed to the presence of the toxic dinoflagellate, *Pfiesteria piscicida*. Because menhaden were the most frequent target of acute fish kills and episodes of fish lesions in the Chesapeake Bay, the penetrating ulcers so common in this species are now viewed by many as “*Pfiesteria*-related” and thought to be caused by exposure to *Pfiesteria* toxin.

Even earlier, however, there was reason to doubt that manure or farm fertilizer were the major cause of fish kills. Every farm boy or girl over a certain age remembers being sent down to the pond on the homeplace with a bucket of fertilizer and ordered to toss in some scoops to encourage growth.

The Cassel operation has a couple of farm ponds including one just below the horse barn—a building that used to house 100 head of cattle—that are full of thriving fish. They have received manure, but not estrogen or road salt, since 1948. Other farmers have healthy ponds that have received manure or fertilizer runoff for decades, too.



Cleon Cassel and his sons Chris and Craig all hold master's degrees and all taught biology. Chris, here with a bass, got his master's degree studying stream runoff. Photo by Jody Cassel.

"Our pond has some of the best fishing in Dauphin County and it is way over-nutrient loaded," Cleon said.

Cleon noted an old booklet from the folks at Zett's Fish Hatchery in Drifting, Pennsylvania, that encourages landowners to sink a bale of straw in a pond and add a sack of manure to the mix to encourage smaller aquatic life to feed. "We'd go to jail if we did that today," he said.

Most farmers are on board with reducing manure and fertilizer runoff. However, manure may be only part of the issue. So-called "nanoparticles"—those man-made bits of material included in hundreds of products ranging from drugs to sunscreen to sporting goods—are what the Cassels and others suspect are doing the bulk of the damage today.

Rebecca Klaper, Ph.D., professor at the School of Freshwater Sciences at the University of Wisconsin-Milwaukee, studies nanoparticles. She wants to know what happens when something so small gets into the environment. Scientists still don't know how these tiny particles interact with the environment and living things, she said. Using environmental genomics, she has studied waterways from Wisconsin across the Great Lakes into Pennsylvania.

To predict the potential impact of nanomaterials on the environment, her group examined properties of nanomaterials that may make them toxic or cause them to impact populations. She uses the aquatic model species *Daphnia magna*, *D. pulex* and *Oncorhynchus mykiss* (rainbow trout) in an effort to make predictions about the impact of current and future nanomaterials and their toxicity.

“Our initial studies have found that nanoparticle toxicity is influenced by the core structure of the nanomaterial as well as how a nanomaterial is introduced into suspension,” Klaper said. For example, titanium dioxide nanomaterials are an order of magnitude less toxic than their fullerene (nC60) counterparts. In addition, smaller particles are more toxic than larger aggregates. “We are continuing this research with other nanomaterials,” she said. A complete investigation will not be a rapid process.

Core particle structure and surface chemistry both act to impact toxicity, immune response and behavior. “Taking a systematic approach to evaluating nanomaterials will provide a basis with which to make predictions about the characteristics of nanomaterials that may affect their interactions with aquatic species,” Klaper said.

Ultimately, she hopes to be able to provide guidance on what makes nanomaterials harmful to the environment and ideas on to how to create environmentally sustainable nanomaterials.

Whatever the cause of the Bay’s difficulties today, most observers would agree that anything that impacts the health of the Bay should come under review.

Focusing on farmers and manure runoff, to the exclusion of other potentially more-damaging causes, is bad for everyone.

“The finger-pointing at farmers is not going to go away,” Chris said, noting big pharma has too much money in the game to allow that.

Research efforts flow to areas where dollars are available. Nobody in academic research wants to do anything that would cause pharmaceutical companies to withdraw research dollars, he said. However, he sees some hope since wastewater treatment operations know they have “a secret problem” and are working on ways to treat effluent.

“Nobody wants to say, ‘We have met the enemy and they are us,’” Cleon said. “But it is interesting that all the researchers’ findings (of sex-distorted fish) are close to populated areas, close to research facilities, close to pharmaceutical plants.”

Curt Harler, who has a B.S. in agriculture from Penn State University and an M.S. in ag from Ohio State University, is a full-time freelance writer specializing in green topics.

The CHAIRMAN. Now, it’s my privilege and honor to recognize Ms. Kuster, serving as acting Ranking Member for this hearing, at this point for her opening statement.

OPENING STATEMENT OF HON. ANN M. KUSTER, A REPRESENTATIVE IN CONGRESS FROM NEW HAMPSHIRE

Ms. KUSTER. Thank you very much, Chairman Thompson. And thank you for holding today’s hearing.

We appreciate the opportunity to allow us to further explore how our conservation efforts are working on-the-ground. As we move closer to the next farm bill in the upcoming session, these are the conversations that our Committee needs to continue to have.

Farm bill conservation programs incentivize farmers and ranchers to take real, meaningful, and voluntary conservation efforts on their land. Farmers and ranchers can choose from several different farm bill conservation programs, such as EQIP, the Environmental Quality Incentive Program, the Conservation Stewardship Program, and the Regional Conservation Partnership Program, to meet the conservation needs of their operations and the surrounding landscape.

It is clear to me that the success of voluntary conservation programs depends upon the partnerships that producers develop, not only with the NRCS but also with the conservation districts that

help farmers and ranchers implement these practices on-the-ground.

I know that a lot of conservation work has gone toward cleaning up the Chesapeake Bay watershed. As an aside, I worked here on the Hill—I like to say 30 years ago; it is more like 40 years ago—and learned to wind surf in the Chesapeake Bay. And let me just say: thank you for your efforts to clean that up.

Because of these efforts and the partnership and participation of farmers, we have seen the health of the Bay improve dramatically. There remains a lot more to do in the Bay watershed, like many other areas across the country.

While many of us on this Committee are not from the Chesapeake Bay area, we are watching the Bay closely for strategies, best management practices, and lessons that we can apply to other important conservation areas, like in my region, the White Mountain National Forest and the Silvio Conte Wildlife Refuge.

Thank you to the witnesses for being here today. We appreciate your time.

And thank you, again, Mr. Chairman, for holding this hearing. I hope we will have more hearings to come to continue to examine our farm bill conservation programs, and we can all work together to make sure that these programs are easy to use for farmers and ranchers.

I yield back.

The CHAIRMAN. I thank the gentlelady, who obviously started working on the Hill when she was 5 years old.

Ms. KUSTER. Oh, thank you.

The CHAIRMAN. The chair would request that other Members submit their opening statements for the record, so that the witnesses may begin their testimony to ensure that there is ample time for questions. The chair would like to remind Members they will be recognized for questioning in order of seniority for Members present at the start of the hearing. After that, Members will be recognized in order of their arrival, and I appreciate the Members' understanding.

I would like to welcome again our witnesses to the table, two agriculture leaders. Mr. Jason Weller, Chief, Natural Resources Conservation Service, United States Department of Agriculture; and the Honorable Russell Redding, Secretary, the Pennsylvania Department of Agriculture, serving the Commonwealth of Pennsylvania, based out of Harrisburg, Pennsylvania.

Witnesses are reminded to limit their oral presentations to 5 minutes, and all written statements will be included in the record.

Chief Weller, please begin when you are ready.

STATEMENT OF JASON WELLER, CHIEF, NATURAL RESOURCES CONSERVATION SERVICE, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.

Mr. WELLER. Good morning, Mr. Chairman, Ms. Kuster, and Members of the Committee. Thank you very much for the invitation.

And, Mr. Chairman, I really credit you in holding this hearing and having an opportunity to talk about how the voluntary approach is delivering real results.

In my experience in the last several years, particularly in the last several months, it seems there is a growing theme, and it is one I am concerned about. And that is the voluntary approach to agriculture conservation is not working, and we are not getting the results that were perhaps expected or promised. And people are considering other options, whatever those options may be.

To have a forum, a venue to actually share what farmers and forest landowners are doing for the Chesapeake Bay but what, importantly, this Committee provides for through its investments through USDA generally and NRCS specifically for an array of conservation programs and the very significant assistance this Committee makes available, I have to say it is delivering huge results, not just in the Chesapeake Bay but nationally.

In previous testimony, I have been able to talk about some of the other outcomes, results that are happening on the landscape because of the voluntary approach, because of the collaborative approach farmers and ranchers are taking as part of their agricultural production. But, today, we are also, obviously, focused on the Bay.

And there have been some allegations that USDA hasn't done its part, that we made promises. I am here to say we made promises absolutely, but those promises were absolutely kept and in part because of the very significant programs and flexibilities and tools this Committee provides us, and in partnership with agriculture in the Chesapeake Bay.

Since 2009 through this fiscal year, we at NRCS and our conservation partners, state government and districts and NGO organizations across the Bay watershed, and across six states, have invested \$890 million in financial and technical assistance to help producers put in place valuable conservation practices on their operations. That in turn has leveraged we estimate \$400 million in conservation out of the pockets, the budgets of those family farming operations. Just through the title II programs alone, that is not counting the very significant investments from partners and state government and very significant investments from the NGO community. We are talking a very substantial investment in private lands, voluntary incentive-based conservation.

In general, I sleep well at night knowing that the voluntary approach works and is delivering results. But what is really compelling is that this voluntary approach is a win-win. It is a win in this case because we are starting to see a recovery of the Bay, but it is also a win because we have been able to maintain productive working agricultural lands here in the Chesapeake Bay region.

Regarding the size and scope, sir, that you outlined at the beginning, it is a very large watershed. In total, it is 44 million acres in size, of which about 7 million acres are cropland, another 3.6 million acres are pasture, and then forests are an additional 21 million acres. It is a very significant footprint that rural lands have. And that is a good thing, because we depend upon the water flowing off those rural lands to maintain the quality of waters that flow ultimately into the Bay.

In my view and in my estimation, if you care about the quality of the Bay water, you have to care about the integrity and the economic success of those working landscapes. It is not just something

that NRCS believes in, it was actually in the Administration's Chesapeake Bay strategy that was released in 2010, that was put out as an interagency report, that laid out our strategy and our commitments, going forward, to implement President Obama's Executive Order to help address Chesapeake Bay challenges and also opportunities. In that report, it specifically calls out that healthy, productive agriculture is essential to maintaining the protection and vitality of the Chesapeake Bay waters.

We put in place, we invested \$890 million. By many people, unfortunately, that is the only metric, how much money you spend. In my view, that is not a very good metric. I would rather actually get to what we are really doing with the money. With the money invested, we were able to put in place conservation systems on 3.6 million acres of working lands: croplands, pastures, and working timberland forests. That is a land area equivalent size almost three times the State of Delaware.

