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**Testimony before the
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Senate Agricultural and Rural Affairs Committee
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Chairman White, Chairman Musto, Chairman Waugh, Chairman O'Pake, and distinguished members of the Environmental Resources and Energy Committee and the Agricultural and Rural Affairs Committee, my name is Matthew J. Ehrhart, and I am the Pennsylvania Executive Director of the Chesapeake Bay Foundation ("CBF"). On behalf of CBF and its 140,000 members, I would like to thank you for the opportunity to express our views on the Pennsylvania Chesapeake Bay Tributary Strategy.

CBF is the largest non-profit organization dedicated to the restoration and protection of the Chesapeake Bay and the rivers, streams, and wetlands in its watershed. Over half of the Commonwealth drains into the Bay, so it is obvious that the everyday actions of Pennsylvanians are crucial in determining its fate.

2,347 miles of Pennsylvania rivers and streams, and nearly the entire Chesapeake Bay, including its tidal tributaries, are listed on the federal Clean Water Act ("CWA") §303(d) list of "dirty waters" impaired by excess nitrogen and phosphorous from sewer plants, farms, urban runoff, and other sources. The Bay has experienced record "dead zones" in recent summers, where large areas of the Bay were devoid of life-supporting oxygen. It was so bad in some areas that many crabs simply left the water for land in a desperate search for oxygen. This phenomenon, known as a "crab jubilee," has occurred far too often in recent years.

Nitrogen and phosphorous are nutrients that are needed in small amounts to sustain human and aquatic life, and to grow crops. Unfortunately, the excess nutrients derived from agricultural and urban runoff, and from sewer plants, far exceed, by several orders of magnitude, the minimum levels to sustain the population and its food sources.

In waterbodies, excess nutrients result in accelerated eutrophication, causing excess algal growth, smothering of submerged aquatic vegetation, a decrease in water clarity, and depletion of dissolved oxygen needed to support fish and aquatic life.

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In order to address the problems caused by excess nutrients, the Bay watershed states, Washington, D.C., and the federal Environmental Protection Agency ("EPA") entered into various agreements to reduce nutrient loading to the Bay watershed. The most recent agreement, Chesapeake 2000 ("C2K"), has resulted in each state agreeing to pursue significant nutrient reductions with the goal of removing the Bay from the §303(d) "dirty waters" list by 2010.

To this end, Pennsylvania made a commitment in March, 2003 to reduce its nitrogen and phosphorous contributions to the Bay watershed by approximately 35% by 2010. These reductions are in addition to other reductions that have been achieved since the first Bay agreement in 1985.

In order to attain these ambitious nutrient reduction commitments, Pennsylvania drafted a Tributary Strategy setting forth a plan for how these commitments would be met for sewage and industrial wastewater treatment facilities, agricultural operations, urban stormwater runoff, and other activities. This is the subject of the hearing today.

Our focus today is going to be on how we can ensure implementation of the Tributary Strategy in order to clean up nutrient pollution in Pennsylvania rivers and streams, and remove the Bay from the "dirty waters" list by 2010.

I would like to address the main components of the Strategy that lay out a plan for nutrient reductions. I will discuss our views on how the Strategy provides for nutrient reductions from sewage and industrial wastewater dischargers, agricultural operations, and urban stormwater runoff.

Excess Nutrients in Sewage and Industrial Wastewater Discharges

The terms of the Tributary Strategy that apply to point sources such as sewage treatment plants and industrial wastewater dischargers will make tremendous strides in cleaning up nutrient pollution when implemented by DEP in wastewater discharge permits. The Strategy provides that DEP will incorporate "load limits" for total nitrogen ("TN") and total phosphorous ("TP") in discharge permits of all "significant" (defined as 400,000 gallons per day or more) sewer dischargers. Permits will be renewed based on a annual nutrient cap load determined by allowable concentrations of 8/mg l TN and 1 mg/l TP at projected 2010 flow. Implementation became effective August 29, 2005, the date final revisions to Maryland's water quality standards for the Chesapeake Bay came into legal effect. DEP has also indicated that new and expanded wastewater discharge permits issued after August 29, 2005 will contain net nutrient effluent limits of zero and will need to offset any loads with reductions found elsewhere. "New" plants are considered those facilities that have not been approved in an Act 537 Sewage Facilities Plan as of August 29, 2005.

The point source portion of the Strategy is by no means an optimal strategy that will maximize nutrient reductions from sewer and industrial facilities, but it is a reasonable and practical one. Though we seek greater nutrient reductions, and the installation and operation of the best available technology to remove nutrients in wastewater effluent, we believe that the approach set forth is a pragmatic first step.

