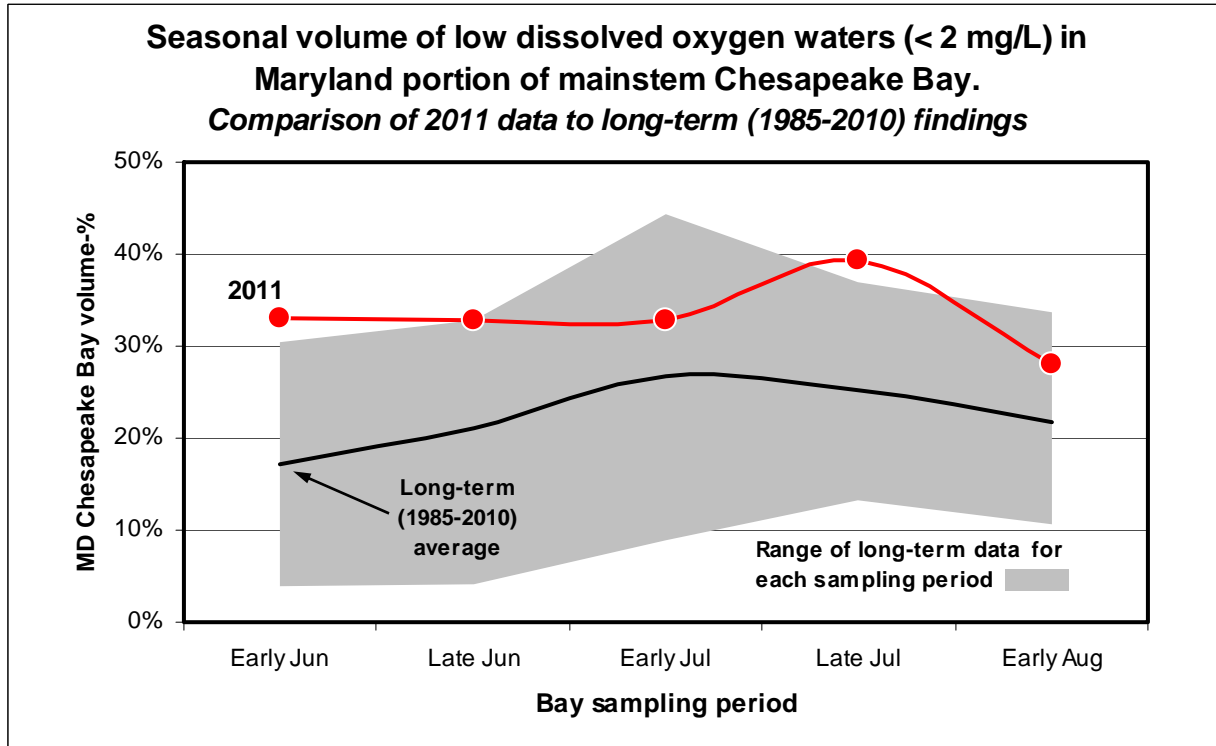


## Update on the Chesapeake Bay summer DEAD ZONE (early August 2011)

- see (<http://mddnr.chesapeakebay.net/eyesonthebay/stories/DOPredictionsAug2011.pdf>), 8/1/2011

Water quality samples collected in Chesapeake Bay between early June and early August 2011 by the MD Department of Natural Resources (DNR) show that the volume of water with low dissolved oxygen in the Maryland portion of the mainstem Bay remains **well above** the long-term average (1985-2010).



DNR has monitored water quality conditions in Chesapeake Bay since 1985. These data show that, during summer, the warm, shallower waters of the Bay are well mixed and have sufficient oxygen for fish, crabs and shellfish to flourish. However, in the cool, deeper waters of the Bay and its tidal tributaries, oxygen levels often are below 2 parts per million. In these areas, there is too little oxygen for these animals to survive. Typically, the volume of low oxygen waters in the mainstem Bay increases to a mid-summer peak before declining in late summer (see figure; table).

### Long-term water monitoring period and average volume of low dissolved oxygen (0 to 2.0 ppm) in Maryland's 21.4 km<sup>3</sup> portion of Chesapeake Bay

Summer period	Average volume of Maryland Bay with low dissolved oxygen levels (1985 - 2010)	Volume of Maryland Bay with low dissolved oxygen levels in 2011
Early June	17.1 %	33.0 % *
Late June	21.2 %	32.7 %
Early July	26.6 %	32.8 %
Late July	25.2 %	39.4 % *
Early August	21.7 %	28.1 %

\* - highest volume recorded since 1985 for same summer period

## **Summary of 2011 low-oxygen conditions in MD portion of mainstem Chesapeake Bay**

**Early June:** The volume of low dissolved oxygen in the Maryland portion of the mainstem Bay was the highest recorded (**33%**) in that period since monitoring began in 1985.

**Late June to early July:** Over the next few weeks, volume of low-oxygen waters declined slightly (**32.7 - 32.8%**), although the volume remained above the long-term average. This resulted in some increase in the volume of the Bay where fish, crabs and shellfish could survive.

**Late July:** Data collected in late July showed an expansion in these low oxygen waters, again setting a record high volume for this summer period (**39.4 %**) and further reducing habitat available for Bay species.

**Early August:** The volume of low oxygen waters in the Maryland portion of the mainstem Bay remains above the long-term average for this time of the season, but declined to **28.1%** from the peak volume found two weeks earlier.

This year's worse-than-average low dissolved oxygen conditions are being driven by high spring flows of freshwater and nitrogen into the Bay. The US Geological Survey reported that freshwater flows in 2011 from the Susquehanna River by late spring had already equaled the total amount delivered to the Bay in an average year. These high flows add additional nutrients, fueling algal blooms that die and sink into deeper waters where they decompose and use up available oxygen. When oxygen levels get too low, some animals simply leave the area but oxygen levels can get low enough to also cause fish kills. Oysters and clams that have settled on the bottom, cannot move and die.

Since early June, between about 30 and 40 percent of the volume of the Maryland portion of the mainstem Chesapeake Bay has had low oxygen levels. Measurements in early August show that this volume of low oxygen water has declined to less than 30%. With changing weather patterns, it is expected that the low oxygen-volume of the Bay will continue to decline through August. DNR will continue to monitor the oxygen conditions and provide another update in early September.

### **What Maryland is doing to reduce the size of the Bay's "dead zone"**

The implementation of the Baywide TMDL in December 2010, committed Maryland and the other Bay watershed States to accelerate their nutrient and sediment reduction strategies, should reduce the size and duration of the Bay's 'dead zone' even in years with above average spring flows.

### **What you can do to reduce your contribution to the Bay's "dead zone"?**

Responsible Marylanders know that reducing polluted runoff is the key to a healthier Chesapeake Bay.

Here is how you can do your part now and make a difference:

- Limit your use of lawn fertilizers
- Maintain your septic system
- Drive less
- Plant a tree

### **For more information:**

- Real-time Maryland Tidal Water Quality Conditions: [www.eyesonthebay.net](http://www.eyesonthebay.net)
- Restoring the Chesapeake Bay: Maryland's Actions & Progress: [www.baystat.maryland.gov/](http://www.baystat.maryland.gov/)
- What You Can Do to Help the Bay: [www.baystat.maryland.gov/what\\_you\\_can\\_do.html](http://www.baystat.maryland.gov/what_you_can_do.html)