Within that very significant footprint, we then worked with our partners to try and identify, where are those most vulnerable soils? Where are those small watersheds where there is the greatest opportunity to make a difference? We put in place these overall good water-quality management practices on 1.6 million acres and highly targeted practices in these priority areas across the Bay states.

Just measuring by one metric alone, the protection for the streams and tributaries, just looking at those buffers and fences, basic practices to protect the integrity of those riparian areas, if you laid them end to end, it would be 3,500 miles of water quality protection practices along streams and tributaries were installed just since 2009. If you laid that out, that would stretch from Annapolis, Maryland, all the way to San Francisco, and from San Francisco all the way north to Seattle. The voluntary approach absolutely is installing real infrastructure that works for working agriculture but also, in this case, is helping to protect the waters of the Chesapeake Bay.

What is the result of all this? We went out and did a survey with producers on the Bay back in 2012. Already, that survey result is getting a little bit long in the tooth. But back in 2012, what we found is that producers on the Bay had in place soil conservation practices on 97 percent of all cropland acres on the Bay. Ninety-seven percent of the 7 million cropland acres on the Bay had soil conservation practices in place. At least 52 percent of those cultivated crop acres had cover crops as part of the rotation. Over 50 percent were no-till.

When we went out and we have done these surveys nationally, the Chesapeake Bay stands out as one of the leading areas in the entire country in terms of the level of stewardship and good quality management, soil conservation, and water-quality management. In many cases, they stand, producers here on the basin, stand head and shoulders above other areas in the country. There is no doubt in my mind that is a result of the voluntary approach producers are doing their part.

What do these good conservation practices result in? Back in 2012, again, we estimate that we reduced edge-of-field losses moving off cultivated farm fields by 62 percent in terms of sediment loss, 45 percent from the phosphorus loss, and 38 percent in terms

of nitrogen loss. Just sediment loss alone, 62 percent reduction in edge-of-field loss, that is equivalent to 15 million tons of sediment that is no longer flowing into tributaries and ultimately deposited into the Chesapeake Bay watershed.

A headwind, though, that blowing against this that people don't often talk about is actually the urbanization of the watershed. Over the last 20 years, so from 2002 to 2012, in 20 years, 1.6 million acres of rural lands were developed, were converted. I don't want to pick on Delaware, but that is a land area 30 percent bigger than the entire State of Delaware was developed.

Why is that significant? Because when you have asphalt, roads, roofs, parking lots, an acre the asphalt has 16 times the volume of runoff than an acre of meadow. You are exacerbating the runoff, the energy that is flowing into tributaries, eroding stream banks, picking up sediment that is in the streambeds, ultimately flowing warmer water, faster water, more energetic water, carrying nutrients, sediments other contaminants off of those developed areas in the Chesapeake Bay watershed. That is a strong headwind. Notwithstanding the headwind, we have made great progress.

What are the actual results? We have estimated what some of these results are doing, and we went out and we started to look at, what are other organizations reporting out in terms of actual outcomes? To be clear, I am not claiming credit that agriculture is responsible for all of these outcomes. But when you start to lay out all the positive trends and you connect the dots, big picture view, there is something happening, and it is very positive. In my view, agriculture is a huge contributor to this.

The Chesapeake Bay Program has estimated that, between 2009 and 2015, that there have been declines in loadings, in tributaries flowing into the Bay. In terms of sediment, a 640 million pound reduction in sediment, a 38 million pound reduction in phosphorus, a 24 million pound reduction in nitrogen. It turns out the agricultural sector, according to the Chesapeake Bay Program, is the leading sector reducing these loadings. In terms of the sediment, the agricultural sector is responsible for 78 percent of that reduction. For the phosphorus, the agriculture sector is responsible for 53 percent of that reduction. And for nitrogen, the agriculture sector is responsible for 23 percent of that reduction.

According to the USDA, the long-term trends in total nitrogen indicate improving conditions at a majority of the monitoring stations across rivers and tributaries in the Bay. Twice as many monitoring stations show improving trends for nitrogen as those monitoring stations showing degrading trends. And for phosphorus, over three times as many are monitoring stations that show positive improving trends as those show degrading. According to USGS, for the last 10 years, nitrogen levels improved at 54 percent of the monitoring stations and, for phosphorus, at 68 percent of the monitoring stations.

And USGS also estimated, in providing a forecast about potential summer dissolved oxygen levels, which is a measure of quality of Bay water, USGS estimated that the Susquehanna River delivered 66.2 million pounds of nitrogen from January to May 2016, which is 17 percent below average conditions.

According to the Maryland Department of Natural Resources in July of 2016, they issued a report that dissolved oxygen levels in Maryland's portion of the Bay were the second best since 1985. And University of Maryland's Center for Environmental Studies, they are the ones who produce the annual report. They issue the index report card. They give a score for the health of the Bay. In 2015, it earned one of the three highest scores since 1986. They got a letter grade of "C," which I will say is not great, but it is one of the three highest since 1986, and the other two highest were in 2014 and 2013, showing a positive trend line.

You also look at the ecosystem itself. You have crabs, 19 percent increase in breeding adult females. Total blue crab population, it is the fourth highest population in 2 decades. Seagrass extent, we have had an over 50 percent increase in the overall expanse of seagrasses in the Bay, which is another indicator of overall aquatic health. That is important because those are the nurseries, the fisheries for crabs and for other aquatic species in the Bay. Anchovy, bass, shad have all shown over the last several years, if not a decade, positive increases, a surging rebounding population across the Bay.

Again, I am not claiming agriculture is solely responsible, but in my view, agriculture has absolutely not only made a promise in part because of what this Committee provides to our Department, has helped deliver on that promise through a voluntary collaborative approach, which is helping, in my view, ensure the long-term sustainability and productivity of agriculture in this region but also, in this case, the recovery and health of the Chesapeake Bay watershed. Thank you.

[The prepared statement of Mr. Weller follows:]

PREPARED STATEMENT OF JASON WELLER, CHIEF, NATURAL RESOURCES
CONSERVATION SERVICE, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.

Mr. Chairman, Ranking Member, and distinguished Members of the Subcommittee, thank you for the opportunity to appear before you today to talk about agriculture, conservation, and the shared effort to restore the health of the Chesapeake Bay. The ongoing support of this Subcommittee for voluntary private lands conservation is an enormous part of the conservation work that is making a difference for the Chesapeake Bay ecosystem and the region's farms and private forests.

Agricultural Land—Key to a Healthy Bay

The Chesapeake Bay is North America's largest, most biologically diverse estuary. Its watershed covers 64,000² miles across six states and is home to more than 17 million people. Nearly ¼ of the watershed's area is in agriculture, whose 84,000 farms' sales approach nearly \$10 billion annually. Since 2009, Federal agricultural conservation investments approaching \$1 billion have been helping the agricultural community on its way toward meeting key conservation goals for cleaner water and a healthier ecosystem. Our own science has documented the benefits being delivered by farmers' active conservation systems, while independent modeled and monitoring results show positive trends for water quality, habitat and key aquatic species.

With technical and financial help from USDA's Natural Resources Conservation Service (NRCS) and farm bill programs, farmers in the watershed are installing conservation systems that avoid, control and trap potential nutrient and sediment losses from farm fields. In addition to helping improve water quality, these conservation systems help boost soil health and air quality, enhance wildlife habitat and strengthen the economic bottom lines for farms.

While agriculture and forest lands remain the predominant land uses in the Bay watershed, both farming and Chesapeake Bay water quality are under continuing pressure from development. Between 1992 and 2012, developed area in the watershed increased by nearly 40 percent (or about 1.6 million acres). Among the con-

sequences of losing agricultural areas are declines in access to local, fresh foods; reduction in the capture of carbon in soils and plants; and increased runoff from roads, roofs, and parking lots. For example, a 1 acre parking lot produces about 16 times the volume of runoff that comes from a 1 acre meadow. While there is no single-sector or short-term solution for the complex water quality issues in the watershed, maintaining agriculture is essential to protecting and restoring the Chesapeake Bay.

NRCS Investment in the Bay Watershed

In 2009, Executive Order 13508 directed agencies to focus resources and identify innovative solutions for improving water quality in the Bay. NRCS collaborated with Federal, state and local partners to target conservation investments and accelerate results. According to USDA's Conservation Effects Assessment Project (CEAP), focusing conservation efforts in priority watersheds and on vulnerable soils can accelerate per-acre reductions by 70 percent for sediment, 30 percent for nitrogen, and 40 percent for phosphorus, as compared to no targeting. Approximately 500 small priority watersheds were identified, and USDA established a goal of helping to install conservation systems on 4 million farmland acres in these watersheds by 2025.

Since 2009, NRCS has worked with thousands of farmers and forest landowners to implement "Avoid-Control-Trap" conservation systems on over 3.6 million acres in the watershed. Critically, about 50 percent of this work has been focused on those priority watersheds and soils, generating greater water quality returns for the Bay and achieving about 41 percent of the 2025 goal within just the initial 6 years.

Through these partnerships with farmers and landowners, since 2009 NRCS has invested over \$890 million in Federal conservation funding in the Bay watershed. In turn, this Federal investment is leveraged by an estimated \$400 million in financial and management resources of the watershed's farmers and forest landowners, as well as state and local governments and private conservation organizations who are helping to implement key actions in each of the Bay states' Watershed Implementation Plans.

NRCS and partners are also building the next generation of conservation science and innovation through Conservation Innovation Grants. Between 2009 and 2016, NRCS has invested nearly \$16 million in 35 projects to test new approaches and technologies, and deepen the bench of partners and tools to drive continued progress in the Chesapeake Bay watershed. These partners match or exceed the Federal investment, adding over \$16 million of their own resources to developing and disseminating conservation tools, technologies and approaches to accelerate progress.

The Regional Conservation Partnership Program (RCPP) provides the newest platform for partners to collaborate and work cooperatively with producers on Bay-wide solutions. The Chesapeake Bay Watershed is one of eight critical conservation areas for RCPP funding, allowing partners in the region to access all RCPP funding pools. In the two sign-ups since the program started, 14 projects have been selected within the Bay Watershed, which will help to improve water quality and wildlife habitat in the Bay region, while also enhancing farms and forest resiliency and productivity. Currently, over \$42 million in Federal resources are leveraging nearly \$60 million in non-Federal investments over the next 4 years.

A Healthier Bay

The signs of a healthier Bay are evident across the watershed, from cleaner water to grasses on the sea floor and more abundant fish and wildlife. A number of agencies and non-government organizations are studying the rebound of the Chesapeake Bay ecosystem made possible by a variety of sectors, including agriculture.