There are 190 wastewater facilities classified as significant discharges in the Bay watershed in Pennsylvania. 164 of these facilities are sewage treatment plants. DEP has indicated that 44 of these facilities already attain the load limits of the Strategy, and 48 more will be able to meet their projected loading caps with operational changes or minimal capital upgrades unless substantial unpredicted growth occurs in their jurisdictions.

Wastewater treatment facilities are a major source of nutrient pollution in the watershed; sewage treatment plants and industrial wastewater dischargers of nutrients are the 2nd largest source of excess nitrogen and phosphorous in the Bay watershed. EPA estimates that Pennsylvania sewage treatment plants and industrial waste dischargers discharged approximately 15,954,362 lbs. of total nitrogen and 1,696,230 lbs. of total phosphorous to the Susquehanna and Potomac Rivers in 2003, the latest year for which data are available. Also, they estimated in April, 2005 that 13% of the nitrogen and 25% of the phosphorous in the Susquehanna River emanates from sewer plants.

Enforceable permit limits are *required* under the federal Clean Water Act (CWA) for any discharge of pollutants (such as nitrogen and phosphorous) that causes or contributes to the impairment of downstream waters. In this sense, the requirement for sewage treatment plants to substantially reduce nutrients in wastewater effluent is a CWA issue, and not a Tributary Strategy issue. The implementation of revised Water Quality Standards for the Bay on August 29, 2005 clearly requires that any new or renewed permits meet the CWA requirements.

The technology to meet the restrictions set forth in the Strategy is readily available and reasonably affordable. This technology, known as Nutrient Reduction Technology ("NRT"), enables dischargers to attain substantial nutrient reductions. NRT has been evolving rapidly, and the costs of installation have decreased as its use has become more widespread. NRT can include operational adjustments such as utilizing excess treatment capacity at a plant, or the addition of biological treatment units. Available NRT can meet effluent limits as low as 3 mg/l for TN and 0.1 mg/l for TP in the southern part of the Bay watershed in Pennsylvania. Because of lower temperatures for a greater portion of the year that slows some biological processes, facilities in the northernmost portions of the watershed can attain 5 mg/l TN, but may have some difficulty reaching reductions of 3 mg/l TN. CBF initially advocated for "limit of technology" requirements, thereby maximizing nutrient load reductions from STPs. As the discussion has evolved, CBF has accepted the compromise approach proposed by DEP in the Tributary Strategy. The reductions proposed in this Strategy are proportional with the load produced by the facilities. Future efforts may have to move toward limit of technology to accommodate future growth.

In the Strategy document, DEP estimates the cost of implementing the point source component of the Strategy at \$376 million. Subsequent to the publication of the Strategy, DEP has indicated that costs will range from \$100 million to \$300 million, with a mean of \$190 million. EPA estimates that nitrogen reductions to a limit of 7-8 mg/l can be attained for a cost that ranges from *½ cent per person per day to 3 cents per person per day*. This amounts to anywhere from \$1.82 to \$10.95 a year. This is less than a quarter of what many people pay for a month of cable TV service!

CBF joined with PMAA to advocate for the passage of the Water and Wastewater Infrastructure Bond Act (Act 218) last year, with the view that sewage treatment plants needed substantial additional funds to add NRT. The result of Act 218 is up to \$150 million in grants and loans to be distributed by PENNVEST for four specific purposes, one of which is NRT. The Act also provides up to \$200 million for infrastructure projects related to economic development. We strongly support new legislative initiatives for additional state and federal funding for NRT projects. The announcement by PENNVEST last week to make \$50 million in grant funds for NRT and combined sewer overflows available to communities, is commendable, and will help address some of the funding needs.

And not only are the costs of installing and operating biological nutrient removal systems very reasonable, and the environmental benefits compelling, but there are also other benefits to plant operators and ratepayers as well. EPA has found that sewer plants that install BNR reduce energy costs by 20-30% through less blower operation for aeration, reduce chemical usage by 50% or more, and reduce the amount of sludge by 5-15%. The savings on electricity, energy, chemical, and sludge disposal costs accrue to ratepayers and the community. In addition, biological nutrient removal can increase the quality of sludge, making it more saleable.

Reductions in nutrients in wastewater effluent are easily ascertainable and verifiable by required monitoring results, and there is a high level of confidence in tracking reductions. The reductions are *immediate* upon implementation of NRT; there are no time lags in nutrient reduction results as with many best management practices ("BMPs") that address nonpoint sources due to groundwater infiltration. In addition, the amount of nutrient discharge is consistent and not affected by storm events as with nonpoint source runoff such as that from farms and parking lots.

