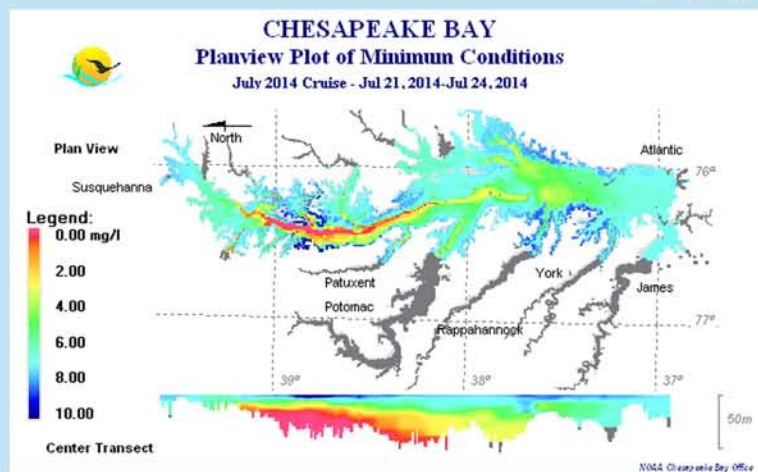
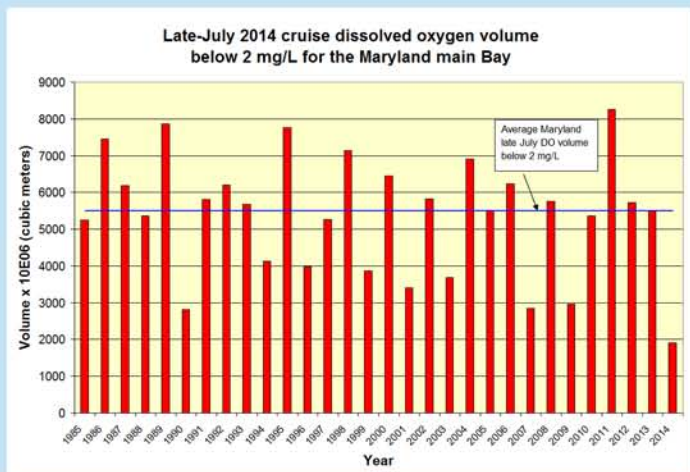
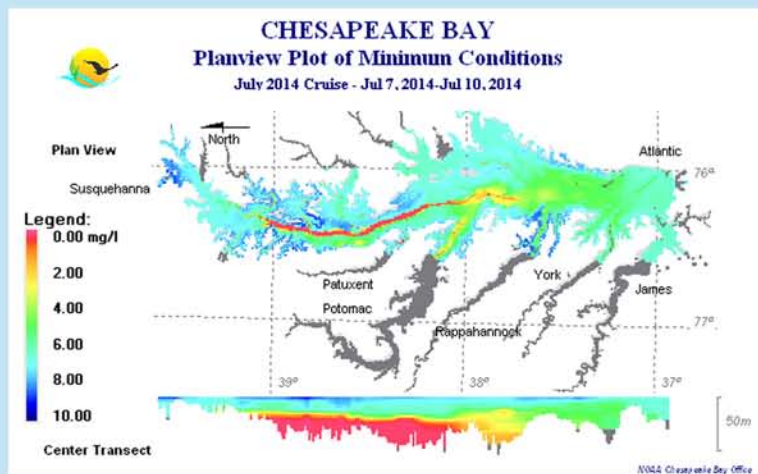


# Maryland Department of Natural Resources

## 2014 Chesapeake Bay Hypoxia Report - Late-July Update



The late-July 2014 Bay sampling shows that hypoxic volume (dead zone) in Maryland's portion of the Bay **continues to be much smaller than average**. It is the **smallest** MD late-July hypoxic zone recorded in 30 years of sampling and follows on the smallest early-July MD dead zone seen in 30 years. Since early-July, the dead zone has spread out laterally toward shore between the vicinity of the Bay Bridge to the Choptank, but has lessened/constricted in the deep trough between the Patuxent and below the Potomac. The overall volume of dead zone waters in the MD main Chesapeake is about 0.46 cubic miles.



For more information:

- *Eyes on the Bay* ([www.eyesonthebay.net](http://www.eyesonthebay.net)) - Chesapeake and Coastal Bays water quality results, and past hypoxia reports
- *Baystat* (<http://baystat.maryland.gov>) Maryland's action and progress towards Chesapeake restoration

Crabs, fish, oysters and other creatures in the Chesapeake Bay need oxygen to survive. Scientists and natural resource managers study the volume and duration of Bay hypoxia (less than 2 mg/L oxygen) to determine possible impacts to Bay life. This area of hypoxia is often termed "The Dead Zone" in media reports.

Each year from June through September, Maryland DNR computes these volumes from data collected by Maryland and Virginia. Data collection is funded by these states and their partner, the EPA Chesapeake Bay Program.

