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Senate Committee on Environment and Public Works
Subcommittee on Water and Wildlife
“Chesapeake Bay Restoration: Status Report and Recommendations”
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Chairman Cardin and members of the subcommittee, thank you for coming out to Annapolis today for this hearing, and for giving me the opportunity to discuss with you the health of the Chesapeake Bay and the Chesapeake Bay Foundation’s recommendations for improving it.

I want to start my remarks today by referencing the two species that are the manifestation of the Chesapeake Bay in most peoples’ minds: Chesapeake blue crabs and Chesapeake Bay oysters. Today, the traditional crab picking businesses are almost all gone. Even in our home town of Baltimore, Mr. Chairman, many if not most crabcakes are made with imported crab. Sitting down to a traditional crab feast in any of the area’s few remaining crab houses costs more than most people can bear. The few waterman families who still try to make a living from catching crabs are barely hanging on, and then only because they have taken second and third jobs. According to NOAA some 4500 crab-related jobs were lost between 1998 and 2006 at a cost of \$640 million to Maryland and Virginia.

And then there are oysters. The native oyster population is so depleted that Mencken’s “great protein factory” is largely boarded up. A generation of kids is growing up here and similar cities around the Bay never having tasted a Chesapeake Bay oyster. Until Maryland, Virginia, and the Corps of Engineers reached agreement last week, a significant part of the remaining oyster community looked to an imported species of oyster for salvation. There is some good news, however. It appears as if fewer oysters in the Bay are dying from MSX and Dermo, possibly signaling the development of resistance among the native oysters to the parasite. In addition, a new record was set in Maryland in 2008 with the planting of over 500 million hatchery-produced seed oysters. Still, the overall situation is grim.

Behind the decline of these species stands the fact that every year an immense area of the Chesapeake Bay and its tidal tributaries is essentially dead, without enough dissolved oxygen to sustain healthy life. To complete the dismal picture, the underwater grasses and tidal wetlands so essential to life in and around the water are diminished to a shadow of their historic coverage.

Why? Overfishing, disease and warming temperatures play a role, but the fundamental problem is what we humans have done to pollute the fine, clear waters of the Bay and destroy the grasses and wetlands that are the biological heart and lungs of the Bay ecosystem.

The Chesapeake Bay is arguably the most studied large body of water on earth. It is an unusually complex ecosystem, but there is a great deal of scientific consensus on the causes of its decline. First and foremost among these causes is a huge and systemic overabundance of human-introduced nitrogen and phosphorous flowing into the Bay from the land and the air. This excess of human-introduced nitrogen and phosphorous degrades water quality and contributes to the decline of the Bay's living resources.

Although we are focused on the Chesapeake Bay today, I would note that the same overabundance of nitrogen and phosphorus that degrades the Bay is an increasing problem for waterbodies around the nation and much of the world. The overabundance of nitrogen in the Bay watershed, for example, is only part of the estimated 32 million tons of nitrogen artificially introduced by humans into the United States each year. That figure represents about four and a half times natural background levels. It is little wonder that our natural systems are out of balance.

The Chesapeake Bay Foundation published the first State of the Bay report card on the Bay's health in 1998. In that year, we gave the Bay's health a 27 on a scale of 100. Last week, our 2008 report gave the Bay's health a 28, still a D. In other words, we have showed little real progress overall in 11 years of reporting, despite the hard work of many people and the millions of public and private dollars. For every yard of progress we have gained, we have lost a yard to increasing population (about 1.5 million people in the last decade) and its associated increase in land conversion and pavement.

After 32 years in this business, it does not really satisfy me to get up in the morning and tell myself that it would have been worse if it were not for our efforts.

It has long been noted that people cannot keep doing the same thing over and over and hope for different results. If we have any hope of breaking out of the static or even worsening conditions in which we find ourselves despite our best efforts, the federal, state and local governments of the region simply must take dramatic action to bring about a major reduction in nitrogen and phosphorus entering the tributary system and the mainstem of the Bay.