Voluntary conservation is working to reduce the loss of sediment and nutrients from farm fields in the Chesapeake Bay region, according to USDA's Conservation Effects Assessment Project (CEAP):

- **Reducing Sediment Loss**—farmers are combining cover crops and field buffers to control erosion and reduce sediment leaving their land. As a result, between 2006 and 2011, average edge-of-field sediment loss decreased by an estimated 15.1 million tons per year.
- **Managing Nutrients**—farmers are using practices such as residue and tillage management, nutrient management and waste storage facilities to minimize the risk of nutrients and sediment reaching the Bay while maintaining productive farming operations. NRCS estimates, from 2006 to 2011, that improved nutrient management has reduced the total loss of nitrogen by 26 percent and phosphorus by 45 percent.

Across the basin, cover crops and other conservation efforts have reduced runoff of nutrients and sediment. The Chesapeake Bay Program reports that between 2009

and 2015, nitrogen loads going to the Bay declined by eight percent, phosphorus loads by 20 percent, and sediment loads by seven percent. Agriculture was the leading contributor to phosphorus and sediment reductions during this period—providing over 50 percent of the phosphorous and over 75 percent of the sediment reductions.

Some U.S. Geological Survey (USGS) water quality monitoring stations are showing water quality improvements in the streams and rivers that flow into the Bay and in the watershed. The USGS has reported that over the last 10 years, nitrogen levels have improved at 54 percent of the monitoring sites and phosphorus at 68 percent of the sites. According to data released by the Maryland Department of Natural Resources in July 2016, the dissolved oxygen levels in Maryland's portion of the Chesapeake Bay were at their second best since 1985.

Cleaner water drives ecosystem recovery. Underwater grasses, which provide critical food and shelter to wildlife, are recovering. The Bay Barometer, reported that between 2013 and 2015, those grasses have grown from nearly 60,000 acres to more than 91,000 acres—the largest amount of grass ecosystems in the past 3 decades, exceeding the 2017 restoration target 2 years early.

The Maryland Department of Natural Resources reports that blue crab, an indicator of the Bay's health, has seen population spikes. Adult females are up 92 percent in 2016 compared with last year, building on population climbs over the past few years. The overall crab population is the fourth highest level in 2 decades, and builds on last year's 38 percent boost in abundance.

Conclusion

There is more work ahead, but one thing is clear—losing farms and forests is not in the best interest of the Chesapeake Bay ecosystem, the region's economy, or the quality of life for our local communities. Maintaining successful, sustainable working agricultural lands is essential for protecting and restoring the Chesapeake Bay.

NRCS and its conservation partners have worked with farmers in the Bay region for more than 80 years and are committed to continuing the voluntary conservation efforts that are improving water quality in the watershed while supporting a strong, Bay-wide agricultural economic sector.

I thank you for the opportunity to be here today, and I will be happy to answer any questions you may have.

The CHAIRMAN. Thank you, chief, I appreciate it.

And also, thank you, during Ag Progress I had the privilege and honor of hosting a listening session in Pennsylvania with Secretary Russell. And you were kind enough to send your regional NRCS person, and she did a great job.

Mr. WELLER. Thank you, sir.

The CHAIRMAN. Secretary Redding, you are now recognized for your statement.

STATEMENT OF HON. RUSSELL C. REDDING, SECRETARY, PENNSYLVANIA DEPARTMENT OF AGRICULTURE, HARRISBURG, PA

Mr. REDDING. Mr. Chairman, Ranking Member, and all Members of the Committee, thank you, first, for the opportunity to be here and to talk about the progress we have made in Pennsylvania on Chesapeake Bay and water quality. And I appreciate Chief Weller's review of what has been invested and the outcomes of those investments but also to echo his points of appreciation to the Committee, who has both the primary concern of conservation first, but also the underpinning of that is an assumption of a productive and viable agricultural economy, right? And that is really key for us.

Mr. Chairman, you have heard me say many times that there are two coequal goals to this discussion about the Chesapeake Bay. One is water quality, and the other is viable farms. You will not achieve the first without the second. We have to ensure that the lands are productive agricultural lands, but as we know, the greatest return on investment of any funds, private or public, can and

will be achieved by way of agricultural conservation practices *versus* others. I think that is an important point.

I will do a quick summary. You have my comments. I prefer to respond to questions, but just to outline a few key points here. We have been working on this issue of the Chesapeake Bay for the last 40 years from the TMDL establishment in 2010. You heard the investments we have made through the USDA and in Pennsylvania. They have been significant. I would say there has been a lot of progress. That is not always the story told. As you alluded to in your opening statement, there has been a tremendous amount of progress made. That progress has been a full partnership with the agricultural community. It has been a full partnership with our U.S. Department of Agriculture, NRCS, and the conservation districts, and many NGOs who have been at the table to help us do that. And we have made progress.

We have more to do. That is part of what you are here to talk about and want to share with you, but we have made progress. The Chesapeake Bay report itself speaks to the progress. The University of Maryland, Center for Environmental Science, the USGS water-quality monitoring shows there has been progress.

We have reduced phosphorus by 25 percent, nitrogen by six percent, sediment by 15 percent. And the numbers sometimes don't tell the full story of the load. But they are significant numbers and we are making progress. We also know that this is one of these issues where there will always be tension between the aspirational and the practical. It is just how dynamic it is. We will work at it. We will work at it hard. But any time you are talking about the landscape and the complexity of this landscape in this region, particularly, as the chief noted, it is going to take a lot of work. And that is not something we should apologize for or shy away from. We simply have to acknowledge it is going to take a lot of work to get the job done.

From Pennsylvania, just to put this in perspective, the Susquehanna River, largest contributor of water to the Chesapeake Bay, as you travel over the Bay Bridge, look down, 90 percent of that water in the upper bay is from the Susquehanna River. It flows right through the heartland of Pennsylvania, and 50 percent of the total water in the Bay is out of the Susquehanna River. We understand our contribution and the magnitude of the challenge as well.

We have continued to work with the Governor and our Administration across the agencies to really refocus our work on the Bay. As you know, we have titled this, *The Reboot*. *The Reboot* implies we had a plan in 2009, 2010. We worked at it through several Administrations. Governor Wolf returned 2 years ago and really put a focus on this. We knew, at that point, we were behind on the deliverables as laid out in 2010 TMDL. The difference with this effort now is it is very specific in terms of total load delivery and reduction expectations between 2009 and 2025. It then sets 2 year milestones, and those 2 year milestones become the midterm exams that we have to do. And we know that we are just not quite where we want to be, particularly on phosphorus and sediment. We are making progress. Anyhow, just to say that that is a key difference between what the discussions were and where we are today. Another reason for the Committee's interest in this is, how we are

doing both with the agriculture aspects but certainly from the public policy standpoint?

Our *Reboot* had a number of points, six major components to it, looking at technical and financial assistance. It looked at the technology. A big component was better coordination and capacity of both the state and agencies looking at improved data collection.

There are many points: Two that I will highlight for you and we can talk more about. One is the role of the conservation districts in the effort of our *Reboot*. And this has surfaced a number of conversations in the state, and I know those conversations have extended to the USDA and NRCS as well. But there is no question that the progress that has been made and the progress that still has to be made can only be accomplished with the partnership of the conservation districts.

What we stepped into was an assumption that, given the historic relationship that the districts had with Pennsylvania by way of delegation agreement over the years, what we found was a willingness but some apprehension because of the comprehensiveness and the expectation of compliance checks, which is also part of our current efforts.

I will just say to that point that we have made tremendous progress in discussions with NRCS at the state level to make sure that the confidentiality of the information, as required by Congress in section 1619, is protected. We believe that we have found a way by way of a signed waiver and transparency with that transaction for the farm community to be protected and to live true to what Congress was intending with the confidentiality and privacy of that data. We have made progress on that.

But just to underscore, there is no way forward without the conservation districts. They have been great partners. We will continue to work with them as well.

The second point, just on a statement, Mr. Chairman, you made at the outset about the voluntary efforts and certainly giving credit to producers. One of the components of our strategy has been making sure that we account for the everyday good management practices that producers are employing. The Chesapeake Bay model has been noted many times. The majority of the BMPs that are in the model are those things that have been cost-shared, meaning that the public has made an investment in them. It does not include the non-cost-share practices or all of them. We have taken an effort with Pennsylvania State University to do a non-cost-share survey. It was well-responded to, and we are anxious to get that information back. Penn State is working through it as we speak, and we hope to have that information for the benefit of the next version of the model.

But even the early signs are really amazing in terms of the practices that we know are out there. The water quality monitoring has demonstrated they are, but they are not in the model. As you know, for a lot of producers, they want to have some assurance that "if I have to do more, I want credit for what I have already done." And that really has been an important part of the conversation for us. Those things continue, but just to say that that has been part of our strategy for the very first time, to go out and do a comprehensive study with our land-grant university to ask the

question, “What have you done that has not been paid for by government and both in terms of practice and the details of those BMPs?” We will have the benefit of that to inform our discussion and work here as we move forward.

In summary, just to end where I began, with a thank you. I appreciate your leadership on the Committee and back in Pennsylvania. I know you travel a lot of miles around the state and see what we see, and that is a changed landscape. When we speak of issues of BMPs and cover crops and all of the good work that has been done, you see that firsthand, as I do. I appreciate your leadership and the Committee in today’s hearing. Thank you.

[The prepared statement of Mr. Redding follows:]

PREPARED STATEMENT OF HON. RUSSELL C. REDDING, SECRETARY, PENNSYLVANIA
DEPARTMENT OF AGRICULTURE, HARRISBURG, PA

Chairman Thompson, Ranking Member Grisham, and distinguished Members of the Subcommittee on Conservation and Forestry, thank you for the opportunity to provide testimony today on our Pennsylvania-centric approach to restore local water quality in Pennsylvania, and by virtue of that, the Chesapeake Bay.

I will provide a general overview on the current state of the Chesapeake Bay in Pennsylvania, highlight state and Federal partnerships and investments in conservation, outline the commonwealth’s strategy to enhance Pennsylvania’s Chesapeake Bay restoration, and share a few key thoughts related to local water quality efforts.

Water Quality Trends in the Chesapeake Bay

For background on how we got here, as a result of the Federal consent decree in 2010, the United States Environmental Protection Agency (EPA) established a Total Maximum Daily Load (TMDL) for the Bay. Implementation of this TMDL requires us to develop plans to meet specific target reductions in nitrogen, phosphorus and sediment loads in phases. Pennsylvania’s Phase 2 Watershed Implementation Plan has interim targets for these reductions to be achieved in 2017. We are not on schedule to meet its goals for 2017. The commonwealth continues to face immense challenges to improve water quality.