In sum, there are many compelling reasons to require sewage treatment plants to remove excess nutrients in their wastewater effluent so that their discharges do not cause or contribute to downstream nutrient impairment. CBF supports the requirements in the Tributary Strategy for nutrient effluent limits, though we believe such requirements should be more stringent and should reflect the best technology that is available. Our rivers and streams, and the Bay downstream, deserve no less.

DEP is in the final stages of developing nutrient trading guidance that will allow treatment plants that outperform their effluent limits, and farmers that install technologies to address agricultural runoff beyond requirements, to generate credits that they can trade to underperforming plants. Although some key technical details of the policy are still under discussion, the basic premise of allowing economic efficiencies to guide cost-effective treatment strategies is a good one. Limits of zero net nutrients for new dischargers, and dischargers that expand their discharge load, are not insurmountable with an efficient and effective trading system.

It should be noted that, while 40-50 trading pilot programs exist nationwide, only a handful of trades have taken place, with no robust point source to non-point source programs. The proposed Pennsylvania nutrient trading program is poised to be a national leader, and will set the bar for all such efforts. The Department and its partners, including the Pennsylvania Environmental Council ("PEC"), have done a thorough and thoughtful job crafting this initiative, with stakeholder involvement. CBF

believes that this program, when all the details are worked out, will facilitate the most cost effective solutions to nutrient reduction.

I now would like to shift my focus to the portion of the Strategy that addresses runoff from agricultural operations.

Addressing Excess Nutrient Runoff From Agricultural Operations

Nutrient runoff from farms and other agricultural operations is the largest source of pollution in the Bay watershed, by a large margin. Such sources are also the largest source of nutrient impairment of Pennsylvania rivers and streams. Approximately 49% of the nitrogen and 63% of the phosphorous in the Bay watershed comes from these operations in the Commonwealth. Reducing nutrient and sediment loads from agricultural will address the impairment of thousands of miles of PA streams as well as Bay related impairment issues. It is clear that Pennsylvania farmers must be part of the solution to substantially reduce nutrient contributions from the Commonwealth if any meaningful progress is to be made in eliminating nutrient impairment in the rivers and streams of the Susquehanna and Potomac watersheds, and downstream in the Bay.

To ensure clean, healthy rivers and streams, and abundant fish and aquatic life, we must preserve our farmland, keep farmers farming, and manage our agricultural lands in an environmentally safe manner.

The Strategy specifies a number of BMPs that are to be voluntarily implemented by the agricultural community in a cooperative effort with 13 watershed teams in various sub-basins of the Susquehanna and Potomac Rivers. If fully implemented, DEP estimates that annual nitrogen reductions of 53.7 million lbs., and phosphorous reductions of 2.95 million lbs., can be attained by agricultural operations.

In the past twelve months, a number of Bay related entities, including CBF, the Chesapeake Bay Commission, and EPA's Chesapeake Bay Program, have published documents evaluating how to proceed with implementation of the agriculturally related portions of the strategy. The groups are all indicating the same thing: There are a handful of cost effective practices that are key to solving the problem. Implementing traditional and enhanced nutrient management, conservation plans (which are already required), precision feeding, cover crops, conservation tillage, and alternative uses for manure will dramatically reduce the scope of the problem. There is widespread agreement on what to do. Now we must develop the funding and implementation strategies to make those changes happen on the landscape.

Unfortunately, the Strategy fails to name an entity that is accountable for assuring that nutrient reductions are attained by agricultural operations. The Strategy also fails to state where the \$592 million in funds that are estimated to be needed for BMP installation and implementation will come from. Instead, the watershed teams are left with little more than a nutrient reduction allocation and the power of persuasion to get the needed reductions.

DEP has asked all County Conservation Districts in the Bay watershed to develop county-level implementation plans that prioritize district efforts to implement the most cost effective strategies. This is an excellent decision in that the Districts have the

expertise and relationships with landowners to make change happen. Indeed, the desired changes may only be achievable through the districts. However, we are asking the right people to do the right thing, without giving them the resources to do so.

