CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

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"Nutrient Trading and Water Quality"
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Good afternoon Mr. Chairman and Members of the Subcommittee on Water and Wildlife, I am Dr. Beth L. McGee, Senior Water Quality Scientist at the Chesapeake Bay Foundation (CBF). Thank you for inviting me, on behalf of CBF's Board of Trustees, staff, and more than 200,000 members, to participate in today's hearing.

For more than 40 years, the CBF has been working to protect and restore the Chesapeake Bay. The Chesapeake Bay is America's largest estuary, and its 64,000 square mile watershed – from Cooperstown, New York to Cape Henry, Virginia and westward to the Allegheny Mountains – is a large part of the Mid-Atlantic states. More than 17 million people live in the Chesapeake Bay watershed, a number that is increasing by roughly 150,000 each year.

If you follow CBF's State of the Bay report, you know that the slow rate of progress being made to improve water quality and protect the living resources of the Chesapeake Bay continues to cause very serious concern. The numeric score that our scientists calculated last year to represent the overall health of the Chesapeake Bay – 32 on a scale of 100 - means that the Bay is ecologically functioning at only about one-third of its historic capacity, and is not improving nearly as fast as we would like. The most systemic problem continues to be an overload of nitrogen and phosphorus pollution creating a lack of dissolved oxygen in many parts of the Bay and its tributaries. Every summer, the mainstem of the Bay and several of its tributaries are plagued by dead zones, where not enough dissolved oxygen exists to sustain many forms of aquatic life. The volume of water affected by these dead zones varies by year, but on average about 80% of the Bay and its tidal rivers have

insufficient levels of oxygen. The Bay's problems are not unique – coastal and estuarine systems around the county and the world suffer from similar problems.

The good news is that in 2010 the Environmental Protection Agency (EPA) and the Bay jurisdictions established a Clean Water Blueprint for the Bay. This blueprint consists of the science based pollution limits for nitrogen, phosphorus and sediments as described in the Chesapeake Bay Total Maximum Daily Load (http://www.epa.gov/chesapeakebaytmdl/) and the state-specific plans to achieve those limits. To develop these plans, Bay jurisdictions worked with local governments to take advantage of local knowledge about sources such that the pollution reduction requirements were equitably distributed and one sector was not burdened at the expense of another. However the cost to reduce pollution varies greatly between sectors. To maintain costs while ensuring all sectors do their part, all of the Bay jurisdictions are relying, to some extent, on nutrient trading to meet and maintain these pollution limits.

Nutrient trading involves the exchange of allocations between pollution sources. The sources can be "point sources" such as wastewater treatment plants or "nonpoint sources" such as runoff from farmland and urban/suburban areas. It is based on the premise that the cost to reduce water pollution differs between sources, so entities that are able to economically reduce their annual pollutant discharges below regulated or permitted levels are allowed to sell their "surplus" reductions to entities facing higher pollution reduction costs. For example, the cost of one pound of annual nitrogen load reduction is many times higher in the stormwater sector than in the wastewater and agricultural sectors.

Critics of nutrient trading will argue that trading allows point sources to "pay to pollute" rather than cleaning up their own emissions. Concerns have also been expressed that trading may lead to localized pollution hotspots, pollution reductions will not be real or verifiable, or that trading is simply not allowed under the Clean Water Act. CBF shares some of this skepticism, but believes that it is possible to properly design and implement nutrient trading programs which can be used to achieve and maintain the Bay's pollution limits in a cost-effective and environmentally-beneficial manner.

In particular, the most costly and challenging aspect of complying with the Bay-wide pollution limits will be reducing and maintaining pollutant loadings from urban/suburban stormwater. The majority of the

responsibility will fall to local governments, many of which currently lack the technical and financial capacity to achieve and maintain the necessary pollution reductions. In addition, large urban areas hold water pollution permits that require substantial pollution reductions. A recent analysis by RTI International, sponsored by the Chesapeake Bay Commission, found that these permitted entities could save hundreds of millions of dollars per year if they purchased credits from a source like farmers, in lieu of implementing retrofits to meet at least a portion of their pollution reduction targets (http://www.chesbay.us/Publications/nutrient-trading-2012.pdf). Furthermore, as the region's population continues to grow, trading provides a framework to track and offset the inevitable additional pollution loads associated with new development – ensuring the pollution limits will be maintained, once they are achieved.

The key to successful nutrient trading in the Chesapeake Region is to have the necessary safeguards in place to ensure reductions are real and verifiable. In this regard, trades involving nonpoint sources are more of a challenge because measuring and counting the nutrient reductions is difficult. These safeguards include: ensuring trades do not degrade local water quality, verifying and monitoring implemented practices by independent third parties, creating legal mechanisms that make sure the necessary reductions are achieved, and making the entire system transparent and accountable to the public by providing public access to information on proposed trades and the opportunity for the public to provide input.