Pennsylvania’s agricultural sector is facing an enormous test, as it constitutes 55% of the nitrogen loads to the Bay. It must reduce its nitrogen loads to Chesapeake Bay by more than 40 percent (or more than 25,000,000 million pounds) by 2025.

Regardless of the 2017 and 2025 Federal deadlines, we have an obligation in Pennsylvania to the Clean Streams Law—established well before the EPA established deadlines for Pennsylvania under the Total Maximum Daily Load.

It’s about local water quality—no matter where you are located in our commonwealth. It’s about doing the right thing. As a state, we realize there is more work to do; however, it is important to recognize the progress Pennsylvania has realized up to this point.

Over the past 30 years, Pennsylvania has invested more than \$4 billion, mainly in wastewater system upgrades, through various loan and grant programs, toward Chesapeake Bay restoration efforts. The results show that phosphorous has decreased by 25 percent; nitrogen by six percent, and sediment by nearly 15 percent. The majority of these reductions have come from increased treatment of the discharges of nutrients from wastewater treatment plants.

With 33,600 of Pennsylvania’s active farms located in the Chesapeake Bay watershed, achieving our water quality improvement goals will be no easy task, and any solution—state or Federal—must balance the commonwealth’s interests in a vibrant agricultural sector, local water quality, and limited state and Federal resources. Agriculture is ready to be part of the solution. Many people are concerned about the health of our local waters—none more so than farmers, who rely on our land and water to grow so much food.

What remains clear to us is that Pennsylvania has been, and continues to make strides toward protecting and improving local water quality. We are pleased to hear recent reports from the Chesapeake Bay Program that estimated nitrogen, phosphorous, and sediment going into the Bay has all dropped over the last 6 years—by eight, twenty, and seven percent, respectively. The University of Maryland’s Center for Environmental Science recently gave the Bay its third highest health score

in 3 decades, noting progress in several areas. And monitoring from the U.S. Geological Survey indicates that the per-acre nutrient and sediment loads are declining at a majority of the monitoring stations across the five Chesapeake Bay states.

This good news is a reflection of progress in a variety of sectors, including agriculture. The practices farmers use and the strategies and plans they have put in place are truly making a difference, but more work needs to be done. It's very important to note that Federal agency investments in conservation have, and will continue to play, a large role in the progress we have made. Of critical importance is the farm bill conservation title funding administered by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS).

State and Federal Partnerships and Investments

USDA programs have been the primary source of Federal assistance to agricultural producers working to improve water quality in the Chesapeake Bay. USDA NRCS targets their investments in high-priority watersheds where nutrient and sediment pollution is highest. According to NRCS, since 2009, they have been able to partner with state, nonprofit and private-sector partners to install conservation systems on more than 1 million acres in the basin. This equates to more than \$267.2 million invested in Pennsylvania since 2009. This investment includes hundreds of nutrient management plans and the implementation of a variety of practices, such as structural practices, tillage management and cover crops. There is no doubt that without the strong support of NRCS through farm bill conservation title program funding for on-farm conservation practices, we would not be where we are today. The numbers tell that story.

Pennsylvania farmers actively seek USDA assistance, with more than \$100 million in applications coming to the NRCS annually. Unfortunately, both Federal and state resources are limited, even with significant Federal investment in conservation programs. In Fiscal Year 2016, applications from Pennsylvania's farmers to the USDA Environmental Quality Incentives Program outpaced available funds by more than 5:1 (\$100 million in requested funds *vs.* \$20 million in available funds): 65 percent or \$52 million of the unmet need comes from the Chesapeake Bay portion of the commonwealth.

Given this unmet need statewide, leveraging innovative private-sector partnerships are more important than ever.

An example of the power of partnerships unfolded recently as the Pennsylvania Department of Agriculture (Department) was awarded more than \$632,000 under the National Fish and Wildlife Foundation's Innovative Nutrient and Sediment Reduction grant to support farmers' local water quality improvement work in southern Lancaster County. The Department partnered with 16 other organizations from the public, private, and nonprofit sector to leverage an additional \$909,000 in matching funds, meaning that more than \$1.5 million will be directed to improving the health of Pennsylvania's rivers and streams. The unique aspect of this project is the connection it will demonstrate between conservation, herd health, and farm profitability. The project will give farmers in the targeted watersheds a suite of tools, or adaptive toolbox to be able to do the things that not only achieves a baseline level of compliance, but that are also best for their operation.

Commonwealth Strategy to Improve Water Quality

While Pennsylvania has made strides toward improving local water quality, it needed to change its approach for the Chesapeake Bay. Working with a number of external partners and stakeholders, in January 2016, Governor Wolf unveiled a comprehensive, Pennsylvania-centric strategy aimed at improving local water quality in this commonwealth—and with that, the Chesapeake Bay. The strategy represents a reasonable, incremental and balanced approach to improving local water quality by reducing nitrogen and sediment loads in Pennsylvania waterways that will ultimately restore the water quality of the Chesapeake Bay. The strategy relies on a mix of technical and financial assistance, technology, improved data gathering and record-keeping, improved program coordination and capacity and, when needed, compliance and enforcement measures.

The strategy also recognizes two key, co-equal goals for success: clean water and viable farms. Our farmers have long recognized the important link between healthy soils, sustainable farming practices, and the water quality of our waterways. When we have healthy, viable farms, we have healthy, viable watersheds. You can't have one without the other.

There are six elements to the plan:

1. Addressing pollutant reduction deficiencies by meeting the EPA goals of inspecting ten percent of farms in the Bay watershed annually, with increased

inspection and compliance efforts using existing Pennsylvania Department of Environmental Protection (DEP) and conservation district staff.

2. Quantifying previously undocumented best management practices (BMPs), and putting new high-impact, low-cost BMP projects on the ground in watersheds that are currently impaired by agriculture or storm water.
3. Improving reporting, record-keeping and data systems to provide better and more accessible documentation of progress made toward Pennsylvania's restoration effort.
4. Identifying legislative, programmatic or regulatory changes that will give Pennsylvania the additional tools and resources necessary to meet water quality goals.
5. Establishing a new Chesapeake Bay Office within DEP to coordinate development, implementation and funding of Pennsylvania's Chesapeake Bay efforts.
6. Obtain additional resources for water quality improvement by seeking new sources of funding.

I would like to highlight two areas in particular: the role of conservation districts in the inspection and compliance efforts (and lessons learned), and our efforts to quantify undocumented best management practices.

The Role of Conservation Districts

In order to help get the commonwealth back on track to meet the mandated reduction goals, ten percent of Pennsylvania farms in the Bay watershed will be inspected annually to ensure they have written plans for manure or nutrient management and erosion control. These mandated reduction goals, paired with our collective challenge of both state and Federal diminishing resources, especially on the human capital side, has made the task of ten percent farm inspections difficult, and has required us to think broadly about conservation service delivery. It has forced a conversation about agricultural compliance and about how to best deliver and implement plans.

Our preferred approach to the challenge of ensuring base-level compliance on ten percent of farms in the Bay watershed is to use our county conservation districts. Conservation districts are trusted, local partners with well-established relationships with farmers across Pennsylvania. With approximately 33,600 farms in the Bay watershed alone, we needed to think broadly and follow an approach that we feel is in accordance with the historical practice of conservation districts. Historically, conservation district staff has had a role in compliance inspections under Pennsylvania's Chapter 83 Nutrient Management and Chapter 102 Erosion & Sedimentation regulatory programs for decades. In particular, the Nutrient Management program's annual compliance inspection of farms by a conservation district staff person, with follow up enforcement action (if necessary) by the State Conservation Commission, is a model for this strategy.

Conservation districts in 29 Pennsylvania counties in the Bay watershed have applied successfully to conduct farm inspections aimed at reducing agricultural runoff into local streams and rivers and ultimately, the Bay. As a result, these districts will continue to receive funding to support bay technician staff from DEP. Nine conservation districts failed to meet the application deadline or have declined to participate. The remaining three counties in the Bay watershed have such a small portion of the watershed they have not received funding for a Bay technician in the past. Farms in the Bay watershed in these counties will be covered by DEP or EPA personnel.

The participating conservation districts will be inspecting 50 farms per full-time person funded in each county. The goal is to start these inspections by the beginning of October. DEP regional staff has already started inspections in some of the counties that have chosen not to participate. The initial compliance inspection focus will be on ensuring that farmers have Manure Management Plans and Erosion and Sedimentation Plans—requirements that have been in law for over 3 decades.

Lessons Learned

We would like to reiterate our commitment to working with the conservation districts to accomplish Pennsylvania's comprehensive strategies to clean up the Bay. The 66 districts across the commonwealth are a critical first line of engagement with our farming community. We acknowledge the positive contribution that districts have made and recognize the challenges that they, like many in public service, face in carrying out their charge.

Since January 2016, a number of lessons have been learned as it relates to conservation work and the strategy put forth by the commonwealth. We made a number of assumptions on the front side that the roles and responsibilities of conserva-

tion-related work are well-defined. Each conservation district is unique, has its own set capacity and capability, and has differing thoughts on the role that district staff plays in conservation. This has caused us to think hard about the level of capacity for conservation work and how to structure the roles and responsibilities. It has caused us to step into the compliance conversation and ask questions about how to best deliver and implement conservation plans. And where conservation districts choose to not conduct compliance visits, we've had to think about which entity is best positioned to step into the compliance role—whether it be the private-sector, DEP, EPA, or the Pennsylvania State Conservation Commission. There is no perfect solution.

A second lesson learned was how to manage and protect confidential data. One intricacy that proves the connectedness between the commonwealth and NRCS is the fact that farmers may use their NRCS Conservation Plan in order to satisfy Pennsylvania erosion and sedimentation regulatory requirements. In doing so, however, it leads to more questions about privacy and maintaining confidentiality.

Over the past few months, discussions have ensued on Section 1619 of the 2008 Farm Bill and other Federal protections of the content of agricultural plans. Section 1619 provides that USDA, or any “contractor or cooperator” of USDA, are prohibited from unilaterally or voluntarily providing or disclosing information provided by farmers or landowners participating in a NRCS program to a third party.¹ In the current situation, conservation districts in Pennsylvania are considered “cooperators” and DEP is considered a “third party.” NRCS-funded plans represent many plans that are currently in use in Pennsylvania. The Federal prohibition does not extend to DEP, as DEP is not a cooperator as that term is defined by relevant Federal law.