Today I want to focus primarily on the governance structure responsible for restoring the health of the Bay, and particularly the federal role in it. I will make five main points: 1) The current system of Bay governance has failed; 2) Science tells us to manage the Bay as a single system; 3) We need a new governance structure with EPA in a far stronger role; 4) Congress may well need to give additional authorities to EPA to help it complete the job; and 5) Federal policies and resources outside the control of the EPA need to help support the goal. Allow me to expand on each of these in turn.

- 1) The current system of Bay governance has demonstrably failed. The current inter-governmental approach of reliance on cooperation and voluntary actions to implement pollution reduction programs is just not going to get the job done. In 1987, the federal government and the states agreed to work together to reduce nitrogen and phosphorus 40% by 2000. They didn't do it. In 2000, they agreed to work together to achieve additional nitrogen and phosphorous reduction goals by 2010. It is now clear that they will not even get close. While it is true that there is a often is a significant lag time between the introduction of a "best management practice" and measurable water quality results, nothing close to the required number of best management practices have been put in place. The complete failure to meet the twice agreed-upon goals evidences the failures of treating these commitments in an exclusively cooperative governance manner.

- 2) Forty years of intense scientific investigation by leading estuarine scientists have documented precisely why the Chesapeake is degraded and how to fix it. No other water body in the world can boast this level of scientific understanding. From the molecular to the macro, we know how this marvel of nature works, or doesn't. Most important, science has taught us that the 200 mile long Chesapeake Bay with its 8,000 miles of shoreline are only one part of a much larger ecological system. From Cooperstown, NY, the headwaters of its largest tributary, to the Virginia Capes, where estuarine waters collide with the Atlantic Ocean 650 miles away, the Chesapeake is a single biological and hydrological system. Its boundary is defined by its drainage basin of 64,000 square miles – natural boundaries which declare the political lines of states as insignificant and meaningless.

And yet, its governance has rejected this basic scientific principle, giving only lip service to a *systems approach* to management, one which would address the entire system as single ecological entity. Rather, with rare exceptions, the six states have make their own plans and programs independent of one another. Shared responsibility is no responsibility.

- 3) The EPA needs to take on a far stronger role. Even the most committed states can only influence pollution within its own borders. Only the federal government has the ability to control pollution across the watershed, and it has failed in its enforcement responsibility. The Federal Clean Water Act passed by Congress over President Nixon's veto 37 years ago provides authority to, and demands accountability from, EPA to protect water quality. It has not done so. From sewage and industrial pipes to chemical-laden stormwater runoff from cities, suburbs and farmlands, the onslaught is awesome.

We must demand the federal government, and particularly the EPA, to assert its system-wide jurisdictional authority.

With the failure of the most recent ten year period of cooperation, EPA and its partners are now developing a Total Maximum Daily Load for the Bay watershed that, if taken to the local jurisdictional scale, will create point and nonpoint nitrogen and phosphorus load caps for jurisdictions throughout the Bay watershed. However, as we know, TMDLs are not self

implementing. The critical issue is what actions will be done to actually achieve the caps and over what time line. As we have learned with so many TMDLs, if timely implementation and accountability don't follow the scientific work, the document is barely worth the paper it's written on.

To begin with, EPA absolutely must ensure that any new permit issued under its own authority, or through a state's delegated Clean Water Act program, does not add new nitrogen or phosphorus loads to the overall pollution cap. This is the essence of the Clean Water Act, and steps to achieve it can be done now. EPA can, for example, now halt the issuance of permits that add more nitrogen or phosphorus pollution to the Chesapeake ecosystem.

The situation is somewhat more problematic with regard to nonpoint source loads. EPA's authority over nonpoint sources is not clearly defined, and its scope is debated. EPA has stated that it will ensure that the TMDL is "supported by documentation showing that the nonpoint source control measures...can and will achieve expected load reductions".

Maryland, Virginia, and Pennsylvania, three of the states involved in the Chesapeake Bay Program partnership developing the Bay TMDL, have agreed to present state implementation plans for achieving the TMDL loads by May 2010. However, we have yet to see any specifics on the mechanisms or funding programs for achievement, and there remains a lack of any defined penalties or consequences for failure to achieve the necessary reductions.