In the Chesapeake Bay region, nutrient trading is not new – states started developing policy and regulations nearly 10 years ago. Unfortunately, these programs developed independently, resulting in some significant differences among the state trading regulations and policies. EPA is in the process of developing technical memoranda that will help level the playing field and provide some regulatory certainty. But there are also other reasons why a robust trading market has not yet developed. There are issues with supply and demand that Congress can help address.

How to stimulate demand: Help local governments enter the market.

As the RTI report highlights, many local governments will need to reduce pollution from their stormwater systems to meet their share of pollution reductions – at a high cost. Nutrient trading offers them a potential cost-

savings, so experts believe local governments are likely to be the "buyers" in the nutrient trading market. However, they face several challenges.

With increasingly reduced budgets and staff, most local governments don't have the resources or staff time to figure out how trading could actually work for them – they have never done it before. So, there are lots of technical, legal, and policy issues that need to be identified and overcome e.g., how do we ensure local water quality is protected? How do we determine how much of their stormwater obligation, can be met through purchasing credits?

Congress has provided some support for answering these questions and helping the states establish their trading programs and policies through the Conservation Innovation Grant program in the Farm Bill. EPA's technical memoranda on trading will also be helpful. But like all things, the "devil is in the details." Consequently, via a private grant, CBF is partnering with the World Resources institute on a pilot project to work with select local governments to take them through the process of transacting an actual trade. The lessons learned from this pilot, we hope, will be useful to inform policy not only in the Bay watershed, but other parts of the country.

One of the things we have already learned is that buyers want – and need -- regulatory certainty. So, it is important that EPA clarifies that municipalities with stormwater permits may meet some of their permit requirements through purchasing credits. Specifically, we recommend that EPA, in its technical memorandum on trading and municipal separate storm sewer systems (MS4s) clarify/expand what is in their 2007 Water Quality Trading Toolkit for Permit Writers to explicitly cover MS4s. The document currently seems geared toward "traditional" point sources. In addition, EPA must continue to clarify their regulatory expectations, including issues related to grandfathering credits and baselines that may change due to the re-evaluation of the Bay TMDL in 2017, such that both "buyers" and "sellers" are confident that they will not be at legal or financial risk if they participate in trading. EPA must also work with, and oversee, state trading programs and permits containing trades to ensure the verification mechanisms are transparent and provide accountability.

How to stimulate supply: Help agriculture enter the market.

Farmers are viewed as the likely "sellers" in nutrient trading markets because the cost to reduce pollution from agriculture is inexpensive, relative to other source sectors. That said, for a variety of reasons, agricultural producers have been somewhat reluctant, to date, to participate in trading. Reasons include: lack of knowledge about trading and what level of conservation is necessary in order to participate, concerns about third party verification and data privacy, the perception that trading allows others to "pay to pollute." Again, Congress is helping address this through the Conservation Innovation Grant (CIG) Program in the Farm Bill. CBF is the lead on one of several grants focused on nutrient trading in the Chesapeake Bay. Our project includes outreach to farmers on trading and helping them determine whether they are eligible to participate in the trading market by using a farm scale nutrient calculator that allows them to estimate the pollution reduction benefits of conservation practices they have implemented on their farms. And even with a tool like this calculator to help them learn about their land's potential to create credits, farmers aren't ready to start trading. They continue to ask for certainty related to the TMDL regulatory framework. This is understandable -- they need to invest time and money to create credits to sell and before they do, they want certainty about the levels of conservation they must put on their land to qualify to begin generating credits, how those credits will be calculated and verified, who has access their farm data if they participate, and who will be buying their credits, when. These are questions that EPA, with assistance from USDA, must answer for them with utmost clarity and provide to them through trusted information channels and validators in the farming community. We encourage this Congress to provide continued support for developing innovative tools through programs like the CIG and to encourage continued collaboration between the Agencies to put those innovations to use in support of Clean Water Act goals.

Lastly, we want to underscore that Federal programs to address nonpoint source pollution -- the 319 Grant program under the Clean Water Act and the conservation programs in the Federal Farm Bill -- are very important. They are key to help farmers comply with the baseline requirements needed for them to enter the nutrient trading markets and generate credits. We continue to be concerned that the volume of support provided through these programs is not sufficient to meet the conservation goals the Congress and the States have set for the Chesapeake

Bay. To this end, we encourage the Committee to increase its support for this issue and extend our sincere thanks to Chairman Cardin for your leadership on this issue – both on this Committee and in relation to the Farm Bill.

Conclusions:

While trading is developing throughout the country, there are lots of eyes on the Chesapeake region because of the sheer scope and audacity of our goal to restore this national treasure. We need to do trading "right" so that it meets the needs of stakeholders and results in real, verifiable pollution reduction that, ultimately, result in a vibrant, productive Chesapeake Bay. We are grateful for the support of EPA in providing guidance to help harmonize key aspects of the states' trading programs and to USDA for continuing to promote nutrient trading and other environmental markets via grants, workshops, and other forums. We hope we have clearly highlighted the need for continued Congressional support to do more. Thank you once more, Mr. Chairman and Members of the Subcommittee, for the opportunity for CBF to participate in today's hearing. I would be pleased to respond to your questions.