The concern that has been expressed on behalf of NRCS and the conservation districts is that they do not want to violate the Federal prohibitions in conducting work for DEP under the Chesapeake Bay Standard Operating Procedure manual (the manual outlines the role of conservation districts in the commonwealth's Chesapeake Bay strategy). The dilemma appears to come from the fact that conservation districts are in partnership with both NRCS for certain purposes, and with state agencies for certain purposes. As an example, conservation districts have been delegated authority from DEP for the implementation of Erosion and Sediment Control regulations, which includes agriculture compliance. It is the overlap of those partnerships at the conservation district level, and the duties and obligations that come with both of those relationships that seems to create the dilemma for conservation districts as well as for state and Federal agencies.

If conservation districts are to continue to operate in this dual role and under these two different sets of parameters, we need to find a way to meet state needs, Federal needs, and conservation district needs, and do so in a way that recognizes and protects each of these interests. As always, this will be a balancing act and compromise will be necessary.

As a temporary solution to this dilemma, DEP is in the process of designing their own release form for conservation district and DEP regional staff to use in the collection of information during the inspections. This form complements the NRCS form. If a producer (at least in this first year) needs to sign both a state and Federal form to help ensure that they have properly acknowledged the release of their USDA information and also acknowledge the purpose and intent of what they are releasing that information to DEP for, then that compromise seems to remove the road block. This compromise also provides us with time to work through these legal and policy issues in hopes of a satisfactory long-term solution.

Quantifying Undocumented Best Management Practices

Our plans to locate, quantify and verify previously undocumented BMPs represent a new and unprecedented partnership with the agriculture industry and the academic community. We want Pennsylvania farmers to obtain maximum credit—both publicly and in the Bay model—for the good work they are doing. Therefore, a survey was developed by The Pennsylvania State University and funded by DEP in late 2015 in collaboration with many partners, including the Department, DEP, Pennsylvania Farm Bureau, PennAg Industries, Professional Dairy Managers of Pennsylvania, Pennsylvania Farmers Union, the Pennsylvania Association for Sustainable Agriculture, the Pennsylvania State Conservation Commission, and the Pennsylvania Association of Conservation Districts.

The purpose of the survey was to inventory conservation practices implemented by farmers across the Chesapeake Bay watershed. We know that Pennsylvania farmers have done much to improve water quality and soil health, yet many of the

¹ 7 U.S.C. § 8791.

practices that farmers have implemented are not accounted for in tracking progress toward priority water quality goals. This is especially true where farmers have implemented practices on their own initiative, using their own means to do so. The survey inventoried these practices by providing a mechanism to capture and report voluntary conservation practices.

The survey was launched online in January 2016, and was subsequently mailed to approximately 20,000 farmers. Approximately 6,780 completed surveys were returned, a response rate of 35%. The Penn State Survey Research Center received all surveys, and processed all data. Ten percent of survey returns were randomly selected for on-farm follow-up visits in order to analyze the accuracy of the data and develop a statistical analysis of the surveys returned.

Penn State Extension staff conducted the farm visits in August, and all visits have now been completed. The research team is now in the process of entering and analyzing farm visit data so that statistical analysis can be completed. A final report will be given to DEP for submission to the Chesapeake Bay Program by the end of September. We look forward to reviewing the data analysis once complete and hope to confirm a high level of conservation stewardship already occurring on farms across Pennsylvania.

Moving Forward

Moving forward, our obligations to water quality—locally and in the Chesapeake Bay will not go away—they aren't something we can ignore. We all have a role in the health of our waterways, and agriculture is a key part of the solution.

We must continue to consider the practical side of things, viewing how rainfall, droughts and planting seasons impact our work to protect our waterways. Like many things in life, there is a tension between the aspirational and the practical. There are a lot of variables in this discussion that can create tension, but we believe it can be a healthy tension. Our collective job is to take the aspiration of cleaner water and a healthy ecosystem and apply it practically.

If anything is clear, it is that agriculture has high standards for conservation, with deep roots in a culture of stewardship. Farmers want to be the solution for clean water, and do not condone poor managers who are causing water quality problems. We need to continue to recognize farmers for their high conservation standards, especially given the multiple and competing expectations of agriculture in the 21st century—job creators, food providers, economic drivers, and environmental stewardship.

We must continue to develop and deploy effective targeting in high-priority areas, integrate soil health and manure management into water quality strategies, support community-based and locally led approaches to conservation, collaboratively seek new funding opportunities, and engage all stakeholders—Federal, state, local, public, private, nonprofit—in our approach to local water quality.

Local water quality in Pennsylvania is a shared responsibility, and we believe that collaboration, partnerships, commitment, and resources are the key to the success of the effort. If every farmer, community and citizen does their part, we will restore and safeguard local water quality in Pennsylvania, and help to restore the quality of the Chesapeake Bay.

Thank you for the opportunity to comment.

The CHAIRMAN. Mr. Secretary, thank you.

Once again, I want to thank you both for your leadership, quite frankly, for our agriculture industry and, specifically, as we look at making sure the watersheds have good drinkable water, quality water. Nobody disputes that. I think that is 100% consensus of how basic and fundamental and important that is.

I also believe in a couple of truisms. One of them, if it is not broken, why are we fixing something? With the Pennsylvania *Reboot*, and there are some really good parts to that, but there are some concerns I have obviously with what appears to be moving away from the model of voluntary conservation, which is really impressive, thank you both for reflecting on what we have accomplished using voluntary conservation, and you didn't even throw in all the endangered species that we have de-listed as a result of voluntary conservation. I happen to think what we are doing actually doesn't so much need a reboot because I think the shoe fits for what we

are trying to accomplish. Now, certainly, with some of the initiatives it is always good to look at how we are doing things.

My first question is for Chief Weller. Chief, as you state in your testimony, with technical and financial assistance from NRCS and the farm bill conservation programs, farmers in the Bay watershed are successfully installing conservation systems that are improving water and air quality and enhancing habitat, wildlife habitat throughout the Chesapeake Bay. An important part of that question is that technical assistance and conservation delivery provided by local conservation districts, who I have tremendous respect and they are just an incredibly important partner. I take the opportunity to go out and to visit our conservation districts when I can. My last one was in Erie County. I attended their annual luncheon and a regular meeting that they had. Are you worried that with Pennsylvania, for example, with what is happening in Pennsylvania with the Pennsylvania Department of Environmental Protection's proposal. I get it; it is because of threatening of withholding moneys, EPA withholding moneys from the Pennsylvania Department of Environmental Protection, who therefore would hold moneys, hold ransom our conservation districts, which would cost us some pretty important positions of great scientists who are working with our conservation districts today. I get where the pressure point is. Are you worried, with what is happening with Pennsylvania, that districts will have less time to actually deliver on-the-ground conservation, on-the-field technical assistance, and stress the conservation delivery system in an area where demand for conservation is so high?

Mr. WELLER. Let me begin with answering and recognizing the importance of the districts. NRCS, when we were born 81 years ago, we were the Soil Conservation Service, 1935. At the same time, we were born alongside across states during that era with soil and conservation districts across the country. And we grew up together. We are collocated together. If you were to walk in one of our field offices, more often than not, we are collocated. You wouldn't know where the local district began and where the NRCS ended. They are teams. They share in everything. And so they are part and parcel of the overall infrastructure to deliver a voluntary approach.

I am also very sympathetic to what Secretary Redding has laid out and the charge that state government is trying to address their needs and challenges in the state. But from my perspective, just looking at our capacity, just at NRCS, to deliver conservation, starting with the conservation planning but then taking advantage of the resources through the farm bill programs and working with producers, since 2010 to 2015, across the entire Chesapeake Bay watershed, because of funding reductions, NRCS has 155 fewer field office employees today than we did back in 2015. In Pennsylvania alone, we have 55 fewer field-level district conservationists to do on-the-ground conservation that we had just 5 years ago. To help pick up the slack, you have to have partners to help us continue to carry the ball, to do that, conservation planning and delivery.

And so to the extent that those very limited resources are already stretched thin, are then diverted to other activities, that is

just going to make it harder to take advantage of the resources through the farm bill, to go out and do one-on-one consultative support with the producer, and ultimately, it is going to make it much harder to deliver a voluntary approach for conservation.

The CHAIRMAN. Conservation districts have a special relationship, obviously, with producers, because a trust factor has been built over many decades. As producers see district employees, they are there to help. They are there to help, I would say not in a punitive; it has never been in a punitive manner. But it has always been in a cooperative, consultative capacity. Because of this trust factor, districts can bridge the gap between producers and government agencies, both state and Federal.

That being said, I am concerned, and I understand the short game, because when you have an agency, the EPA, and Washington is threatening withholding funding that have been appropriated by this body, they are there to execute what we appropriate, and yet they are changing and they are arbitrarily implementing their roles. They are actually, to some extent, they are legislating, which is not within the Constitution what they are supposed to do. I get the short game of the threats of the personnel needs, because I have met these folks, the boots-on-the-ground, and they are good people. They have great education, great background, and they are dedicated to serving or advancing conservation practices. But that trust issue, I am just very concerned that the Pennsylvania Department of Environmental Protection finds themselves in a position, because of the influence of the EPA, which I don't think they really have the authority to do, quite frankly. I don't remember anything that we have done authorizing or appropriating that would allow them this hammer, especially when the EPA regional director from Philadelphia has been in this hearing room and has told us that the Chesapeake Bay is not a regulation, which pretty much knocked most of us out of our seats, because it sure sounds like a regulation when you look at the punitive consequences of not adhering.

But it really comes down, and I am concerned what the breakdown, what this does to the trust, where the requirements, the districts begin doing compliance checks in order to continue receiving funding for bay technician staff only will erode this relationship. If districts lose this trust due to the uncomfortable position EPA has forced them into, we will only serve to hamper the conservation delivery system.

I divide this into a short game and a long game. The short game is, I get it, the financial pressures, being held for ransom financially. But the long-term game is what concerns me because trust is inherently a part of voluntary conservation. And all the great gains, the percentages, sediments, the TMDLs, the phosphorus, the nitrates.

And you put it into such great perspective because you talked about the urbanization, that headwind, that pressure, that growth since I was first elected to serving this body in 2008. You compound that with what we never account for, those periodic 100 and 500 year floods, which seem to be coming a whole lot more often than that, that just wash over those banks. And there is not a thing that we can do about that, not a thing that we can do about

stopping those things that have always occurred that wash all the phosphates and nitrates that were safely safeguarded, except for those occasions of those massive floods.