In short, there is nothing yet on the horizon that fundamentally changes the voluntary nature of the traditional, failed process for achieving a large part of the necessary reductions in the pollution that is ruining the Chesapeake Bay. A recent set of estimates from the Chesapeake Bay Program showed that at current rates, we could not expect to achieve necessary reductions in the Bay for decades to come. Given the extremely poor track record of the past decades, we have justifiable skepticism that the needed reductions will occur in a reasonable time frame absent far more aggressive EPA engagement.

4) Congress must strengthen EPA authorities. Congress must be prepared to provide EPA with stronger and perhaps additional authorities it needs to get the job done. In the recent past, EPA has been a negative force, undercutting the good intentions of the states as the Agency pursued a policy of environmental deregulation. With several partners, we have filed a lawsuit in federal court demanding EPA utilize all of its existing authorities to reduce pollution to the Bay and its rivers. However, additional tools may well be key to finishing the job. We urge Congress to do two things to enhance the EPA's current authorities:

First, we urge Congress to pass language clarifying EPA's jurisdiction over the entire network of wetlands, streams, and waterways of the Chesapeake Bay watershed. The simplest way to do this is to pass the Clean Water Restoration Act introduced earlier this month by Senator Feingold and others, including Senator Cardin.

More than forty years of scientific research by the Stroud Water Research Center in southeastern Pennsylvania attests to the critical importance of small headwater streams in removing pollution from higher order streams and rivers, as well as in preserving aquatic and riparian life throughout the entire system. Stroud's research also attests to the extreme vulnerability of seepages and first order headwater streams. The Chesapeake Bay receives half of its water from a network of 110,000 streams and 1.7 million acres of wetlands, most of which are non-navigable tributaries and non-tidal wetlands that drain to those tributaries. Other studies have shown that non-tidal wetlands near the Chesapeake Bay removed an estimated 89% of the nitrogen and 80% of the phosphorus that entered the wetlands through upland runoff, groundwater, and precipitation. Ensuring EPA jurisdiction over all of these waters and wetlands is key to a healthy Chesapeake.

In addition, we urge Congress to give EPA clear authority to either regulate nonpoint pollution directly, or to give it additional means to ensure that states bring nonpoint sources of nitrogen and phosphorous pollution under control. Given the pressing issues facing Congress today, our preference is that Congress not try to open the Clean Water Act generally, but rather that it use the reauthorization of section 117 to create a statutory

requirement that states must provide the EPA with reasonable timelines for controlling the nonpoint sources of pollution or face stipulated consequences and penalties.

- 4) My fifth and final point is that federal government policies and financial and technical resources, both controlled by the EPA and outside of its purview, need to be supportive of Chesapeake Bay restoration. We appear to be moving to some degree in that direction, as evidenced by at least four recent examples. First, significant farm bill resources were directed last year to assist farmers and landowners in the Chesapeake Bay watershed to better manage their fertilizers, including animal manure. Second, in 2007 Senator Cardin and others showed great leadership in requiring new federal buildings and installations – of which we have more than our share in this area – to better manage stormwater. Third, the Recovery Act included significant resources to limit pollution from wastewater treatment and other sources, as well as additional funds that NOAA, the Army Corps of Engineers, the Department of Agriculture and the US Fish and Wildlife Service may apply to Bay restoration. Lastly, several members of the House are working in the FY2010 appropriations process to increase the Bay Program related small watershed and nutrient reduction grants which are well used and badly needed by local governments and private watershed groups to make water quality progress at the local level.

Over time, if the result of more effective regulation results in disproportionately high costs for some sectors, subsequent federal investments need to be strategically directed to easing that burden.

Finally, I want to note the extraordinary opportunity that we have in the upcoming Surface Transportation reauthorization bill to address the serious water pollution generated by the nation's existing million miles of federal aid roads, and the countless more miles to come. I urge you to take aggressive action to address this ongoing, federally-subsidized source of pollution of our streams, rivers, lakes, and estuaries.

