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## **Restoring the bay means taking action on climate change**

By Donald F. Boesch

October 9, 2007

We know that the average water temperature of the Chesapeake Bay has increased by nearly 2 degrees Fahrenheit since 1960. If global warming continues unabated, it is likely to rise by an additional 5 or more degrees by the end of this century.

We know that the bay's sea level has risen by a foot and a half since the 1930s. Climate science tells us that we should prepare for an additional 2 feet to 4 feet before the next century.

We know that over the last four centuries, the bay has lost about 10 inhabited islands to erosion and a rising sea level.

Each of these facts is troubling on its own. Examined as a whole, they confirm that global climate change has already arrived in the Chesapeake Bay region.

Rather than prolonging the scientific debate about global warming, we urgently need to implement climate change policies that move us toward an economically stable and environmentally sound Chesapeake region. Climate change is emerging as the single greatest threat to Chesapeake Bay restoration, and all the hard work we have done and need to continue to do to clean up the bay could be undermined by our failure to act today.

The U.S. Senate Committee on Environment and Public Works recently asked the region's political and scientific leaders for their perspective on the impact of global warming on the Chesapeake Bay.

While hearings like these are commonplace in the halls of Congress, this session conveyed a heightened sense of urgency. Maryland's leaders alerted the country to the consequences of climate change for the Chesapeake Bay and outlined their approaches to taking action in our region, while strongly encouraging the federal government to change its path on climate change.

Witnesses, including me, identified a multitude of climate change-induced problems facing the region. Higher bay temperatures have seriously depleted bay grasses, reducing habitat for juvenile crabs and rockfish. Shoreline erosion has accelerated, causing more soil to cloud bay waters and islands to wash away. Sea level has risen, bringing city streets, homes and businesses closer to the water's edge and increasing the risk of flooding. And increasing salinity is helping to spread oyster diseases into new parts of the bay.

While these changes will drastically alter the bay ecosystem, they also can reduce the region's economic productivity. Fewer crabs and oysters mean lost income to struggling watermen. A rising sea level means greater property losses when major storms pound the bay region - a region whose insurance industry is wary of taking on the risk of writing policies in coastal counties.

With stakes this high, it is critical that we respond effectively. Gov. Martin O'Malley has formed a Commission on Climate Change with an aggressive timeline calling for the creation of an action plan for mitigating and adapting to climate change. In Virginia, Gov. Tim Kaine is pursuing a similar approach.

The Maryland action plan will undoubtedly call for deep reductions in emissions of carbon dioxide and other greenhouse gases - perhaps as much as 25 percent by 2020 and 80 percent by 2050. This will require the participation of all Marylanders and will eventually transform the ways we live and travel. In particular, we will have to drastically ramp up our efforts in energy conservation, renewable energy supplies and efficiency with regard to transportation and land use.

Experience elsewhere shows that there can be significant net economic benefits to reducing greenhouse gases, although initial investments are usually required to achieve them. Furthermore, many of the steps taken to reduce greenhouse gases, such as reducing emissions from power plants and increasing transportation efficiency, help to restore the bay.

It is time to take swift and direct action to solve our climate crisis. We have lost much time debating its existence while the scientific evidence and consensus has grown ever stronger. Now that the leaders of all major nations understand this, we must act in the best interest of our economy and the environment of the Chesapeake region - as well as the rest of the planet.

*Donald F. Boesch, a professor of marine science, is president of the University of Maryland Center for Environmental Science. This article was adapted from his testimony before the U.S. Senate Committee on Environment and Public Works. His e-mail is boesch@umces.edu.*

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This op-ed is based on testimony presented to the U.S. Senate Committee on Environment and Public Works on September 26, 2007 ([www.umces.edu/president/BoeschSenateTestimonyChesBay.pdf](http://www.umces.edu/president/BoeschSenateTestimonyChesBay.pdf)). As a result of revisions during the drafting and editing, the sentence "We know that the bay's sea level has risen by a foot and a half since the 1930s" was erroneously included in the Sun op-ed. The responsibility for this error is mine alone. As the testimony makes clear, mean sea level rose approximately 1 foot relative to the land in the Chesapeake Bay region (ranging from 11 inches at Washington, DC, to nearly a foot and a half at Norfolk) during the 20<sup>th</sup> century. This correction does not affect the projection of possible sea level rise during the present century.