What is your perspective on the long-term game? Because I am concerned that if we lose the trust with the voluntary conservation programs, which means that, over time, we will begin to lose ground on cleaning our watersheds as farmers and ranchers become more guarded about allowing, whether its NRCS, whether it is conservation districts, whether it is the ag extension folks, onto their farms and ranches.

Mr. WELLER. If I may, in listening, sir, to your question and your remarks, I am reminded of a different region of the country but a very eloquent producer. This was in Denver, Colorado, when Secretary Jewell announced we were not going to list the sage-grouse because of a voluntary approach to managing range country in the West. There was a rancher from Nevada. His name is Duane Coombs. In my view, he stole the show at this event, in part because he spoke for the land, but he also spoke for his community and the people that work the land. He was very eloquent when he said, I am going to paraphrase what he said, good conservation is good government. And that empowers people. It empowers communities, and it gives dignity, in his words, to the little people.

But he also talked about how a collaborative voluntary approach, where you built trust with landowners and communities, can help change the relationship between people who live on the land and the government. And he was starting to see a shift in the winds in a part of the country where there has not, frankly, been a great relationship between landowners and the Federal Government, and he was very optimistic for the future.

Shifting here back to the Chesapeake Bay and to your question on trust, it is fundamental. What a lot of our colleagues in the environmental community don't recognize is we are only there on that farm but for the invitation of that landowner. And more often than not, I just spoke to a producer yesterday, in fact, from Texas, and she was relaying to me some concerns she had, but how she worked with NRCS, invited her into her kitchen, and sat at the table for 8 hours working through her agricultural operation and identifying what are the best approaches to address her resource-management challenges on her farm. That doesn't happen with very many other Federal agencies where you are literally invited to a homeowner's house, at the kitchen table, and you are part of, many cases, the family, but you are looked at as a business partner. If you lose that trust and people suspect you have other motives or they suspect or fear that what they are going to share with you will be used for other purposes, the long view I share a concern with what may happen to that invitation and to that willingness for people to open their farm gate.

The CHAIRMAN. Thank you very much.

I am pleased to recognize Ms. Kuster for a line of questioning and consume as much time as you would.

Ms. KUSTER. Thank you, Chairman Thompson.

The CHAIRMAN. I don't think we are pressured for time.

Ms. KUSTER. Thank you. Well, I appreciate it.

Thank you to our witnesses, Chief Weller and Secretary Redding, for being with us today.

I am impressed by the progress here of the Chesapeake Bay. It is an area of incredible ecological diversity and pristine natural resources. And I wish you well in your continued efforts.

I wanted, if you wouldn't mind indulging me, to turn our attention to my farmers in New Hampshire. I can't say we have many ranchers, but a few. As a Member of this Committee, I have had the privilege of representing hundreds of farms throughout my district. And I have spent a lot of time visiting with farmers around who participate in NRCS cost-share programs. But the one piece of this that I keep hearing recurring frustration about is the annual SAM DUNS, is that how we refer to it, reporting requirement. The producers that I have spoken with were frustrated that this regulation puts small farmers on the same playing field as entities that receive multimillion dollar contracts, such as large military contractors, but in New Hampshire, the average NRCS contractor is around \$20,000. The paperwork is overwhelming.

Can you tell us, and this is to Chief Weller, what producers are telling NRCS field offices about the regulations? What I keep hearing, just to be specific, is that my producers are confused about the process. What I am worried about is it is acting as a barrier to entry to some producers who want to participate in the conservation program but are just getting tangled up in red tape.

Mr. WELLER. I am very cognizant, but I am appearing for the body that writes the laws. We don't get a choice on what laws we choose to implement or not.

Ms. KUSTER. That is fair. We are asking, what do we need to change in the upcoming farm bill? If it is not on you, it is on us. We will take it on us. And be specific about what would need to change.

Mr. WELLER. To your question, ma'am, there is a lot of concern, and it is not just from producers, landowners, forest landowners, producers in New Hampshire. This is virtually in every state. When I go on the road, I think about every farmer I visit with this is what I hear. And then I get in the cab of the truck and visit with the NRCS staff, and I get an earful. It is a concern. And so it is a little bit responding to the previous question about trust. It is also, frankly, about the brand. If your brand is, what you offer is a lot of paperwork and red tape, it makes it really hard to get people to want to come in and work with you. Again, long view, I am a little bit concerned.

Short-term, we have been able to work through it. I will be honest: it has been a burden on the men and women in the field. It has been distracting them from their day-to-day jobs. We have had to go back and review 15,000 active EQIP and CSP contracts this year. The value of those contracts is approaching \$1 billion, and these are active contracts that were hung up on this issue.

Ms. KUSTER. And what is it specifically? What is the hang up?

Mr. WELLER. The requirement, there are these two different systems. You have to get a DUNS number, DUNS Bradstreet number, and then you have to have a System for Award Management number, which is a separate system. It was, my understanding, put into a Military Construction Authorization Act. It was meant to really

address large contractors that work with the government. If a farmer files his or her taxes as an entity, a joint operation, or an LLC, which many producers do, they are required to basically register with the government because they are receiving a direct payment from the Federal Government. It is a way, big picture, for the government to ensure we are not improperly paying corporations that have some issues, tax liabilities, or shouldn't be paid. I don't think it was intended to, in this case, impact the producers, land-owners.

Unfortunately, these SAM numbers require the producers to go to this website, and it requires an annual renewal. And so, for a lot of folks, they would get their number, but then their number would expire. Separately, and I am sorry to get bureaucratic, but—

Ms. KUSTER. That is all right. We need to get into the weeds to fix it. The one thing we can agree on: we are not pro-red tape. We would like to work together to get rid of it.

Mr. WELLER. Okay. We are required then to ensure producers have their numbers and are valid and are current. If they are not, we legally cannot make a payment. We are working very hard to educate producers. We are helping to provide as much help to get their numbers going. But, frankly, it is something at the end they have to get. I would be happy to work with your office, with this Committee to go a little bit deeper into what the issues are and look for some options to help reduce the red tape.

Ms. KUSTER. I would love to. And see if we can't streamline. My other committee is the Veterans' Affairs Committee, so you can imagine I am used to red tape. But it would be great if we could help our producers, and I have a bill in now about exports for a one-stop shop in the Department of Commerce, because for a small business in my district to make a terrific product and try to sell it overseas, Make It In America, and we can bring those dollars here and be successful, but they have to go to 25 different places to get the permission. I am a big fan of cutting through red tape. Thank you. I would like to work with you on that.

The other question I wanted to bring up to you, and this is a self-serving pitch for a bill of mine, H.R. 5451, Improving Access to Farm Conservation Act of 2016. This is a bipartisan bill and, again, cutting red tape for producers who are interested in participating in voluntary conservation programs. I would love to get my colleagues to take a look at it. It is a win-win for these producers who want to improve conservation practices on their farms and would be helpful for NRCS field staff who can spend less time sitting behind their desks dealing with the paperwork and more time in the field providing technical assistance. I am hoping that this Committee will bring up the bill during the next markup. I very much thank you for being with us, and I will follow up offline with the chair here to see if we can get some movement and try to get some relief. Thanks very much.

Thank you.

The CHAIRMAN. I thank the gentlelady.

Let me take the liberty of a couple more questions. I know that we are coming up on some time limitations Secretary Redding has with his schedule.

But, Secretary Redding, this Committee has had serious concerns with the Chesapeake Bay TMDL from the beginning for fear it would unfairly punish states for not meeting certain benchmarks. Part of that is our concern that all of the great things that we do in agriculture don't always get measured, nor do we get credit for it.

Do you believe that Pennsylvania is being unfairly scrutinized for its perceived lack of progress in Bay restoration efforts? And do you believe that the EPA is recognizing all conservation activities that farmers and ranchers are not just voluntarily implementing but, based on those most recent reports, multiple reports that are being documented, great outcomes?

Mr. REDDING. Mr. Chairman, thank you. I wouldn't say that we feel like we are being—well, we are scrutinized for sure. Any time you are talking about a watershed of this size and the number of people who live here and have an opinion about it—and it is right in our nation's capital—there are a lot of folks watching that water body very closely. We certainly feel the pressure and feel the heat of questions being raised about our progress on the TMDL.

The challenge has been for us is, given the scale of this, to have some appreciation by the EPA of the number of farms and the size of the state. As an example, there are 33,600 farms in the Chesapeake Bay watershed. And since Delaware has been referenced several times earlier, I will just say you can put all the agriculture in the State of Delaware in the county of Lancaster as an example, just to put this in scale: 5,000+ farms in the county of Lancaster alone, 1/2 of those Amish.

The frustration has been not an acknowledgment that we have a deliverable. We understand we have a timeline, but you have to have an appreciation for what has been done, and that gets back to having a good baseline of the non-cost-share practices that have been invested in. You have to have a good baseline of where you need to make particular investments, where you have the capacity to make the investments.

The frustration has been more in not acknowledging that every state in this Chesapeake Bay watershed is equal. And if that is true, then you have to have some commensurate allocation of resources to go with it. And we think you have to have some commensurate timelines that are in keeping with the scale of the problem, right, that you have to keep looking at that issue. So that has been a challenge.

The bigger one, or at least part of that, has been the narrative, is that it is always about what you have to do yet *versus* what have you done in the last 30 years that has brought us to the moment where anybody driving these roads in this region says, "This landscape has changed"? It has changed by population. It has changed by infrastructure. It has changed in so many ways, and it has changed agriculturally. It is this frustration of, we had the TMDL; we will manage that; we are going to have to have an honest conversation about whether we can make the mark on all of the original timelines and milestones that were laid out, but we will make our best effort to get to 2025. But we also want to make sure that we are giving credit to the producers who are doing everyday good management practices, that we can meet the two coequal goals, be-

cause if you rush past the water quality and say that is the only indicator of success, then we trade away an incredible economic resource or quality of life in this region that we don't want to do. That is the coequal goals piece.

It is going to be a constant discussion. We would simply ask for transparency. We would ask for an acknowledgment that, as we have done in Pennsylvania with our State Conservation Commission, that we recognize the equilibrium that you have to find between environmental issues and agricultural issues. That has not always been evident in discussions about only the TMDL and whether we are successful. I appreciate the question.

The CHAIRMAN. Mr. Secretary, how much of a role, if any, is the EPA playing in terms of its directives or threatening withholding of funding on using conservation districts to conduct compliance checks? And if so, isn't that the role of the states to regulate and enforce how farmers operate?

Mr. REDDING. Yes, so in the design of this and why I mentioned the role of conservation districts in the testimony, we have used them, and will need them, going forward. And to the point made about trust, there is clearly, when you ask the farm community who would they prefer to have on the farm, they would like to see the local conservation district personnel and realizing that may sometimes look like NRCS personnel just because they are commingled there. But it is going to be a local presence would be preferred. And we would prefer that as well at the state level.