Before closing, I also would like to briefly touch on four of the Chesapeake Bay's most important fisheries—menhaden, blue crabs, oysters, and striped bass. As I noted at the beginning of the

statement, blue crabs and oysters are severely depleted, yet we believe that there may be some reason for hope if the governance and pollution issues can be solved.

Blue Crabs

The Chesapeake Blue Crab fishery has now been officially recognized by NOAA as a disaster, simply confirming what we have all known for a long time. However, we believe that the states of Maryland and Virginia are working very well and cooperatively together to make management decisions based on good science. These decisions are painful in the short run, but we believe that the science is clear. If cooperative fishery management decisions follow the science, and the water quality and grasses improve significantly, the population will rebound. The only request that we have of the federal government is that Congress continue to generously fund the important work that NOAA is doing in this area.

Oysters

A five year scientific investigation of whether to introduce the Asian oyster to the Bay has recently drawn to a close. Although the Environmental Impact Statement contained much uncertainty, it did identify causes for concern with the Asian oyster and reasons for hope with our native oyster. Accordingly, federal and state officials opted for caution, a position that we applaud. It is now clear that the native oyster is and will be the Chesapeake Bay oyster of the future.

There is an increasing body of evidence that the native oyster is becoming more tolerant of the two diseases that have helped to decimate the population, as well as peer-reviewed evidence that oysters do better as pollution diminishes and dissolved oxygen in hypoxic zones increases. This is very good news for the possibility of restoration. We also have a growing record of success in oyster aquaculture. There are several places in the Bay where entrepreneurs are making money with private oyster farms. The sterile native oyster, which grows faster than the non-sterile variety, appears to have great potential when cultivated both in the highly controlled environment of cages and floats, and on the bottom, where greater numbers can be grown at a reduced per unit cost.

We believe that there is a bright future for native oyster restoration as long as federal, state, and private investments are strategically made. I want to emphasize again that the water quality

problem must be aggressively dealt with, as must the problem of increasing predation by cow-nosed rays, the population of which is exploding as its traditional predators are reduced. We must begin to find ways to address this problem.

Federal investments through NOAA and the Corps of Engineers continue to be critical to the long-term future of the native oyster in the Bay. We are hopeful that a significant down payment on oyster restoration activities will be made through funds appropriated to NOAA in the recent Recovery Act, and annual appropriations for both agencies are important. We now have a significant body of knowledge and experience in oyster restoration, and we just need to be prepared to make the kinds and the levels of strategic investments that will allow us to succeed.

Menhaden

Menhaden are a species rarely consumed by people but critical to the ecological health of the Bay. Among other things, they are a primary food source for striped bass. Over the past several years, they have been fished industrially by one company and removed from the Bay ecosystem in great quantities. We are now three years into a five year negotiated cap on how many menhaden that company can remove from the Bay. The five year cap period also corresponds to a period of intense study designed to help the Atlantic States Marine Fisheries Commission to develop an ecologically sustainable management plan for the stock. CBF is committed to this process. However, it is certainly our view that if the ASMFC does not use this period to develop and present a management plan in a timely way, Congress should step in to ensure that menhaden can continue to play their key role in the ecosystem.

Striped Bass

Finally, I want to note that we are seeing a troubling amount of bacterial disease in the striped bass population. This disease, known as mycobacteriosis, was first identified in Chesapeake striped bass in 1997 and is generally thought to be fatal. In fact, scientists have now documented a higher death rate in stripers due to the disease. While the exact causes are not known, poor water quality, poor nutrition, or both are leading candidates. A good deal of research is going on to better understand these diseases and the impact that they have on both the fishery and the ecosystem.

Mr. Chairman and members of the subcommittee, the Chesapeake Bay is the largest estuary in the United States and one of America's great national treasures, a fact that Congress itself officially recognized in passing the Section 117 reauthorization bill in the year 2000. We continue to treat it shamefully. It is long past the time for the federal government to get tough on reducing the pollution that is so terribly degrading its waters and the lives—human and non-human—that depend on them. I urge you to do all that is in your power to change course now, before it becomes too late to reverse our actions and leave our descendants a healthy Chesapeake Bay.