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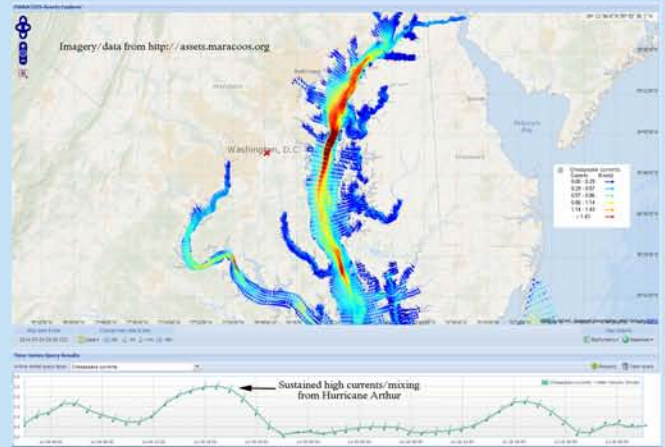
Posted: July 29, 2014



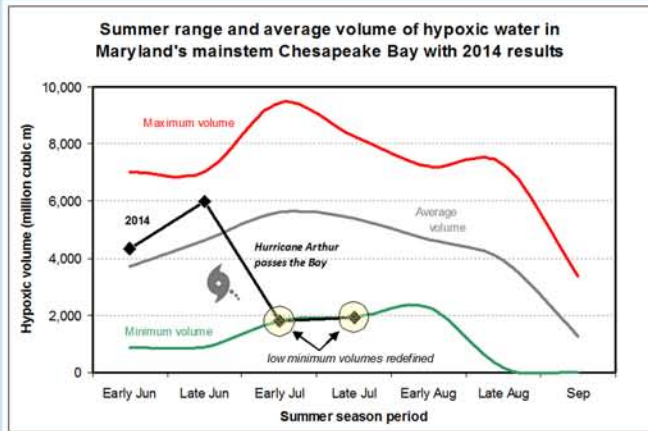
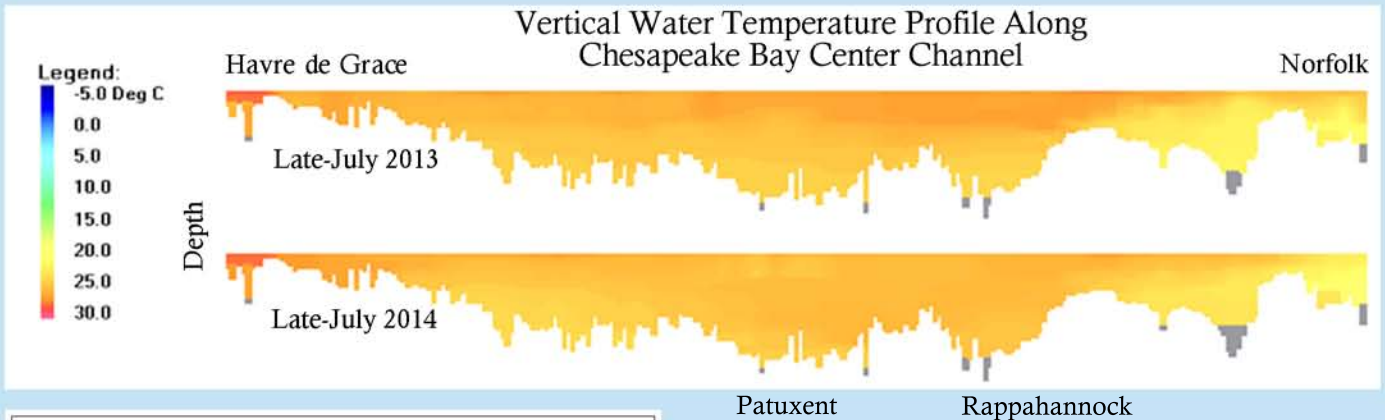
# What continues the dramatic reduction in dead zone size?

Hurricane Arthur passed closely by the Maryland coast on July 4th, producing sustained winds in the region. Chesapeake Bay modeled data on currents, obtained from the Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS) of which Maryland DNR is a member, shows a sustained period of higher than average currents being forced down the Bay which mixed oxygen into the deeper waters of the Bay.

<http://assets.maracoos.org>



Hurricane Arthur stirred up the Bay, but unseasonably cool weather in July 2014 following Arthur, seems to have helped prevent stronger thermal stratification from setting up. When much warmer waters sit on top of cooler waters, it can prevent oxygen from mixing to the deeper cooler layers and cause dead zones to expand. Also, warmer waters are not able to hold as much oxygen. The graphic below shows a comparison of Bay vertical temperature from late-July 2013 and late-July 2014. Waters in the deeper areas between the Patuxent and Rappahannock appear to be more well mixed in 2014 compared to 2013.



What lies ahead for August and the Bay dead zone? Because of weather anomalies, this year has been hard to forecast, but DNR has been observing quite a few large algal blooms in the Bay that could die-off and fuel the consumption of oxygen by their decomposition. If low temperatures and relatively low rainfall persist, however, it could mitigate those impacts to some degree. These theories will be tested by the next Chesapeake Bay monitoring cruise scheduled for early August.

Through numerous best management practices, Maryland is diligently working to reduce nutrient and sediment pollution. Maryland has defined goals for reducing this pollution, as set forth in the US EPA's Total Maximum Daily Load (TMDL) process. The EPA Chesapeake Bay Program just announced that Maryland has reached its 2013 TMDL pollution reduction milestones for nutrients and sediment. For more information on Maryland's pollution reduction progress, view this recent press release: <http://1.usa.gov/V2NxNU>

<http://www.eyesonthebay.net>