Now, the EPA certainly has jurisdiction over the concentrated animal feeding operations, the CAFO permits, as you know. But for all of the others, the preference from our standpoint would be either state or local.

What we have experienced in the last couple of months has been, in the absence of conservation districts or the states being either as aggressive as needed and/or as comprehensive as needed, that the EPA would do some farm visits, even to the non-CAFO permit holders.

It is not forced upon, but as we know in the Watershed Implementation Plan, the WIPs as they are referred to, and these milestones, if there is not progress the way that the TMDL is set up, the EPA certainly has the right to inquire, to request, to encourage, and, in some cases, to farm visits. That is not our preference by far. The preference is to do that with districts for the state.

The CHAIRMAN. And then my final question is for both of you. It may not be a fair question for folks who are agricultural leaders, but we have talked, obviously, our focus here has been on agriculture and agriculture's role in keeping our watersheds clean. But, as we talked the word *urbanization* has been mentioned a few times. And we all know the pressures that our states within the Chesapeake Bay watershed have been under, specifically Pennsylvania, from my perspective. And we know the great work that's been done.

And, Secretary, thank you for your leadership on the voluntary conservation, things that we are not getting credit for, clearly, because you wouldn't get those types of reductions in phosphates and nitrates and sediments without all of those efforts.

But I am curious, do either of you know what kind of difficulties and challenges on our agricultural community that have been, pressures, I guess. Any perspective on what measures are being pursued on the whole urbanization issue? And I am not saying that is under your jurisdictions, but obviously, being involved with the watersheds, I would be curious to see what the rest of the story is. With those pressures, chief, that you reflected on, are there measures being taken to deal with the urbanization within the watershed, specifically along the Chesapeake Bay itself?

Mr. REDDING. Mr. Chairman, I will say two things and then defer to the chief.

We believe long-term, given that the TMDL carries through 2025, but as I have said many times, this is a question of what we do in the next 25 to 50 years, not what we do in the next 10. If we really are serious about meeting the two coequal goals that we have established for water quality in the TMDLs, so we have to be thinking long-term.

Long-term, we believe that the answer is found in a combination of partnerships of local urban centers in rural communities that you simply have to have a way to address either nutrient trading, you have to bring stormwater into the conversation long-term about how you manage nutrients. And, personally, you stop worrying about the sector allocations and the pie, as we refer to it, and look at the water quality outcomes. If you do that, then you start having really important conversations about how you have folks in the community who have to coexist look at the issues of water resources and the natural resource management of the community. That is important.

Very specifically, then, one of the issues the farm community has pointed out numerous times to us in Pennsylvania is that there is not a requirement for commercial fertilizer application on lawns. Okay? They can simply do that. There is no reporting. There is not a credential as there is, in comparison, to if somebody is doing that in an agricultural enterprise. There is a whole other set of record-keeping; there is a set of credentials.

We have a piece of legislation ready to go for the state that will close that gap and make it a requirement for the person doing fertilizer application to be credentialed to do so, that there will be record-keeping requirements so we know where the fertilizer is being applied and how it is being applied. And that will get to that discussion of both the shared responsibilities in many neighborhoods for water quality. And that will be where a lot of folks in urban centers touch that Chesapeake Bay, right, or the Susquehanna in our case.

I think that will be an important change, because it will help change the narrative. It will help bring that back to communities and push this issue beyond an agricultural conversation where it is at the moment.

The CHAIRMAN. Thank you, Mr. Secretary.

Chief, any thoughts in terms of how we mitigate the urbanization side of this issue?

Mr. WELLER. Well, I am not the overall expert in what localities and developers are doing for stormwater management. But I would like to just build upon what Secretary Redding laid out in that

there is also hints at an opportunity for agriculture, for working lands, is something at NRCS we have also been trying to support, and that is this notion of trading, of using market mechanisms.

For example, just here in Washington, D.C., D.C. Water, a couple of years ago, had to encumber ratepayers in the city with a 100 year \$1 billion bond to retrofit the city stormwater and wastewater treatment system, which is by setting that aside, a huge debt but also an environmental justice issue for a lot of folks who live in this community.

Setting that aside, could there have been opportunities for D.C. Water to instead partner with producers of the Potomac, to work with the watershed itself and partner with them to put in place lower cost practices that will be, frankly, good for production, better nutrient management, better tillage practices, better pest management that would have the same, if not more, effect on overall water quality flowing here in the Bay, that would have been a lower cost to taxpayers, ratepayers, here in the city, would have encumbered communities with less long-term debt, but then also, frankly, would have been, again, that positive feedback, that investment in agricultural infrastructure that is going to help provide for the long-term productivity of the lands.

We have been, in trying to provide some seed money, venture money in this here in the Bay, in Maryland, Virginia. I would be very interested in exploring opportunities in Pennsylvania. Is there a way you could actually not just get money for your grain crop or for your dairy products but a producer could then also get some additional financial incentive to provide for cleaner water for ratepayers downstream but do it in a way that is not a regulatory burden but is, instead, a more collaborative positive approach.

There are examples of this in a small scale nationally. We are very interested and excited about this, but we haven't yet cracked the code to get this at scale. This is a big opportunity here in the Chesapeake Bay.

The CHAIRMAN. Well, it sounds like a great opportunity for the agricultural community. I am not sure it is doing much for stopping the progressive contributions of chemicals or phosphates, nitrates, all the things that we have been battling. Urbanization, as you know, obviously continues. And development, it is hard not to have that happen. The trading credits, obviously, are a credible tool that many are looking at, but I am not sure it is a solution in getting the Bay cleaner, quite frankly.

And I did promise that was my last question, but just a clarification. There is a lot of heartburn and concern on the part of the Committee, who worked so long and hard on the farm bill, in terms of maintaining confidentiality of farmers. And I just wanted to revisit that.

Just briefly, Secretary Redding, looking at, and I get the idea of a voluntary confidentiality waiver. Quite frankly, if your Member of Congress is working with you for any reason, first thing we do is we get people to sign that waiver form. They are eager to do it, because they have approached us about resolving their problem. But how does that work if they choose not to do that, not to provide that information, are they then automatically, technically out of

compliance and, therefore, potentially subject to some type of a penalty?

There is kind of an oxymoron between the words *voluntary* and *compliance*. They just usually don't fit very well together.

Mr. REDDING. Yes. It is voluntary but verify, right? And we build it, the hallmark of conservation success has been the voluntary nature. What we are asked to do in the TMDL now is to verify what it is that we have actually done and/or say what we are going to do is verify. But specific to section 1619, the way this is now set up, if a producer, when approached, voluntarily provides the information to the conservation district or to a third party, they can do so.

What we are requesting is just a standard procedure, is that before any of the information is turned over to either the state or to a third party is that those release forms are signed. That way there is full acknowledgement.

In a perfect world, we would prefer that the producer handles the file and interfaces with the individual who is doing the verification. That is the preferred way. But your assumption is that there would be some intermediary in there.

We have not, again, it is an assumption that we haven't confronted the question, if somebody refuses to provide the information, what does that do? At this point, that has not been contemplated as a default to noncompliance, but it will certainly require some additional conversation if somebody is not cooperative. But we are not going to make the assumption just on the question of the privacy of the information, if it is not provided, that it is noncompliance.

The CHAIRMAN. One of the first things they told me around here is don't ask a question unless you already know the answer. But I don't know the answer to this; I will be up-front.

Would that information, then, as it is, obviously, if it is held by the producer, the farmer, the rancher, it is protected at that point. But even with this release, when that information is provided to the state or the conservation district, would that then would be vulnerable? Would that be information that is, I don't know what word I am looking for, but basically through the courts would that have to be released to the public?

Mr. REDDING. Well, I can tell you for Pennsylvania, in fact, on the release of agricultural plans form, we note that once the information is provided, the documents will become part of the Commonwealth's public record and will be retained as such. There is notice that it is potentially subject to the right to know.

The CHAIRMAN. It would be subject for those who are kind of shopping around for information for nuisance lawsuits.

I am pleased to recognize the gentleman from Georgia for 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman, and thank you for holding this hearing.

Chief Weller, on October 4, the Chesapeake Bay Executive Council, including the EPA Administrator, the Governors of Virginia, Maryland, New York, Delaware, West Virginia, Pennsylvania, and the Mayor of Washington, D.C., and the Chair of the Chesapeake Bay Commission will be meeting to identify restoration challenges,

moving forward. If given a seat at the table, what story would you tell about the role of voluntary conservation efforts being implemented by producers?

Mr. WELLER. In part, it would be a reflection of what has been shared and discussed in the hearing today. But my short message would be, really, a request that the commission and representatives that appear before the commission, to be honest, that we need to celebrate. We have collectively made huge progress.

In part, a lot of the impassioned concern for the health of the Bay, there are a lot of folks who are concerned we haven't made as much progress as some feel we need, but it is important once in a while to actually take stock of how far we have come.

We should also thank, frankly, agriculture for how much has been delivered. As I shared a little bit earlier before you were able to arrive, according to the Chesapeake Bay Program, agriculture, the agricultural sector, is one of the leading if not the leading sector for reducing nonpoint source loadings into the Bay itself, particularly for sediment and for phosphorous, and also has made good contributions for nitrogen.

And so it is, really, the holdup in identify, recognize, and celebrate success. And then, collectively, we need to identify, we are not saying "mission accomplished." We are not saying "job done." Then let's jointly focus on what needs to happen next.

And so, unfortunately, there has been a lot of focus on how much money you have spent, a lot of folks point at USDA. And for those who care about the sustainability of the Bay, if your only metric is how much the Federal Government has spent, I would submit that is not a very sustainable metric and perhaps it is not the best metric. Let's look at, broadly, what is science telling us about the trend and direction of the Bay. And in general, there are a lot of good points that show recovery, a rebound. And, okay. Let's celebrate what is resulting in that. It is very complex. There are a lot of factors, but you can't forget the men and women, the family operations that are trying to make a living off the land that, frankly, are putting products on the shelves of our stores, the people, the 17 million people that live on the Bay, who depend upon the food when they go to the grocery store. And so these small business operators want to stay in business. And then, frankly, that is the best thing for the Bay is to have those lands stay in pasture and in crop and forest. And the best way to ensure that landscape stays open and doesn't get sold and developed is to ensure it is economic and those business owners can make a living.