We believe that the nutrient reductions that are needed can only be accomplished with significant increases in both state and federal funding and the harnessing of the ingenuity of the Pennsylvania producer. Pennsylvania farmers are under a host of increasing economic pressures. They receive less than half as much per unit of production as they did in the 1950s. Land prices, equipment prices, property taxes and inheritance taxes have all outstripped inflation. Their demand is inelastic. With no way to influence the price they are paid for their products, they cannot pass increases in cost on to the end users of their products. Many are simply not in the financial position to protect water quality in the public interest and remain economically viable. Producers know what is needed; we simply need to give them the resources to do the job. Good agricultural stewardship and sound farm conservation simply requires more resources. Without these resources, agriculture could be pushed out of the watershed, leaving us to deal with the larger and more costly impacts of sprawl development.

There is a crucial need for increases in state and federal funding for the implementation of key technologies by farmers including conservation plans, nutrient management plans, alternative uses of manure, precision dairy feeding operations, and widespread installation of vegetated riparian buffers. CBF has made it a priority to research these technologies and target available funding to innovative practices in the agricultural community. We are working with a broad array of partners on these fronts.

Chairman Waugh and Senator Wenger have introduced an important initiative – the Farmers First Agenda. This initiative, if enacted, will preserve more farmland, create economic relief to keep farming profitable, and provide financial and technical assistance to farmers for conservation practices. An important piece of the Agenda that is of particular significance to CBF is the manure disposal alternatives proviso. We believe that an initial state investment of up to \$25 million per year over several years is needed to help capitalize new facilities. This will enable farmers to dispose of manure, and nutrients, in a cost effective and environmentally sound fashion.

CBF has been deeply involved in discussions leading up to the 2007 Federal Farm Bill. We are working with groups, including the Chesapeake Bay Commission, from around the nation to help Pennsylvania and the other states in the Bay watershed get their fair share of farm bill funds. Farmers in our region only receive one to three cents of federal agricultural funding for every dollar in agricultural production. The national average is double that, at six cents per dollar, and in some states, such as North Dakota, farmers receive up to five times as much as farmers in our region. These funds need to be reallocated so that Pennsylvania and Chesapeake Bay region farmers get an equitable monetary share. It will not be easy to wrest our fair share of funding from vested agricultural interests in the Midwest, but it can happen if conservation and farm interests work together toward this end.

We are also working to ensure that the important programs in the Conservation Title of the Farm Bill, such as the Conservation Reserve Enhancement Program (CREP), the Environmental Quality Incentives Program (EQIP), Conservation Security Program (CSP), and the Conservation Reserve Program (CRP) are enhanced, and funding

preserved and expanded. Adequate technical assistance for the delivery of these programs is also a key priority.

With enhanced funding from state and federal sources, and our fair share of Farm Bill funds, the farm community can be enabled to do its part in reducing nutrient loads. The monies allocated for this task will be an investment in clean rivers and streams in Pennsylvania, as well as the Chesapeake Bay. Streamside buffers and other conservation measures will aid the effort to assure a sustainable future where farmland is preserved, and farmers can continue to farm while at the same time acting as agricultural stewards of our lands and waters.

I look forward to working with the members of the General Assembly and Congress to help bring resources to bear to help farmers attain substantial nutrient reductions.

I will now briefly address CBF's views on the provisions in the Tributary Strategy that address stormwater runoff from urban sources.

Addressing Stormwater Runoff from Urban Sources

Urban runoff accounts for about 7% of the nitrogen and 5% of the phosphorous delivered to the Bay from the Commonwealth. The retrofits needed to implement the BMPs set forth in the Strategy to address urban runoff are estimated to cost \$5.6 billion in order to eliminate 9% of the nitrogen load. In many ways, obtaining nutrient reductions from the implementation of these measures is one of the most difficult aspects of the Strategy to accomplish. The excessive costs pose a tremendous obstacle to full implementation.

We support requirements for infiltration of post-construction stormwater runoff, and full implementation of erosion and sediment controls on earth disturbance sites. In addition, we support full implementation of Act 167 and permits for Municipal Separate Storm Sewers ("MS4s").

The integration of tributary strategy implementation with Act 167 and National Pollutant Discharge Elimination System ("NPDES") Phase II permitting, including MS4s, will facilitate the most cost effective implementation. New discussions about legacy sediments and reattaching tributary watersheds to effective floodplains may provide new, more cost effective solutions, to addressing stormwater, sediment and nutrients in concert.

One way the General Assembly could aid stormwater management efforts is to clarify the legal status of stormwater utilities. These entities could, similar to other utilities, provide stormwater management services in a community to all ratepayers served by the utility. Currently, development and use of such entities is under a legal cloud.

Thank you for the opportunity to testify. I'm glad to answer any questions any members may have.