That comes back to celebrating success, rewarding progress, and then focusing on what still needs to happen and how do we jointly leverage and invest in a positive solution that is collaborative, as opposed to punitive.

Mr. ALLEN. So what you are saying is that there is a joint effort here that has been successful. And then what is holding us back in continuing this effort?

Is there some way that we need to build a better partnership here? Are there obstructions to building a better partnership? Is there any finger-pointing or like, "Hey, you are not doing enough," and that sort of thing? How do we do this in a joint effort to get to the end result we want?

Mr. WELLER. There are examples. And I am not saying, but it is in part human nature, and folks are very concerned and passionate, doesn't matter what side of the issue you are on.

I am not saying there is finger-pointing, but I am saying we could better partner together. Notwithstanding the resources we get from this Committee, our resources, particularly our staff, our field folk, who work very hard, and I am very proud of what they do, their time, and they are stressed very thin. And right now, they are pretty stressed, given it is the final week or 2 of the fiscal year.

How do we, then, work better with state government? How do we work better with districts? How do we work better with agribusiness and agricultural consultants? How do we work better with loaning institutions? How do we work better with water utilities and municipalities? And there are examples of this. In part, there is a program this Committee has supported, a Regional Conservation Partnership Program, which around the country, we have now over 198 projects which are showing you can partner together. When you empower local folks to identify their priorities and invite NRCS, USDA in that conversation to co-invest, you can unlock some really exciting things.

We have a lot of examples where you can get past the finger-pointing and actually get the results on the ground. And there are absolutely examples right here on the Chesapeake Bay. I don't want to mischaracterize what is happening.

Mr. ALLEN. Would the Chairman yield 1 additional minute?

The CHAIRMAN. The gentleman is recognized.

Mr. ALLEN. Okay.

Mr. Secretary, I would like to hear your thoughts on this collaborative effort. As you have recognized, the Bay received the highest grade for health since 1992 and 30th highest in 3 decades. Acknowledging that more work remains to be done, would you agree that we are on the right course to continue this collaborative effort and incentive-based conservation?

Mr. REDDING. Yes. Congressman, thank you for the question.

Certainly, going forward, the only way to success is through this foundation of partnerships and collaboration. We have looked at it in state. And while we, as a Department, look at our role and responsibilities and relationship with the districts, the reality is it is well beyond that. It will take the mayors, and it will take the county commissioners, it will take everybody looking at what it is that we can do, number one.

I think, to your point about the meeting and looking forward a little bit, there are two things. I would say, first, as we have stated earlier in the hearing, there is some recognition that there has been a tremendous amount of progress has to be part of the narrative, right? It can't always be about, "You have more to do," right? That is fatiguing. It is fatiguing at the farm level. Every time you feel like you are making progress. We all understand the cycles of this business and the seasons we live in and so forth. You like to hear that you are actually making progress. And some of what has been noted by the USGS, the University of Maryland, and EPA, that has to be front and center and really part of what we talk about and how we talk about the Bay, going forward.

And the third point would be about the question of the goals. If it only is, if the simple metric is water quality, then that becomes a very limiting conversation, right? If it is about the economic viability of, in our case, agriculture or the region, then that requires us, then, to look at some of the urbanization concerns and the demographics shifts that we have seen.

But I would say it also presents an opportunity to bring 17 million people as consumers to the conversation. And I don't know at this point whether there is really a regional appreciation for the delicate balance that is required, but also the personal action that is required to get us to the reductions, right? It is what we buy. It is where we shop. It is what we view in terms of the value of land. I think that can be part of the conversation that the chief notes of celebration, but it is also becomes part of the narrative.

Mr. ALLEN. Okay. Well, thank you, again, for your testimony.

Again, our role here is to facilitate collaboration, and we are here to do that for you as best we can do in our role and as Members of Congress. And thank you for your efforts, and I wish you all the best. And let us know how we can help you.

Mr. REDDING. Very good.

Mr. ALLEN. I yield back, Mr. Chairman.

The CHAIRMAN. I thank the gentleman.

I want to thank our witnesses. It is undeniable the record of success that we have accomplished together through voluntary conservation.

I was at a Chesapeake Bay event where the NFWF was presenting some grant moneys, some that came from the USDA, some came from the EPA, to folks. Actually, Secretary Larson was there. We did it, actually, at Penn State, Secretary Redding, we did it at the Larson farm at Penn State about a month ago or so. And it was out there that I made the comment that conservation is a team sport. And it is. And since we have embraced conservation not in a punitive way, a top-down penalty-imposed system, where we went to a team sport, which really reflects voluntary conservation, we have just made amazing gains so that water is cleaner. Our phosphates are down. Nitrates are down. Sediments are down. The other benefits, quite frankly, these voluntary programs create jobs for the mediation work that is done, whether it is for preparing buffers or stream bank restoration, just all the different things that are there. The endangered species that actually have been de-listed, which I still find just remarkable how well that has worked *versus*, unfortunately, what was tried to be done in the past with a punitive regulatory approach by the Fish and Wildlife Service. It just shows the benefits and not only has it worked based on pure, great statistically documented information, these studies, but it is a sustainable trend. It has a trajectory. It is about direction and momentum.

And so I have tremendous concerns of anything that would break that teamwork approach and taking our folks, who have been great, who have been embraced by farmers and ranchers on the fields, and having them exercise police power, I think that it is just very threatening to me in terms of the long-term. And not only would it, perhaps, stop our trajectory that we have now under vol-

untary conservation, we may actually see those gains start to erode.

I really appreciate both of you being here today to address this topic. Pennsylvania and the United States, quite frankly, are just tremendously benefited by having you in your leadership roles in agriculture. And I appreciate the opportunity to continue to work with you on this issue and others.

And under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from witnesses to any questions posed by a Member.

This Subcommittee on Conservation and Forestry hearing is now adjourned.

Mr. REDDING. Thank you.

[Whereupon, at 11:26 a.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED QUESTIONS

Response from Jason Weller, Chief, Natural Resources Conservation Service, U.S. Department of Agriculture*

Questions Submitted by Hon. Bob Goodlatte, a Representative in Congress from Virginia

Question 1. I regularly hear from producers in the Sixth District of Virginia who are concerned with the implementation of EPA's Chesapeake Bay Total Maximum Daily Load (TMDL) blueprint and the economic impact of its mandates. Do you believe that the TMDL blueprint was the best way to achieve a healthy Bay?

Question 2. Chief Weller, do you share the Committee's view that voluntary conservation is the best model for conserving natural resources? Why or why not?

Response from Hon. Russell C. Redding, Secretary, Pennsylvania Department of Agriculture

Questions Submitted by Hon. Bob Goodlatte, a Representative in Congress from Virginia

Question 1. As the Secretary of Agriculture of a Chesapeake Bay state, do you believe that EPA has removed or diminished the autonomy of the Bay states with its Chesapeake Bay Total Maximum Daily Load (TMDL) blueprint? Has EPA respected the Congressionally mandated partnership between EPA and the states as was clearly established with the Clean Water Act?

Answer. Under the Federal Clean Water Act, states are required to establish a Total Maximum Daily Load (TMDL) for watersheds or stream reaches with impaired water quality. In establishing a TMDL, states are required to determine existing pollution loads and calculate load reductions that they believe will enable them to achieve the water quality goals for these impaired waters. Within certain limits, this TMDL process is a fairly straight-forward mathematical calculation to allocate pollution load reductions based on best available data and information regarding nutrient and sediment loads within the targeted watershed or stream segment.

The development of a Watershed Implementation Plan (WIP) by a state is required under the TMDL process in order to describe in detail how a state will achieve the pollution reduction targets established under the TMDL. Throughout the development of the Chesapeake Bay Watershed Implementation Plans (WIPs 1 & 2), Pennsylvania has been able to develop restoration plans that suited the unique characteristics and needs of the Commonwealth.

While these WIPs and the specific best management practices (BMPs) and other pollution control tactics contained in them are subject to EPA review and approval, I believe the Commonwealth has been able to maintain a high level of autonomy and discretion in selecting the specific practices, plans and approaches that will achieve the largest nutrient and sediment reductions contained in the Chesapeake Bay TMDL.

Throughout this TMDL WIP development process, EPA plays a critical role to ensure accountability as the states work to both develop and implement the plan's provisions. We appreciate the importance of this EPA function and value the feedback on our work, however, ultimately the choice of how to meet our water quality improvement goals of the TMDL and the WIP rests with the Commonwealth.

Question 2. As you may know, many Members of the House Committee on Agriculture have been opposed to the Chesapeake Bay TMDL since its inception for fear it would unfairly punish states for not meeting EPA mandated goals. Do you believe that Pennsylvania is being unfairly scrutinized for its perceived lack of progress in Bay restoration efforts? If so, do you believe that this type of strict examination could be easily applied to other Bay states? Do you believe that EPA is recognizing all conservation activities that farmers and ranchers are voluntarily implementing?

Answer. The Commonwealth fully recognizes that we have an obligation under both state and Federal law to protect and restore the quality of our streams, lakes and other water bodies. Pennsylvania's Clean Streams Law was enacted and established a goal of protecting and restoring the waters of our Commonwealth long before the Federal Government and EPA became a player in this arena. We also recognize that on the Federal level, a large portion of this obligation falls on our shoulders as a state. As such, we recognize and understand the high level of scrutiny directed towards Pennsylvania by EPA and quite frankly, by other states and organizations as well.

*There was no response from the witness by the time this hearing was published.

The Chesapeake Bay watershed encompasses approximately 64,000² miles of land, with 40% of that land found in the Susquehanna and Potomac watersheds. The Susquehanna River alone contributes about $\frac{1}{2}$ of all fresh water of the Bay.

Within Pennsylvania's portion of the watershed are nearly 34,000 family farm operations which contribute to the water quality challenges we face. We believe those outside of PA recognize the significant and proportional role that Pennsylvania plays in the restoration of the watershed. Others can characterize whether this is fair or unfair—we are singularly focused on meeting the water quality expectations placed on us.

In terms of recognizing farmers' voluntary conservation practices, the Chesapeake Bay model does allow for reporting of certain conservation practices voluntarily installed by our farmers. The challenge is that Pennsylvania has previously lacked cost effective means to identify, verify and report these voluntary practices. Pennsylvania has recently piloted several innovative and promising tactics to gather this information (PSU Agricultural BMP Self-Reporting, NRCS Potomac Watershed Remote Sensing Pilot) that will enable us to report voluntarily installed conservation practices. EPA has acknowledged the difficulty that Pennsylvania faces in this regard and has committed their support to assist the Commonwealth in evaluating these new approaches and working to ensure the model is capable of accepting this new data

